Agenda

Council Meeting

7.00pm, Tuesday 16 March 2021

MS Teams

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Council Meetings

Council Meetings are public forums where Councillors come together to meet as a Council and make decisions about important, strategic and other matters. The Mayor presides over all Council Meetings, and they are conducted in accordance with the City of Yarra Governance Rules 2020 and the Council Meetings Operations Policy.

Council meetings are decision-making forums and only Councillors have a formal role. However, Council is committed to transparent governance and to ensuring that any person whose rights will be directly affected by a decision of Council is entitled to communicate their views and have their interests considered before the decision is made.

There are two ways you can participate in the meeting.

Public Question Time

Yarra City Council welcomes questions from members of the community.

Ideally, questions should be submitted to Council in writing by midday on the day of the meeting via the form available on our website. Submitting your question in advance helps us to provide a more comprehensive answer. Questions that have been submitted in advance will be answered first.

Public question time is an opportunity to ask questions about issues for which you have not been able to gain a satisfactory response on a matter. As such, public question time is not:

- a time to make statements or engage in debate with Councillors;
- a forum to be used in relation to planning application matters which are required to be submitted and considered as part of the formal planning submission;
- a forum for initially raising operational matters, which should be directed to the administration in the first instance.

If you wish to raise matters in relation to an item on this meeting agenda, Council will consider submissions on these items in conjunction with and prior to debate on that agenda item.

When you are invited by the Mayor to ask your question, please come forward, take a seat at the microphone, state your name clearly for the record and:

- direct your question to the Mayor;
- refrain from making statements or engaging in debate
- don’t raise operational matters which have not previously been raised with the Council administration;
- not ask questions about matter listed on the agenda for the current meeting.
- refrain from repeating questions that have been previously asked; and
- if asking a question on behalf of a group, explain the nature of the group and how you are able to speak on their behalf.

Once you have asked your question, please remain silent unless called upon by the Mayor to make further comment or to clarify any aspects.

Public submissions

Before each item is considered, the meeting chair will ask people in attendance if they wish to make submission. If you want to make a submission, simply raise your hand and the Mayor will invite you to come forward, take a seat at the microphone, state your name clearly for the record and:

- Speak for a maximum of five minutes;
- direct your submission to the Mayor;
- confine your submission to the subject under consideration;
- avoid repetition and restating previous submitters;
- refrain from asking questions or seeking comments from the Councillors or other submitters;
- if speaking on behalf of a group, explain the nature of the group and how you are able to speak on their behalf.

Once you have made your submission, please remain silent unless called upon by the Mayor to make further comment or to clarify any aspects.

Once all submissions have been received, the formal debate may commence. Once the debate has commenced, no further submissions, questions or comments from submitters can be received.

Arrangements to ensure our meetings are accessible to the public

Council meetings are held at either the Richmond Town Hall or the Fitzroy Town Hall. The following arrangements are in place to ensure they are accessible to the public:

- Entrance ramps and lifts (off Moor Street at Fitzroy, entry foyer at Richmond).
- Interpreting assistance is available by arrangement (tel. 9205 5110).
- Auslan interpreting is available by arrangement (tel. 9205 5110).
- A hearing loop is available at Richmond only and the receiver accessory is available by arrangement (tel. 9205 5110).
- Proposed resolutions are displayed on large screen.
- An electronic sound system amplifies Councillors' debate.
- Disability accessible toilet facilities are available at each venue.

Recording and Publication of Meetings

An audio recording is made of all public Council Meetings and then published on Council's website. By participating in proceedings (including during Public Question Time or in making a submission regarding an item before Council), you agree to this publication. You should be aware that any private information volunteered by you during your participation in a meeting is subject to recording and publication.

Order of business

1. **Acknowledgement of Country**
2. **Attendance, apologies and requests for leave of absence**
3. **Announcements**
4. **Declarations of conflict of interest**
5. **Confidential business reports**
6. **Confirmation of minutes**
7. **Public question time**
8. **Council business reports**
9. **Notices of motion**
10. **Petitions and joint letters**
11. **Questions without notice**
12. **Delegates' reports**
13. **General business**
14. **Urgent business**

1. Acknowledgment of Country

"Yarra City Council acknowledges the Wurundjeri Woi Wurrung people as the Traditional Owners and true sovereigns of the land now known as Yarra.

We acknowledge their creator spirit Bunjil, their ancestors and their Elders.

We acknowledge the strength and resilience of the Wurundjeri Woi Wurrung, who have never ceded sovereignty and retain their strong connections to family, clan and country despite the impacts of European invasion.

We also acknowledge the significant contributions made by other Aboriginal and Torres Strait Islander people to life in Yarra.

We pay our respects to Elders from all nations here today—and to their Elders past, present and future."

2. Attendance, apologies and requests for leave of absence

Attendance

Councillors

- Cr Gabrielle de Vietri — Mayor
- Cr Claudia Nguyen — Deputy Mayor
- Cr Edward Crossland — Councillor
- Cr Stephen Jolly — Councillor
- Cr Herschel Landes — Councillor
- Cr Anab Mohamud — Councillor
- Cr Bridgid O'Brien — Councillor
- Cr Amanda Stone — Councillor
- Cr Sophie Wade — Councillor

Council officers

- Vijaya Vaidyanath — Chief Executive Officer
- Brooke Colbert — Group Manager Advocacy and Engagement
- Ivan Gilbert — Group Manager Chief Executive's Office
- Lucas Gosling — Director Community Wellbeing
- Gracie Karabinis — Group Manager People and Culture
- Chris Leivers — Director City Works and Assets
- Diarmuid McAlary — Director Corporate, Business and Finance
- Bruce Phillips — Director Planning and Place Making
- Rhys Thomas — Senior Governance Advisor
- Mel Nikou — Governance Officer

3. Announcements

An opportunity is provided for the Mayor to make any necessary announcements.

4. Declarations of conflict of interest (Councillors and staff)

Any Councillor who has a conflict of interest in a matter being considered at this meeting is required to disclose that interest either by explaining the nature of the conflict of interest to those present or advising that they have disclosed the nature of the interest in writing to the Chief Executive Officer before the meeting commenced.

5. Confidential business reports

The following items were deemed by the Chief Executive Officer to be suitable for consideration in closed session in accordance with section 66(2)(a) of the Local Government Act 2020. These items have been presented to Council in a separate agenda for determination as to whether they shall be considered in closed session.

Item

5.1 IntoWork Report

This item is presented for consideration in closed session because it contains council business information, being information that would prejudice the Council's position in commercial negotiations if prematurely released.

This item is considered applicable because it contains information in relation to a commercial negotiations regarding a part Council-owned business entity.

6. Confirmation of minutes

RECOMMENDATION

That the minutes of the Council Meeting held on Tuesday 2 March 2021 be confirmed.

7. Public question time

An opportunity is provided for questions from members of the public.

8. Council business reports

Item		Page	Rec. Page	Report Presenter
8.1	Update on Glenvill's Groundwater Investigations and Yarra Riverbank at Yarra Bend Development, Alphington	9	18	Peter Moran – Manager Traffic and Civil Engineering
8.2	Nicholson Street, Mollison Street and Langridge Street, Abbotsford: Traffic calming trial evaluation	235	249	Peter Moran – Manager Traffic and Civil Engineering
8.3	Status Update - 3-Bin Kerbside Service	282	294	Joe Agostino – Manager City Works
8.4	Fitzroy-Collingwood Interim Planning Scheme provisions (Stage 2) – Alexandra Parade, Victoria Parade (east of ACU) and Fitzroy West	295	311	Fiona van der Hoeven - Assistant Manager City Strategy
8.5	Implementation of the Climate Emergency Plan	765	770	Michael Oke – Sustainability Unit Manager
8.6	Motions for ALGA National General Assembly and MAV State Council	779	781	Rhys Thomas - Senior Governance Advisor

9. Notices of motion

Nil

10. Petitions and joint letters

An opportunity exists for any Councillor to table a petition or joint letter for Council's consideration.

11. Questions without notice

An opportunity is provided for Councillors to ask questions of the Mayor or Chief Executive Officer.

12. Delegate's reports

An opportunity is provided for Councillors to table or present a Delegate's Report.

13. General business

An opportunity is provided for Councillors to raise items of General Business for Council's consideration.

14. Urgent business

An opportunity is provided for the Chief Executive Officer to introduce items of Urgent Business.

8.1 Update on Glenvill's Groundwater Investigations and Yarra Riverbank at Yarra Bend Development, Alphington

Executive Summary

Purpose

To provide Council with a summary of the reports provided by Glenvill (drafted by Douglas Partners on their behalf), investigating the cause of the riverbank slumping at the Yarra Bend Development, Alphington and the subsequent peer review report by Alluvium (on behalf of Council).

Key Issues

The former AMCOR site in Alphington is currently being re-developed. The site is privately owned, including the riverbank.

Slumping of the riverbank has occurred along sections of the pathway on the lower terrace causing two trees to fall into the river, a third tree was removed by Glenvill as a precaution. In response, Council Officers engaged an independent consultancy (Alluvium) to investigate the potential cause of the riverbank slumping and its impact on the riverbank and trees.

There is an existing riverbank pathway that runs along the southern boundary of the site, which has historically been used by the members of the public. The pathway was temporarily closed as it was determined to be unsafe for pedestrian access; an alternative pathway to the riverbank has been provided through the Yarra Bend development site.

A number of reports have been presented to Council on this matter, including most recently on 05 May 2020. At this meeting it was resolved that *"A Final report on the cause and potential permanent mitigation options to address the groundwater and river bank slumping be presented to Council in Feb 2021, with earlier reports to be provided if warranted"*.

Further investigation and collection of groundwater data was carried by Glenvill's consultants (Douglas Partners), between November 2019 and December 2020, and two reports have been submitted to Council. This Council report provides summaries of Glenvill's reports (drafted on their behalf by Douglas Partners), as well as a peer review report of this information by Alluvium (on behalf of Council).

Mitigation works have been completed to manage surface water flows within the site. Officers and Alluvium have reviewed these measures and expect that these works have been somewhat effective, however the extent to which they have addressed the issue at hand (groundwater) is still unclear.

Council Officers have made numerous requests to Glenvill to undertake further investigation in order to provide additional data in line with Alluviums advice and requirements. Many of these requests have been actioned by Glenvill, however a number have not and have resulted in gaps in some areas of data collection and presentation that make the findings difficult to evaluate. Thus neither Officers or Alluvium are currently in a position to confirm the safety and stability of the subject land and are not able to be confident that Glenvill has a pathway to provide the information necessary to confirm that safety and stability of the site.

Financial Implications

There has been a cost to Council to commission independent expert advice. Council Officers believe these costs incurred to date are reasonable and necessary in order to effectively monitor this significant site, and to protect the riverbank.

There may be some ability to recover costs once/if the cause of the riverbank slumping is determined, however this will be determined by whether the ultimate findings on the cause of the riverbank slumping are definitive; at this stage, they are not.

PROPOSAL

1. That:

   (a) Council notes this report, and that the cause of the slumping of the riverbank is not yet definitively known;

   (b) Council notes Glenvill's intention to install additional sub-surface drainage in the riverbank subject to all relevant authority approvals;

   (c) Council Officers continue to liaise with Glenvill and request further investigations to implement Alluviums recommendations as per their peer review report, and that any additional information/data resulting from such investigations be provided to Council to review;

   (d) Council Officers continue to monitor and take any necessary action to ensure appropriate management of the Yarra Bend site, including the riverbank, by Glenvill and their agents; and

   (e) Melbourne Water (MW), Environmental Protection Agency (EPA), Department of Environment, Land, Water and Planning (DELWP) and any other authorities/agencies as appropriate, be informed of current and ongoing investigations and findings.

8.1 Update on Glenvill's Groundwater Investigations and Yarra Riverbank at Yarra Bend Development, Alphington

Reference	D21/20777
Author	Ciaran Maher - Senior Project Engineer
Authoriser	Director City Works and Assets

Purpose

1. To provide Council with a summary of the reports provided by Glenvill (drafted by Douglas Partners on their behalf) investigating the cause of the riverbank slumping at the Yarra Bend Development, Alphington and the subsequent peer review report by Alluvium (on behalf of Council).
2. To advise Council on the proposed next steps.

Critical analysis

History and background

3. The former AMCOR site in Alphington is currently being re-developed.
4. There is an existing riverbank path that runs along the southern boundary of the site.
5. The site is privately owned, including the riverbank.
6. The Development Plan sets out the expectations for site including the design and ultimate treatment of the riverbank as part of the completion of this development by Glenvill (Developer).
7. The riverbank pathway is within the 30-metre wide corridor from the riverbank to the top of the embankment that is proposed to continue to be publicly accessible. The whole abuttal length is to be landscaped to provide public access for pedestrians and potentially cyclists to the river and trails along the river, as per the Development Plan.
8. In January of 2019, a section of the riverbank slumped, causing a tree to fall into the river.
9. Slumping of the riverbank has occurred along sections of the pathway on the lower terrace. The pathway was determined to be unsafe for pedestrian access and has consequently been closed off to the public by Glenvill since January 2019.
10. An alternative pathway to the riverbank has been provided through the Yarra Bend development site, however the section of the riverbank subject to slumping has remained closed to public for safety reasons.
11. A second tree fell into the river in May 2019.
12. Council Officers subsequently engaged an independent consultancy (Alluvium) to investigate the potential cause of the riverbank slumping and its impact on riverbank trees.
13. Based on the independent recommendations presented to Council, a third tree was removed by Glenvill to address an urgent public risk and to avoid any further damage to the riverbank that may have occurred if the tree had fallen.
14. Officers have previously reported to Council on this matter on the following dates:
    (a) 30 July 2019 (Council report – Urgent Business);
    (b) 13 August 2019 (Council report);
    (c) 27 August 2019 (Council report);
    (d) 24 September 2019 (General Business item);

(e) 12 November 2019 (Council report); and

(f) 05 May 2020 (Council report).

15. All previous reports are accessible on Councils website via the agenda from the relevant meeting.

Summary of investigation, monitoring and remediation actions to date

16. In line with the recommendations of Alluvium (consulting to Council), a site-wide surface water management plan (SWMP) was prepared by Glenvill. Following a review by Alluvium and Council Officers, this plan was conditionally approved in November 2019.

17. As part of the SWMP, several remediation measures have been implemented on site by Glenvill. These measures were completed prior to the Council Meeting of 05 May 2020, and include the following:

(a) backfilling and/or sealing of sediment ponds on site to prevent discharge into underlying groundwater;

(b) backfilling of locations along the riverbank, where slumping and tension cracking occurred;

(c) the construction of permanent drainage infrastructure on the development site, so water is captured in the drains rather than potentially seeping into groundwater;

(d) reshaping of land on the development site during construction, so that surface water runs towards treatment locations prior to entering permanent Council drains;

(e) the construction of swale cut-off drains to direct surface stormwater to sealed engineered sediment ponds for treatment and disposal;

(f) the construction of subsoil 'ag' (agricultural) drains along the ridge line to the embankment, to intercept subsurface runoff, and direct away from riverbank; and

(g) installation of temporary sub surface 'ag' drainage within the lower riverbank terrace to lower the groundwater levels and reduce bank moisture condition.

18. At the most recent Council Meeting on 05 May 2020, Council resolved that:

(a) Council Officers continue to liaise with Glenvill to request further investigations to incorporate Alluviums recommendations as per their peer review report and update Councillors on a regular basis;

(b) Council Officers continue to monitor the river bank regularly and take any necessary action to ensure appropriate management of the site, including the river bank, by Glenvill and their agents;

(c) the Construction Management Plan, Services and Engineering Infrastructure Report, The Environmental Management Plan, The Stormwater Management Plan and 'The Groundwater Management Plan – AMCOR Site Yarra Riverfront' including appendices be made publicly available, where possible on the Yarra website;

(d) Melbourne Water (MW), Environmental Protection Agency (EPA), Department of Environment, Land, Water and Planning (DELWP) and any other authorities/agencies as appropriate, be informed of current and ongoing investigations and findings; and

(e) a Final report on the cause and potential permanent mitigation options to address the groundwater and river bank damage be presented to Council in Feb 2021, with earlier reports to be provided if warranted.

19. The Council resolution section 18 (a) – (e) (above), resolved at the Council Meeting of 05 May 2020, have been addressed to date as following:

(a) Council Officers frequently liaise with Glenvill in relation to riverbank monitoring and investigations. Alluvium have reviewed periodic monitoring reports submitted by Glenvill (drafted by Douglas Partners on their behalf) and provided critical assessment on the findings and gaps in data;

(b) Council Officers conduct weekly inspections of the riverbank. Where any concerns relating to the condition of the riverbank, or safety of the walking track are identified, they are immediately communicated to Glenvill for action;

(c) documents identified in resolution section 18 (c) have been be made publicly available on the Yarra website; and

(d) Council Officers have liaised with the authorities and agencies, identified in resolution section 18 (d) to keep them informed of current and ongoing investigations and findings.

20. In line with resolution item 18 (e), and to provide information on the cause and potential mitigation options to address issues around groundwater and riverbank damage, monitoring works have been undertaken by the developer between November 2019 and December 2020.

21. The results of the monitoring and proposed management actions to address identified issues has been put forward within the following two reports that have been prepared on behalf of the developer:

(a) *Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020* (Attachment 1); and

(b) *Yarra River Northern Bank Slump Management Advice, Douglas Partners,* January 2021 (Attachment 2).

22. Due to the technical complexity of the reports and issues at hand, the above reports have been peer reviewed by an independent consultant (Alluvium) on behalf of Council (Attachment 3: *Alluvium's Peer Review of Douglas Partners' Reports, February 2021*).

23. Glenvill's reports (drafted by Douglas Partners on their behalf), and Alluviums subsequent peer review (on behalf of Council), are summarised in the following sections of this report.

24. During a routine (weekly) site inspection on 16 February 2021, Council Officers observed cracking in a localised section of the riverbank track. This matter has been urgently referred to Glenvill (developer) for an immediate conditional assessment of the riverbank, and associated vegetation / trees. Council Officers photographic inspection report can be viewed in full in appendix of this report (Attachment 4*: Amcor Riverbank Inspection 16 February 2021*).

25. On 19 February Glenvill provided a response from their arborist (Tree Logic) which advised the cracks appear to be an extension of an area already flagged due to its past slumping and presumably due to its potential for further soil instability. Thus far, the newly formed cracks are of a sufficient distance from the nearest significant trees (Trees 103 & 81) not to warrant any immediate concern, but to be regularly monitored, i.e. cracks are well outside the Structural Root Zones (SRZ) of both trees, so the root plates and structural roots of both trees are not expected to be impacted. Tree Logic's report can be viewed in full in the appendix of this report (Attachment 5*: Tree Logic - Site Inspection Memo - 17 February 2021*).

26. Council Officers have referred this to Glenvill and (at the time of writing) were waiting on a response from Glenvill in relation to geotechnical and groundwater assessment of the cracking. Some reports in relation to this matter were received from Glenvill just prior to the approval of this report, however officers did not have time to review these reports or include advice on these in this report, and have subsequently referred these to suitably qualified consultants to peer review all the information. As the matter is still developing, additional updates may be available by the time this briefing report is presented, and can be verbally provided as part of the meeting as useful.

Discussion

Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

27. This report provides a review of the collected data (photographic surveys, groundwater / river / rainfall level data, water chemistry testing) and technical assessments undertaken by Douglas Partners between November 2019 and December 2020.

28. This data and testing has been undertaken to:

    (a) record the ongoing condition of the riverbank slumps;

    (b) assess ongoing general conditions of the riverbank in other areas;

    (c) check for the development of other zones exhibiting slumping instances; and

    (d) assess the ongoing drainage / moisture conditions of the lower terrace adjacent to the riverbank.

29. This report sets out the geotechnical data and technical observations of the undertaken monitoring.

30. The interpretation of the findings and recommendations are set out in Douglas Partners' Management Advice report (January 2021).

Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

31. This report provides the geotechnical advice provided by the developer's consultant, Douglas Partners. This is the final report Glenvill has provided in relation to ground water investigations, and at this point Officers understand that Glenvill are not proposing any further ongoing specialist investigations or reports.

32. The report provides a summary of how the data collection relating to each key issue has been analysed and modelled to help reach an expert opinion.

33. The report is complex and specialised in nature. It is understood that the report generally finds that:

    (a) a slight increase in groundwater was recorded over the past 12 months which is attributed to significant rainfall events in Autumn 2020;

    (b) the chemical testing has identified that ground water found at the riverbank is similar to that found in upgradient aquifers, and that ground water conditions at the riverbank are most likely influenced by upgradient conditions (beyond the site boundary) and fluctuating river water levels;

    (c) for the most part there is little noticeable change in riverbank survey points since the commencement of formal monitoring. Where there has been noticeable movement, this has not been considered significant or has been the result of site remediation works; and

    (d) as the development progresses, the construction of sealed surfaces and other infrastructure will likely further reduce the current impact of groundwater on the riverbanks condition.

34. The report puts forward the following conclusions and recommendations:

    (a) the installed sub-surface drainage measures, similar to the temporary 'ag' drain, appear to be a viable long-term measure to manage slumping risk;

    (b) a long-term drainage solution is needed to drain the basalt aquifer close to the river terrace;

    (c) a permanent subsoil drain will be required in the eastern, but not western, extent of the riverbank, within the development site;

    (d) this drainage should reduce upgradient groundwater within the riverbank terrace and prevent water seeping from the face of the upper embankment and flowing across the surface of the river terrace. This will help improve bank stability; and

(e) there is a need for the continuation of ongoing monitoring.

Alluvium's peer review of Douglas Partners' Reports, February 2021

35. The Alluvium peer review has identified that:

    (a) there are gaps in some areas of data collection and presentation that make the findings difficult to evaluate;

    (b) there is a difference in professional opinion on some aspects of the methodology, integration and analysis of data in the assessment;

    (c) there is a difference in professional opinion on some aspects of the data interpretation from which certain conclusions have been made; and

    (d) there is a need to further justify recommendations put forward.

36. The Alluvium report puts forward a number of conclusions and recommendations which are summarised below:

    (a) based on the information provided, Alluvium is not currently in a position to confirm the safety and stability of the subject land and is not confident that Glenvill has a pathway to provide the information necessary to confirm that safety and stability of the site;

    (b) the proposed riverbank drainage solution put forward by Glenvill is supported as a temporary interim solution, as the installation of additional drainage beneath the bank is likely to reduce groundwater levels;

    (c) the extent to which the temporary works will address the issues at hand is unclear based on the information provided;

    (d) there could still be implications arising from the ongoing uncertainty regarding a number of unaddressed issues in Douglas Partners' reports;

    (e) there is a need to address the broader management of the existing slumps (i.e. vegetation management) and prevent slumping in areas not protected by the existing and proposed drainage; and

    (f) due to the limitations of Douglas Partners' data and assessment, Alluvium are unable to evaluate whether the drainage design arrangements are appropriate as a longer-term solution to the issues at the site.

Options

37. It is noted that the land in question is private and Council statutory powers relating to this matter are limited. As such, it is recommended that Council Officers continue to advocate for ongoing riverbank monitoring, investigation and further development of management options with the developer (Glenvill) and engage other relevant authorities if and as relevant.

38. While this issue relates to private land in which Council is only a stakeholder, it is clear that:

    (a) there is likely to be benefit to the installation of the proposed temporary drainage solution, as an interim measure;

    (b) there is a need for ongoing representation on behalf of the public as part of the management of the riverbank, including the provision of monitoring reports and seeking assurance and updates from the developer that existing slumps are being managed and future slumps prevented; and

    (c) a broader approach to the management of the riverbank should be advocated for as part of the overall development of the site and made a key focus in the final riverbank design.

39. Council Officers note that Glenvill intend to install additional sub-surface drainage in the riverbank at the earliest opportunity. This infrastructure may be installed by the time a report is presented to Council, as Melbourne Water approval is required and currently being sought.

Community and stakeholder engagement

40. No specific community and stakeholder engagement has been undertaken to inform this report, however Council is aware of significant community interest in this matter and has sought to communicate as appropriate with the local community, including via public reporting and making all relevant reports available on Councils website.

41. Council Officers communicate with Melbourne Water (MW), the Environmental Protection Agency (EPA), the Department of Environment, Land, Water and Planning (DELWP) and other relevant authorities (as needed) to ensure they are informed of current and ongoing investigations and findings for this matter. The advice, guidance and approval of relevant statutory authorities is sought, where applicable and appropriate.

Policy analysis

Alignment to Council Plan

42. Environment, sustainability and bio-diversity outcomes are important to Council and the Community, and Officers' efforts are to achieve the best outcomes possible.

Climate emergency and sustainability implications

43. Not applicable

Community and social implications

44. The protection of the riverbank is important to the local and broader community.

45. The work being undertaken is to ensure that the riverbank is managed in line with DPO requirements and best practice.

Economic development implications

46. Not applicable

Human rights and gender equality implications

47. Not applicable

Operational analysis

Financial and resource impacts

48. There has been a cost to Council to commission independent expert advice. Officers believe these costs incurred to date are reasonable and necessary in order to effectively monitor this significant site, and to protect the riverbank.

49. There may be some ability to recover costs once/if the cause of the riverbank slumping is determined, however this will be determined by whether the ultimate findings on the cause of the riverbank slumping are definitive; at this stage, they are not.

Legal Implications

50. Council is responsible to monitor the development site to ensure that works comply with planning requirements, relevant local laws, environmental requirements (EPA guidelines) and Melbourne Water (MW) requirements. MW is responsible for the riverbank (noting that the land in question is private land). The Development Plan Overlay (DPO) sets out the expectations for the ultimate treatment and design of riverbank at the completion of the development, and Glenvill need to comply with these conditions.

51. There are no obvious legal implications at this stage, however there may be future legal implications, pending further investigations and/or findings in relation to the cause of the riverbank slumping.

Conclusion

52. Issues relating to the stability of the riverbank at the former AMCOR site have been ongoing since early 2019.

53. There has been a range of geotechnical studies, and given the complexity of the issues at hand, Council has commissioned its own independent consultant (Alluvium) to provide expert advice.

54. Mitigation works have been completed to manage surface water flows within the site. We expect that these works have been somewhat effective, however the extent to which they have addressed the issue at hand (groundwater) is still unclear.

55. Council Officers have made numerous requests to Glenvill to undertake further investigation in order to provide additional data in line with Alluviums advice and requirements. Many of these requests have been actioned by Glenvill, however a number have not and have resulted in gaps in some areas of data collection and presentation that make the findings difficult to evaluate. Thus Alluvium is not currently in a position to confirm the safety and stability of the subject land and is not confident that Glenvill has a pathway to provide the information necessary to confirm that safety and stability of the site.

56. Officers continue to liaise with Glenvill and all relevant authorities to monitor and understand the impacts of the development and to ensure the site is being managed appropriately and will take actions as necessary to ensure the riverbank is maintained and protected to enable community access in future.

57. Council Officers will continue to engage consultants Alluvium (and others as necessary), to peer review reports and findings that relate to the riverbank as required.

58. While this issue relates to private land in which Council is only a stakeholder, it is clear that:

    (a) there is likely to be benefit to the installation of the proposed temporary drainage solution, as an interim measure;

    (b) there is a need for ongoing representation on behalf of the public during construction, including the provision of monitoring reports and seeking assurance and updates from the developer that existing slumps are being managed and future slumps prevented; and

    (c) a broader approach to the management of the riverbank should be advocated for as part of the overall development of the site and made a key focus in the final riverbank design.

59. Council Officers note that Glenvill intend to install additional sub-surface drainage in the riverbank at the earliest opportunity. This infrastructure requires Melbourne Water approval, and subject to receiving that approval, may be installed by the time a report is presented to Council.

60. Council Officers will continue to liaise with Glenvill, and others as appropriate, to monitor the site, including the riverbank, and to seek to ensure an outcome that protects the riverbank and supports a final design that is consistent with the requirements of the DPO.

RECOMMENDATION

1. That:

   (a) Council notes this report, and that the cause of the slumping of the riverbank is not yet definitively known;

   (b) Council notes Glenvill's intention to install additional sub-surface drainage in the riverbank subject to all relevant authority approvals;

   (c) Council Officers continue to liaise with Glenvill and request further investigations to implement Alluviums recommendations as per their peer review report, and that any additional information/data resulting from such investigations be provided to Council to review;

   (d) Council Officers continue to monitor and take any necessary action to ensure appropriate management of the Yarra Bend site, including the riverbank, by Glenvill and their agents; and

   (e) Melbourne Water (MW), Environmental Protection Agency (EPA), Department of Environment, Land, Water and Planning (DELWP) and any other authorities/agencies as appropriate, be informed of current and ongoing investigations and findings.

Attachments

1⇩ Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

2⇩ Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

3⇩ Alluvium's Peer Review of Douglas Partners' Reports, February 2021

4⇩ Amcor Riverbank Inspection 16 February 2021

5⇩ Tree Logic Site inspection Memo - 17 February 2021

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

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2 December 2020
R.023.Rev0
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Attention: Travers Nuttall

Dear Travers,

Yarra River Northern Bank Slump Monitoring Report - 3
Yarrabend, Alphington

1. Introduction and Background

This report, prepared by Douglas Partners Pty Ltd (DP), presents the results of monitoring works undertaken on the northern bank of the Yarra River, adjacent to the Yarrabend development site in Alphington. The monitoring requirement relates to river-bank slumping instances at specific locations.

Additional data was collected on 13/10/2020 and has been incorporated with the previous monitoring information. In summary the works included:

- photographic surveys on 12 May and 24 July and 13 October 2020;
- collection, collation and presentation of groundwater level data with respect to time from a number of groundwater monitoring wells, from December 2019 to 13 October 2020. Automatic level loggers were installed in a number of the monitoring wells, in March 2020 to take continuous groundwater level readings;
- collation and presentation of publicly available rainfall and river level data for the site;
- review of survey data from a number of surface monitoring points installed and surveyed by Reeds surveyors, with surveys carried out weekly from March to June 2020, then quarterly;
- collection of water quality samples from the monitoring wells, the river and targeted minor surface water sites, with samples delivered to a NATA accredited laboratory for analysis to determine key cation and anion parameters; and
- presentation of the data in a report along with preliminary comment.

Background information relating to the slumping instances is discussed in previous DP reports as referenced below.

- Douglas Partners (July 2019). Yarra River Northern Bank Slump / Erosion and Tree Toppling Instance, Yarrabend Alphington. (Ref: 79075.12.R.003.Rev0).
- Douglas Partners (March 2020). Report on Geotechnical Investigation and Groundwater Study Yarrabend Riverfront Area Heidelberg Road, Alphington. (Ref: 79075.12.R.012.Rev0).

The latter report includes recommendations for further monitoring. The details in the above reports are not repeated here and reference should be made to the reports as needed.

DP was engaged by Alphington Developments Pty Ltd (AD), the Yarrabend developer. DP have provided consulting geotechnical services for various phases of the Yarrabend development, including civil earthworks construction and site preparation works since 2016. It is understood that the City of Yarra (COY) and Melbourne Water (MW) are stakeholders in the management of the riverfront area adjacent to the southern boundary of the Yarrabend site. It is noted that Alluvium Consulting Australia Pty Ltd (ACA) act as consultants for the City of Yarra in relation to the riverfront slumping issue. Alluvium memo, Ref: Draft scope, for monitoring of bank slump and vegetation, dated 18/2/2020, discussed nominal monitoring approaches. DP considered the monitoring methods in this memo and have adopted relevant suggestions. It is noted that their monitoring approach includes assessment of trees / vegetation. These aspects are not part of the DP work scope.

Due to potential implications associated with groundwater conditions the monitoring approach includes the use of automated water level loggers in selected monitoring wells. These perform a continuous water level monitoring function. Monitoring has also included numerous manual water level measurements in the non-automated wells.

Previous monitoring report references are:

- Douglas Partners (June 2020). Yarra River Northern Bank Slump Monitoring Report – 1. (Ref: 79075.12.R.017.Rev0).
- Douglas Partners (August 2020). Yarra River Northern Bank Slump Monitoring Report – 2. (Ref: 79075.12.R.022.Rev0).

2. Monitoring Objectives

DP recommended monitoring of the Yarrabend riverbank conditions in the DP, July 2019 and March 2020 reports. The purpose of the monitoring is to provide further information for relevant stakeholders to decide on actions / responses required to manage the river bank erosion / slumping mechanism. The objectives are:

- To record the ongoing condition of identified slumping instances on the river bank.
- Assess ongoing general conditions of the river bank to check for the development of other zones exhibiting slumping instances;
- Assess ongoing surface drainage / surface moisture conditions on the terrace adjacent to the river bank and the toe of the embankment to the north.

It is noted that Alluvium advised the City of Yarra that monitoring should include initial and ongoing monitoring of the position and inclination of trees along the river bank and that this should be undertaken by an arborist. Sub-surface drainage and groundwater conditions were identified as a probable contributing factor to the slumping instances. DP installed automated data loggers in six targeted monitoring wells (week ending 20 March 2020). Manual readings were taken in these and other monitoring wells, commencing in December 2019.

It is noted that the slumping instances are limited to the sub-vertical river bank edge. The monitoring work is focused on the bank and adjacent terrace zone. The embankment to the north is not included in the monitoring program other than visual checks on surface / seepage conditions at the embankment toe, potentially influencing the terrace.

It is noted that the initial scope was revised to include water quality sampling and analysis with an initial round of samples collected from selected wells, the river and a sub soil drainage outlet in the terrace area. After the initial sampling and analysis and a subsequent meeting, ACA requested that the monitoring scope be revised to include collection of groundwater level information from available boreholes in the northern portion of the Yarrabend development, along with collection of a single round of water samples from the above boreholes as well as selected surface water sampling sites across the Yarrabend site.

3. Monitoring Tasks

The agreed monitoring tasks are summarised below. It is noted that there are three previously identified slump areas situated in the eastern portion of the river front area as shown on Figure 1 and referred to as slumps A, B and C. There have not been any observed signs of recent slumping in the western portion of the Yarrabend river front, i.e. west of slump C (located south of the former Latrobe Avenue alignment).

Figure 1: Slump Locations and (Reeds survey drawing extract, January 2020)

Groundwater Monitoring

Each monitoring event was to include recording of groundwater water levels in the (ten) monitoring wells installed by DP (in November and December 2019). This would include downloading data from the six automated data loggers (installed week ending 20.3.2020) and by manually reading levels in the others. The groundwater level data would be correlated with river levels and rainfall readings.

A single round of water sampling was requested by COY / ACA For basic water chemistry and preparation of Piper plots from selected wells.

Following review of initial monitoring results presented in DP Ref: 79075.12.R.017, dated June 27, 2020) additional water quality sampling points were included in the second monitoring round. These comprised accessible monitoring wells near the northern part of the development site (near Heidelberg Road) along with sampling and analysis of puddles and minor drainage depressions or basins where surface water was available for collection.

Visual Monitoring / Photographic Record

Visual inspection and photographic records of conditions with agreed permanent photo points for the three identified slumps. These would include set up of ongoing positions and directions with stakes and co-ordinates.

Detailed surveys of the river bank including the slump instances have been undertaken by Reeds. The Reeds site feature survey drawings (attached in Appendix D) would form the base line plans for the monitoring works.

In addition to photographs targeting the slumping instances, other general site photos would be taken with positions recorded with GPS co-ordinates and direction. The permanent photo points would be adjusted for any identified significant features that may develop. Observations would refer to:

- Existing slump conditions, shape, surface drainage / wet ground, any water emanating from the bank;
- General evidence of bank slumping or instability, tension cracks, ground movement, extent and width.
- Surface soil moisture and or free water observations;
- Signs of seepage the embankment or toe zone of the slope to the north.
- Significant changes in vegetation;
- Any ground modification i.e. minor track maintenance or similar.

Slump Survey

Reeds surveyors are periodically recording the position and level of monitoring stakes adjacent to Slumps A and C.

Report

The data is to be presented in reports with annotated plans, photographs, groundwater, rainfall, river level, survey data, water sampling records, laboratory test result certificates and key comment / observations provided for each event. The groundwater and survey data would be cumulative.

4. Methodology and Results

4.1 Groundwater River Level and Rainfall

Groundwater monitoring well information, including ground surface RL, depth of screened interval, and automated logger installation is presented in Table 1. The locations of the monitoring wells are shown on Drawings 1 and 1A attached in Appendix B. As previously mentioned, additional monitoring wells located near the northern Yarrabend boundary were added to the monitoring set for the second monitoring event. The relevant wells are BH103 and BH104, with locations shown on Drawing 1A. It is noted that these two monitoring wells were removed in early October 2020 during basement excavation within the relevant development site (Lot 2a 626 Heidelberg Road).

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The automated (Solinst) water level loggers record total pressure and include a barometric pressure adjustment. Barometric pressure is measured by a barometric pressure logger (installed in DG7) with the combined measurements giving a precise water level in the relevant wells. The loggers have been set to collect water levels at 0.5 hr intervals. The loggers are installed near the bases of the wells and the data is collected through a data cable connected to the top of the well. The data is collected by inserting a storage device into a data portal at the well head without removing the logger.

Table 1: Monitoring Well Information

Borehole Number	RL Ground Surface (m) AHD	Screened Interval Depth / (Unit)		Automated Logger Installed
		Depth (m)	Unit	
DG1	16.2	5 - 13.5	BASALT	✓
DG2	18.4	4 - 13.5	BASALT	-
DG4	10.5	3 – 5	ALLUVIUM (SILTSTONE BELOW)	-
DG5	11.8	4 – 10	SILSTONE (RESIDUAL ABOVE)	-
DG6	18.7	5.5 – 15	STRADDLES BASALT & SILTSTONE	✓
DG7	19.3	5.5 – 15	BASALT	✓*
DG12	10.5	2.5 - 4.5	CLAY ALLUVIUM (SILSTONE BELOW)	-
DG13	9.4	2 – 4	CLAY ALLUVIUM	✓
DG15	7.9	1 – 2	CLAY ALLUVIUM (PERCHED)	✓
DG16	8.2	6 – 7	SILSTONE (RESIDUAL ABOVE)	✓
BH103	31.3	14 – 16	BASALT	-
BH104	31.4	14 – 16	BASALT	-

* the barometric pressure logger and water level logger was installed in this well

The six automated loggers were installed on 19 March 2020, with data collected on 9/4/2020, 8/5/2020, 19/5/2020, 21/7/2020, 12/8/2020 and 13/102020. Manual readings were taken from the wells on eight occasions from December 2019 to October 2020 (12/12/2019, 23/01/2020, 21/02/2020, 19/03/2020, 24/03/2020, 8/05/2020, 19/05/2020, 21/7/2020, 12/8/2020 and 13/10/2020).

Rainfall records were obtained from the Melbourne Water website, for a rain gauge at Alphington, for the above period. River level data was also obtained from the Melbourne Water website, for the Yarra River Level gauge at the Chandler Highway bridge (at the western end of the area) with a gauge level of 5 m AHD.

The well monitoring, rainfall and river level data is plotted with respect to time on the Figures in Appendix B, listed in Table 2. The results are discussed in Section 5.

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Table 2: Monitoring Well and River Levels (m) AHD with Respect to Time and Cumulative Weekly Rainfall data (mm): List of Figures: Appendix B.

Figure No.	Description
1a	All Wells in Upgradient and Terraced areas (except for BH103 and BH104), River and Rainfall Data
1b	Wells in the Upgradient Area above the river gully (DG1, DG2, DG6 and DG7) and Rainfall Data
1c	Western Terrace Area: Wells DG4 and DG, River and Rainfall Data
1d	Wells along the Latrobe Avenue Alignment (Slump C) Terrace and Upgradient area. DG1, DG6, DG12 and DG13, River and Rainfall Data.
1e	Wells in the Slump A (Eastern) Terrace and Upgradient Area DG6, DG7, DG15, DG16. River and Rainfall Data

Note: River Level data is Hourly along with an average weekly level trend line presented in Figures 1c and 1e.

Groundwater level data for boreholes BH103 and BH104 are available from November 2019 and July 2020, presented in Table 3. Data is also included in Table 3, for monitoring well BH102, with a level measurement taken in November 2015. As previously mentioned these wells were removed during recent basement excavation on Lot 2a 626 Heidelberg Road.

Table 3: BH102, BH103 and BH104 Standpipe Groundwater Levels

Borehole Number	RL Ground Surface (m) AHD	Screened Interval Depth (m)	Date of Measurement	Water Depth Below Surface (m)	RL of Water (m) AHD
BH102	31.0	-	6 November 2015	9.9	21.1
BH103	31.3	14 – 16	23 October 2019	12.5	18.7
			24 October 2019	12.5	18.7
			7 November 2019	12.45	18.75
			21 July	12.2	19.1
BH104	31.4	14 – 16	23 October 2019	12.2	19.2
			24 October 2019	12.2	19.2
			7 November 2019	9.8	21.6
			21 July	6.72	24.7

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4.2 Photographic Record

Photograph positions and directions were selected to target Slump areas A, B and C, as well as general terrace conditions. The positions were marked out on the ground with stakes with co-ordinates and directions recorded for each photo location / direction. The photograph location / direction drawings and photos are attached in Appendix C. Photo suffixes, e.g. 3a and 3b represent different image directions taken from the same location. Numbers and drawings relating to the western and eastern terrace areas and Slumps A, B and C are shown in Table 4. Photos were taken from the same location in the same direction for monitoring events 1 to 3, with dates presented in Table 4.

Table 4: Photograph and Drawing Numbers in Relevant Areas

Area	Photograph Location / Direction Numbers	Photograph Dates	Drawing No
Western Terrace Area	1, 2, 3a, 3b, 4a, 4b, 5a & 5b	12/05/2020 24/07/2020 13/10/2020	Drawing 4
Slump A	14, 17a, 17b, 18		Drawing 6
Slump B	9, 10, 11		Drawing 6
Slum C	6a, 6b, 7a, 7b, 8a, 8b		Drawing 5
Eastern Terrace Area	12,13,15a, 15b,16a, 16b		Drawing 6
Surface Water Samples	Surface water sample photographs 1 to 6	24/07/2020	Drawings 3 and 7

4.3 Survey Data

Periodic survey monitoring of the two key slump areas (Slump A and Slump C) is being undertaken by Reeds surveyors, with six survey monitoring stakes at each of the slump sites, referred to as slump east and slump west. The stakes include positions just outside and within the slumps. The surveys were undertaken weekly from 3 March to 23 June 2020 and then Quarterly, with the first quarterly survey carried out on 15 September 2020. Plans showing the survey points and the results, i.e. incremental and cumulative horizontal and vertical movements in (mm) are attached in Appendix D. The results are discussed in Section 5.

4.4 Water Quality Sampling and Analysis

Monitoring well and surface water quality samples were taken in general accordance with company procedures. The monitoring well locations are shown on Drawings 1 and 1A, Appendix B. The locations of the surface sampling sites are shown on Drawings 3 and 7, Appendix C. Photographs of surface water sample sites are presented in the same Appendix. The sampling locations and dates are summarised in Table 5.

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Table 5: Summary of Water Sampling Events

Location	Date	Comment
Wells DG2, DG6, DG7	19-20.5.2020	Basalt unit north of the river
Wells DG4, DG5,DG12, DG15, DG16		Riparian area
River and sub-surface drainage outlet in eastern terrace area.	20.5.2020	Near Slump A. Drainage outlet associated with recently installed sub surface drain in terrace area.
BH103 & BH104	21-22.7.2020	Adjacent to northern site boundary.
Surface samples (SW1–SW6) various locations, as shown on Drawings 3 and 7 Appendix C.	22.7.2022	SW1 -SW4 were from surface water bodies. SW1: Alpha site. SW2: Puddle western terrace. SW3: basin under bridge, SW4: Sediment Basin SW5 emanated from the river bank near Slump B and SW6 was taken from wet ground in the eastern terrace, near Slump B, by excavating a small sump.

The monitoring wells were purged and sampled with disposable Teflon bailers. Water quality parameters were recorded during sampling with a water a field water quality meter. The results were recorded and are presented on the groundwater sampling and purging record attached in Appendix E. Recorded parameters and units were:

- Dissolved Oxygen DO (ppm);
- Electrical Conductivity EC (ms);
- pH Units;
- Oxidation-reduction potential (mV);
- Temperature (C).

The water samples were delivered to a NATA accredited chemical laboratory for analysis of: pH, TDS, Anions (Chloride, Sulphate, Bicarbonate ($HC0_3^-$), Carbonate, (CO_3^{2-})) and Cations (Calcium, Magnesium, Sodium and Potassium). The chemical analysis result certificates are presented in Appendix E.

The anion and cation data were used to prepare Piper Plots for the monitoring well and surface water samples and these are also presented in Appendix E.

5. Comment

5.1 Groundwater and River Levels and Rainfall Data

Observations and comment regarding the groundwater monitoring findings are presented in Table 6 for the relevant monitoring wells and site areas.

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Table 6: Monitoring Well Information

Area / Wells	Observations & Comment
Upper Area DG1, DG2, DG6, DG7	Refer to Figure 1b , Appendix B. Unconfined fractured basalt aquifer, except for DG6 which straddles the basalt and siltstone. The wells show little variation in ground water levels from Dec 2019 to Feb 2020. Slight rises from Feb 2020 to late May Early June 2020 with a plateau and slight decreases to Mid-October. DG1: 10.94 m 12/12/19 maximum at 11.75 m 14/6/20, decreasing to 11.31 m 13/10/2020; DG2: 12.93 m 12/12/19 maximum at 13.37 m 08/05/20 decreasing to 13.01 m 13/10/20; DG6: 9.88 m to 12/12/19 maximum at 10.56 m 14/06/20 decreasing to 10.29 m 13/10/20; DG7: 9.93 m 12/12/19 maximum at 10.56 m 14/06/20 3 m decreasing to 10.33 m 13/10/20; The above is consistent with a seasonal peak in winter, falling into late spring. The auto logger plots indicated very slight short-term fluctuations, with no significant short-term fluctuation.
Western Terrace DG4 and DG5	Refer to Figure 1c. Appendix B. DG4: The screened well section is in the clay alluvium. Increase, Dec 2019 to May 2020, +1 m (5.47 m to 6.47 m AHD). Then Slight decrease 6.47 m to 6.0 m May to October 2020. Likely combination of upgradient and river level influences. DG5: The screened well section is in the Silurian Siltstone. Probable partially confined Siltstone aquifer. Some fluctuation is evident. 7.33 m AHD 12/12/19 to 7.52 m 13/10/20, with peaks around 8.3 m to 8.5 m in January and April 2020. Fluctuation at this location is consistent with historical variation in GHD data in nearby wells MW4 & MW5 between 2010 and 2016.
Slump A & B Eastern Terrace Area	Refer Figure 1e. DG15: Shallow standpipe in the terrace alluvium, through near surface perched water table above clay sub soil. Insignificant change over time period. Minor fluctuations due to apparent river effects and or rain. River effects evident on / around 4/04/20 and 28/08/20 DG16: Baseline level around 6.8 m to 7.0 m with fluctuating peaks coinciding with river level increases. Baseline readings coincide with and appear to be influenced by average river levels. Piezometric levels in apparent confined siltstone rock aquifer with screened section 3 m to 4 m below mean river level (RL 1 m to 2 m). Fluctuation consistent with hydraulic connection between the river bed and the underlying siltstone unit beneath the river. Comparison between the levels from the well loggers in the upgradient basalt rock (DG6 and DG7) and the terrace wells (DG15 and DG16) does not show an obvious connection between upgradient and river terrace groundwater levels.
Slum C (End Latrobe Avenue)	Refer to Figure 1d. Alluvium. Data does not indicate obvious correlation/s between levels in upgradient basalt (DG1 and DG2) and terrace alluvium aquifers (DG12 and DG13). The data shows correlation of the fractured basalt aquifer in DG1 and DG6. The data shows hydraulic connection between river water levels and groundwater levels in the alluvium in DG13 and DG12. There are overall falls in groundwater levels in the river terrace wells over the monitoring period. DG12: -1.16 m (8.17 m to 7.01 m AHD) DG13: -1.7 m (7.48 m to 5.78 m AHD). The plots for levels in DG12 and DG13 show a decrease in water levels in the alluvium in mid-March coinciding with the installation of the sub surface drain in the eastern terrace area at this time. The data indicates an overall fall of 1 m to 1.5 m with ongoing fluctuation, coinciding with water levels in the river.

5.2 Slump Survey

Key observations from the weekly survey data, from 3rd March to 23 June 2020 and a subsequent survey on 15th September 2020 for each of the two surveyed slump sites are:

- Slump East (referred to elsewhere in this report as Slump A): Some lateral (18 mm to 63 mm) and vertical (15 mm to 23 mm) movements were recorded between initial survey on 3 March, and subsequent surveys on 17 and 24 March, with negligible movement in the subsequent 13 weekly readings. It is noted that subsurface drainage works, were carried out during the week between 17 and 24 March, including the slump area and the movement appears to be related to these earthworks. Horizontal and vertical movements from June 23 to September 15 were negligible.
- Slump West (referred to elsewhere in this report as Slump C): Lateral movement towards the river, ranging from 7 mm to 11 mm in the initial two weeks and negligible vertical movement. Negligible further movement in the 13 weekly subsequent surveys to 23 June. Horizontal and vertical movements from June 23 to September 15 ranged from 1 mm to 3 mm, i.e. very slight.

5.3 Photographs

Monitoring inspections and photographs were taken on May 12, July 24 and October 13, 2020. Key observations in the main sub-areas are summarised below:

Western Terrace Area (Photographs 1 to 5b)

- Historical slumping is evident along the entirety of western terrace area. From size / age of the trees on the slumped surfaces the historical slumping pre-dates AMCOR demolition and Yarrabend site activities by years / decades. There were no observed signs of slump activity in the monitoring period.
- It was apparent that rainfall had fallen in the preceding days to the May 12 survey. There was water filled surface depressions / puddles on the surface of the access road, (Photograph 4a). There were less rain puddles during the 24 July survey than the May 12 survey. There was a surface puddle at the western end of the terrace access road observed on October 13 (photo 4b), not apparent following rain on previous inspections.
- A tree branch fall is evident in photo 5b, post May 12, visible in the June and October photographs. The fall is consistent with wind damage.

Slump C (Photographs 6a, 6b, 7a, 7b, 8a, 8b)

Condition changes in this area were limited to ground surface moisture / puddles following rain on May 12 (there was a minor puddle, as Photographs 6a & 8b, and river level variation. There were no significant changes in the condition of this slump or signs of ongoing movement from the initial to last inspection.

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Slump B and Adjacent Terrace Area (Photographs 9, 10 and 11, 12 and 13)

Condition changes in this area were also limited to changes surface soil moisture conditions, discussed further below, and river level variation. There were no significant changes in the condition of this slump or signs of ongoing movement from the initial to last inspection.

Moisture conditions in this slump area have altered between the May 12 and October 13 inspections as a result of minor seepage emanating from the toe of the embankment to the immediate north. Photographs 12 and 13 show a slight trickle of water from the toe of the adjacent embankment in the July 24 and October 13 photographs. Moist to wet ground has developed at the embankment toe and across the flat terrace area, with minor surface trickles evident across the terrace surface onto Slump B. Inspection on October 13 revealed slight seepage egress from the Slump B surface consistent with migration of water from the upgradient basalt area, migrating through the terrace soils emanating from the river bank.

It is noted that the previously mentioned sub-soil drain, installed adjacent the toe of the embankment to the north in March 2020, terminates at the approximate mid-point of Slump B, visible as a white inspection outlet in photograph 12. The western end of the sub-soil drain is assisting drainage, but is having limited impact at this location, due to shallow invert depth (approximately 0.2 m) compared to the eastern parts of the drain, which is deeper.

Eastern Terrace Area (15a, 15b, 16a, 16b, Photographs)

It is noted that subsurface drainage works were undertaken in the terrace area adjacent to the eastern (Slump A) completed prior to the end of March 2020. The ground adjacent to the sub-surface drain is visible in the above listed photographs. It is noted that the surface soils in this area were drier than the conditions prior to installation of the drain. The puddle adjacent to Slump A, mentioned above is the result of rainfall and the presence of a localised surface depression and not groundwater seepage. It is noted that water was emanating from the sub-surface drain outlet located near Slump A.

Slump A (Photographs 14, 17a, 17b and 18)

Condition changes in this area were limited to ground surface moisture / puddles following rain and river level variation. A minor puddle was observed adjacent to the slump as shown on photograph 18 on May 12, consistent with rain preceding this survey. There were no significant changes in the condition of this slump or visible signs of ongoing movement from the initial to last inspection.

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5.4 Water Sampling and Analysis.

The results of the water sample analysis are presented in Appendix E, including a presentation of the Piper Plots. The TDS and pH results are presented in Table 7.

Table 7: TDS and pH Results with comment on Pipe Plot Information

Sampling Site	TDS (ppm)	pH	Ground Profile / Geological Unit
DG1	4600	7.9	BASALT
DG2	550	7.5	BASALT
DG4	1100	6.9	ALLUVIUM (SILTSTONE BELOW)
DG5	750	6.9	SILSTONE (RESIDUAL ABOVE)
DG6	2400	7	STRADDLES BASALT & SILTSTONE
DG7	2300	7.1	BASALT
DG12	340	7.3	CLAY ALLUVIUM (SILSTONE BELOW)
DG15	2500	7.2	CLAY ALLUVIUM (PERCHED WATER)
DG16	2600	7.5	SILSTONE SCREENED INTERVAL (ALLUVIUM ABOVE)
BH103	2200	7.2	BASALT
BH104	2200	7.8	BASALT
*DRAIN (ADJACENT DG15)	2300	7.9	-
RIVER	94	7.4	-
SW1	540	8.4	-
SW2	300	7.7	-
SW3	130	8.2	-
SW4	380	8.6	-
SW5 (Eastern River Bank, Adjacent Slump B)	2000	7.6	Water is emanating from the toe of the adjacent basalt embankment to the north
SW6 (Terrace Surface, Adjacent slump B)	2100	7.5	-

The blue grouping of water samples in Table 7 exhibit consistent Piper Plot positions and similar TDS values, consistent with groundwater associated with the basalt aquifer at the site.

Sample from well DG16 comprises near surface perched water in the terrace alluvium, associated with seepage emanating from the upgradient basalt aquifer migrating as near surface perched water on the terrace profile.

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The drain sampled in the eastern terrace area, near DG15 derives water from the sub surface drain at the toe of the basalt embankment installed in March 2020. The water properties in the sub-surface drain sample are consistent with water from the basalt aquifer. Similar comments apply to the SW5 and SW6 samples which involve seepage from the terrace alluvium adjacent to the adjacent upgradient basalt slope. In summary, the blue grouping in Table 7 is consistent with surface seepage (SW6) and water emanating from the riverbank (SW5) in the terrace area have migrated from the basalt rock groundwater aquifer.

There appears to be a similar Piper Plot position and TDS value for the green grouping in Table 7, i.e. DG4, DG5 and DG12. It is noted that these boreholes were screened across the alluvium and or Silurian age units.

6. Summary / Conclusion

It is noted that the summary comments presented below are preliminary and that an interpretive report is being prepared with further comments on groundwater conditions and river bank stability.

The conceptual ground model in the area where the slump instances have occurred is shown in Figure 2 below. It is noted that there is a temporary sub surface drain at the northern edge of the terrace near the toe of the basalt unit. The approximate location of the drain is shown in Figure 2, along with an indication of the phreatic surface in the basalt before and after installation.

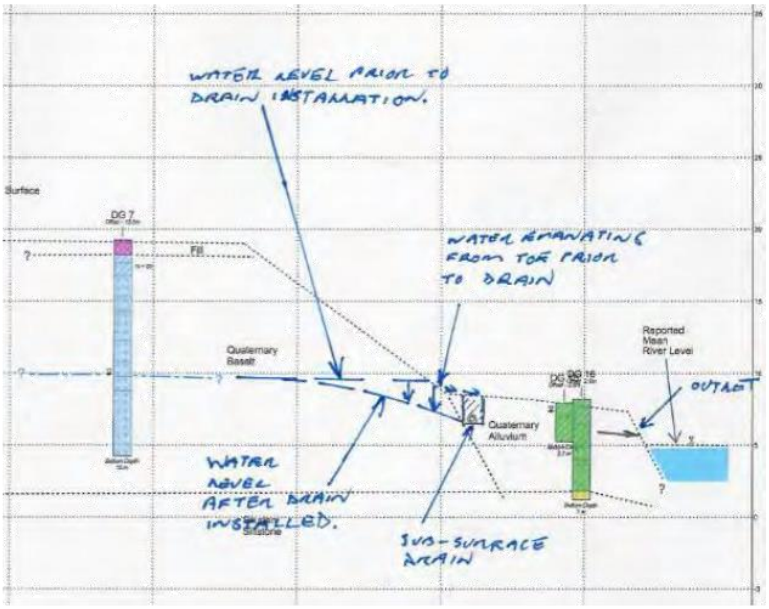

Figure 2 : Cross Section at Eastern Terrace Slump Site

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From the above figure and information from the groundwater monitoring and water sample analysis, combined with the position of the slump/s it is apparent that groundwater is a contributing factor influencing the slump instances to date, with upgradient and river water levels both influencing stability.

The slumping instances have occurred in the natural clay terrace alluvium and groundwater conditions in the alluvium are a factor. The available data shows that there are a number of features affecting groundwater conditions in the terrace alluvium. These include aquifers in the fractured basalt, the underlying Silurian sedimentary rock and the terrace alluvium. The information indicates that groundwater conditions in the alluvium are influenced by upgradient groundwater conditions as well as river levels. It is noted that the available historical and recent groundwater data indicates considerable fluctuation of groundwater conditions in the terrace alluvium. Key features are summarised below:

- There is interaction between the groundwater in the basalt and the alluvium. The groundwater level in the basalt and the shape of the phreatic surface through the basalt, down to the terrace affects conditions in the alluvium. It is noted that the alluvium has a low permeability. Perched water develops on the surface of the terrace when the phreatic surface emanates from the bank toe above the terrace surface. This was occurring prior to the installation of the sub surface drain. Visible surface water seepage ceased after installation of the drain.

- Interaction between the Silurian siltstone aquifer and the alluvium. The groundwater conditions in the siltstone unit are influenced by upgradient conditions in the basalt and interaction with it, as well as interaction between the Silurian / Alluvium aquifers and the river. It is noted that the river channel is set in the Silurian age siltstone with hydraulic connection between the two. The groundwater logger data shows a direct relationship between piezometric levels in the siltstone and river levels (See Figure 1e).

- There is direct interaction between groundwater levels in the alluvium and the adjacent river, evident from the groundwater logger data (DG12 and DG13 Figure 1d) and river level data.

- The conditions in the upgradient water levels in the basalt (DG6, DG7 and DG1) aquifer appear to have stabilised or are gradually falling, consistent with a broad seasonal and possible longer-term effects.

The groundwater data demonstrates that the sub-surface drain has lowered groundwater levels in the alluvium (Figure 1d). Based on the monitoring findings to date and apparent stability of the slumps since March 2020, sub-surface drainage measures similar to the temporary drain appear to be a viable long-term measure to manage slumping risk.

Considering the conceptual model in Figure 2 and the data collected to date, installation of a sub-soil drain across the eastern terrace area, just south of the toe of the basalt embankment is suggested as a slump mitigation measure. The drain depth would be set to lower the groundwater surface in the basalt aquifer to approximate RL 6 m - 7 m (AHD) and connect to the river or alternate drainage outfalls. The invert would be set just above mean river water level. The approximate alignment in Figure 3, below is suggested. From the available data the drain would not be required in the western terrace area. Given the response of groundwater conditions to the temporary drain, such a drain is considered to be a practical and effective solution to control / mitigate the effect of upgradient groundwater fluctuations on bank edge stability.

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

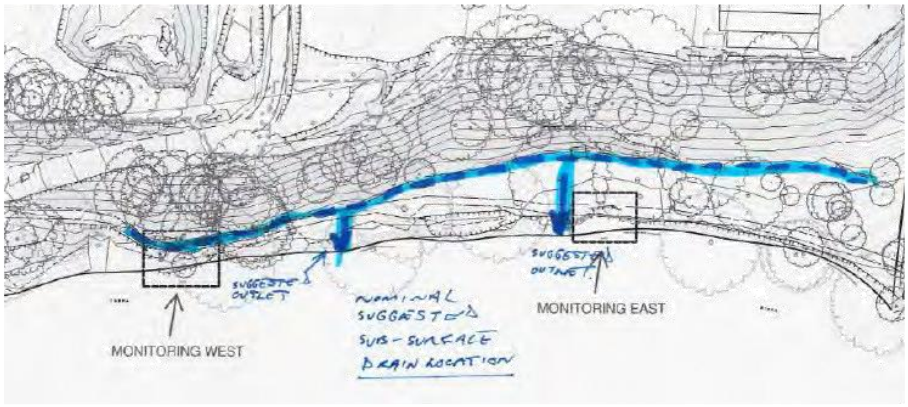


Figure 3 : Suggested Sub Surface Groundwater Control Drain Location

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

7. Limitations

Douglas Partners (DP) has prepared this report for this project as instructed by Alphington Developments Pty Ltd. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

The contents of this report do not constitute formal design components such as are required, by Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction of all works (not just geotechnical components) and the controls required to mitigate risk.

Yours faithfully,
Douglas Partners Pty Ltd

Andrew Murphy
Senior Associate

Appendices:

Appendix A: About This Report
Appendix B: Groundwater Monitoring Well & River Water Levels and Rainfall Data Plots
Appendix C: Photographs and Location Plan Drawings
Appendix D: Reeds survey Monitoring Data Plans and Results
Appendix E: Water Sampling Record Sheets, Piper Plots and Laboratory Test Result Certificates

Appendix B

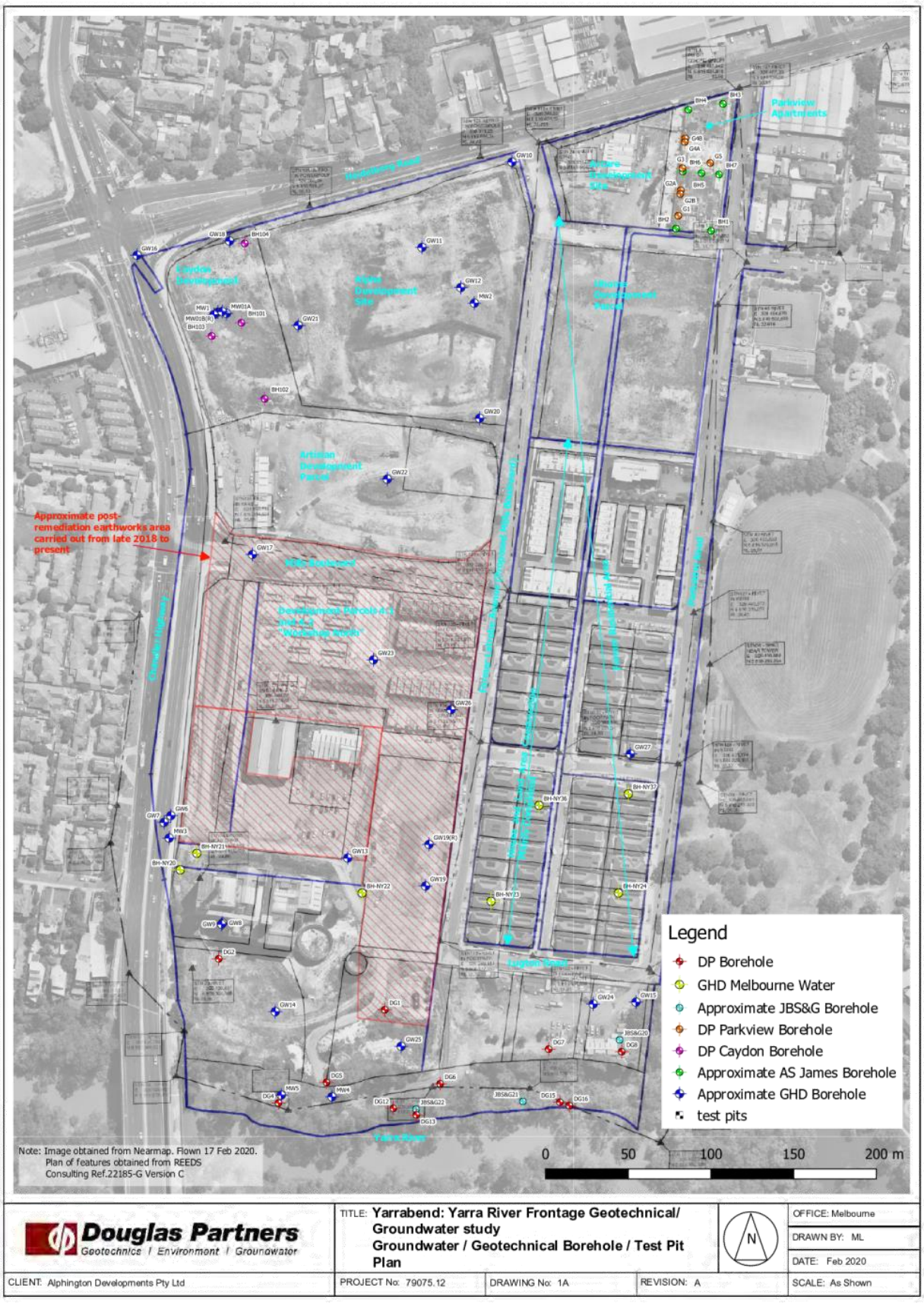
Groundwater Monitoring Well Location Plans and Water Level Plots

Drawing 1 : Groundwater Monitoring Well Locations – River Front Area
Drawing 1A : Groundwater Monitoring Wells – Yarrabend Site

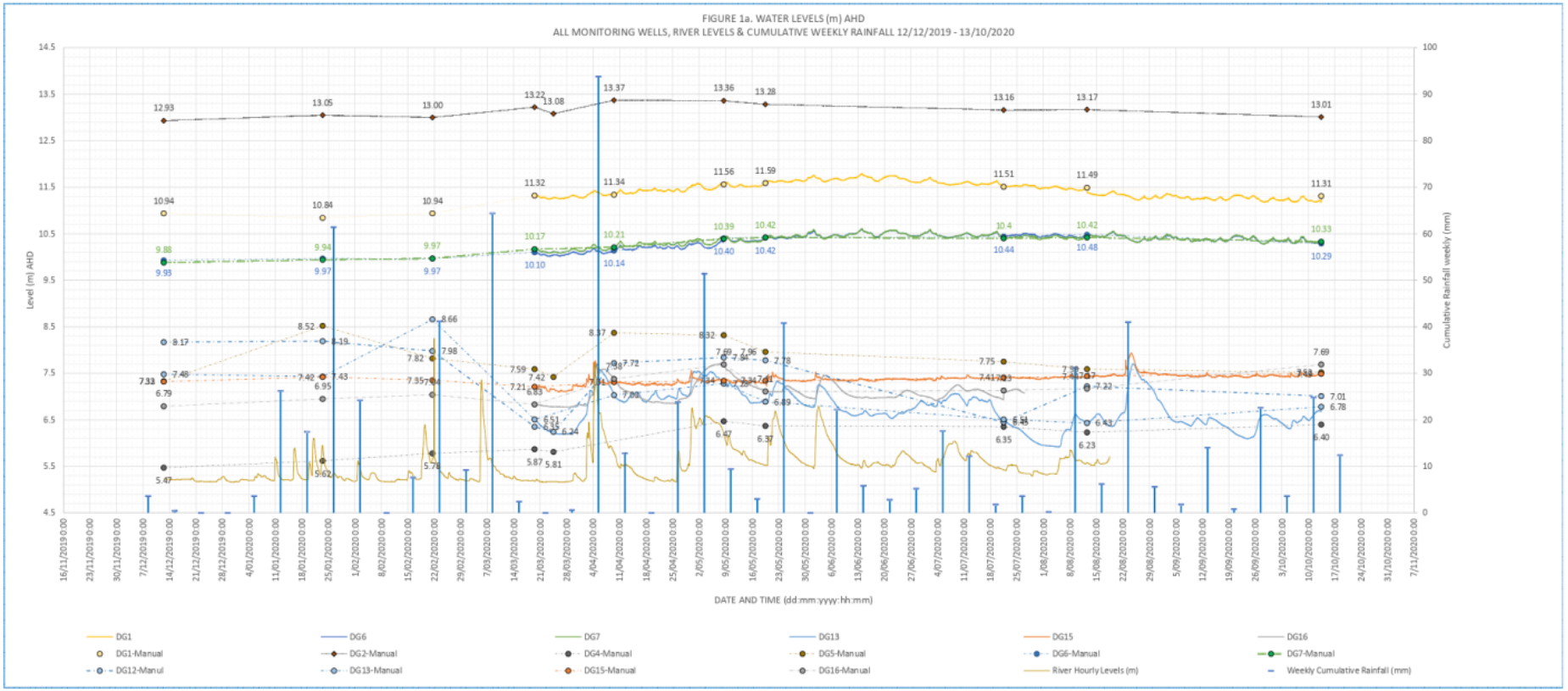
Figures 1A to 1E (5 sheets)

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

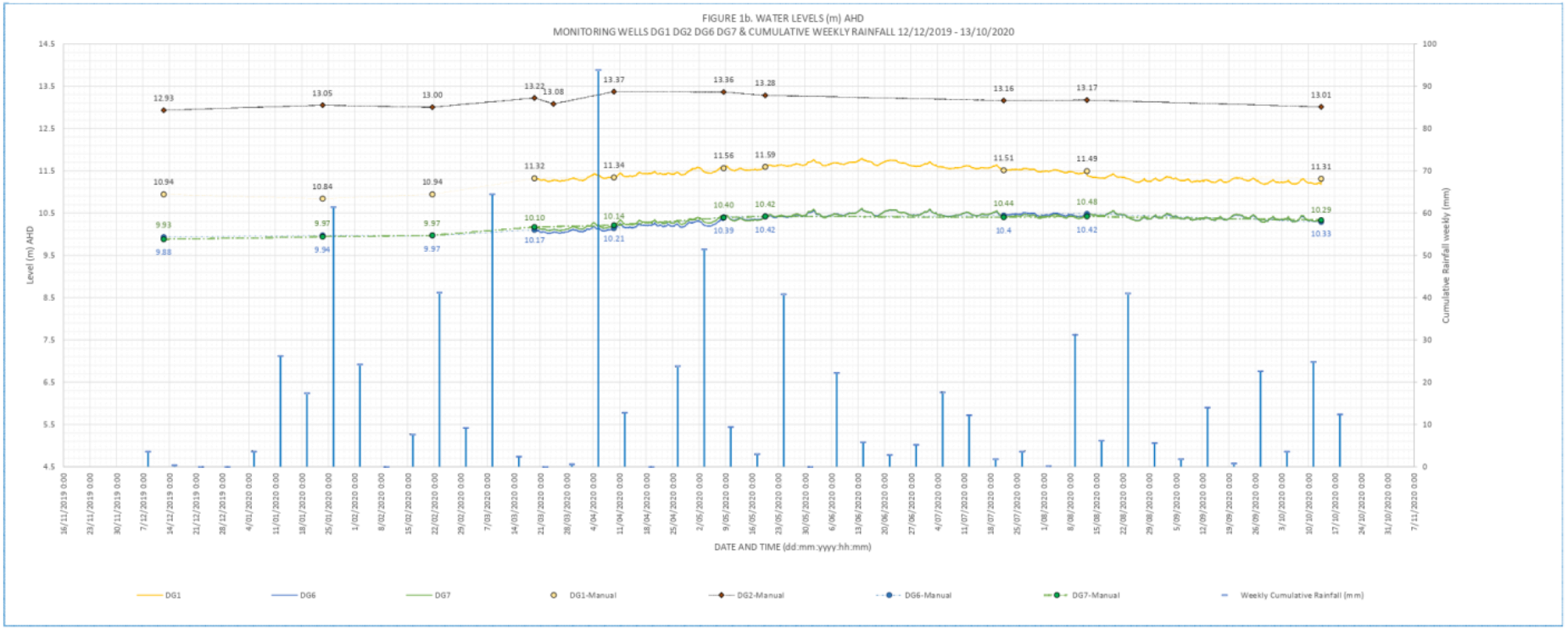
Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



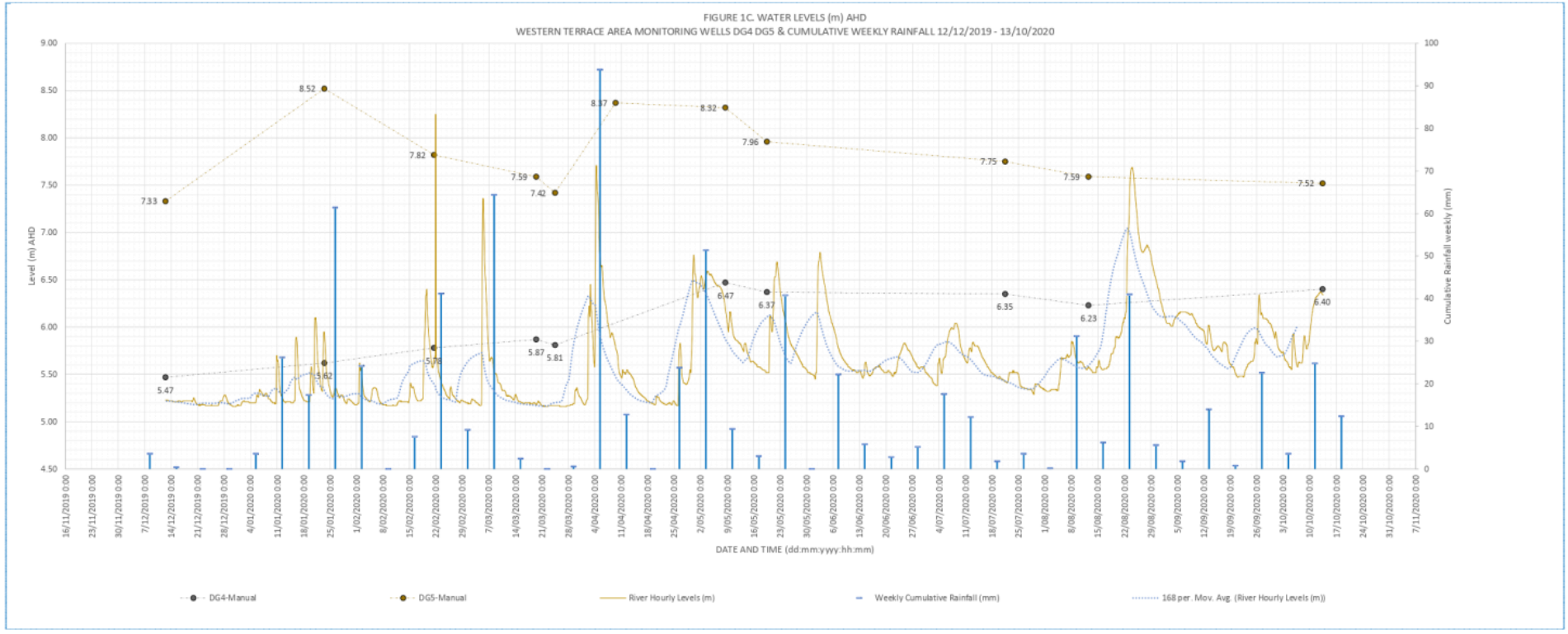
Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



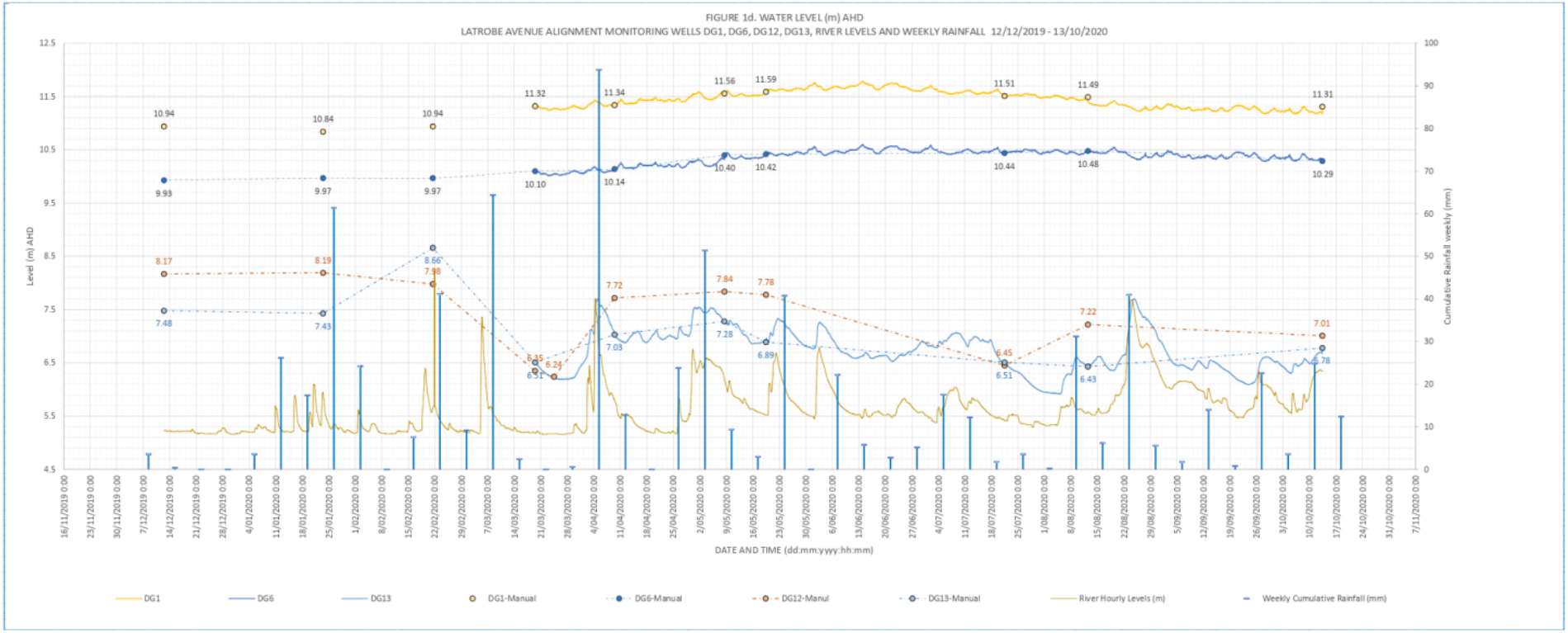
Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



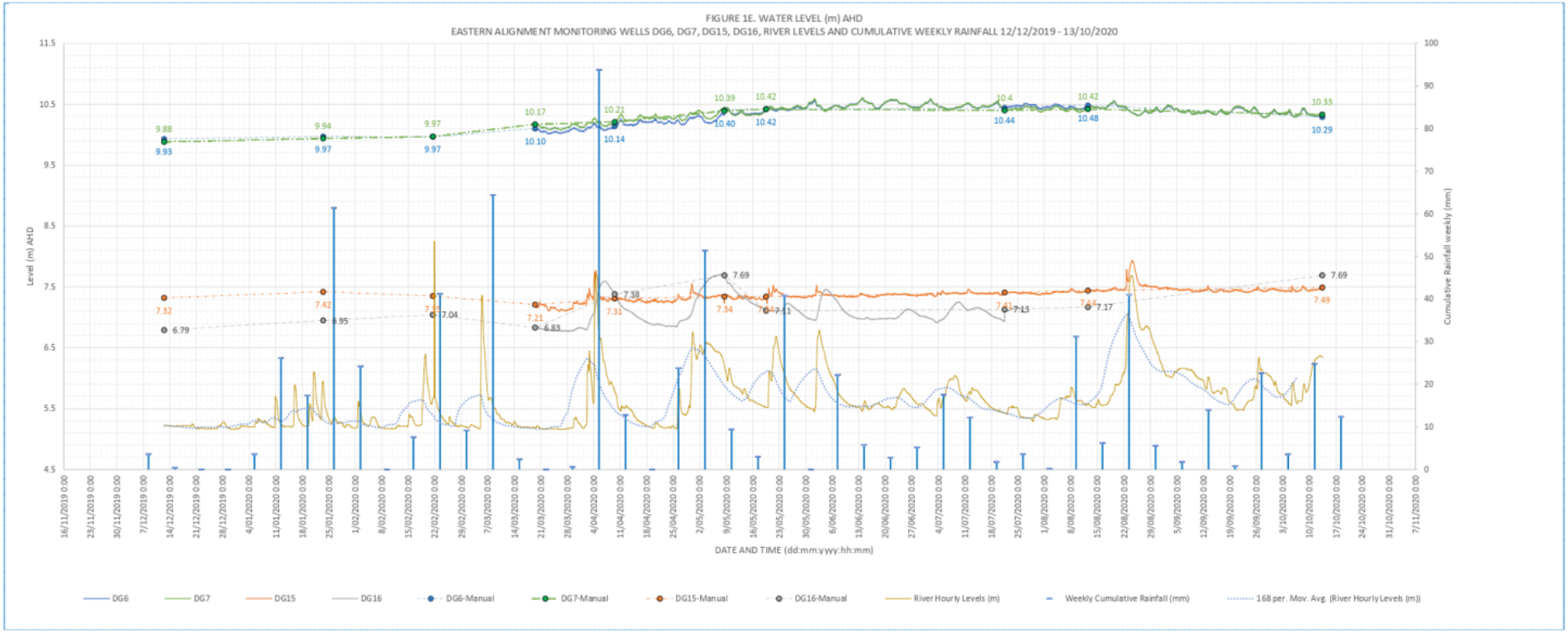
Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

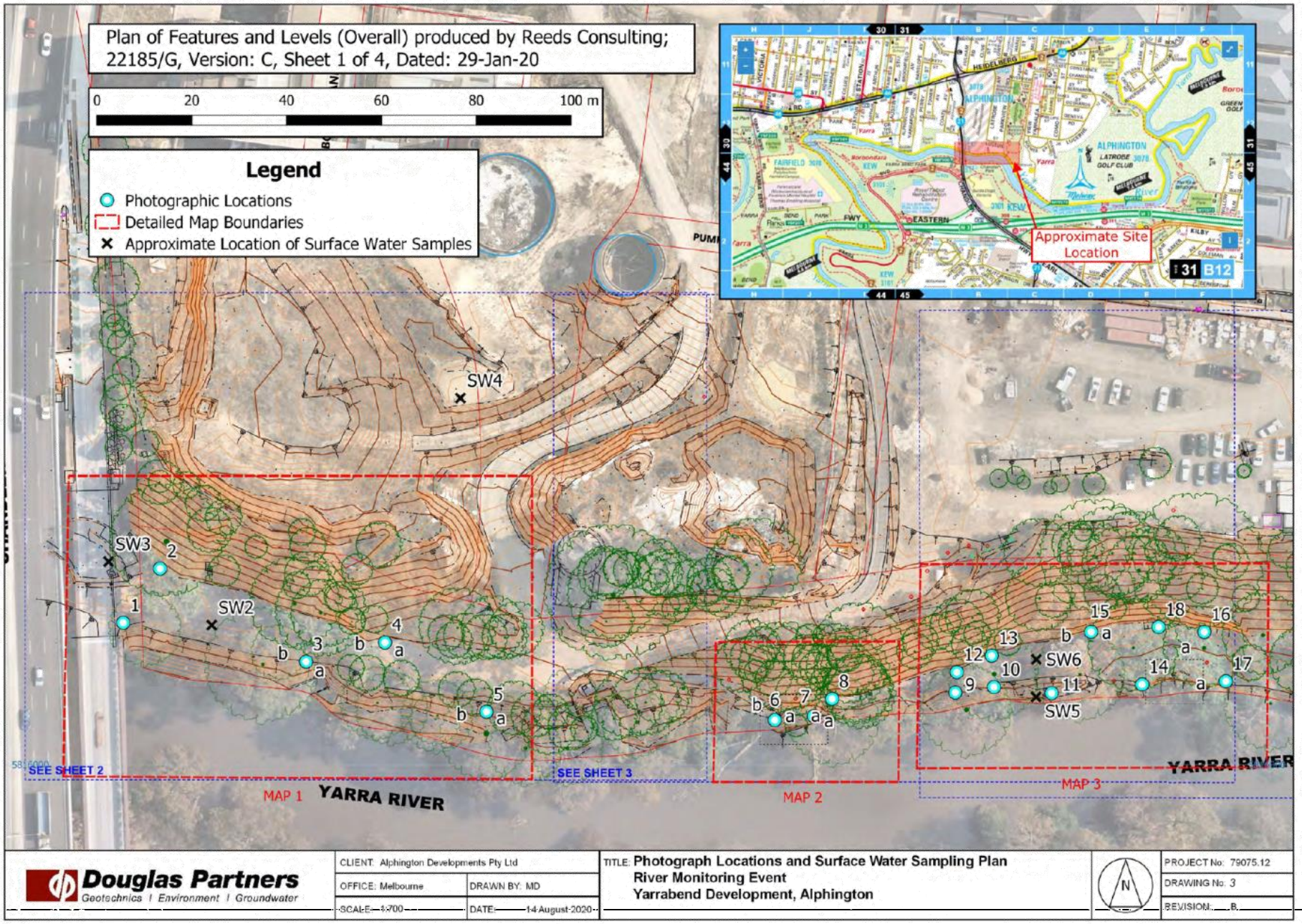


Appendix C

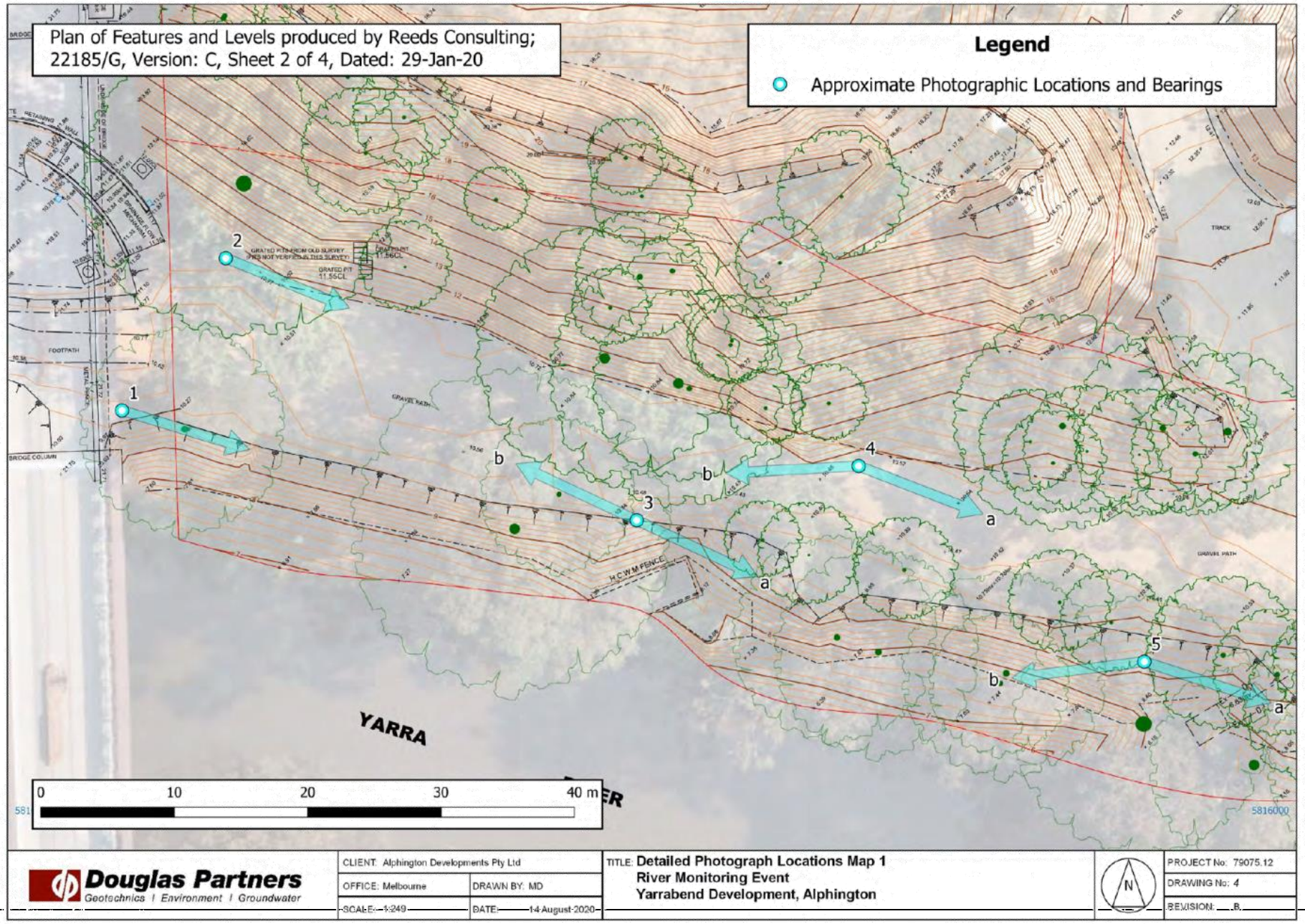
Monitoring Photographs and Location Plans

Drawings 2 to 5
Photograph Plates 1 to 30

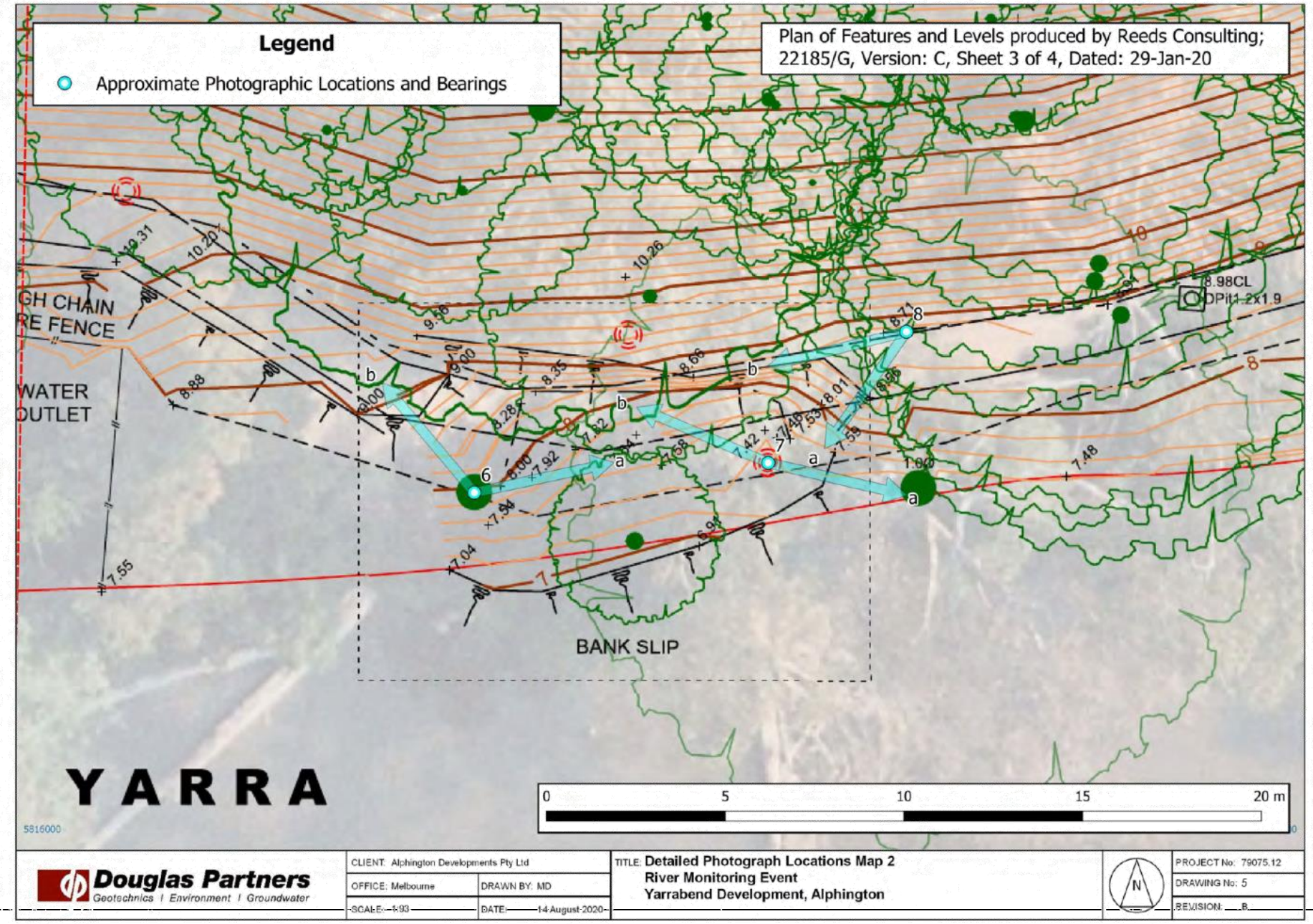
Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



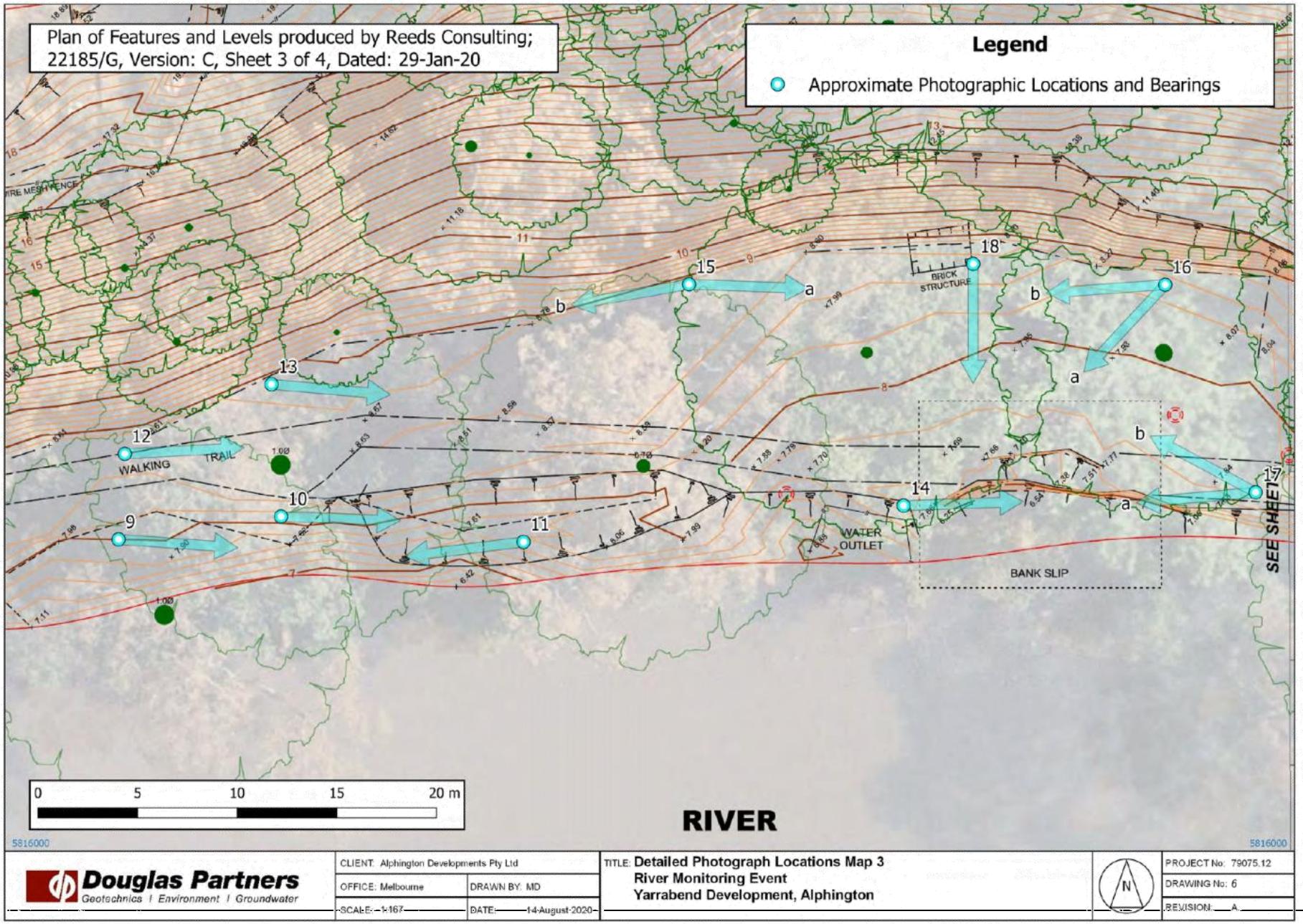
Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



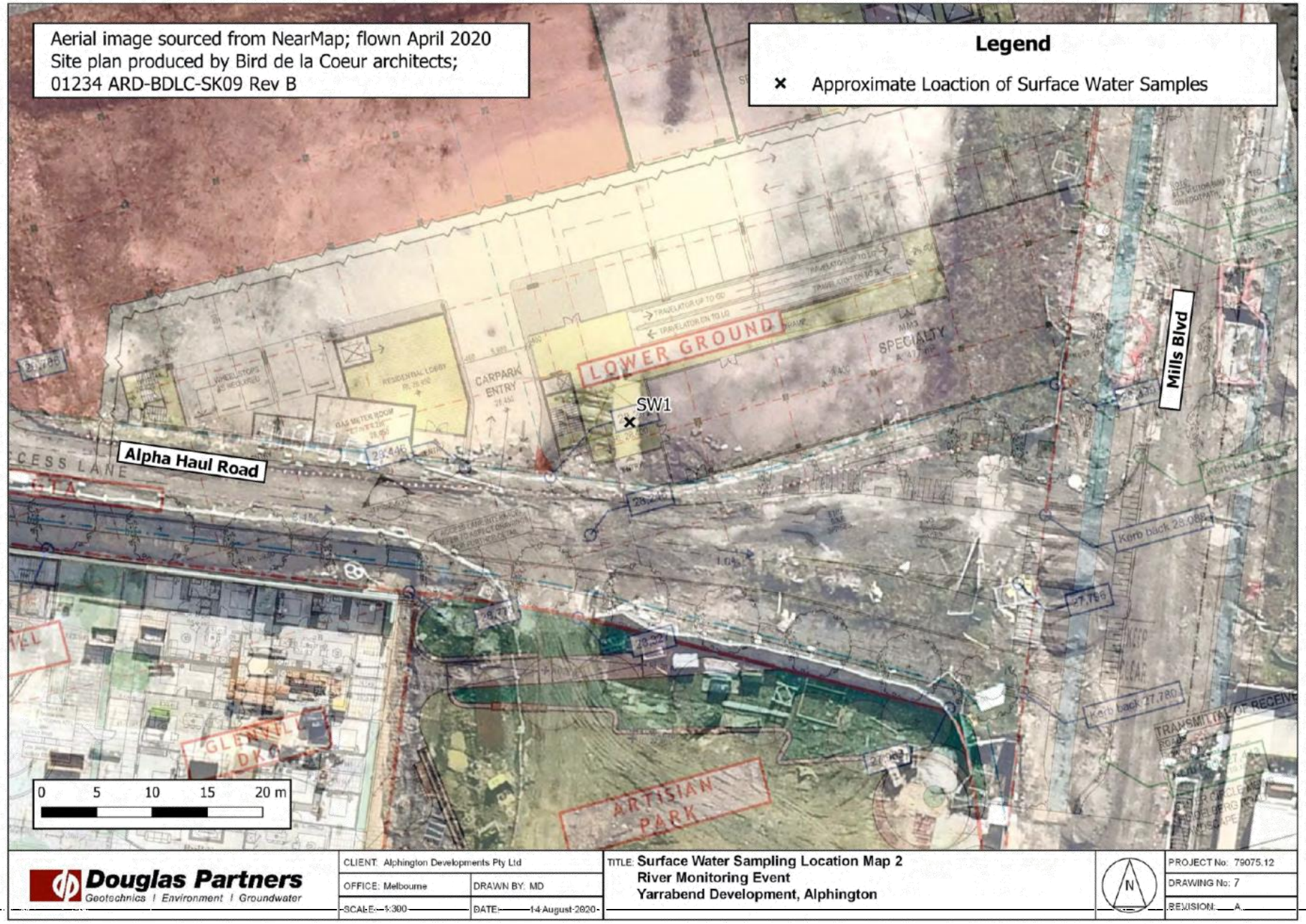
Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 1 All above photographs were taken at approximately E 326132, N 5816030 and bearing S73°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

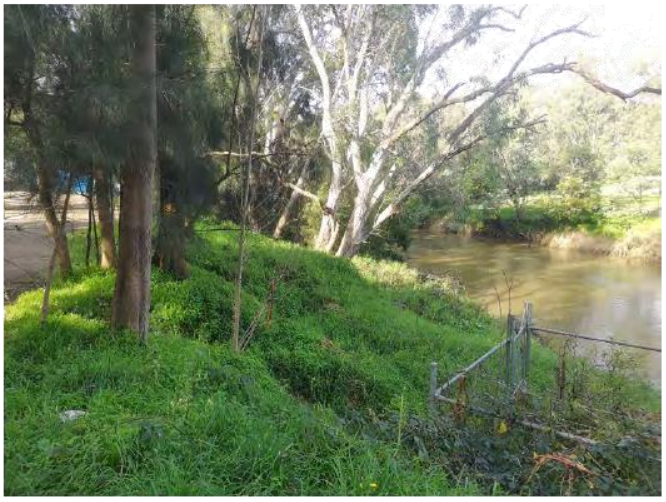
CLIENT: Alphington Developments Pty Ltd	**Site Photographs** **River Monitoring Event** **Yarrabend Development, Alphington**	PROJECT:	79075.12
Douglas Partners Geotechnics / Environment / Groundwater		PLATE No:	1
		DATE:	18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 2 All above photographs were taken at approximately E 326140, N 5816041 and bearing S68°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 2
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



Photograph Location 3a All above photographs were taken at approximately E 326171, N 5816022 and bearing S65°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs** **River Monitoring Event** **Yarrabend Development, Alphington**	PROJECT:	79075.12
Douglas Partners Geotechnics / Environment / Groundwater		PLATE No:	3
		DATE:	18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 3b

All above photographs were taken at approximately E 326171, N 5816022 and bearing N65°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 4
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 4a

All above photographs were taken at approximately E 326187, N 5816026 and bearing S69°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 5
	Yarrabend Development, Alphington	DATE: 18-Oct-20

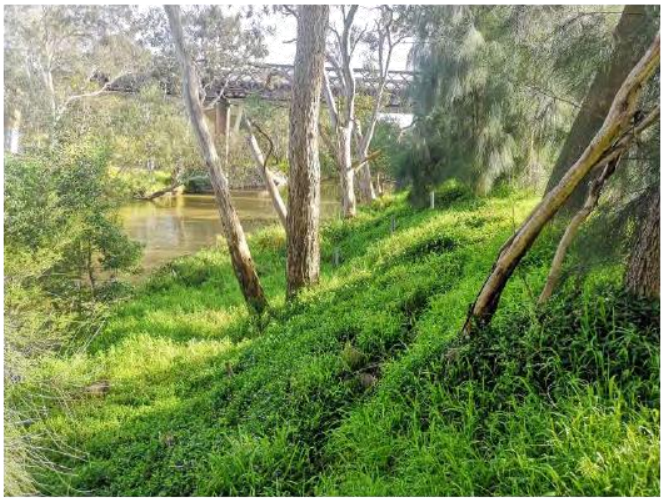
Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 4b

All above photographs were taken at approximately E 326187, N 5816026 and bearing S87°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 6
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



Photograph Location 5a All above photographs were taken at approximately E 326209, N 5816011 and bearing S72°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs** **River Monitoring Event** **Yarrabend Development, Alphington**	PROJECT:	79075.12
Douglas Partners Geotechnics / Environment / Groundwater		PLATE No:	7
		DATE:	18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 5b

All above photographs were taken at approximately E 326209, N 5816011 and bearing S83°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs** **River Monitoring Event** **Yarrabend Development, Alphington**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater		PLATE No: 8
		DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 6a All above photographs were taken at approximately E 326270, N 5816009 and bearing N78°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT:	79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No:	9
	Yarrabend Development, Alphington	DATE:	18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 3b

All above photographs were taken at approximately E 326270, N 5816009 and bearing N40°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 10
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 7a All above photographs were taken at approximately E 326278, N 5816010 and bearing S77°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT:	79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No:	11
	Yarrabend Development, Alphington	DATE:	18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 7b All above photographs were taken at approximately E 326278, N 5816010 and bearing N67°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 12
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 8a

All above photographs were taken at approximately E 326282, N 5816014 and bearing S35°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs** **River Monitoring Event** **Yarrabend Development, Alphington**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater		PLATE No: 13
		DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 8b All above photographs were taken at approximately E 326282, N 5816014 and bearing S76°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 14
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 9 All above photographs were taken at approximately E 326308, N 5816015 and bearing S86°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 15
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 10 All above photographs were taken at approximately E 326316, N 5816016 and bearing S88°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 16
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 11 All above photographs were taken at approximately E 326328, N 5816015 and bearing S83°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 17
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 12 All above photographs were taken at approximately E 326308, N 5816020 and bearing N87°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT:	79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No:	18
	Yarrabend Development, Alphington	DATE:	18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 13 All above photographs were taken at approximately E 326315, N 5816023 and bearing S85°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs** **River Monitoring Event** **Yarrabend Development, Alphington**	PROJECT:	79075.12
Douglas Partners Geotechnics / Environment / Groundwater		PLATE No:	19
		DATE:	18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 14 All above photographs were taken at approximately E 326347, N 5816017 and bearing N88°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 20
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 15a

All above photographs were taken at approximately E 326336, N 5816028 and bearing S88°E. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 21
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 15b

All above photographs were taken at approximately E 326336, N 5816028 and bearing S80°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 22
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 16a

All above photographs were taken at approximately E 326360, N 5816028 and bearing S43°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 23
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 16b

All above photographs were taken at approximately E 326360, N 5816028 and bearing S86°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 24
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 17a All above photographs were taken at approximately E 326365, N 5816018 and bearing S85°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 25
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 17b

All above photographs were taken at approximately E 326365, N 5816018 and bearing N62°W. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs** **River Monitoring Event** **Yarrabend Development, Alphington**	PROJECT:	79075.12
Douglas Partners Geotechnics / Environment / Groundwater		PLATE No:	26
		DATE:	18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Photograph Location 18 All above photographs were taken at approximately E 326351, N 5816029 and bearing due S0°. The top was photographed on 12 May 2020, the middle on 24 July 2020 and the bottom on 13 October 2020.

CLIENT: Alphington Developments Pty Ltd	**Site Photographs**	PROJECT: 79075.12
Douglas Partners Geotechnics / Environment / Groundwater	**River Monitoring Event**	PLATE No: 27
	Yarrabend Development, Alphington	DATE: 18-Oct-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Surface Water Sample Photograph 1 – SW1 sample location looking west

Surface Water Sample Photograph 2 – SW2 sample location looking east

Douglas Partners Geotechnics / Environment / Groundwater	**Surface Water Sampling Photographs River Monitoring Event Yarrabend Development, Alphington**	PROJECT:	79075.12
		PLATE No:	28
		REV:	A
	CLIENT: Alphington Developments Pty Ltd	DATE:	14-Aug-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Surface Water Sample Photograph 3 – SW3 sample location looking north-east

Surface Water Sample Photograph 4 – SW4 sample location looking north-east

Douglas Partners Geotechnics / Environment / Groundwater	**Surface Water Sampling Photographs River Monitoring Event Yarrabend Development, Alphington**	PROJECT:	79075.12
		PLATE No:	29
		REV:	A
	CLIENT: Alphington Developments Pty Ltd	DATE:	14-Aug-20

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Surface Water Sample Photograph 5 – SW5 sample location looking south-east

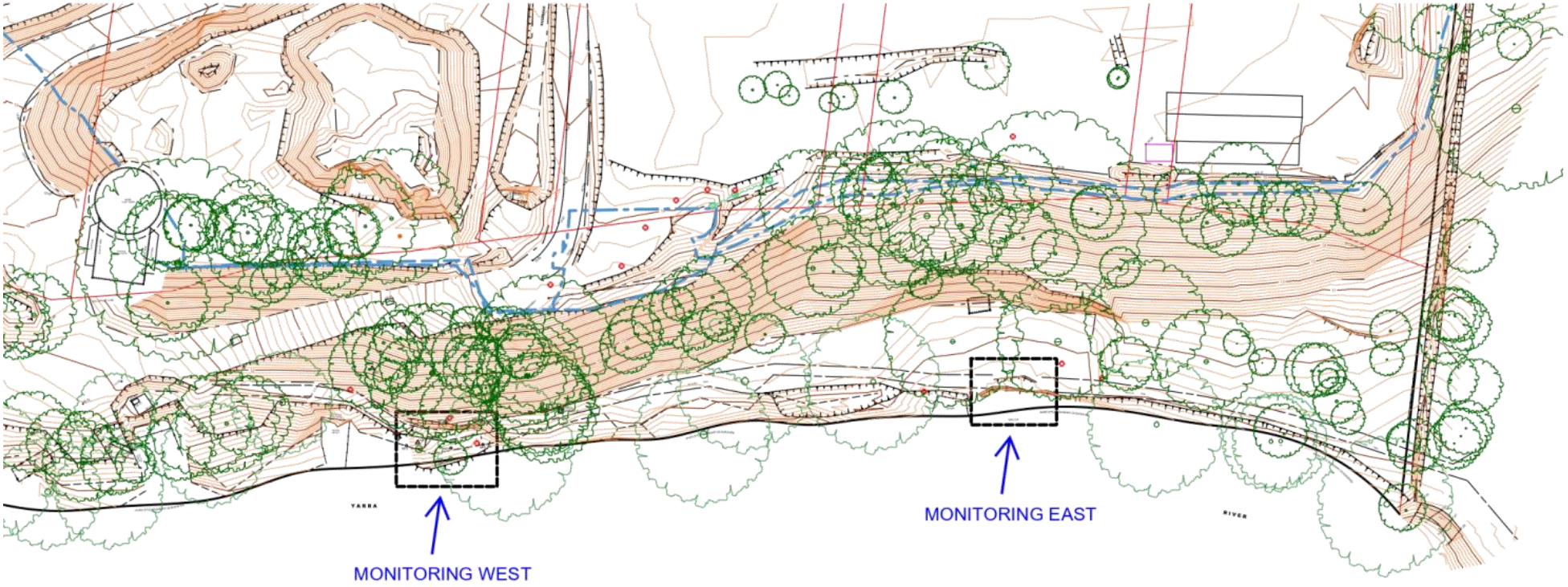
Surface Water Sample Photograph 6 – SW6 sample location looking east

Douglas Partners Geotechnics / Environment / Groundwater	**Surface Water Sampling Photographs River Monitoring Event Yarrabend Development, Alphington**	PROJECT:	79075.12
		PLATE No:	30
		REV:	A
	CLIENT: Alphington Developments Pty Ltd	DATE:	14-Aug-20

Appendix D

Reeds Survey Monitoring Data Tables and Plans
(4 Sheets)

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



REEDS CONSULTING

MONITORING SITE PLAN

DATE 04-03-2020

SURVEY REFERENCE 22185/G

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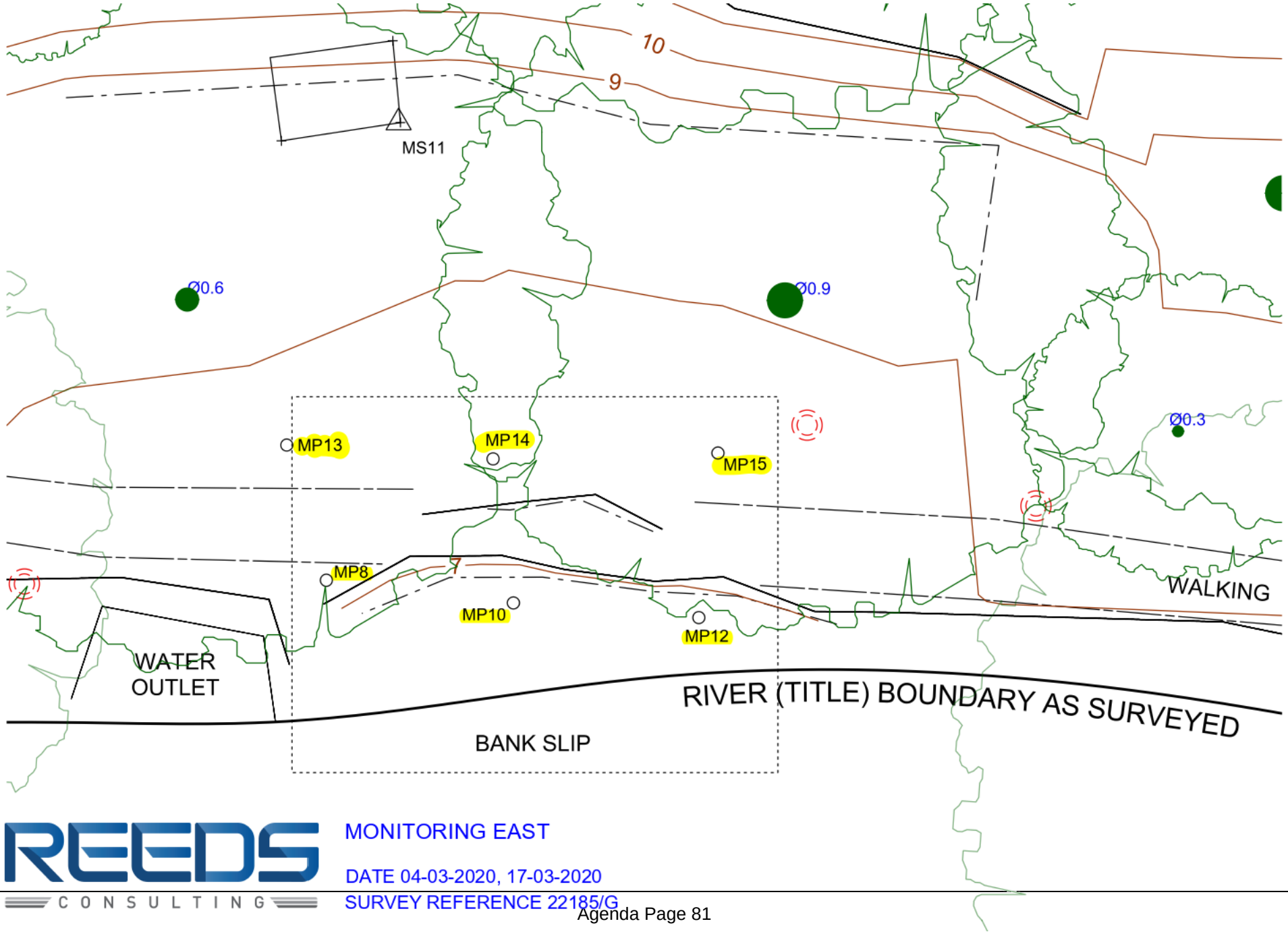
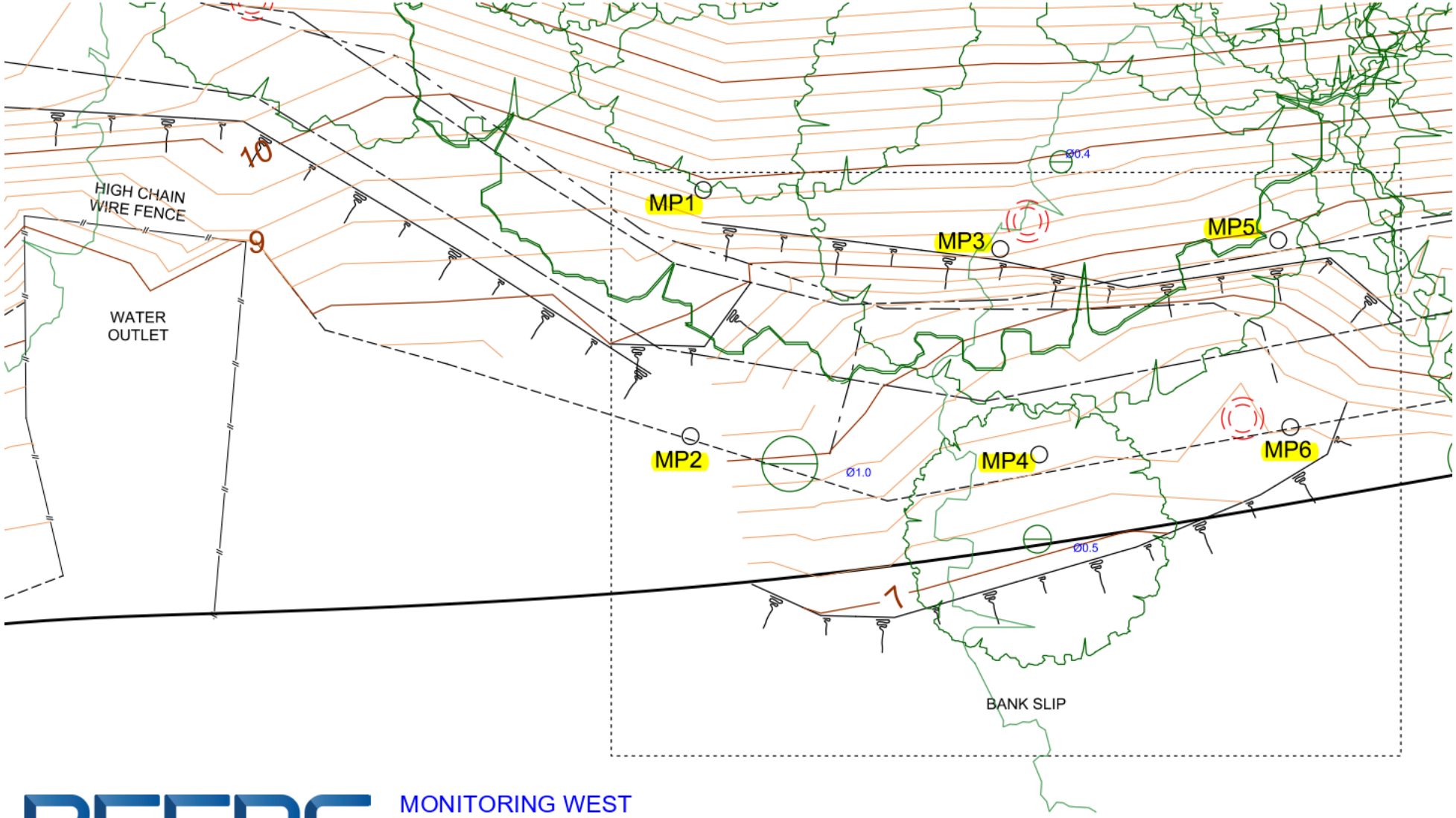


Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

MONITORING YARRA BANK VISIT 18 **SURVEY REFERENCE 22185/G**

REEDS CONSULTING

	MONITORING POINT	MEASUREMENT DATE	3/03/2020	10/03/2020	17/03/2020	24/03/2020	31/03/2020	7/04/2020	15/04/2020	21/04/2020	28/04/2020	5/05/2020	13/05/2020	19/05/2020	28/05/2020	02/06/2020	09/06/2020	16/06/2020	23/06/2020	15/09/2020		CHANGE SINCE PREVIOUS	CHANGE SINCE INITIAL
MONITORING WEST	MP1	OFFSET	0	-7	-7	-6	-5	-6	-6	-5	-4	-5	-5	-5	-5	-5	-6	-6	-5	-5		0	-5
		LATERAL	0	4	3	3	4	4	2	-1	1	0	1	-1	-1	-1	0	0	-1	2		3	2
		HEIGHT	0	2	3	2	1	1	3	4	0	1	1	2	4	5	3	4	5	6		1	6
	MP2	OFFSET	0	-9	-9	-9	-9	-9	-10	-10	-9	-11	-10	-11	-10	-10	-14	-13	-12	-10		2	-10
		LATERAL	0	3	1	1	-2	-1	-3	-3	-2	-2	-2	-2	-3	-3	-1	-1	-2	0		2	0
		HEIGHT	0	0	0	-1	-1	-1	-1	-1	-2	-3	-3	-2	-1	0	-2	-1	0	-1		-1	-1
	MP3	OFFSET	0	-9	-8	-7	-6	-6	-7	-5	-5	-6	-6	-5	-5	-5	-7	-7	-6	-5		1	-5
		LATERAL	0	3	1	2	2	2	0	-3	-2	-2	-3	-2	-3	-3	-1	-1	-2	-2		0	-2
		HEIGHT	0	3	4	3	2	2	0	3	3	3	3	3	4	4	4	5	5	5		0	5
	MP4	OFFSET	0	-11	-10	-9	-9	-8	-9	-9	-9	-10	-10	-10	-10	-9	-12	-12	-11	-10		1	-10
		LATERAL	0	7	5	5	7	6	3	3	4	5	5	5	5	5	6	5	5	6		1	6
		HEIGHT	0	1	0	-1	-3	-4	-2	-2	-2	-3	-3	-3	-3	-2	-2	-2	-1	-3		-2	-3
	MP5	OFFSET	0	-9	-8	-8	-8	-8	-7	-6	-6	-7	-7	-6	-6	-6	-8	-8	-7	-4		3	-4
		LATERAL	0	5	1	2	3	3	0	-2	-1	0	0	-1	-2	-2	0	0	-2	-1		1	-1
		HEIGHT	0	1	3	2	2	2	2	-4	0	1	1	2	3	3	2	3	4	2		-2	2
	MP6	OFFSET	0	-11	-10	-10	-9	-9	-10	-10	-9	-10	-9	-10	-9	-8	-16	-17	-16	-15		1	-15
		LATERAL	0	6	3	3	3	3	0	1	1	2	2	1	1	1	10	9	7	9		2	9
		HEIGHT	0	0	0	-2	-4	-4	-3	-3	-4	-5	-5	-5	-3	-2	-4	-3	-2	-5		-3	-5
MONITORING EAST	MP13	OFFSET	NA	NA	0	33	37	36	32	31	32	32	32	31	31	31	33	32	31	31		0	31
		LATERAL	NA	NA	0	-2	-2	-2	-3	-3	-3	-4	-4	-4	-3	-3	-2	-2	-2	-2		0	-2
		HEIGHT	NA	NA	0	-15	3	2	2	3	3	2	2	2	3	3	5	4	3	3		0	3
	MP8	OFFSET	0	-1	-2	-1	-2	-2	-4	-4	-5	-5	-5	-5	-5	-5	-6	-5	-7	-5		2	-5
		LATERAL	0	1	1	2	1	1	1	1	1	1	1	1	1	1	2	3	2	2		0	2
		HEIGHT	0	-3	-1	-3	-3	-3	-4	-4	-4	-4	-5	-4	-4	-3	-4	-5	-5	-7		-2	-7
	MP14	OFFSET	NA	NA	0	-63	-71	-71	-71	-71	-71	-71	-71	-71	-71	-71	-70	-71	-71	-71		0	-71
		LATERAL	NA	NA	0	3	0	0	0	-1	-1	-1	-1	0	0	0	1	1	0	0		0	0
		HEIGHT	NA	NA	0	-23	-26	-26	-27	-26	-26	-27	-26	-24	-26	-26	-25	-25	-26	-26		0	-26
	MP10	OFFSET	0	-3	-22	-23	-25	-25	-24	-26	-26	-22	-22	-25	-26	na	-25	-26	-28	-30		-2	-30
		LATERAL	0	0	0	1	0	0	-1	-2	-2	-3	-3	-3	-3	na	-5	-4	-3	-3		0	-3
		HEIGHT	0	-3	-12	-13	-12	-14	-15	-17	-15	-17	-18	-16	-16	na	-16	-17	-18	-20		-2	-20
	MP15	OFFSET	NA	NA	0	-18	-18	-18	-18	-18	-17	-17	-17	-17	-18	-18	-17	-17	-18	-18		0	-18
		LATERAL	NA	NA	0	12	10	11	8	9	9	8	9	8	9	9	8	8	9	9		0	9
		HEIGHT	NA	NA	0	-6	-5	-5	-8	-6	-6	-7	-7	-6	-6	-6	-7	-8	-7	-7		0	-7
	MP12	OFFSET	0	-2	-14	-26	-27	-29	-27	-29	-30	-27	-28	-29	-29	-26	-30	-30	-31	-32		-1	-32
		LATERAL	0	2	7	7	5	6	5	5	5	4	4	4	4	5	4	5	4	4		0	4
		HEIGHT	0	-3	-17	-19	-20	-22	-27	-29	-22	-24	-23	-23	-23	-20	-23	-23	-24	-26		-2	-26

MONITORING POINTS

ALL UNITS ARE IN MILLIMETRES

A positive difference in offset refers to movement away from Yarra River

A positive difference in lateral refers to movement east along Yarra River

A positive difference in height refers to an upward movement

Appendix E

Water Quality Sampling Test Results and Piper Plots

Groundwater Purging and Sampling Records
Piper Plot Data
Laboratory Test Result Certificates

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	19 May 2020	Method of purging:	Hand Bailer
Bore No:	DG2	Method of sampling:	Hand Bailer
SWL prior to purging:	5.17 m	SWL after purging:	5.20 m
Sampled by:	AP	Bore Depth:	13.4 m
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
4:00 PM	-	5.17	1.66	1148	7.63	-9.205	20.3	
4:10 PM	6	5.20	0.71	1192	7.52	121.4	18.7	
4:20 PM	9	5.25	0.23	1208	73.52	-115.5	18.2	
4:30 PM	12	5.28	0.01	1222	7.46	143.9	18.7	
4:40 PM	15	5.20	0.2	1238	7.50	149.9	18.4	

Water Quality Parameters within stable limits, sample DG2 taken at 4:40 PM.

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	20 May 2020	Method of purging:	Hand Bailer
Bore No:	DG4	Method of sampling:	Hand Bailer
SWL prior to purging:	4.10 m	SWL after purging:	4.18 m
Sampled by:	AP	Bore Depth:	5.0 m
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
1:20 PM	-	4.10	6.36	1349	7.30	91.3	16.9	
1:35 PM	5.5	4.14	6.32	2082	6.94	105.8	17.3	
1:50 PM	9	4.15	6.05	2201	6.90	115.5	17.6	
2:00 PM	12	4.18	6.40	2276	6.85	127.0	17.5	
2:10 PM	15	4.15	6.16	2317	6.84	133.2	16.9	
2:20 PM	18	4.18	6.18	2295	6.87	139.2	16.8	

Water Quality Parameters within stable limits, sample DG4 taken at 2:20 PM.

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	20 May 2020	Method of purging:	Hand Bailer
Bore No:	DG5	Method of sampling:	Hand Bailer
SWL prior to purging:	3.81 m	SWL after purging:	3.93 m
Sampled by:	AP	Bore Depth:	10.0 m
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
2:25 PM	-	3.81	3.34	1367	7.09	37.3	18.0	
2:35 PM	6	3.98	5.32	1466	6.92	49.20	17.5	
2:40 PM	8	3.95	4.40	1386	6.94	73.20	17.8	
2:50 PM	10	3.99	4.02	1359	6.83	83.3	17.8	
3:00 PM	12	3.95	5.08	1350	6.85	81.4	17.9	
3:00 PM	14	3.93	5.15	1360	6.87	83.8	18.3	

Water Quality Parameters within stable limits, sample DG5 taken at 3:00 PM.

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	19 May 2020	Method of purging:	Hand Bailer
Bore No:	DG6	Method of sampling:	Hand Bailer
SWL prior to purging:	8.50 m	SWL after purging:	8.40 m
Sampled by:	AP	Bore Depth:	15.0 m
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
3:30 PM	-	8.50	3.40	7520	6.89	-2.7	17.8	
3:40 PM	6	8.54	2.19	7012	6.94	-67.2	17.6	
3:45 PM	9	8.54	2.74	6462	6.98	-45.3	17.5	
3:50 PM	12	8.43	2.87	5877	7.07	-34.4	17.6	
3:55 PM	15	8.40	3.50	5432	6.98	-26.4	17.7	

Purging of DG6 terminated after 15L, sample DG6 taken at 4:00 PM.

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	20 May 2020	Method of purging:	Hand Bailer
Bore No:	DG7	Method of sampling:	Hand Bailer
SWL prior to purging:	8.84 m	SWL after purging:	8.85 m
Sampled by:	AP	Bore Depth:	12.50 m
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
10:50 AM	-	8.84	3.34	5383	7.05	125.9	18.8	
11:15 AM	7	8.87	4.10	5351	7.07	117.9	18.5	
11:30 AM	9	8.85	3.75	5330	7.15	109.2	19.0	
11:40 AM	12	8.87	4.11	6344	7.14	114.2	19.1	
11:50 AM	14	8.85	3.94	6325	7.15	133.3	18.6	
12:00 PM	16	8.85	3.98	6341	7.15	119.1	18.7	
Water Quality Parameters within stable limits, sample DG7 taken at 12:00 PM.								

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	19 May 2020	Method of purging:	Hand Bailer
Bore No:	DG12	Method of sampling:	Hand Bailer
SWL prior to purging:	2.74 m	SWL after purging:	4.00 m
Sampled by:	AP	Bore Depth:	4.50 m
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
4:15 PM	-	2.74	3.38	4825	7.16	55.8	16.8	
4:25 PM	7							
4:30 PM	11	3.41	5.34	4776	7.03	92.0	16.5	
4:40 PM	13	3.49	6.65	4649	7.11	98.1	17.0	
4:50 PM	16	3.73	6.47	4373	7.30	100.6	17.1	
4:55 PM	-	4.00						

DG12 was unable to be purged past the 4.00 m btoc and therefore terminated after 16L. Sample DG12 was taken after minor recovery at 5.15 PM.

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	21 July 2020	Method of purging:	Bailer
Bore No:	DG12	Method of sampling:	Bailer
SWL prior to purging:	4.07 m	SWL after purging:	4.33 m
Sampled by:	Michael Davidson	Bore Depth:	4.5 m
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
9:35:20	-	4.07						
9:38:25	1	4.33						brown, opaque
	The purge of DG12 was unable to continue past the 4.33 m btoc and therefore terminated; Sampling was undertaken on 22/7/20, see following sheet.							

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	22 July 2020	Method of purging:	Bailer
Bore No:	DG12	Method of sampling:	Bailer
SWL prior to purging:	4.06 m	SWL after purging:	4.33 m
Sampled by:	Michael Davidson	Bore Depth:	4.5 m
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
13:31:25	-	4.06						
13:24:48	1		20.2	471	4.2	37.5	14.7	brown, opaque
13:44:00		4.33						

DG12 was unable to be purged past the 4.33 m btoc and was therefore terminated after 1L; Sample DG12 was taken at 1:44 PM.

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	19 May 2020	Method of purging:	Hand Bailer
Bore No:	DG15	Method of sampling:	Hand Bailer
SWL prior to purging:	0.60 m	SWL after purging:	0.69 m
Sampled by:	AP	Bore Depth:	2.0 m
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
5:00 AM	3	0.60	0.03	4412	7.17	-123.8	15.7	
5:10 AM	7	0.69						
5:30 AM	10	0.68	2.80	5547	7.21	-1.93	14.5	
5:51 AM	13	0.65	2.64	5557	7.25	-15.7	14.9	
6:00 AM	15	0.68	2.58	5509	7.25	-19.3	14.6	
6:05 AM	16	0.69	2.56	5517	7.20	-17.7	14.8	

Water Quality Parameters within stable limits, sample DG15 taken at 6:10 PM.

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	19 May 2020	Method of purging:	Hand Bailer
Bore No:	DG 16	Method of sampling:	Hand Bailer
SWL prior to purging:	1.10 m	SWL after purging:	6.2 m
Sampled by:	AP	Bore Depth:	7.0 m
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
6:00 PM	-	1.10	4.90	5901	7.71	33.3	16.4	
6:10 PM	6	4.00	4.05	7059	7.54	-103.0	16.9	
6:20 PM	8	5.53	0.16	6891	7.47	-159.0	17.0	
6:30 PM	9	6.20						

DG16 was unable to be purged past the 6.20 m btoc and therefore terminated after 9L; Sample DG16 was taken at 6:30 PM.

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	21 July	Method of purging:	Hand Bailer
Bore No:	BH103	Method of sampling:	Hand Bailer
SWL prior to purging:	12.19 m TOC	SWL after purging:	12.22
		Bore Depth:	
Sampled by:	Michael Davidson	Bottom of the standpipe dipped at 16.89 m with a hard base.	
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
2:55 PM	22		61.1	3498	7.23	13.9	17.7	cloudy, transparent
3:06 PM	4		45.4	3570	7.09	35.6	17.3	cloudy, transparent
3:10 PM	11		27.2	4650	7.24	33.2	17.5	cloudy, transparent
3:13 PM	16		23.8	4000	7.22	37.1	17.9	cloudy, transparent
3:18 PM	21		22.9	4087	7.22	40.5	17.9	cloudy, transparent
3:24 PM	27		26.0	4192	7.22	43.9	18.3	cloudy, transparent
3:27 PM	31		22.8	4219	7.20	46.9	17.8	cloudy, transparent
3:30 PM	35		19.5	4235	7.18	49.3	17.5	cloudy, transparent
3:32 PM	35	12.22						

Water Quality Parameters within stable limits, sample BH103 taken at 3:36 PM.

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	21 July 2020	Method of purging:	Bailer
Bore No:	BH104	Method of sampling:	Bailer
SWL prior to purging:	6.72 m	SWL after purging:	13.62 m
Sampled by:	Michael Davidson	Bore Depth:	Bottom of the standpipe dipped at 15.3 m with a soft base.
Pump depth and settings:			

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
1:24 PM	2							clear, slightly cloudy
1:29 PM	7.5							cloudy, transparent
1:34 PM	13							cloudy, transparent
1:40 PM	19		26.5	3549	7.46	38.2	18.0	cloudy, transparent
1:45 PM	24		20.1	3750	7.49	-8.2	18.0	
1:47 PM		10.18						brown - grey and
1:53 PM	26.5		31.6	3753	7.43	-36.2	17.7	cloudy, translucent
1:51 PM	31		32.9	3825	7.53	-36.8	17.9	brown - grey, opaque
2:04 PM	36		34.5	4230	7.58	-39.8	17.7	brown - grey, opaque
2:20 PM		13.55						
2:12 PM	41		38.2	4300	7.63	-42.5	17.1	brown - grey, opaque
2:26 PM	43		53.2	4261	7.75	-49.0	17.2	brown - grey, opaque
2:30 PM		13.73						
3:49 PM		13.62						
The purge of BH104 was unable to continue past the 13.62 m btoc and therefore terminated; Sampling was undertaken on 22/7/20, see following sheet.								

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

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Douglas Partners
Geotechnics / Environment / Groundwater

GROUNDWATER SAMPLING AND PURGING RECORD

Job Name:	River Monitoring Event	Job No:	79075.18
Date:	22 July 2020	Method of purging:	Bailer
Bore No:	BH104	Method of sampling:	Bailer
SWL prior to purging:	13.33 m	SWL after purging:	13.66 m
		Bore Depth:	
Sampled by:	Michael Davidson	Bottom of the standpipe dipped at 15.3 m	
Pump depth and settings:		with a soft base.	

Time	Volume Purged (L)	SWL m btoc	DO ppm ± 10%	EC ms ± 3%	pH units ± 0.05	ORP mV ± 10 mV	Temp °C	Water observations
12:57 PM	-	13.33						
1:05 PM	1		68.3	4324	7.63	70.8	17.6	brown - grey, opaque
1:09 PM		13.66						
BH104 was unable to be purged past the 13.66 m btoc and therefore terminated after 1L; Sample BH104 was taken at 1:30 PM.								

* Lower DO and ORP in comparison with other wells may indicate hydrocarbon contamination.

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

ALS Water

CERTIFICATE OF ANALYSIS

Batch No:	**20-25491**	*Page*	Page 1 of 5
Final Report	827882	*Laboratory*	Scoresby Laboratory
		Address	Caribbean Business Park, 22 Dalmore Drive, Scoresby, VIC 3179
Client:	**Douglas Partners Pty Ltd**	*Phone*	03 8756 8000
Contact:	**Andrew Murphy**	*Fax*	03 9763 1862
Address:	231 Normanby Road SOUTH MELBOURNE VIC 3205 AUSTRALIA	*Contact*	Tuyen Nguyen Client Manager Tuyen.Nguyen@alsglobal.com
Client Program Ref:	**79075-18 Alphington**	Date Sampled:	19-May-2020 - 20-May-2020
ALS Program Ref:	**DOUGLAS**	Date Samples Received:	21-May-2020
PO No:	**150722**	*Date Issued:*	**29-May-2020**

The hash (#) below indicates methods not covered by NATA accreditation in the performance of this service.

Analysis	*Method*	*Laboratory*	*Analysis*	*Method*	*Laboratory*	*Analysis*	*Method*	*Laboratory*
Alkalinity	WD037	Scoresby	**Chloride**	WD045G	Scoresby	**OES Scan**	WG005A (Si not NATA); EA065-69	Scoresby
pH	WA005	Scoresby	**TDS at 180°C +/- 5°C**	WA015	Scoresby	**SO4 DA**	WD041G	Scoresby

Result for pH in water tested in the laboratory may be indicative only as holding time is generally not achievable.

Accreditation No. 992
Accredited for compliance with ISO/IEC 17025 - Testing

Signatories
Legionella species refers to Legionella species other than Legionella pneumophila

[redacted]

Name	*Title*	*Name*	*Title*
Chatura Perera	**Team Leader Nutrients**	**Joseph De Alwis**	**Analyst**
John Earl	**Team Leader Metals**	**Ricky Singh**	**Analyst**

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Page:	**Page 2 of 5**
Batch No:	**20-25491**
Report Number:	**827882**
Client:	**Douglas Partners Pty Ltd**
Client Program Ref:	**79075-18 Alphington**

LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may be due to high moisture content, insufficient sample or matrix interference.
CAS Number = Chemistry Abstract Services Number. The analytical procedures in this report (including in house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM.

				Sample No.	6566748	6566749	6566750	6566751	6566752	6566753
				Client Sample ID	DG1	DG2	DG4	DG5	DG6	DG7
				Sample Date	20/05/20	20/05/20	20/05/20	20/05/20	19/05/20	20/05/20
				Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Analysis	**Analyte**	**CAS #**	**LOR**							
pH	pH, units	pH_Lab		Units	7.9	7.9	7.5	7.4	7.5	7.7
TDS at 180°C +/-	Total Dissolved Solids	TDS	<5	mg/L	4600	550	1100	750	2400	2300
Chloride	Chloride, as Cl	16887-00-6	<1	mg/L	2600	110	270	89	1200	1100
SO4 DA	Sulphate, as SO4	14808-79-8	<1	mg/L	250	30	350	220	360	250
Alkalinity	Bicarbonate Alkalinity as CaCO3	ALKBICARBON	<2	mg CaCO3 / L	850	480	470	360	600	890
Alkalinity	Carbonate Alkalinity as CaCO3	ALK_CARBON	<2	mg CaCO3 / L	<2	<2	<2	<2	<2	<2
Alkalinity	Hydroxide Alkalinity as CaCO3	ALK_HYDROXI	<2	mg CaCO3 / L	<2	<2	<2	<2	<2	<2
Alkalinity	Total Alkalinity as CaCO3	ALK_CACO3	<2	mg CaCO3 / L	850	480	470	360	600	890
Analysis	**Analyte**	**CAS #**	**LOR**							
OES Scan	Calcium	7440-70-2	<0.1	mg/L	110	71	84	95	85	80
OES Scan	Magnesium	7439-95-4	<0.1	mg/L	400	160	110	86	240	310
OES Scan	Potassium	7440-09-7	<0.1	mg/L	28	22	12	20	28	32
OES Scan	Sodium	7440-23-5	<0.1	mg/L	1200	100	280	110	650	700

Samples not collected by ALS and are tested as received.

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Water microbiological testing was commenced on the day received and within 24 hours of sampling unless otherwise stated.
MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Page:	**Page 3 of 5**
Batch No:	**20-25491**
Report Number:	**827882**
Client:	**Douglas Partners Pty Ltd**
Client Program Ref:	**79075-18 Alphington**

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CAS Number = Chemistry Abstract Services Number. The analytical procedures in this report (including in house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM.

				Sample No.	6566754	6566755	6566756	6566757	6566758
				Client Sample ID	DG12	DG15	DG16	RIVER	DRAIN
				Sample Date	19/05/20	19/05/20	19/05/20	19/05/20	20/05/20
				Sample Type	WATER	WATER	WATER	WATER	WATER
Analysis	**Analyte**	**CAS #**	**LOR**						
pH	pH, units	pH_Lab		Units	7.4	7.8	8.2	7.4	7.9
TDS at 180°C +/-	Total Dissolved Solids	TDS	<5	mg/L	260	2500	2600	94	2300
Chloride	Chloride, as Cl	16887-00-6	<1	mg/L	32	1200	1400	29	1000
SO4 DA	Sulphate, as SO4	14808-79-8	<1	mg/L	42	250	250	3	250
Alkalinity	Bicarbonate Alkalinity as CaCO3	ALKBICARBON	<2	mg CaCO3 / L	160	880	880	38	780
Alkalinity	Carbonate Alkalinity as CaCO3	ALK_CARBON	<2	mg CaCO3 / L	<2	<2	<2	<2	<2
Alkalinity	Hydroxide Alkalinity as CaCO3	ALK_HYDROXI	<2	mg CaCO3 / L	<2	<2	<2	<2	<2
Alkalinity	Total Alkalinity as CaCO3	ALK_CACO3	<2	mg CaCO3 / L	160	880	880	38	780
Analysis	**Analyte**	**CAS #**	**LOR**						
OES Scan	Calcium	7440-70-2	<0.1	mg/L	310	69	57	4.2	61
OES Scan	Magnesium	7439-95-4	<0.1	mg/L	440	260	180	3.9	190
OES Scan	Potassium	7440-09-7	<0.1	mg/L	190	40	13	1.7	13
OES Scan	Sodium	7440-23-5	<0.1	mg/L	69	750	850	15	630

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Page: **Page 4 of 5**
Batch No: **20-25491**
Report Number: **827882**
Client: **Douglas Partners Pty Ltd**
Client Program Ref: **79075-18 Alphington**

QUALITY CONTROL - BLANKS

QC Blanks are an 'analyte free' matrix in which all applicable reagents have been added in the same proportion as in standard samples and are an internal monitor for laboratory contamination.

					Value
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6568466	QC - Blank	pH	pH, units	Units	5.6
6568543	QC - Blank	pH	pH, units	Units	5.5
6568598	QC - Blank	Chloride	Chloride, as Cl	mg/L	<1
6568598	QC - Blank	SO4 DA	Sulphate, as SO4	mg/L	<1
6569358	QC - Blank	Alkalinity	Bicarbonate Alkalinity as CaCO3	mg CaCO3 / L	<2
6569358	QC - Blank	Alkalinity	Carbonate Alkalinity as CaCO3	mg CaCO3 / L	<2
6569358	QC - Blank	Alkalinity	Hydroxide Alkalinity as CaCO3	mg CaCO3 / L	<2
6569358	QC - Blank	Alkalinity	Total Alkalinity as CaCO3	mg CaCO3 / L	<2
6576833	QC - Blank	Chloride	Chloride, as Cl	mg/L	<1
6576833	QC - Blank	SO4 DA	Sulphate, as SO4	mg/L	<1
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6568692	QC - Blank	OES Scan	Calcium	mg/L	<0.1
6568692	QC - Blank	OES Scan	Magnesium	mg/L	<0.1
6568692	QC - Blank	OES Scan	Potassium	mg/L	<0.1
6568692	QC - Blank	OES Scan	Sodium	mg/L	<0.1

QUALITY CONTROL - DUPLICATES

QC Data for duplicates is calculated on raw 'unrounded' values. Laboratory duplicates are randomly selected samples tested by the laboratory to maintain method precision and provide information on sample homogeniety.
RPD = Relative Percentage Difference for duplicate determinations. RPD's that fall outside the general acceptance criteria will be attributed to non-homogeneity of samples or results of low magnitudes.

Samples not collected by ALS and are tested as received.

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Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Page: **Page 5 of 5**
Batch No: **20-25491**
Report Number: **827882**
Client: **Douglas Partners Pty Ltd**
Client Program Ref: **79075-18 Alphington**

					Sample Value	Duplicate Value	% RPD
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6568471	NCP	pH	pH, units	Units	8.2	8.3	0.7
6568663	NCP	Chloride	Chloride, as Cl	mg/L	350	350	0.6
6568663	NCP	SO4 DA	Sulphate, as SO4	mg/L	28	28	0.8
6571316	NCP	TDS at 180°C +/- 5°C	Total Dissolved Solids	mg/L	3300	3300	0.0
6571974	DRAIN	Alkalinity	Bicarbonate Alkalinity as CaCO3	mg CaCO3 / L	780	800	2.2
6571974	DRAIN	Alkalinity	Carbonate Alkalinity as CaCO3	mg CaCO3 / L	<2	<2	0
6571974	DRAIN	Alkalinity	Hydroxide Alkalinity as CaCO3	mg CaCO3 / L	<2	<2	0
6571974	DRAIN	Alkalinity	Total Alkalinity as CaCO3	mg CaCO3 / L	780	800	2.2
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6575317	NCP	OES Scan	Calcium	mg/L	<0.1	<0.1	0
6575317	NCP	OES Scan	Magnesium	mg/L	<0.1	<0.1	0
6575317	NCP	OES Scan	Potassium	mg/L	<0.1	<0.1	0
6575317	NCP	OES Scan	Sodium	mg/L	<0.1	<0.1	0

QUALITY CONTROL - SPIKES

QC Data for spikes is calculated on raw 'unrounded' values. Laboratory spikes are randomly selected samples in which the analytes in question have been artificially introduced and recovered via standard analysis and are used to provide information on potential matrix effects on analyte recoveries.
Spike recoveries that fall outside the general acceptance criteria will be attributed to sample matrix interference or results of high magnitudes.
NCP: Non-Customer Parent (sample quality is representative of the analytical batch but the sample that was QC tested belongs to a customer not pertaining to the report.)

					Sample Value	Expected Value	% Recovery
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6568640	NCP	Chloride	Chloride, as Cl	mg/L	3100	3300	118
6568640	NCP	SO4 DA	Sulphate, as SO4	mg/L	34	230	107
6571317	NCP	TDS at 180°C +/- 5°C	Total Dissolved Solids	mg/L	36	2500	100
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6575318	NCP	OES Scan	Calcium	mg/L	<0.1	2.0	93.0
6575318	NCP	OES Scan	Magnesium	mg/L	<0.1	2.0	92.6
6575318	NCP	OES Scan	Potassium	mg/L	<0.1	2.0	96.9
6575318	NCP	OES Scan	Sodium	mg/L	<0.1	2.0	93.4

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Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

ALS Water

CERTIFICATE OF ANALYSIS

Batch No:	**20-35588**	*Page*	Page 1 of 6
Final Report	839905	*Laboratory*	Scoresby Laboratory
		Address	Caribbean Business Park, 22 Dalmore Drive, Scoresby, VIC 3179
Client:	**Douglas Partners Pty Ltd**	*Phone*	03 8756 8000
Contact:	**Andrew Murphy**	*Fax*	03 9763 1862
Address:	231 Normanby Road SOUTH MELBOURNE VIC 3205 AUSTRALIA	Contact:	Tuyen Nguyen Client Manager Tuyen.Nguyen@alsglobal.com
Client Program Ref:	**79075-18 Alphington**	Date Sampled:	22-Jul-2020 - 23-Jul-2020
ALS Program Ref:	**DOUGLAS**	Date Samples Received:	24-Jul-2020
PO No:	**150774**	*Date Issued:*	**04-Aug-2020**

The hash (#) below indicates methods not covered by NATA accreditation in the performance of this service.

Analysis	*Method*	*Laboratory*	*Analysis*	*Method*	*Laboratory*	*Analysis*	*Method*	*Laboratory*
Alkalinity	WD037	Scoresby	**Chloride**	WD045G	Scoresby	**OES Scan**	WG005A (Si not NATA); EA065-69	Scoresby
Soluble OES Scan	WG005A (Si not NATA); EA065-69	Scoresby	**pH**	WA005	Scoresby	**TDS at 180°C +/- 5°C**	WA015	Scoresby
SO4 DA	WD041G	Scoresby						

Result for pH in water tested in the laboratory may be indicative only as holding time is generally not achievable.

Accreditation No. 992
Accredited for compliance with ISO/IEC 17025 - Testing

Signatories
Legionella species refers to Legionella species other than Legionella pneumophila

[redacted]

Name	*Title*	*Name*	*Title*
Chatura Perera	**Team Leader Nutrients**	**John Earl**	**Team Leader Metals**
John Levvey	**Principal Trace Metals Chemist**	**Mario Solorzano**	**Analyst**
Ricky Singh	**Analyst**		

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Page:	**Page 2 of 6**
Batch No:	**20-35588**
Report Number:	**839905**
Client:	**Douglas Partners Pty Ltd**
Client Program Ref:	**79075-18 Alphington**

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CAS Number = Chemistry Abstract Services Number. The analytical procedures in this report (including in house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM.

				Sample No.	6643355	6643356	6643357	6643358	6643359	6643360
				Client Sample ID	DG12	BH104	BH103	SW1	SW2	SW3
				Sample Date	23/07/20	23/07/20	22/07/20	22/07/20	23/07/20	23/07/20
				Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Analysis	**Analyte**	**CAS #**	**LOR**							
pH	pH, units	pH_Lab		Units	7.4	8.1	7.6	8.4	7.7	8.2
TDS at 180°C +/-	Total Dissolved Solids	TDS	<5	mg/L	340	2200	2200	540	300	130
Chloride	Chloride, as Cl	16887-00-6	<1	mg/L	34	960	790	84	23	10
SO4 DA	Sulphate, as SO4	14808-79-8	<1	mg/L	68	390	280	230	<5 LINT	15
Alkalinity	Bicarbonate Alkalinity as CaCO3	ALKBICARBON	<2	mg CaCO3 / L	300	910	960	150	830	66
Alkalinity	Carbonate Alkalinity as CaCO3	ALK_CARBON	<2	mg CaCO3 / L	<2	<2	<2	<2	<2	<2
Alkalinity	Hydroxide Alkalinity as CaCO3	ALK_HYDROXI	<2	mg CaCO3 / L	<2	<2	<2	<2	<2	<2
Alkalinity	Total Alkalinity as CaCO3	ALK_CACO3	<2	mg CaCO3 / L	300	910	960	150	830	66
Analysis	**Analyte**	**CAS #**	**LOR**							
OES Scan	Calcium	7440-70-2	<0.1	mg/L		130	54	34		21
OES Scan	Magnesium	7439-95-4	<0.1	mg/L		220	240	27		4.5
OES Scan	Potassium	7440-09-7	<0.1	mg/L		31	9	3.9		4.0
OES Scan	Sodium	7440-23-5	<0.1	mg/L		810	630	160		14
Soluble OES Scan	Calcium	7440-70-2	<0.1	mg/L	29				52	
Soluble OES Scan	Magnesium	7439-95-4	<0.1	mg/L	17				15	
Soluble OES Scan	Potassium	7440-09-7	<0.1	mg/L	3.2				6.7	
Soluble OES Scan	Sodium	7440-23-5	<0.1	mg/L	40				32	

LINT Level of Reporting raised due to interferences in the sample matrix

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Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Page:	**Page 3 of 6**
Batch No:	**20-35588**
Report Number:	**839905**
Client:	**Douglas Partners Pty Ltd**
Client Program Ref:	**79075-18 Alphington**

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				Sample No.	6643361	6643362	6643363
				Client Sample ID	SW4	SW5	SW6
				Sample Date	23/07/20	23/07/20	23/07/20
				Sample Type	WATER	WATER	WATER
Analysis	**Analyte**	**CAS #**	**LOR**				
pH	pH, units	pH_Lab		Units	8.6	7.6	7.5
TDS at 180°C +/-	Total Dissolved Solids	TDS	<5	mg/L	380	2000	2100
Chloride	Chloride, as Cl	16887-00-6	<1	mg/L	93	870	910
SO4 DA	Sulphate, as SO4	14808-79-8	<1	mg/L	110	250	220
Alkalinity	Bicarbonate Alkalinity as CaCO3	ALKBICARBON	<2	mg CaCO3 / L	120	680	710
Alkalinity	Carbonate Alkalinity as CaCO3	ALK_CARBON	<2	mg CaCO3 / L	6	<2	<2
Alkalinity	Hydroxide Alkalinity as CaCO3	ALK_HYDROXI	<2	mg CaCO3 / L	<2	<2	<2
Alkalinity	Total Alkalinity as CaCO3	ALK_CACO3	<2	mg CaCO3 / L	120	680	710
Analysis	**Analyte**	**CAS #**	**LOR**				
OES Scan	Calcium	7440-70-2	<0.1	mg/L	25	57	76
OES Scan	Magnesium	7439-95-4	<0.1	mg/L	11	180	140
OES Scan	Potassium	7440-09-7	<0.1	mg/L	3	8	11
OES Scan	Sodium	7440-23-5	<0.1	mg/L	110	570	560

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Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Page:	**Page 4 of 6**
Batch No:	**20-35588**
Report Number:	**839905**
Client:	**Douglas Partners Pty Ltd**
Client Program Ref:	**79075-18 Alphington**

QUALITY CONTROL - BLANKS

QC Blanks are an 'analyte free' matrix in which all applicable reagents have been added in the same proportion as in standard samples and are an internal monitor for laboratory contamination.

					Value
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6643925	QC - Blank	pH	pH, units	Units	5.8
6645113	QC - Blank	Alkalinity	Bicarbonate Alkalinity as CaCO3	mg CaCO3 / L	<2
6645113	QC - Blank	Alkalinity	Carbonate Alkalinity as CaCO3	mg CaCO3 / L	<2
6645113	QC - Blank	Alkalinity	Hydroxide Alkalinity as CaCO3	mg CaCO3 / L	<2
6645113	QC - Blank	Alkalinity	Total Alkalinity as CaCO3	mg CaCO3 / L	<2
6645500	QC - Blank	Chloride	Chloride, as Cl	mg/L	<1
6645500	QC - Blank	SO4 DA	Sulphate, as SO4	mg/L	<1
6649409	QC - Blank	Chloride	Chloride, as Cl	mg/L	<1
6649409	QC - Blank	SO4 DA	Sulphate, as SO4	mg/L	<1
6652217	QC - Blank	Alkalinity	Bicarbonate Alkalinity as CaCO3	mg CaCO3 / L	<2
6652217	QC - Blank	Alkalinity	Carbonate Alkalinity as CaCO3	mg CaCO3 / L	<2
6652217	QC - Blank	Alkalinity	Hydroxide Alkalinity as CaCO3	mg CaCO3 / L	<2
6652217	QC - Blank	Alkalinity	Total Alkalinity as CaCO3	mg CaCO3 / L	<2
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6645947	QC - Blank	OES Scan	Calcium	mg/L	<1
6645947	QC - Blank	OES Scan	Magnesium	mg/L	<1
6645947	QC - Blank	OES Scan	Potassium	mg/L	<1
6645947	QC - Blank	OES Scan	Sodium	mg/L	<1
6648011	QC - Blank	Soluble OES Scan	Calcium	mg/L	<0.1
6648011	QC - Blank	Soluble OES Scan	Magnesium	mg/L	<0.1
6648011	QC - Blank	Soluble OES Scan	Potassium	mg/L	<0.1
6648011	QC - Blank	Soluble OES Scan	Sodium	mg/L	<0.1

QUALITY CONTROL - DUPLICATES

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Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

Batch No: **20-35588**
Report Number: **839905**
Client: **Douglas Partners Pty Ltd**
Client Program Ref: **79075-18 Alphington**

QC Data for duplicates is calculated on raw 'unrounded' values. Laboratory duplicates are randomly selected samples tested by the laboratory to maintain method precision and provide information on sample homogeniety.
RPD = Relative Percentage Difference for duplicate determinations. RPD's that fall outside the general acceptance criteria will be attributed to non-homogeneity of samples or results of low magnitudes.

					Sample Value	Duplicate Value	% RPD
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6645486	SW6	Chloride	Chloride, as Cl	mg/L	910	940	3.7
6645486	SW6	SO4 DA	Sulphate, as SO4	mg/L	220	220	0.3
6645518	NCP	pH	pH, units	Units	7.4	7.4	0.0
6645528	NCP	TDS at 180°C +/- 5°C	Total Dissolved Solids	mg/L	220	220	1.8
6645848	SW6	Alkalinity	Bicarbonate Alkalinity as CaCO3	mg CaCO3 / L	710	720	2.6
6645848	SW6	Alkalinity	Carbonate Alkalinity as CaCO3	mg CaCO3 / L	<2	<2	0
6645848	SW6	Alkalinity	Hydroxide Alkalinity as CaCO3	mg CaCO3 / L	<2	<2	0
6645848	SW6	Alkalinity	Total Alkalinity as CaCO3	mg CaCO3 / L	710	720	2.6
6649510	NCP	TDS at 180°C +/- 5°C	Total Dissolved Solids	mg/L	370	370	0.0
6653198	SW2	Alkalinity	Bicarbonate Alkalinity as CaCO3	mg CaCO3 / L	830	850	1.9
6653198	SW2	Alkalinity	Carbonate Alkalinity as CaCO3	mg CaCO3 / L	<2	<2	0
6653198	SW2	Alkalinity	Hydroxide Alkalinity as CaCO3	mg CaCO3 / L	<2	<2	0
6653198	SW2	Alkalinity	Total Alkalinity as CaCO3	mg CaCO3 / L	830	850	1.9
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6645370	NCP	OES Scan	Calcium	mg/L	7.9	7.9	0.0
6645370	NCP	OES Scan	Magnesium	mg/L	6.9	6.9	0.2
6645370	NCP	OES Scan	Potassium	mg/L	10	10	0.2
6645370	NCP	OES Scan	Sodium	mg/L	42	42	0.2
6648012	SW2	Soluble OES Scan	Calcium	mg/L	52	51	1.0
6648012	SW2	Soluble OES Scan	Magnesium	mg/L	15	14	1.4
6648012	SW2	Soluble OES Scan	Potassium	mg/L	6.7	6.7	0.0
6648012	SW2	Soluble OES Scan	Sodium	mg/L	32	32	0.0

QUALITY CONTROL - SPIKES

QC Data for spikes is calculated on raw 'unrounded' values. Laboratory spikes are randomly selected samples in which the analytes in question have been artificially introduced and recovered via standard analysis and are used to provide information on potential matrix effects on analyte recoveries.
Spike recoveries that fall outside the general acceptance criteria will be attributed to sample matrix interference or results of high magnitudes.
NCP: Non-Customer Parent (sample quality is representative of the analytical batch but the sample that was QC tested belongs to a customer not pertaining to the report.)

Samples not collected by ALS and are tested as received.

A blank space indicates no test performed. Soil microbiological testing was commenced within 4 days from the day collected unless otherwise stated.
Water microbiological testing was commenced on the day received and within 24 hours of sampling unless otherwise stated.
MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020

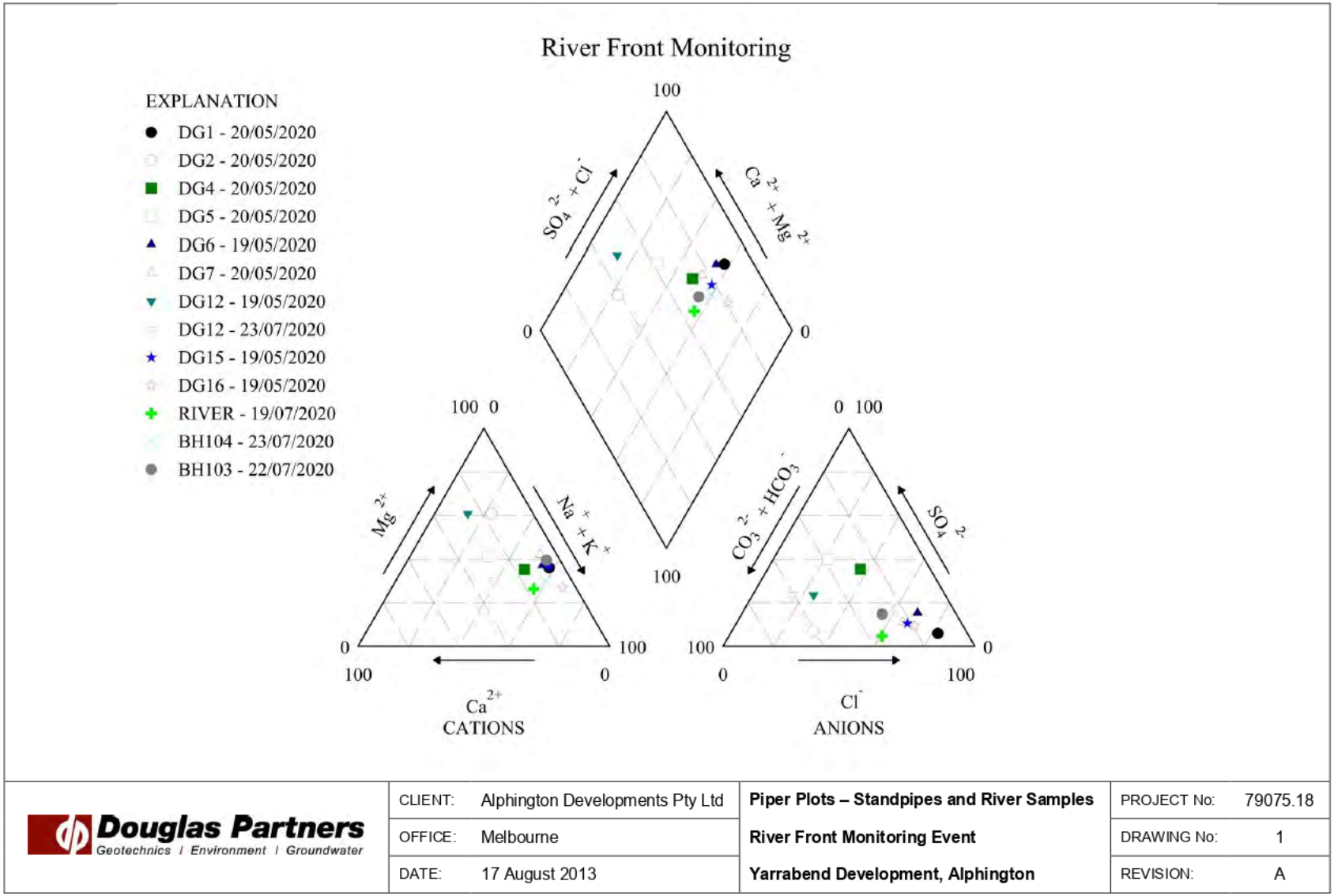
Page: **Page 6 of 6**
Batch No: **20-35588**
Report Number: **839905**
Client: **Douglas Partners Pty Ltd**
Client Program Ref: **79075-18 Alphington**

					Sample Value	Expected Value	% Recovery
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6645458	NCP	Chloride	Chloride, as Cl	mg/L	71	270	101
6645458	NCP	SO4 DA	Sulphate, as SO4	mg/L	63	260	112
6645531	NCP	TDS at 180°C +/- 5°C	Total Dissolved Solids	mg/L	28	2500	99.3
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6648013	SW2	Soluble OES Scan	Potassium	mg/L	6.7	8.7	88.0

Samples not collected by ALS and are tested as received.

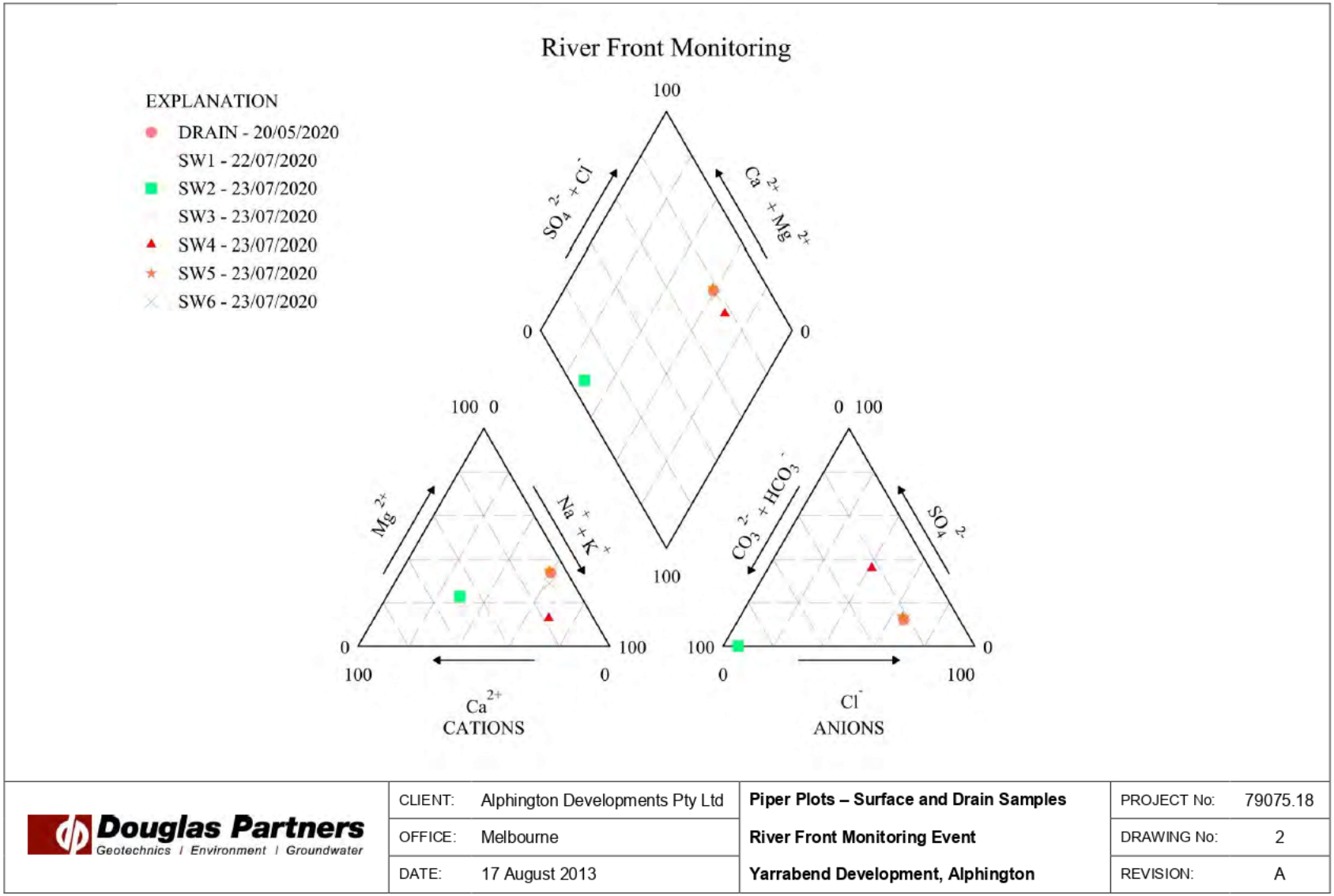
A blank space indicates no test performed. Soil microbiological testing was commenced within 4 days from the day collected unless otherwise stated.
Water microbiological testing was commenced on the day received and within 24 hours of sampling unless otherwise stated.
MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



Douglas Partners Geotechnics / Environment / Groundwater	CLIENT:	Alphington Developments Pty Ltd	**Piper Plots – Standpipes and River Samples**	PROJECT No:	79075.18
	OFFICE:	Melbourne	**River Front Monitoring Event**	DRAWING No:	1
	DATE:	17 August 2013	**Yarrabend Development, Alphington**	REVISION:	A

Attachment 1 - Yarra River Northern Bank Slump Monitoring Report, Douglas Partners, December 2020



Douglas Partners Geotechnics / Environment / Groundwater	CLIENT:	Alphington Developments Pty Ltd	**Piper Plots – Surface and Drain Samples**	PROJECT No:	79075.18
	OFFICE:	Melbourne	**River Front Monitoring Event**	DRAWING No:	2
	DATE:	17 August 2013	**Yarrabend Development, Alphington**	REVISION:	A

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

Douglas Partners
Geotechnics / Environment / Groundwater

Integrated Practical Solutions

Report on Yarra River Northern Bank Slump Management Advice

Yarrabend: Riverfront Area
Heidelberg Road, Alphington

Prepared for
Alphington Developments Pty Ltd

Project 79075.12
R.024.Rev0
21 January 2021

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

Douglas Partners
Geotechnics / Environment / Groundwater

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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature	Date
Author	Andrew Murphy	21 January 2021
Reviewer		

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Douglas Partners
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Appendix A : Notes about This Report

Appendix B : Drawing 1 Rev1 Yarrabend: Geotechnical Investigations and Groundwater Contour Plan.
Drawing 2 Site Contours and Cross Section Locations.
Groundwater level, rainfall and river level Plots Figures 1d and 1e. From DP report (December 2020).
Conceptual Cross Sections AA and BB
Reeds Main Drain Plan and Longitudinal Cross Section

Appendix C : Extract of Douglas Partners (March 2020), Section 3.3
Extract of Douglas Partners (March 2020). Section 8.2

Appendix D : Insitu Permeability Test Results
Slump Survey Data and Plans
DP Borehole Logs November – December (2019)

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

Report on Yarra River Northern Bank Slump Management Advice
Yarrabend: Riverfront Area
Heidelberg Road, Alphington

1. Introduction and Background

This report prepared by Douglas Partners Pty Ltd (DP) provides geotechnical advice relating to management of slumping instances on the northern bank of the Yarra River adjacent to the Yarrabend development site. The advice is focused on the southern portion of the site adjacent to the northern bank of the Yarra River. It is understood that an approximate 30 m wide parcel of land, adjacent to the river, is intended for ongoing public access and includes a walking track with variable tree and shrub cover.

The report includes summaries of previous groundwater condition investigation findings and the results of periodic slump monitoring works undertaken through during 2020. Groundwater monitoring levels and slug test data collected in December 2020 are also presented.

Relevant previous DP reports are:

- Douglas Partners (July 2019). Yarra River Northern Bank Slump / Erosion and Tree Toppling Instance, Yarrabend Alphington. (Ref: 79075.12.R.003.Rev0).
- Douglas Partners (March 2020). Report on Geotechnical Investigation and Groundwater Study Yarrabend Riverfront Area Heidelberg Road, Alphington. (Ref: 79075.12.R.012.Rev0).
- Douglas Partners (December 2020). Report on Yarra River: Northern Bank Slump Monitoring Report - 3 . Yarrabend, Alphington: (Ref: 79075.12.R.023.Rev0).

Information presented in the above reports is not repeated in this report, and reference should be made to the reports if necessary.

The Yarrabend site is shown on drawing 1, Appendix B and Figure 1 below. The approximate 18 ha site comprises former industrial and non-industrial areas.

Figure 1: Former AMCOR area (orange) and residential area (yellow) North to Right

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The development areas comprise:

- The approximate 14-ha former AMCOR paper mill over the western majority of the site including the area west of the former Latrobe Avenue (upgraded road to be named Mills Boulevard). AMCOR Areas east of Latrobe Avenue were limited to sub-areas fronting Heidelberg Road and a zone between Lugton Road and the Yarra River front. The AMCOR site comprised numerous industrial buildings, pavements, pipelines and miscellaneous industrial units.
- An approximate 4-ha former residential area located between Parkview Road, Latrobe Avenue and Lugton Street. It is noted that most of the houses in this parcel were demolished in 1986 and the area was vacant until Yarrabend development works commenced.

DP are advised by AD that, at the time of writing, a total 4 ha area of the site is owned by third parties and not controlled by AD. A further 3.5 ha of the development have been completed and handed over to owners.

DP was engaged by Alphington Developments Pty Ltd (AD), the developer of "Yarrabend" comprising approximately 70% of the AMCOR paper mill site. DP was engaged by Alphington Developments Pty Ltd (AD), the Yarrabend developer. DP have provided consulting geotechnical services for various phases of the Yarrabend development, including civil earthworks construction and site preparation works since 2016. It is understood that the City of Yarra (COY) and Melbourne Water (MW) are stakeholders in the management of the riverfront area adjacent to the southern boundary of the Yarrabend site. It is noted that Alluvium Consulting Australia Pty Ltd (ACA) act as consultants for the COY in relation to the riverfront slumping issue.

2. Riverbank Slump Issue Overview and Recommended Approach

Riverbank slumping occurred on the northern bank of the Yarra River adjacent to the Yarrabend development between December 2018 and early 2020. Historic slumping occurred along the riverfront in the decades prior to demolition of the paper mill, particularly in the western portion of the area. The recent slump instances occurred in the eastern portion of the riverfront. The western part of the riverfront area is not subject to recent slump movement and does not represent an ongoing slump issue at the time or writing.

The relevant recent slumps are described in Douglas Partners (March 2020), section 3.3 and the relevant text is attached in Appendix C. The slump instances occurred at three localised positions, directly adjacent to the river edge. The locations are presented on Figure 2. No slumping or instability issues have been identified away from the river edge.

The main surface geological unit over the Yarrabend development site is the Quaternary Age Newer Volcanics basalt. The basalt unit extends from near southern site boundary adjacent to the Yarra River bank, over the Yarrabend site and beyond. The site and surrounding areas rise to the north and north west. The southern edge of the basalt flow forms an 8 m to 11 m high embankment above the northern bank of the Yarra. The basalt overlies the Silurian sedimentary rock unit. Silurian siltstone underlies the river and is exposed on its southern bank.

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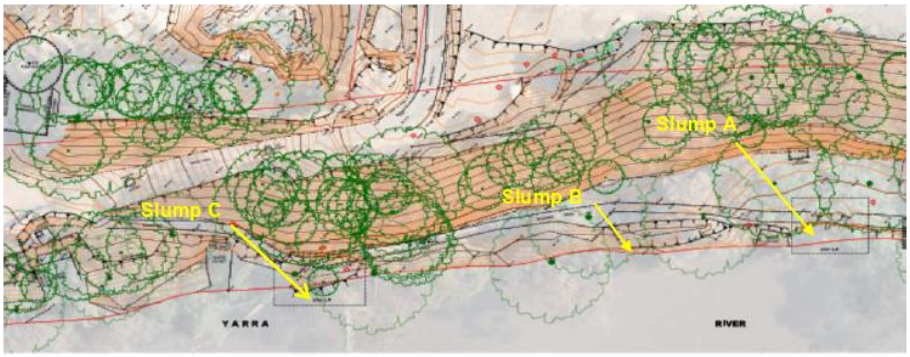

Figure 2: Slump Locations and (Reeds survey drawing extract, January 2020)

The southern edge of the basalt unit at is set between 10 m and 40 m north of the riverbank. There is a natural alluvial terrace with variable thickness surface fill between the basalt flow and the bank. The surface of the alluvial terrace has a slight grade down to the river.

The recent slumps are located in the eastern part of the development where there are steep (sub vertical) 2 m to 3 m high riverbanks. Recent instability has not been observed in the basalt (and overlying soil) embankment north of the terrace.

A number of factors were identified as contributing to the slumping instances, discussed in Douglas Partners (March 2020) Section 8.2, attached in Appendix C. Groundwater conditions in the alluvial terrace were identified as a critical factor contributing to the slump issue. Groundwater conditions in the terrace alluvium are influenced by upgradient conditions as well as fluctuating river water levels.

The main upgradient feature affecting groundwater conditions in the terrace alluvium is the basalt rock aquifer. This aquifer extends across the site into surrounding areas well beyond the northern and eastern site boundaries. General flow direction of the aquifer is to the south and south east. Groundwater moves into the Yarrabend site, across the Heidelberg Rd and Chandler Highway site boundaries and across the Yarrabend site with a general flow direction to the south and south-east. Groundwater from the aquifer flows through the terrace alluvium and into the Yarra River. There are a number of other less significant upgradient flow pathways discussed in Section 5.

The groundwater surface level at the southern edge of the basalt flow, at the interface with the terrace alluvium sets the groundwater water level at the bank. Water levels in the Yarra River also have a significant impact on groundwater conditions at the bank, discussed in more detail in Section 5.

Given the significance of the groundwater level at the southern edge of the basalt aquifer on riverbank stability, it is recommended that sub-surface drainage be adopted as the key measure to manage bank slumping along the eastern part of the Yarrabend riverfront. This approach is supported by cessation of significant slump movements indicated by survey and visual monitoring since the installation of interim sub-surface drainage on the riverfront in March 2020. Periodic monitoring is also recommended.

The rational for this approach is discussed in sections 4 to 6 of this report. Sub-surface drainage recommendations are discussed in Section 7.

3. Groundwater Level Monitoring Data

3.1 Methods and Data

Data relating to groundwater monitoring are presented in Douglas Partners (December 2020). Well information and automated logger installation numbers are presented in Table 1. The locations of the wells are shown on Drawing 1, Appendix B. The Solinst water level loggers record levels at 0.5 hr intervals.

Table 1: Monitoring Well Information

Borehole Number	RL Ground Surface (m) AHD	Screened Interval Depth / (Unit)		Automated Logger Installed
		Depth (m)	Unit	
DG1	16.2	5 - 13.5	BASALT	✓
DG2	18.4	4 - 13.5	BASALT	-
DG4	10.5	3 – 5	ALLUVIUM (SILTSTONE BELOW)	-
DG5	11.8	4 – 10	SILSTONE (RESIDUAL ABOVE)	-
DG6	18.7	5.5 – 15	STRADDLES BASALT & SILTSTONE	✓
DG7	19.3	5.5 – 15	BASALT	✓
DG12	10.5	2.5 - 4.5	CLAY ALLUVIUM (SILSTONE BELOW)	-
DG13	9.4	2 – 4	CLAY ALLUVIUM	✓
DG15	7.9	1 – 2	CLAY ALLUVIUM (PERCHED)	✓
DG16	8.2	6 – 7	SILSTONE (RESIDUAL ABOVE)	✓

The loggers were installed in March 2020, with data collected up to December 2020. Manual readings were taken from the wells from December 2019 to December 2020. Rainfall records were obtained from the Melbourne Water website, for a gauge at Alphington. River levels were obtained from the same website for the Yarra River Level gauge at the Chandler Highway bridge with a gauge level of 5 m AHD.

Well monitoring, rainfall and river level data are presented on selected groundwater data plots from the latest DP monitoring report, Douglas Partners (December 2020), attached in Appendix B. The selected plots present data for wells relevant to Slump C (Figure 1d) and Slump A (Figure 1e).

Initial and final groundwater levels in the monitoring wells are presented in Table 2.

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

Table 2. Initial and Final Water Monitoring Well Levels

Borehole / Well Number	Aquifer	Initial Reading December 2019 (m)	Reading December 2020 (m)	Change (m)	Comment
DG1	BASALT	10.94	11.28	+0.34	Minor seasonal fluctuation. Peak in winter. Minor annual increase.
DG2	BASALT	12.93	12.91	-0.02	Minor seasonal fluctuation peaks in late autumn. Slight annual decrease.
DG6	BASALT	9.93	10.25	+0.32	Minor seasonal fluctuation. Peaks in winter. Minor annual increase.
DG7	BASALT	9.88	10.23	+0.37	Minor seasonal fluctuation. Peak in winter. Minor annual increase.
DG4	ALLUVIUM / SILTSTONE	5.47	6.11	+0.64	Fluctuation due to river influence.
DG5	SILTSTONE	7.48	7.37	-0.11	Fluctuation due to river influence. Little annual variation.
DG12	ALLUVIUM	8.17	6.60	-0.57	Fluctuation due to river level influence, overall annual decrease, inferred to be due to interim drainage installation
DG13	ALLUVIUM	7.48	6.53	-0.95	Fluctuation due to river level influence, overall annual decrease, inferred to be due to interim drainage installation
DG15	ALLUVIUM	7.32	7.40	+0.08	No significant change.
DG16	SILTSTONE	6.79	7.09	+0.3	Fluctuation due to river influence.

3.2 Conclusion / Interpretative Comment on Groundwater Conditions

The main upgradient groundwater feature affecting groundwater conditions at the river bank is the level of the water in the basalt adjacent to the eastern riverfront. This level determines groundwater levels across the terrace alluvium which are also influenced by river level. The monitoring data plots attached (see Figures 1d and 1e, Appendix B) show a close correlation between groundwater and river levels in monitoring wells in the terrace alluvium (DG12, DG13, DG16).

General water levels across the site are shown on the groundwater contour plan on Drawing 1, Appendix B. The contours plan was prepared using DPs monitoring well data combined with selected data from historical wells installed by others. While there is a reasonable amount of groundwater data for the riverfront area for the last 12 months, historical data directly adjacent to the river is limited, fluctuates and the upgradient contours are approximate. DG7

The main conclusions drawn from the available groundwater data are:

- That the basalt aquifer appears to exhibit minor seasonal variation with an amplitude in the order of 0.3 m. Levels appear to peak in late autumn with the lowest point around December;
- There was a slight rise in levels, 0.32 m to 0.37 m over 12 months in the wells above the bank (DG1, DG6 and DG7).

The minor rise could be associated with weather conditions and high rainfall in autumn 2020 along with a number of other possible influences including possible increased aquifer flows from areas to the north and north west of Yarrabend. It should be kept in mind that the basalt aquifer extends many km beyond the site boundary, with groundwater grading toward Yarrabend over many km's.

Upgradient construction activity at Yarrabend in 2019 and 2020 has involved an overall increase in building and pavement coverage with sealed areas diverting runoff to the stormwater system, resulting in a decrease in potential upgradient recharge.

Regardless of the reason for the slight rise of groundwater level in the basalt wells in 2020, it is anticipated that future groundwater level changes in the basalt will be due broad on and off site seasonal or longer-term rainfall conditions. Planned development related site alteration will result in increased sealed surfaces and likely reduced recharge, with increased flow into the stormwater system through sealed pipes.

4. Insitu Rising Head (Slug) Tests and Permeability Estimates.

Insitu rising head tests were undertaken in each of the groundwater monitoring wells. The tests involved removal of water from the well. Recovery levels were recorded using an automatic level logger. The results are attached in Appendix D. The estimated permeability values are presented in Table 3 along with published typical ranges for the key geological units.

The key finding was that the tests confirmed a higher permeability in the basalt than the alluvium and siltstone materials, as expected for fractured basalt rock. The results were generally consistent with published permeability estimates for the respective geological units.

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It is noted that the tests indicated higher than expected permeability for insitu tests in the predominant clay terrace alluvium. The estimated permeability values were consistent with the presence of higher permeability lenses and seems typically encountered in alluvial deposits, with some evidence of these in the boreholes. It is noted that localised sand seems can be difficult to identify during drilling. Note is also made of a probable high permeability weathered basalt layer intercalated in the alluvium in borehole DG16, near Slump A.

Table 3. Initial and Final Water Monitoring Well Levels

Borehole / Well Number	Material / Geological Unit	Estimated Permeability from insitu tests m/sec	Published Permeability Range* m/sec	Comment
DG1	BASALT	1.50E-05	1.2E-5 to 4.1E-4	Insitu tests consistent with published range for Newer Volcanics Basalt
DG2	BASALT	7.30E-05		
DG6	BASALT	3.2E-05		
DG7	BASALT	4.3E-04		
DG4	ALLUVIUM / SILTSTONE	1.10E-05	1.2E-08 to 1.2E-06	Higher than expected for predominant clay alluvium, but consistent with presence of higher permeability sandy zones / seems
DG5	SILTSTONE	2.1E-07		
DG12	ALLUVIUM	1.60E-05		
DG13	ALLUVIUM	1.40E-06		
DG15	ALLUVIUM	2.60E-06		
DG16	SILTSTONE	9.30E-09	2.3E-07 to 1.2E-05	Test result lower than published value for basement rock unit. Consistent with lower permeability, upper weathered layer.

* Peck-1992 Engineering Geology of Melbourne

5. Conceptual Geological / Groundwater Model

As previously mentioned a groundwater surface contour plan is attached on Drawing 1 in Appendix B. The contours are included to provide an overview of conditions and flow directions.

Scaled cross-section drawings are presented in Appendix B, for locations shown on Drawing 2, i.e. Slump A (cross-section B-B) and Slump C (cross-section A-A). The cross sections present conceptual models of groundwater flow pathways between the different geological units as well as between the river and the underlying siltstone and adjacent alluvial terrace.

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

Section geometry wad determined from the Reeds survey drawing presented in Drawing 2. The Reeds survey drawing includes river floor level data from hydrographic survey carried out in 2020. The distribution of the geological units on the sections was determined from DP's 2019 borehole data. Borehole logs are attached in Appendix B. The geological boundaries between boreholes were interpolated and are approximate. The groundwater levels on the sections are from DP's monitoring data.

The slumps have occurred in narrow zones at the sub-vertical riverbank. The key groundwater condition from a stability perspective is therefore the groundwater surface level in the terrace alluvium, at the riverbank. The cross sections show the following key features:

Basalt Aquifer

a) Groundwater flow through the fractured basalt rock mass to the south and south-east with an estimated surface gradient of 1.75%;

b) Slight migration of groundwater from the basalt unit into the underlying Silurian unit. The basement rock typically includes a low permeability aquitard at its surface and groundwater flows from the basalt to the Silurian unit are typically minor. The key flow pathway from the basalt aquifer is into the terrace alluvium at its southern edge.

c) Seepage occurs from the basalt face (through the cover soil) when / if the groundwater surface emanates above the toe of the basalt embankment. This occurred prior to the installation of the interim sub soil drain installed in the area of Section BB (Slump A) in March 2020. When this occurs, the water runs along the surface of the terrace unit to the river. It is noted that a perched water table formed on the terrace surface when this occurred at in the Slump A area, contributing to increased soil moisture and bank slumping. Prevention of this scenario is a benefit of the installation of suitable drainage to lower groundwater at the southern edge of the basalt aquifer.

Silurian Basement Rock

d) Groundwater movement in the Silurian aquifer is likely to be to the south to the river, with significantly lower flow rates than flows through the basalt aquifer. The Silurian aquifer is likely to be confined by the weathered, low permeability zone at its surface and the overlying clay terrace alluvium.

   It is noted that monitoring in DG16 indicated hydraulic connection between the river and the Silurian siltstone, with groundwater level fluctuation coinciding with river level variation (see Figures 1e and 1d Appendix B). Limited infiltration of water into the siltstone occurs with increasing river levels. Groundwater flows into the siltstone through this mechanism are expected to be low due to low permeability of the Silurian unit. However, the mechanism is likely to cause pore pressure increases in the overlying alluvium near the river edge with a consequent reduction in bank stability. Pore pressures in the alluvium are likely to occur after river levels recede contributing to bank instability following river level drawdowns. It is noted that upgradient head (level) control in the basalt through sub surface drainage would mitigate general groundwater pressure in the Silurian aquifer. This would aid in limiting pore pressure development the Silurian Alluvium interface improving bank stability.

Terrace Alluvium

e) Migration of groundwater from the basalt into and though the terrace alluvium towards the river. The groundwater surface in the terrace grades down from the basalt interface towards the riverbank. The groundwater height at the bank depends on: the groundwater level at the basalt / alluvium interface and the horizontal distance between the edge of the basalt and the riverbank (as well as the river water level). It is noted that slump C (Section A-A) has occurred at the point on the river where the edge of the basalt is at its closest to the riverbank.

f) The boreholes drilled through the terrace alluvium (DG12, DG13, DG15 and DG16) indicated predominant low permeability very stiff clay soils and these generally act as aquitards. However localised sandy lenses and seems are common in alluvial deposits and it is likely that groundwater movement in the terrace is governed by these features. The intercalated basalt layer encountered in DG16 is also a potential flow pathway, see Section B-B. It is noted that the presence of high permeability zones could be a contributing factor, transmitting water to localised zones inducing slumps. It is noted that higher permeability features in alluvial deposits occur in variable shaped lenses and zones attempts to identify their location through drilling is impractical.

g) Monitoring wells in the terrace alluvium indicated level fluctuations coinciding with variation in river levels (see Figures 1e and 1d attached). This is consistent with migration of water into and out of the alluvium, near the bank with rises and falls in river levels. It is suspected that this occurs through higher permeability seems. The significance of river level fluctuation on bank stability is unclear. It is likely that that critical instability conditions occur due to a combination of upgradient groundwater condition effects and falls in river level following elevated levels.

h) Inundation when the river level rises above the terrace surface. It is noted that this has this has occurred on several occasions in 2020. Monitoring well data for these events indicates this to have a similar effect to g).

It is noted that the water samples were collected from the monitoring wells and at selected locations where seepage was emanating from the bank for chemical analysis. The data was used to prepare Piper Plots and compare aquifer properties. The results are presented in DP-December 2020 and reference can be made to this report as necessary.

The main finding of the water chemistry analysis was that there were consistent chemical signatures for samples from the basalt wells and samples of water emanating from the alluvium at the riverbank, confirming the basalt aquifer as the water source for groundwater at the bank.

6. Monitoring Survey Results and Comment

Periodic survey monitoring of the two slump areas (Slump A and Slump C) is being undertaken by Reeds surveyors, with six survey monitoring stakes at each of the slump sites, referred to as slump east and slump west. The stakes include positions just outside and within the slumps. The surveys were undertaken weekly from 3 March to 23 June 2020 and then Quarterly on 15 September and 08 December 2020. Plans showing the survey points and the results, i.e. incremental and cumulative horizontal and vertical movements in (mm) are attached, Appendix D.

Key observations from the survey data, from 3rd March to December 2020 are:

- Slump East (referred to elsewhere in this report as Slump A): Some lateral (18 mm to 63 mm) and vertical (15 mm to 23 mm) movements were recorded between initial survey on 3 March, and subsequent surveys on 17 and 24 March, with negligible movement in the subsequent 13 weekly readings. It is noted that subsurface drainage works, were carried out during the week between 17 and 24 March, including the slump area and the movement appears to be related to these earthworks. Horizontal and vertical movements from June 23 to September 15 were negligible.

  The December readings were indicated 15 mm to 21 mm movement at two points in the slump towards the river with combined 7 mm downward movement. It is noted that movements outside the slump were very slight 1 mm to 4 mm. While these movements represent an increase compared to the previous period of negligible movement, the movement magnitudes follow an inundation event and are insignificant in comparison to the initial slump height. It is recommended that quarterly monitoring continue.

- Slump West (referred to elsewhere in this report as Slump C): Lateral movement towards the river, ranging from 7 mm to 11 mm in the initial two weeks and negligible vertical movement. Negligible further movement in the 13 weekly subsequent surveys to 23 June. Horizontal and vertical movements from June 23 to September 15 ranged from 1 mm to 3 mm, i.e. very slight. The

  December readings indicated movement of the points in and above the slump by between 6 mm and 12 mm towards the river with negligible vertical movement. This occurred over three months and incorporated an inundation event. It is recommended that quarterly monitoring continue.

7. Slump Management Advice – Drainage Options

7.1 Rationale for Adoption of Sub Surface Drainage Approach

The recent slump instances on the Yarrabend riverfront have occurred at three positions in the eastern area as shown on Figure 2. Ongoing visual monitoring by DP over 2020 has not exhibited any other recent riverbank slumping instances in the eastern or western portions of the riverfront.

There is no current evidence indicating the need for measures in the western area other than continuing the periodic monitoring. It is noted that the western part of the river front differs from the eastern area in two main ways;

- There has been historical slumping, south of the existing road, flattening the river bank and increasing stability;
- The edge of the basalt embankment and associated basalt aquifer is located well north of the riverbank (30 m to 40 m) so that upgradient groundwater levels drawdown well before they reach the river edge. This means that upgradient groundwater conditions have less influence on bank stability and sub-surface drainage is not required to lower groundwater levels adjacent to the bank.

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There are two main site features contributing to the occurrence of river edge slumping occurrences in the eastern Yarrabend riverfront area;

- The natural riverbank is subvertical (very steep). The steepness of the natural bank affects stability, with the riparian conditions (vegetation and trees root systems) contributing to bank stability;
- The close proximity of the riverbank to the southern edge of the basalt unit means that the groundwater level at the river edge is sensitive to changes in the height of the aquifer in the basalt embankment and can result in elevated groundwater levels at the bank. The riverbank is located close (10 m to 20 m) to the toe of a basalt flow in this area.

  If the groundwater level at the basalt / terrace interface, is close to, or higher than the river terrace surface, groundwater emanates from the riverbank above the river level and this can also contribute to bank instability.

Installation of suitable interim and long-term sub-surface drainage measures are considered to be the most practical approach to manage the river bank slump issue subject to continuing periodic survey monitoring.

The groundwater conditions and pathways affecting conditions at the riverbank are discussed in Section 5. Considering the conceptual groundwater interactions discussed in Section 5, there are several benefits derived from installing sub-surface drainage to control groundwater levels at the basalt / river terrace interface. These are:

a) Supressing upgradient groundwater levels through the terrace and at the river edge with a consequent bank stability improvement;

b) With a suitable drain configuration, seepage is prevented from emanating from the basalt embankment face and flowing across the surface of the river terrace. This;

   i. prevents instability due to water introduction and puddle formation from surface flows across the terrace and over the bank. Water entry to existing slumps should be avoided due to additional potential for infiltration into soil defects and fissures at the slump interface;

   ii. improves stability of the soils on any affected soils above the basalt on embankment; and

   iii. prevents ground surface softening and pedestrian track deterioration on the terrace surface

c) Controlling groundwater levels in the basalt, at its southern edge, lessens hydraulic head in the underlying siltstone aquifer. While flows from the siltstone to the alluvium are expected to be slight, due to low permeability of the siltstone, minimising head in the siltstone aquifer limits excess pore pressure development at the base of the alluvium, with a consequent stability improvement at the bank.

It is noted that upgradient groundwater control through sub surface drainage does not influence river levels. However reduced upgradient groundwater levels in the terrace, provides an increased buffer against reduced stability from the combined effect of river and upgradient influences.

Other benefits with the drainage / monitoring approach are:

- Avoidance of other more disruptive measures to modify the bank, that cannot be installed without completely destroying the existing natural riparian conditions;
- Sub surface drainage will be required to manage item b) iii) regardless of other bank stability management concerns;

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- the interim drainage measures installed in March 2020 have been effective to date in terms of;
  - track condition and pedestrian access;
  - no new slumping instances have developed; and
  - the existing slumps have not significantly moved, as demonstrated by the survey data collected since the drainage was installed.

7.2 Suggested Drainage Options

As mentioned above it is recommended that the long-term drainage solution be designed to drain the basalt aquifer close to, or just back from the interface with the river terrace.

Extracting water from the rock formation results in less erosion / clogging maintenance issues than will apply to a drain installed in the terrace alluvium. Another benefit of this approach is that this also improves groundwater conditions in the underlying siltstone unit. It is also noted that drains installed in the alluvium involves drainage from lower permeability soils (clay) and will be less efficient in terms of water extraction than drains installed in the basalt.

Another benefit of drain installation in the rock unit, is that passage through the rock will avoid drain installation in the terrace soils, noting that sub soil drains can deliver water to the ground as well as extract water from it. Rock installation mitigates migration of water from the sub surface drain into the terrace soils.

From a design perspective the drain outlet should be as low as is practical but slightly higher than the mean river level, say 6 m to 7 m to prevent backflow from the river. Ideally the drain should extract water from the southern edge of the basalt with closed form pipe use to carry water via gravity out through the terrace alluvium, without delivering water into the terrace soils.

There are two potential drain installation methods for a drain in the basalt. These are;

a) Trenched installation from the river terrace, taken as far as is practical into the basalt embankment; or

b) Using trenchless drilling methods to install a permeable drainage conduit along the river at suitable depth and position, near the southern edge of the basalt unit.

The disadvantages of a) are that it requires use of excavators on the river terrace and will necessitate unavoidable disturbance of site soils and vegetation and is less optimal in terms placement at the required location and providing the required drainage function.

The main disadvantage of b) is the cost associated with directionless drilling through rock. Sub surface drainage through directionally drilled holes is not a common practice and there would have to be careful liaison with contractors regarding methods and materials. The benefit of a directionally drilled drain installation is that the work can be performed from the vacant site to the north of the embankment, with no disturbance to the river front. There would also be flexibility in connecting to the main drain as an alternate discharge point, without trenching through the river front area to reach the connection point. It is noted that the invert level at the downstream main drainage outlet is 7 m (from the Reeds drain design drawing, attached).

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8. References

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- Reeds (January 2018) Yarrabend Main Drain Stage 1 – South Section Layout Plan and Longitudinal Cross Section, 22185G/MD1 Version G Sheets 2 and 4 of 8.
- Reeds (January 2020) Plan of Features and Levels. 626 Heidelberg Road, Alphington. Ref: 22185/G Version C, Sheets 1 to 4.

9. Limitations

Douglas Partners (DP) has prepared this report for the Yarrabend Riverfront as instructed by Alphington Developments Pty Ltd. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

The scope for work for this investigation/report did not include the assessment of surface or sub-surface materials or groundwater for contaminants.

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Appendix A

About This Report

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About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

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About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

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Cone Penetration Tests

Douglas Partners

Introduction

The Cone Penetration Test (CPT) is a sophisticated soil profiling test carried out in-situ. A special cone shaped probe is used which is connected to a digital data acquisition system. The cone and adjoining sleeve section contain a series of strain gauges and other transducers which continuously monitor and record various soil parameters as the cone penetrates the soils.

The soil parameters measured depend on the type of cone being used, however they always include the following basic measurements

- Cone tip resistance q_c
- Sleeve friction f_s
- Inclination (from vertical) i
- Depth below ground z

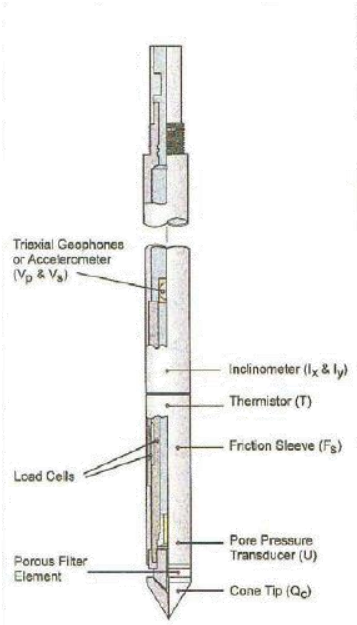

Figure 1: Cone Diagram

The inclinometer in the cone enables the verticality of the test to be confirmed and, if required, the vertical depth can be corrected.

The cone is thrust into the ground at a steady rate of about 20 mm/sec, usually using the hydraulic rams of a purpose built CPT rig, or a drilling rig. The testing is carried out in accordance with the Australian Standard AS1289 Test 6.5.1.

Figure 2: Purpose built CPT rig

The CPT can penetrate most soil types and is particularly suited to alluvial soils, being able to detect fine layering and strength variations. With sufficient thrust the cone can often penetrate a short distance into weathered rock. The cone will usually reach refusal in coarse filling, medium to coarse gravel and on very low strength or better rock. Tests have been successfully completed to more than 60 m.

Types of CPTs

Douglas Partners (and its subsidiary GroundTest) owns and operates the following types of CPT cones:

Type	Measures
Standard	Basic parameters (q_c, f_s, i & z)
Piezocone	Dynamic pore pressure (u) plus basic parameters. Dissipation tests estimate consolidation parameters
Conductivity	Bulk soil electrical conductivity (σ) plus basic parameters
Seismic	Shear wave velocity (V_s), compression wave velocity (V_p), plus basic parameters

Strata Interpretation

The CPT parameters can be used to infer the Soil Behaviour Type (SBT), based on normalised values of cone resistance (Qt) and friction ratio (Fr). These are used in conjunction with soil classification charts, such as the one below (after Robertson 1990)

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Cone Penetration Tests

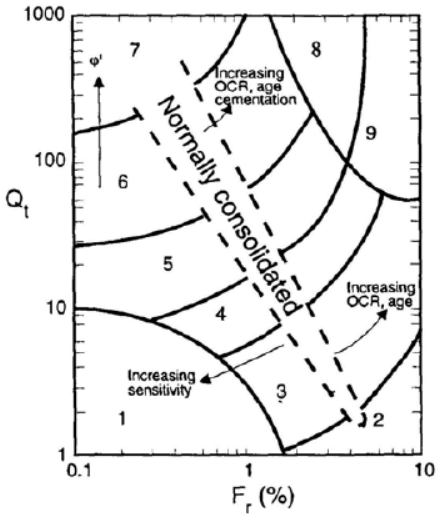

Figure 3: Soil Classification Chart

DP's in-house CPT software provides computer aided interpretation of soil strata, generating soil descriptions and strengths for each layer. The software can also produce plots of estimated soil parameters, including modulus, friction angle, relative density, shear strength and over consolidation ratio.

DP's CPT software helps our engineers quickly evaluate the critical soil layers and then focus on developing practical solutions for the client's project.

Engineering Applications
There are many uses for CPT data. The main applications are briefly introduced below:

Settlement
CPT provides a continuous profile of soil type and strength, providing an excellent basis for settlement analysis. Soil compressibility can be estimated from cone derived moduli, or known consolidation parameters for the critical layers (eg. from laboratory testing). Further, if pore pressure dissipation tests are undertaken using a piezocone, in-situ consolidation coefficients can be estimated to aid analysis.

Pile Capacity
The cone is, in effect, a small scale pile and, therefore, ideal for direct estimation of pile capacity. DP's in-house program ConePile can analyse most pile types and produces pile capacity versus depth plots. The analysis methods are based on proven static theory and empirical studies, taking account of scale effects, pile materials and method of installation. The results are expressed in limit state format, consistent with the Piling Code AS2159.

Dynamic or Earthquake Analysis
CPT and, in particular, Seismic CPT are suitable for dynamic foundation studies and earthquake response analyses, by profiling the low strain shear modulus G_0. Techniques have also been developed relating CPT results to the risk of soil liquefaction.

Other Applications
Other applications of CPT include ground improvement monitoring (testing before and after works), salinity and contaminant plume mapping (conductivity cone), preloading studies and verification of strength gain.

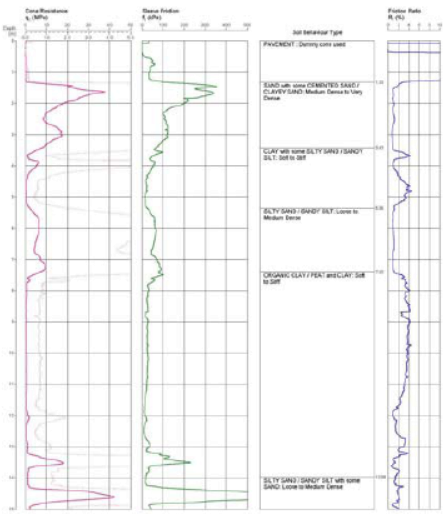

Figure 4: Sample Cone Plot

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Rock Descriptions

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Rock Strength

Rock strength is defined by the Unconfined Compressive Strength and it refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects.

The Point Load Strength Index $Is_{(50)}$ is commonly used to provide an estimate of the rock strength and site specific correlations should be developed to allow UCS values to be determined. The point load strength test procedure is described by Australian Standard AS4133.4.1-2007. The terms used to describe rock strength are as follows:

Strength Term	Abbreviation	Unconfined Compressive Strength MPa	Point Load Index * $Is_{(50)}$ MPa
Very low	VL	0.6 - 2	0.03 - 0.1
Low	L	2 - 6	0.1 - 0.3
Medium	M	6 - 20	0.3 - 1.0
High	H	20 - 60	1 - 3
Very high	VH	60 - 200	3 - 10
Extremely high	EH	>200	>10

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$. It should be noted that the UCS to $Is_{(50)}$ ratio varies significantly for different rock types and specific ratios should be determined for each site.

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Residual Soil	RS	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely weathered	XW	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible
Highly weathered	HW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately weathered	MW	The whole of the rock material is discoloured , usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly weathered	SW	Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh	FR	No signs of decomposition or staining.
Note: If HW and MW cannot be differentiated use DW (see below)		
Distinctly weathered	DW	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching or may be decreased due to deposition of weathered products in pores.

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Rock Descriptions

Degree of Fracturing
The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with occasional fragments
Fractured	Core lengths of 30-100 mm with occasional shorter and longer sections
Slightly Fractured	Core lengths of 300 mm or longer with occasional sections of 100-300 mm
Unbroken	Core contains very few fractures

Rock Quality Designation
The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq \text{100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or stronger. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing
For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

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Sampling Methods

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Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

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Sampling Methods

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

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Soil Descriptions

Douglas Partners

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are generally based on Australian Standard AS1726:2017, Geotechnical Site Investigations. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	19 - 63
Medium gravel	6.7 - 19
Fine gravel	2.36 – 6.7
Coarse sand	0.6 - 2.36
Medium sand	0.21 - 0.6
Fine sand	0.075 - 0.21

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

The proportions of secondary constituents of soils are described as follows:

In fine grained soils (>35% fines)

Term	Proportion of sand or gravel	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	>30%	Sandy Clay
With	15 – 30%	Clay with sand
Trace	0 - 15%	Clay with trace sand

In coarse grained soils (>65% coarse)
- with clays or silts

Term	Proportion of fines	Example
And	Specify	Sand (70%) and Clay (30%)
Adjective	>12%	Clayey Sand
With	5 - 12%	Sand with clay
Trace	0 - 5%	Sand with trace clay

In coarse grained soils (>65% coarse)
- with coarser fraction

Term	Proportion of coarser fraction	Example
And	Specify	Sand (60%) and Gravel (40%)
Adjective	>30%	Gravelly Sand
With	15 - 30%	Sand with gravel
Trace	0 - 15%	Sand with trace gravel

The presence of cobbles and boulders shall be specifically noted by beginning the description with 'Mix of Soil and Cobbles/Boulders' with the word order indicating the dominant first and the proportion of cobbles and boulders described together.

May 2019

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

Soil Descriptions

Cohesive Soils
Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	VS	<12
Soft	S	12 - 25
Firm	F	25 - 50
Stiff	St	50 - 100
Very stiff	VSt	100 - 200
Hard	H	>200
Friable	Fr	-

Cohesionless Soils
Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	Density Index (%)
Very loose	VL	<15
Loose	L	15-35
Medium dense	MD	35-65
Dense	D	65-85
Very dense	VD	>85

Soil Origin
It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Extremely weathered material – formed from in-situ weathering of geological formations. Has soil strength but retains the structure or fabric of the parent rock;
- Alluvial soil – deposited by streams and rivers;
- Estuarine soil – deposited in coastal estuaries;
- Marine soil – deposited in a marine environment;
- Lacustrine soil – deposited in freshwater lakes;
- Aeolian soil – carried and deposited by wind;
- Colluvial soil – soil and rock debris transported down slopes by gravity;
- Topsoil – mantle of surface soil, often with high levels of organic material.
- Fill – any material which has been moved by man.

Moisture Condition – Coarse Grained Soils
For coarse grained soils the moisture condition should be described by appearance and feel using the following terms:

- Dry (D) — Non-cohesive and free-running.
- Moist (M) — Soil feels cool, darkened in colour. Soil tends to stick together. Sand forms weak ball but breaks easily.
- Wet (W) — Soil feels cool, darkened in colour. Soil tends to stick together, free water forms when handling.

Moisture Condition – Fine Grained Soils
For fine grained soils the assessment of moisture content is relative to their plastic limit or liquid limit, as follows:

- 'Moist, dry of plastic limit' or 'w <PL' (i.e. hard and friable or powdery).
- 'Moist, near plastic limit' or 'w ≈ PL (i.e. soil can be moulded at moisture content approximately equal to the plastic limit).
- 'Moist, wet of plastic limit' or 'w >PL' (i.e. soils usually weakened and free water forms on the hands when handling).
- 'Wet' or 'w ≈LL' (i.e. near the liquid limit).
- 'Wet' or 'w >LL' (i.e. wet of the liquid limit).

May 2019

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Symbols & Abbreviations

Douglas Partners

Introduction
These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	Pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock
The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	Lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation
The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

May 2017

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Symbols & Abbreviations

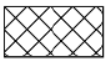
Graphic Symbols for Soil and Rock

General

Asphalt

Road base

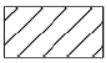
Concrete

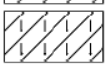

Filling

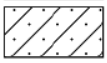
Soils

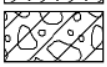
Topsoil

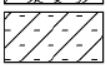
Peat


Clay

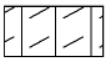

Silty clay


Sandy clay

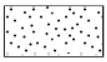

Gravelly clay

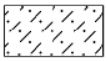

Shaly clay

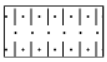
Silt


Clayey silt

Sandy silt


Sand

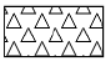

Clayey sand


Silty sand

Gravel

Sandy gravel

Cobbles, boulders

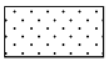

Talus

Sedimentary Rocks

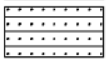
Boulder conglomerate

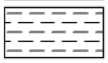
Conglomerate

Conglomeratic sandstone


Sandstone

Siltstone

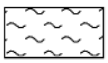

Laminite


Mudstone, claystone, shale

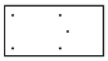
Coal

Limestone

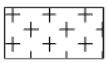
Metamorphic Rocks

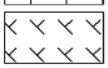

Slate, phyllite, schist

Gneiss

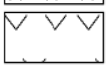

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite

Dacite, epidote


Tuff, breccia

Porphyry

May 2017

Appendix B

Drawing 1 Rev1 Yarrabend: Geotechnical Investigations and Groundwater Contour Plan.

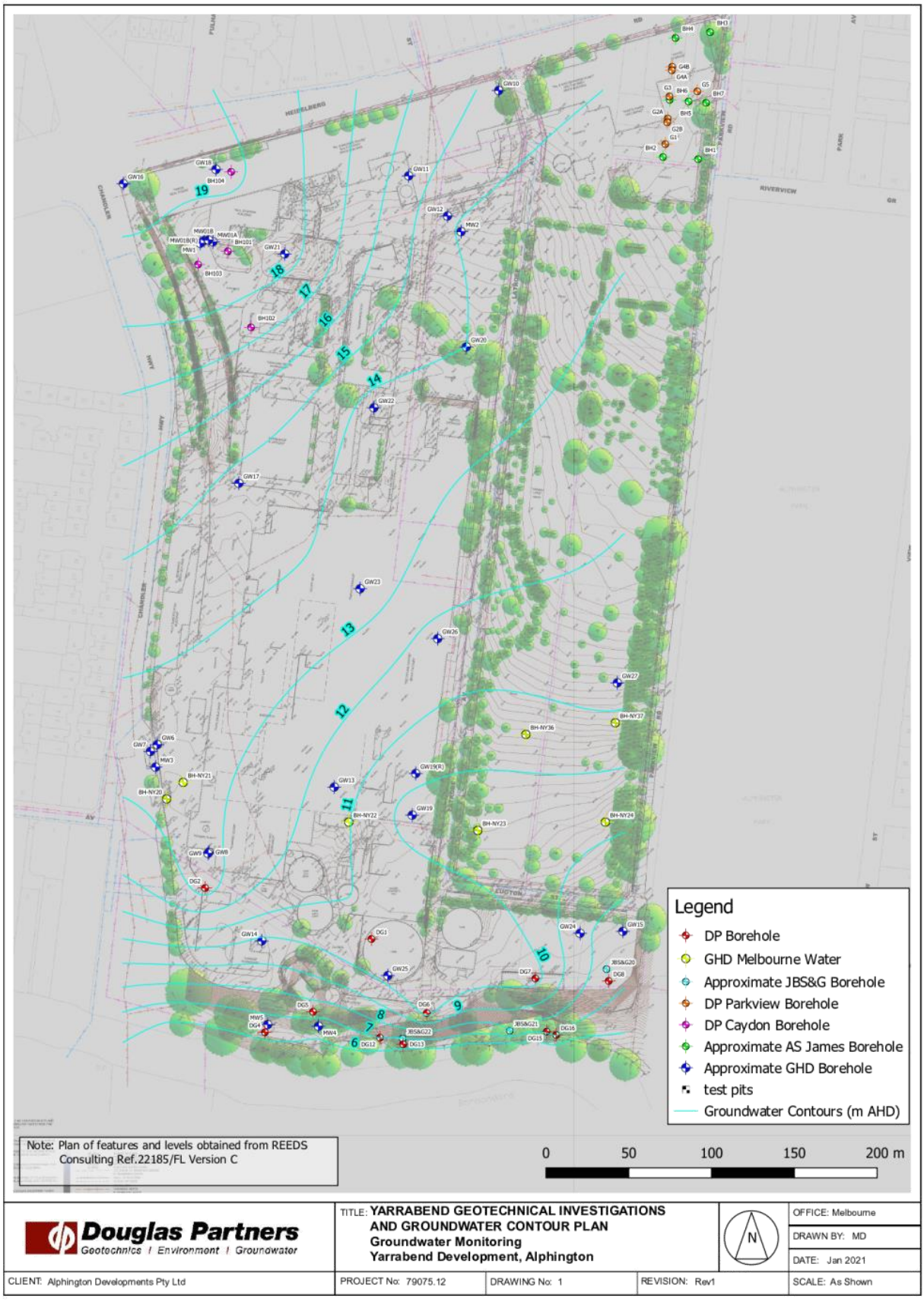
Drawing 2 Site Contours and Cross Section Locations.

Groundwater level, rainfall and river level Plots Figures 1d and 1e. From DP report (December 2020).

Conceptual Cross Sections AA and BB

Reeds Main Drain Plan and Longitudinal Cross Section

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021



Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

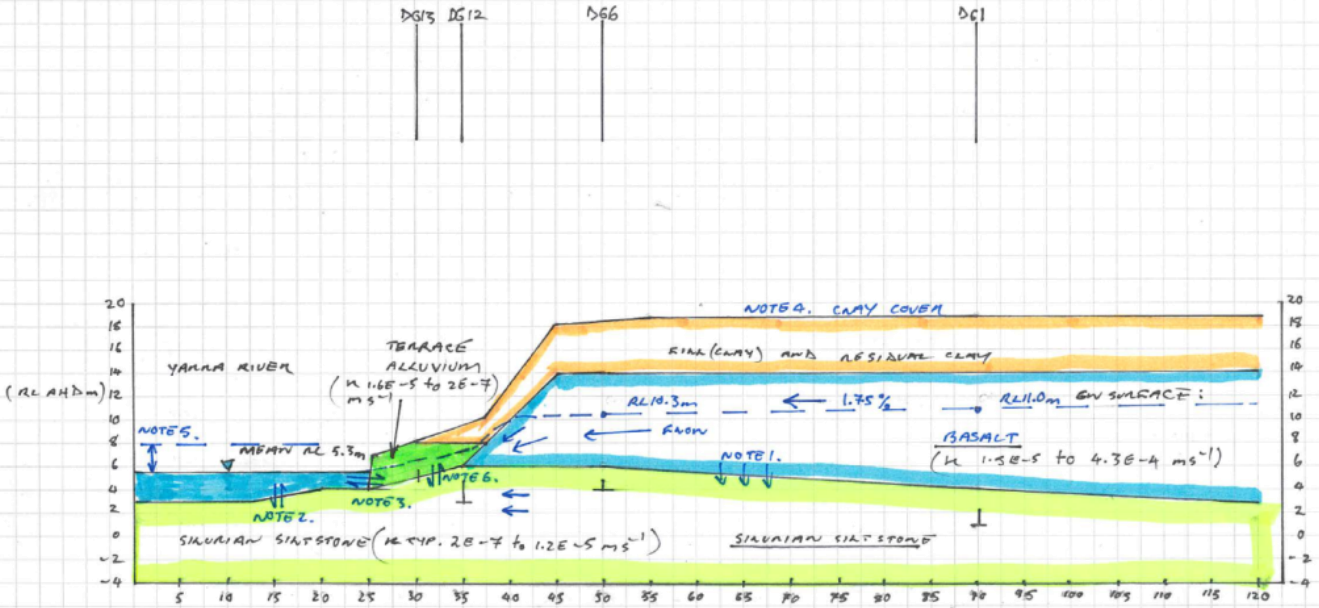
Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Alphington Developments Pty Ltd	**CROSS SECTION LOCATIONS A-A AND A-B**	PROJECT No: 79075.12
	OFFICE: Melbourne	**Conceptual Groundwater - Geotechnical Section**	DWG No: 2
	DATE: 19 Jan 2021	**Yarrabend Developments, Alphington**	REVISION: 0

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

Douglas Partners
Geotechnics · Environment · Groundwater

PROJECT YARRASEND RIVERFRONT SLUMPING STUDY Project No: 79075.12 Page No: Calcs By: Checked By: Date:

SECTION A-A CONCEPTUAL GROUNDWATER AND GEOLOGICAL CONDITIONS



NOTES:

1: The basement rock (Silurian Siltstone) typically has a significantly lower permeability than the fractured basalt. Some migration of groundwater from the basalt aquifer to the siltstone basement rock does occur.

2: Ground water level data coinciding with river level fluctuation indicated hydraulic connection between the river and groundwater in the underlying Silurian siltstone.

3: Groundwater wells in the alluvium near the bank also coincide with river level variation, demonstrating movement of water into the alluvium from the river as well as movement of groundwater from the alluvium to the river.

4: Clay cover soil was encountered above the basalt. It is noted that clay soils exhibit low permeability and act to minimise infiltration of surface water into the basalt aquifer.

5: River level variation results in occasional instances where the terrace alluvium is inundated.

6: Groundwater conditions in the Silurian can affect conditions in the alluvium. Monitoring data indicates variation with river level fluctuation as well as upgradient influences.

FORM: A3 Grid

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

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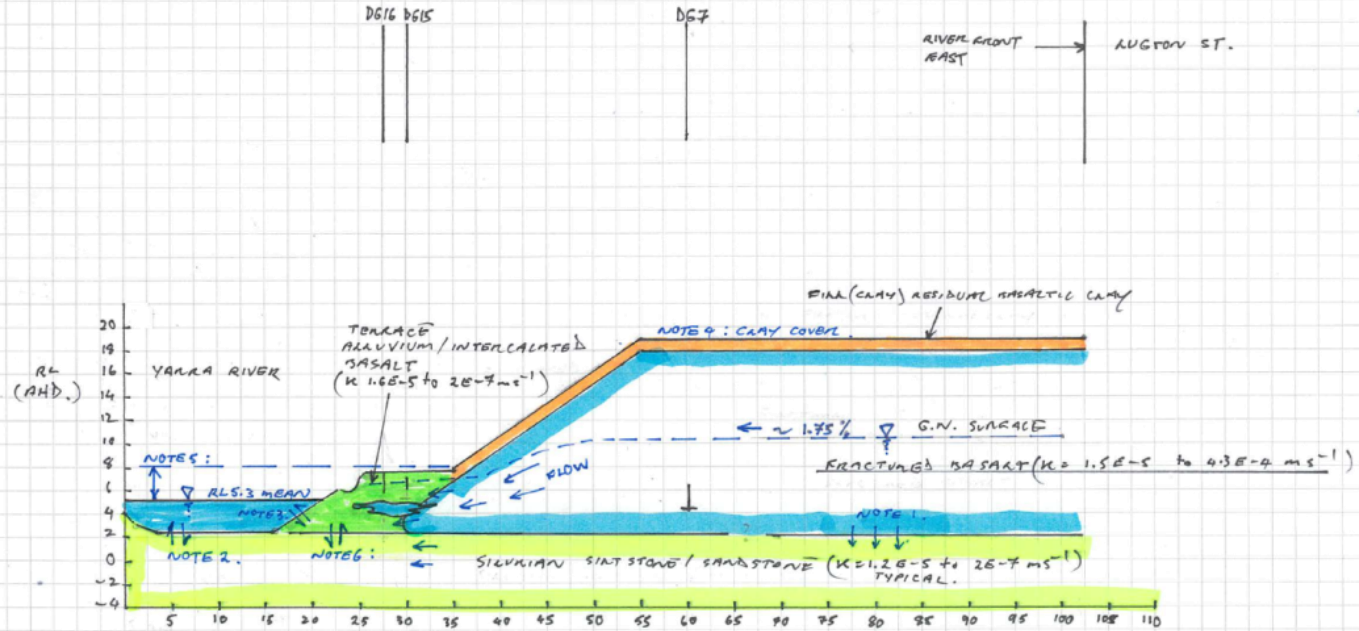
PROJECT YARRABEND RIVERFRONT SLUMPING STUDY Project No: 79075.12 Page No: Calcs By: Checked By: Date:

SECTION B-B CONCEPTUAL GROUNDWATER AND GEOLOGICAL CONDITIONS



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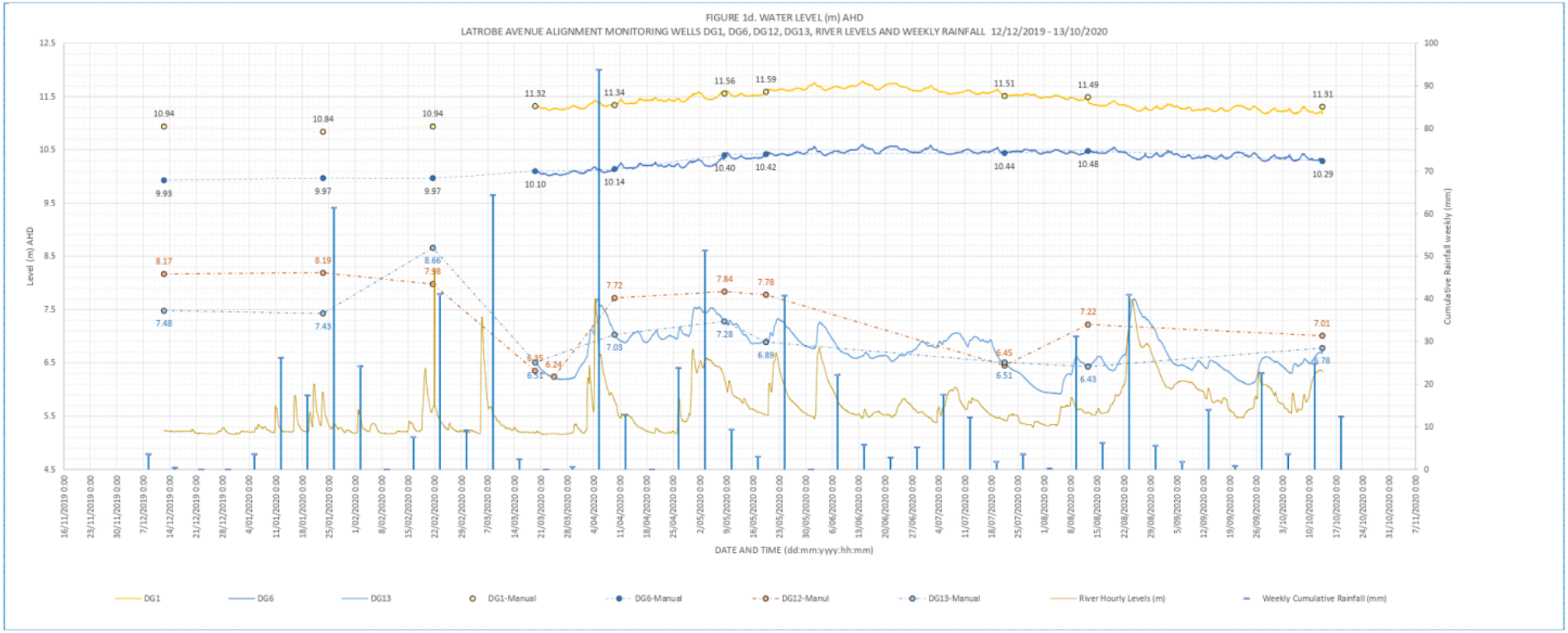
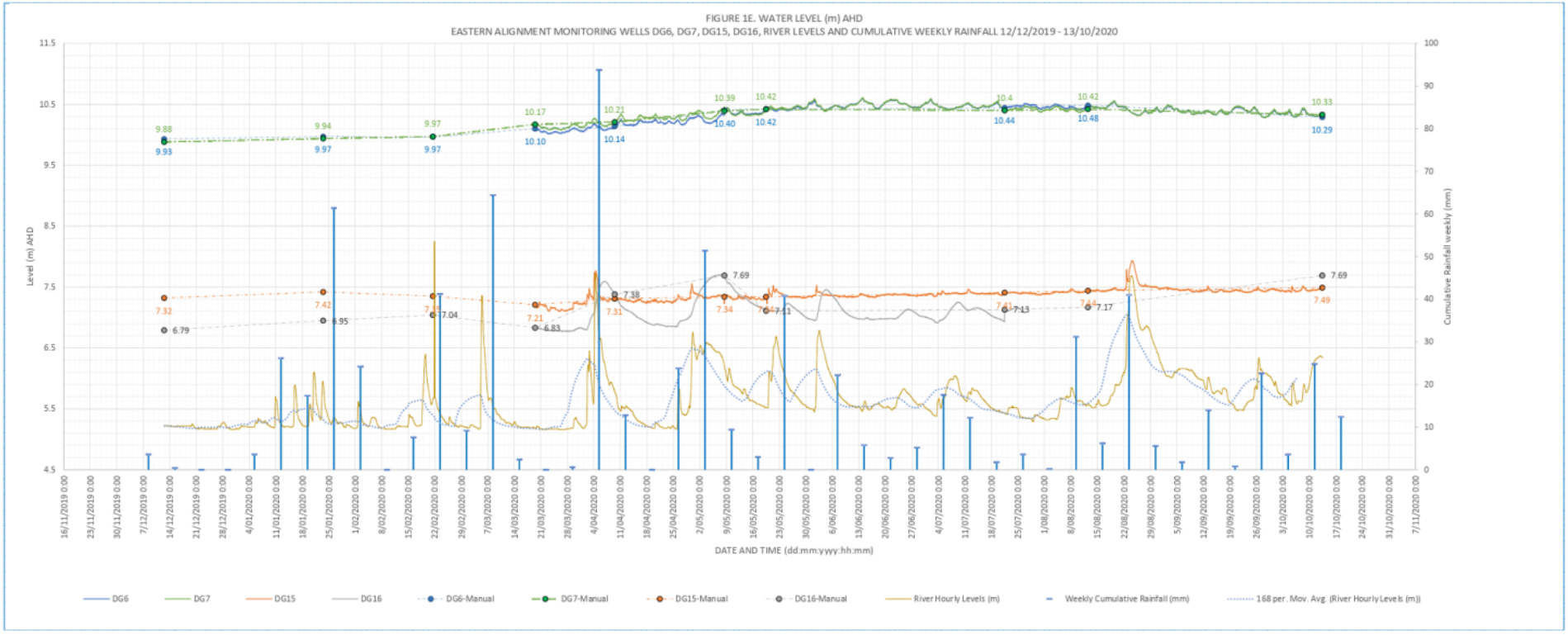
FORM: A3 Grid

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021



Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021



Appendix C

Extract of Douglas Partners (March 2020), Section 3.3.

Extract of Douglas Partners (March 2020), Section 8.2.

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Temporary stormwater sediment basins were installed at the southern end of the Latrobe Avenue in an area to the immediate west of the road reserve in accordance with the Environmental Management Plan approved by Council in June 2017. A copy of the relevant plan is included in Appendix B. Basins were formed in late 2016 and backfilled in late 2019. The basins were excavated into natural soils and periodically reconfigured to accommodate staged remediation and earthworks activities. Initial location of the basins at the southern end of Latrobe was to accommodate the site topography and original drainage along Latrobe Avenue to the south.

A temporary construction access road was installed, along the western half of the Yarrabend river front for VicRoads access during construction of the Chandler Highway bridge construction project. A new six lane bridge was constructed to the immediate west of the existing bridge between mid-2017 and late 2019. The access road was installed on the river terrace, by the bridge construction contractor. The unsealed granular access road required re-shaping of an approximate 6 m to 7 m wide, 110 m long area on the river terrace, about 10 m back from the bank.

It is noted that the North Yarra Sewer Main (NYM) was re-aligned to the north of the original sewer main in 2015. The alignment of the sewer is shown on Figures 2A, 2B and cross sections A and C in Appendix B. The eastern portion of the original brick-lined sewer ran along the river about 30 m to 40 m north of the northern river bank. From a point near the end of Latrobe Avenue, the sewer runs to the north west, passing south of the Boiler House and across the Chandler Highway. Records indicate that the sewer was tunnelled and is located 9 m to 15 m below surface. The eastern portion was reportedly relined in the early 80's. The western section was not relined. The sewer and manholes in the AMCOR site were reportedly back-grouted in 2015.

3.3 Slumping Instances

Slumping of the sub-vertical, variable height, riverbank adjacent to the Yarrabend site has occurred at the locations shown on Figure 5, referred to as Slumps A, B and C. Detailed descriptions of Slumps A and B are provided in DP Ref: 79075.12.R.003, dated July 2019. Summarised descriptions of the slumps are presented below, with approximate locations shown on the survey drawing extract in Figure 5.

Figure 5: Slump Locations and (Reeds survey drawing extract, January 2020)

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

Other historical slump instances are evident on the northern and southern banks on the section of river adjacent to the Yarrabend site. A number of these have well established trees growing on them and occurred well before recent demolition and development activity. This was discussed in DP-July 2019.

- Slump A: This area has exhibited intermittent drainage issues and wet ground (pre and post development, reported to DP by CSC). Historical slumping was reported at this location prior to May 2017, Ref: CDM Smith – 2019. Tension cracks at the upper edge of the riverbank have progressed to slump movement since mid-2019.

  Seepage was reported in this area in January 2019. Tension cracks were observed by DP in June 2019. Wet ground was observed in this area at this time, consistent with prolonged poor drainage and intermittent wet ground, as shown in Plate 11 Appendix B (extract from of DP-July2019).

  Surface drainage in the terrace between the embankment toe and river bank is poor due to shallow surface depressions.

  Water was observed emanating from the toe of the embankment adjacent to the terrace in January and February 2020 and further slumping has occurred where the former tension cracks were observed. Minor surface flow was seen trickling through depressions across the terrace and over the slumped bank.

  Soils in this localised part of the terrace are dark grey / black, consistent with organic matter development on the surface and apparent long-term, seasonal or intermittent, moist / wet ground.

- Slump B. This slumping instance reportedly occurred in the days prior to 1 January 2019. A single tree toppled into the river. The tree was removed by Melbourne Water on 23-25 January. From ref: CDM Smith – 2019, water was not observed emanating from the ground in the immediate slump area but was near slump A. The slump straddled the toppled tree stump and is approximately 6 m long and 2 m wide. The slump does not appear to be active (to be confirmed by monitoring, discussed in Section 8).

- Slump C: This slumping instance occurred on or near 31 May 2019, affecting adjacent trees located at the river edge. One tree toppled into the river and two others were destabilised but remained standing. One of the remaining trees was cut down on the advice of a consulting arborist/s as a safety requirement. The stumps and root zones were left in place. The third tree remains in place. DP was engaged by AD to assess this slumping instance and provide initial advice regarding tree and riverbank stability in DP-2019/July. Surface water or wet ground was not observed in the area of this slump when inspected by DP in June 2019.

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

Initial water level readings are indicated on the relevant borehole logs in Appendix C and are presented on the cross-section drawings. The latter give a representation of the aquifer conditions and proximity to the riverfront embankment and Yarra River. The significance of the data is discussed in Section 8.

8. Discussion

The recent and historical (pre-demolition) slumps evident on the northern bank of the Yarra River adjacent to the Yarrabend development, are limited to approximate 1 m to 3 m wide strips back from the sub-vertical, 2 m to 3 m high, river bank. The slumps have occurred through the outer edge of the natural terrace deposit.

The slumping is restricted to the outer edge of the terrace without evidence of larger slips away from the bank.

There are no visually apparent active or recent slumps or landslip instances occurring in the embankment above the northern edge of the river terrace. The embankment ranges in height from 8 m to 10 m with slopes ranging from 1.6:1 H:V to 1.8 H:V. Boreholes DG6 and DG7 drilled at the embankment crest indicated surface fill over natural basalt rock extending well below the embankment toe and adjacent terrace soils.

Subject to visual monitoring of the embankment to confirm ongoing stability, the river edge slumping instances are the focus of this discussion and the adjacent embankment is not further discussed.

8.1 General Causes of River Bank Erosion

Rivers are dynamic systems and the factors controlling their formation are complex and interrelated. Factors include, river flows, sedimentation, geology and vegetation extent. As these factors change over time, river systems respond by changing their shape and form. In stable rivers the rate of these changes is generally slow.

River bank formation is a natural process. Even stable river systems have some eroding banks, albeit at a slower rate and on a smaller scale than unstable systems.

Fluctuations in river levels and occasional flooding can affect banks as well as land uses with bank responses.

Stream bank erosion processes generally fall into two main groups, i.e. bank scour and mass failure. In many cases of bank instability both will be evident. Often with either scour or mass failure being dominant. Bank scour is the direct removal of bank materials by the physical action of flowing water. Less common in lower reaches of stable systems.

Mass failure includes bank collapse and slumping, where masses of bank material become unstable and topple or slide into the river channel, in single events. Mass failure is often dominant in the lower reaches of large rivers, often occurs in association with scouring of lower banks.

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Factors which can affect bank alteration processes comprise:

a) stream bed lowering or infill

b) rises in river levels, or inundation of bank soils followed by rapid drops in river levels

c) moisture increases or saturation of bank materials from off-stream sources

d) redirection and acceleration of flow around obstructions, debris or vegetation within the stream channel

e) removal or disturbance of vegetation from stream banks

f) bank soil characteristics such as localised higher permeability seams or zones or poor drainage in materials prone to softening within the bank profile

g) wave action generated by wind or boat wash;

h) intense rainfall/surface drainage events that affect bank materials;

The process is complex. Careful inspection can narrow down, but rarely pinpoint a single cause of instability.

Bank scour is the direct removal of bank materials by the physical action of flowing water and the sediment that it carries. As flow speed increases, the erosive power of flowing water also increases and scour may occur. Increases in flow speed can be the result of natural (e.g. from d, f and h) and/or human induced processes (e.g. a and e). Undercutting of the bank toe is an obvious sign of scour processes. Effective strategies for combating scour are generally aimed at reducing flow speed through revegetation and in some cases through strategic bank or channel works. Mass failure describes the various mechanisms of bank erosion that result in sections of the bank sliding or toppling into the stream.

Mass failure is sometimes described as collapse or slumping. Bare and near-vertical banks or areas of slumped bank materials are obvious signs of these processes. The causes of these types of failures are often difficult to determine but can include natural (e.g. b or f) and/or human factors (e.g. c, e or g). Collapse following undermining of the bank toe and slumping as a result of saturation after flooding are common examples of mass failure.

It is noted that pore-water pressures within the soil are a significant factor in most cases of slope instability, particularly when rapid changes or differential pressures develop. In addition to pore pressures, soil moisture condition is also a significant factor to the stability of the bank. It is noted that moisture variation is a key factor. While dry conditions result in increased suction and increased strength in clay profiles, the clay soils are reactive and prone to shrink-swell behaviour. Dry weather leads to potential for shrinkage cracks and soil structure changes that increase infiltration rates and water pathways into the profile and form tension cracks where water pressures can drive soil movements.

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8.2 Mechanisms and Factors Contributing to Slump Instances

From the available information slumping instances, A B and C are consistent with the mass failure or bank collapse described in Section 8.1. As previously mentioned the slumps are restricted to the zone just back from steep bank edges. There are a number of probable contributing factors.

Upgradient groundwater conditions, resulting from general surface infiltration and, in particular, the sediment basins, were nominated as the key factor contributing to the slumping instances by the City of Yarra's consultants (Alluvium-2019). The investigation and study indicate that upgradient groundwater conditions are a probable contributing factor in the slumping instances but one of a number. Due to the complexity of the geology, hydrogeology, variable vegetation conditions, historical slumping instances and modified site conditions it is not possible to pinpoint a single cause. While the geometry and interface shapes of the geological units vary along the river, key characteristics for the slump sites include:

- Near vertical, 2.5 m to 3 m high river edge banks, with a relatively flat terrace extending behind the bank to the toe of the adjacent embankment;
- Minor surface fill overlying natural alluvial materials extending below adjacent mean river level, over Silurian sedimentary rock;
- A basalt flow edge, forming an approximate 7 m to 10 m high, natural basalt rock embankment to the north of the terrace alluvium, with a thickening basalt unit rising and extending many km's to the north and north west of the northern river bank.
- A mean river level at 5.1 m, with occasional river level variations in the order 1 m to 2 m and less frequent but recorded instances of peak levels between 2.5 m and 3.5 m. A number of these would have inundated significant part of the terrace.
- The presence of groundwater in the fractured basalt aquifer to the north of the riverbank, interacting with the terrace alluvium, resulting in groundwater levels in the terrace ranging from RL 5.5 m to 7.8 m AHD and exhibiting some fluctuation, in recent measurements. It is noted that soil moisture conditions in the alluvium, at the borehole locations were variable. This is consistent with predominant clay alluvium, with local higher permeability seems and lenses.
- From the boreholes the terrace soils were typically stiff to very stiff with localised firm zones.
- From the investigation fill materials do not appear to be a significant factor contributing to the slump instances.

Groundwater conditions are discussed further in Section 8.3.

Comment on the significance of site-specific factors are presented below.

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Table 2: Slump Instance Comment on Significance of Factors

Factor Description	Comment
a) Sub vertical bank edges with heights exceeding around 2 m to 3 m above mean river level.	This is a key factor. No active slumping is evident in river edge areas that have been made flatter through previous historical slumping.
a) stream bed lowering or infill	No information confirming this. Would require historical bathymetry data.
b) Rises in river levels, or inundation of bank soils followed by rapid drops in river levels	Probable contributing factor. Note that slumps B and C occurred after river level peaks, in December 2018 and May 2019. Consistent with fluctuating GW levels in standpipes near the river edge, historical and recent (MW5, MW4, DG4). Note that historical slumps are evident near these boreholes. See Plate 1 Appendix B, extracted from DP report -July 2019.
c) moisture increases or saturation of bank materials from off-stream sources	Probable contributing factor. Up-gradient standing water levels are influencing soil moisture conditions in the areas of the slumps. The investigation has demonstrated likely hydraulic influence between groundwater in the fractured basalt unit and the soil in the terrace areas near Slumps A and C. The historical data is variable, but there is evidence historical occurrence of groundwater in the terrace soils before. Historical data in MW4, MW5 JBS&G21 is consistent with previous elevated water in the terrace. It noted that organic soil development and absence of shrub vegetation under the Oak trees, near slump A is consistent with long term seasonal or intermittent wet ground. Upgradient groundwater conditions are inconclusive in demonstrating that recent upgradient conditions have caused the recent groundwater level increases, discussed in Section 8.3.
d) redirection and acceleration of flow around obstructions, debris or vegetation within the stream channel	No information demonstrating this.
e) removal or disturbance of vegetation from stream banks	Not aware of significant removal other than toppled trees, where root systems were left in place as far as practicable.
f) bank soil characteristics such as localised higher permeability seams or zones or poor drainage in materials prone to softening within the bank profile	The terrace soils exhibit permeability variation consistent with alluvial deposits. Soil strengths are not an apparent factor with soils in the near slump boreholes typically exhibiting stiff to very stiff consistency. This points to bank height, sub vertical inclination and variation in groundwater levels through river fluctuation and upgradient conditions.

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Appendix D

Insitu Permeability Test Results
Slump Survey Data and Plans
DP Borehole Logs November – December (2019)

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Permeability Testing - DG1 Rising Head Test Report

Client:	Alphington Developments Pty Ltd	Project No:	79075.12
Project:	Yarrabend River Monitoring Event	Test date:	27-Oct-20
Location:	Yarrabend Development, Alphington	Tested by:	MD

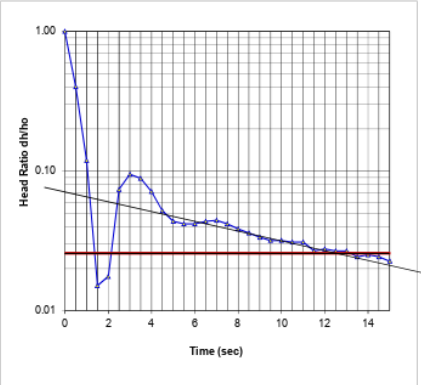
Test Location		**Test No.**	DG1
Description:	Standpipe in borehole	Easting:	326254.71 m
Material type:	BASALT	Northing	5816077.4 m
		Surface Level:	16.24 m AHD

Details of Well Installation

Well casing diameter (2r)	50	mm	Depth to water before test	4.83	mTOC
Well screen diameter (2R)	125	mm	Depth to water at start of test	5.92	mTOC
Length of well screen (Le)	8	m			

Test Results

Time (sec)	Depth (m)		Change in Head: δH (m)	δH/Ho		Ht	Ho
0	5.92	5.92	1.09	1.000	0.026		1.09358
0.5	5.27	5.27	0.44	0.402	0.026	5.23575	
1	4.96	4.96	0.13	0.119	0.026	4.92592	
1.5	4.81	4.81	0.02	0.015	0.026	4.77925	
2	4.85	4.85	0.02	0.018	0.026	4.815	
2.5	4.91	4.91	0.08	0.074	0.026	4.87642	
3	4.93	4.93	0.10	0.095	0.026	4.89933	
3.5	4.92	4.92	0.10	0.089	0.026	4.89292	
4	4.90	4.90	0.08	0.071	0.026	4.87367	
4.5	4.88	4.88	0.06	0.052	0.026	4.85258	
5	4.87	4.87	0.05	0.044	0.026	4.84342	
5.5	4.87	4.87	0.05	0.042	0.026	4.84158	
6	4.87	4.87	0.05	0.042	0.026	4.84158	
6.5	4.87	4.87	0.05	0.044	0.026	4.84342	
7	4.87	4.87	0.05	0.044	0.026	4.84433	
7.5	4.87	4.87	0.05	0.042	0.026	4.84158	
8	4.87	4.87	0.04	0.039	0.026	4.83792	
8.5	4.87	4.87	0.04	0.036	0.026	4.83517	
9	4.86	4.86	0.04	0.034	0.026	4.83242	
9.5	4.86	4.86	0.03	0.032	0.026	4.83058	
10	4.86	4.86	0.03	0.032	0.026	4.83058	
10.5	4.86	4.86	0.03	0.031	0.026	4.82967	
11	4.86	4.86	0.03	0.031	0.026	4.82967	
11.5	4.86	4.86	0.03	0.027	0.026	4.82508	
12	4.86	4.86	0.03	0.028	0.026	4.826	
12.5	4.86	4.86	0.03	0.027	0.026	4.82508	
13	4.86	4.86	0.03	0.027	0.026	4.82508	
13.5	4.85	4.85	0.03	0.024	0.026	4.82233	
14	4.85	4.85	0.03	0.025	0.026	4.82325	
14.5	4.85	4.85	0.03	0.024	0.026	4.82233	
15	4.85	4.85	0.02	0.023	0.026	4.8205	



To = 0.213 mins
12.78 secs

Theory: Falling Head Permeability calculated using equation by Hvorslev

$k = [r^2 \ln(Le/R)]/2Le\ To$

where r = radius of casing
R = radius of well screen
Le = length of well screen
To = time taken to rise or fall to 37% of initial change

Hydraulic Conductivity	**k =**	**1.5E-05**	m/sec
	=	**5.339**	cm/hour

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Permeability Testing - DG4 Rising Head Test Report

Client:	Alphington Developments Pty Ltd	Project No:	79075.12
Project:	Yarrabend River Monitoring Event	Test date:	27-Oct-20
Location:	Yarrabend Development, Alphington	Tested by:	MD

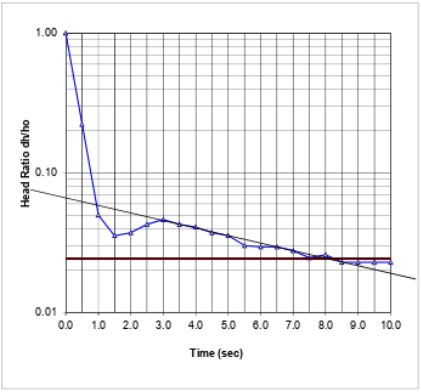
Test Location		**Test No.**	DG2	
Description:	Standpipe in borehole	Easting:	326154.27	m
Material type:	BASALT	Northing	5816108.19	m
		Surface Level:	18.45	m AHD

Details of Well Installation

Well casing diameter (2r)	50	mm	Depth to water before test	5.44	mTOC
Well screen diameter (2R)	125	mm	Depth to water at start of test	6.96	mTOC
Length of well screen (Le)	9	m			

Test Results

Time (sec)	Depth (m)		Change in Head: δH (m)	δH/Ho		Ht	Ho
0.00	6.96	6.96	1.52	1.000	0.024		1.5235
0.50	5.77	5.77	0.34	0.222	0.024	5.7445	
1	5.51	5.51	0.08	0.050	0.024	5.48233	
1.5	5.49	5.49	0.05	0.035	0.024	5.46033	
2	5.49	5.49	0.06	0.037	0.024	5.46308	
2.5	5.50	5.50	0.07	0.043	0.024	5.47133	
3	5.51	5.51	0.07	0.046	0.024	5.47683	
3.5	5.50	5.50	0.07	0.043	0.024	5.47133	
4	5.50	5.50	0.06	0.041	0.024	5.46858	
4.5	5.49	5.49	0.06	0.037	0.024	5.46308	
5	5.49	5.49	0.05	0.035	0.024	5.46033	
5.5	5.48	5.48	0.05	0.030	0.024	5.45208	
6	5.48	5.48	0.04	0.029	0.024	5.45117	
6.5	5.48	5.48	0.04	0.029	0.024	5.45117	
7	5.48	5.48	0.04	0.028	0.024	5.44842	
7.5	5.47	5.47	0.04	0.025	0.024	5.44383	
8	5.48	5.48	0.04	0.026	0.024	5.44567	
8.5	5.47	5.47	0.03	0.023	0.024	5.44108	
9	5.47	5.47	0.03	0.023	0.024	5.44108	
9.5	5.47	5.47	0.03	0.023	0.024	5.44108	
10	5.47	5.47	0.03	0.023	0.024	5.44108	



To = 0.133 mins
8 secs

Theory: Falling Head Permeability calculated using equation by Hvorslev

$k = [r^2 \ln(Le/R)]/2Le\ To$

where r = radius of casing
R = radius of well screen
Le = length of well screen
To = time taken to rise or fall to 37% of initial change

Hydraulic Conductivity	**k =**	**7.3E-05**	m/sec
	=	**26.274**	cm/hour

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Permeability Testing - DG5 Rising Head Test Report

Client:	Alphington Developments Pty Ltd	Project No:	79075.12
Project:	Yarrabend River Monitoring Event	Test date:	27-Oct-20
Location:	Yarrabend Development, Alphington	Tested by:	MD

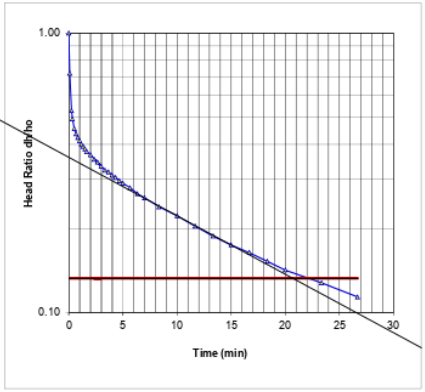
Test Location		**Test No.**	DG5
Description:	Standpipe in borehole	Easting:	326219.45 m
Material type:	SILTSTONE	Northing	5816033.41 m
		Surface Level:	11.77 m AHD

Details of Well Installation

Well casing diameter (2r)	50	mm	Depth to water before test	4.12	mTOC
Well screen diameter (2R)	125	mm	Depth to water at start of test	5.16	mTOC
Length of well screen (Le)	5.5	m			

Test Results

Time (min)	Depth (m)		Change in Head: δH (m)	δH/Ho		Ht	Ho
0.00	5.16	5.16	1.04	1.000	0.132		1.04041
0.08	4.87	4.87	0.75	0.718	0.132	4.83925	
0.25	4.67	4.67	0.55	0.529	0.132	4.64217	
0.33	4.64	4.64	0.51	0.493	0.132	4.6055	
0.50	4.60	4.60	0.47	0.456	0.132	4.56608	
0.67	4.58	4.58	0.45	0.436	0.132	4.54592	
0.83	4.56	4.56	0.44	0.423	0.132	4.53217	
1.00	4.55	4.55	0.43	0.412	0.132	4.52117	
1.17	4.54	4.54	0.42	0.401	0.132	4.50925	
1.33	4.53	4.53	0.41	0.393	0.132	4.501	
1.50	4.52	4.52	0.40	0.385	0.132	4.49275	
1.67	4.51	4.51	0.39	0.377	0.132	4.4845	
2.00	4.50	4.50	0.38	0.367	0.132	4.4735	
2.67	4.48	4.48	0.36	0.345	0.132	4.4515	
3.00	4.47	4.47	0.35	0.334	0.132	4.43958	
2.33	4.49	4.49	0.37	0.353	0.132	4.45975	
3.33	4.46	4.46	0.34	0.323	0.132	4.42858	
3.67	4.45	4.45	0.33	0.318	0.132	4.42308	
4.00	4.44	4.44	0.32	0.310	0.132	4.41483	
4.33	4.44	4.44	0.32	0.304	0.132	4.40842	
4.67	4.43	4.43	0.31	0.296	0.132	4.40017	
5.00	4.42	4.42	0.30	0.290	0.132	4.39375	
5.67	4.41	4.41	0.29	0.279	0.132	4.38275	
6.33	4.40	4.40	0.28	0.266	0.132	4.369	
7.00	4.39	4.39	0.27	0.257	0.132	4.35983	
8.33	4.37	4.37	0.25	0.239	0.132	4.34058	
10.00	4.35	4.35	0.23	0.222	0.132	4.32317	
11.67	4.33	4.33	0.21	0.204	0.132	4.30392	
13.33	4.32	4.32	0.20	0.188	0.132	4.28742	
15.00	4.30	4.30	0.18	0.174	0.132	4.27367	
16.67	4.29	4.29	0.17	0.164	0.132	4.26267	
18.33	4.28	4.28	0.16	0.152	0.132	4.25075	
20.00	4.27	4.27	0.15	0.142	0.132	4.23975	
23.33	4.26	4.26	0.13	0.128	0.132	4.22508	
26.67	4.24	4.24	0.12	0.114	0.132	4.21042	



To = 20.6 mins
1236 secs

Theory: Falling Head Permeability calculated using equation by Hvorslev

$k = [r^2 \ln(Le/R)]/2Le\ To$

where r = radius of casing
R = radius of well screen
Le = length of well screen
To = time taken to rise or fall to 37% of initial change

Hydraulic Conductivity	**k =**	**2.1E-07**	m/sec
	=	**0.074**	cm/hour

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Permeability Testing - DG6 Rising Head Test Report

Client:	Alphington Developments Pty Ltd	Project No:	79075.12
Project:	Yarrabend River Monitoring Event	Test date:	27-Oct-20
Location:	Yarrabend Development, Alphington	Tested by:	MD

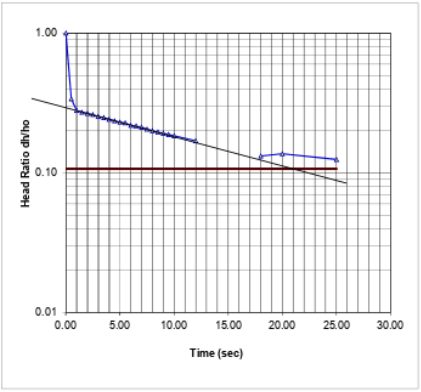
Test Location		**Test No.**	DG6	
Description:	Standpipe in borehole	Easting:	326288.17	m
Material type:	BASALT	Northing	5816032.61	m
		Surface Level:	18.72	m AHD

Details of Well Installation

Well casing diameter (2r)	50	mm	Depth to water before test	8.41	mTOC
Well screen diameter (2R)	125	mm	Depth to water at start of test	11.43	mTOC
Length of well screen (Le)	9.5	m			

Test Results

Time (sec)	Depth (m)		Change in Head: δH (m)	δH/Ho		Ht	Ho
0.01	11.43	11.43	3.02	1.000	0.107		3.01675
0.50	9.43	9.43	1.02	0.338	0.107	9.40242	
1	9.26	9.26	0.84	0.280	0.107	9.22733	
1.5	9.23	9.23	0.82	0.271	0.107	9.20167	
2	9.22	9.22	0.80	0.266	0.107	9.18517	
2.5	9.20	9.20	0.79	0.261	0.107	9.1705	
3	9.18	9.18	0.76	0.253	0.107	9.14575	
3.5	9.16	9.16	0.75	0.249	0.107	9.13383	
4	9.14	9.14	0.73	0.242	0.107	9.11183	
4.5	9.12	9.12	0.71	0.236	0.107	9.09442	
5	9.11	9.11	0.69	0.230	0.107	9.07792	
5.5	9.10	9.10	0.69	0.228	0.107	9.06967	
6	9.07	9.07	0.66	0.218	0.107	9.04125	
6.5	9.07	9.07	0.65	0.216	0.107	9.03575	
7	9.05	9.05	0.64	0.212	0.107	9.02383	
7.5	9.03	9.03	0.62	0.205	0.107	9.00183	
8	9.02	9.02	0.60	0.200	0.107	8.98717	
8.5	9.00	9.00	0.59	0.196	0.107	8.97342	
9	8.99	8.99	0.58	0.192	0.107	8.96242	
9.5	8.98	8.98	0.57	0.188	0.107	8.9505	
10	8.97	8.97	0.56	0.184	0.107	8.9395	
12	8.92	8.92	0.51	0.170	0.107	8.89458	
14	#REF!	#REF!	#REF!	#REF!	0.107	#REF!	
16	#REF!	#REF!	#REF!	#REF!	0.107	#REF!	
18	8.81	8.81	0.40	0.132	0.107	8.781	
20	8.83	8.83	0.41	0.137	0.107	8.79558	
25	8.79	8.79	0.38	0.125	0.107	8.75892	



To = 0.355 mins
21.3 secs

Theory: Falling Head Permeability calculated using equation by Hvorslev

$k = [r^2 \ln(Le/R)]/2Le\ To$

where r = radius of casing
R = radius of well screen
Le = length of well screen
To = time taken to rise or fall to 37% of initial change

Hydraulic Conductivity	**k =**	**3.2E-05**	m/sec
	=	**11.578**	cm/hour

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Permeability Testing - DG17 Falling Head Test Report

Client:	Alphington Developments Pty Ltd	Project No:	79075.12
Project:	Yarrabend River Monitoring Event	Test date:	27-Oct-20
Location:	Yarrabend Development, Alphington	Tested by:	MD

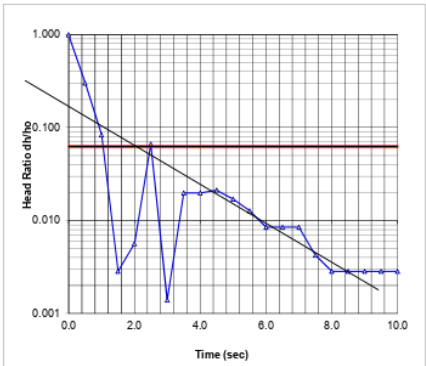
Test Location		**Test No.**	DG7	
Description:	Standpipe in borehole	Easting:	326353.77	m
Material type:	BASALT	Northing	5816053.55	m
		Surface Level:	19.26	m AHD

Details of Well Installation

Well casing diameter (2r)	50	mm	Depth to water before test	8.89	mTOC
Well screen diameter (2R)	125	mm	Depth to water at start of test	8.24	mTOC
Length of well screen (Le)	8	m			

Test Results

Time (min)	Depth (m)		Change in Head: δH (m)	δH/Ho		Ht	Ho
0.00	8.241	8.24	0.65	1.000	0.063		0.64716
0.5	8.693	8.69	0.20	0.302	0.063	8.66308	
1	8.834	8.83	0.05	0.084	0.063	8.80425	
1.5	8.890	8.89	0.00	0.003	0.063	8.86017	
2	8.885	8.88	0.00	0.006	0.063	8.85467	
2.5	8.845	8.85	0.04	0.067	0.063	8.81525	
3	8.887	8.89	0.00	0.001	0.063	8.85742	
3.5	8.901	8.90	0.01	0.020	0.063	8.87117	
4	8.901	8.90	0.01	0.020	0.063	8.87117	
4.5	8.902	8.90	0.01	0.021	0.063	8.87208	
5	8.899	8.90	0.01	0.017	0.063	8.86933	
5.5	8.897	8.90	0.01	0.013	0.063	8.86658	
6	8.894	8.89	0.01	0.008	0.063	8.86383	
6.5	8.894	8.89	0.01	0.008	0.063	8.86383	
7	8.894	8.89	0.01	0.008	0.063	8.86383	
7.5	8.891	8.89	0.00	0.004	0.063	8.86108	
8	8.890	8.89	0.00	0.003	0.063	8.86017	
8.5	8.890	8.89	0.00	0.003	0.063	8.86017	
9	8.890	8.89	0.00	0.003	0.063	8.86017	
9.5	8.890	8.89	0.00	0.003	0.063	8.86017	
10	8.890	8.89	0.00	0.003	0.063	8.86017	
10.5	8.890	8.89	0.00	0.003	0.063	8.86017	
11	8.890	8.89	0.00	0.003	0.063	8.86017	
11.5	8.888	8.89	0.00	0.000	0.063	8.85833	
12	8.888	8.89	0.00	0.000	0.063	8.85833	
12.5	8.888	8.89	0.00	0.000	0.063	8.85833	
13	8.888	8.89	0.00	0.000	0.063	8.85833	
13.5	8.888	8.89	0.00	0.000	0.063	8.85833	



To = 0.04 mins
2.1 secs

Theory: Falling Head Permeability calculated using equation by Hvorslev

$k = [r^2 \ln(Le/R)]/2Le\ To$

where r = radius of casing
R = radius of well screen
Le = length of well screen
To = time taken to rise or fall to 37% of initial change

Hydraulic Conductivity	**k =**	**4.3E-04**	m/sec
	=	**154.890**	cm/hour

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

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Permeability Testing - DG12 Rising Head Test Report

Client:	Alphington Developments Pty Ltd	Project No:	79075.12
Project:	Yarrabend River Monitoring Event	Test date:	15-16/10/2020
Location:	Yarrabend Development, Alphington	Tested by:	MD

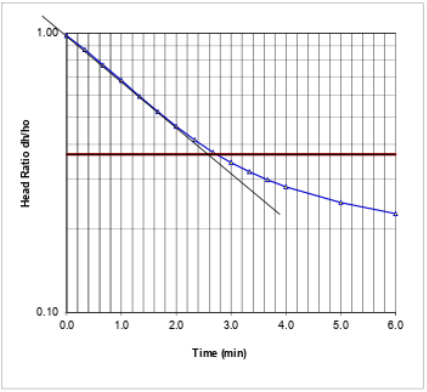
Test Location		**Test No.**	DG12
Description:	Standpipe in borehole	Easting:	326259.85 m
Material type:	CLAY	Northing	5816017.74 m
		Surface Level:	10.52 m AHD

Details of Well Installation

Well casing diameter (2r)	50	mm	Depth to water before test	3.39 mTOC
Well screen diameter (2R)	125	mm	Depth to water at start of test	4.39 mTOC
Length of well screen (Le)	2	m		

Test Results

Time (min)	Depth (m)		Change in Head: δH (m)	δH/Ho		Ht	Ho
0.00	4.37	4.37	0.98	0.980	0.368		0.9799
0.33	4.26	4.26	0.87	0.873	0.368	4.233	
0.67	4.16	4.16	0.77	0.768	0.368	4.1275	
1.00	4.07	4.07	0.68	0.678	0.368	4.0377	
1.33	3.98	3.98	0.59	0.594	0.368	3.9535	
1.67	3.91	3.91	0.52	0.523	0.368	3.8828	
2.00	3.85	3.85	0.46	0.463	0.368	3.8232	
2.33	3.80	3.80	0.41	0.415	0.368	3.7746	
2.67	3.76	3.76	0.37	0.374	0.368	3.7343	
3.00	3.73	3.73	0.34	0.344	0.368	3.7043	
3.33	3.71	3.71	0.32	0.319	0.368	3.6789	
3.67	3.69	3.69	0.30	0.298	0.368	3.6584	
4.00	3.67	3.67	0.28	0.282	0.368	3.6419	
5.00	3.64	3.64	0.25	0.248	0.368	3.6076	
6.00	3.62	3.62	0.23	0.226	0.368	3.5858	
7.00	3.60	3.60	0.21	0.210	0.368	3.5698	
8.00	3.59	3.59	0.20	0.199	0.368	3.559	



To = 2.65 mins
159 secs

Theory: Falling Head Permeability calculated using equation by Hvorslev

$k = [r^2 \ln(Le/R)]/2Le\ To$

where r = radius of casing
R = radius of well screen
Le = length of well screen
To = time taken to rise or fall to 37% of initial change

Hydraulic Conductivity	**k =**	**1.6E-05**	m/sec
	=	**5.685**	cm/hour

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Permeability Testing - DG13 Rising Head Test Report

Client:	Alphington Developments Pty Ltd	Project No:	79075.12
Project:	Yarrabend River Monitoring Event	Test date:	15-Oct-20
Location:	Yarrabend Development, Alphington	Tested by:	MD

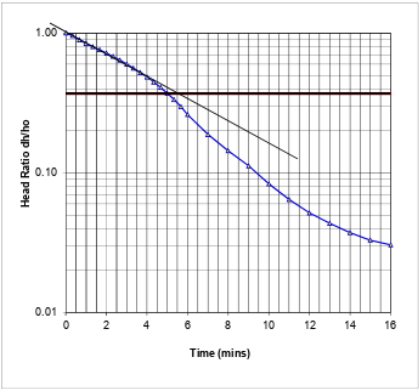
Test Location		**Test No.**	DG13	
Description:	Standpipe in borehole	Easting:	326273.84	m
Material type:	SILTY CLAY	Northing	5816013.78	m
		Surface Level:	9.43	m AHD

Details of Well Installation

Well casing diameter (2r)	35	mm	Depth to water before test	2.68 mTOC
Well screen diameter (2R)	50	mm	Depth to water at start of test	3.97 mTOC
Length of well screen (Le)	2	m		

Test Results

Time (min)	Depth (m)		Change in Head: δH (m)	δH/Ho		Ht	Ho
0.01	3.97	3.97	1.29	1.000	0.370		1.29
0.33	3.92	3.92	1.24	0.960	0.370	3.8879	
0.67	3.83	3.83	1.15	0.894	0.370	3.8034	
1	3.77	3.77	1.09	0.843	0.370	3.737	
1.33	3.71	3.71	1.03	0.800	0.370	3.6823	
1.67	3.66	3.66	0.98	0.761	0.370	3.6311	
2	3.61	3.61	0.93	0.721	0.370	3.5804	
2.33	3.56	3.56	0.88	0.681	0.370	3.5288	
2.67	3.51	3.51	0.83	0.641	0.370	3.4769	
3	3.46	3.46	0.78	0.601	0.370	3.4251	
3.33	3.40	3.40	0.72	0.562	0.370	3.3745	
3.67	3.35	3.35	0.67	0.522	0.370	3.324	
4	3.30	3.30	0.62	0.484	0.370	3.2748	
4.33	3.26	3.26	0.58	0.446	0.370	3.2252	
4.67	3.21	3.21	0.53	0.408	0.370	3.1762	
5	3.16	3.16	0.48	0.371	0.370	3.1291	
5.33	3.11	3.11	0.43	0.334	0.370	3.0811	
5.67	3.06	3.06	0.38	0.298	0.370	3.0339	
6	3.02	3.02	0.34	0.261	0.370	2.9873	
7	2.92	2.92	0.24	0.188	0.370	2.8926	
8	2.87	2.87	0.19	0.144	0.370	2.8354	
9	2.82	2.82	0.14	0.112	0.370	2.7946	
10	2.79	2.79	0.11	0.083	0.370	2.7574	
11	2.76	2.76	0.08	0.064	0.370	2.7329	
12	2.75	2.75	0.07	0.052	0.370	2.7166	
13	2.74	2.74	0.06	0.043	0.370	2.7061	
14	2.73	2.73	0.05	0.037	0.370	2.6981	
15	2.72	2.72	0.04	0.033	0.370	2.6925	
16	2.72	2.72	0.04	0.030	0.370	2.6893	



To = 5.6 mins
336 secs

Theory: Falling Head Permeability calculated using equation by Hvorslev

$k = [r^2 \ln(Le/R)]/2Le\ To$

where r = radius of casing
R = radius of well screen
Le = length of well screen
To = time taken to rise or fall to 37% of initial change

Hydraulic Conductivity	**k =**	**1.4E-06**	m/sec
	=	**0.493**	cm/hour

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Permeability Testing - DG15 Rising Head Test Report

Client:	Alphington Developments Pty Ltd	Project No:	79075.12
Project:	Yarrabend River Monitoring Event	Test date:	15-Oct-20
Location:	Yarrabend Development, Alphington	Tested by:	MD

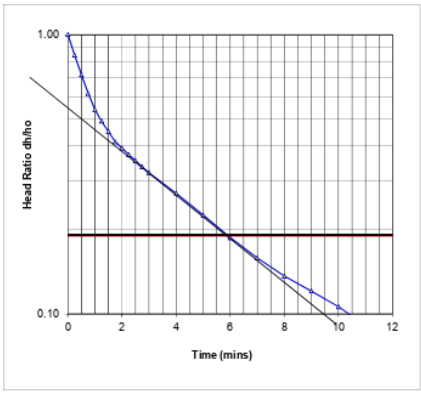
Test Location		**Test No.**	DG15	
Description:	Standpipe in borehole	Easting:	326360.6	m
Material type:	CLAY	Northing	5816021.43	m
		Surface Level:	7.94	m AHD

Details of Well Installation

Well casing diameter (2r)	50	mm	Depth to water before test	0.46	mTOC
Well screen diameter (2R)	100	mm	Depth to water at start of test	1.83	mTOC
Length of well screen (Le)	1	m			

Test Results

Time (min)	Depth (m)		Change in Head: δH (m)	δH/Ho		Ht	Ho
0.01	1.83	1.83	1.37	1.000	0.191		1.37
0.25	1.62	1.62	1.16	0.845	0.191	1.588	
0.5	1.44	1.44	0.98	0.718	0.191	1.4138	
0.75	1.30	1.30	0.84	0.615	0.191	1.2731	
1	1.20	1.20	0.74	0.540	0.191	1.1698	
1.25	1.13	1.13	0.67	0.490	0.191	1.1012	
1.5	1.08	1.08	0.62	0.450	0.191	1.047	
1.75	1.03	1.03	0.57	0.414	0.191	0.9967	
2	1.00	1.00	0.54	0.392	0.191	0.9672	
2.25	0.97	0.97	0.51	0.372	0.191	0.9395	
2.5	0.94	0.94	0.48	0.354	0.191	0.9147	
2.75	0.92	0.92	0.46	0.336	0.191	0.8908	
3	0.90	0.90	0.44	0.320	0.191	0.8685	
4	0.83	0.83	0.37	0.270	0.191	0.8004	
5	0.77	0.77	0.31	0.226	0.191	0.7393	
6	0.72	0.72	0.26	0.188	0.191	0.687	
7	0.68	0.68	0.22	0.158	0.191	0.6471	
8	0.65	0.65	0.19	0.137	0.191	0.6171	
9	0.63	0.63	0.17	0.121	0.191	0.5955	
10	0.61	0.61	0.15	0.106	0.191	0.5752	
11	0.58	0.58	0.12	0.091	0.191		
12					0.191		



To = 5.9 mins
354 secs

Theory: Falling Head Permeability calculated using equation by Hvorslev

$k = [r^2 \ln(Le/R)]/2Le\ To$

where r = radius of casing
R = radius of well screen
Le = length of well screen
To = time taken to rise or fall to 37% of initial change

Hydraulic Conductivity	**k =**	**2.6E-06**	m/sec
	=	**0.952**	cm/hour

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Permeability Testing - DG16 Rising Head Test Report

Client:	Alphington Developments Pty Ltd	Project No:	79075.12
Project:	Yarrabend River Monitoring Event	Test date:	15-16/10/2020
Location:	Yarrabend Development, Alphington	Tested by:	MD

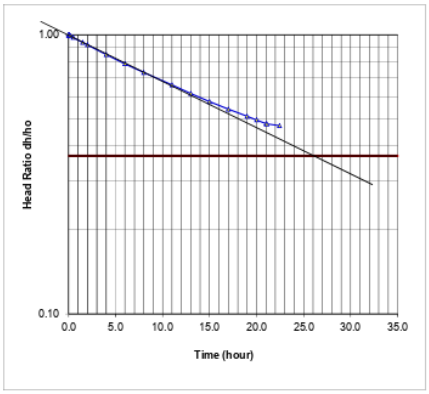
Test Location		**Test No.**	DG16	
Description:	Standpipe in borehole	Easting:	326366.28	m
Material type:	CLAY and SANDSTONE	Northing	5816019.38	m
		Surface Level:	8.21	m AHD

Details of Well Installation

Well casing diameter (2r)	50	mm	Depth to water before test	0.49	mTOC
Well screen diameter (2R)	125	mm	Depth to water at start of test	6.50	mTOC
Length of well screen (Le)	1	m			

Test Results

Time (hour)	Depth (m)		Change in Head: δH (m)	δH/Ho		Ht	Ho
0.00	6.50	6.50	6.01	0.999	0.368		6.00667
0.02	6.49	6.49	6.00	0.999	0.368	6.463	
0.03	6.49	6.49	6.00	0.998	0.368	6.45842	
0.05	6.48	6.48	5.99	0.997	0.368	6.45292	
0.07	6.48	6.48	5.99	0.997	0.368	6.44925	
0.08	6.47	6.47	5.98	0.996	0.368	6.44467	
0.17	6.45	6.45	5.96	0.991	0.368	6.41717	
0.50	6.36	6.36	5.87	0.977	0.368	6.33467	
1.50	6.13	6.13	5.64	0.938	0.368	6.1	
2.00	6.02	6.02	5.53	0.920	0.368	5.99	
4.00	5.59	5.59	5.10	0.849	0.368	5.56192	
6.00	5.22	5.22	4.73	0.787	0.368	5.18883	
8.00	4.89	4.89	4.40	0.733	0.368	4.8625	
11.00	4.46	4.46	3.97	0.661	0.368	4.43075	
13.00	4.19	4.19	3.70	0.616	0.368	4.16308	
15.00	3.95	3.95	3.46	0.576	0.368	3.92383	
17.00	3.74	3.74	3.25	0.541	0.368	3.70933	
19.00	3.56	3.56	3.07	0.510	0.368	3.526	
20.00	3.47	3.47	2.98	0.495	0.368	3.43525	
21.00	3.38	3.38	2.89	0.481	0.368	3.34908	
21.08	3.37	3.37	2.88	0.479	0.368	3.34175	
22.43	3.33	3.33	2.84	0.473	0.368	3.3	
35.00					0.368		



To = 1560 mins
93600 secs

Theory: Falling Head Permeability calculated using equation by Hvorslev

$k = [r^2 \ln(Le/R)]/2Le\ To$

where r = radius of casing
R = radius of well screen
Le = length of well screen
To = time taken to rise or fall to 37% of initial change

Hydraulic Conductivity	**k =**	**9.3E-09**	m/sec
	=	**0.003**	cm/hour

Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

MONITORING YARRA BANK VISIT 19 **SURVEY REFERENCE 22185/G**

REEDS CONSULTING

	MONITORING POINT	MEASUREMENT DATE	3/03/2020	10/03/2020	17/03/2020	24/03/2020	31/03/2020	7/04/2020	15/04/2020	21/04/2020	28/04/2020	5/05/2020	13/05/2020	19/05/2020	28/05/2020	02/06/2020	09/06/2020	16/06/2020	23/06/2020	15/09/2020	08/12/2021	CHANGE SINCE PREVIOUS	CHANGE SINCE INITIAL
MONITORING WEST	MP1	OFFSET	0	-7	-7	-6	-5	-6	-6	-5	-4	-5	-5	-5	-5	-5	-6	-6	-5	-5	-14	-9	-14
		LATERAL	0	4	3	3	4	4	2	-1	1	0	1	-1	-1	-1	0	0	-1	2	1	-1	1
		HEIGHT	0	2	3	2	1	1	3	4	0	1	1	2	4	5	3	4	5	6	7	1	7
	MP2	OFFSET	0	-9	-9	-9	-9	-9	-10	-10	-9	-11	-10	-11	-10	-10	-14	-13	-12	-10	-22	-12	-22
		LATERAL	0	3	1	1	-2	-1	-3	-3	-2	-2	-2	-2	-3	-3	-1	-1	-2	0	1	1	1
		HEIGHT	0	0	0	-1	-1	-1	-1	-1	-2	-3	-3	-2	-1	0	-2	-1	0	-1	0	1	0
	MP3	OFFSET	0	-9	-8	-7	-6	-6	-7	-5	-5	-6	-6	-5	-5	-5	-7	-7	-6	-5	-11	-6	-11
		LATERAL	0	3	1	2	2	2	0	-3	-2	-2	-3	-2	-3	-3	-1	-1	-2	-2	-3	-1	-3
		HEIGHT	0	3	4	3	2	2	0	3	3	3	3	3	4	4	4	5	5	5	9	4	9
	MP4	OFFSET	0	-11	-10	-9	-9	-8	-9	-9	-9	-10	-10	-10	-10	-9	-12	-12	-11	-10	-18	-8	-18
		LATERAL	0	7	5	5	7	6	3	3	4	5	5	5	5	5	6	5	5	6	8	2	8
		HEIGHT	0	1	0	-1	-3	-4	-2	-2	-2	-3	-3	-3	-3	-2	-2	-2	-1	-3	-2	1	-2
	MP5	OFFSET	0	-9	-8	-8	-8	-8	-7	-6	-6	-7	-7	-6	-6	-6	-8	-8	-7	-4	-11	-7	-11
		LATERAL	0	5	1	2	3	3	0	-2	-1	0	0	-1	-2	-2	0	0	-2	-1	0	1	0
		HEIGHT	0	1	3	2	2	2	2	-4	0	1	1	2	3	3	2	3	4	2	8	6	8
	MP6	OFFSET	0	-11	-10	-10	-9	-9	-10	-10	-9	-10	-9	-10	-9	-8	-16	-17	-16	-15	-26	-11	-26
		LATERAL	0	6	3	3	3	3	0	1	1	2	2	1	1	1	10	9	7	9	7	-2	7
		HEIGHT	0	0	0	-2	-4	-4	-3	-3	-4	-5	-5	-5	-3	-2	-4	-3	-2	-5	-5	0	-5
MONITORING EAST	MP13	OFFSET	NA	NA	0	33	37	36	32	31	32	32	32	31	31	31	33	32	31	31	27	-4	27
		LATERAL	NA	NA	0	-2	-2	-2	-3	-3	-3	-4	-4	-4	-3	-3	-2	-2	-2	-2	-1	1	-1
		HEIGHT	NA	NA	0	-15	3	2	2	3	3	2	2	2	3	3	5	4	3	3	4	1	4
	MP8	OFFSET	0	-1	-2	-1	-2	-2	-4	-4	-5	-5	-5	-5	-5	-5	-6	-5	-7	-5	-12	-7	-12
		LATERAL	0	1	1	2	1	1	1	1	1	1	1	1	1	1	2	3	2	2	5	3	5
		HEIGHT	0	-3	-1	-3	-3	-3	-4	-4	-4	-4	-5	-4	-4	-3	-4	-5	-5	-7	-8	-1	-8
	MP14	OFFSET	NA	NA	0	-63	-71	-71	-71	-71	-71	-71	-71	-71	-71	-71	-70	-71	-71	-71	-75	-4	-75
		LATERAL	NA	NA	0	3	0	0	0	-1	-1	-1	-1	0	0	0	1	1	0	0	1	1	1
		HEIGHT	NA	NA	0	-23	-26	-26	-27	-26	-26	-27	-26	-24	-26	-26	-25	-25	-26	-26	-25	1	-25
	MP10	OFFSET	0	-3	-22	-23	-25	-25	-24	-26	-26	-22	-22	-25	-26	na	-25	-26	-28	-30	-51	-21	-51
		LATERAL	0	0	0	1	0	0	-1	-2	-2	-3	-3	-3	-3	na	-5	-4	-3	-3	-5	-2	-5
		HEIGHT	0	-3	-12	-13	-12	-14	-15	-17	-15	-17	-18	-16	-16	na	-16	-17	-18	-20	-27	-7	-27
	MP15	OFFSET	NA	NA	0	-18	-18	-18	-18	-18	-17	-17	-17	-17	-18	-18	-17	-17	-18	-18	-21	-3	-21
		LATERAL	NA	NA	0	12	10	11	8	9	9	8	9	8	9	9	8	8	9	9	10	1	10
		HEIGHT	NA	NA	0	-6	-5	-5	-8	-6	-6	-7	-7	-6	-6	-6	-7	-8	-7	-7	-8	-1	-8
	MP12	OFFSET	0	-2	-14	-26	-27	-29	-27	-29	-30	-27	-28	-29	-29	-26	-30	-30	-31	-32	-47	-15	-47
		LATERAL	0	2	7	7	5	6	5	5	5	4	4	4	4	5	4	5	4	4	3	-1	3
		HEIGHT	0	-3	-17	-19	-20	-22	-27	-29	-22	-24	-23	-23	-23	-20	-23	-23	-24	-26	-33	-7	-33

MONITORING POINTS

ALL UNITS ARE IN MILLIMETRES

A positive difference in offset refers to movement away from Yarra River

A positive difference in lateral refers to movement east along Yarra River

A positive difference in height refers to an upward movement

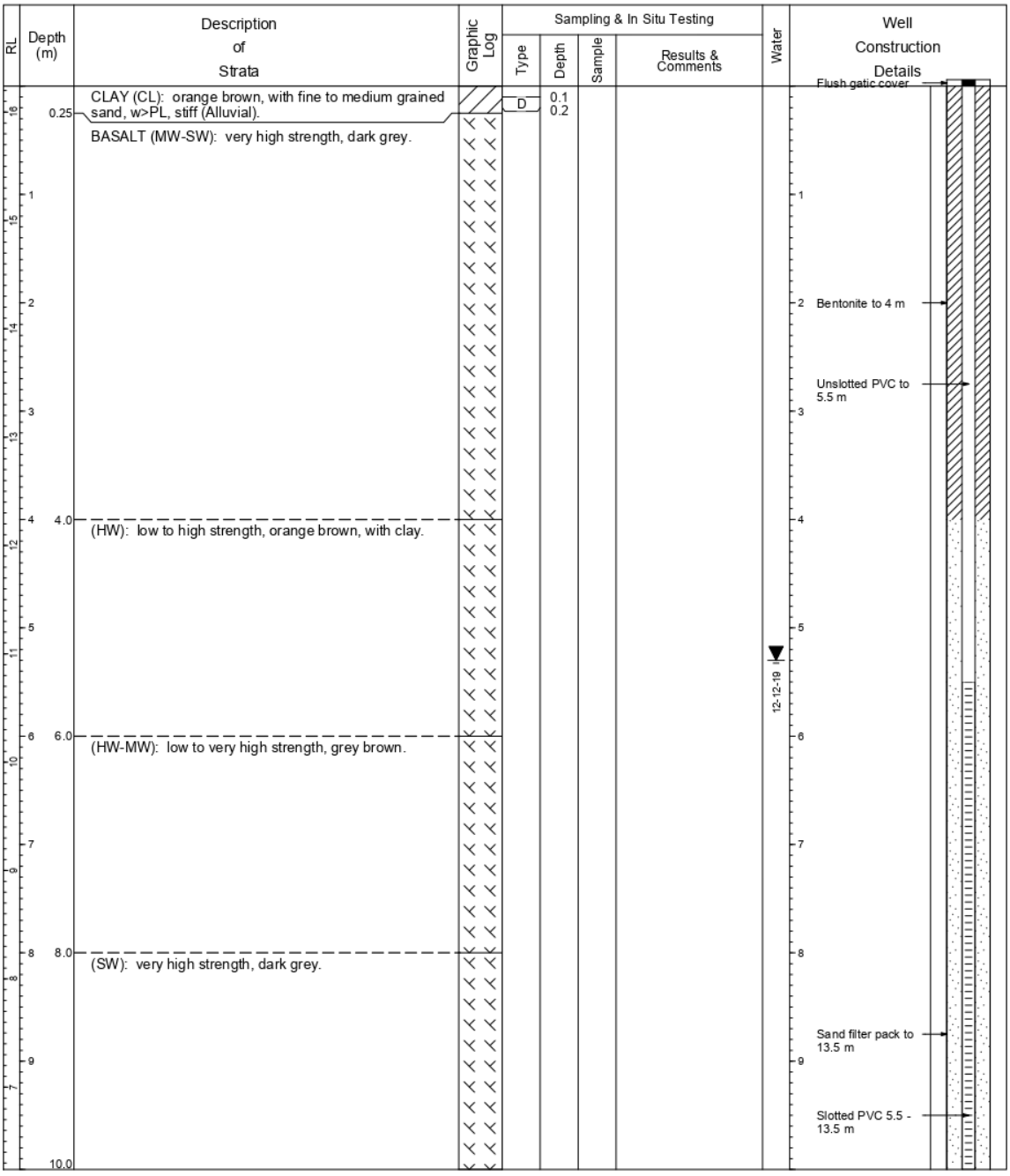
Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 16.24 m AHD
EASTING: 326254.71
NORTHING: 5816077.4
DIP/AZIMUTH: 90°/--

BORE No: DG 1
PROJECT No: 79075.18
DATE: 26/11/2019
SHEET 1 OF 2



RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to 0.25 m; hammer drill to 15 m.
WATER OBSERVATIONS: Groundwater measured at 5.3 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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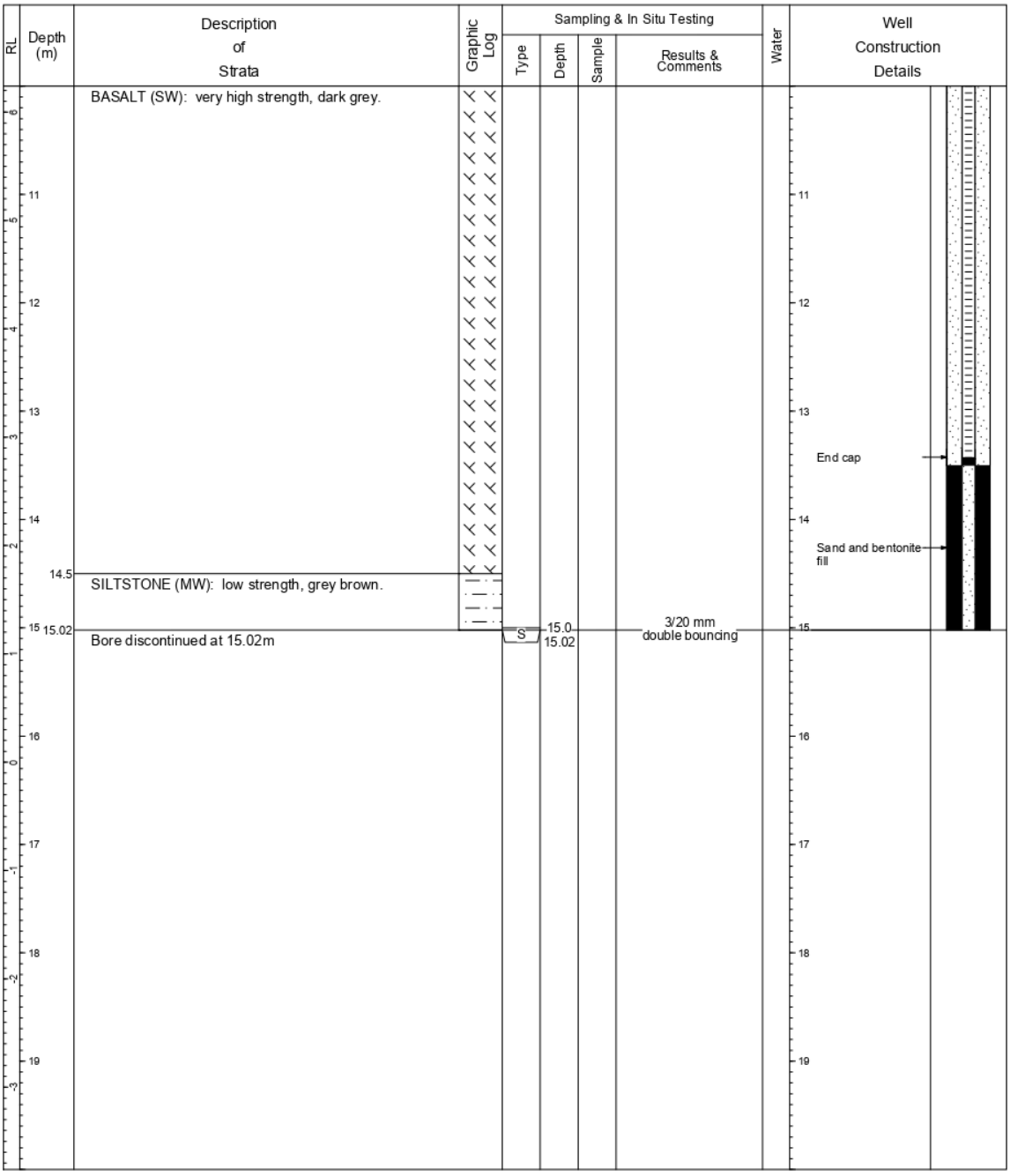
Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 16.24 m AHD
EASTING: 326254.71
NORTHING: 5816077.4
DIP/AZIMUTH: 90°/--

BORE No: DG 1
PROJECT No: 79075.18
DATE: 26/11/2019
SHEET 2 OF 2



RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to 0.25 m; hammer drill to 15 m.
WATER OBSERVATIONS: Groundwater measured at 5.3 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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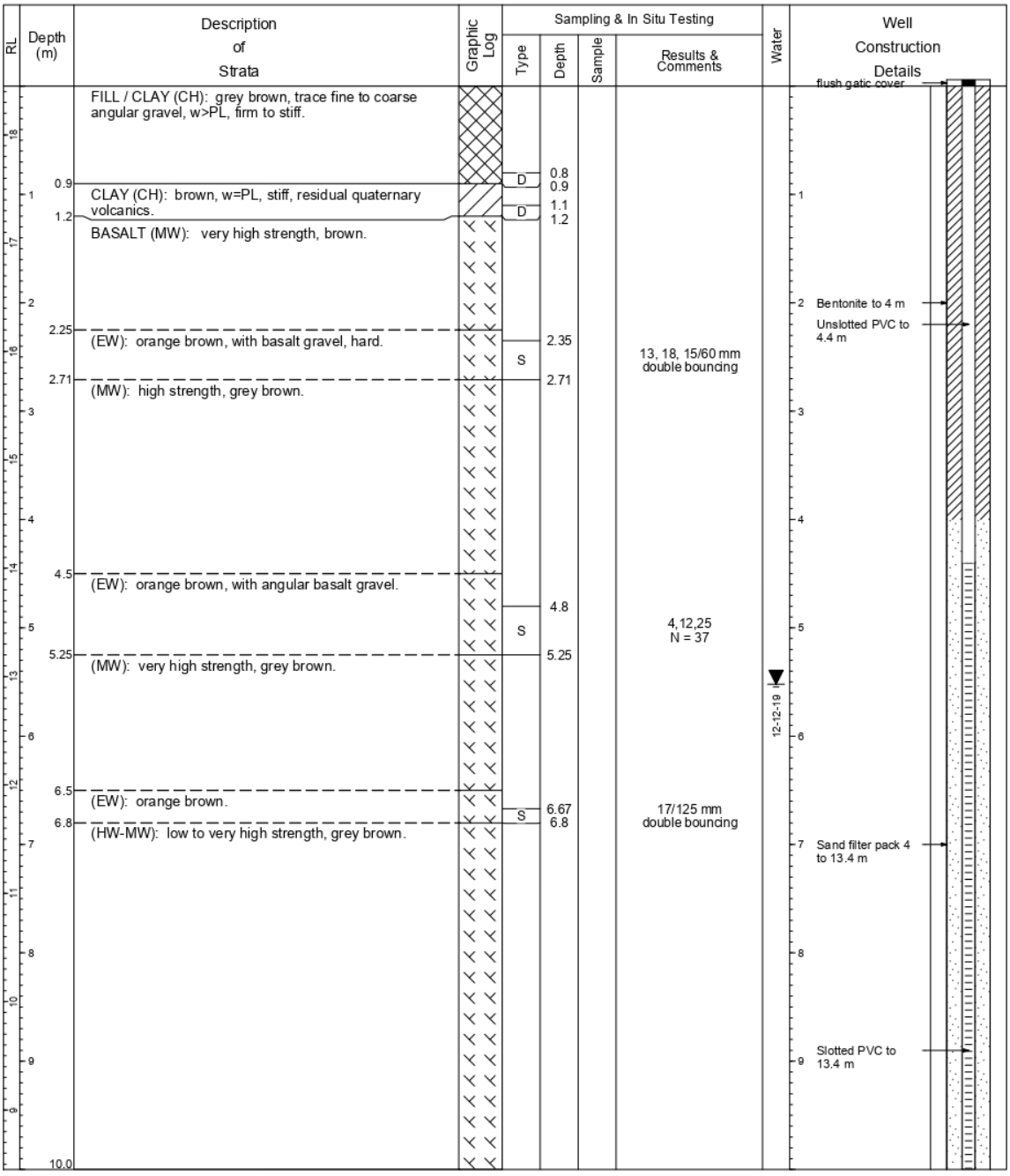
Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 18.45 m AHD
EASTING: 326154.27
NORTHING: 5816108.19
DIP/AZIMUTH: 90°/--

BORE No: DG 2
PROJECT No: 79075.18
DATE: 27/11/2019
SHEET 1 OF 2



RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to 1.2 m; hammer drilling to 15 m.
WATER OBSERVATIONS: Groundwater measured at 5.52 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Strong hydrocarbon odour on top of water table; standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 18.45 m AHD
EASTING: 326154.27
NORTHING: 5816108.19
DIP/AZIMUTH: 90°/--

BORE No: DG 2
PROJECT No: 79075.18
DATE: 27/11/2019
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		BASALT (HW-MW): low to very high strength, grey brown.							End cap; Borehole collapse 13.4 - 15 m
	15.0	Bore discontinued at 15.0m							

RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to 1.2 m; hammer drilling to 15 m.
WATER OBSERVATIONS: Groundwater measured at 5.52 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Strong hydrocarbon odour on top of water table; standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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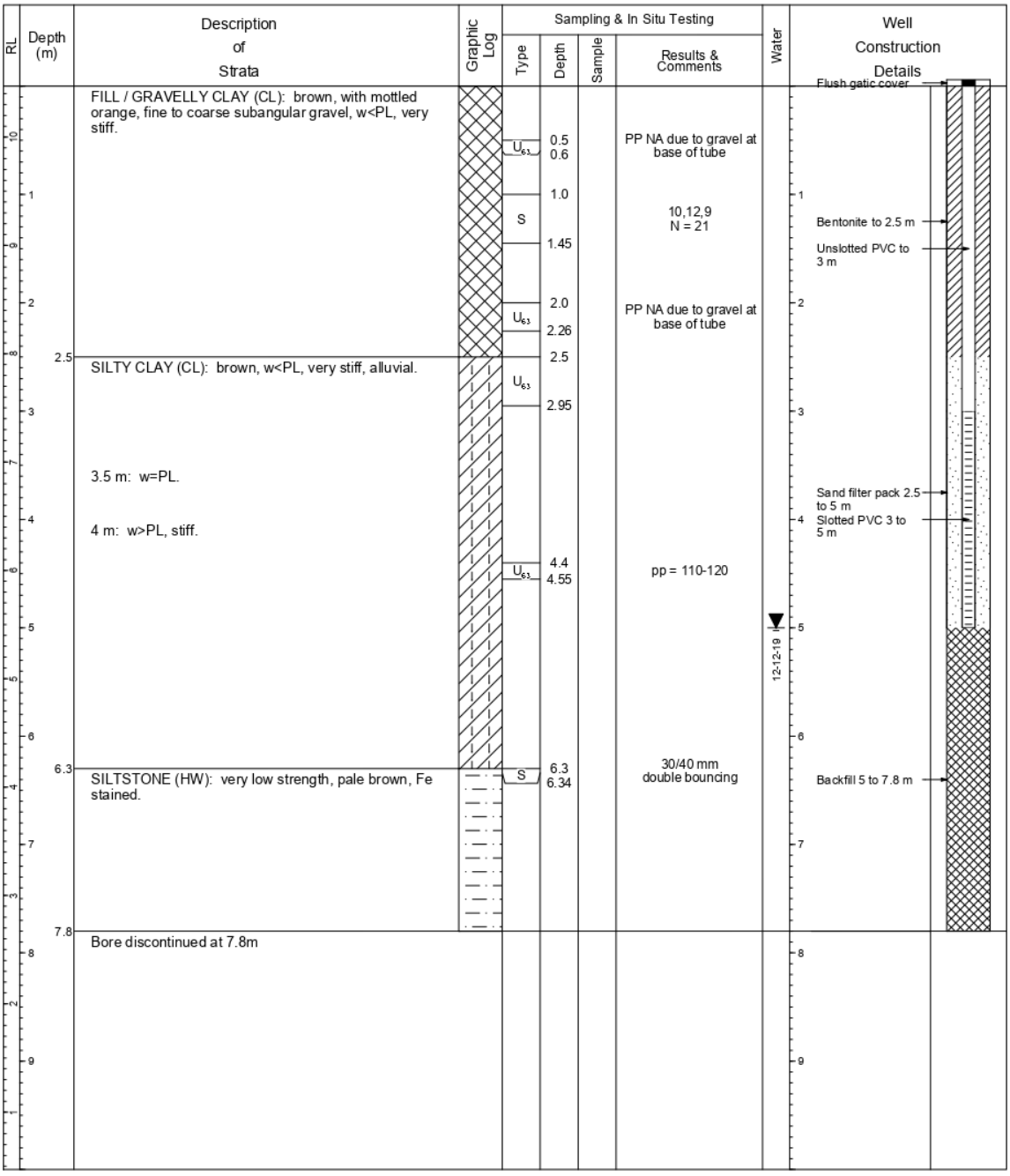
Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 10.47 m AHD
EASTING: 326190.38
NORTHING: 5816021.01
DIP/AZIMUTH: 90°/--

BORE No: DG 4
PROJECT No: 79075.18
DATE: 4/12/2019
SHEET 1 OF 1



RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to end.
WATER OBSERVATIONS: Groundwater measured at 5.00 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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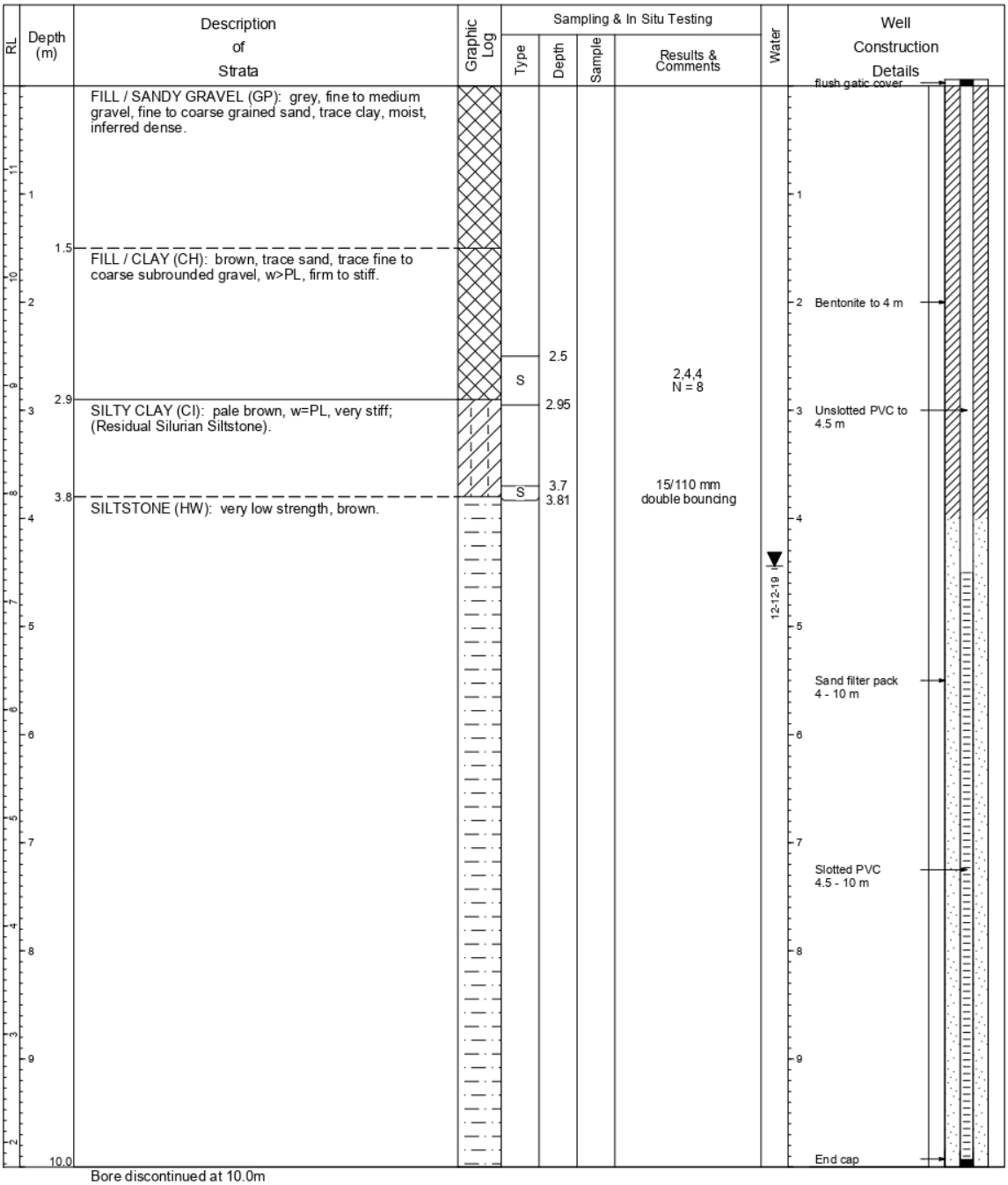
Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 11.77 m AHD
EASTING: 326219.45
NORTHING: 5816033.41
DIP/AZIMUTH: 90°/--

BORE No: DG 5
PROJECT No: 79075.18
DATE: 27/11/2019
SHEET 1 OF 1



RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to 3.7 m; PCD blade bit to 10 m.
WATER OBSERVATIONS: Groundwater measured at 4.44 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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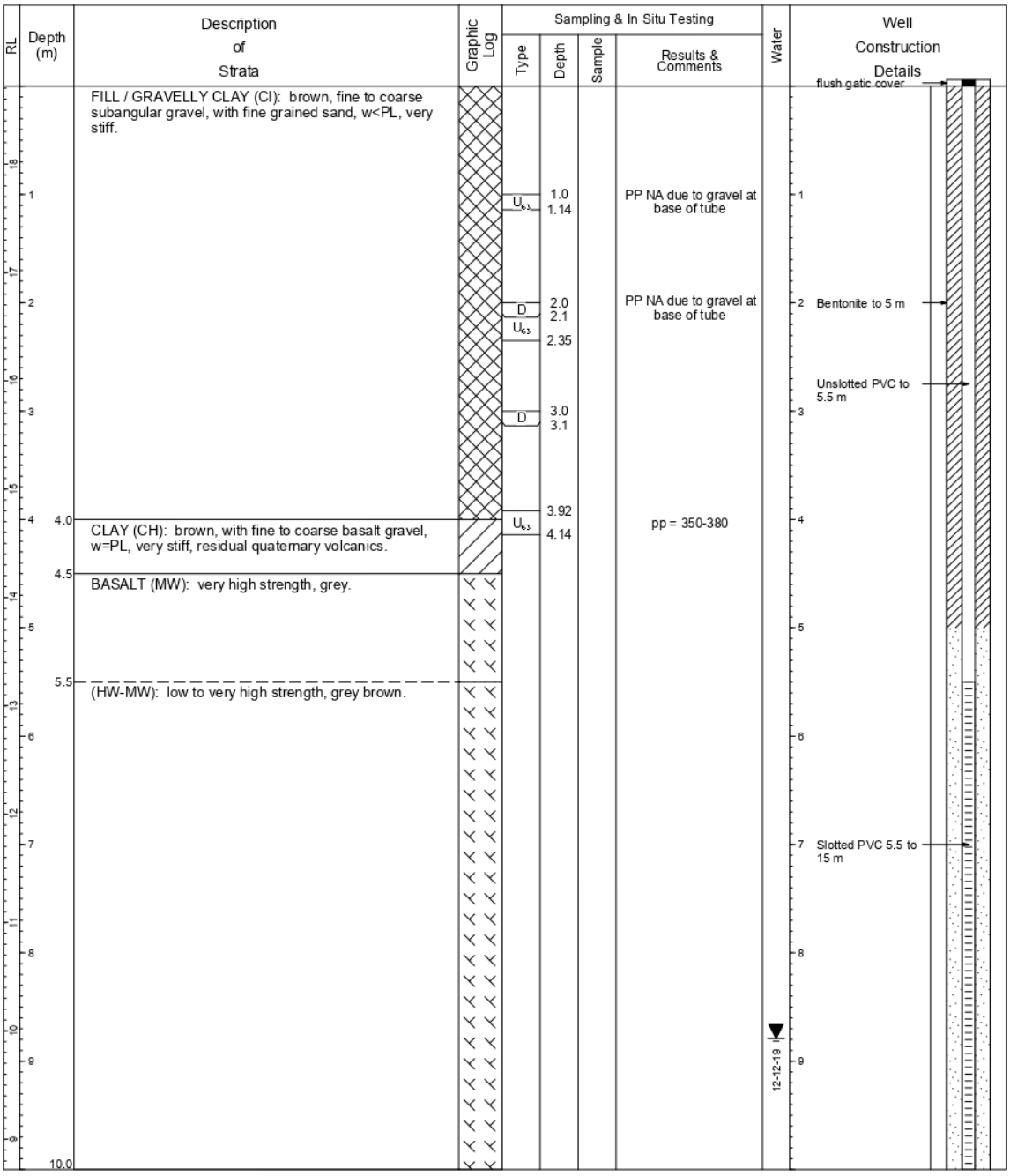
Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 18.72 m AHD
EASTING: 326288.17
NORTHING: 5816032.61
DIP/AZIMUTH: 90°/--

BORE No: DG 6
PROJECT No: 79075.18
DATE: 28/11/2019
SHEET 1 OF 2



RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to 4.5 m; hammer drilling to 15 m.
WATER OBSERVATIONS: Groundwater measured at 8.79 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 18.72 m AHD
EASTING: 326288.17
NORTHING: 5816032.61
DIP/AZIMUTH: 90°/--

BORE No: DG 6
PROJECT No: 79075.18
DATE: 28/11/2019
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		BASALT (HW-MW): low to very high strength, grey brown.							Sand filter pack 5 to 15 m
	12.5	SILTSTONE (HW): very low strength, brown.							
	15.0	Bore discontinued at 15.0m							

RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to 4.5 m; hammer drilling to 15 m.
WATER OBSERVATIONS: Groundwater measured at 8.79 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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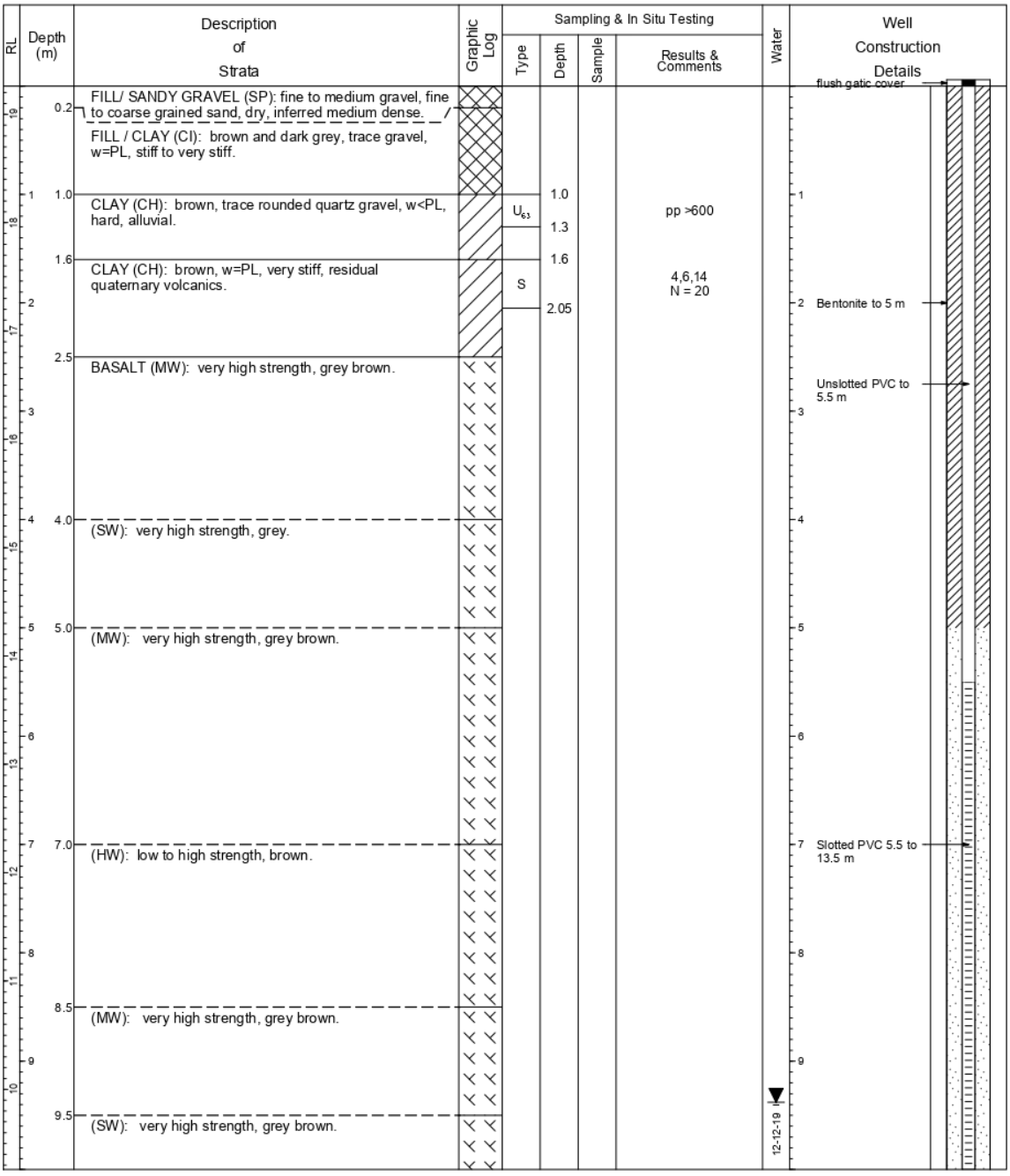
Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 19.26 m AHD
EASTING: 326353.77
NORTHING: 5816053.55
DIP/AZIMUTH: 90°/--

BORE No: DG 7
PROJECT No: 79075.18
DATE: 28/11/2019
SHEET 1 OF 2



RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to 2.5 m; hammer drilling to 15 m.
WATER OBSERVATIONS: Groundwater measured at 9.38 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 19.26 m AHD
EASTING: 326353.77
NORTHING: 5816053.55
DIP/AZIMUTH: 90°/--

BORE No: DG 7
PROJECT No: 79075.18
DATE: 28/11/2019
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		(SW): very high strength, grey brown. *(continued)*							
	10.5	BASALT (MW-HW): low to very high strength, grey brown.							
	15.0	Bore discontinued at 15.0m							

Well Construction Details: Sand filter pack 5 to 13.5 m; hole collapse 13.5 - 15 m

RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to 2.5 m; hammer drilling to 15 m.
WATER OBSERVATIONS: Groundwater measured at 9.38 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

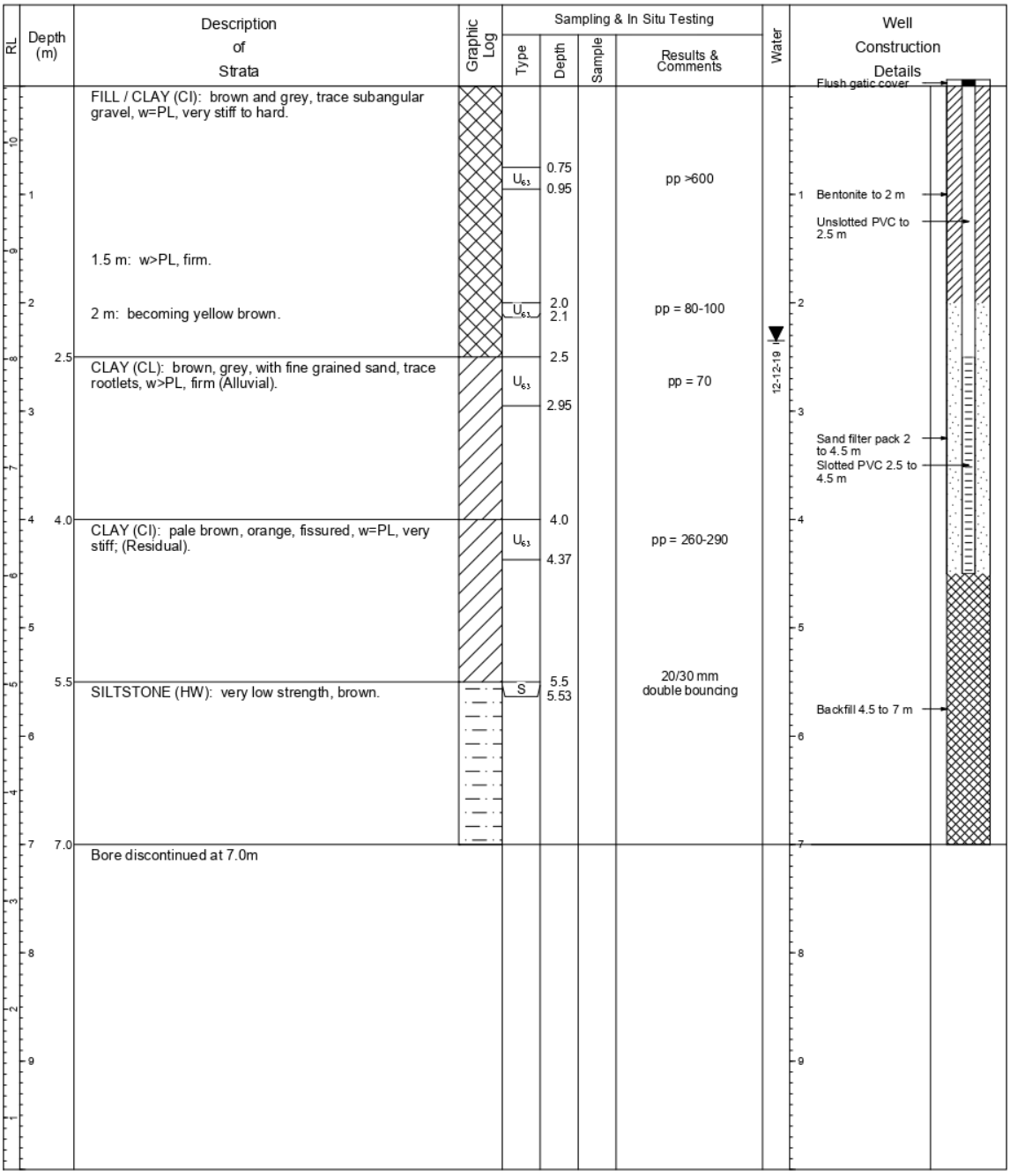
Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 10.52 m AHD
EASTING: 326259.85
NORTHING: 5816017.74
DIP/AZIMUTH: 90°/--

BORE No: DG 12
PROJECT No: 79075.18
DATE: 3/12/2019
SHEET 1 OF 1



RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to end.
WATER OBSERVATIONS: Groundwater measured at 2.35 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 9.43 m AHD
EASTING: 326273.84
NORTHING: 5816013.78
DIP/AZIMUTH: 90°/--

BORE No: DG 13
PROJECT No: 79075.18
DATE: 3/12/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.2	SILTY SAND (SP): fine grained, brown, moist.							Flush gatic cover
	0.6	FILL / CLAY (CL): brown, trace subangular gravel, w<PL, very stiff.							
	1.0	CLAY (CI): pale grey brown, w=PL, very stiff; (Residual basalt).							Unslotted PVC to 2 m
		SILTY CLAY (CI): brown, w=PL, very stiff (Alluvial).						12-12-19	
		2.1 m: trace fine to coarse basalt gravel.							Slotted PVC to 5.4 m
		2.2 m: becoming w>PL, firm.							
		2.5 m: fissured, mottled orange grey brown.							
		3.5 m: becoming very stiff.							Slotted PVC 2 to 4 m
	4.8	SILT (ML): pale grey, w>PL, very stiff.							
	5.0	SAND (SP): pale grey, firm to medium grained, very dense.							Backfill 4 to 5.4 m
	5.4	Bore discontinued at 5.4m							

RIG: Hand Auger **DRILLER:** DP **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Hand Auger
WATER OBSERVATIONS: Groundwater measured at 1.95 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 7.94 m AHD
EASTING: 326360.6
NORTHING: 5816021.43
DIP/AZIMUTH: 90°/--

BORE No: DG 15
PROJECT No: 79075.18
DATE: 2/12/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.9	CLAY (CL): grey brown, with fine sand, w>PL, firm; (Alluvial). 0.3 m: becoming w>>PL.						12-12-19	Flush gatic cover; Bentonite to 0.6 m; Unslotted PVC to 1.0 m
		CLAY (CH): grey, trace basalt gravel, w>PL, stiff; (Alluvial). 1.5 m: with minor orange brown mottling.		D	1.1				Sand filter pack 0.6 to 2.0 m; Slotted PVC 1.0 to 2.0 m
	2.7	Bore discontinued at 2.7m due to auger refusal, inferred to be top of basalt unit.			2.7				Backfill 2 to 2.7 m

RIG: Hand Auger **DRILLER:** DP **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Hand Auger
WATER OBSERVATIONS: Groundwater measured at 0.62 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

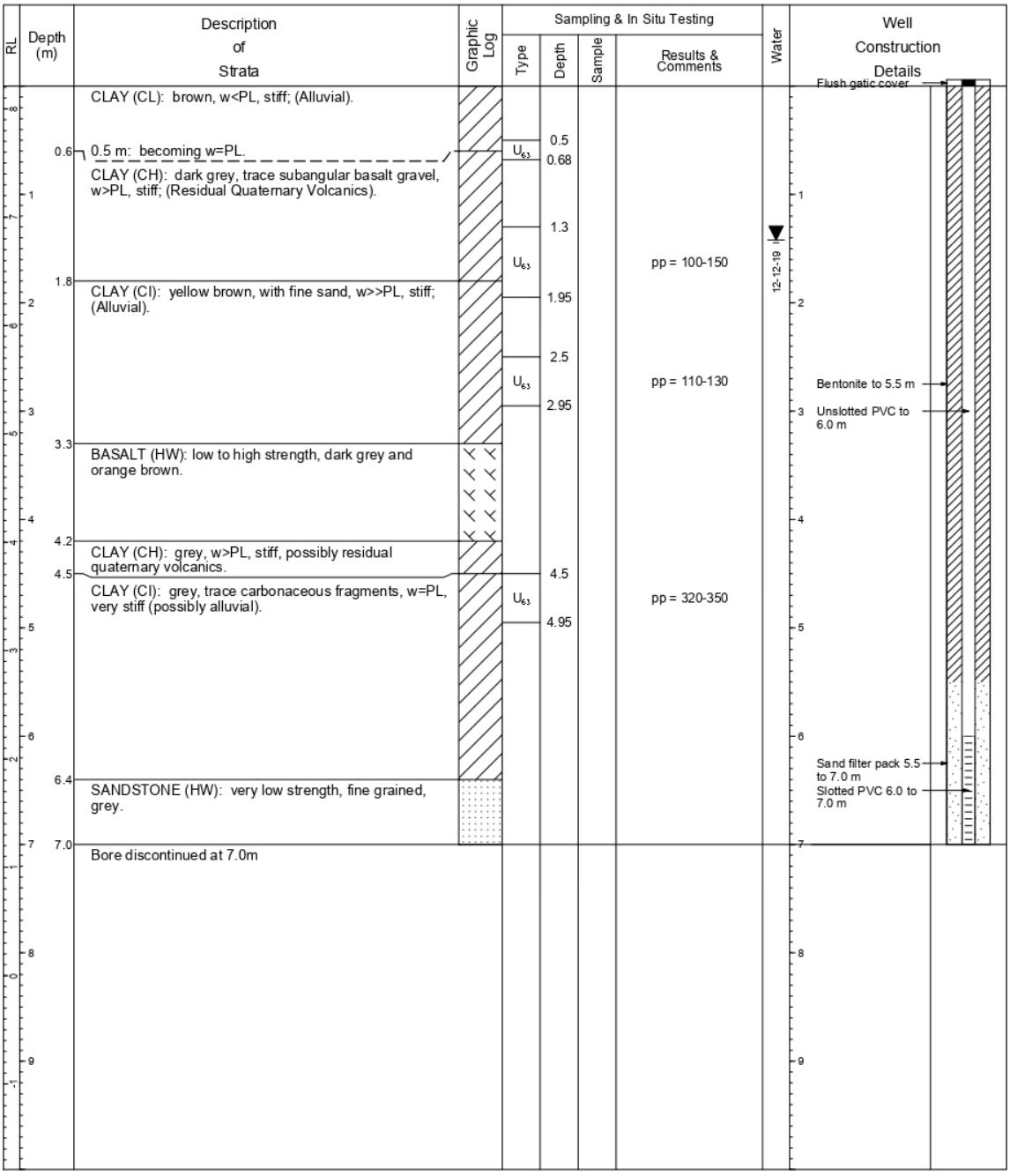
Attachment 2 - Yarra River Northern Bank Slump Management Advice, Douglas Partners, January 2021

BOREHOLE LOG

CLIENT: Alphington Developments Pty Ltd
PROJECT: Groundwater Monitoring
LOCATION: Heidelberg Road, Alphington

SURFACE LEVEL: 8.21 m AHD
EASTING: 326366.28
NORTHING: 5816019.38
DIP/AZIMUTH: 90°/--

BORE No: DG 16
PROJECT No: 79075.18
DATE: 2/12/2019
SHEET 1 OF 1



RIG: Fraste Multi-drill ML **DRILLER:** Apex Drilling **LOGGED:** APM **CASING:** NA
TYPE OF BORING: Solid flight auger to 7 m.
WATER OBSERVATIONS: Groundwater measured at 1.42 m
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

Attachment 3 - Alluvium's Peer Review of Douglas Partners' Reports, February 2021

alluvium

SUMMARY REPORT:

Tree collapse and bank slump investigation on Yarra River adjacent to former Amcor site at Alphington

February 2021

CITY OF YaRRA

Attachment 3 - Alluvium's Peer Review of Douglas Partners' Reports, February 2021

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1 Introduction

Yarra City Council (Council) has engaged Alluvium Consulting Australia Pty Ltd (Alluvium) to investigate tree collapse (2019) and bank slumping events on the Yarra River adjacent to the former Amcor paper mill site in Alphington. The subject site adjoins the right bank of the Yarra River and is the subject of an urban renewal / development project by Glenvill Developments (Glenvill).

The riverbank at the subject site comprises a lower terrace (including walking path) adjacent to the Yarra River's water edge and a steep embankment up to the former industrial and proposed residential lands. The riverbank on the lower terrace has been subject to recent slumping. Members of the local community have raised concerns with the Yarra City Council regarding the bank slump and associated tree collapse including the coincident timing of the slumping with the redevelopment of the site.

Yarra City Council engaged Alluvium to investigate slumping at the site and to support Council in its review of documentation provided by Glenvill and its consultants. The investigation and the ongoing support have been provided through an expert panel process. The expert panel convened by Alluvium comprises specialists in the fields of hydrology and fluvial geomorphology (Ross Hardie, Alluvium), geotechnical bank stability (Tim Holt, A.S. James), groundwater processes (Jon Fawcett, C.D.M. Smith), surface water management (Jonathon McLean, Alluvium) and riparian ecology (Rob Dabal, Alluvium).

The intent of the work undertaken and or requested by Yarra City Council has been to develop an evidence-based approach to the management of the bank slump and tree collapse. The investigations were intended to:

1. Identify the causes of the recent bank slump and tree collapse
2. Identify any short-term actions that should be undertaken
3. Identify long term remediation measures for the site

The investigations and ongoing support provided by Alluvium have been undertaken in two stages:

- Stage 1 interim report (August 2019): A qualitative assessment to identify the most likely causes of the bank slump and trees collapse and to set out a program of investigations to provide an evidence-based approach to management of the issues. This qualitative assessment was undertaken in 2019 for Yarra City Council, by Alluvium, and was based on a field inspection and review of readily available existing information.
- Stage 2 (Ongoing since September 2019): Ongoing peer review of investigations and monitoring documentation undertaken by Glenvill and submitted to Yarra City Council. This work by Alluvium, to review the work presented to Yarra City Council, is the **subject of this report**

This purpose of this report is to provide a summary of the monitoring and assessments undertaken to date and to provide an independent peer review of this work. In addition, we have provided a background to the issue and a 'problem statement' to provide some context to the summary and peer review.

2 Background

The subject site is located on the right bank of the Yarra River upstream of Dights Falls, immediately upstream of the Chandler Highway and adjacent to the former Amcor paper mill (Figure 1). The riverbank at the subject site is located within freehold land. It is understood that a 30-metre-wide riparian corridor will be established for public use as a component of the planning consent for the proposed redevelopment. This corridor includes the subject river bank.

The riverbank at the subject site comprises a lower terrace (including an informal walking path) adjacent to the Yarra River's water edge and a steep embankment up to the former industrial and proposed residential lands. The existing informal walking path is located on private land. It is understood that the steep embankment

leading from the lower river terrace up to the upper terrace was established though placement of fill material during the period of site occupation by Amcor. The fill has raised the land that now forms part of the upper terrace, to the 1% AEP (approx.) flood elevation, limiting flood inundation of the site.

Figure 1. *The bank slumping zone on the Yarra River, with the location of trees assessed at bank slump zone*

The lower terrace and steep embankment have been revegetated with non-indigenous native trees. However, the edge of the riverbank comprises mature indigenous river red gums, likely to have established from natural regeneration. The riverbank on the lower terrace has been subject to recent slumping (Figure 2Figure 3). The slumping of the riverbank has led to the collapse of several of these mature river red gums into the Yarra River.

Figure 2. *Tree (T1) and bank slump site visit by Alluvium (August 2019)*

Figure 3 *Tree collapse (T2) at the edge of bank slump (August 2019)*

The initial (stage 1) interim report of the expert panel (Alluvium 2019) was based on a site visit, review of available reports and surveys, and an expert panel workshop to discuss the preliminary findings, identify an agreed most likely cause of the bank slump and tree collapse, and to agree on next steps in terms of both immediate risk mitigation measures and detailed investigations. While there are many elements that contribute to the slumping of riverbanks, the bank slumps at the site in early 2019 appear to have been triggered by recent increases in groundwater levels. The increase in groundwater levels was identified by the expert panel to have been most likely associated with the redevelopment of the site. However other factors, such as the grouting of a disused sewer main by Melbourne Water, were also identified as possible triggers.

The stage 1 report (Alluvium 2019) proposed a set of detailed investigation to determine the cause of any elevated groundwater, the bank slumps and tree collapse. The scope of the detailed investigations was concentrated on the issues of surface water / ground water interactions and the geotechnical stability of the embankments at the site. The recommended investigations set out in the stage 1 report also included further bank stability assessment to confirm (or otherwise) anecdotal evidence provided by Melbourne Water that the subject recent bank slumps were limited to and concentrated at the subject site.

This (stage 2) report focuses on the outcome of the subsequent detailed investigations set out in the Stage 1 report. These more detailed investigations have been undertaken by Glenvill and its consultants.

3 Problem statement

Elevated groundwater levels appear to have triggered the recent (2019) slumping on the left bank of the Yara River adjacent the former Amcor site. In the absence of options for remedial work on existing slumps, we expect some ongoing movement of the existing slumps, and that this movement will generate ongoing community concern. Slumping and tree collapse appears to have coincided with elevated groundwater levels within the lower terrace, expressed as surface water on the lower terrace.

The cause of elevated groundwater levels and the likely future changes in groundwater levels at the site require understanding to enable the development of an evidence-based management plan for the site. Numerous factors could lead to an increase in groundwater levels at the site. However, the timing of the slumping and the limited geographic location of the slumping led to the identification of two possible factors for increased groundwater levels at the site. The two factors are not mutually exclusive, and the ultimate cause of increased groundwater levels may be the result of a combination of the two triggers, or an alternative, as yet to be identified, factor. The two alternate potential factors for the increase in the groundwater levels and bank slumps are:

1. Factor No. 1: An increase in site infiltration associated with the removal of the drainage system servicing the former Amcor site and / or construction of infiltration based site construction site stormwater management: The activities had the potential to increase local (site) groundwater infiltration. This factor was identified by the expert panel as the most likely factor to have increased local groundwater levels.
2. Factor No. 2: Changes to groundwater levels associated with grouting of a disused sewer main. It is understood that Melbourne Water grouted a major sewer main associated with the decommissioning of that main. This work is understood to have occurred in 2015/2016. The old sewer main is understood to have been 'leaky'. However rather than sewerage leaking from the main, it is more typical for groundwater to leak into the sewer system. This leakage of groundwater into the system may have created a local draw down groundwater levels reducing the groundwater flux to the lower terrace. The grouting of the main had the potential to have halted such leakage of groundwater into the main and as a result, increased local groundwater levels. This was not the most likely factor identified by the expert panel. However, this factor could not be dismissed.

As previously discussed, factors other than the two outlined above may have caused the increased groundwater levels at the site. Further investigations and assessment were identified as being required to identify the most likely factors that led to an increase in groundwater levels at the site. This information could then be used to develop a evidence based management plan for the site.

4 Key stakeholders and communication process

The Stage 1 investigations recommended a variety of monitoring data be collected at, and assessments undertaken for the study site, and that this data and the assessments be used to inform further an evidence-based management plan to address the bank slumping.

In practical terms, this monitoring data was;

- collected and analysed by consultants engaged by Glenvill Developments (Douglas Partners and others) and
- forwarded to Yarra City Council by Glenvill
- forwarded to the Alluvium team (engaged by the Yarra City Council) for review. In turn, Alluvium has engaged the services of Jon Fawcett of CDM Smith for groundwater expertise and other members of the expert panel if and as required.

The outcomes of reviews undertaken by Alluvium were forwarded to Yarra City Council for distribution to Glenvill and its consultants.

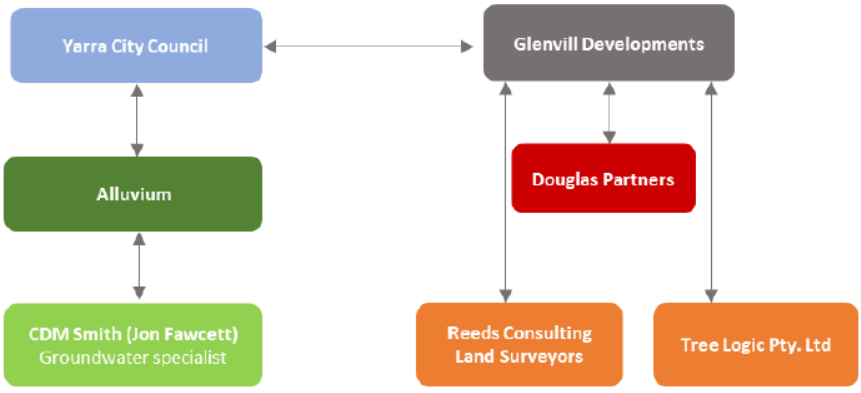


Figure 4. *Key stakeholders and data exchange for monitoring at the Yarra Bend bank slump site*

The intent of this process was that Glenvill Developments (with assistance from their consultants) compile monitoring data, undertake additional investigations and then build an evidence-based management plan to address bank slumping at the site.

Several iterations of this process have been completed over the past 18 months. Subsequent sections of this report summarise the data requested, the data provided, and the monitoring data and management plans available as of February 2021.

4.1 Data and information requests

Data and information requests have included:

- Reach scale context of slumps -This data provides context for the site by assessing the stability (evidence for ongoing bank slumping or historic bank collapse) in the study reach. This assessment was sought to identify whether recent instability at the study site is isolated to the site, or part of a wider pattern of instability in this section of the Yarra River.
- Slump movement monitoring – This data includes surveying the rate of slump movement to identify slump dynamics. Slumping rates can then be related to possible causal factors.
- Site topography and bathymetry surveys – this data was sought to be used as an input to hydraulic modelling, bank stability assessments, development of conceptual models of the processes at work and groundwater modelling.
- Erosion of bank toe – This assessment included hydrologic (analysis of variations in discharge in the Yarra River over the monitoring period) and hydraulic analysis (calculation of the forces exerted by flows on the toe of the left bank) used to determine whether natural processes are scouring the toe of the bank, triggering bank slumping.
- Groundwater assessment – the groundwater assessment was proposed to identify the role of groundwater in driving bank slumping. The assessment sought had three components:
    - Characterise soil properties (permeability, stability and chemical composition). This data was sought to contribute to an understanding of site stability and as inputs to groundwater modelling.
    - Monitor and model groundwater levels at representative locations across the site – groundwater level data can be used directly to indicate the elevation of the water table across the site. High groundwater levels in riverbanks can increase pore pressure and cause bank instability. The data is also used to calibrate groundwater modelling, which can be used to calculate the total flux of fluid through the bank.
    - Characterise groundwater chemistry – identify the source of groundwater moving through the bank. Because the chemical composition of rainwater that has recently infiltrated the ground differs from the composition of groundwater that has been stored underground for prolonged periods differ, comparing their chemical composition allows water sources and subsurface flow paths to be identified.
- Assess tree health – tree health is used to identify rapid tree die-off, which may be a precursor to tree collapse and accelerated slumping of the bank. Tree health can also be used as secondary evidence for elevated groundwater, as water-logging kills root systems
- Conceptual model and management plan – use the insights gained from monitoring and other assessments to develop a conceptual model of the underlying cause of bank slumping at the site, and from this develop a management plan to address the underlying causes.

4.2 On-site actions

Other on-site actions sought by Yarra City Council have included:

- Provision of public safety arrangements including:
    - controls on public access
    - management of at-risk trees
- Planning, design and implementation of modification to construction phase surface water management arrangements on the upper terrace including:
    - Works to prevent ponding of surface runoff.
    - Sealing of stormwater treatment ponds.
- Installation of temporary sub surface 'ag' drainage to lower the groundwater levels and hence limit the surface expression of groundwater within the lower terrace. This work was sought pending development of long-term management arrangements for the site.

A program of additional monitoring was requested to monitor the performance of these works including the monitoring of discharge from the temporary sub surface drain. This discharge rate could be used to inform the understanding of groundwater flow rates (flux).

5 Chronology of information requested and provided to date

This section summarises the timeline of data requests and if and when that data was provided to Yarra City Council and Alluvium for review.

Attachment 3 - Alluvium's Peer Review of Douglas Partners' Reports, February 2021

Table 1. Summary of monitoring data requested from Glenvill Developments by City of Yarra. The table relates the reason specific data was requested, whether the monitoring data was provided.

Investigation component	Data requested	Date of request	Provided as of January 2021	Reviewed and response provided	Outcome or further requests
Reach scale context - This data provides context for the site by assessing the stability (evidence for ongoing bank slumping or historic bank collapse) in the study reach. This assessment determines whether instability at the study site is an isolated event, or part of a wider pattern of instability in this section of the Yarra River	Reach scale bank stability assessment	20 August 2019	Not provided	N/A	Data still required as of February 2021
Slump movement monitoring – surveying the rate of slump movement to identify slump dynamics. Slumping rates can then be related to possible causal factors.	Slump monitoring survey	20 August 2019	Yes Currently 12 monitoring points across the site assessed over an eleven month period between December 2019 and December 2020	Yes	Supporting data and integration with additional monitoring data still required
Site topography and bathymetry surveys – this data is used as an input to hydraulic modelling, bank stability assessments and groundwater modelling.	Topographic survey of the subject site	20 August 2019	Yes Provided in combination with other surveying data in monitoring reports	Yes	The survey is of appropriate scale and quality
	Bathymetric survey of the Yarra River adjacent to the subject site streambank	20 August 2019	Not provided	N/A	Data still required as of February 2021

Attachment 3 - Alluvium's Peer Review of Douglas Partners' Reports, February 2021

Investigation component	Data requested	Date of request	Provided as of January 2021	Reviewed and response provided	Outcome or further requests
Erosion of bank toe – hydrologic (analysis of variations in discharge in the Yarra River over the monitoring period) and hydraulic analysis (calculation of the forces exerted by flows on the toe of the right bank) are used to determine whether natural processes are scouring the toe of the bank, triggering bank slumping.	Hydraulic assessment	20 August 2019	Not provided	N/A	Data still required as of February 2021
	Hydrologic assessment	20 August 2019	Not provided	N/A	Data still required as of February 2021
Groundwater assessment – the groundwater assessment is used to determine the role of groundwater in driving bank slumping. The assessment has three components: **Characterise soil properties** (permeability, stability and chemical composition). This data is used to assess overall stability and as inputs to groundwater modelling. **Monitor and model groundwater levels** at representative locations across the site – groundwater level data can be used directly to indicate the elevation of the water table across the site. High groundwater levels in riverbanks can increase pore pressure and cause bank instability. The data is also used to calibrate groundwater modelling, which can be used to calculate the total flux of fluid through the bank **Characterise groundwater chemistry** – identify the source of groundwater moving	Soil stability analysis	20 August 2019	In part	Yes	Borehole logs provided in December 2019 were used to characterise soil conditions at the site, but a more robust analysis which identified soil strength, possible failure planes and a probability of failure analysis was not undertaken
	Soil permeability testing data	20 August 2019	Yes	Yes	Soil permeability testing was undertaken via falling head tests and the data are fit for purpose
	Groundwater data from 12 groundwater bores (4x Lower terrace, 4x upper terrace, and 4x 100m from riverbank)	20 August 2019 Note: Alluvium requested that an additional bore be installed in the northern section in March 2020	Partially provided A total of 9 groundwater monitoring bore were installed across the site	Yes	There is now a substantial body of groundwater data available for the subject site. (see . Table 2) However, integration of the groundwater process understanding with the wider monitoring data and assessments for the site has not been completed.

Attachment 3 - Alluvium's Peer Review of Douglas Partners' Reports, February 2021

Investigation component	Data requested	Date of request	Provided as of January 2021	Reviewed and response provided	Outcome or further requests
through the bank. Because the chemical composition of rainwater that has recently infiltrated the ground differs from the composition of groundwater that has been stored underground for prolonged periods differ, comparing their chemical composition allows water sources and subsurface flow paths to be identified.	Groundwater chemistry assessment	20 August 2019	Partial Some borehole locations and surface water sampling data are absent from assessment.	Yes	The groundwater sampling methods were undertaken to a high standard and are fit for purpose. Complete analysis of data still required as of February 2021
	Groundwater modelling	20 August 2019	Not provided	N/A	Requested for modelling data and report Modelling still required as of February 2021
Assess tree health – tree health is used to identify rapid tree die-off, which may be a precursor to tree collapse and accelerated slumping of the bank. Tree health can also be used as secondary evidence for elevated groundwater, as water-logging kills root systems	Tree assessment – all trees >200mm Diameter at Breast Height	20 August 2019	Provided A tree health survey was undertaken in monitoring period 3 (March 2020-December 2020)	Yes	This vegetation assessment has been undertaken to a high standard and appears fit for purpose. Additional tree survey data provided 11 February 2012 but has not yet been reviewed
Conceptual model and management plan – use the insights gained from monitoring to develop a conceptual model of the underlying cause of bank slumping at the site, and then develop a management plan to address the underlying causes	Integrated mid to long term management options and arrangements for the site reflecting the outcomes of geotechnical, groundwater, surface water, riparian and waterway management assessments	20 August 2019	In part	Yes	Conceptual model and management plan provided, but analysis is of insufficient detail to support the proposed management actions. Comprehensive conceptual model that brings all data together and clearly links data to a long term management plan still missing.

6 Summary of works completed to date and site monitoring data collected

6.1 On site actions completed to date

Several of the actions sought by Yarra City Council have been undertaken by Glenvill:

- Risk assessment and ongoing monitoring of trees identified at the slump site as being at-risk
- Revision of the construction management plan to prevent ponding of surface runoff
- Modification of stormwater treatment ponds to eliminate this potential groundwater recharge pathway
- Efforts to limit public access to the slumping site
- Commencement of an additional monitoring program for the site, as outlined in Tables Table 1 Table 2 including the installation of motoring bores, a groundwater sampling program and soil permeability testing
- Installation of temporary sub surface 'ag' drainage to lower the groundwater levels and hence limit the surface expression of groundwater within the lower terrace.
- Design of additional modifications to the temporary 'ag' drain installed at the site

6.2 Monitoring data provided

This section summarises the three data monitoring periods for the site and sets out the data that has been collected. Monitoring data should form part of the evidence base for a conceptual model of processes driving bank slumping and the management plan that addresses the slumping.

Table 2. Summary of monitoring data available at the study site as of February 2021.

Monitoring report	Monitoring data requested	Monitoring data supplied to Council/Alluvium	Monitoring data reviewed
Round 1 November 2019 - June 2020	Groundwater level	Yes	Yes
	Slump movement	Yes	Yes
Round 2 November 2019 - June 2020	Groundwater level	Yes	Yes
	Slump movement	Yes	Yes
Northern section of slump	Groundwater chemistry data	Yes	Yes
Round 3 March 2020 - December 2020	Groundwater level	Yes	Yes
	Tree health	Yes	Yes
	Slump movement	Yes	Yes

7 Summary of investigation outcomes to date

This section summarises the insights obtained from monitoring data collected to date, whether that information is fit for purpose, and whether the insights from the monitoring period have been used to inform management of the site.

Overall, much of the data requested to date has either not been provided to Alluvium, has been provided in part only, or has been provided without supporting/contextual information (Table 1). Without supporting documents, such as a suitable conceptual model that integrates the monitoring data and describes the processes causing bank slumping, we are unable to properly evaluate the information that has been provided.

We outline the status of each set of monitoring data below.

7.1 Slump survey and tree monitoring data

The slump monitoring and tree health data is fit for purpose and of appropriate resolution. However, the slump survey and tree data has not been integrated with other monitoring data collected (for example groundwater levels). The lack of additional monitoring data that was requested (see table 1) also makes evaluating this data difficult.

Importantly, the monitoring data reveals recent movement of slumps and trees. The survey data indicates that:

1. At some sites, approximately 50% of total observed slump movement occurred in the 3-month period between September 2020 and December 2020.
2. Most of the tree movement that has been monitored at the site has also occurred between September2020 and December 2020
3. This December 2020 phase of slump movement has occurred despite the provision of the temporary 'ag' drain that was intended to reduce water levels on the lower terrace and reduce such movement.

The movement was recorded on 8 December 2020 and was provided to Yarra City Council on 11 December 2020. On receipt of the slump monitoring data Yarra City council noted their concern and requested that Glenvill undertake:

1. Assessment and reporting of the significance of the movement;
2. A risk assessment on the trees that have been subject to movement to identify the risk of tree or limb collapse;
3. Evaluation of the recent slump and tree movement and related data setting out;
    a. the conditions that have accompanied the movement (e.g. groundwater, river levels, rainfall),
    b. a conceptual understanding of the cause of the movement and
    c. any proposed remedial measures

The 8 December 2020 slump movement is referenced in the Douglas Partners management advice report (January 2021). That documentation states: "*While these movements represent an increase compared to the previous period of negligible movement, the movement magnitudes follow an inundation event and are insignificant in comparison to the initial slump height. It is recommended that quarterly monitoring continue*" (p. 10). Further comment regarding movement on the existing slumps states: "*the existing slumps have not significantly moved, as demonstrated by the survey data collected since the drainage was installed*" (P. 12).

However, a formal risk assessment was not undertaken as part of the management advice report. We remain concerned at the movement and note that the Douglas Partners management advice report does not contain sufficient analysis to alleviate these concerns. We believe the December slumping warrants urgent attention as previously requested.

7.2 Groundwater chemistry data

We are confident that the water chemistry analysis by ALS is of an acceptable standard. However, data provided does not adequately address the original data request. The report describes the data collection method as well as an interpretation of the groundwater chemistry results. The source of much of the groundwater samples has been identified as the basalt aquifer beneath the study site, on the landward side of the slumping bank with the chemical signature of discharge water consistent with that consistent with that of the regional basalt aquifer (Douglas Partners, Yarra River Northern Bank Slump Monitoring Report – 3, December 2020).

Although the accompanying report does identify the source of sampled water (the basalt aquifer), the report does not explore the link between the source of the water emanating at the surface of the terrace and the factors that may be driving elevated groundwater levels, driving groundwater to the surface of the lower terrace.

7.3 Groundwater level data

Although groundwater level data has been collected for all three monitoring periods, a more detailed assessment is required to understand groundwater flow dynamics, including:

1. Calculation of groundwater flux to the riverbank slumps in order to assess how long groundwater discharge may persist for.

2. Groundwater recharge and mounding calculation to determine the relative influence of the decommissioned sewer and site sourced recharge to the development of the elevated groundwater levels.

3. Modelling of how effective draining of the subsurface will be in reducing soil moisture and drawing down the groundwater mound.

We also note that it is unlikely that ongoing monitoring of groundwater bores alone will be able to provide adequate information to assess the effectiveness of the mitigation plan and/or to determine the cause of the elevated groundwater levels and how long they may persist, creating ongoing risk of riverbank collapse.

7.4 Vegetation survey

A vegetation survey was conducted at the site by Tree Logic Pty Ltd in June 2020. A total of 137 trees were assessed for health and their risk of collapse. The report recommended 12 leaning trees be monitored and for a total of 3 leaning or dead trees to be removed.

Alluvium has reviewed the summary report, provided with the vegetation assessment. The report is fit-for-purpose and the methods and recommendations clearly articulated. While the tree assessment was appropriate and useful, it has yet to be integrated with other monitoring data collected at the site.

7.5 Conceptual model and proposed remediation measures

Conceptual model and management advice

Investigations have been undertaken by Douglas Partners and other consultants on behalf of Glenvill. Investigations included collection of monitoring data and its analyses. The management advice report (Douglas Partners January 2021) received by Yarra City Council was expected to:

1. Collate and integrate all monitoring data collected and assessment undertaken between December 2019 and December 2020.

2. Provide a conceptual model of the processes at work including those that triggered the bank collapse.

3. Provide and assess options for management of the site.

4. Provide recommendations for a preferred option.

The management advice report by Douglas Partners (2021) did not include a clearly framed set of conclusions arising from the investigations. However, Douglas Partners (2021) included various findings and conclusions through their report. We have extracted these findings and conclusions and set these out in Table 3. Our response to these conclusions is also included in Table 3.

Table 3 Conclusions from Douglas Partners (2021)

Conclusions drawn by Douglas Partners 2021 (Douglas Partners, *Report on Yarra River Northern Bank Slump Management Advice*, January 2021)	**Alluvium response to conclusions**
Groundwater conditions in the alluvial terrace were identified as a critical factor contributing to the slump issue. Groundwater conditions in the terrace alluvium are influenced by upgradient conditions as well as fluctuating river water levels. *The significance of river level fluctuation on bank stability is unclear. It is likely that that critical instability conditions occur due to a combination of upgradient groundwater condition effects and falls in river level following elevated levels*	We concur that groundwater conditions in the lower terrace are critical factor in the slumping. We concur that groundwater levels in the lower terrace are influenced by upgradient conditions as well as fluctuating river water levels. However, the conclusions fail to tell a complete story. The conclusions have not reflected data that indicate the issues have recently emerged and are confined to the site. This evidence suggests that the issues are likely to have been triggered by local hydrologic and hydrogeologic changes rather than regional processes that influence river levels.
The main upgradient feature affecting groundwater conditions in the terrace alluvium is the basalt rock aquifer. Planned development related site alteration will result in increased sealed surfaces and likely reduced recharge	The conclusion explicitly states that development of the site will reduce infiltration at the site and thereby reduce groundwater levels. From this conclusion it could be implied that the redevelopment of the site and the removal of the previous buildings, hard surfaces and associated drainage system is likely to have resulted in increased infiltration and increased groundwater levels. We concur that the explicit and implied conclusions are likely, however evidence to support the conclusions has not been provided.
There is no current evidence indicating the need for measures in the western area other than continuing the periodic monitoring	Suitable evidence has not been presented to suggest that measures will not be required in the western area. We concur that ongoing monitoring will be required. However, monitoring alone is unlikely to provide the evidence required. This monitoring should be supported by the development of an agreed conceptual model and additional investigations aided by such monitoring data.
Installation of suitable interim and long-term sub-surface drainage measures are considered to be the most practical approach to manage the riverbank slump issue subject to continuing periodic survey monitoring	While temporary sub surface drainage may have been effective at lowering groundwater levels and hence reduced the rate of slumping, the investigations to date have not demonstrated that such drainage is adequate for management of the existing slumps. The investigations to date have not demonstrated that sub soil drainage will prevent ongoing movement of the existing slumps and prevent the loss of residual riparian vegetation.

The report (Douglas Partners 2021) does not address the information gaps, has not integrated all the data and assessments completed to date, has not provided suitable conceptual models of the processes at work and has not provided or assessed the options for management. The report does not integrate available monitoring data into a single, well-reasoned conceptual model or models for the site. The conclusions drawn are either

not supported by the evidence or do not tell a complete story that is supported by available evidence. As a result, the management recommendations that follow, namely the installation of limited subsurface drainage between the terrace at the river's edge and the adjacent basalt aquifer, is not well justified. Further discussion on this option is provided in the discussion on the proposed drainage solution set out below.

The report fails to address the broader management of the existing slumps (e.g. riparian vegetation management) and the range of options to prevent slumping in areas not protected by the proposed drainage solution.

Proposed drainage solution

Glenvill has installed an interim (temporary) 'ag' drain within the lower terrace to reduce groundwater levels. This temporary drain has assisted in reducing the presence of surface water on the lower terrace. We assume that it has contributed to a reduction in bank movement, although we remain concerned over recent bank movement recorded in the most recent slump surveys.

On site discussions were held with Glenvill (12 October 2020) regarding modification and extension of that temporary drain to further reduce the surface expression of groundwater at the site. The modifications to the temporary arrangements, discussed on site, included the use of the existing temporary sub surface drain outlet to the Yarra River. We support the modification to the current temporary arrangements as discussed on site.

Glenvill has subsequently provided Council (5 February 2021) with a design drawing for a proposed modification to the temporary ag drain. This proposed arrangement was under review at the time of preparation of this report.

While installation of additional sub surface drainage is likely to reduce groundwater levels, the absence of any quantitative analysis, in support of a conceptual model, that identifies the extent, dimension, orientation and number of drains required to be installed in the bank, we are unable to evaluate whether the design arrangements are appropriate as a longer-term resolution to the issues at the site. Further monitoring, evaluation, investigations, design, and reporting will be required to confirm whether the proposed drainage solution is an appropriate long-term solution to issues at the site.

8 Summary

Bank slumping and tree collapse occurred on the lower terrace of the Yarra River in 2019. The slumping and tree collapse coincided with the timing of recent works associated with the redevelopment of the former Amcor site. The slumping and tree collapse also coincided with community observed increase in the presence of surface water on the lower terrace. The increased presence of surface water on the lower terrace is indicative of elevated groundwater levels. While bank slumping can be caused by many factors, the increased occurrence of bank slumps at the subject site appears to have been triggered by a localised increase in groundwater levels.

In response to the bank slumps and tree collapse, Yarra City Council sought investigations by Glenvill to enable the development of an evidence-based solution to bank slumping at the subject site. Yarra City Council requested that Glenvill collect and analyse various monitoring data for the site and undertaken additional investigations necessary to develop a conceptual model that would contribute to that evidence-based solution.

As of February 2021, the information sought by Yarra City Council is incomplete. Given the limited available monitoring data, the incomplete analyses of that data and the lack of a conceptual model for the processes at the site, it is not possible to definitively attribute the cause of bank slumping or support the majority of the substantive findings and conclusions drawn by Douglas Partners (2021). We are not in a position to support the long-term management recommendations provided by Glenvill nor are we able to provide an evidence-based strategy for managing existing, and preventing future, bank slumps at the site.

A temporary sub surface drain was installed at the site in March 2020. Glenvill recently proposed (February 2021) modification to the current sub surface drain for the site. While there are details that are yet to be resolved (construction technique and design suitability), the modifications to the existing sub surface drain will provide a low-risk interim measure that will improve the outcomes at the site. The long- term adequacy of these interim measures has not been determined.

9 References

Alluvium, 2019. Tree collapse and bank slump investigation on Yarra River adjacent to former Amcor site at Alphington, Report by Alluvium Consulting Australia for City of Yarra

Douglas Partners, 2020. Report on Geotechnical Investigation and Groundwater Study

Douglas Partners, 2020. Yarra River Northern Bank Slump Monitoring Report 2, Yarrabend, Alphington

Douglas Partners, 2021. Report on Yarra River Northern Bank Slump Management Advice, prepared for Alphington Developments Pty Ltd

Douglas Partners, 2021. Yarra River Northern Bank Slump Monitoring Report – 3, Yarrabend, Alphington

Douglas Partners, 2021. Drawing no 22185G_SEMP_Agi outfall 14.01.2021

Reeds Consulting, 2020. Monitoring Yarra Bank Visit 19

Reeds Consulting, 2021. Yarrabend River Corridor Tree Monitoring No. 75

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Amcor Riverbank Inspection

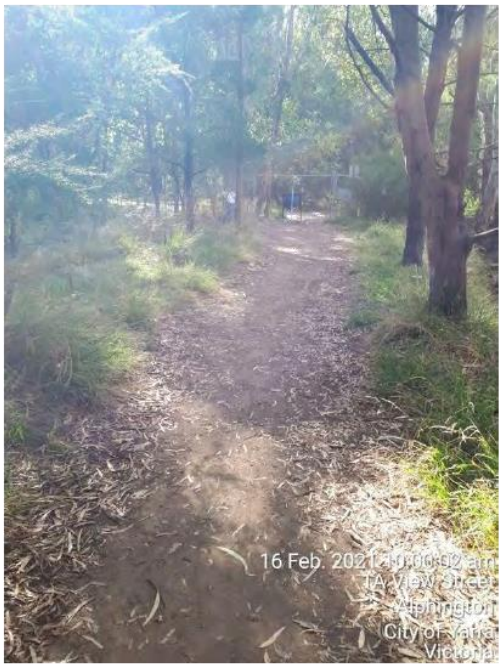
Created	2021-02-15 22:55:01 UTC
Updated	2021-02-15 23:12:36 UTC
Location	-37.785909, 145.0287445
Title/Address	Amcor Riverbank Inspection
Date	2021-02-16

0

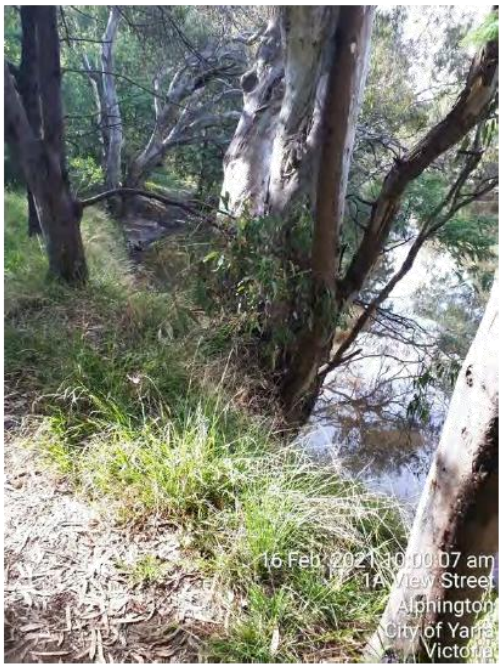
Distance (m)	0
Photos	

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

15	
Distance (m)	15
Photos	



Attachment 4 - Amcor Riverbank Inspection 16 February 2021



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Distance (m)	30

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Photos

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

40

Distance (m)	40

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Photos

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Additional Notes	Ground movement and displacement

50

Distance (m)	50
Photos	

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

60

Distance (m)	60
Photos	

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

70	
Distance (m)	70

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Photos

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

80

Distance (m)	80
Photos	

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Additional Notes	Ground water seepage

90

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Distance (m)	90
Photos	

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

100

Distance (m)	100
Photos	

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

110

Distance (m)	110

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Photos

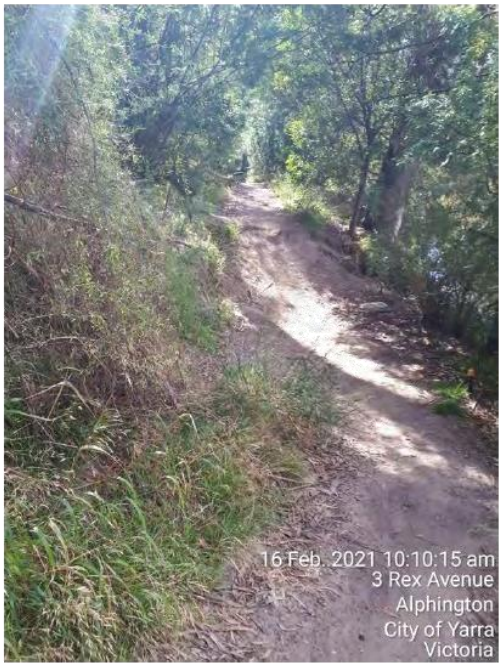
Attachment 4 - Amcor Riverbank Inspection 16 February 2021

120

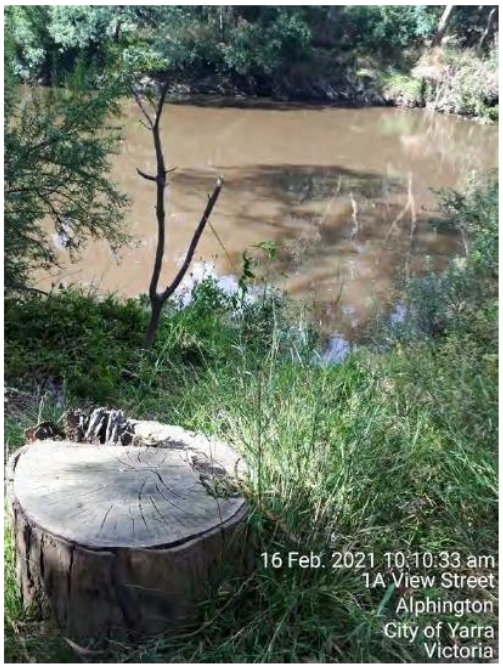
Distance (m)	120

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Photos



Attachment 4 - Amcor Riverbank Inspection 16 February 2021



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Distance (m)	130

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Photos

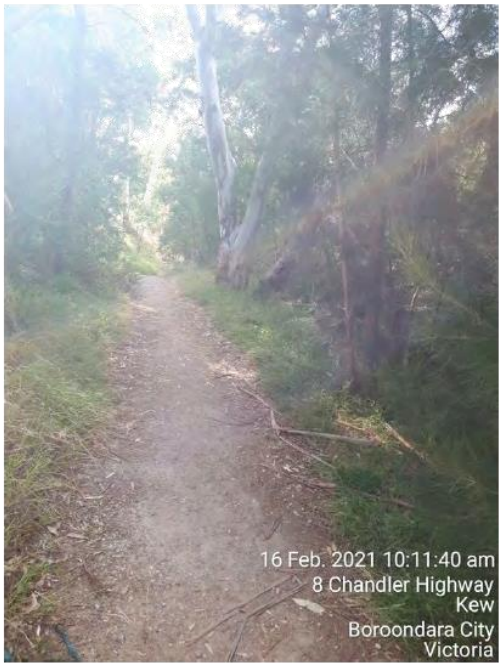
Attachment 4 - Amcor Riverbank Inspection 16 February 2021

140

Distance (m)	140

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Photos



Attachment 4 - Amcor Riverbank Inspection 16 February 2021

150

Distance (m)	150

160

Distance (m)	160

Photos

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Attachment 4 - Amcor Riverbank Inspection 16 February 2021

Attachment 5 - Tree Logic Site inspection Memo - 17 February 2021

Unit 4, 21 Eugene Terrace
Ringwood Victoria 3134

ABN: 95 080 021 610

T 03 9870 7700
M 0429 782 195

harry.webb@treelogic.com.au

18 February 2021

Calvin Chong
Glenvill
480 Church Street,
Cremorne 3121

Dear Calvin,

RE: Site inspection 17 February 2021

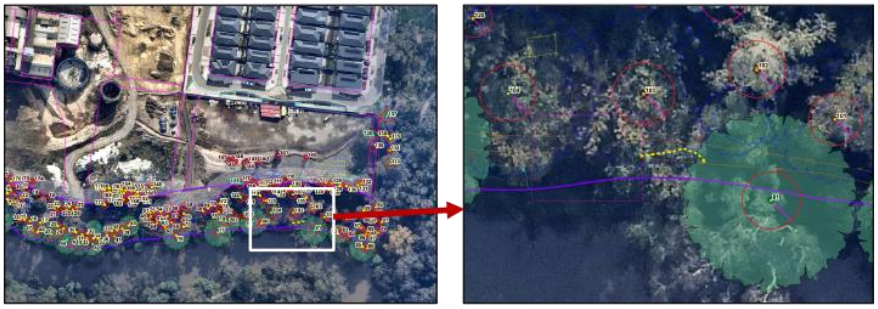
I advise the following in relation to the inspection of trees along the corridor in response to Amcor observations of soil cracking on 16.02.21

A site inspection was undertaken on Wednesday 17 February 2021.

The cracking appears to be a relatively minor extension of an area already fenced off with fluoro-para webbing, i.e. an area that is already identified as a slumping risk. The most significant of the new cracks has appeared in the path ~0.5m north of the eastmost extent of the para-webbed area. The other path cracks are comparatively smaller but extend a further ~6.4m to the east.

In terms of adjacent trees, the two closest trees to the new cracking are Trees 81 and 103.

The largest crack is ~7.1m south of Tree 103, while the eastmost cracking is 7.7m west of Tree 81. The approximate location of the observed cracking relative to the two trees is shown in Figures 1 & 2.



***Figures 1&2**. Approximate length of soil cracking (yellow dashed line) relative to the closest of the assessed trees. Red circles indicate SRZs.*

Attachment 5 - Tree Logic Site inspection Memo - 17 February 2021

***Image 1**. Taken from next to Tree 81 (left) looking west. The red dotted line shows the approximate length of the newly appeared soil cracking.*

***Image 2**. Looking west, with arrow pointing to the largest of the newly appeared soil cracking, next to the existing para-webbed exclusion zone.*

Details of the two trees are as follows:

Tree 103 is a maturing Algerian Oak (*Quercus canariensis*) growing in the terrace area (Image 4). It was previously assessed as having poor health and this is still the case, with no live foliage observed. It is currently part of the Reeds monitoring program, which has thus far not detected any unusual movement in the lean of the tree.

Trees 81 is a maturing River Red Gum (*Eucalyptus camaldulensis*) growing on the riverbank (Image 3). It exhibited fair and typical health and structural characteristics. It is not part of the Reeds monitoring program.

There were no observations indicating change of lean or root plate instability in either of the trees.

***Images 3&4**. Image on left shows Tree 81, Image on right Tree 103 and its location relative to the newly appeared soil cracking.*

Discussion

The cracks appear to be an extension of an area already flagged due to its past slumping and presumably due to its potential for further soil instability. Thus far, the newly formed cracks are of a sufficient distance from the nearest significant trees (Trees 103 & 81) to warrant any immediate concern, i.e cracks are well outside the SRZs of both trees, so the root plates and structural roots of both trees are not expected to be impacted.

Regardless, it is recommended that Tree 81 be included in the Reeds monitoring program in case the issue worsens. Lean monitoring should continue on a monthly basis.

Should you require any further information or clarification please do not hesitate to contact me.

Yours Sincerely,

Harry Webb | Consulting Arborist

MSc.(Botany), Grad. Cert. Arb.

Attachment 5 - Tree Logic Site inspection Memo - 17 February 2021

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- All instructions (verbal or written) that define the scope of the report have been included in the report and all documents and other materials that the Tree Logic consultant has been instructed to consider or to take into account in preparing the report have been included or listed within the report.
- To the writer's knowledge all facts, matter and all assumptions upon which the report proceeds have been stated within the body of the report and all opinion contained within the report will be fully researched and referenced and any such opinion not duly researched is based upon the writers experience and observations.

Tree Logic Pty. Ltd.
Unit 4, 21 Eugene Terrace,
Ringwood. VIC. 3134.

Arboricultural Consultancy:

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8.2 Nicholson Street, Mollison Street and Langridge Street, Abbotsford: Traffic calming trial evaluation

Executive Summary

Purpose

To provide a review of available data on the traffic calming trial at the intersections of Nicholson Street, Mollison Street and Langridge Street in Abbotsford, and an evaluation of the petitions tabled on 1 December and 15 December in relation to the trial median treatment at this location, in response to the Council resolution of 15 December 2020.

To provide options to improve safety for pedestrians and cyclists at this location, for Council consideration.

Key Issues

Safety concerns were identified for pedestrians and cyclists at the intersections of Nicholson Street, Mollison Street and Langridge Street in the Abbotsford LAPM 13 study in 2018.

The temporary central median island on Nicholson Street was installed as a trial for 12 months to try and address some of these safety concerns in response to the changing movement and physical distancing needs for an immediate and post-COVID 19 context. It should be noted that it was proposed in the LAPM plan to install items 17 (central median) and 19 (threshold treatment and kerb extensions on Langridge Street and raised zebra crossing on Nicholson Street) as a package to achieve the maximum safety benefit.

The trial received mixed responses from the community with some support, but also numerous complaints regarding movement and access problems, despite on-going monitoring and adaptation to safety concerns for the trial duration. Most, but not all these complaints, related to illegal and unsafe driver behaviour.

In response to construction access needs of a development at 20-30 Mollison Street, community feedback and officer advice, Council resolved on 15th of December to remove the temporary central median. Reinstating the central median trial before the construction works have been completed would require the removal of two mature London Plane trees to allow alternative access arrangements.

Officers had intended obtaining traffic volume data during the 12 months trial of the central median island on Nicholson Street once traffic levels had reverted to normal levels, however this was not able to be achieved due to the removal of the trial.

Due to the limitations with available data before, during and after the installation of the central median island on Nicholson Street, Officers cannot accurately measure the success of this trial in achieving its objective of reducing the amount of non-local traffic crossing the cycle route on Nicholson Street, based on the data alone.

Financial Implications

Depending on whether Council resolve to implement additional treatments in this location, and if so, which option is pursued, there could be a financial cost to Council.

There is no current budget allocation for any further works relating to the temporary central median trial at Nicholson Street, Mollison Street and Langridge Streets (Option 1).

Amendments to signs and line marking relating to AM and PM peak hour turn bans are relatively modest and could be funded through existing operational budgets (Option 2).

Discretionary funding of $30k to undertake Local Government Act (LGA) 1989 access restriction requirements, which include data collection, a Traffic Impact Assessment and consultation, would need to be referred to and considered as part of the 2021/22 budget (Option 3).

$200k of the existing discretionary funding bid of $934k for Abbotsford LAPM 13 being considered as part of the 2021/22 financial year budget process would need to be reprioritised to implement a threshold treatment and kerb extensions at Langridge Street and install a raised zebra crossing on Nicholson Street, north of Langridge Street (Option 4 – Recommended option).

PROPOSAL

1. That Council:

   (a) supports the implementation of the endorsed LAPM 13 Plan, Item 19 (being to replace the Langridge Street zebra crossing with a threshold treatment and kerb extensions; and install a raised zebra crossing north of Langridge Street) excluding the central median;

   (b) note that this treatment requires an allocation of $200k, and noting an allocation of $934k for Abbotsford LAPM 13 is being considered as part of the discretionary expenditure in the 2021/22 financial year budget process and that this allocation would enable the proposed measures to be delivered in 2021/22, refer this to the 2021/22 budget process for formal consideration; and

   (c) notes that implementation would be subject to Council approval and allocation of sufficient funding in the 2021/22 budget process.

8.2 Nicholson Street, Mollison Street and Langridge Street, Abbotsford: Traffic calming trial evaluation

Reference	D21/19691
Author	Peter Moran - Manager Infrastructure, Traffic and Civil Engineering
Authoriser	Director City Works and Assets

Purpose

1. To provide a review of available data on the traffic calming trial at the intersections of Nicholson Street, Mollison Street and Langridge Street in Abbotsford, and an evaluation of the petitions tabled on 1 December and 15 December in relation to the trial median treatment at this location, in response to the Council resolution of 15 December 2020.
2. To provide options to improve safety for pedestrians and cyclists at this location, for Council consideration.

Critical analysis

History

3. During the Local Area Place Making (LAPM) study conducted in Abbotsford in 2018, a LAPM treatment was endorsed for implementation at the intersection of Nicholson Street, Mollison Street and Langridge Street to address safety concerns for people walking and cycling in this area due to a high number of confusing and conflicting traffic movements.
4. This proposal is shown as Items 17 and 19 on the endorsed LAPM Plan for Abbotsford (Attachment 1) and is described in Table 1 and shown in Figure 1 below.

LAPM Treatment Number	Location	Proposed Treatment	Indicative Cost Estimate
17	Nicholson Street	Median island on Nicholson St with left in/left out only at Mollison St (cyclists excepted)	$50,000 ($10,000 trial)
19	Nicholson Street /Langridge Street	Redesign Langridge St intersection to be left-in/left-out only (cyclists excepted) Replace Langridge St crossing with threshold treatment and kerb extensions Relocate speed hump on Nicholson St and install raised zebra crossing north of Langridge St	$200,000

Table 1: Endorsed LAPM 13 Treatments relating to Nicholson Street, Langridge Street and Mollison Street, Abbotsford

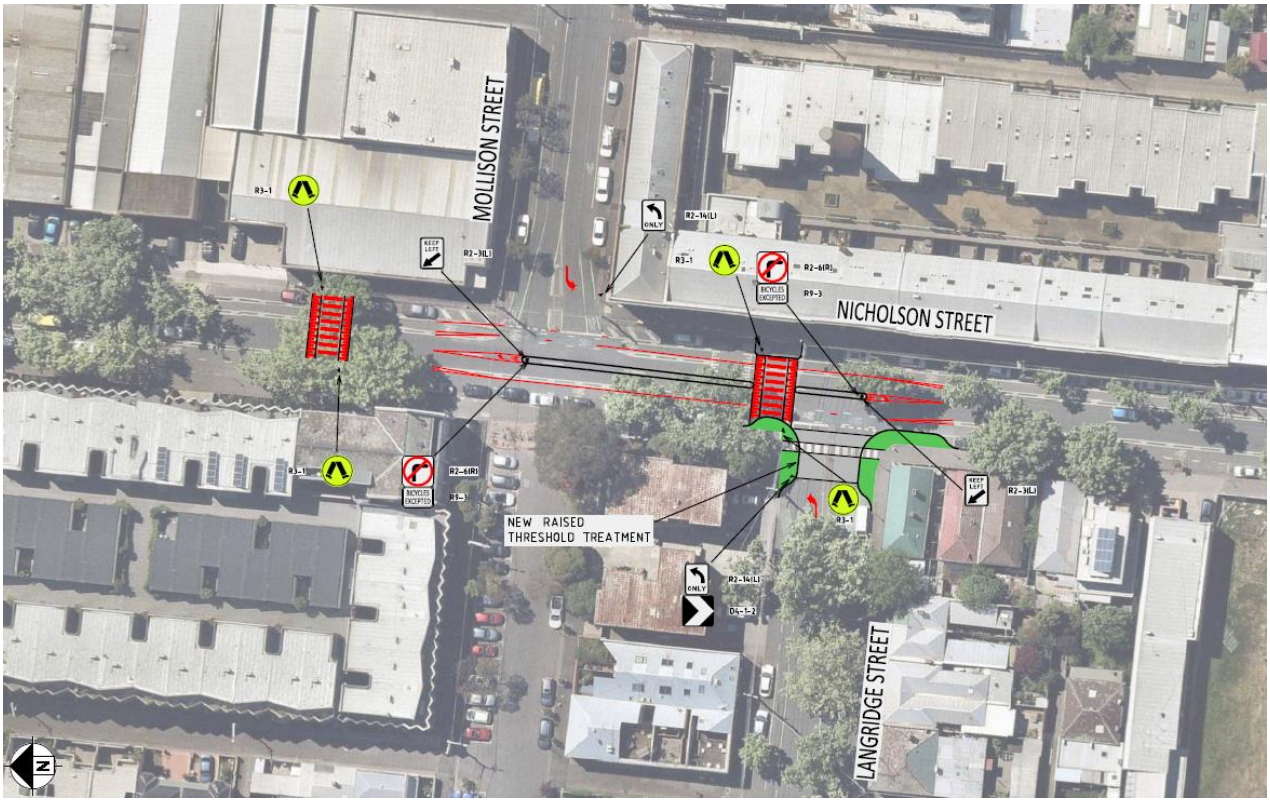


Figure 1: Items 17 and 19 in endorsed Abbotsford LAPM Plan

Background

5. Due to the impacts of the COVID-19 pandemic in 2020, regarding physical distancing requirements, the need became apparent for Council to respond to the challenges presented regarding the changing movement and access needs for the Yarra community and visitors, in both an immediate and post-COVID-19 context.

6. A Council resolution on the 5th of May 2020 to respond to these needs and subsequent Council report on 23 June 2020 (Attachment 2), resulted in the development of temporary traffic management trials, which included a temporary central median preventing east-west movements (except for pedestrians and cyclist movement) across Nicholson Street at Mollison Street and Langridge Street. This is a partial component of the LAPM endorsed overall traffic improvement proposal for Nicholson Street (Items 17 and 19 of the LAPM 13 endorsed plan).

7. The central median trial was installed on Monday 24 August 2020.

8. The trial objectives were to provide safer and more sustainable alternative travel options, while continued physical distancing considerations for the community were prevalent. Community concerns were anticipated regarding this trial, which were subsequently considered by way of on-going monitoring and adaptation to any notable safety concerns for the trial duration.

9. It became apparent in December 2020 that a development at 20-30 Mollison Street, currently under construction in close proximity to the temporary median trial on Nicholson Street, would require a crane lifting zone for the site from mid-January 2021 that would need full access to the intersection of Mollison Street/Nicholson Street and removal of the temporary median to allow for truck movements.

10. The only other feasible location for the crane lifting zone is on Nicholson Street, however this would require the removal of two mature London Plane trees.

11. Following community feedback and advice from officers that there were ongoing safety issues related to illegal and unsafe driving behaviour, and that at least part of the median treatment would need to be removed to accommodate the development requirements outlined above, Council resolved on December 15th 2020 to remove the temporary central median on Nicholson Street and requested Council Officers to bring back a report in March reviewing available data on the traffic calming trial at Nicholson Street, Mollison Street and Langridge Street in Abbotsford.

12. The temporary central median was removed on December 22nd, 2020.

Trial Monitoring

13. Following installation of the central median spring back paddles and separator kerb, Council Traffic Engineering Officers monitored the operation of the temporary median on a weekly basis to observe driver, cyclist and pedestrian behaviour.

14. Several of the spring back paddles on the separator kerb were damaged following installation and were subsequently replaced.

15. Initially Council Officers reported drivers performing U-turns at either end of the central median, so No U-turn signage was installed.

16. Traffic volumes during the trial were observed to be significantly less than before the COVID-19 pandemic on streets in the vicinity of the trial, however this was also observed throughout the City of Yarra.

17. In response to community feedback regarding the operation of the Nicholson Street/Gipps Street intersection, this was also a focus of the monitoring. During the weekly monitoring during peak and off-peak times, this was observed to be operating satisfactorily.

Iterative Amendments

18. Following a review of feedback and monitoring of the operation of the temporary central median and in response to non-compliant driver behaviour regarding U-turns, Council Officers installed *No U-turn* signs at each end of the central median to try and address the issue of vehicles undertaking this manoeuvre. This amendment subsequently reduced the number of community enquiries regarding the median treatment from over 10 daily, to 3-4, with the sentiment changing from outright opposition, to complaints primarily in relation to non-compliant driver behaviour.

19. 'Three Bags Full' café on the corner of Nicholson Street and Mollison Street submitted a request to remove the kerbside barriers immediately adjacent to the café as visibility for their business advertising was compromised. They noted that this was an issue for them as they recover from the economic repercussions of the COVID-19 pandemic. A safety assessment was conducted, and the request granted in early December, as safety for patrons and road users was considered not to be compromised with the removal of the barrier.

Data Analysis

Crash data – period between 01/07/2015 and 30/06/2020

20. Nicholson Street/Mollison Street: No crashes in the last five years.

21. Nicholson Street/Langridge Street: Three crashes in the last five years. All crashes are classified 'other injury' category (no hospitalisation or emergency department attendance record) and occurred in 2016, 2019, and 2020.

22. Details of the three crashes:

    (a) 2016 - One motorcyclist lost their balance and fell while turning right from Nicholson Street into Langridge Street;

    (b) 2019 - Motorist on Langridge Street entering Nicholson Street failed to stop and give way to cyclist travelling northbound on Nicholson Street; and

    (c) 2020 - Motorist turning right from Nicholson Street into Langridge Street collided with cyclist travelling north on Nicholson Street.

23. It should be noted that crash data in VicRoads Road Crash Information System includes reported crashes that Victoria Police attend. It is possible that there could be crashes in this location that have not been reported.

24. The crash data in VicRoads Road Crash Information System is typically six months behind due to data processing requirements and therefore the latest data is up to 30 June 2020 (before the trial was installed). We anticipate that crash data relating to the trial duration (24/08/20 – 22/12/20) would be available in July 2021.

Traffic volume and speed data

25. Traffic volume and speed data was collected in 2017 for the purpose of the Abbotsford LAPM (LAPM 13) study.

26. Traffic data was also collected from 1st – 5th February 2021. This data was collected over five days, however on one of the days Victoria Crescent was closed at some stage and traffic was diverted to Mollison St so higher volume numbers were recorded than expected. This day has been removed from the data to be representative and therefore a four-day average has been used.

Nicholson Street between Victoria & Langridge Street	85th Percentile Speed (average)	Total Daily Volume (average)
2017 data before Trial	36.5 km/h	6,963
2021 data after Trial	36.1 km/h	6,240

Langridge Street between Charles & Nicholson Street	85th Percentile Speed (average)	Total Daily Volume (average)
2017 data before Trial	41.6 km/h	6,999
2021 data after Trial	40.0 km/h	4,391

Mollison Street between Nicholson Street & Victoria Crescent	85th Percentile Speed (average)	Total Daily Volume (average)
2017 data before Trial	37.8 km/h	3,830
2021 data after Trial	34.3 km/h	2,753

27. Traffic speed on Nicholson Street has stayed at a similar level of 36km/h and traffic volume has decreased by 10%.

28. Traffic speed on Langridge Street has slightly decreased to 40km/h and traffic volume has decreased by 37%.

29. Traffic speed on Mollison Street has decreased to 34km/h and traffic volume has decreased by 28%.

30. A comparison of traffic speed surveys before and during COVID-19 restrictions showed that speed remained at similar levels and therefore the 2021 speed data is considered representative.

31. Traffic volume has decreased significantly from 2017 to February 2021. It is considered that the 2021 traffic volume data is likely lower than representative conditions due to the continued impact of COVID-19 restrictions, specifically in relation to people working from home and significantly lower public transport patronage.

Intersection movement data

32. All movement data for motor vehicles and cyclists was collected in 2014 for the intersections of Nicholson Street/Mollison Street and Nicholson Street/Langridge Street.

33. This data collection was replicated on Wednesday 3rd February 2021.

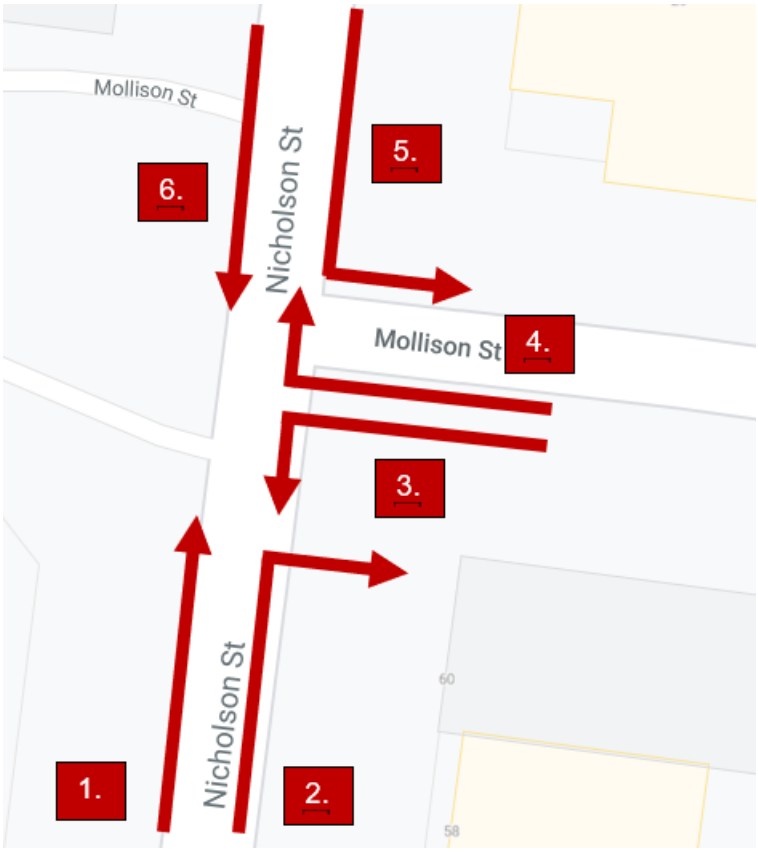


Figure 2: Nicholson Street/Mollison Street motor vehicle and cyclist movements

Movement data Nicholson Street/Mollison Street intersection

AM PEAK	2014 Data before trial 7AM-9AM		2021 Data after trial 7:30AM-9:30AM	
Movement No:	**VEHICLE**	**CYCLIST**	**VEHICLE**	**CYCLIST**
1.	324	64	327	52
2.	206	11	128	15
3.	216	17	129	31
4.	41	5	60	12
5.	72	6	163	16
6.	610	149	630	157
PM PEAK	2014 Data before trial 4:30PM-6:30PM		2021 Data after trial 4:30PM-6:30PM	
Movement No:	**VEHICLE**	**CYCLIST**	**VEHICLE**	**CYCLIST**
1.	575	210	432	161
2.	209	11	116	36
3.	406	16	175	19
4.	145	7	61	10
5.	44	3	38	5
6.	586	56	365	43

34. AM Peak motor vehicle data was at similar levels for the straight through movements northbound and southbound on Nicholson Street between 2014 and 2021 but there were significant fluctuations in the following:

    (a) Right turn from Nicholson Street to Mollison Street decreased by 78 movements (-38%);

    (b) Left turn from Mollison Street to Nicholson Street decreased by 87 movements (-40%);

    (c) Right turn from Mollison Street to Nicholson Street increased by 19 movements (+46%); and

(d) Left turn from Nicholson Street to Mollison Street increased by 91 movements (+127%).

35. AM Peak cyclist data was at similar levels between 2014 and 2021, except for the left turn from Mollison Street to Nicholson Street, which increased by 14 movements (+82%).

36. PM Peak motor vehicle data decreased significantly (25-58%) for all movements, except for the left turn from Nicholson Street to Mollison Street, which remained at a similar level.

37. PM peak cyclist data decreased significantly for the straight through north and southbound movements on Nicholson Street and increased significantly in the right turn movement from Nicholson Street to Mollison Street by 25 movements (+227%).

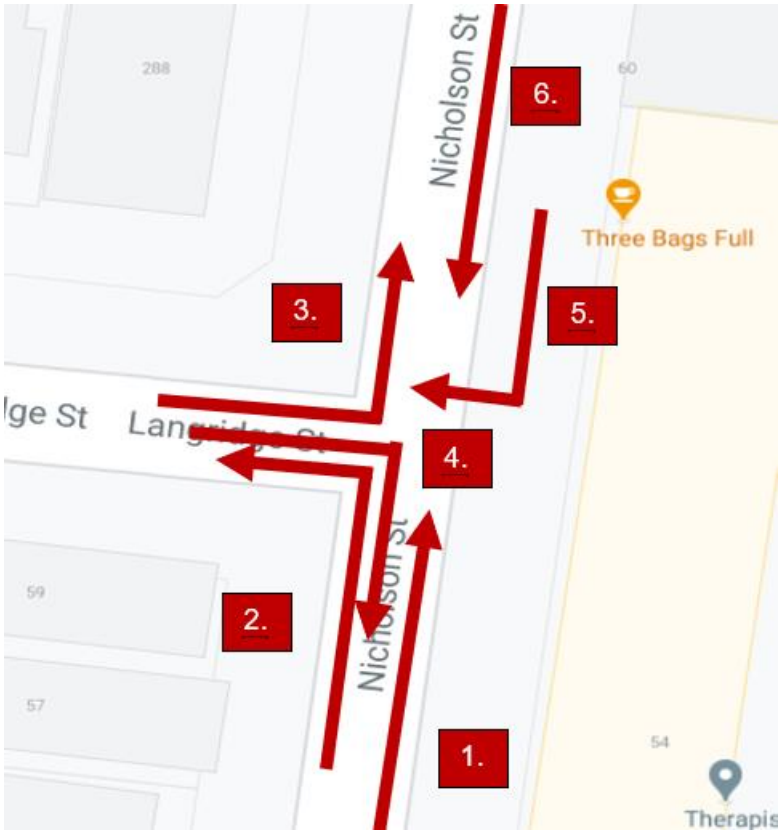


Figure 3: Nicholson Street/Langridge Street motor vehicle and cyclist movements

38. Movement data Nicholson Street/Langridge Street intersection.

AM PEAK	2014 Data before trial 7AM-9AM		2021 Data after trial 7:30AM-9:30AM	
Movement No:	**VEHICLE**	**CYCLIST**	**VEHICLE**	**CYCLIST**
1.	229	47	183	44
2.	133	32	149	17
3.	301	28	244	28
4.	86	36	62	27
5.	438	44	183	38
6.	388	122	591	131
PM PEAK	2014 Data before trial 4:30PM-6:30PM		2021 Data after trial 4:30PM-6:30PM	
Movement No:	**VEHICLE**	**CYCLIST**	**VEHICLE**	**CYCLIST**
1.	460	165	299	138
2.	141	29	150	22
3.	324	56	213	67
4.	113	38	102	23
5.	546	22	230	19
6.	446	50	318	53

39. AM Peak motor vehicle data decreased significantly (19-58%) between 2014 and 2021, apart from a small increase in the left turn movement from Nicholson Street to Langridge Street and a significant increase in the straight through north bound movements on Nicholson Street (203 movements (+52%).

40. AM Peak cyclist data was at similar levels between 2014 and 2021, except for the left turn movement from Nicholson Street to Langridge Street, which decreased by 15 movements (-47%).

41. PM Peak motor vehicle data decreased significantly (10-58%) for all movements, except for the left turn movement from Nicholson Street to Langridge Street, which increased slightly.

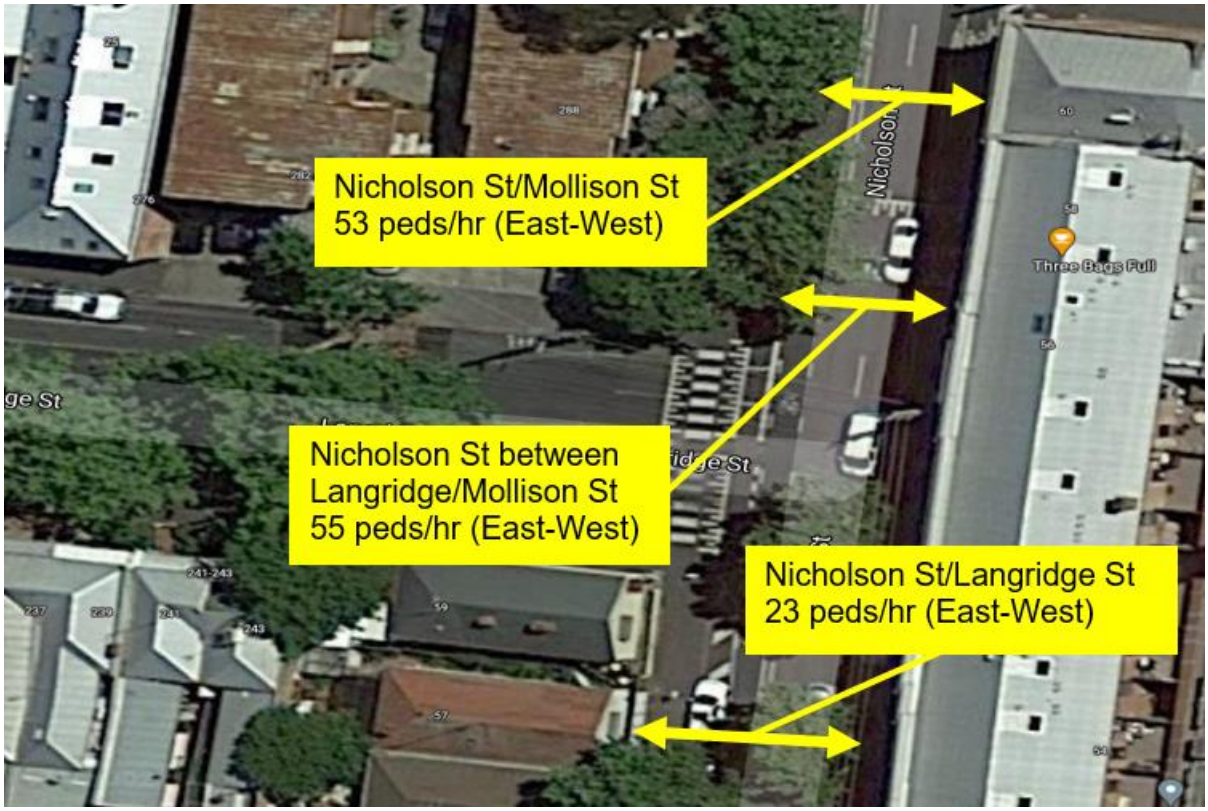
42. PM peak cyclist data was steady except for a decrease of 27 movements (-16%) northbound on Nicholson Street and 15 movements (-39%) undertaking the right turn from Langridge Street to Nicholson Street.

43. Motor vehicle data decreased significantly in the AM and PM peak from 2014 to 2021. As noted earlier in the report, it is considered that traffic volume is not representative due to the impact of COVID-19. These impacts include the large proportion of people still working from home and that significantly lower public transport patronage levels.

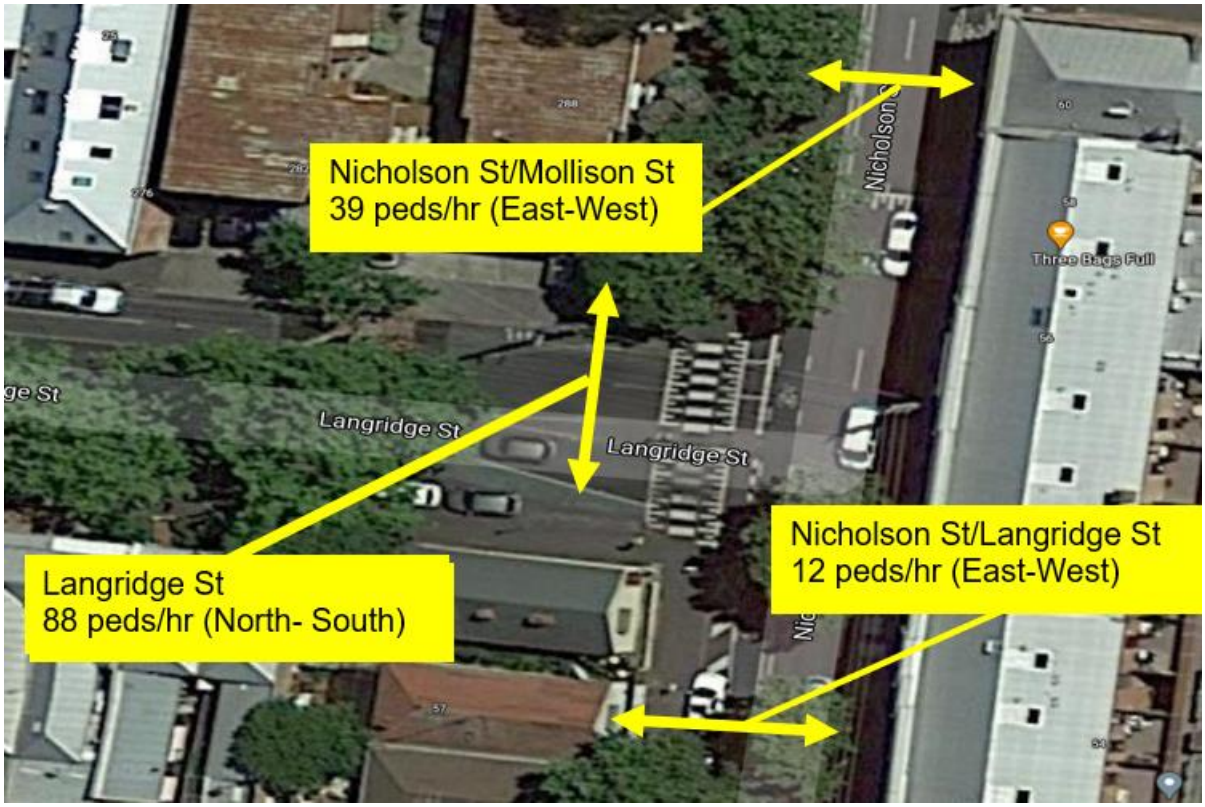
44. Cyclist data has reduced slightly in the AM and PM peak from 2014 to 2021, except for a small increase in the AM peak at the Nicholson Street/Mollison Street intersection. There were small fluctuations between the individual movements that could be explained by less commuter cyclists due to increased working from home and increased local trips.

Pedestrian Data

45. Peak hour pedestrian movements before trial (2017):



46. Peak hour pedestrian movements after trial (February 2021):



47. Pedestrian crossing movements in the peak hour on Nicholson Street, north and south of Langridge Street, have reduced according to data collected for the Abbotsford LAPM study in 2017 and data collected in February 2021.

48. The pedestrian zebra crossing warrants from DoT are:

	Pedestrians/hour	Vehicles/hour
Zebra crossing without flashing light	More than 20 peds	More than 200 veh
Zebra crossing with flashing light	More than 60 peds	More than 500 veh

49. The most recent pedestrian data still indicates that east-west pedestrian movements on Nicholson Street, north of Langridge Street, meet DoT warrant requirements for a zebra crossing without flashing lights with 39 pedestrian movements in the peak hour.

50. As noted earlier, the Council resolution on the 5th of May 2020 and Council report on 23 June 2020 proposed increased opportunities for physical distancing due to COVID-19 restrictions. The temporary Nicholson Street median trail aimed to facilitate this through reducing the amount of non-local traffic crossing the cycle route on Nicholson Street, therefore making it safer and more attractive.

51. As previously discussed, traffic volumes have decreased significantly from before the trial was implemented (2014/2017) to after it was removed (February 2021), however it is considered that the February 2021 traffic volume data is not representative due to the continued impact of COVID-19 restrictions.

52. Data collection was not undertaken while the temporary central median trial was installed due to traffic conditions being unrepresentative and volumes significantly reduced because of the impact of COVID-19. Council officer's site observations outlined in paragraphs 13-16 confirm this.

53. Irrespective of the performance or perceptions of the success of this trial treatment, the trial ultimately needed to be removed for an extended period to accommodate the adjacent development requirements, as outlined earlier.

54. Had the trial still been in place once traffic conditions returned to closer to pre-COVID levels (considered in March 2021 for local streets), then data collection at that time would have been undertaken and would be expected to provide more informed decision making on its effectiveness at reducing the volume of non-local (rat running) traffic using Langridge Street and Mollison Street.

Options

Option 1 – Reinstate the temporary median at Nicholson Street.

55. After consideration of the community feedback and operation of the central median trial, it is evident that despite some community support, it has not been positively received by all members of the community, nor have the full benefits of the original LAPM proposal been realised as only part of the proposal was implemented as a trial.

56. The treatment endorsed in the Abbotsford LAPM 13 Plan included relocating a zebra crossing, installing a threshold treatment and a central median. This aimed to more comprehensively address road safety at this location. Therefore, the full safety benefits for cyclists and pedestrians were not realised by the central median trial.

57. A development at 20-30 Mollison Street is currently under construction with a crane lifting zone proposed for its Mollison Street frontage from mid-January 2021 for approximately 18 months, in close proximity to this trial. Truck access to this lifting zone would not be possible if the trial is reinstated. The only other option for a crane lifting zone for the site is on Nicholson Street, which would require the removal of two mature London Plane trees close to this site.

Option 2 – Introduce AM and PM peak hour turn bans at Nicholson Street/Mollison Street and Nicholson Street/Langridge Street.

58. Non-compliance of peak hour turn bans is commonplace and enforcement is very rarely undertaken by Victoria Police.

59. Peak hour turn bans were considered as part of the Abbotsford LAPM study but not pursued at this location due to requiring enforcement to be effective.

Option 3 – Pursue implementation of items 17 and 19 of the endorsed LAPM 13 Plan

60. Items 17 and 19 of the endorsed LAPM plan are described in Table 1 and shown in Figure 1. They include redesigning the Langridge Street and Mollison Street intersections with Nicholson Street to be left in/left out only (cyclists exempted) through a central median island, replacing the Langridge Street zebra crossing with a threshold treatment and kerb extensions, and installing a raised zebra crossing north of Langridge Street.

61. As evidenced by the crash statistics, there is a pattern of turning motorist collisions with cyclists whilst negotiating the intersection of Nicholson and Langridge Streets. Therefore, to try and address this and the pedestrian safety improvements in accordance with the endorsed LAPM plan, funding of $30k for this could be referred to and considered as part of the 2021/22 budget to undertake Local Government Act (LGA) 1989 access restriction requirements, which include data collection, a Traffic Impact Assessment and consultation.

62. Pending favourable LGA consultation, discretionary funding could be sought in the 2022/23 financial year budget process to deliver Abbotsford LAPM Items 17 and 19.

Option 4 – Pursue implementation of item 19 of the endorsed LAPM 13 Plan but exclude central median

63. Item 19 of the endorsed LAPM Plan is described in Table 1 and shown in Figure 1. This includes replacing the Langridge Street zebra crossing with a threshold treatment and kerb extensions and installing a raised zebra crossing north of Langridge Street.

64. This should improve pedestrian safety at this location through providing a raised zebra crossing at a pedestrian desire line on Nicholson Street and remove the uncertainty and safety issues of the existing zebra crossing on Langridge Street. These safety issues include vehicles propping on the crossing and uncertainty when turning into or out of the Langridge Street/Nicholson Street intersection due to the presence of the raised zebra crossing immediately across the Langridge Street intersection approach.

65. Cyclist safety would also be improved by reducing vehicle speed on Nicholson Street and reducing confusion at the Langridge Street/Nicholson Street intersection (as noted above).

66. As previously discussed, a temporary trial of the central median in Nicholson Street was undertaken and attracted significant opposition from the community. This is summarised in the next section of this report.

67. It is proposed that $200k of the existing discretionary funding bid of $934k for Abbotsford LAPM 13 being considered as part of the 2021/22 financial year budget process, be reprioritised to deliver Item 19 of LAPM 13 (replacing the Langridge Street zebra crossing with a threshold treatment and kerb extensions and installing a raised zebra crossing north of Langridge Street), excluding the central median.

Community and stakeholder engagement

68. Approximately 10,000 residents live in the LAPM precinct of Abbotsford.

69. The LAPM study for the Abbotsford precinct (LAPM 13) was undertaken between October 2017 and November 2018.

70. The LAPM plan endorsed by Council on 18 Dec 2018 incudes Items 17 and 19 relating to Nicholson Street/Mollison Street/Langridge Street.

71. Consultation undertaken as part of the LAPM study on the draft LAPM plan across the whole precinct in June/July 2018 received the below responses relating to these treatments.

Number	Description	Responses	Like	Dislike
17	Median island on Nicholson Street with left in/left out only at Mollison Street (cyclists excepted)	**28**	**61%**	**39%**
19	Redesign Langridge Street intersection to be left in/left out only (cyclists excepted) Replace Langridge Street crossing with threshold treatment and kerb extensions Relocate speed hump on Nicholson Street and install raised zebra crossing north of Langridge Street	**18**	**61%**	**39%**

72. The Local Area Study Group considered the draft LAPM plan in Sept 2018 and the whole Abbotsford LAPM precinct was sent the recommended LAPM plan and invited to participate at the Council meeting on 18 Dec 2018.

73. Following implementation of the trial median treatment, 68 submissions of recorded community feedback were received, with 15 in support and 53 in opposition.

74. One petition in opposition was received during the trial with 464 signatures. Ninety-four signatures were from Abbotsford residents. This was tabled at the 1 December Council Meeting.

75. One petition was received in support of the trial with 106 signatures. Ten signatures were from Abbotsford residents. This was tabled at the 15 December Council Meeting.

76. It should be noted that multiple signatures in the petitions were from the same households, duplicate and triplicate responses were included, and signatures from wider metropolitan Melbourne and interstate were present.

77. Summary of opposition feedback:

    (a) Creating more problems than resolving noted LAPM study issues;

    (b) Concerns around motorist U-turns and resulting dangerous behaviour;

    (c) Restricted access issues to residential properties;

    (d) Impact on local traffic movements;

    (e) Concerns that the LAPM study in 2018 was not recent enough to be considered valid for community consultation;

    (f) Extension of trips (800m detour);

    (g) Lack of community consultation;

    (h) Concerns regarding emergency services vehicle access;

    (i) Cyclist non-compliant behaviour;

    (j) Increased traffic congestion;

    (k) Dangerous consequences at other intersections especially for cyclists and pedestrians;

    (l) Increase in traffic now on other local roads; and

    (m) Local residents and businesses unable to drive directly to their homes or workplaces, increasing travel time and traffic.

78. Summary of feedback in support:

    (a) Safety benefits of the temporary median strip for cyclists and pedestrians;

    (b) Requests to lengthen the median strip; and

    (c) Requests for enforcement of illegal driver U-turns.

Policy analysis

Alignment to Council Plan

79. Objective Six of the Council Plan 2017-2021 refers to *A Connected Yarra, a place where connectivity and travel options are environmentally sustainable, integrated and well-designed.*

80. *Strategy 6.1: Manage traffic movement and promote road safety within local roads.*

81. *Strategy 6.5: Develop and promote pedestrian and bicycle infrastructure that encourages alternative modes of transport, improves safety and connectedness.*

Climate emergency and sustainability implications

82. Improvements in cycling and pedestrian connectivity and safety, support the usage and encouragement of sustainable transport options.

83. Implementation of the median using an ‘iterative trials’ approach is consistent with Council’s Climate Emergency Plan, Action 4.2 which states:

    Increase sustainable transport solutions throughout the city including:

    > *Using iterative trials for temporary sustainable transport infrastructure, car free zones and curfews and reallocation of car space for sustainable transport modes.*

Community and social implications

84. There are no social implications specifically addressed within this report.

Economic development implications

85. There are no identified economic implications.

Human rights and gender equity implications

86. There are no identified human rights implications.

Operational analysis

Financial and resource impacts

87. Depending on whether Council resolve to implement additional treatments in this location, and if so, which option is pursued, there could be a financial cost to Council.

88. There is no current budget allocation for any further works relating to the temporary central median trial at Nicholson Street, Mollison Street and Langridge Streets (Option 1).

89. Amendments to signs and line marking relating to AM and PM peak hour turn bans are relatively modest and could be funded through existing operational budgets (Option 2).

90. Discretionary funding of $30k to undertake Local Government Act (LGA) 1989 access restriction requirements, which include data collection, a Traffic Impact Assessment and consultation, would need to be referred to and considered as part of the 2021/22 budget (Option 3).

91. $200k of the existing discretionary funding bid of $934k for Abbotsford LAPM 13 being considered as part of the 2021/22 financial year budget process would need to be approved and the projects reprioritised to implement a threshold treatment and kerb extensions at Langridge Street and install a raised zebra crossing on Nicholson Street, north of Langridge Street (Option 4 – Recommended option).

Legal Implications

92. Council has an overall obligation under the Road Management Act 2004 to manage the local road network in a manner that gives due consideration to community safety.

Conclusion

93. Safety concerns were identified for pedestrians and cyclists at the intersections of Nicholson Street, Mollison Street and Langridge Street in the Abbotsford LAPM 13 study in 2018.

94. The temporary central median island on Nicholson Street was installed as a trial for 12 months to try and address some of these safety concerns in response to the changing movement and physical distancing needs for an immediate and post-COVID 19 context. It should be noted that it was proposed in the LAPM plan to install items 17 (central median) and 19 (threshold treatment and kerb extensions on Langridge Street and raised zebra crossing on Nicholson Street) as a package to achieve the maximum safety benefit.

95. The trial received mixed responses from the community with some support, but also numerous complaints regarding movement and access problems, despite on-going monitoring and adaptation to safety concerns for the trial duration. Most, but not all these complaints, related to illegal and unsafe driver behaviour.

96. In response to construction access needs of a development at 20-30 Mollison Street, community feedback and officer advice, Council resolved on 15th of December to remove the temporary central median. Reinstating the central median trial before the construction works have been completed would require the removal of two mature London Plane trees to allow alternative access arrangements.

97. Officers had intended obtaining traffic volume data during the 12 months trial of the central median island on Nicholson Street once traffic levels had reverted to normal levels, however this was not able to be achieved due to the removal of the trial.

98. Due to the limitations with available data before, during and after the installation of the central median island on Nicholson Street, Officers cannot accurately measure the success of this trial in achieving its objective of reducing the amount of non-local traffic crossing the cycle route on Nicholson Street, based on the data alone.

99. Peak hour turn bans typically have high non-compliance rates. Enforcement by Victoria Police is very infrequent due to other priorities.

100. Noting the level of opposition to the central median trial and that LAPM Plan Item 19 (but excluding the central median), should improve pedestrian and cyclist safety at this location, it is considered that Option 4 is the most appropriate to pursue.

101. Option 4 proposes that $200k of the existing discretionary funding bid of $934k for Abbotsford LAPM 13 being considered as part of the 2021/22 financial year budget process be reprioritised to deliver endorsed LAPM Plan Item 19 (to replace the Langridge Street zebra crossing with a threshold treatment and kerb extensions; and install a raised zebra crossing north of Langridge Street) but exclude the central median.

102. Officers have proposed funding for LAPM 13 treatments in the Discretionary CAPEX program for 2021/22, and subject to Council support, this treatment could be delivered in 2021/22.

RECOMMENDATION

1. That Council:

   (a) Supports the implementation of the endorsed LAPM 13 Plan, Item 19 (being to replace the Langridge Street zebra crossing with a threshold treatment and kerb extensions; and install a raised zebra crossing north of Langridge Street) excluding the central median;

   (b) note that this treatment requires an allocation of $200k, and noting an allocation of $934k for Abbotsford LAPM 13 is being considered as part of the discretionary expenditure in the 2021/22 financial year budget process and that this allocation would enable the proposed measures to be delivered in 2021/22, refer this to the 2021/22 budget process for formal consideration; and

   (c) notes that implementation would be subject to Council approval and allocation of sufficient funding in the 2021/22 budget process.

Attachments

1⇩ Attachment 1 - Abbotsford LAPM 13 Endorsed Plan

2⇩ Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 1 - Attachment 1 - Abbotsford LAPM 13 Endorsed Plan

YOUR SAY YARRA

Taking it to the streets - Abbotsford

Recommended Local Area Place Making (LAPM) Plan

CITY OF YARRA

LEGEND ---- Precinct Boundary — Route Treatment — Intersection Treatment

KEY

1. Reduce northbound lanes from 3 to 2 and continue bicycle lane to intersection (subject to VicRoads approval)
   Advocated VicRoads for safety improvements at Johnston St and Nicholson St and review bus stop location
2. Remove parking on south side between Paterson St and Trenerry Cres 4pm-6.30pm Mon-Fri for traffic clearway
3. Remove speed hump
4. Upgrade speed hump to full width and reconsider location
5. Upgrade existing crossing to raised zebra crossing
6. Remove speed hump
7. Ban entry from Harper St into laneway behind 106-160 Nicholson St 7am–9am Mon–Fri
8. Intersection upgrade with new pedestrian and bike links
9. Provide contraflow bicycle lane on Vere St
10. Raised pedestrian crossing between Gahan Reserve and railway station. Future shared space between Collingwood Town Hall and railway station
11. Upgrade existing crossing to raised zebra crossing
12. Upgrade speed hump to full width
13. Replace bluestone channel on north-west corner of intersection to widen bicycle lane
14. Raised pedestrian friendly threshold treatment on outside of bend and vibraline on bike lane
15. Raised pedestrian crossing on Victoria Cres
16. Upgrade existing crossing to raised zebra crossing
17. Median island on Nicholson St. Left in/left out only at Mollison St (cyclists excepted)
18. Raised pedestrian crossing on Mollison St
19. Redesign Langridge St intersection to be left-In/ left-out only (cyclists excepted)
    Replace Langridge St crossing with threshold treatment and kerb extensions
    Relocate speed hump on Nicholson St and install raised zebra crossing north of Langridge St
20. Replace painted islands with kerb outstands and new kerb ramps
21. Raised zebra crossing
22. Relocate existing closure on Albert St to Murray St and provide pedestrian and cyclist access across Murray St at bend
23. Raised threshold treatment on Murray St
24. Continue bicycle lane to Victoria St (subject to VicRoads approval)
25. Advocate VicRoads to increase right turn capacity into Hoddle St
26. Remove 3 parking spaces and provide landscape treatment on western side at entrance to Hive Shopping Centre. Relocate/ rationalise loading zone and community bus parking
27. Reconfigure southbound bicycle lane to Victoria St to kerbside (subject to VicRoads approval)
28. into Thompson St 7am–9am Mon–Fri

Attachment 1 - Attachment 1 - Abbotsford LAPM 13 Endorsed Plan

Taking it to the streets – Abbotsford
Recommended Local Area Place Making (LAPM) Plan

1 Johnston St & Nicholson St

Reduce northbound lanes from 3 to 2 and continue bike lane to intersection of Nicholson St and Johnston St

96% liked this idea.

- Complete a missing bike link on Nicholson St to Johnston St
- A reduction in right turn capacity may discourage traffic using Nicholson St
- Any change would be subject to capacity intersection analysis and VicRoads approval.

Advocate VicRoads for safety improvements at the intersection of Johnston Street and Nicholson Street

53% liked this idea.

- Our original proposal to remove the left turn slip lane from Johnston St to Nicholson St received a mixed response, with concern that it would lead to cars queuing further back in Johnston St.
- There was agreement that the existing bus stop is poorly located and unsafe.
- We advocate to VicRoads for safety improvements for pedestrians, bike riders and bus users. This may include relocating the bus stop to the west side of Nicholson St.

2 Johnston St

Remove parking on south side of Johnston St, between Paterson St and Trenerry Cr 4pm-6.30pm Mon-Fri

93% liked this idea.

- The removal of parking improves traffic flow on Johnston St in the vicinity of Trenerry Cr during the afternoon peak.
- This may discourage traffic from using local streets by reducing delays on Johnston St.
- Parking restrictions in Paterson Street would be changed to allow trader and visitor parking during business hours.

3 Outside 220 and 227 Nicholson St

Remove speed humps outside 220 and 227 Nicholson St

- 55% disliked this idea.
- However there is no demonstrable need for the humps as a raised zebra crossing is already located nearby.
- While there was concern that removing speed humps would result in increased vehicle speeds, it is still recommended that the humps be removed and monitored to see if speed actually increases through the area.

4 Outside 190 and 193 Nicholson St

Upgrade existing speed humps outside 190 and 193 Nicholson St to full width and reconsider position

- 60 percent disliked the original proposal to remove the speed humps.
- The spacing of existing traffic treatments along this section of Nicholson Street may benefit from an upgrade and relocation of the humps in this case.

5 Nicholson St, south of Vere St

Upgrade existing crossing to raised zebra crossing outside Mavis the Grocer

94% liked this idea.

- Raising the crossing lowers travel speed and increases the attention of all road users.
- Upgrade lighting, drainage and pedestrian accessibility as required.

6 Outside 181 Nicholson St

Remove speed humps outside 181 Nicholson St

58% liked this idea.

- There is less need for the humps as a raised zebra crossing is proposed nearby.
- Speed shall be monitored through the area. following the removal.

7 Harper St and laneway

Ban entry 7am-9am Mon-Fri from Harper St into laneway behind 106-160 Nicholson St

89% liked this idea.

- Deter motorists from using the narrow laneway behind 106-160 Nicholson St as a shortcut in the peak period.
- Local residents will not be exempt from the ban and will only be able to enter via Gipps St.
- While requests for full time bans were received, evidence shows low traffic volume in the laneway outside the morning peak to warrant a permanent change.
- It is recommended that the proposal proceeds with monitoring.

8 Vere St and Park St

Intersection upgrade with new pedestrian and bike links at Park St and Vere St

89% liked this idea.

- New zebra crossings on Park and Vere streets to connect to Gahan Reserve
- A bike opening on the eastern leg.

9 Vere St

Provide contraflow bike lane on Vere St

89% liked this idea

- This bike link provides an important east-west connection between the bridge over Hoddle St and Nicholson St
- No parking is proposed to be removed.

10 Collingwood Station, Stanton St

Raised pedestrian crossing between Gahan Reserve and railway station, and shared space between Collingwood Town Hall and railway station

100% liked this idea.

- A raised zebra crossing lowers speed and allows pedestrians to have priority to cross Stanton St at all times
- Parking would be converted to pedestrian friendly areas where possible.
- In view of the high costs associated with creating a shared space, more cost effective short term models will be investigated.
- A long term shared space will be considered as part of future planning on the Collingwood Town Hall precinct.

11 Gipps St pedestrian crossing

Upgrade existing crossing on Gipps St near railway bridge to a raised zebra crossing

89% liked this idea

- Raising the crossing lowers travel speed and increases the attention of all road users.
- Upgrade flashing lights, lighting, drainage and pedestrian accessibility as required.

12 Outside 124 and 155 Nicholson St

Upgrade speed hump to full width

90% liked this idea

- Replace the speed humps outside 124 and 155 Nicholson St with a full width hump.

13 Gipps St and Nicholson St

Replace bluestone channel on north-west corner of intersection to widen bike lane

87% liked this idea.

- Maximise the bike lane on the western approach to Gipps St and Nicholson St.

14 Gipps St and Victoria Cr

Raised pedestrian friendly threshold treatment on outside of bend and vibraline on bike lane

100% liked this idea

Attachment 1 - Attachment 1 - Abbotsford LAPM 13 Endorsed Plan

Taking it to the streets – Abbotsford
Recommended Local Area Place Making (LAPM) Plan

14 Gipps St and Victoria Cr

- Raising the eastern entrance to Gipps St provides a new level path for pedestrians to travel north-south
- Thicker audio-tactile line marking warn drivers to stay out of the bike lane and may reduce speeds through the Gipps St-Victoria Cr bend.

15 Victoria Cr, south of Gipps St

Raised pedestrian crossing on Victoria Cr just south of Gipps St

94% liked this idea

- A zebra crossing allows pedestrians to have priority to cross at all times.
- Raising the crossing lowers travel speed and increases the attention of all road users.
- Some parking may need to be removed to ensure adequate sight lines.

16 Nicholson St, north of Mollison St

Upgrade existing crossing to raised zebra crossing

90% liked this idea

- Raising the crossing lowers travel speed and increases the attention of all road users.
- Upgrade flashing lights, lighting, drainage and pedestrian accessibility as required.

17 Nicholson St and Mollison St

Median island on Nicholson St with left in/left out only at Mollison St (cyclists excepted)

- Proposed to be implemented on a trial basis with monitoring of impact to surrounding streets by traffic redistribution
- Right turns are prevented by a median on Nicholson St, with breaks to allow cyclists to be exempt
- Short-cutting traffic may be reduced but local residents and businesses will need to modify travel
- Opportunities for landscaping, public seats, bike racks and outdoor dining by repurposing up to four parking spaces.

18 Mollison St and Victoria Cr

Raised pedestrian crossing on Mollison St at Victoria Cr

100% liked this idea

- A zebra crossing allows pedestrians to have priority to cross at all times
- Raising the crossing lowers travel speed and increases the attention of all road users.

19 Nicholson St and Langridge St

Redesign Langridge St intersection to be left-in/left-out only (cyclists excepted)

Replace Langridge St crossing with threshold treatment and kerb extensions

Relocate speed hump on Nicholson St and install raised zebra crossing north of Langridge St

61% liked this idea

- Proposed to be implemented on a trial basis with monitoring of impact to surrounding streets by traffic redistribution.
- Monitor the need for pedestrian crossing on Langridge St.
- Right turns are prevented by a median on Nicholson St, with breaks to allow cyclists to be exempt
- Short-cutting traffic may be reduced but local residents and businesses will need to modify travel
- Raising the crossing on Nicholson St lowers travel speed and increases the attention of all road users
- A zebra crossing allows pedestrians to have priority to cross at all times along the most desirable path
- Opportunities for landscaping.

20 Langridge St and Charles St

Replace painted islands with kerb outstands and new kerb ramps at Langridge St and Charles St

100% liked this idea

- A narrower intersection may reduce speed, improve sight lines and reduce pedestrian crossing distance.

21 Langridge St near Park St

Raised zebra crossing on Langridge St near Park St

92% liked this idea

- A zebra crossing allows pedestrians to have priority to cross at all times along the most desirable path.
- Raising the crossing lowers travel speed and increases the attention of all road users.
- Flashing lights, lighting, drainage and pedestrian accessibility upgrades as required.

22 Murray St and Albert St

Relocate existing road closure on Albert St to Murray St and provide pedestrian and bike rider access across Murray St at bend

94% liked this idea

- The option removes a potential conflict point at this intersection.
- Properties on Albert St, south of Murray St, including the Abbotsford Primary School will only have vehicle access via Victoria St or Princes St.
- Southbound bike riders continuing along Albert St may find it safer to dismount when crossing Murray St.
- A raised pedestrian crossing to be provided across Murray St.

23 Murray St and Church St

Raised threshold treatment on Murray St

70% liked this idea

- Raising the entrance to Murray St may discourage speeding through the intersection and improve giving way to pedestrians and traffic on Church St.

24 Church St and Victoria St

Continue bike lane to Victoria St

90% liked this idea

- Complete a missing bike link on Church St between Princes St and Victoria St
- Any change would be subject to capacity intersection analysis and VicRoads approval.

25 Victoria St and Hoddle St

Advocate VicRoads to increase right turn capacity from Victoria St into Hoddle St

86% liked this idea

- Improving right turn movements from Victoria St may discourage traffic from using local streets
- Any change would be subject to capacity intersection analysis and VicRoads approval.

26 Nicholson St, north of Victoria St

Remove 3 parking spaces and provide landscape treatment on western side at entrance to Hive Shopping Centre

Relocate/rationalise loading zone and community bus parking

88% liked this idea

Attachment 1 - Attachment 1 - Abbotsford LAPM 13 Endorsed Plan

Taking it to the streets – Abbotsford
Recommended Local Area Place Making (LAPM) Plan

26 Nicholson St, north of Victoria St

- The treatment reduces conflict when vehicles are stopped on the northbound bike lane when being parked or illegally double-parking
- New public space is created for seats, landscaping and bike parking
- Existing loading zone and community bus parking relocated north
- Design shall discourage motorists from stopping in front of Hive to drop-off and pick-up passengers.

27 Nicholson St and Victoria St

Reconfigure southbound bike lane on Nicholson St to Victoria St to the kerbside

90% liked this idea

- The treatment provides better separation of bike riders from left turning vehicles through buffers and relocation of a disabled space
- Kerbside bluestone channel to be reduced to maximise space for bike riders
- Traffic signals at Nicholson St/Victoria St would need to be reprogrammed or upgraded for bike riders and pedestrians (subject to capacity intersection analysis and VicRoads approval).

28 Victoria St and Thompson St

No right turn from Victoria St into Thompson St 7am-9am Mon-Fri

100% liked this idea

- The right turn ban is similar to other turn bans along Victoria St and may reduce traffic short-cutting through local streets in the morning peak.
- Local residents and businesses will not be exempt from the turn ban and will need to modify travel during these times.

Projects to advocate to VicRoads

Johnston Street, Hoddle Street and Victoria Street are managed by VicRoads, the state road authority. Another output of our LAPM study will be to provide a priority list of actions for advocacy to VicRoads. These actions include:

Johnston St and Trenerry Cr

We advocate to VicRoads for traffic signals and other improvements at Trenerry Cr and Johnston St to improve the safety of all road users. Recommendations include:

- Immediate safety improvements to reduce the risk to pedestrians and cyclists
- Reduce confusion at the intersection when the centre lane on Johnston Street changes operation during clearway times
- Integrate existing left turn bans into traffic signals to reduce confusion and improve compliance by motorists
- Optimise traffic signal operations to reduce short-cutting traffic using Trenerry Cr.

Johnston St pedestrian crossing

We advocate to VicRoads for improvement to the existing pedestrian crossing under the railway bridge on Johnston St to stop drivers blocking the crossing.

Hoddle St

We advocate to VicRoads for:

- Post evaluation of Streamlining Hoddle Street project to ensure any issues to local streets are properly addressed.
- Public realm improvements particularly at Johnston Street and Hoddle Street.
- Continuous bus lanes.
- Advocate to Public Transport Victoria for bus route 246 Elsternwick-Clifton Hill to be upgraded to SmartBus timetable.
- Reduce speed limit to 60 km/h.
- Improvement in pedestrian crossing times and responsiveness at all existing crossings, particularly in the east-west direction.

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

11.1 Transport, movement and access response to impacts of COVID-19

Reference: D20/96634
Authoriser: Director Planning and Place Making

Purpose

1. This report outlines the progress made towards catering for the physical distancing, transport and movement needs of the Yarra community and visitors in response to the impacts of the COVID-19 pandemic (COVID-19).
2. This report provides a high level summary of the Stage 1 COVID-19 Response Trials proposed by officers.
3. This report sets out how officers plan to inform, communicate and involve the Yarra community in the transport response to COVID-19 both now and going forward.
4. This report recognises that further progress will also be made between the publication of this report and the Council meeting of 23 June 2020.
5. A verbal update on this progress will be provided at the Council meeting of 23 June 2020.

Background

6. The way people work, live, shop and move around has changed to varying extents as a result of the impacts of COVID-19.
7. This is clearly reflected in the current transport, movement and access context with lower levels of traffic on Yarra's roads and fewer people using public transport.
8. It is possible that these travel patterns will continue to some extent for a period of time, including in an immediate post COVID-19 context and into the future, particularly with continued physical distancing considerations in many aspects of life and while community health concerns are prevalent.
9. Likewise, physical distancing requirements have impacted on the operation of Yarra's local economy and how people access services. It is noted that this is a dynamic situation as businesses start to reopen and/or respond to the progressive easing of some restrictions.
10. This is a universal challenge and many cities around the world have responded by re-examining how road space is used and whether it is possible to provide additional space or safer streets for people in terms of movement (i.e. walking and cycling) and for everyday living (i.e. socialising or meeting at a local business).
11. This is a key challenge for Yarra given:
    (a) its dense urban environment and limited space to safely cater for all transport modes and street activity;
    (b) the high usage of public transport by the community and visitors to move around pre-COVID-19; and
    (c) the struggles faced by local business during COVID-19 and potential uncertainty going forward.
12. The need to respond to this challenge has been identified by Council via:
    (a) a resolution to the General Business Motion on 5 May 2020;
    (b) a Special Bicycle Advisory Committee (BAC) meeting on 29 May 2020;
    (c) a Council resolution on this matter on 2 June 2020;
    (d) a Special Councillor Briefing on 9 June 2020; and

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

(e) this report to the Council meeting of 23 June 2020.

13. In particular the Council resolution of 5 May 2020 recognised:

(a) there is a need to respond to the transport, movement and access needs of the community through the provision of a range of safe transport options;

(b) there is an opportunity to re-examine how we view and use public spaces especially road space given the reduced levels of traffic using roads in Yarra; and

(c) there is also an opportunity to respond to the emergency situation by fast tracking projects particularly through the use of temporary infrastructure and a mindset of acting now and adapting over time.

Project identification

14. Council has already received many ideas provided by the community, and via the BAC meeting, about possible projects and initiatives to address the physical distancing, transport and movement needs of the community.

15. Council officers have actively engaged with some local businesses (within available resources) to understand the potential needs of businesses at this current time.

16. Council officers are also working with neighbouring Council's to see if there is an opportunity to align or jointly investigate projects.

17. The type and number of projects that have been suggested are wide ranging, and there is a range of different views in the community.

18. However, it is clear that there are some common themes in the feedback provided, including:

(a) a desire to address community health concerns particularly around physical distancing and catering for vulnerable people;

(b) a desire for Council to consider transport projects that provide a greater choice of safe transport options for local and longer journeys;

(c) a desire to help the local economy; and

(d) a desire to act now.

19. Officers have undertaken a systematic approach to the identification of some proposed smaller and larger scale trials and the prioritisation of possible future projects based on community ideas.

20. Key to this is the development of an Assessment Tool which prioritises projects based on the response to COVID-19 and alignment with Council's transport and safety objectives.

21. The Assessment Tool has been developed to manage and assess a large number of projects in a clear, informed and consistent manner to guide decision making on immediate project priorities, and the on-going project delivery pipeline thereafter.

22. This approach enables a balanced view of each project to be taken and for all projects to be directly compared in terms of effectiveness, adaptability, impacts, delivery timeframes, and cost.

23. It also provides a one stop shop for documenting which COVID-19 response projects have been considered and how they perform. In some cases there are multiple strategic options for delivering a project, like a strategic bike corridor.

24. The assessment tool can also be used to assess these particularly where there are competing demands for use of space and a decision needs to be made on how it can be best used in the context of a COVID-19 response.

25. This approach is key to be able to manage the transport, movement and access response to COVID-19 within the resources available to Council.

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

26. Many of the initially identified Stage 1 COVID-19 Response Trials (discussed later in this report) are resource intensive not only in terms of design and implementation, but also in terms of ongoing monitoring and facilitating and channelling ongoing community input to best learn from community experiences, and if necessary, adapt to concerns especially if there is identified safety issues.
27. The Assessment Tool allows officers to fairly and equitably manage and prioritise community ideas while also managing all other aspects of project delivery and evaluation within resources available.
28. All community ideas received so far have been assessed, along with ideas developed by officers, using the Assessment Tool.
29. Approximately 80 projects have been reviewed using the Assessment Tool so far.
30. Other community ideas yet to be received will also be reviewed and prioritised using the Assessment Tool.
31. From the 80 projects identified so far, some initial trials have been undertaken (see below) and eight larger scale Stage 1 COVID-19 Response Trials have been identified for consideration by Council in this report.
32. Council officers are also in the process of investigating additional projects with neighbouring Councils and the Department of Transport (DoT).

Initial Trials

33. Officers have delivered some initial small scale trials while larger scale trials were being developed.
34. These trials have included:
    (a) the placement of social distancing markers outside Yarra Primary School for parents waiting to collect their children. This trial was undertaken with a view to identifying the cost and installation of suitable products for other schools to follow (if desired) in conjunction with the Department of Education and Training;
    (b) the placement of social distancing stickers at school crossings in Yarra;
    (c) the development and installation of proposed leisure walking circuits that provide alternatives to Yarra's trails and visit various local activity areas, to support physical activity, physical distancing and promote sites of cultural significance and local economic development;
    (d) working with traders on Queens Parade to manage the footpaths outside premises to provide an appropriate balance between street trading activity and the physical distancing requirements of businesses, customers and people passing along Queens Parade;
    (e) removal of some carspaces outside 4 café premises to increase the waiting area (through use of the kerbside area), and
    (f) the provision of additional space to allow pedestrians improved physical distancing outside Piedimonte's Supermarket in Fitzroy North through the removal of some carspaces).

    Note: Council officers have also been exploring the reallocation of road space (in particular on-street parking spaces) as a means for some other businesses to meet current and future physical distancing requirements.
35. It is noted that of the 12 businesses that were initially approached, only four were interested in taking up this kerbside option at this time. In these 4 kerbside areas officers have installed some temporary barriers on 6 June 2020 on a one month trial basis.
36. Council officers are engaging further with these businesses regarding the opportunity for them to install furniture and seating (to act as a parklet); this may be able to be extended to other businesses as further trials.

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37. This opportunity will however, be subject to identifying and addressing any issues around public safety and local laws, particularly in situations where there is significant passing vehicular traffic.

38. It is noted that any trial of the placement of seating and furniture in parklets (at the current trial sites or subsequently identified locations) will provide ongoing information to Council officers on any next steps, noting that there is unlikely to be a one-sized-fits-all approach.

39. Council officers will explore parklets at other locations where demand exists, noting that there may be a cost to businesses to install and manage the parklets which will be determined and agreed on a case by case basis.

40. A verbal update on the trial will be provided at the Council meeting on 23 June 2020.

Proposed Stage 1 COVID-19 Response Trials

41. The proposed Stage 1 COVID-19 Response Trials have been identified using the Assessment Tool and have also been further informed by the following considerations:

    (a) trials that may become more difficult to deliver as time goes on;

    (b) trials where there are minimal competing objectives (or trials that can facilitate competing objectives). For example, installing a temporary bicycle lane may meet certain transport objectives, but in turn could hamper the recovery of a local economy where there is a demand to use the same road space to service a business (i.e. a parklet or the continued use of on-street parking);

    (c) trials that allow Council to act now and adapt over time primarily through the use of temporary or easily modified infrastructure - or remove the temporary infrastructure, accept and learn from any setback, and move on; and

    (d) trials that address localised community needs and when combined together work towards a regional or strategic objective for Council (see proposed Heidelberg Road to CBD/Church Street safer cycle route).

42. All of the proposed Stage 1 COVID-19 Response Trials closely align with many Council strategies, policies and objectives.

43. It is noted that some of the Stage 1 COVID-19 Response Trials would need approval from DoT.

44. It is also noted that some of the Stage 1 COVID-19 Response Trials may be subject to Ministerial approval.

45. Officers are currently working through the formal approvals process with DoT so this could be actioned in an expedited manner should Council resolve to proceed with the Stage 1 COVID-19 Response Trials.

46. A verbal update on progress regarding DoT approvals will be provided at the Council on 23 June 2020.

47. The Stage 1 COVID-19 Response Trials proposed by officers are summarised in Table 1, with location plans provided in Attachment 1.

Table 1: Proposed Stage1 COVID-19 Response Trials

Stage 1 Trial	Summary of key considerations
Addressing local community needs and key missing links in cycle network between Heidelberg Road and CBD/Church Street (see next four projects)	
Closure of Trenerry Crescent, Clifton Hill (under Eastern Freeway overpass) to traffic in both directions (all cyclists and pedestrian	Trial road closed using temporary barriers and signage. Responds to immediate physical distancing issue on adjacent Capital City and Merri Creek trails by providing additional space. Responds to a missing link in strategic cycle network given

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movements to be retained)	safety and amenity issues for cyclists sharing this section of the street with road traffic. Responds to safer routes to local schools for non-car traffic. Provides indirect response to other safety issues in surrounding streets due to a reduced level of traffic. No loss of parking. For some journeys, it would require the local community to travel further by car. Travel times on adjacent arterials are much lower in current context. Temporary closure can be easily adapted to one way or removed if there are notable safety issues. Subject to DoT / Ministerial approval.
Reallocation of some road space to cyclists at Johnston Street and Nicholson Street intersection, Abbotsford (eastbound bus lane on Johnston Street and northbound traffic lane on Nicholson St) to form a part protected intersection	Traffic lanes closed using temporary barriers and signage. Responds to immediate physical distancing issue at this location due to narrow footpaths and pre COVID-19 safety issues (cyclist use footpaths). Responds to missing link in strategic cycle network and numerous reported cyclist safety concerns pre-pandemic. Responds to safer routes to local schools for non-car traffic. No loss of parking. Temporary lane closures can be easily adapted or removed if there are notable safety issues. Subject to DoT / Ministerial approval.
Centre median preventing east-west movements across Nicholson Street, between Mollison Street to Langridge Street (all cyclists and pedestrian movements to be retained)	Council adopted Local Area Place Making (LAPM 13) project to be delivered with temporary infrastructure Responds to localised pedestrian and cyclist safety need due to a high number of conflicting traffic movements. Responds to safer routes to local schools for non-car traffic. No loss of parking. For some journeys, it would require residents and visitors to travel further by car. Travel times on adjacent local roads are much lower in current context. Temporary closure can be easily adapted to one way or removed if there are notable safety issues. Subject to normal DoT approvals. As this is an approved Council project, officers will work to an early to mid-July 2020 implementation date.
Elizabeth Street protected bicycle lanes trial (Council approved trial pre Covd-19 to be delivered July 2020)	Council approval is in place (Dec 2019) to undertake the trial at this location. Responds to a missing link in strategic cycle network Connects into City of Melbourne protected bicycle lanes on Albert Street Reduction in parking supported by extensive investigation As this is an approved Council project, officers will work to an early to mid-July 2020 implementation date.

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Individual projects that address localised community needs and contribute towards other strategic cycle networks (see next four projects)	
Mid-block closure of Wellington Street, Collingwood to traffic in both directions, between Johnston Street and Alexandra Parade (all cyclist and pedestrian movements to be retained)	Road closed using temporary barriers and signage. Intention is to reduce through-traffic (but retain local access) similar to Napier Street strategic bicycle route and surrounds. Responds to a missing link in strategic cycle network given safety and amenity issues for cyclists sharing this section of the street with road a high level of passing traffic. Responds to safer routes to local schools for non-car traffic. No loss of parking. For some journeys, it would require the local community to travel further by car. Travel times on adjacent arterials are much lower in current context. Temporary closure can be easily adapted to one way or removed if there are notable safety issues. Subject to DoT / Ministerial approval.
Contra-flow bicycle lane on Park Street, North Carlton	High priority project identified by Assessment Tool Responds to immediate physical distancing issue on the Capital City Trail and at the intersection of Nicholson Street and St Georges Road Provides additional capacity on the strategic cycle network No loss of parking Subject to normal DoT approvals. Officers would work to a late June 2020 implementation date.
Closure of Coppin Street on north side of Bridge Road intersection, Richmond, to traffic (all cyclist and pedestrian movements to be retained)	Trial road closed using temporary barriers and signage. Particular focus on providing safe cycle routes to Richmond High School and Bridge Road civic areas and activity centre. Responds to a missing link in the local cycle network given safety and amenity issues for cyclists sharing this section of the street with road traffic. Responds to safer routes to local schools for non-car traffic. No loss of parking. For some journeys, it would require residents and visitors to travel further by car. Travel times on adjacent local roads are much lower in current context. Temporary closure can be easily relocated or removed if there are notable safety issues. Subject to DoT / Ministerial approval.
Conversion of left turning lane to cycle only lane on Gipps Street at intersection with Hoddle Street, Abbotsford/Collingwood	Left turn traffic lane(s) converted to bicycle lanes using temporary infrastructure Facilitates safer east/west cycle movements on Gipps Street and cyclist currently mix with traffic, or use footpath Approved project at this location. Officers would work to late June to early July 2020 implementation date.

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48. Many of the trials set out in Table 1 have the potential to make a notable contribution towards providing safer non-car travel options both at a local and a strategic/area-wide context.
49. This is particularly important given the uncertainty around how the Yarra community and visitors will travel in the future, particularly if there less demand to use public transport for community health reasons.
50. Council officers recognise that the proposed Stage 1 COVID-19 Response Trials would result in increased inconvenience for some residents and visitors due to increased travel time for some car journeys.
51. Council officers note that there is likely to be some vocal opposition to the proposed trials, particularly during the early stages of project delivery as the community gets used to the changes.
52. For Yarra to be successful in its transport response to COVID-19, there would be a requirement to ask the community to give the proposed trials a chance, noting that the trials directly try to cater for vulnerable members of the community.
53. This may be a difficult proposition in the early stages of implementation given that there tends to be fewer people walking and cycling in winter months.
54. Importantly, there is potential to work with the community and **adjust and adapt** the trials over time.
55. There is also the ability to remove trials that result in safety issues that cannot be resolved by adapting the trials.
56. Council officers will proactively monitor the installed trials on an ongoing basis.
57. Given the uncertainty around COVID-19, it is proposed that the Stage 1 COVID-19 Response Trials are:
    (a) reviewed immediately (at any time) if there is an identified safety issue;
    (b) reviewed 3 months post implementation to allow the community time to adjust and adapt to the changes; and
    (c) fully evaluated 12 months post implementation to identify whether the trials have been a success and whether there is any demand to continue with any trial.
58. As Council officers will be undertaking ongoing monitoring, there is the opportunity any time post the 3 month review to adapt or end a trial, if it is identified:
    (a) that the trial is not meeting the objectives; and/or
    (b) there is an alternative trial or outcome that better meets the needs of the community; and/or
    (c) the trial is having an unacceptable impact on infrastructure or operations managed by DoT (as determined by DoT and agreed with Council).
59. Council officers would provide periodical project updates on Council's website, particularly in advance of any proposed changes to the installed trials.
60. It is proposed that this would also occur for any future stage COVID-19 Response Trials.

Communications

61. Communications is key to any success in Council's transport, movement and access response to COVID-19.
62. Communications for the Stage 1 COVID-19 Response Trials would aim to inform the community about what changes are happening to their local streets, with an emphasis on why and the expected benefits.

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63. As well as notifying people of works and changes, key messaging would focus on how Yarra is addressing the physical distancing and transport needs of the community by creating friendlier, safer, and more sustainable streets.

64. While this is a departure from Yarra's standard consultation process, Council officers would also provide mechanisms for community feedback to help refine these initiatives as the trials progress.

65. Targeted communications, advising the community of the specific projects in their area, would include:

    (a) letterbox drops, DL postcards or fact sheets (as required and where appropriate);

    (b) signage, including corflute posters and potentially footpath decals; and

    (c) targeted social media, where appropriate.

66. The Stage 1 COVID-19 Response Trials would be promoted more holistically to the wider community through Council's existing channels, including Yarra's website, which would include maps, images, and question and answer tools.

67. Information on Council's transport, movement and access response to COVID-19 would be included Yarra News, Yarra Life e-news, and social media, as well as other targeted e-newsletters, including business and environment.

68. Proactive media statements would also be prepared to manage risk.

69. As outlined above, it is anticipated that some members of the community will express concerns about some of the proposed interventions. Undoubtedly, some of the proposals would require changes in behaviour and in some cases this change would entail longer travel times for vehicular traffic for some journeys.

70. It is important that Council understand this, and is prepared to support the implementation and evaluation of trials, even if there is not universal community support.

Prioritisation of Stage 1 COVID-19 Response Trials

71. Should Council resolve to deliver the proposed Stage 1 COVID-19 Response Trials, the proposed next steps and prioritisation of the trials is set out in Table 2.

Table 2: Prioritisation of Stage 1 COVID-19 Response Trials and Timelines

Action / Trial	Timeline
Initial media release on the Stage 1 COVID-19 Response Trials	Day following Council resolution
Initial launch of website and inform community of the project (signage, community notifications)	1 week following Council resolution
Contra-flow bicycle lane on Park Street, North Carlton	Late June 2020
Conversion of left turning lane to cycle lane on Gipps Street at intersection with Hoddle Street, Abbotsford/Collingwood	Late June to early July 2020
Centre median preventing east-west movements across Nicholson Street, from Mollison Street to Langridge Street	Early to mid-July 2020
Closure of Coppin Street on north side of Bridge Road intersection, Richmond	Mid to late July 2020 *subject to Ministerial approval
Closure of Trenerry Crescent, Clifton Hill (under Eastern Freeway overpass) to traffic	Mid to late July 2020 *subject to Ministerial approval

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Reallocation of some road space to cyclists at Johnston Street and Nicholson Street intersection, Abbotsford * subject to ministerial approval	Mid to late July 2020 *subject to Ministerial approval
Mid-block closure of Wellington Street, Collingwood between Johnston Street and Alexandra Parade	Mid to late July 2020 *subject to Ministerial approval

NB. It is noted that the Elizabeth Street protected bicycle lanes trial received Council approval in December 2019, and the delivery stage is about to commence. Information to the community regarding this trial installation occurred recently.

Proposals put forward by adjoining Council's and DoT

72. Officers are currently working with counterparts at neighbouring Council's to identify any opportunities for joint projects.
73. This collaboration is occurring concurrently to the design of the Stage 1 COVID-19 Response Trials proposed by officers.
74. Officers are currently in discussions with officers at the City of Banyule and the City of Darebin, to investigate the potential for cycling improvements on Heidelberg Road to form a strategic bicycle route between Banyule and the CBD.
75. This investigation is still at an early stage. A verbal update will be provided at the Council meeting of 23 June 2020.
76. It is understood that the State Government may separately be exploring the implementation of a number of strategic bicycle routes in response to COVID-19.
77. Officers will be working closely with the State Government as and when this project progresses. A verbal update will also be provided at the Council meeting of 23 June 2020.
78. It is noted that these projects may involve the removal of kerbside car parking.
79. At an early stage in these projects, officers would seek direction from Council on the loss of parking, as this would be key to the delivery of these projects.
80. The matters would inform where officers allocate resources in the overall transport response to COVID-19.

Leisure and Walking Circuits

81. Council officers have implemented three leisure and walking circuits in the municipality.
82. The leisure and walking circuits are shown in Attachment 2 and are intended to:
    (a) provide an alternative to Yarra's busy trails for residents and visitors concerned about social distancing;
    (b) promote physical activity; and
    (c) promote sites of cultural significance and local economic development.
83. The leisure and walking circuits are being promoted through the installation of decals and information provided on Yarra's website.
84. The implementation of the leisure and walking circuits do not require external approvals and has been funded via existing budgets.
85. These circuits will be monitored, and if deemed successful, could be extended and/or expanded.

External Consultation

86. Council officers have considered all the community ideas provided so far (including those provided during the Special Bicycle Advisory Committee meeting in late May. These ideas have been assessed and prioritised using an Assessment Tool.

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87. As said above, Council officers have actively engaged with some local businesses (within available resources) to understand the potential needs of businesses at this current time.

88. Council officers are working with neighbouring Council's to see if there is an opportunity to align or jointly investigate projects.

89. There has been extensive consultation with Department of Transport (DoT) seniors regarding the approval of the proposed Stage 1 COVID-19 Response Trials.

90. It is noted that some of the proposed Stage 1 COVID-19 Response Trials would need approval from DoT.

91. It is also noted that some of the proposed Stage 1 COVID-19 Response Trials may be subject to Ministerial approval.

92. Officers are currently working through the formal approvals process with DoT so this could be actioned in an expedited manner should Council resolve to proceed with the Stage 1 COVID-19 Response Trials.

93. There has been no formal communication with the public on the proposed Stage 1 COVID-19 Response Trials.

94. Subject to Council resolving to proceed with the proposed Stage 1 COVID-19 Response Trials, officers would then inform the public on the implementation of the trials via various means of communication.

95. It is anticipated that there would be community feedback following the implementation of the proposed Stage 1 COVID-19 Response Trials.

96. Interaction with the community following the implementation of the proposed Stage 1 COVID-19 Response Trials would be undertaken as per a communications plan which would also be updated as required.

97. Importantly, there is potential to work with the community and *adapt* the proposed Stage 1 COVID-19 Response Trials over time.

Advocacy

98. Significant advocacy has been undertaken by the CEO and senior officers in order to explore and promote initiatives to encourage safe and sustainable travel and to mitigate the impacts of COVID-19.

99. This advocacy has included meetings and representations to the Associate Secretary Department of Transport, and his senior staff. Discussions with DoT have focussed on strategic project identification, project approvals (where required) and potential funding of key strategic projects.

100. Project identification and joint advocacy has also occurred with IMAP (Inner Melbourne Action Plan) Councils, with a particular focus on the inner Melbourne cycling network of pathways, and introducing better connections.

Internal Consultation (One Yarra)

101. There has been extensive internal consultation undertaken in the development and implementation of the initial trials and the development of the proposed Stage 1 COVID-19 Response Trials.

102. Internal consultation has been undertaken with Council's City Works, Compliance, Communications, Economic Development, Recreation and Leisure, Strategic Transport and Infrastructure, Traffic and Civil Engineering teams.

103. There is an internal officer support team for the proposed Stage 1 COVID-19 Response Trials.

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Financial Implications

104. While temporary infrastructure is noted to be far less expensive than permanent treatments, there are still costs to Council in terms of resourcing and employing specialist contractors, communications (i.e. producing and delivering notices of works) and the purchase, hire and installation of traffic management equipment and signage.
105. The costs to deliver the proposed Stage 1 COVID-19 Response Trials is currently estimated to be in the order of $200,000 to $250,000 (excluding the Elizabeth Street separated bicycle lane trial project which is funded under a separate budget allocation within Council's Budget).
106. The costs to deliver the proposed trials would be determined to some extent whether Council hires or purchases the required traffic management equipment.
107. This would be further influenced by Council's ability to store and/or reuse the traffic management equipment for other trials or other Council projects.
108. A special budget allocation has not been made for the delivery of the proposed Stage 1 COVID-19 Response Trials.
109. There would be a need to monitor expenditure throughout 2020/21 and it may be necessary to report back to Council on the proposed source of funding for these projects, if either external funding is not provided, or sufficient savings cannot be identified, to cover these costs.
110. The cost to deliver the proposed Stage 1 COVID-19 Response Trials also includes installation and maintenance costs which would need to be absorbed within Council's operational budget.
111. External funding would be pursued where there are opportunities for this to occur.
112. A further update on the funding of the Stage 1 COVID-19 Response Trials will be verbally provided at the Council meeting on 23 June 2020.

Economic Implications

113. COVID-19 has had a significant impact on many aspects of the local economy in Yarra.
114. This is a dynamic situation as many businesses start to reopen and/or respond to the progressive easing of some restrictions associated with COVID-19.
115. Facilitating safe travel and movement for people can assist the local economy.
116. Council officers have actively engaged with some local businesses (within available resources) to better understand the potential needs of businesses at this current time.
117. Council officers have installed trial kerbside spaces (to enable improved physical distancing / waiting areas) at four businesses in Yarra (through removal of some carspaces) on a one month trial basis, as means of seeking some activation of what could be achieved elsewhere in the municipality.
118. Council officers are currently exploring whether furniture and seating could be installed within these areas to create them as small parklets and are in discussion with these café operators.
119. Any trial of the placement of seating and furniture in these areas (at the current trial sites or subsequently identified locations) would provide learnings officers on possible next steps, noting that there is unlikely to be a one-sized-fits-all approach.
120. Council officers will also continue to explore parklets at other locations where demand exists, noting that there may be a cost to businesses to install and manage the parklets which will be determined and agreed on a case by case basis.
121. A verbal update will be provided at the Council meeting of 23 June 2020.
122. Seeking to assist businesses is occurring through these trial installations and also the Councils community support package.

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

123. As noted above, some of the transport trials would change some travel patterns to a degree, which may provide diversions of travel for some customers to some businesses in the municipality. These are considered relatively minor and should not significantly impact on local trade.

Sustainability Implications

124. The proposed Stage1 COVID-19 Response Trials have the potential to make a notable contribution towards providing safer non-car travel options both at a local and a strategic/area-wide context.

125. The delivery of sustainable transport options is a key sustainability objective for Council.

Climate Emergency Implications

126. The proposed Stage1 COVID-19 Response Trials would promote sustainable forms of transport through providing safer non-car travel options both at a local and a strategic/area-wide context.

127. The delivery of these sustainable transport options aligns very closely with the provisions of the recently adopted Climate Emergency Plan by Council.

Social Implications

128. The intended improved physical distancing for community members as outlined by the proposed trials is consistent with health advice.

Human Rights Implications

129. There are no identified human rights implications associated with the recommendations of this report. The proposals would support the improved safety of community members.

Communications with CALD Communities Implications

130. The communication of various trials and initiatives would be critical to the community's understanding and acceptance of Councils intentions.

131. A communications plan would be developed for each initiative to ensure people understand what is being proposed and why. Various methods would be used, and this may differ for each initiative.

132. A language advisory panel would be included in any future correspondence with residents and owner non-occupiers.

133. This would include contact details and a reference number to access Council's interpreter services.

Council Plan, Strategy and Policy Implications

134. All proposed Stage 1 COVID-19 Response Trials strongly align with Council strategies and policies particularly in the area of transport and road safety and seeking to assist local businesses.

Legal Implications

135. Pre COVID-19, many of the proposed Stage 1 COVID-19 Response Trials would be subject to extensive approval, consultation and reporting processes set out in the Local Government Act (1989) and the Road Management Act (2004) which would take a significant amount of time to navigate.

136. As this is considered by Council to be a response to an emergency situation, the proposed Stage 1 COVID-19 Response Trials would be delivered via applicable powers set out in both Schedule 10 of the Local Government Act (1989) and the Road Safety (Traffic Management) Regulations 2019, which allow Council to install obstructions and barriers on a road on a temporary basis (subject to approval by the State Government in some instances).

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

137. It is noted that DoT (at operational level) are comfortable with this approach given the immediate need to respond to COVID-19, subject the sign-off of trials from DoT, and where required, at a Ministerial level.

Other Issues

138. No other issues are explored in this report.

139. The report provides a response to various Council resolutions.

Options

Option 1 – Proceed with the implementation of proposed Stage 1 COVID-19 Response Trials

140. Council officers have proposed eight Stage 1 COVID-19 Response Trials in response to Council's resolution of 5 May 2020 and also having regard to other more recent Council resolutions.

141. Under Option 1, Council officers would:

(a) initially implement trials currently approved by Council, where DoT approval has already been obtained, or is not required;

(b) obtain any formal approvals required from DoT and advise Council if any of the trials are not be supported by DoT;

(c) inform the community of the upcoming trials and advise why Council is taking this approach and the timing for the implementation of each trial;

(d) deliver the trials on the basis that the trials are:

(i) reviewed immediately (at any time) if there is an identified safety issue;

(ii) reviewed 3 months post implementation to allow the community time to adjust and adapt to the changes;

(iii) fully evaluated 12 months post implementation to identify whether the trials have been a success and whether there is any demand to continue with any trial.

(e) undertake ongoing monitoring to identify any need to adapt or end any trail post the 3 month review, if it is identified that:

(i) that the trial is not meeting the objectives; and/or

(ii) there is an alternative trial or outcome that better meets the needs of the community; and/or

(iii) the trial is having an unacceptable impact on infrastructure or operations managed by DoT (as determined by DoT and agreed with Council).

(f) continue to receive submissions from the community and prioritise these submissions using the Assessment Tool and according to available resources;

(g) continue to work with DoT and neighbouring Council's to identify and further investigate joint projects;

(h) continue to liaise with the local business community and explore possible options to assist with social distancing requirements;

(i) explore external funding opportunities to support these and other initiatives in response to the impacts of COVID-19; and

(j) investigate and report to Council on any Future Stage COVID-19 Response Trials as part of Council's transport, movement and access response to COVID-19.

142. All of the Stage 1 COVID-19 Response Trials closely align with many Council strategies, policies and objectives.

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

143. All of the Stage 1 COVID-19 Response Trials have been developed with a mindset of acting now and adapting over time, with the opportunity to adapt or end the trial, accept and learn from any actual or perceived setback, and move on.

Option 2 – Proceed with the implementation of (only) some of the proposed Stage 1 COVID-19 Response Trials

144. Council may decide to proceed with some, but not all of the proposed Stage 1 COVID-19 Response Trials.

145. The proposed trials are considered to have equal merit and respond to the physical distancing, movement and access requirements of the community in different ways.

146. It is noted that it may become more difficult to proceed with the proposed trials as time goes on as the community begins to return to some more traditional movements.

147. Under Option 2, Council officers would:

(a) initially implement trials currently approved by Council, where DoT approval has already been obtained, or is not required;

(b) implement trials supported by Council at this stage, subject to DoT approvals as required;

(c) seek direction from Council in terms of next steps to understand what type of trials would likely be supported;

(d) continue to receive submissions from the community and prioritise these submissions using the Assessment Tool, direction provided by Council and according to available resources;

(e) continue to work with DoT and neighbouring Council's to identify and further investigate joint projects;

(f) continue to liaise with the local business community and explore possible options to assist with social distancing requirements; and

(g) explore external funding opportunities to support initiatives in response to the impacts of COVID-19.

Option 3 – Do not proceed with the implementation of the proposed Stage 1 COVID-19 Response Trials

148. Council may decide not to proceed with any of the proposed Stage 1 COVID-19 Response Trials.

149. It is noted that this would result in a delay in Council's response to the impacts of COVID-19.

150. In this option, Council officers would then seek direction from Council in terms of next steps to understand what type of trials would likely be supported.

151. Council officers will, most probably, continue to receive submissions from the community and prioritise these submissions using the Assessment Tool, direction provided by Council and according to available resources.

152. Council officers, will nevertheless, continue to work with DoT and neighbouring Council's to identify and further investigate possible joint projects.

153. Council officers will also continue to liaise with the local business community and explore possible options to assist with social distancing requirements;

154. Council officers will explore external funding opportunities to support initiatives in response to the impacts of COVID-19.

Option 4 – Pursue COVID-19 Response Trials not outlined in this report

155. Council may decide to pursue COVID-19 Response Trials not outlined in this report, whether this is in addition, or as an alternative to the proposed Stage 1 COVID-19 Response Trials.

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

156. In this option, Council officers would review any additional trials put forward by Council using the Assessment Tool and assess this according to available resources.

157. It is noted is that the proposed Stage 1 COVID-19 Response Trials are resource intensive not only in terms of design and implementation, but also in terms of ongoing monitoring and facilitating and channelling ongoing community input to best learn from community experiences, and if necessary, adapt to concerns especially if there is identified safety issues.

Conclusion

158. Council, through its resolutions, has identified a requirement to address the physical distancing, transport and movement needs of the Yarra community and visitors in response to the COVID-19 pandemic (COVID-19).

159. Council, officers have undertaken a number of initial small scale trials in the form of walking routes, physical distancing stickers and trial kerbside areas for waiting areas for some cafes.

160. Council officers will continue to work on these trials and will look to identify other small scale trials.

161. Council officers have developed an Assessment Tool to clarify the objectives and consistently review and prioritise ideas provided by the community and propose to continue doing this going forward.

162. Council officers are working with DoT and neighbouring Council's to identify and further investigate joint projects.

163. Council officers have proposed eight larger scale Stage1 COVID-19 Response Trials for consideration of Council, noting that some of the trials would require formal sign off from the Department of Transport (DoT) and at Ministerial level.

164. It is recommended that Council instruct with the implementation of the suggested Stage1 COVID-19 Response Trials and monitor and review these projects as per the proposals set out in this report.

RECOMMENDATION

1. That Council note the officers report as requested by the Council resolution on 5 May, 2019 regarding opportunities to create improved spaces for cycling and physical distancing, and support for local businesses regarding the current COVID-19 circumstances.

2. That Council note the actions of officers to date and also note the options presented in this report for Council consideration.

3. That Council. having noted the contents of the report and considered the options presented, authorise officers:

   (a) to proceed with the implementation of the proposed COVID-19 Response Trials, as outlined in Option 1;

   (b) to initially implement trials currently approved by Council, where DoT approval has already been obtained, or is not required;

   (c) to obtain any formal approvals required from the Department of Transport (DoT) and advise Council if any of the trials are not be supported by DoT;

   (d) to inform the community of the upcoming trials and advise why Council is taking this approach and the timing for the implementation of each trial;

   (e) to deliver the trials on the basis that the trials are:

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

(i) reviewed immediately (at any time) if there is an identified safety issue;

(ii) reviewed 3 months post implementation to allow the community time to adjust and adapt to the changes; and

(iii) fully evaluated 12 months post implementation to identify whether the trials have been a success and whether there is any demand to continue with any trial; and

(f) to undertake ongoing monitoring to identify any need to adapt or end any trail post the 3 month review, if it is identified that:

(i) that the trial is not meeting the objectives; and/or

(ii) there is an alternative trial or outcome that better meets the needs of the community; and/or

(iii) the trial is having an unacceptable impact on infrastructure or operations managed by DoT (as determined by DoT and agreed with Council);

(g) to continue to receive submissions from the community and prioritise these submissions using the Assessment Tool and according to available resources;

(h) to continue to work with DoT and neighbouring Council's to identify and further investigate joint projects;

(i) to continue to liaise with the local business community and explore possible options to assist with physical distancing requirements;

(j) to explore external funding opportunities to support these and other initiatives in response to the impacts of COVID-19; and

(k) to investigate and report to Council on any Future Stage COVID-19 Response Trials as part of Council's transport, movement and access response to COVID-19.

CONTACT OFFICER: **Danny Millican**
TITLE: **Coordinator Civil Engineering**
TEL: **9205 5762**

Attachments

1 ⇩ COVID-19 Response Trials (location and concept plans)
2 ⇩ Leisure and Walking Circuits
3 ⇩ Attachment 3 - Action Sheet 9.1 Councillor Stone - Physical Distancing and Public Space Opportunities (Council - 5 May 2020) - general business

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 1 - COVID-19 Response Trials (location and concept plans)

Attachment 1: Proposed COVID-19 Response Trials

Addressing local community needs and key missing links in cycle network between Heidelberg Road and CBD/Church Street

Overview Plan

Left: Trial locations shown on City of Yarra GIS extract

Right: Trial locations shown on draft Strategic Cycling Corridor Map

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 1 - COVID-19 Response Trials (location and concept plans)

Attachment 1: Proposed COVID-19 Response Trials

Addressing local community needs and key missing links in cycle network between Heidelberg Road and CBD/Church Street

Closure of Trenerry Crescent, Clifton Hill (under Eastern Freeway overpass) to traffic in both directions

Location and high level concept plans

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 1 - COVID-19 Response Trials (location and concept plans)

Attachment 1: Proposed COVID-19 Response Trials

Addressing local community needs and key missing links in cycle network between Heidelberg Road and CBD/Church Street

Reallocation of some road space to cyclists at Johnston Street and Nicholson Street intersection, Abbotsford (eastbound bus lane on Johnston Street and northbound traffic lane on Nicholson St) to form a part protected intersection

Location and high level concept plans

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 1 - COVID-19 Response Trials (location and concept plans)

Attachment 1: Proposed COVID-19 Response Trials

Addressing local community needs and key missing links in cycle network between Heidelberg Road and CBD/Church Street

Centre median preventing east-west traffic movements across Nicholson Street, between Mollison Street to Langridge Street (all cyclist and pedestrian movements to be retained)

Location and high level concept plans

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 1 - COVID-19 Response Trials (location and concept plans)

Attachment 1: Proposed COVID-19 Response Trials

Addressing local community needs and key missing links in cycle network between Heidelberg Road and CBD/Church Street

Elizabeth Street protected bicycle lanes trial
(Council approved trial pre COVID-19 to be delivered July 2020)

Location and high level concept plan

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 1 - COVID-19 Response Trials (location and concept plans)

Attachment 1: Proposed COVID-19 Response Trials

Individual projects that address localised community needs and contribute towards other strategic cycle networks

Mid-block closure of Wellington Street, Collingwood to traffic in both directions, between Johnston Street and Alexandra Parade (all cyclist and pedestrian movements to be retained)

Location and high level concept plans

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 1 - COVID-19 Response Trials (location and concept plans)

Attachment 1: Proposed COVID-19 Response Trials

Individual projects that address localised community needs and contribute towards other strategic cycle networks

Contra-flow bicycle lane on Park Street, North Carlton

Location and high level concept plan

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 1 - COVID-19 Response Trials (location and concept plans)

Attachment 1: Proposed COVID-19 Response Trials

Individual projects that address localised community needs and contribute towards other strategic cycle networks

Closure of Coppin Street on north side of Bridge Road intersection, Richmond to traffic
(all cyclist and pedestrian movements to be retained)

Location and high level concept plans

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 1 - COVID-19 Response Trials (location and concept plans)

Attachment 1: Proposed COVID-19 Response Trials

Individual projects that address localised community needs and contribute towards other strategic cycle networks

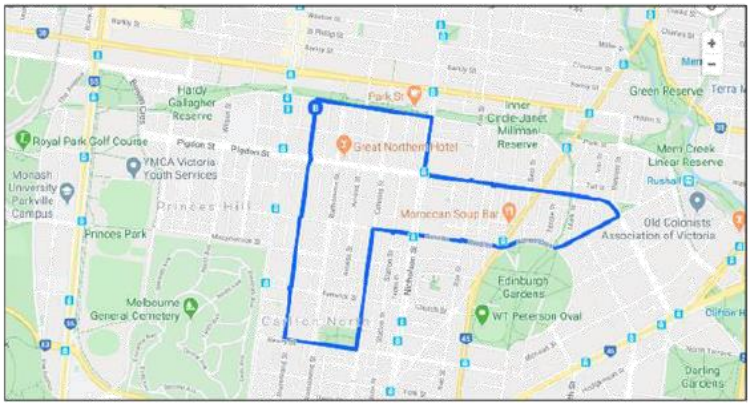
Conversion of left turning lane to cycle only lane on Gipps Street at intersection with Hoddle Street, Abbotsford/Collingwood

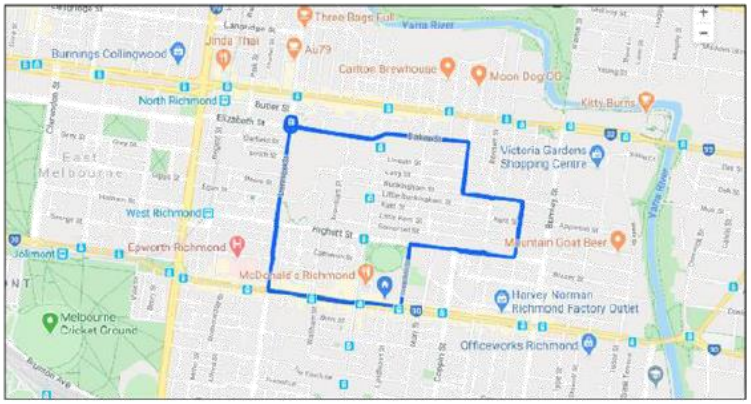
Location and high level concept plans

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 2 - Leisure and Walking Circuits

Attachment 2: Leisure and Walking Circuits





Top left: Langridge Ward Circuit, Abbotsford and Collingwood (approx. 6.5km)

Bottom left: Melba Ward Circuit, Richmond (approx. 3.7km)

Top right: Nicholls Ward Circuit, Carlton North and Fitzroy North (approx. 5 km)

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 3 - Attachment 3 - Action Sheet 9.1 Councillor Stone - Physical Distancing and Public Space Opportunities (Council - 5 May 2020) - general business

COUNCIL **RESOLUTION ITEM 6624**

TO: DIRECTOR CITY WORKS AND ASSETS **FOR ACTION**

9.1 COUNCILLOR STONE - PHYSICAL DISTANCING AND PUBLIC SPACE OPPORTUNITIES – GENERAL BUSINESS

Meeting Date: 5/05/2020
Target Date: 2/06/2020
Notes:
File Number:

9.1 Councillor Stone - Physical Distancing and Public Space Opportunities

Background

The result of the recent restrictions on movement as a result of the COVID-19 pandemic and Victoria's State of Emergency has been an emptying of Yarra's streets to vehicle traffic and an increase in pedestrians and cycling. Whilst this has been most noticeable on shared paths through open space, it is also seen in our shopping strips and commercial precincts. Council has had feedback that this has been welcomed by many in the community.

Whilst some restrictions are likely to be lifted in the near future, there will remain a requirement for physical distancing for some time to come, possibly a year or more.

Physical distancing will be a challenge in some locations in Yarra with narrow footpaths and busy commercial centres. Pedestrians will find separation difficult as they go about their regular activities in a busier environment.

Yarra Council has also received numerous approaches from residents interested in taking this opportunity to re-examine how we view and use public spaces especially road space. There is an opportunity to introduce some short-term measures which both facilitate physical distancing in our busier areas, but also a better use of public space where more space is devoted to people. Some of these measures could become long term if successful.

Yarra Council officers are aware of these community submissions for better use of public spaces and have begun work to identify opportunities and innovative solutions where pressure points and concentrations of pedestrian activity currently exist. This motion builds on that work and ensures a progress report is provided to Council and the community.

COUNCIL RESOLUTION

Moved: Councillor Stone **Seconded:** Councillor Bosler

1. That officers bring a report to the June cycle of Council meetings outlining:
   (a) identified locations in Yarra's public spaces where physical distancing will be hard to achieve once current restrictions are lifted;
   (b) measures which can be taken to increase the opportunities for physical

Attachment 2 - Attachment 2 - Transport, movement and access response to impacts of COVID-19.

Attachment 3 - Attachment 3 - Action Sheet 9.1 Councillor Stone - Physical Distancing and Public Space Opportunities (Council - 5 May 2020) - general business

distancing at these locations;

(c) other opportunities to simultaneously achieve Council objectives such as improving pedestrian facilities, improving bike lanes, increased street greening, increased opportunities for connectivity, increased opportunities for passive recreation whilst maintaining physical distancing; and

(d) a selection of such projects which could be implemented quickly and cost effectively by Council and a further selection of such projects proposed for any future state or federal funding opportunities as part of an economic stimulus programme.

CARRIED UNANIMOUSLY

ACTION TAKEN BY OFFICER

Please provide information regarding your work on this action in the notes section of TRIM. Do not update this Word document.

8.3 Status Update - 3-Bin Kerbside Service

Executive Summary

Purpose

The purpose of this report is to update Council on the current status of the 3-bin kerbside service roll out, including data on material volumes collected and bin audits to understand how bins are being used, the amount of material and their contents.

Key Issues

On 23 November 2020, the 3-bin service commenced across Yarra. The default service for single dwellings includes:

- A weekly rubbish collection
- A fortnightly recycling collection
- A fortnightly glass only collection

This service was implemented in recognition that the comingled recycling service in which glass is collected with plastic and paper/cardboard and compacted, was leading to glass fragments contaminating the paper, cardboard and plastic, resulting in poor material quality and poor recycling outcomes.

The 3-bin service was implemented to improve the quality of material being collected and recycled. With this new service came some changes to bin infrastructure and the collection regime (as above).

Whilst there is a need to have some kind of standardisation in relation to bin infrastructure, noting the varying household sizes and types in Yarra, Officers have tried to meet individual needs as much as possible.

Residents in single dwellings can request to have a smaller glass bin, upsize their bins as required, elect not to have a glass bin if they do not require one, and we are aware some residents have elected to share with their bin with their neighbours.

There is no default position for bin infrastructure at the Multi-Unit Development (MUD) sites due to a vast range of building types and either dated or in some cases no existing Waste Management Plans. The MUD sites require a tailored solution on a site by site basis. Officers have commenced working with MUD sites and this work will continue to ensure MUD sites are engaged and appropriately managing their waste/recycling.

The process of transitioning to a new kerbside service across the municipality is a huge undertaking as it touches all properties across Yarra. As a general observation the 3-bin service implementation has run to the expected schedule. A service of this type usually takes several months to establish and bed in the basic functions such as adjusting to collection schedules and correct use of the bins.

The expectation prior to the roll out of the 3-bin service was that there would be a six-month adjustment period for residents to adjust to a fortnightly recycling collection and the change in acceptable materials. The issue of bin capacity has been intensified by the increased volumes of cardboard flowing into the kerbside system. Key issues have included adjusting to bin capacity, understanding the acceptable plastics including the Tetra Pack exclusion and the need to flatten cardboard boxes.

Currently 72 out of the 79 Victorian Councils have a fortnightly recycling service. An extensive audit of the single dwelling bins has indicated that a fortnightly recycling frequency can be a successful model in Yarra. Capacity issues at most single dwellings can be resolved by flattening cardboard boxes or increasing the capacity of the recycling bin. It is critical to maintain a focus on waste reduction targets which should be the guiding principle for future sustainability.

The average capacity usage for the recycling bins is approximately 75% compared to approximately 70% for rubbish bins, which indicates that the issue of bin capacity is not a universal issue across Yarra, but is confined to pockets across the municipality. This is primarily a human behaviour issue rather than a systems issue.

The average for recycling bins with lids not fully closed is 26% and the average of material beside recycling bins is 8% or 1,044 out of 13,518 bins audited; these are considered to be overflowing bins. This problem is limited to confined areas of the municipality and is not a universal issue across Yarra. Most of the recycling bins with lids not closed were due to unflattened boxes in the bin. Flattening the recycling material and providing a larger bin where required is expected to resolve the capacity issues for recycling bins. Some households may have to drop off bulk cardboard occasionally (for packaging for one-time purchases such as furniture or a fridge), but for most households this is unlikely to be necessary as a regular occurrence.

The average for rubbish bins with lids not fully closed is 17% and the average of material beside bins is 2% or 403 out of 17,806 bins audited; these are considered to be overflowing bins. This problem is confined to pockets of the municipality and is not a universal issue across Yarra. Rubbish is a weekly service and yet 17% of bins have lids that are not fully closed. Bins with lids up is not a new issue and can be seen across all Victorian Councils.

Glass bins are underutilised; however, this is not a surprising confirmation. The original modelling was based on a 47-litre bin for glass collections, however WorkSafe Victoria required that the bins must be suitable to be placed on a mechanical lifter. A special consideration was given to allow a limited number of smaller bins for glass across the municipality.

The audits conducted at MUD sites have confirmed there are historical issues that need to be resolved. A key issue is that material is being disposed without any attempt to reduce the volume; flattening boxes for example will address the issue of capacity. It will be necessary to work one on one with MUD sites to ensure the correct bin capacity and the correct use of bins. This provides an opportunity to create a best practice model for MUD sites to ensure suitable systems and high-quality recycling material.

It will be a worthwhile exercise to repeat the audits in approximately 3 months, and ongoing, to measure and compare results to the current audit results. This will provide data to determine if any adjustments to the service are required. This will also allow a holistic assessment of the service to integrate solutions for the diversion of FOGO from the landfill stream.

The future model for a holistic model that deals with recycling, glass and FOGO should be based on data, information and options to establish the most suitable model for Yarra.

Financial Implications

There are no significant financial or resource implications as a result of this report as the report is providing an update only.

PROPOSAL

That Council:

(a) note the report; and

(b) note that Officers will continue to monitor the service and to make adjustments as necessary; and to continue to support residents to make adjustments to minimise waste, maximise recycling and appropriately dispose of waste where disposal is necessary.

8.3 Status Update - 3-Bin Kerbside Service

Reference	D21/19027
Author	Joe Agostino - Assistant Manager City Works
Authoriser	Director City Works and Assets

Purpose

1. The purpose of this report is to update Council on the current status of the 3-bin kerbside service roll out, including data on material volumes collected and bin audits to understand how bins are being used, the amount of material and their contents.

Critical analysis

History and background

2. On 23 November 2020, the 3-bin service commenced across Yarra. The default service for single dwellings includes:
   (a) A weekly rubbish collection;
   (b) A fortnightly recycling collection; and
   (c) A fortnightly glass only collection.
3. This service was implemented in recognition that the comingled recycling service in which glass is collected with plastic and paper/cardboard and compacted, was leading to glass fragments contaminating the paper, cardboard and plastic, resulting in poor material quality and poor recycling outcomes.
4. The 3-bin service was implemented to improve the quality of material being collected and recycled. With this new service came some changes to bin infrastructure and the collection regime (as above).
5. Whilst there is a need to have some kind of standardisation in relation to bin infrastructure, noting the varying household sizes and types in Yarra, we have tried to meet individual needs as much as possible.
6. Residents in single dwellings can request to have a smaller glass bin, upsize their bins as required, elect not to have a glass bin if they do not require one, and we are aware some have elected to share with their bin with their neighbours.
7. There is no default position for bin infrastructure at the MUD sites due to a vast range of building types and either dated or in some cases no existing Waste Management Plans. The MUD sites require a tailored solution on a site by site basis. Officers have commenced working with MUD sites and this work will continue to ensure MUD sites are engaged and appropriately managing their waste/recycling.

Discussion

8. The 3-bin service has been in transition for a three month period and the main focus has been to shift the glass items out of the recycling bins and to allow residents to adjust to the 10 collection areas (and collection dates) so that the correct bins are presented on the correct collection cycle.
9. The key areas of concern from residents making enquiries has been:
   (a) Recycling bin capacity issues due to the fortnightly collection schedule (This has been the most common enquiry, but has reduced as residents realise they can request an upsized recycling bin);
   (b) Acceptable materials (Change in the acceptable contents of the recycling bin);

(c) Confusion about plastics that are or are not accepted in the recycling bin;

(d) Confusion about Tetra Pack containers (Fruit juice/Milk); and

(e) Over capacity of the 80lt glass bin.

10. Other peripheral areas of concern/themes:

(a) A perception that recycling is being sent to landfill (Note, the data provided within this report does not support this perception); and

(b) A perception that weekly recycling will allow people to place unacceptable plastics back into the recycling bin.

11. Key factors in dealing with the areas of concern for residents will be:

(a) Ongoing community engagement and information;

(b) Confirming the options to change their bin infrastructure;

(c) Working 1:1 with residents to resolve their issues; and

(d) Confirming options to dispose of excess material, such as the drop off points in Clifton Hill and Burnley.

Cardboard Volumes

12. An unexpected consequence of the COVID pandemic and resultant restrictions, which resulted amongst other things in an increase in working from home and an increase in online shopping, has been an extraordinary amount of cardboard in the kerbside recycling stream. This is unprecedented and has caused capacity issues in some of the recycling bins, particularly if material such as cardboard boxes have not been flattened. The kerbside system was not designed to cope with the volumes of cardboard now flowing in and out of some households, however this issue can be resolved by following several relatively simple processes including:

(a) Where possible reduce volume of material brought into the household;

(b) Flattening boxes prior to disposal;

(c) Upsizing recycling bins if required; and/or

(d) Taking large cardboard items or excess material to the Clifton Hill or Burnley St Richmond drop off areas.

Bin Upsizes/Downsizes

13. Since the commencement of the 3-bin service on 23 Nov 2020, there has been a consistent stream of requests for a change in bin sizes. To date the number of requests fulfilled has been approximately:

(a) Recycling Bin Upsize: 1,500; and

(b) Glass Bin Downsize: 500.

Face to Face Community Engagement

14. Due to COVID restrictions the planned face to face community engagement sessions were not able to be implemented. Since the easing of COVID restrictions, face to face engagement has been possible. Table 1 below provides a list of sessions that have occurred or been planned. Face to face sessions will continue to be rolled out beyond the below schedule. The sessions completed to date have proven to be valuable with regards to community interaction and feedback.

15. The sessions have been attended by Councillors and Council Officers. The key queries from residents attending the face to face engagement sessions have been much the same as the queries received via customer service:

(a) Confusion about plastics that are or are not accepted in the recycling bin;

(b) Confusion about Tetra Pack containers (Fruit juice/Milk);

(c) Acceptable materials (Change in the acceptable contents of the recycling bin); and

(d) Recycling bin capacity issues due to the fortnightly collection schedule (This has reduced as residents realise, they can request an upsized recycling bin).

Table 1

Date	Location	Time	Ward	Status
Sat 6 Feb	Swan Street outside of Coles	9:30am-11:30am	Melba	Complete
Sat 13 Feb	Piedemontes Fitzroy North	10am-12pm	Nicholls	Complete
Thu 18 Feb	Outside Carlton Library (corner Newry and Rathdowne streets)	3:30pm-5:30pm	Nicholls	Complete
Sat 20 Feb	Clifton Hill Depot	11am-1pm	Langridge	Complete
Thu 25 Feb	Corner of Smith Street Stanley Street, Collingwood (south side of road)	12pm-2pm	Langridge	Complete
Sat 27 Feb	Victoria Gardens Shopping Centre	10am-12pm	Melba	Complete
Sat 13 Mar	Collingwood Children's Farm	9.30am-11.30am	Langridge	
Sun 21 Mar	Piedimonte Fitzroy North	2-4pm	Nicholls	

16. It is anticipated that several face to face engagement sessions will be held for residents within the Abbotsford trial area to gain a better understanding of the 4-bin model after a period of adjustment maturity. The Abbotsford trial has been in progress for over 12 months and feedback from the trial residents informed the 3-bin service roll-out and will be valuable insight when considering solutions for diverting FOGO material out of the landfill stream.

17. Individual advice has been provided to many residents, including information about the rationale for the change, the appropriate way to dispose of different material, and options for alternative means of disposal (drop off etc.), and in some cases leading to a change in bin infrastructure.

Kerbside Material Weights to Date

18. Table 2 below provides a snapshot of material weights for the first 3 months of the 3-bin service. It is important to note that this data reflects weight, not volumes as such. The table provides weighbridge data for all the kerbside material collected over the 3 month period broken down by month and compared to the same period of the previous year. This includes single dwellings, MUD sites and commercial premises (receiving a residential collection service).

19. The key observations from Table 2 include:

(a) Total recycling tonnes by weight have reduced compared to the same period for the previous year (over the last 3 years the weight of recycling has been in decline and is predominately related to the reduction of magazines and newspapers in the kerbside recycling material profiles as the community has adopted electronic media. These items carry significant weight and hence the reduction in weights);

(b) The landfill weights have remained consistent when compared to weights for the previous year. Over the 3-month period the landfill weights have reduced by 35.48 tonnes. The main observation that should be highlighted is that this demonstrates that since the introduction of the 3-bin service there has not been any additional material flowing into the landfill stream; and

(c) The percentage of glass flowing out of the yellow lid recycling bin into the separate glass stream has increased on a monthly basis.

Table 2

KERBSIDE MATERIAL WEIGHTS – 3 MONTH PERIOD						
	Recycling Tonnes	**Glass Tonnes**	**Glass as a % of Total Recycling Tonnes**	**Total Recycling Tonnes**	**Landfill Tonnes**	**Variance in Tonnes**
Dec-20	422.50	184.86	30.43%	607.36	1222.58	+11.30
Dec-19				728.35	1211.28	
Jan-21	353.67	206.52	36.85%	560.19	1054.76	- 88.56
Jan-20				730.02	1143.32	
Feb-21	334.45	230.00	40.74%	564.45	1104.34	+41.78
Feb-20				647.88	1062.56	
				Landfill weight variance over 3 months		-35.48

Initial Audits – Single Dwellings

20. Initial audit data has been collected for analysis of the 3-bin service to date. Table 3 below provides data collected with a focus on single dwelling bins. This provides averages across the ten collection areas for rubbish bins, recycling bins and glass bins. The sample for the glass bins is less than the rubbish and recycling due to time constraints and avoiding commencing the audit too early in the transition period. The priority was the combination of rubbish/recycling bins. However, the glass bin sample is adequate to provide information on trends.

21. NOTE: This audit has focused on the 3-bin service and the Abbotsford trial area has not been included to avoid skewing the 3-bin results. The trial area will be audited as a stand-alone area over the coming months.

Table 3

	RUBBISH BINS				**RECYCLING BINS**				**GLASS BINS**			
	Bin Count	**Lids Up**	**Waste Beside Bin**	**Average Capacity Used %**	**Bin Count**	**Lids Up**	**Waste Beside Bin**	**Average Capacity Used %**	**Bin Count**	**Lids Up**	**Waste Beside Bin**	**Average Capacity Used %**
Mon 1 Richmond	2505	492	100	70.21%	1507	381	70	67.62%	540	7	36	34.61
Mon 2 Richmond	1251	166	38	75.34%	1253	177	95	75.45%	N/A	N/A	N/A	N/A
Totals	3756	658	138	72.78%	2760	558	165	71.54	540	7	36	34.61%
		18%	4%			20%	6%			1%	7%	
Tue 3 Rich/Abbotsford	1297	213	14	62.53%	1541	535	69	77.78%	N/A	N/A	N/A	N/A
Tue 4 Rich/Abbotsford	1204	232	26	72.22%	1171	266	90	72.47%	N/A	N/A	N/A	N/A
Totals	2501	445	40	67.38%	2712	801	159	75.13%				
		18%	2%			30%	6%					

	RUBBISH BINS				RECYCLING BINS				GLASS BINS			
	Bin Count	Lids Up	Waste Beside Bin	Average Capacity Used %	Bin Count	Lids Up	Waste Beside Bin	Average Capacity Used %	Bin Count	Lids Up	Waste Beside Bin	Average Capacity Used %
Wed 5 Coll/Fitzroy	1237	292	48	74.06%	1272	438	205	74.69%	721	3	0	31.8%
Wed 6 Coll/Fitzroy	1700	300	29	62.42%	1011	254	118	66.61%	480	17	6	29.83%
Totals	2937	592	77	68.24%	2283	692	323	70.65%	1201	20	6	30.81%
		20%	3%			30%	14%			2%	0.5%	
Thu 7 C/Hill, Abbots	1210	169	2	77.55%	1248	368	60	81.50%	N/A	N/A	N/A	N/A
Thu 8 C/Hill, Abbots	2359	209	31	57.19%	961	138	61	67.50%	685	2		26.07%
Totals	3569	378	33	67.37%	2209	506	121	74.50%	685	2		26.07%
		11%	1%			23%	5%			0.3%		
Fri 9 P/Hill/Carlton Nth	1926	435	53	77.73%	1884	575	135	80.32%	N/A	N/A	N/A	N/A
Fri 10 P/Hill/Carlton Nth	3117	445	62	74.93%	1670	422	141	82.29%	854	2		25.50%
Totals	5043	880	115	76.33%	3554	997	276	81.30%	854	2		25.50%
		17%	2%			28%	8%			0.2%		
Totals	17806	2953	403	70.42%	13518	3554	1044	74.62%	3280	31	42	29.25%
		17%	2%			26%	8%			1%	1%	

Glossary of Audit Categories

22. The same audit categories were used for the rubbish bin, recycling bin and the glass bin to ensure consistency of analysis and comparison. A description for each category is provided below.

CATERGORY	DESCRIPTION	COMMENTS
Bin Count	Total bins counted for audit purposes	This provides the baseline for calculating percentages
Lids Up	All bins with lids not fully closed were recorded	This is not an overflowing bin. It is important to note that an overflowing bin is a situation where there is material on the ground beside the bin.
Waste Beside Bin	This is a full bin which has additional material beside the bin	This is considered an overflowing bin. Material beside the bin could be oversized material, excess material, hard waste, inappropriate material, bagged rubbish or cardboard.
Average Capacity Usage	Each bin was visually inspected to visually measure the capacity used at the time of the audit.	For each street audited, average capacity usage was recorded. This is represented as an average capacity used percentage in Table 3 above.

Audit Methodology

23. The audit focused on capturing relevant data across the 10 collection areas in the most consistent manner possible to allow comparison and analysis.

    The audit methodology included:

    (a) A very comprehensive sample has been taken across the 10 collection areas;

    (b) Commencing data capture at 5.00am as it was necessary to stay in front of collection vehicles;

(c) The raw data was recorded manually street by street; and

(d) The same data was collected for each material stream.

Summary Analysis – Table 3

24. The key observations from Table 3 above include:

(a) **Rubbish Bins, Weekly Collection** – 17,806 bins counted, 2,953 (17%) with lids not fully closed, 403 (2%) bins with waste beside bins (these are considered overflowing bins), average utilisation 70.42%;

(b) **Recycling Bins, Fortnightly Collection** – 13,518 bins counted, 3,554 (26%) with lids not fully closed, 1044 (8%) with material beside bins (these are considered overflowing bins), average utilisation rate 74.62%;

(c) **Glass Bins, Fortnightly Collection** – 3,280 bins counted, 31 (1%) with lids not fully closed, 42 (1%) with material beside bins (these are considered overflowing bins), average utilisation rate 29.25%;

(d) Glass bin capacity is underutilised, this is not a surprising result (noting the 80lt bins were a requirement of WorkSafe and understood to be greater capacity than most residents require for a fortnightly collection);

(e) Observations from the auditors were that most of the recycling bins with lids not closed and material beside bins were due to cardboard that had not been flattened, the remainder could be remedied by a larger recycling bin;

(f) Observations from the auditors were that the recycling bins with lids not closed were predominately 120 litre recycling bins;

(g) Observations from the auditors were that most of the rubbish bins with lids not closed and material beside bins were 80 litre bins and any overflow was predominately due to excess household waste;

(h) On average the capacity utilisation for the recycling bins and the rubbish bins is under 75%; and

(i) The average utilisation capacity of the recycling bins is approximately 5% more than the rubbish bin, even though the recycling bins are collected fortnightly.

Proactive Campaign – Bins with lids up or overflowing

25. Preparations are currently being made for a proactive campaign that will target bins with lids up or bins with additional material beside the bin which are considered overflowing. The collection crews will carry a bin tag which will be placed on bins with lids up or material beside bins after the bins have been emptied. The tags will encourage residents to try flattening recycling, particularly cardboard boxes, or to request a larger recycling bin. Tags will also be used for any overflowing rubbish bins to raise awareness and encourage residents to contact Council if they have capacity issues.

Other Comments Regarding Table 3

26. There are aspects of information in the raw data that are not apparent in the summary provided on Table 3 above. Comments include:

(a) Lids not closed is not a new issue and can be observed throughout all Victorian Councils regardless of collection frequencies;

(b) The issues of lids not closed and material beside bins (overflows) occurs more in some pockets across the municipality and is not a universal issue;

(c) In some instances, the kerbside system is simply overused by some residents (i.e. being used to dispose of material that should be disposed of via other means, such as cardboard packaging for new white goods, furniture or large electronics); and

(d) It is critical to focus on waste reduction and the appropriate disposal of material, as these are important regardless of the collection frequency.

National and State Waste Reduction Targets

27. Both National and State Governments have set waste reduction targets as below:

    (a) National Targets - Reduce total waste generated in Australia by 10% per person by 2030; and

    (b) Victorian Targets - Cut total waste generation by 15 per cent per capita by 2030.

28. The State Government has also mandated, as part of its Circular Economy Policy adopted in 2020, a 4-bin (or 4-stream) kerbside collection service for all Local Governments in Victoria by 2030.

29. Given Yarra has already moved towards the circular economy model and is currently assessing models for FOGO diversion, it is critical that the waste reduction targets are kept front of mind and remain a guiding principle and a priority.

MUD Sites

30. Approximately 85% of existing MUD sites in Yarra are serviced by Council. There are a number of historical issues with MUD sites including, poor building designs, access issues, incorrect bin infrastructure, no waste management plans, inadequate waste management plans, shared bins, transient populations and lack of planning for waste management.

31. A major issue which creates ongoing challenges at the MUD sites has been the difficulty in engaging with Body Corps, Site Managers and site Operators. Council does not have the details of Property Managers, and despite contacting all properties, not all have responded or engaged with Council. This limits the speed of progress at MUD sites.

32. By population, approximately 70% of people in Yarra live within the MUD sites. These sites need to be considered on an individual basis as their needs, issues and solutions vary. It will take 6 – 12 months to ensure all the MUD sites have a tailored solution to suit their individual site needs. Officers have proactively contacted many properties and continue to seek to engage with sites and their property managers.

33. To date, since the 3-bin service has commenced there has been engagement via webinars, direct contact and email contact with approximately 330 MUD sites. Officers will continue to seek to engage MUD sites, in the first instance to ensure the appropriate bin infrastructure and education material is implemented. This will also allow for additional discussion on individual site needs.

MUD Recycling Bin Audit

34. The audit at the MUD sites has not been as extensive as the single dwelling audit. This has been due to time restraints and the recognition that there are existing significant issues at some MUD sites. Table 4 below provides a snapshot of an audit of the recycling bins at MUD sites. The focus of this audit was to identify priority sites that could be targeted and resolved across all the waste streams.

Table 4

	MUD SITES RECYCLING BIN AUDITS			
	Bin Count	**Overfull**	**Average Capacity Used**	**Additional Cardboard**
Mon 1	373	80	102.2	15
Mon 2	295	42	102.1	13
Totals	668	122	102.15	28
		18%		4%
Tue 3	210	44	104.3	4
Tue 4	140	24	104	2
Totals	350	68	104.15	6
		19%		2%
Wed 5	166	66	105.7	7

	MUD SITES RECYCLING BIN AUDITS			
	Bin Count	**Overfull**	**Average Capacity Used**	**Additional Cardboard**
Wed 6	92	46	109	3
Totals	258	112	107.35	10
		43%		4%
Thu 7	307	44	105.7	7
Thu 8	261	35	101	21
Totals	568	79	103.35	28
		14%		5%
Fri 9	149	25	103.3	4
Fri 10	150	30	102	13
Totals	299	55	102.65	17
		18%		6%
Totals	**2143**	**436**	**103.93**	**89**
		20%		4%

Summary Analysis – Table 4

35. The key observations from Table 3 above include:

    (a) **Recycling Bins, Fortnightly Collection** – 2,143-bins counted, 436 (20%) bins were overfull, 89 (4%) additional piles of cardboard;

    (b) The average utilisation rate of the recycling bins is 103.93%; (Solution for capacity issues will include adding increased bin capacity and ensuring all cardboard is flattened);

    (c) There were 86 (4%) of additional cardboard beside bins; and

    (d) The Wednesday areas are a standout regarding overfull bins at over double the % of full bins compared to other areas.

Other Comments Regarding Table 3

36. There are aspects of information in the raw data that are not apparent in the summary provided on Table 4 above. Comments include:

    (a) Observations from the auditors were that most of the overflowing recycling bins were due to cardboard that had not been flattened;

    (b) There is a significant volume of cardboard at most of the MUD sites;

    (c) Hard waste is often found in the larger shared bins located at some MUD sites;

    (d) Weighbridge data from the MUD sites demonstrates that a major issue at MUD sites is volumetric based, in other words a lot of cardboard boxes that are not flattened;

    (e) As per the single dwellings, in some instances, the kerbside system is simply overused or used incorrectly by some MUD sites;

    (f) Improved engagement with MUD property managers (and residents) will be critical to resolving the issues noted in the above; and

    (g) Community engagement directly with residents rather than site operators will be critical for the MUD sites.

Cardboard Separation Trial – MUD Sites

37. There may be an opportunity to separate cardboard out as a single material at MUD sites or selected MUD sites; i.e. to collect this in dedicated cardboard only bins.

38. The benefits would include:

(a) A cleaner stream of material – improved recycling and a lower gate fee cost;

(b) A focus on flattening a single stream material – creates more space on the sites;

(c) More difficult to conceal contamination and glass in the mixed recycling bin;

(d) Creates a best practice model for MUD sites; and

(e) An opportunity to engage directly with residents during the implementation phase.

39. The plan is to carry out a trial across potentially 30 willing MUD sites that will act as data collection points. These sites would then be reference points and examples for other MUD sites. It is estimated that a trial may be implemented around the end of April 2021.

Cardboard Drop Off Facility – Burnley Street Depot

40. On Friday 26 Feb 2021, a cardboard drop off facility was operational to provide an option for residents and businesses at the Southern end of the municipality. The facility is serviced by the existing recycling collection vehicles and as such, can be offered at no additional cost to the collection service. Approximately 5 cubic metres of cardboard is being collected daily.

Options

41. This report is seeking to provide an update for Council only; as such, not further options have been explored. Officers will continue to explore options to support the community to make this transition.

Community and stakeholder engagement

42. Significant consultation and engagement has taken place, and more is planned; some of this is outlined earlier in the report.

Policy analysis

Alignment to Council Plan

43. This service is a component of meeting Councils objective that *Council leads on sustainability and protects and enhances its natural environment*.

Climate emergency and sustainability implications

44. The 3-bin service aligns closely with Councils sustainability commitments.

Community and social implications

45. This report indicates that a minority of residents have found it difficult to make a transition to a 3-bin waste service.

Economic development implications

46. No Economic Development implication have been identified within this report.

Human rights and gender equality implications

47. There are no known Human rights or Gender Equity implications as a result of this report.

Operational analysis

Financial and resource impacts

48. There are no significant financial or resource implications as a result of this report as the report is providing an update only.

Legal Implications

49. There are no known legal implication as a result of this report.

Conclusion

50. The process of transitioning to a new kerbside service across the municipality is a huge undertaking as it touches all properties across Yarra. As a general observation the 3-bin service implementation has run to the expected schedule. A service of this type usually takes at least three months to establish and bed in the basic functions such as adjusting to collection schedules and correct use of the bins.

51. The expectation prior to the roll out of the 3-bin service was that there would be a six month adjustment period for residents to adjust to a fortnightly recycling collection and the change in acceptable materials. The issue of bin capacity has been intensified by the increased volumes of cardboard flowing into the kerbside system. Key issues have included adjusting to bin capacity, understanding the acceptable plastics including the Tetra Pack exclusion and the need to flatten cardboard boxes.

52. Currently 72 out of the 79 Victorian Councils have a fortnightly recycling service. An extensive audit of the single dwelling bins has indicated that a fortnightly recycling frequency can be a successful model in Yarra. Capacity issues at most single dwellings can be resolved by flattening cardboard boxes or increasing the capacity of the recycling bin. It is critical to maintain a focus on waste reduction targets which should be the guiding principle for future sustainability.

53. The average capacity usage for the recycling bins is approximately 75% compared to approximately 70% for rubbish bins, which indicates that the issue of bin capacity is not a universal issue across Yarra, but is confined to pockets across the municipality. This is primarily a human behaviour issue rather than a systems issue.

54. The average for recycling bins with lids not fully closed is 26% and the average of material beside recycling bins is 8% or 1,044 out of 13,518 bins audited; these are considered to be overflowing bins. This problem is limited to confined areas of the municipality and is not a universal issue across Yarra. Most of the recycling bins with lids not closed were due to unflattened boxes in the bin. Flattening the recycling material and providing a larger bin where required is expected to resolve the capacity issues for recycling bins. Some households may have to drop off bulk cardboard occasionally (for packaging for one-time purchases such as furniture or a fridge), but for most households this is unlikely to be necessary as a regular occurrence.

55. The average for rubbish bins with lids not fully closed is 17% and the average of material beside bins is 2% or 403 out of 17,806 bins audited; these are considered to be overflowing bins. This problem is confined to pockets of the municipality and is not a universal issue across Yarra. Rubbish is a weekly service and yet 17% of bins have lids that are not fully closed. Bins with lids up is not a new issue and can be seen across all Victorian Councils.

56. Glass bins are underutilised; however, this is not a surprising confirmation. The original modelling was based on a 47-litre bin for glass collections, however WorkSafe Victoria required that the bins must be suitable to be placed on a mechanical lifter. A special consideration was given to allow a limited number of smaller bins for glass across the municipality.

57. The audits conducted at MUD sites have confirmed there are historical issues that need to be resolved. A key issue is that material is being disposed without any attempt to reduce the volume; flattening boxes for example will address the issue of capacity. It will be necessary to work one on one with MUD sites to ensure the correct bin capacity and the correct use of bins. This provides an opportunity to create a best practice model for MUD sites to ensure suitable systems and high-quality recycling material.

58. It will be a worthwhile exercise to repeat the audits in approximately 3 months, and ongoing, to measure and compare results to the current audit results. This will provide data to determine if any adjustments to the service are required. This will also allow a holistic assessment of the service to integrate solutions for the diversion of FOGO from the landfill stream.

59. The future model for a holistic model that deals with recycling, glass and FOGO should be based on data, information and options to establish the most suitable model for Yarra.

60. Officers will present further information back to Council on options for a FOGO service in the latter part of 2020/21.

RECOMMENDATION

1. That Council:

   (a) note the 'Status Update 3 Bin Kerbside Service' report; and

   (b) note that Officers will continue to monitor the service and to make adjustments as necessary; and to continue to support residents to make adjustments to minimise waste, maximise recycling and appropriately dispose of waste where disposal is necessary.

Attachments

There are no attachments for this report.

8.4 Fitzroy-Collingwood Interim Planning Scheme provisions (Stage 2) – Alexandra Parade, Victoria Parade (east of ACU) and Fitzroy West

Executive Summary

Purpose

The purpose of the report is for Council to consider requesting that the Minister for Planning, in accordance with Section 8 (1) (b) and 20 (4) of the *Planning and Environment Act 1987*, to introduce 'Interim' *Design and Development Overlays* (DDOs): Schedules 38, 39 and 40; to land along Alexandra Parade, Victoria Parade (east of ACU) and Fitzroy West.

Key Issues

Council and the Yarra community places great importance on planning provisions to better manage development pressure, change and provide as much certainty as possible for future development outcomes.

To respond to the increasing development pressure along Alexandra Parade and Victoria Parade, and the mixed use zone area in Fitzroy West, officers have prepared draft 'Interim' *Design and Development* Overlays (DDO's) with the advice of expert consultants to better guide development.

This work represents Stage 2 of a wider built form program in relation to the Fitzroy and Collingwood activity centres and precincts.

The work provides a strategically sound basis, ensuring a balance between maintaining Yarra's heritage fabric and protecting sensitive residential interfaces whilst guiding new development.

The work builds on and supports the *Yarra Housing Strategy 2018* and the *Yarra Spatial Economic and Employment Strategy 2018*.

Financial Implications

The administrative fee to DELWP for requesting the Minister for Planning to introduce 'Interim' DDOs would be met within the existing strategic planning budget.

PROPOSAL

In summary, that Council:

(a) note the officer report and attachments for the Fitzroy-Collingwood Stage 2 interim built form provisions for Alexandra Parade, Victoria Parade and the Fitzroy West Mixed Use Zone area;

(b) adopt the three individual Precinct Review and Built Form Framework reports, supporting Heritage Analysis and Recommendations and the Traffic Engineering Assessment prepared by Hansen Partnership, GJM Heritage and Traffix Group at Attachments 1 to 7;

(c) adopt the interim Design and Development Overlay Schedules 38, 39 and 40 included in Attachment 8;

(d) request the Minister for Planning to introduce DDO schedules on an interim basis for the three Stage 2 Fitzroy-Collingwood precincts outlined above, in accordance with the amendment documentation outlined in the attachments;

(e) authorise officers to consult with the Minister for Planning to assist the Minister to prepare, adopt and approve the Amendment; and

(f) authorise the CEO to make any minor adjustments required to meet the intent of the resolution.

8.4 Fitzroy-Collingwood Interim Planning Scheme provisions (Stage 2) – Alexandra Parade, Victoria Parade (east of ACU) and Fitzroy West

Reference	D21/3558
Author	Kate Johnson - Strategic Planner
Authoriser	Director Planning and Place Making

Purpose

1. The purpose of the report is for Council to consider requesting that the Minister for Planning, in accordance with Section 8 (1) (b) and 20 (4) of the *Planning and Environment Act 1987*, to introduce 'Interim' *Design and Development Overlays* (DDOs) to land along Alexandra Parade, Victoria Parade (east of ACU) and Fitzroy West.

Critical analysis

History and background

Managing Growth in Yarra's activity centres

2. Demand for housing within the City of Yarra is high due to its proximity to employment opportunities, heritage character and cultural offerings.

3. This has led to increased levels of planning applications for multi-dwelling and commercial developments. This trend is supported by state and local policy that directs higher density housing and employment opportunities towards activity centres.

4. *Plan Melbourne* and the *Yarra Planning Scheme* generally direct job and housing growth towards major activity centres and to a lesser degree towards neighbourhood activity centres. The planning system in Victoria generally expects that these major activity centres accommodate a higher rate of change than other areas.

5. Activity centres are defined by state policy as community hubs where people shop, work, meet, relax and live. They should provide a broad range of goods, services and diverse offerings, focusing on mixed-use development including retail, commercial and residential, and should be well connected by transport modes. These centres support local economies and the development of 20-minute neighbourhoods outlined in *Plan Melbourne*.

6. Council and the Yarra community places great importance on planning controls to better manage change and provide as much certainty as possible for future development outcomes. This includes ensuring a balance between maintaining heritage fabric in Yarra's activity centres and protecting sensitive residential interfaces whilst guiding new development.

7. To address these issues, Council has been undertaking a program of preparing built form frameworks for its activity centres to enable the introduction of the interim *Design and Development Overlays* (DDOs) in the Yarra Planning Scheme, while permanent built form provisions are progressed. This work is well progressed in:

   (a) Johnston Street (permanent provisions gazetted by the Minister for Planning (Minister));

   (b) Queens Parade (permanent provisions for Parts 1 and 3 gazetted by the Minister);

   (c) Swan Street (interim provisions in place; and permanent provisions currently being considered for approval by the Minister);

   (d) Bridge Road and Victoria Street (interim provisions in place, and strategic work underway to inform permanent provisions);

(e) Collingwood South (interim provisions in place);

(f) Heidelberg Road (interim provisions currently being considered for approval by the Minister); and

(g) Fitzroy and Collingwood Stage 1 (interim provisions for Brunswick, Smith, Johnston and Gertrude Streets and Mixed Use Zone areas behind those corridors and in Fitzroy East are currently being considered for approval by the Minister).

Fitzroy and Collingwood Activity Centres

8. The Fitzroy and Collingwood activity centres are important for Yarra and inner Melbourne. They host a variety of employment, cultural and housing opportunities and they are known for their heritage retail strips and former industrial history. The area has transitioned from its industrial past to an area characterised by its vibrant retail, hospitality and arts and culture scene, with greater levels of residential and some office developments.

9. Within Fitzroy and Collingwood, there are several overlapping activity centres and mixed use areas. They include the Brunswick Street and Smith Street Major Activity Centres, the Johnston Street and Gertrude Street Neighbourhood Activity Centres and Mixed Use Zone areas in Fitzroy East and adjacent to the major corridors.

10. These areas were part of a first stage (Stage 1) of Yarra's built form program for Fitzroy and Collingwood (refer to Figure 1). These proposed interim provisions were informed by comprehensive background work, including independent urban design, heritage and traffic advice. On 19 December 2019 Council resolved to request interim DDOs from the Minister for stage 1. A decision on the request has not been made yet.

11. Stage 2 (subject of this report), includes the Fitzroy West Mixed Use zone area and the boulevards of Victoria Parade and Alexandra Parade (refer to Figure 1). Next to the activity centres, these areas are also experiencing increased development pressure, however, the Yarra Planning Scheme currently provides limited guidance about the preferred built form outcomes, including building heights and setbacks.

12. The introduction of interim DDOs into the Yarra Planning Scheme would fill the gap in policy in these areas and provide strong guidance for new developments.

13. Table 1 should be read in conjunction with Figure 1 to clearly illustrate the precincts and their stage of preparation.

Table 1: Built Form Control – Stages

Stage	Precinct
Stage 1 Precincts – completed, interim provisions currently being considered by the Minister for Planning.	Brunswick Street Precinct (**B**) Town Hall Precinct (**TH**) Fitzroy East Precinct (**FE**) Gertrude Street Precinct (**G**) Johnston Street – west of Smith Street (**J**) Smith Street (**S**)
Stage 2 Precincts – subject of this report.	Alexandra Parade (**A**) Victoria Parade (**V**) Fitzroy West (**FW**) Note: Collingwood Mixed Use (North) (**CN**) is proposed to be included within a separate stage as it is subject to the outcome of a Victorian Heritage Register application.

Figure 1: Built Form Control – Fitzroy and Collingwood Study Area and Precincts

Discussion

Study Area

14. The current stage 2 work covers the remaining 3 precincts in the Fitzroy and Collingwood Study Area - the major boulevards of Alexandra Parade and Victoria Parade to the north and south, and the mixed use precinct of Fitzroy West (see Fig 2 below).

Figure 2: Stage 2 - Precinct Boundaries Map

Approach

15. The interconnected nature of the Fitzroy/Collingwood activity centres, mixed use precincts and corridors means they are unique in comparison to other retail strips within inner Melbourne. A more holistic approach was taken to respond to the inter-relationship across the centres. This allowed the recognition of commonalities and differences between the areas.

16. Council commissioned 'Hansen Partnership' in association with 'GJM Heritage Consultants' and 'Traffix Group' to prepare a range of strategic work to underpin the introduction of interim DDO schedules for the precincts in Stage 2.

17. As per the built form work in Stage 1, the proposed built form provisions for Stage 2 have been informed by comprehensive strategic work (see Figure 3 for an overview), which included:

    (a) overarching background documents analysing existing conditions, current built form, heritage fabric and traffic matters;

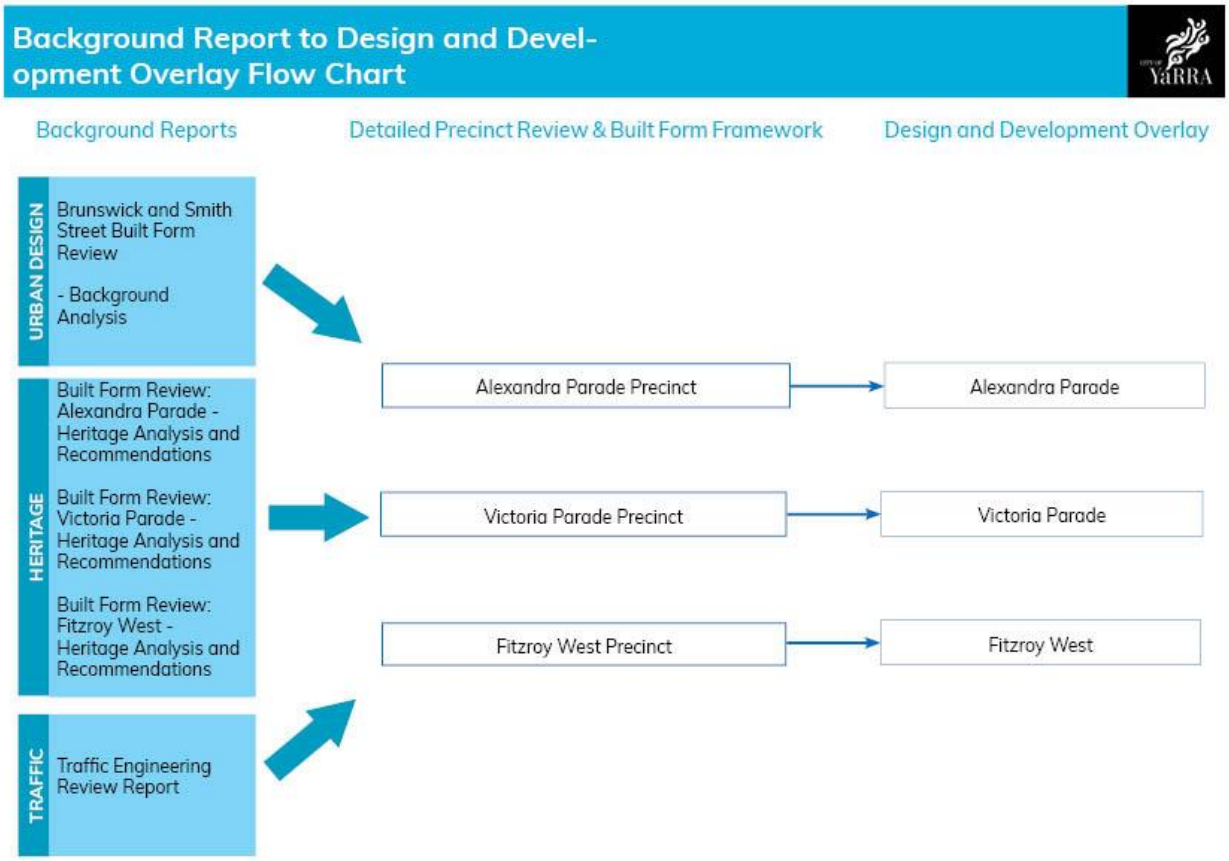
    (b) detailed 'Built Form Frameworks' to provide specific context analysis, framework plans and built form provision recommendations;

    (c) consideration of recent planning applications, Victoria Planning Panel recommendations and Victorian Civil and Administrative Tribunal (VCAT) decisions; and

    (d) substantial testing of different options using cross sections and 3D-modelling.

18. Officers then translated the recommendations from the three individual Built Form Frameworks, heritage and traffic reports into three schedules to the DDO. The schedules draw on character distinctions found in the Built Form Frameworks.

Figure 3: Fitzroy/Collingwood Stage 2 Activity Centres Built Form Work Overview



Brunswick and Smith Street Built Form Review – Background Analysis Report

19. Hansen Partnership, with specialist advice from GJM Heritage Consultants and Traffix Group, prepared the *Brunswick and Smith Street Built Form Review – Background Analysis Report.*

20. The *Background Analysis Report* provides a detailed analysis on existing conditions (including policy, physical attributes, and recent development trends) across the entire study area for both Stages 1 and 2. It reviewed existing conditions and identified the general direction of a *preferred* future built form character for each Built Form Framework precinct.

21. The document assisted in identifying appropriate ways to accommodate growth and change within the retail corridors, boulevards and mixed use areas. A set of overarching principles guided the preparation of the subsequent Built Form Frameworks.

Heritage Advice

22. GJM Heritage were engaged to provide heritage advice to inform the Built Form Frameworks and prepared the following reports to assist officers in preparing built form provisions and controls for the area:

    (a) *Built Form Review: Alexandra Parade – Heritage Analysis and Recommendations;*

    (b) *Built Form Review: Victoria Parade – Heritage Analysis and Recommendations; and*

    (c) *Built Form Review: Fitzroy West Mixed Use Precinct – Heritage Analysis and Recommendations.*

23. The three 'Heritage Analysis and Recommendations' analysed gaps, inconsistencies and inaccuracies with the current heritage controls within Stage 2 and provided recommendations for addressing these issues. It considered the built form parameters that are required to ensure the values of the heritage places in the three precincts are appropriately managed and protected. The advice promotes good heritage outcomes being achieved for development on land subject to, or abutting, the Heritage Overlay.

24. The heritage advice has informed Hansen's Built Form Frameworks and ensured that DDO provisions appropriately respond to heritage fabric and values within Alexandra and Victoria Parades and the Fitzroy West Mixed Use Precinct. This combined work has had a strong influence on the proposed street wall heights, building setbacks and building heights in the proposed DDOs.

Traffic Advice

25. Traffix Group prepared a Traffic Engineering Assessment that informed the development of the DDOs. It focussed on identifying changes required to achieve safe and efficient vehicular and pedestrian access as the area is developed in accordance with the built form requirements.

Precinct Review and Built Form Frameworks

26. Hansen Partnership, in association with GJM Heritage Consultants, subsequently prepared three 'Built Form Frameworks' for the Stage 2 precincts.

27. The Built Form Framework reports provide the strategic justification and evidence (alongside other reports) needed to enable the Minister to consider a request to prepare and approve interim DDO schedules. They would provide the basis for the preparation of future permanent planning controls.

Interim Design and Development Overlay Schedules

28. The 'Precinct Review and Built Form Framework Reports' for Victoria and Alexandra Parades include some allotments fronting the corridors that are currently zoned General Residential Zone (GRZ), Schedules 1, 3 and 4. As the GRZ, and its respective schedules, already guide future development, including overall heights and Clause 54 or 55 requirements, the decision was made to not include them in the respective DDO areas.

29. The recommended *interim* provisions provide a balance between heritage, sensitive residential interfaces and guiding change across the activity centres.

30. Heritage matters have been considered strongly in preparing the proposed interim DDO's. It means that strong built form provisions are proposed to protect the heritage character of the precincts with the majority of change concentrated in a few areas only, in locations with few heritage constraints.

31. Each DDO schedule has been tailored to address the unique built form typologies, heritage and character of that precinct. Table 2 provides a summary of the proposed future scale each in the proposed interim DDOs for each precinct.

Table 2: Proposed DDO Precinct Summary of Future Scale

DDO Schedule	*Summary*
Alexandra Parade (DDO38)	• This precinct generally comprises land with a primary frontage to Alexandra Parade between George Street in the west and Hoddle Street in the east. The northern side of the Parade is defined by the extent of Commercial 2 Zone and Mixed Use Zone. The southern side reflects equally diverse zoning designation, comprising Commercial 1 Zone, Commercial 2 Zone and Mixed Use Zone. (Refer to Figure 2) • The Alexandra Parade boulevard is defined by a wide road profile and tree-lined central median. The Clifton Hill Shot Tower (Municipal Landmark) is a key feature of Alexandra Parade, maintaining views to the Shot Tower is a clear consideration for the future scale. The precinct is further characterised by varied lot sizes and inconsistent built forms with regards to age, height and style. • Future development along Alexandra Parade would confine taller buildings to the eastern and western ends of the precinct on larger allotments compromising non-contributory buildings. Development in the centre of the precinct and surrounding the Shot Tower would maintain key views to the Municipal Landmark. (Refer to Figure 4)
Victoria Parade (DDO39)	• This precinct comprises land subject to the Commercial 1 Zone on the northern side of Victoria Parade between Napier Street to the west and Hoddle Street to the east. (Refer to Figure 2) • Victoria Parade is a grand boulevard comprising a broad central median with tram tracks and established street trees which creates a strong public realm condition. • To the west of Wellington Street a finer grained subdivision pattern accommodating rows of traditional Victorian terraces is found, some being listed on the Victorian Heritage Register. East of Wellington Street, Victoria Parade is dominated by a mix of lot sizes and highly varied built form, including commercial buildings on large lots. There are minimal heritage buildings found to the east of Wellington Street. • The intent of this precinct is for future development along the western end of Victoria Parade to respect the valued and prominent heritage fabric. The eastern end of the boulevard forms part of one of Yarra's major employment precincts (known as the Gipps Street precinct) as identified in proposed local planning policy in the current planning scheme amendment C269. This area would provide opportunity for higher development as part of the employment precinct. (Refer to Figure 4)
Fitzroy West (DDO40)	• This precinct covers land subject to the Mixed Use Zone and Commercial 2 Zone between Nicholson Street in the west and to the rear of lots to Brunswick Street in the east. The study area extends north south between the rear lots of Johnston Street and properties with a frontage to Alexandra Parade at the corner of Nicholson Street. (Refer to Figure 2)

	• The Fitzroy West precinct is an eclectic area, comprising a network of narrow one-way streets and wider, tree lined streets in combination with a mix of building typologies. It is defined by clusters of attached traditional Victorian terraces of one and two storeys, larger heritage and non-contributory buildings, recent warehouses as well as scattered Victorian retail and commercial forms. • Future development in the Fitzroy West precinct needs to strongly relate to its heritage fabric and street profile. It should be framed by a variety of low-rise heritage and mid-rise contemporary infill on larger allotments. • Recommended building heights for the Fitzroy West precinct would support lower- to mid-rise development ranging from 3 to 6 storeys with a few minor sites which can accommodate up to 7 and 8 storeys. (Refer to Figure 4)

Figure 4: Stage 2 General Heights Map

32. The content of the proposed interim DDOs have considered and been guided by the key directions from Amendments C220 (Johnston Street), C231 (Queens Parade) and C191 (Swan Street). They follow the approach taken as per Stage 1 interim DDOs in Amendment C270.

Built Form Design Controls within the DDOs

33. The DDO schedules provide guidance on building heights, street wall heights, upper level setbacks, front setbacks, rear setbacks, building separation and access and movement.

34. Key proposed built form requirements are summarised below in Table 3. The proposed 'metrics' are summarised in Table 4.

Table 3: Proposed Built Form Requirements

Built Form Requirements	**General Description of Proposed Elements**
Street wall	• Retain the existing heritage street wall along streets. • Infill development must match the height of the adjacent heritage street wall to achieve a consistent heritage street wall. • New development would "turn a corner" and apply the same street wall height for a minimum distance along the side street. • *Mandatory* controls are proposed to areas with consistent heritage street walls to ensure this significant element of the street is retained. This is reflected in *DDO39 – Victoria Parade*. • Areas where there is limited heritage consistency, a new street wall would be created.

Upper level setbacks	• The recommended upper level setbacks ensures development does not overwhelm the heritage buildings and that the heritage streetscape remains a prominent and defining element of the Fitzroy/Collingwood areas.
	• Upper levels should avoid a stepped form. Certain heritage places may require a stronger setback, depending on the individual heritage building and development proposal.
	• Development within or adjacent to land subject to the Heritage Overlay would generally be required to provide for a 6m *preferred* setback behind the street wall.
	• In areas with consistent heritage character a *mandatory* 6m setback is proposed for:
	  ○ *DDO38 Alexandra Parade* (heritage buildings);
	  ○ *DDO39 Victoria Parade* (land subject to or immediately adjacent to a HO along Victoria Parade and Wellington Street).
	  ○ *DDO40 Fitzroy West* (heritage buildings)
	• *Preferred* (that is, discretionary) 3m upper level setbacks apply towards side streets.

Overall building heights	• The heights have been determined through an analysis of heritage values, lot depths, rear interface conditions and other built form elements (see Figure 4 – General Heights Map and Attachment 8). • *Mandatory* maximum height controls are proposed in *DDO40 – Fitzroy West* to Victorian terrace buildings within the Heritage Overlay, where there are consistent heritage streetscapes and are recommended to reduce the visual impact of new development and better respect the heritage significance of the heritage forms.

	• For areas with less heritage consistency *preferred* (discretionary) height provisions being more suitable.
	• *Alexandra Parade, Victoria Parade and Fitzroy West* Schedules include a set of criteria that a development would need to comply with to exceed the *preferred* height limit. New development would need to achieve:
	  o increased separation distances;
	  o higher ESD standards;
	  o increased private and communal open space;
	  o housing diversity; and
	  o no additional amenity impacts to residentially zoned properties.

Rear interface and heights and setbacks	• DDOs address residential interfaces through boundary wall heights and building setbacks at the rear. • Rear interface heights are determined by the adjacent zone and whether a laneway separates the properties from the proposed DDO area. • These heights are *preferred* (discretionary) to accommodate the vast variety of conditions on adjacent sites that are too numerous and varied to be expressed definitively in a DDO. These include topography changes, changing floor to ceiling heights in heritage buildings and garages/outbuildings to the rear of residential properties outside of the overlay areas. • A maximum 8m boundary wall height is proposed for sites abutting properties in the Neighbourhood Residential Zone (NRZ) and General Residential Zone (GRZ) where there is no lane and 11.2m is proposed for land which abuts a laneway or is in the MUZ. • The assessment of visual bulk and potential overshadowing would also assist in determining the appropriate boundary wall height. • A *mandatory* 45 degree setback envelope for upper levels above the rear interface height is proposed towards residential interfaces. This is to ensure that development provides an appropriate transition to the lower scaled development in adjacent residential zones.

Overshadowing and daylight	• There are a range of provisions that would manage overshadowing and daylight access to public land and sensitive residential land.
	• *Mandatory* controls regarding limiting overshadowing on the opposite footpaths and kerb outstands between 10am and 2pm at the equinox (Sept) are proposed for main streets, wider side streets and kerb outstands with seating and planting as well as the central median of the two boulevards.
	• The protection of sunlight to these locations is considered very important to retain quality public spaces to ensure 'life and attraction' at the street level for residents, workers and visitors.
	• *Preferred* (discretionary) overshadowing and daylight access provisions are proposed referring to:
	  o Clause 55.4-5 for adjoining land within the NRZ and/or GRZ;
	  o Clause 55.4-5 for single dwellings within the MUZ; and
	  o Ensure adequate daylight access to habitable room windows.

Building layout	• The retention of commercial activity is integral to the vibrancy of these centres. • The schedules include provisions to ensure shop widths are not reduced to the extent they become commercially unviable and to incorporate floor to floor heights suitable for commercial activity (4m) at ground level, where heritage is not a constraint.

Common boundary and building separation	• To reduce the need for screening, allow for daylight access and create views to blue sky between buildings when viewed from the street, minimum setbacks are proposed at upper levels between buildings: o 4.5m to a balcony or living room window; and o 3m to a commercial or non-habitable window.
Heritage	• The schedules include heritage design requirements which address upper level setbacks, design of upper levels and façade design. • They are included to guide decision-making for commercial and industrial buildings, at least until such time as the heritage policy in Clause 22.02 is amended through Amendment C269, to more comprehensively address industrial, commercial and retail places. • The proposed 'Interim' provisions provide for strong heritage protection through the above mentioned requirements on: o street wall height; o overall height; o façade design requirements; o upper level visibility; and o retaining heritage fabric and avoiding heritage facadism. • Heritage consideration has played a strong role in determining the proposed requirements to limit visibility and to retain the heritage character of streetscapes.

Table 4: Proposed Precinct Specific Control Metrics

DDO Schedule	***Street Wall***	***Upper Level Setback***	***Building Heights***	***Rear Boundary Wall Height***
DDO38 – Alexandra Parade	**Discretionary** See Map 1 & 2, Attachment 8. Match the parapet height of the adjacent heritage building to the width of boundary or 6m, whatever is less.	**Mandatory** 6m for heritage buildings. **Preferred (discretionary)** 6m for sites immediately abutting land subject to the HO. 6m minimum for non-contributory sites on the northern side of Alexandra Parade and Cecil, Council George, Gore and Smith Streets. 3m minimum for all other non-contributory sites. Upper levels above Noone Street should be visually limited from the opposite footpath. 3m minimum for side streets.	**Discretionary** See Map 1 & 2, Attachment 8. Ranging between 11.2m (3 storeys) to 33.6m (10 storeys).	**Discretionary** See rear controls Table 3
DDO39 – Victoria Parade	**Mandatory** Street wall height within or adjacent to HO, match parapet height of adjacent heritage building to the width of	**Mandatory** Minimum 6m for land subject to or immediately adjacent to a HO along Victoria Parade and Wellington Street	**Discretionary** See Map 1 & 2, Attachment 8. Ranging	**Discretionary** See rear controls Table 3

DDO Schedule	***Street Wall***	***Upper Level Setback***	***Building Heights***	***Rear Boundary Wall Height***
	boundary or 6m, whatever is less. **Discretionary** See Map 1 & 2, Attachment 8.	**Discretionary** 6m minimum for all other sites. 3m minimum for side streets.	between 11.2m (3 storeys) to 40m (12 storeys, highest levels being limited from view).	
DDO40 – Fitzroy West	**Discretionary** See Map 1, Attachment 8. Match parapet height of adjacent heritage building to the width of boundary or 6m, whichever is less.	**Mandatory** 6m minimum from principal street frontage of heritage buildings. **Discretionary** 6m minimum from secondary street frontage of heritage buildings on corner sites. 6m minimum for non-contributory sites fronting Alexandra Parade and Nicholson, Cecil, Westgarth, Kerr and Argyle Streets and key corners at intersections. 3m minimum for non-contributory sites fronting Rose, Fitzroy, Spring and Henry Streets. 3m minimum for side streets.	**Mandatory** Victorian terraces within the HO - 11m/3 storeys. See Attachment 8. **Discretionary** See Map 1, Attachment 8. Ranging between 11.2m (3 storeys) to 27.2m (8 storeys).	**Discretionary** See rear controls Table 3

Mandatory Controls

35. All three DDO schedules include *some* proposed mandatory controls which address elements most important to the respective locale, such as building heights, setback and street wall height.

36. Guidance of the application of 'mandatory controls' is provided in the State Government *Planning Practice Note 59 and 60. Planning Practice Note 60* details that mandatory height and setback controls would only be considered in 'exceptional circumstances', where they are absolutely necessary to achieve the built form objectives or outcome identified within a comprehensive built form analysis.

37. Council officers have considered the Planning Practice Notes in the application of mandatory controls. Specifically the Practice Notes requires that mandatory controls must: be underpinned by comprehensive strategic work; consistent with state policy; take into consideration recent development activity; and provide capacity to accommodate growth.

38. It is considered that the extensive strategic work undertaken should provide sufficient justification for the use of some particular *mandatory* controls in the interim DDO schedules.

39. It is important to note that the application of mandatory controls has been carefully considered and applied selectively and are not proposed to apply across all precincts and/or to all requirements within the DDO schedules.

Collingwood North

40. One precinct (Collingwood North) has not been included as part of the suite of DDO schedules being proposed as there is currently an application being considered by Heritage Victoria for the development of the Police Warehouse building located along Wellington Street. Once a decision is made by Heritage Victoria, work would be completed on the strategic evidence for a DDO on that precinct.

Options

41. There are two options for Council:

    (a) request the Minister for Planning for the introduction of three *interim* DDO schedules into the Yarra Planning Scheme under Section 8(1)b and Section 20(4) of the *Planning and Environment Act 1987;*

    or

    (b) undertake the full amendment process to seek permanent provisions in Alexandra Parade, Victoria Parade and Fitzroy West.

    NB. This option would require a longer process, expected to take a minimum of 18 months leaving the study area without built form provisions for an increased time period.

42. Interim DDO provisions are applied without community consultation, usually via a request for a Ministerial Amendment (under Section 20(4) of the *Planning and Environment Act 1997*). These (once approved by the Minister) form a holding position while the *permanent* provisions go through a full amendment process, including public exhibition and the ability to make submissions to an independent Planning Panel.

43. Interim provisions are usually applied for a set period of time – usually two years. Council can apply for an extension of the interims, but must be able to demonstrate that it has made progress on introducing permanent provisions.

44. It is ultimately the Minister for Planning who can provide approval for Interim DDO's, and any extensions to the Interim DDO's.

45. Officers recommend that Council undertake **Option A** as outlined above – seek Interim provisions at this point in time.

46. It is likely that the interim DDO schedules would expire after 2 years. During this time Council can progress permanent DDO schedules in a separate amendment, or possibly via a Standing Advisory Committee process that Council considered at its meeting on 2 March 2021.

47. The community would have an opportunity to submit during the processes seeking to introduce the permanent DDO schedules into the planning scheme.

48. The option of seeking Interim provisions firstly is consistent with the approach taken with Stage 1 and would provide increased certainty to the community. That is, it would come into effect sooner than a full amendment process to guide development in Alexandra Parade, Victoria Parade and Fitzroy West.

Community and stakeholder engagement

49. No formal external consultation has been undertaken to inform the draft 'Interim' DDO schedules; and there would be no formal statutory opportunity for the community to submit on the draft interim DDO schedules before it is submitted to the Minister for Planning.

50. Council has undertaken extensive consultation with the community through Amendments C220 (Johnston Street), C231 (Queens Parade) and C191 (Swan Street). The drafting of the interim DDO schedules for this Stage 2 proposal have been informed by those Amendments.

51. The community would have the opportunity to submit on the permanent DDO schedules as part of a planning scheme amendment that seeks to introduce permanent provisions. The Planning and Environment Act 1987 establishes an extensive public consultation process with minimum statutory requirements.

52. The strategic background reports and DDOs have been prepared with input from Council's Urban Design, Strategic Planning and Statutory Planning teams and Council's Senior Heritage Advisor.

Policy analysis

Alignment to Council Plan

53. The request to introduce 'Interim' DDO schedules for the Fitzroy/Collingwood activity centres also supports the following strategies in the Council Plan:

    (a) *4.2 Actively plan for Yarra's projected growth and development and advocate for an increase in social and affordable housing; and*

    (b) *4.3 Plan, promote and provide built form and open space that is accessible to all ages and abilities.*

Climate emergency and sustainability implications

54. The 'Interim' DDOs would seek to best manage the redevelopment of the land, this would provide an opportunity to address climate emergency objectives:

    (a) opportunity for greater levels of sustainability through the redevelopment of land in keeping with Council's ESD policy; and

    (b) facilitate sustainable communities that are walking distance to sustainable transport options, employment and services.

Community and social implications

55. There are no specific social implications for requesting the Minister for Planning to introduce interim DDO's, that approach seeks to provide increased certainty to the community around future built form in the area outlined in this report.

Economic development implications

56. There are no economic implications for requesting the Minister for Planning to introduce interim DDOs to the areas outlined in this report.

57. Planning provisions exist to manage development opportunities.

Human rights and gender equity implications

58. There are no known human rights implications for requesting the Minister for Planning to introduce 'Interim' DDOs to the areas outlined in this report.

Operational analysis

Financial and resource impacts

59. The statutory request fee is accounted for in the strategic planning budget.

Legal Implications

60. The approach outlined in this report is in accordance with the requirements of this *Planning and Environment Act 1987.*

Conclusion

61. Three *Heritage Built Form Reviews* and three *Built Form Frameworks* have been prepared and provide built form recommendations for the future development in the Fitzroy/Collingwood precincts of Alexandra Parade, Victoria Parade and the Fitzroy West Mixed Use Zone area.

62. The reports' recommendations seek to balance the need to accommodate growth and development in activity centres with the strong heritage values and sensitive residential interfaces.

63. The introduction of 'Interim' provisions as detailed in the three DDO schedules (Attachment 8) into the Yarra Planning Scheme would improve planning provisions across the precinct and provide greater planning certainty.

64. Interim DDOs, (once approved by the Minister), would form a holding position while the proposed *permanent* provisions go through a notification process and review by a Panel or an Advisory Committee.

65. Whilst no formal community consultation has been undertaken on the recommended 'Interim' DDO schedules, the community would have an opportunity to submit during formal exhibition processes to introduce permanent DDO schedules into the planning scheme.

66. It is recommended that Council now resolve to seek interim planning scheme provisions, from the Minister for Planning for the 3 areas subject to this report, as a means of seeking to manage development pressure and to steer development activity.

RECOMMENDATION

1. That Council:

   (a) notes the officer report and attachments for the Fitzroy-Collingwood Stage 2 interim built form provisions for Alexandra Parade, Victoria Parade and the Fitzroy West Mixed Use Zone area;

   (b) adopts for the purpose of supporting the amendment request, the three individual Precinct Review and Built Form Framework reports, supporting Heritage Analysis and Recommendations and the Traffic Engineering Assessment prepared by Hansen Partnership, GJM Heritage and Traffix Group at **Attachments 1 to 7**;

   (c) requests the Minister for Planning in accordance with sections 8(1)(b) and section 20(4) of the *Planning and Environment Act* 1987 to introduce Design and Development Overlay Schedules 38, 39 and 40 on an interim basis into the Yarra Planning Scheme (**Attachment 8);**

   (d) authorises officers to consult with the Minister, in accordance with sections 8(1)(b), 20(4) and 20(5) of the Act, to assist the Minister to prepare, adopt and approve the Amendment; and

   (e) authorises the CEO to make any minor adjustments required to meet the intent of the above resolution.

Attachments

1⇩ Attachment 1 - Alexandra Parade Built Form Framework

2⇩ Attachment 2 - Victoria Parade Built Form Framework

3⇩ Attachment 3 - Fitzroy West Built Form Framework

4⇩ Attachment 4 - Alexandra Parade Heritage Review

5⇩ Attachment 5 - Victoria Parade Heritage Review

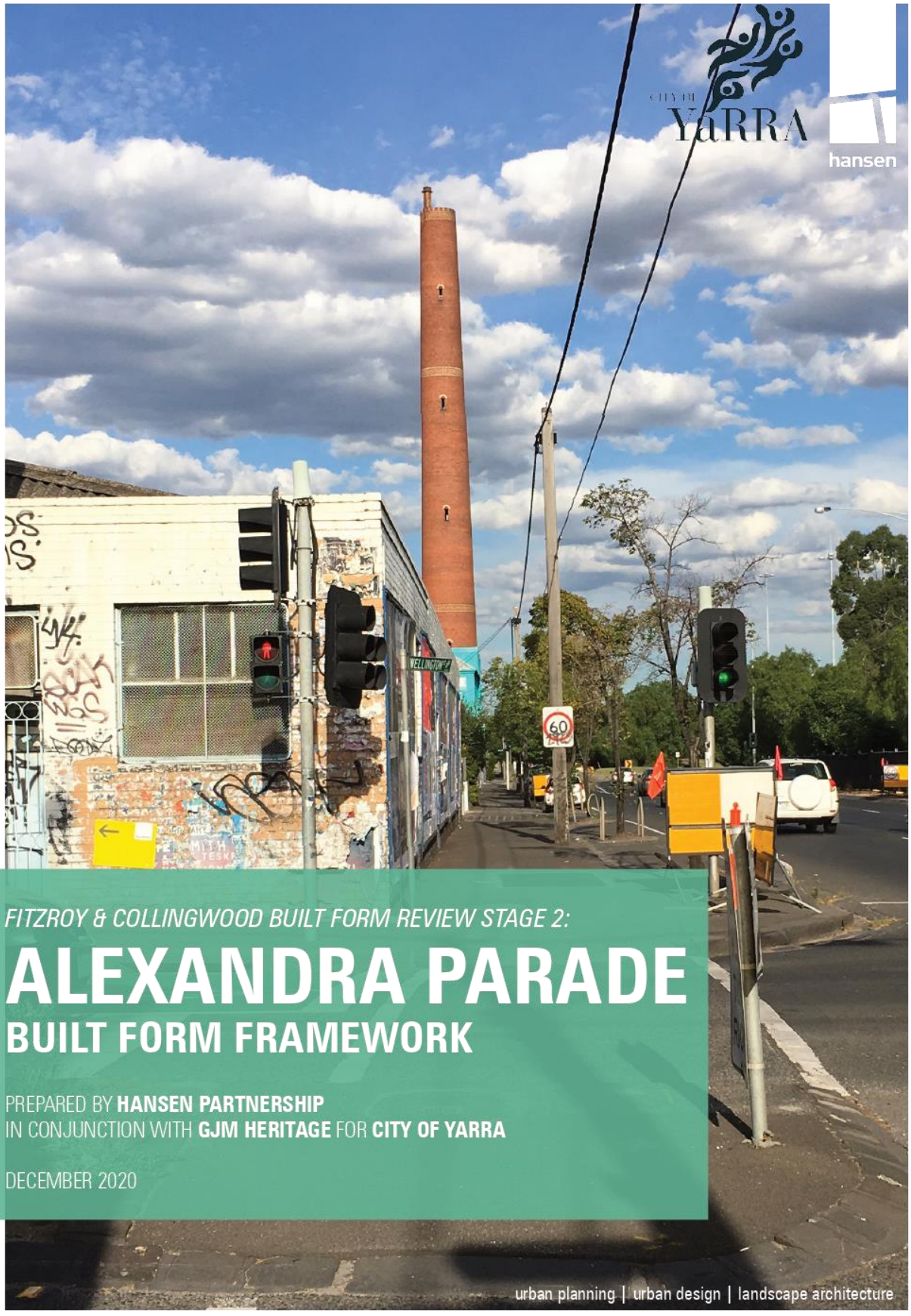
6⇩ Attachment 6 - Fitzroy West Heritage Review

7⇩ Attachment 7 - Traffic Engineering Assessment

8⇩ Attachment 8 - DDO38, DDO39 and DDO40

9⇩ Attachment 9 - Statutory Documentation

Attachment 1 - Attachment 1 - Alexandra Parade Built Form Framework



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** Note: This Draft document is a part of a broader Built Form Review for the Brunswick Street and Smith Street Activity Centres : Built Form Review. It is a component of a broader body of work that sets out a future proposition for two of Yarra's key Activity Centre spines and their adjoining mixed use precincts.*

Preamble

The following urban design report has been prepared for the City of Yarra as the basis for urban design vision for the Alexandra Parade precinct. It sets out a preferred built form framework underpinned by an integrated urban design and heritage assessment.

The report has been prepared by a multidisciplinary team comprising Hansen Partnership (Urban Design) and GJM Heritage (Heritage) with the support of the City of Yarra's internal working group.

The study area is identified in Figure 1.

This report sets out the rationale for proposed built from controls for Alexandra Parade and is underpinned by key components, namely:

Part 1: Alexandra Parade Context

Part 2: Alexandra Parade Precinct - Influences

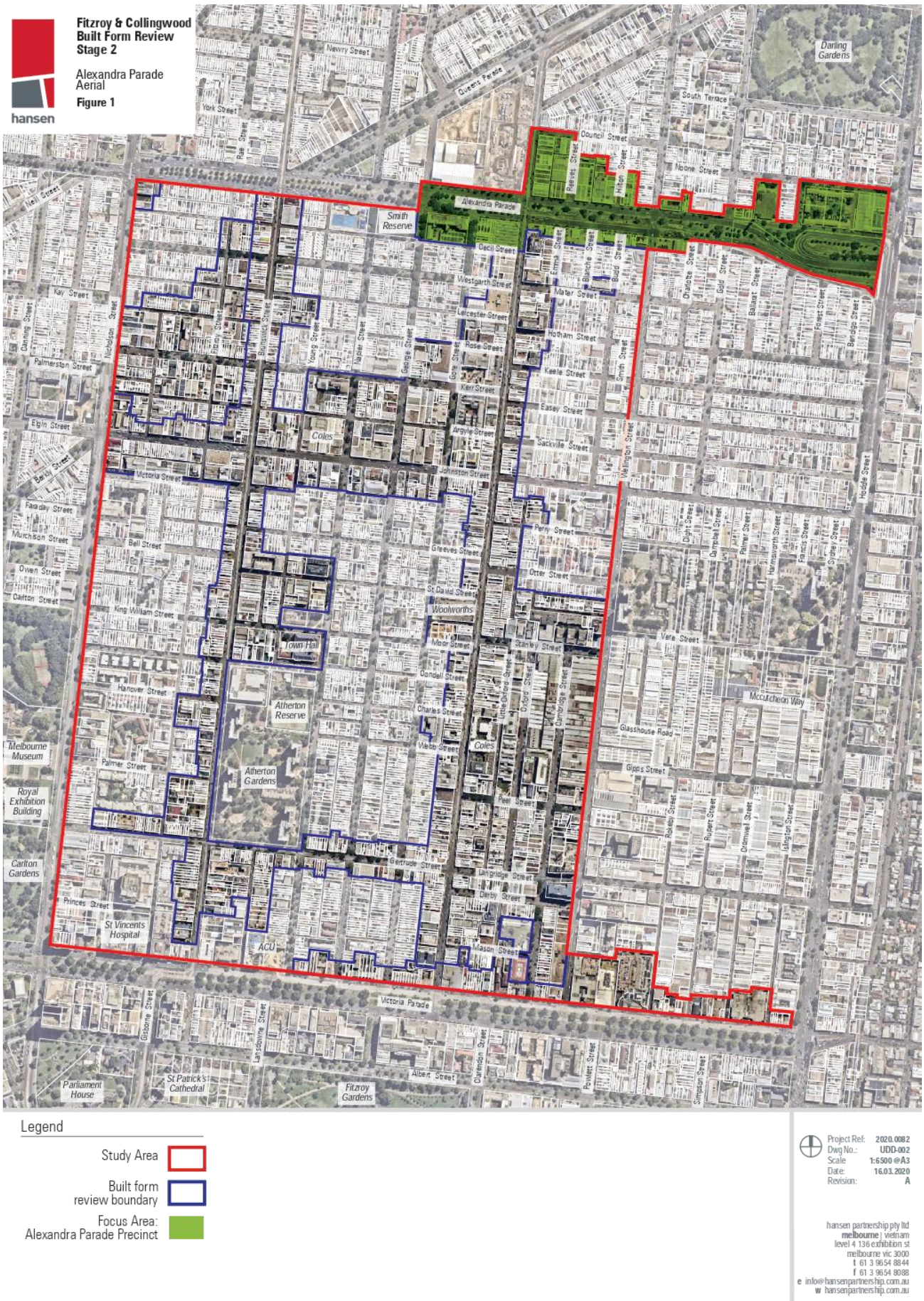
Part 3: Alexandra Parade - Built Form Proposition

Part 4: Recommended Controls

The report is part of a broader Built Form Review.

Oblique View of the Alexandra Parade Study Area and Surrounding Context

Attachment 1 - Attachment 1 - Alexandra Parade Built Form Framework



PART 1: ALEXANDRA PARADE CONTEXT

The Brunswick Street and Smith Street Built Form Review is a broader urban design program to set a clear framework for future change within two of Yarra's key Activity Centres and their adjoining Mixed Use areas. Planning policy identifies such Activity Centres as areas for accommodating growth and change.

Therefore, these are the areas that must be carefully planned and managed in order to accommodate progressive change while protecting (or indeed enhancing) existing established character and heritage values.

Stage 1 of the project was initiated in May 2017 and encompasses large areas bound by Alexandra Parade (to the north), Victoria Parade (to the south), Wellington Street (to the east) and Nicholson Street (to the west).

Stage 1 of the project comprised the preparation of Built Form Frameworks for Gertrude, Brunswick and Smith Streets in 2019. Johnston Street Precinct and Fitzroy East Precinct reports were completed in June 2019 and the Collingwood Precinct report was prepared in June 2018.

As part of the the Stage 1 process, extensive analysis of the existing conditions was undertaken and documented within an overall Background Report. This comprehensive analysis identified and divided the overall Review Area into ten 'place- specific' precincts. Furthermore, a series of guiding objectives were identified to be contemplated across ten defined precincts.

This report addresses the **Alexandra Parade Precinct** (Figure 1 overleaf). A key consideration in the preparation of a Detailed Review for Alexandra Parade relates to its proximity to the Smith Street MAC and its role as a movement conduit. Importantly, uninterrupted views towards the Shot Tower (Municipal Landmark) can be experienced at various locations along the Alexandra Parade corridor. Two separate reports were also prepared for Fitzroy West 'Mixed Use Area' Precinct and the Victoria Parade 'Boulevard' Precinct in 2020 (as part of Stage 2).

1.1 Overarching Built Form Objectives

The following 8 objectives have been identified for the Brunswick and Smith Streets Built Form Review:

Objectives:

1. Recognise and carefully manage potential in key areas within the Activity Centres.
2. Highlight the character distinctions between the different retail Streets and mixed use precincts within the Activity Centres.
3. Reinforce the traditional Victorian cityscape of heritage Streetscapes as dominant elements, including significant corner elements and identified local landmarks.
4. Ensure continued diversity through sensitive infill within traditional Victorian Streetscapes.
5. Shape the retail Streets and mixed use areas to ensure high quality, people-oriented public realm.
6. Ensure development encourages walking, cycling and public transport usages through layout and design responses.
7. Ensure new development is sustainable and adaptive over time.
8. Manage the built form profile of new development to avoid adverse impact to surrounding areas, including heritage places, Streetscapes and residential interfaces.

The Clifton Hill Shot Tower rising above fine grain residential and commercial warehouse forms (viewed from Wellington Street)

10 Precincts

The 10 precincts within the Brunswick & Smith Street Built Form Review are:

Stage 1 (May 2017 to November 2019)

- Precinct 1: Brunswick Street (B);
- Precinct 2: Smith Street (S);
- Precinct 3: Gertrude Street (G);
- Precinct 4: Johnston Street (J);
- Precinct 6: Fitzroy East (FE);
- Precinct 7: Collingwood (C);
- Precinct 8: Town Hall (TH);

Stage 2 (Commenced February 2020)

- Precinct 5: Fitzroy West (FW);
- Precinct 9: Alexandra Parade (A); and
- Precinct 10: Victoria Parade (V).

This report addresses **Precinct 9: Alexandra Parade.**

1.2 Brunswick & Smith Built Form Precincts

Based on the initial analysis phase of the project the following Precincts were identified spatially as relatively coherent parts. The Precincts are largely defined by function as either:

- An Activity Spine;
- A Mixed Use Area; or
- A Boulevard.

Activity Spines

The Activity Spines are defined by the 'traditional' retail and commercial functions along the four main streets within the review area of:

- Brunswick Street;
- Smith Street;
- Gertrude Street; and
- Johnston Street.

Mixed Use Areas

The Mixed Use Areas are defined by the mixed use functions present in the non-residential land located generally in local streets, behind the Spines. The four renewal areas within the review area are:

- Fitzroy West;
- Fitzroy East;
- Collingwood; and
- Town Hall.

Boulevards

The Boulevards are the non-residential land to the northern and southern edges of the review area which front the broad road corridors of:

- Alexandra Parade (this report); and
- Victoria Parade.

Attachment 1 - Attachment 1 - Alexandra Parade Built Form Framework

PART 2: PRECINCT INFLUENCES

As one of Yarra's main boulevards, Alexandra Parade forms defining edges to some of Yarra's neighbourhoods (Fitzroy North, Clifton Hill, Fitzroy, Collingwood) including some of its premier Major Activity Centres along Smith and Brunswick Streets. It is anchored by major north-south movement corridors including Hoddle Street to the east and Nicholson Street to the west. The study area itself terminates at the intersection of Alexandra Parade and Brunswick Street.

Alexandra Parade is not a designated activity centre in the Yarra Planning Scheme. However, its western end is well-serviced by good public transport and community infrastructures, particularly around its key junctions with Brunswick Street and Smith Street.

The extent of the Alexandra Parade Precinct is set out in Figure 2 and described below.

Boundary Description

This precinct generally comprises land with a primary frontage to Alexandra Parade between George Street in the west and Hoddle Street in the east. The northern side of the Parade is defined by the extent of C2Z and MUZ with some NRZ and GRZ. It is noted that sites currently in NRZ and GRZ (including the Office of Housing site at 43 Noone Street) will continue to be guided by existing residential provisions. They are included to ensure they inform future directions for the study area. The southern side reflects equally diverse zoning designation, comprising C2Z, C1Z and MUZ.

Built Form Character

The Alexandra Parade boulevard corridor is defined by a wide road profile and tree-lined central median. Varied existing built forms reflect its land use and zoning designation with some allotments affected by Heritage Overlay. Larger, low rise warehouses and mid-rise contemporary commercial development adjacent to low rise, fine-grained residential is commonly found. Current built form profile contributes to an open, exposed environment that is dominated by roadway. Given existing low rise building profiles along Alexandra Parade, the full width of the road reserve (60m, or greater) can be appreciated from any point within the public realm.

The skyline of North Fitzroy, Clifton Hill and some of Collingwood are predominantly characterised by low rise heritage forms, taller landmarks and institution buildings (ie. the Shot Tower, St John's Church Spire, Collingwood Town Hall), high rise Office of Housing structures and remnant industrial silos. The recent redevelopment of strategic redevelopment sites (ie. recent developments at the northern end of Smith Street) and predominantly mid-rise development in Activity Centres have generally maintained this skyline effect. Approvals for taller mixed-use developments including upper-level apartments are yet to be constructed, including at and around the Gasworks Site. While the corridor is generally varied and mixed in character, it presents several pockets of larger sites accommodating warehouses found both along the Parade, as well as in the adjacent 'back blocks'.

The Alexandra Parade Boulevard with the evolving Smith Street Activity Spine forming the background

2.1 Foundations

Setting a vision for the Alexandra Parade Precinct must be underpinned by an understanding of the diverse physical conditions, including the fabric of existing and approved developments,the pattern of heritage forms, critical views as well as other relevant considerations which form the 'foundations' of a future built form framework and development recommendations. This is illustrated in Figure 3 and can be described as follows:

Views to Clifton Hill Shot Tower (Municipal Landmark)

The Clifton Hill Shot Tower is a VHR listed Municipal Landmark located at 94 Alexandra Parade (HO85). It represents the tallest vertical element in the local context (65m in height). Views to the Shot Tower are available from within the study area and can be glimpsed from within the broader Fitzroy, Collingwood and Clifton Hill surrounds.

Key viewlines towards the Clifton Hill Shot Tower are identified in the Draft City of Yarra Landmarks Policy Review and the proposed Clause 15.01-2L: Landmarks (Amendment C269 to the Yarra Planning Scheme). The policy review seeks to ensure the visual prominence of the structure is retained, specifically the visibility of at least a third of the structure. Location of primary views are:

- View 1: Brunswick Street and Alexandra Parade intersection;
- View 2: Eastern Freeway (west of the Hoddle Street overpass);
- View 3: Darling Gardens (rotunda).

Secondary views are identified in the supporting documentation - 'Landmarks and Views Assessment' (Ethos Urban, October 2019):

- View 4: Roseneath Street and Hoddle Street intersection; and
- View 5: Gold Street and Queens Parade intersection.

In this built form review, a complementary view additional to the primary and secondary views is identified at north-eastern junction of Alexandra Parade and Hoddle Street (at the pedestrian crossing island refuge). The Shot Tower from this pedestrian crossing, as well as visual prominence of the local landmark in the streetscape is important from a sense of place and wayfinding perspective.

Additionally, the shot tower is visible from other significant heritage landmarks, specifically the Royal Exhibition Building Dome Promenade Deck - anticipated to be open to the public in the near future. It is understood that Heritage Victoria is currently in the process of reviewing the Royal Exhibition Building and Carlton Gardens Wold Heritage Environs Strategy. Protection of viewlines to key heritage landmarks such as the Shot Tower from the Promenade Deck will be determined through that process.

Local Landmarks

Like many main roads and boulevards, Alexandra Parade comprises a number of local landmarks which act as wayfinding elements along the length of the Boulevard. These notable buildings display articulated corners which punctuate the streetscape with distinguishing architectural features. Along Alexandra Parade, four of these 'local landmarks' buildings have been identified in collaboration with GJM Heritage.

Shot Tower viewed from the Royal Exhibition Building Dome Promenade Deck

The Shot Tower visible from both the north and south side of the Parade

View toward the Shot Tower from the Smith Street intersection

View toward the Shot Tower from the Brunswick Street intersection

These local landmarks are identified as:

- British United Shoes Machinery Co. Pty Ltd Factory (200 Alexandra Parade, Fitzroy);
- Former Murray Co. Wool Works (457 Hoddle Street, Clifton Hill);
- Gasometer Hotel (484 Smith Street, Collingwood); and
- Fox Hotel (351 Wellington Street, Collingwood).

Heritage

Properties fronting Alexandra Parade (between Budd and Alexander Streets) are subject to Heritage Overlays (HO317 to the north and west and HO321 to the south). It comprises a mix of contributory intact buildings from the Victorian and Edwardian - era including commercial, residential and some industrial fabrics of varying scale. Notable heritage forms include corner hotel buildings (such as the Gasometer and Fox Hotels) and heritage warehouse buildings occupying broad sites such as the local landmarks - British United Shoes Machinery Co. Pty Ltd Factory and Former Murray Co. Wool Works.

There are no predominant features such as traditional street walls that are notable characteristics of other main roads in the City of Yarra such as Smith Street and Brunswick Street. The heritage significance of surrounding low-rise neighbourhoods may influence the future development outcomes of sites that have an immediate or proximate interface to heritage precincts. This includes properties located on side streets that are adjacent to heritage precincts (e.g. Alexander Street). The remaining properties within the study area are not affected by any Heritage Overlays.

Non- contributory sites

There are several non-contributory sites across the precinct. These sites are typically located on corners between rows of heritage fine-grain buildings or have existing approvals for contemporary developments of up to 3 storeys (not constructed). No.45 Alexandra Parade currently accommodates a 4 storey 'walk-up' apartment.

Warehouses

The concentration of warehouses and light industrial uses are dominant along on the northern side of Alexandra Parade on medium to large allotments. The warehouse forms contribute little for street activation on some of the side streets, where often servicing attributes are located away from the high-volume traffic of the Parade. Few of the warehouses within the study area are contributory to the heritage fabric of the Precinct, with the exceptions of the two individually significant local landmark heritage warehouse buildings, bookending the precinct to the east and west. Otherwise, many warehouse buildings represent more contemporary light industrial forms with no heritage value. It is noted that residential and warehouse buildings generally have different heights and profiles due to the different floor-to-ceiling dimensions. For instance, a single storey warehouse may have a comparable height as a double-storey residential building.

Example of heritage warehouse at the corner of Alexandra Parade and Hoddle Street

Adjoining fine grain heritage residential areas such as Budd Street pictured

A non-contributory building between Wellington Street and Charlotte Street

Example of a broad frontage warehouse on the northern side of the Parade

Recent development trends

Recent developments within the study area have seen a significant transformation of sites around the Smith Street intersection, including an 11-storey approval at the Emma Street corner. Opposite, another 11-storey application encompassing several allotments between Smith Street and Reeves Street was recently refused by Council, signalling interest in the redevelopment of the land. Another Other smaller-scale development proposals comprise refurbishments and additions to warehouses north of the Parade.

Several active development proposals are also shaping the edges of the Precinct. This includes the Fitzroy Gasworks site, currently undergoing soil remediation works in preparation of a mixed-use development comprising several buildings upwards of 10 storeys, guided by a Development Plan Overlay (DPO16). Along Smith Street, several developments have recently been constructed or approved for development upwards of 10 storeys. Developments within the Smith Street corridor generally adopt a street wall proportionate to the streetscape with recessed upper levels behind.

Urban Renewal

Recent strategic directions around the western end of Alexandra Parade sought a considerable change around the Gasworks Site, where future mixed-use precinct development comprising taller apartment development, a vertical school, open spaces and a network mid-block linkages (DPO16).

The urban renewal of the urban block west of George Street is also expected to contemplate mid-rise development outcomes as set out in DDO16 (and subsequent Planning Scheme Amendment C231). Despite being located outside the study area, strategic directions for these precincts provide clear guidance for Alexandra Parade urban morphology and what can be anticipated on larger sites within the commercial/light industrial precinct west of Wellington Street. Substantial medium to high-density development is occurring along the corridor, particularly around the Smith Street junction with forms upwards of 10 storeys in scale on the north side of Alexandra Parade.

To the east of Wellington Streets are a mix of low rise residential (up to 4 storeys), commercial and attached industrial warehouses built to the street boundary. This includes the Office of Housing fronting Alexandra Parade, Alexandra Street and Noone Street, comprising 2 storeys attached dwellings arranged around an internal reserve (Alexander Street Reserve).

Recent interim controls along the Johnston Street corridor (DDO37) has sought to adopt a discretionary 8m setback above 11.2m street wall in absence of heritage overlay. Further, building heights are subject to lot depths and specific heritage context. Request for interim DDO37 is currently awaiting Ministerial's approval.

Existing residential forms (single and multi-dwelling) along the Parade are setback from the street boundary, with varied fencing treatments. There is no known development application in this sector, other than recent rezoning at 64 Alexandra Parade East, and its site-specific DDO19 designating a discretionary height limit of up to 25m (8 storeys).

An interface of adjoining Smith Street development to the Alexandra Pde study area

Smith Street allotments north of the Parade set to undergo 11 storey development

Large industrial/commercial allotments north of Alexandra Parade

Topography

The topography is generally flat along the length of the Alexandra Parade corridor. In the broader context, the landform rises towards Queens Parade across the residential environs to the north and towards Collingwood Hill to the south. Historically, Alexandra Parade was a natural watercourse that flowed into the Yarra River. Presently, the Special Building Overlay (SBO) implements measures for mitigating remnant drainage and flooding issues along the Boulevard. The skyline of buildings on the lower plane of the Alexandra Parade Precinct will, therefore, be visible from the view corridors up to the notable hilltop on Queens Parade.

Street width

The study area comprises a clear hierarchy of street widths, contributing to a structured experience and streetscape character. The widest street is the boulevard typology of Alexandra Parade, which generally widens from 60m at the western extent of the study area, to over 100m toward the east near the Hoddle Street intersection. The boulevard typology of Alexandra Parade is defined by a 30m wide grassed median comprising 2 rows of canopy trees. On either side of the median are between 3 traffic lanes and service lanes which are separated further by additional medians at the eastern end.

Other streets feeding into the Alexandra Parade are of a narrower profile (10m to 20m). Due to the legacy of the initial subdivision and development pattern of the precinct, there is limited direct connectivity across Alexandra Parade. Within its local context, side streets (where rear laneways are not available) provide secondary frontage or service access to corner allotments. Narrower side streets accommodate one-way traffic, on-street car parking and narrow footpaths.

Some wider side streets such as Smith, Wellington and Gold Streets traverse through Alexandra Parade with signalised intersections and provide north-south transport, cycling and pedestrian links to activity precincts to the south and broader residential neighbourhood. From place- hierarchy, Smith Street is a priority pedestrian street, noting it provide access to services and public transport.

There are limited pedestrian and cycle crossings over Alexandra Parade – generally at the main junctions of Brunswick Street, Smith Street and Wellington Street. However, other crossings are available at Gold Street and opposite the Fitzroy Pool. This pattern of limited north- south connection and by virtue of the 60m wide boulevard, as well as grassed central median reinforces the distinction between the north and south side of the Parade as different experiences.

The rising landform along Queens Parade

The expansive street profile of the Boulevard

A 20m wide commercial/industrial street north of the Parade

A typical 20m wide perpendicular side street, leading into residential precinct north of the Parade

Boulevard & Green Streets

The boulevard profile is asymmetrical across its entire length with a generally wider carriageway width to the north and wider footpath to the south. Where it begins to transition to the Eastern Freeway. An existing bus network (Route 546) operates at the western end of Alexandra Parade, turning into George Street. The footpath width varies along the length of Alexandra Parade (2.5m to 4m) with additional width at street corners and on the south side. A lane of parallel parking to both sides interspersed with street tree plantings. The pedestrian connection across Alexandra Parade is limited to signalised intersections and a pedestrian crossing.

Complementary to the Boulevard typology is 20m wide north-south green streets including George Street and Gore Street (not signalised) in Collingwood. These streets traverse through Alexandra Parade, connecting neighbourhoods in Collingwood (south) and Fitzroy North. Distinctive to other 'side' streets, green streets benefit from established canopy planting (Plane Trees) on both sides of the road reserves, providing some sense of street enclosure and offering 'borrowed' amenity to its broader context.

Varied allotment configuration

The study area comprises a significant variance of allotment sizes, frontage widths and depths contributing to the diverse character of the precinct. Lot depth varies due to irregular subdivision pattern of former industrial sites, as compared to the fairly regular pattern of fine-grain residential. Studying the cadastral data indicates a presence of small clusters of fine-grain rows of terraces that are generally tightly enclosed by large allotments of remnant industrial uses. To the east, the subdivision of the Office of Housing site housing occupying an urban block is unique to the study area.

To the north are three narrow mid-block terraces between Wellington and Gold Street. To the Parade's south, similar conditions are found between Blanche and Wellington Streets. Where these small clusters of fine-grain allotment occur, they generally immediately adjoin residential areas beyond the study area, indicating the broader residential influence in the subdivision pattern along Alexandra Parade. Some properties at key intersections address both Alexandra Parade and side streets, thereby presenting as side elevations to Alexandra Parade (e.g. The Fox Hotel on the corner of Wellington Street and the Gasometer Hotel on the corner of Smith Street).

The grassed median of Alexandra Parade boulevard accommodates canopy trees

Green Streets feeding into the Parade from the south

Green Streets feeding into the Parade from the south

The Fox Hotel presenting its side frontage to Alexandra Parade

Key Junctions

The Smith Street and Alexandra Parade intersection presents as the key junction with the precinct, serving as an important wayfinding element, contributing to the clear division in character along the Parade. This key junction also accommodates public transport movement, the Route 86 Tram (Bundoora RMIT to Waterfront City, Docklands). The junction provides an important connection in navigating pedestrian movement across the Parade, which experiences high volumes of east-west traffic. At the eastern edge of the Precinct, the junction of Hoddle Street with the Eastern Freeway marks a key vehicular entrance into the municipality.

Rear interfaces

The majority of lots with a primary frontage to Alexandra Parade corridor have an interface with General Residential or Neighbourhood Residential Zoned land to the north and south. Exceptions occur where the study area has a direct interface to adjoining Smith Street Built Form Precincts (C1Z). Based on the varied laneway conditions, residential lots to the south are particularly sensitive, where overshadowing to habitable rooms and private open space will influence the built form proposition.

Consistent with Brunswick Street and Smith Street are the regular laneways to the rear of properties fronting Alexandra Parade (south side) and side streets. On the northern side of the Parade both, north-south oriented laneways provide rear access to mid-block properties, which otherwise are not accessible from the east-west oriented rear laneways. On the south side, the Precinct boundary east of Smith Street is formed by rear laneways providing access to properties fronting Alexandra Parade, as well as separation to adjoining residential allotments.

Open Space

There is a lack of notable public open space within the boundaries of the precinct, however, Smith Street Reserve (and Fitzroy Pool) is located immediately west of the study area. Additionally, Darling Gardens is located less than 200m to the north and Edinburgh Gardens islocated 500m to the northwest.

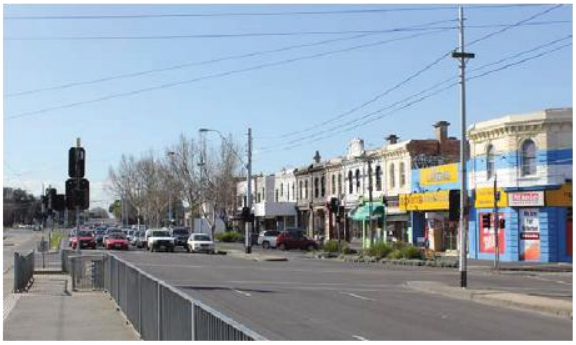
Adjoining Built Form Precincts

The Alexandra Parade Precinct is flanked and intercepted by the Queens Parade Activity Spine, a transit corridor and heritage retail strip. The Queens Parade precinct has recently been through the Planning Scheme Amendment process (Amendment C231, adopted on 17 March 2020). Also adjoining the Precinct is the Smith Street Activity Spine Built Form Precinct which contains one of Melbourne's notable heritage streetscapes. The Former Gasworks Site and recent DPO16 precinct also anticipates considerable change that will influence the western interface to the study area.

Smith Street signalised junction with Alexandra Parade

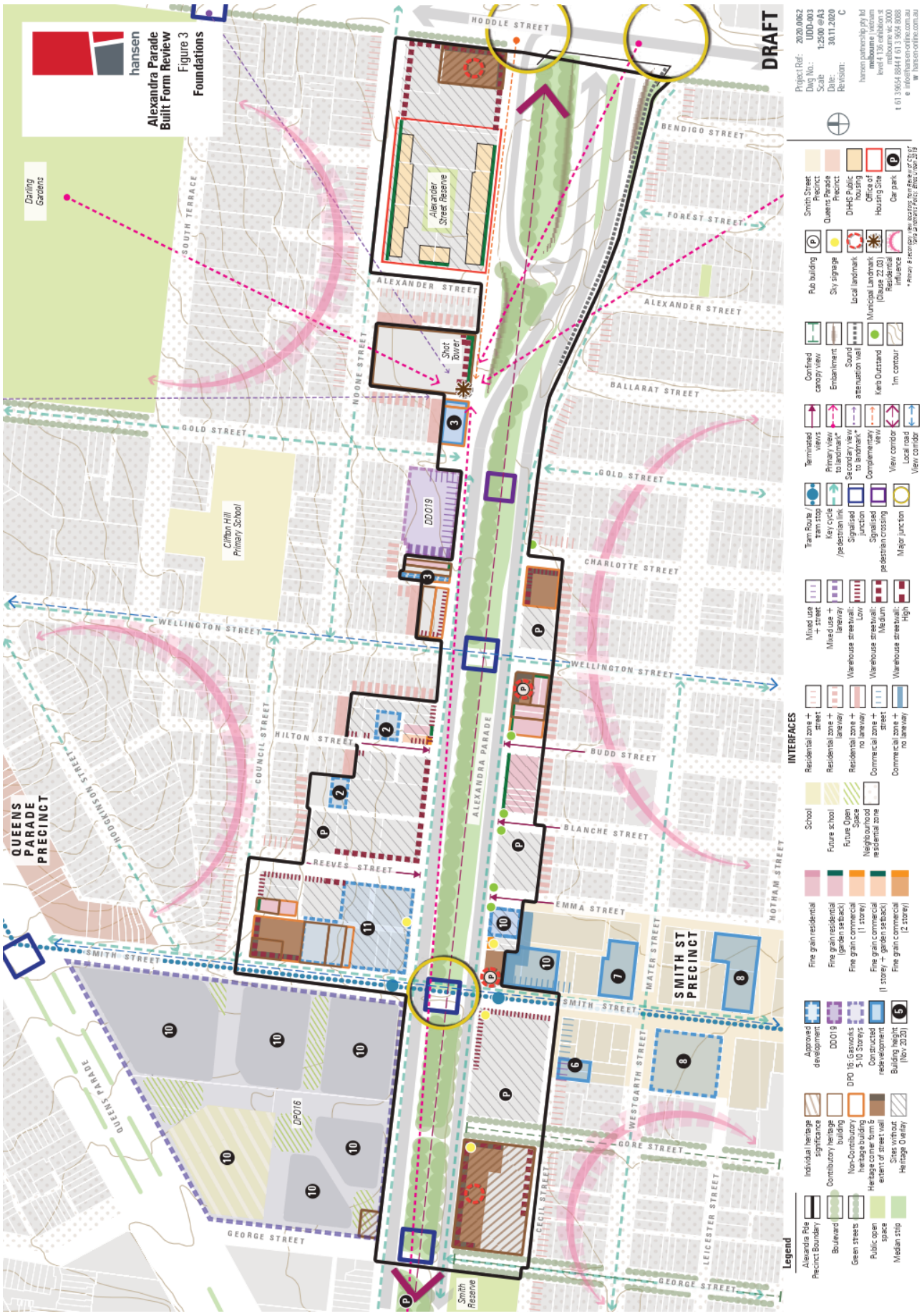
Wellington St dellings with northern outlook toward properties fronting the Parade

Rear backyards of Council Street residences forming a study area boundary



The adjoining Queens Parade Activity Spine

Attachment 1 - Attachment 1 - Alexandra Parade Built Form Framework



2.2 Alexandra Parade Precinct Built Form Framework

In response to foundation matters, a Built Form Framework has been advanced to reinforce locations for varying levels of change within the study area. A Framework is not definitive (like a Built Form Control Plan), instead it seeks to identify critical 'gestures' of the City. In this instance, the framework recognises the importance of the following attributes (Refer to Figure 4):

Views to Municipal Landmark: Shot Tower

Views to the Shot Tower remain an important consideration for the shaping of built form in the precinct. Future development and upper-level additions must not impede primary views to the Shot Tower (identified in the Draft City of Yarra Landmarks Policy Review and the proposed Clause 15.01-2L: Landmarks (Amendment C269 to the Yarra Planning Scheme). Future development should retain the Shot Tower as the principle built form landmark in the identified secondary views, as well as the complementary view at the north-eastern junction of Alexandra Parade and Hoddle Street (at the pedestrian crossing island refuge), from where the Shot Tower serves as an important wayfinding element in the local setting.

Varied Streetscape Profile

The central blocks of Alexandra Parade, between Emma Street and Alexander Street have a more varied streetscape profile due to its varied uses and subdivision pattern. A large proportion of sites in urban blocks affected by existing Heritage Overlays (HO317 and HO321) are non - contributory buildings. A limited number of contributory and individually significant buildings include the Shot Tower and local landmarks positioned at corners. The north side of the Boulevard has a more consistent built form definition along the street frontage. On the south side, some existing buildings are setback from the street frontage for landscaping and private open space.

Future built form should reference this 'varied' condition and adopt a more customised response while acknowledging the sensitivity of its residential interface to the rear, and alignment of adjoining heritage frontage. Continuation of street wall definition on the north side should also be contemplated, while a more varied setback response to the south is likely to be retained. Future development including on heritage sites should ensure primary views and prominence of the Shot Tower are retained.

Capacity

At the east and west of the study area, these 'bookend' precincts lack heritage sensitivity with limited controls to guide future development outcomes, particularly on C1Z and C2Z sites. Located at the periphery at either end of the Boulevard and in proximity to Hoddle Street, they are also distinguished from the more sensitive middle section due to its large subdivision and limited immediate sensitive interface with established residential area (outside the study area boundary). Currently, most of these allotments accommodate broad grained warehouses and commercial buildings.

Views to the Shot Tower west along Alexandra Parade

Large allotments of urban blocks with capacity for change (west)

Large allotments of urban blocks with capacity for change (east)

A varied streetscape profile south of the Boulevard

Some sites have existing approvals (not constructed) for up to 11 storeys comprising street walls/ podium and rising form above. Importantly, recently implemented strategic initiatives for the Gasworks Site- DPO16 and Council's endorsed interim DDO controls for the Smith Street MAC sets the ambition for a greater level of capacity that can be accommodated on the western end of the study area.

The Office of Housing site (43 Noone Street) is currently zoned GRZ3. The site was part of a review under the Public Housing Renewal Program (PHRP) but renewal was not pursued. For the purpose of this Review, existing residential zoning provisions will continue to be applicable. The 'island' condition defined by Noone Street, Alexander Street and the Hoddle Street junction presents an opportunity to demarcate entrance into Alexandra Parade.

Key Junctions

Where Alexandra Parade intersects with local side streets, the future form should be shaped to retain views to the Shot Tower from the broader precinct (outside the study area) for wayfinding and sense of place. Similarly, the junctions with Hoddle Street (a main road) and Smith Street (a commercial spine) demarcates key junctions and entries into the Municipality and into one of Yarra's Major Activity Centres. In absence of heritage sensitivity at corner locations and where larger sites have recent development approvals (not constructed) for 10 storeys and above, there is opportunity for taller forms, which preserve viewlines to the Shot Tower and protect amenity (solar, wind, pedestrian scale) to public realm.

Back Blocks

Where the Boulevard provides the primary address for significant change to occur, particular urban blocks also have address or interface to established residential areas. While these blocks can accommodate capacity, their development opportunity is influenced by proximity to residential influences. The shaping of new urban form will be influenced by managing transition within these urban blocks.

Boulevard Address

Alexandra Parade is strongly defined by its landscaped central median. Solar access to the central median will ensure long term viability of the canopy planting, as well as retaining attractive presentation into inner Melbourne and the City of Yarra. Future development should continue to ensure solar access to the central median is protected and to adhere to a pedestrian scale despite the large cross section. Consideration of street wall definition and overall development height is required to determine an appropriate outcome for solar access.

Key Pedestrian Connections

Smith, Wellington and Gold Streets are important perpendicular streets with designated sustainable transport routes (tram and dedicated cycle paths) between Clifton Hill and Collingwood. At the Alexandra Parade junctions, these north -south links are provided with signalised pedestrian and cycle crossings. Where increased pedestrian footfall can be expected, street level activation and long term amenity to public realm (solar access, wind effect, pedestrian scale consideration) along these streets should be prioritised.

A varied streetscape profile north of the Boulevard

The northern approach to the Smith Street junction

Cycling infrastructure in the Wellington Street streetscape profile

Residential green streets are integral to the Fitzroy/Collingwood image

Green streets

It is essential that future development continues to support the landscaped character of Gore and George Streets, which are defined by large established trees within the road reserve and kerb extensions at the intersections at George Street. Opportunities to realise additional 'pause places' at Gore Street through kerb extension should be investigated as part of future Alexandra Parade public realm upgrades.

Heritage Values

Within the precinct are individually significant and contributory heritage buildings including the Municipal Landmark (Shot Tower), local landmarks (including heritage warehouses and corner hotels) and fine grained residential buildings. Given the varied heritage definition, there is potential to tailor site responses in accordance to its heritage abuttal. Where heritage fabric only occupies a portion of large sites, varied opportunities can also be realised on site, including the opportunity for a standalone new building to be realised beside, or behind the heritage asset. Council and Noone Streets run parallel to Alexandra Parade to the north, typified by low rise, fine grain heritage buildings in NRZ. Development along these residential streetscapes should respond to this existing scale of built form. Future development in the precinct should consider implication on these residential streetscapes. Views to the Shot Tower are also prominent along Noone Street.

Transition

Behind the Alexandra Parade spine are fine grained residential precincts within the Heritage Overlay. At Wellington and Alexander Streets, the spine is also interrupted by a fine grain residential row of allotments (NRZ) which have been excluded from the study area. New forms on adjoining sites, including some larger sites in C2Z such as along Hilton Street, their development opportunity is strongly influenced by its proximity to sensitive residential properties beyond the precinct. The existing hierarchy of primary and secondary street addresses will assist in managing future 'fronts', 'sides' and 'backs', contributing to strengthening sense of address and activations as well as reinforcing a sense of order along the corridor. The shaping of new urban form will be influenced by managing transition within these urban blocks.

Varied Subdivision Pattern

Varied urban block arrangements and subdivision patterns on the northern and southern sides of Alexandra Parade warrants a varied response. A valued attribute is the clear sense of grain and visual permeability. Where large allotments occur, consideration for multiple building footprints should be encouraged to minimise the effect of continuous walling. This includes single allotments that extend between multiple streets, such as the 'Officeworks' site at 230 Alexandra Parade, Fitzroy, and the Office of Housing site further east.

The level of moderate growth is apparent along the middle of the spine and overall scale will be particularly influenced by lot depth and rear interface factors. Island sites, which constitute a super lot in a single ownership with at least three street frontages including to Alexandra Parade will need to have regards to improving permeability through adopting multiple forms for visual 'breaks' and/ or ground level linkages that line up with perpendicular laneways and street networks.

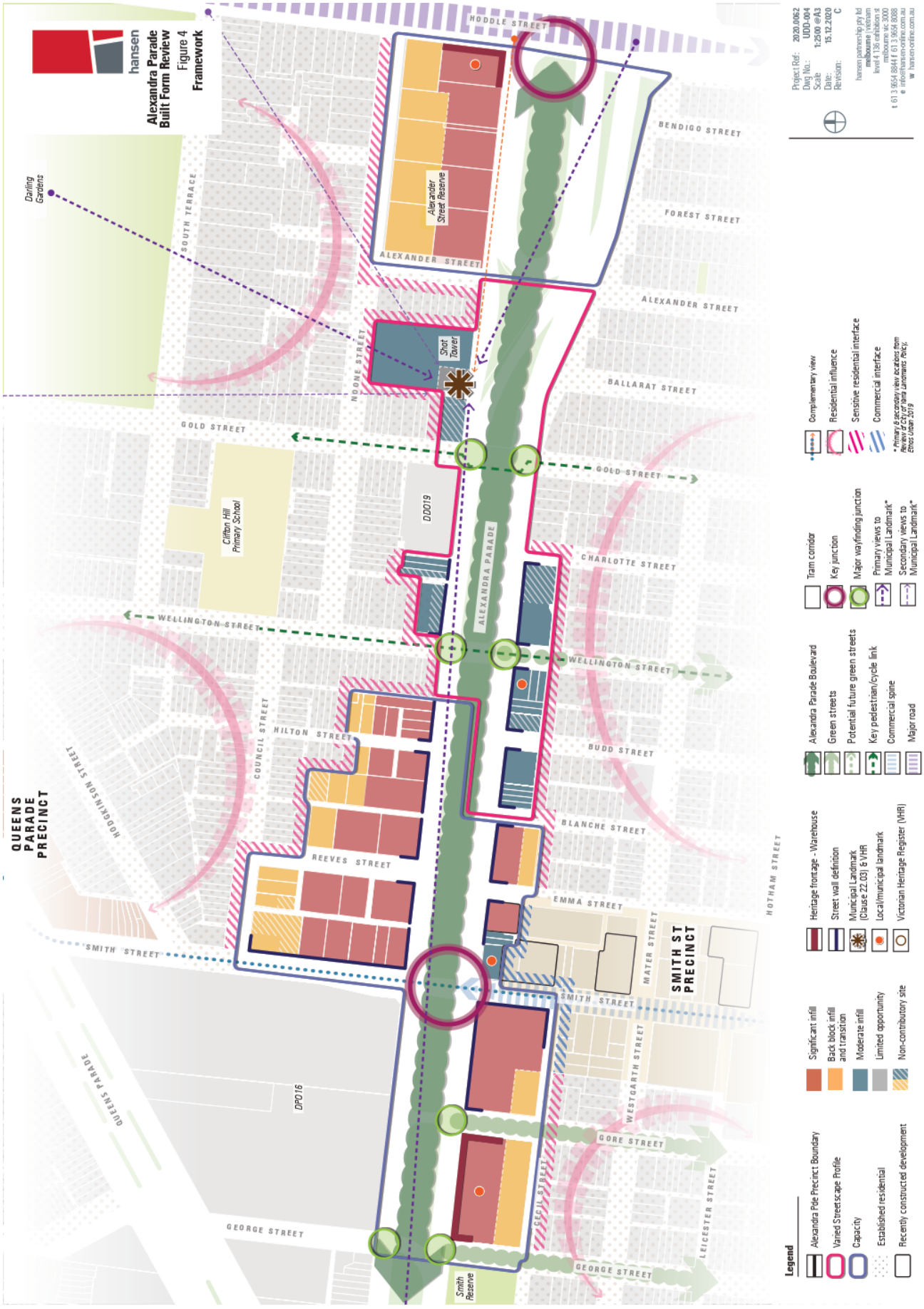
The heritage fabric of the former Murray Co. Wool Works building

Residential terraces along Council Street

Fine grain residences in streets immediately adjoining the Parade

Office of Housing building viewed along Alexander Street

Attachment 1 - Attachment 1 - Alexandra Parade Built Form Framework



Future Character Statement

Given this 'Framework' for change, the following future character statement is recommended.

Future development along Alexandra Parade will continue to reinforce its role as a key east- west boulevard, connecting inner Melbourne to the broader Eastern subregion. The Alexandra Parade visual experience will continue to be influenced by the Municipal Landmark of the Clifton Hill Shot Tower – integral to the precinct character and wayfinding of Collingwood, Fitzroy and Clifton Hill.

New development will respond to the varied subdivision pattern and the landscape character along the main spine and its network of streets behind, creating a low to moderate street edge that balances a sense of enclosure with a pedestrian scale and streetscape openness. Development on key junctions at Smith Street and Hoddle Street will demarcate entrances into the Smith Street MAC and the municipality respectively.

Taller buildings will be confined to the eastern and western ends of the precinct on larger allotments comprising non-contributory buildings, where amenity tests can be absorbed within the site boundary. In this context, future development should continue to reflect the prevailing subdivision pattern and permeability. The remainder of the precinct will continue to provide for moderate infill development while enhancing pedestrian amenity and streetscape presentation to the residential setting, to where urban form will transition to.

Framework Principles

In response to this distinction in the precinct's urban fabric, the preferred future-built form character will seek to build on its key attributes by adopting the following principles:

1. Protect views to the Clifton Hill Shot Tower and views to the architectural features of local landmarks.
2. Maintain solar access to the Boulevard's central median and opposite footpaths along commercial spines and green streets.
3. Transition to the residential edges, with a particular awareness of potential overshadowing to southern interfaces and rising topography at the northern edges.
4. Establish a moderate street edge condition at infill development opportunities that steps down to lower, sensitive building fabric to create a pedestrian scaled sense of enclosure at building edges, that balances the open setting of the boulevard.
5. Respond to the scale and form of existing and approved development within and at the periphery of the study area, through moderate infill in between taller precinct bookends on larger allotments with limited heritage fabric.
6. Demarcate key entries into the Boulevard and MAC's at junctions while preserving views to valued heritage asset.

PART 3: BUILT FORM PROPOSITION

The Built Form Proposition has been derived from the Built Form Framework which was informed by the Foundations Analysis and underpinned by the overall Background Analysis.

The Alexandra Parade Precinct Built Form Proposition demonstrates block by block and street by street parameters for the precincts' evolution of new development. The identified parameters are neither fixed, or absolute but are intended to guide future change. The proposed proposition or 'controls' are represented in Figure 4 and are derived from the following basis:

- Heritage input;
- Municipal Housing Strategy;
- Precinct character;
- Street propotions;
- Solac access to the public realm;
- Shot Tower view and vistas;
- Local landmarks;
- Heritage street walls and upper levels;
- Heritage frontages;
- New street walls and upper levels;
- Transition;
- Upper level expression;
- Residential interfaces;
- Building separation, amenity and equitable development;
- Sites in residential zone.

The rationale for height parameters is outlined as follows:

3.1: Basis for Height Parameters

Heritage Input

GJM Heritage provided extensive heritage input based on comprehensive analysis comprising:

- The heritage grading of each property within the Heritage Overlays;
- The currency of existing Statements of Significance;
- Confirmation of places with Victorian Heritage Register nomination;
- Identification of local landmarks; and
- Recommended built form parameters to appropriately manage development within the heritage context.

Refer to Alexandra Parade Heritage Analysis & Recommendations (GJM Heritage) for details.

Housing Strategy

With reference to the adopted Housing Strategy for the Municipality (adopted 2018), the southern side of the Alexandra Parade Precinct (between George and Charlotte Street) is identified as part of the Smith Street Major Activity Centre. The western end of the Alexandra Parade Built Form Review study area is the Clifton Hill Neighbourhood Activity Centre, including the Former North Fitzroy Gasworks site. The Major Activity Centre and the Former Gasworks site are predominantly designated for high change (around the Smith Street intersection on land zoned C1Z and MUZ). Further east along Alexandra Parade is urban blocks in varied zones (MUZ and GRZ) designated for a moderate change. Land zoned C2Z within the Precinct is not given a designation, while residential zoned land is designated for minimal change.

In areas of moderate change, the strategy identifies future development to be in the form of mixed-use, infill and shop-top apartment development on individual and consolidated lots that respond to the existing heritage character of streetscapes. In areas of high change, the strategy identifies future development to be in the form of mixed-use, infill and urban renewal apartment development that will establish a new character for a site or Precinct.

Precinct Character

Key characteristics that distinguish the Alexandra Parade Precinct are attributed to the primary address to the wide boulevard, traversing through a mixed built form setting punctuated by the landmark Clifton Hill Shot Tower. The diversity in built form is attributed to variation in the subdivision pattern, land use function and mix of built form typologies, comprising commercial forms, corner hotel buildings, remnant warehouses and contributory residential dwellings. New development should seek to respond to the unique characteristics and sensitivities as required.

Street Proportions

Default preferred maximum building heights have been derived in relation to the adjoining street width. This has been based on considerable analysis and documentation of the existing relationships throughout the broader study area, which has shown there is some correlation between the width, function and character of the street to the height and profile of the buildings which line it.

This study also recognises that street width relationship to the ovarall building height also has a strong correlation with the street's function and streetscape character.

In the diverse context of Alexandra Parade, future development will continue to respond to the street-based built form outcome by adopting streetwall scale and setbacks to upper levels influenced by retention of key views, solar access to the public realm, pedestrian scale and heritage influence. They are also determined by the size and depth of lots, noting the need for rear boundary transition conditions.

It acknowledges that the street width to building height ratio is not seen as a 'target'. Rather this consideration must also be complemented by the ability for future development to respond to its streetscape character and heritage setting.

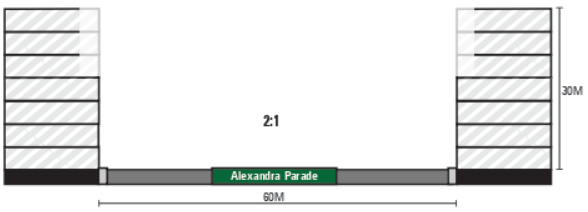
Parade Presence & Transit Corridor

Alexandra Parade (60m) and Hoddle Street (40m) are distinctively characterised by open, broad profile with a central median planting to Alexandra Parade and Hoddle Street (north of Alexandra Parade).

As a starting point, the preferred overall building height of new forms along these wide movement corridors will seek to balance the opportunity presented by the generous road proportion with retaining the sense of openness.

The following is recommended:

- Up to 2:1 – Street width to overall building height ratio (main road corridors at key junction locations, large size lots).



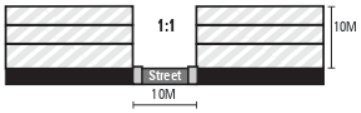
A street width to building height ratio 2:1 for parade and transport corridor

Typical Streets

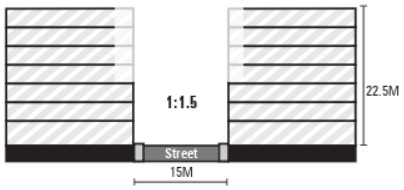
On sites without a frontage to Alexandra Parade, the preferred overall building height of new forms can be influenced by the width of the street, which ranges between 10m, 15m and 20m 'streets'. The size, depth of allotments, commercial road frontage and transition to sensitive interfaces are factors that vary the 'default ratio' as a starting point.

The following is recommended:

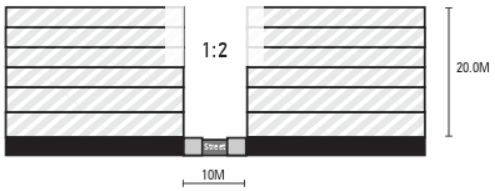
- Up to 1:1 – Reduced street width to overall building height ratio for other streets (15m-20m wide).
- Up to 1:1.5 – Reduced street width to overall building height ratio for moderate size lots on Smith Street and Reeves Street (20m wide).
- Up to 1:2 – Reduced street width to overall building height ratio for moderate size lots on Hilton Street (10m wide).



A default street width to building height ratio 1:1 on typical streets (15-20m wide)



A default street width to building height ratio 1:1.5 for moderate sized lots on Smith and Reeves Streets (20m wide)



A default street width to building height ratio 1:2 for moderate sized lots on Hilton Street (10m)

Solar Access to the Public Realm

In inner urban areas such as Fitzroy, Collingwood and Clifton Hill, solar access to the public realm is an important consideration. Therefore, future urban form should protect solar access to key streets and open spaces appropriately to ensure 'life and attraction' at the street level for residents and visitors.

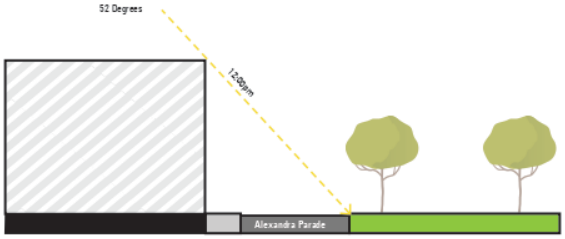
The Urban Design Guidelines for Victoria contains the following relevant Objectives and Guidelines:

'Objective 5.1.3 To ensure buildings in activity centres provide equitable access to daylight and sunlight', and

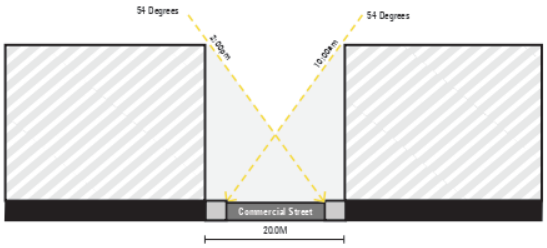
'5.1.3a Locate and arrange the building to allow daylight and winter sun access to key public spaces and key established street spaces.'

Within the Alexandra Parade Precinct we recommend the following solar access measures to maintain appropriate solar access to the public realm, measured on 22 September (equinox):

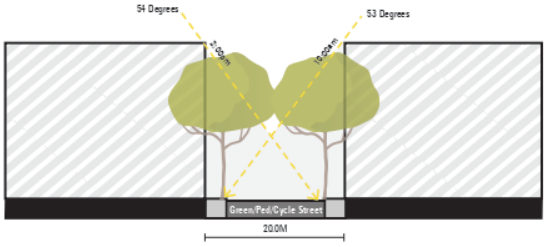
- Along **Alexandra Parade** (Boulevard), minimise overshadowing of the central median at 12pm. This test will ensure the viability of median vegetation and reinforcing the civic quality of its boulevard, recognising its importance to the image of the City.
- Along **Commercial Street** (Smith Street): avoid overshadowing of the eastern and western footpaths (3m from property boundary) between 10am and 2pm.
- Along **Green Streets** (George Street and Gore Street) and **Key Pedestrian Priority/ Cycle Links** (Wellington Street and Gold Street): avoid additional overshadowing of the opposite western footpath at 10am; and the opposite eastern footpath at 2pm. Kerb-outstands at intersections should also be protected.
- Along **Other Streets Within the Study Area** (Reeves, Emma, Blance, Budd, Charlotte, Alexander Streets): avoid overshadowing of the opposite western footpath at 10am; and the opposite eastern footpath at 2pm.
- Along **Narrow Streets Within the Study Area** (Hilton Street): avoid additional overshadowing above the ground floor of buildings. On narrower street, some overshadowing of footpaths is inevitable. It is determined that protection of solar access to first floor is acceptable in this location.
- **Other streets Outside the Study Area:** avoid overshadowing of footpaths to opposite side of the street between 10am to 2pm.



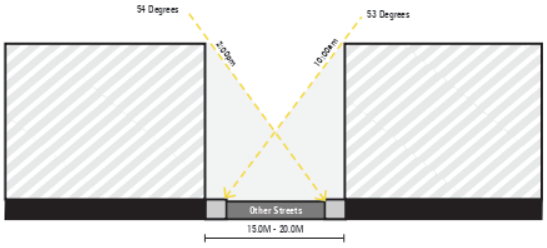
12pm exquinox solar angle along Alexandra Parade



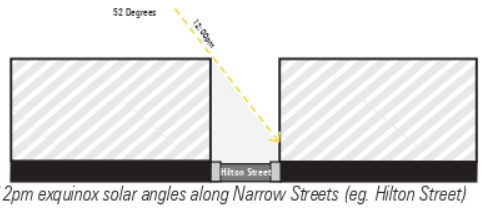
Exquinox solar angles along 20m wide Commercial Streets



Exquinox solar angles along Green Streets & Pedestrian Priority/Cycle Links



Exquinox solar angles along 15-20m wide 'Other Streets'



12pm exquinox solar angles along Narrow Streets (eg. Hilton Street)

Shot Tower Views and Vistas

The Clifton Hill Shot Tower is approximately 65m tall. It is prominent in views along Alexandra Parade from the east, with high visual frequency at key pedestrian, tram and vehicle movement intersection such as Brunswick and Smith Streets. It is also prominent in views in the broader setting, due to surrounding low scale residential areas and the northern rising topography of Clifton Hill.

Key to the identity of Alexandra Parade and its surrounds is the Shot Tower and its importance as a wayfinding element in the legibility of the broader setting. Therefore primary views must not obscured. Secondary views, as well as 'breathing space' around the Shot Tower should be retained to maintan the visual prominence of this Municipal Landmark.

Key viewlines towards the Clifton Hill Shot Tower identified in the Draft City of Yarra Landmarks Policy Review and the proposed Amendment C269 to the Yarra Planning Scheme (Clause 15.01-2L: Building Design) have influenced the shaping of built form proposition for Alexandra Parade (heights and setbacks). Its recommendations are below.

Shot Tower 'primary views': *Maintain visual prominence of the Shot Tower to at least one third of the Tower's height. Future development sited behind the Shot Tower not to impede on its silhouette against a clear sky. Location of primary views are:*

- *View 1: Brunswick Street and Alexandra Parade intersection;*
- *View 2: Eastern Freeway (west of the Hoddle Street overpass);*
- *View 3: Darling Gardens (rotunda).*

Based on this review, new street walls and upper levels in the foreground and background of these views should therefore not impede primary views of the tower.

Shot Tower 'secondary views': *supporting the primary views are secondary views of the Shot Tower that are encouraged to be retained in the shaping of new street walls and upper levels. The location of secondary views are identified in the 'Landmarks and Views Assessment'* (Ethos Urban, October 2019)*, are:*

- *View 4: Roseneath Street and Hoddle Street intersection; and*
- *View 5: Gold Street and Queens Parade intersection.*

Shot Tower Primary View 1: View from the Brunswick Street intersection

Shot Tower Primary View 2: View from the Eastern Freeway (west of the Hoddle Street overpass)

Shot Tower Primary View 3: View from the Darling Gardens rotunda

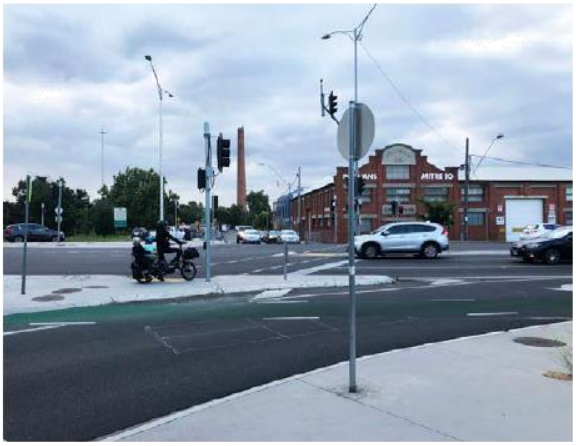
Complementary 'views': An additional view to the Shot Tower is identified from the north-eastern junction of Alexandra Parade and Hoddle Street (at the pedestrian crossing island refuge). From this location, the prominent south-eastern corner of the former Murray Co. Wool Works at 457 Hoddle Street (HO89) - a local landmark, sits in the foreground. Maintaining this view to the Shot Tower from this pedestrian crossing, as well as its visual prominence in the streetscape is important from a sense of place and wayfinding perspective.

Future development sited in front of the Shot Tower should retain 'breathing space' around it. Retention of the former Murray Co. Wool Works heritage fabric and roof form (along Alexandra Parade) is also recommended from heritage perspective. Any new street walls are to respond to the heritage fabric, with upper levels set back to retain **visual primacy of the Shot Tower from this complementary view location.**

Local Landmarks

A total of four local landmarks are identified in the Study Area, occupying corner sites. Prominent heritage corner building is a heritage feature and a key characteristic of Fitzroy, Collingwood and Clifton Hill. Therefore, retaining views to and 'space' behind these prominent corner forms (and its chimney) is important to ensure they remain visually prominent and 'hold' the corner. The following are identified as Local landmarks in the study area:

- Murray Co. Wool Works at 457 Hoddle Street (HO89), Clifton Hill.
- Gasometer Hotel at 484 Smith Street, Collingwood.
- British United Shoes Machinery Co. Pty Ltd Factory at 200 Alexandra Parade, Fitzroy (HO334).
- Fox Hotel at 351 Wellington Street, Collingwood (HO321).



Complementary view of the Shot Tower with 457 Hoddle Street in foreground

Local landmark - the Fox Hotel

Local landmark - the Gasometer Hotel

Heritage Street Walls and Upper Levels

Within the Alexandra Parade study area, there is a presence of heritage fabric which is to be retained. The recommended upper level setback parameters for contributory or individually significant sites draw on the objectives and provisions of Clause 22.02, 22.10 and 22.14 as well as hertiage advice from GJM Heritage.

Within the precinct, heritage street walls and frontage vary considerably. They generally occur as single entities between neighbouring non-contributory buildings and generally comprise 1-2 storeys and a 4 storey street wall exist at 200 Alexandra Parade (Former British United Shoe Machinary building).

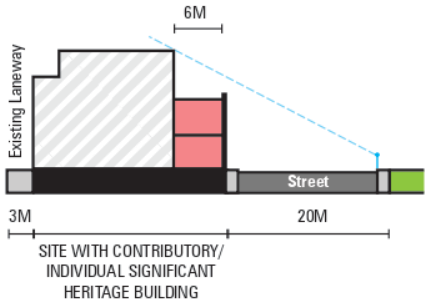
A **default 6m measurement** (from the retained facade to the new built form including balcony line) is applied to the contributory and individually significant sites fronting Alexandra Parade, Smith, Wellington and Council Streets. This is to ensure adequate protection of the primary heritage 'volume' (including chimneys, and exposed roof forms). The default upper level setback will also protect facade articulation in the streetscape elevation with spatial separation between the street wall or frontage and recessive upper levels.

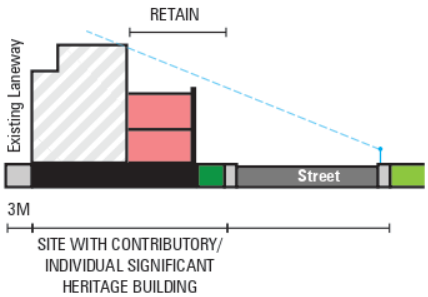
Where opportunity for taller development exists behind the heritage volume, an upper level setback greater than the default 6m will be required in addition to consideration of a sensitive architectural design treatments (massing, form and materiality) to ensure the new form does not visually compete with the heritage element.

Heritage Frontages

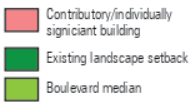
Based on an understanding of heritage advice and the distinct built form character across the precinct, the following parameters guide the preferred built form response for heritage frontages in the study area:

- The existing curtilage around the base of the Clifton Hill Shot Tower should be retained (approximately 6m measured from the base of the Shot Tower) to ensure new development maintaing 'breathing space' around the landmark.
- Where new buildings are proposed within the side or rear setback of VHR sites (Clifton Hill Shot Tower site), they are to be positioned behind existing structures, ensuring heritage frontages are not concealed by new forms from streetscape views.
- New built form to the rear of individually significant residential heritage forms, including single and two storey terraces should ensure upper levels are highly recessive in view.
- Retain existing heritage frontages, including street setbacks.





Preferred setback above and behind heritage frontage



New Street Walls and Upper Levels

In urban areas, almost all urban design guidelines seek to introduce a 'street wall' and 'upper level front setback' measure. The purpose for such a distinction and separation is to ensure predominance of the 'traditional' forms and parapets within the streetscape, while enabling provision of new and increased heights in a recessive order. Upper level setbacks also retain a sense of openness to the street, which are prominent in a pedestrian's field of vision and reinforce the traditional street wall scale.

New street wall heights

The Alexandra Parade Precinct has a diverse mixe of street wall and frontage heights, from tall and broad warehouse forms lining the boulevard and commercial side streets, to narrow, low-rise dwellings set behind front garden setbacks.

Importantly, new street walls should not diminish the heritage qualities present in streetscapes. On wider allotments with greater capacity for change, street walls should 'step' down to match adjoining heritage forms, but can accomodate higher street walls after a minimum 6m of matching the adjoining heritage parapet.

Importantly, new street walls should not result in diminishing the heritage quality of streetscapes. The following is recommended:

- A **'default' maximum street wall of 4 storeys (14.4m)** is applicable to sites fronting Alexandra Parade, Smith Street and Reeves Street on non-residential zoned land. It reflects the 4 storey heritage street wall datum of the British United Shoes Machinery Co. Pty Ltd Factory.
- Reduced **street wall height of 3 storeys (11.2m)** is applicable for Hoddle Street and part of Smith Street response to heritage street wall and transition to residential interface.
- Reduced **street wall of 3 storeys (11.2m)** is applicable to other streets, reinforcing the hierarchy of Alexandra Parade and providing transition to lower scaled residential areas to the north and south of the study area.
- Reduced **street wall height of 2 storeys (8m)** is applicable for sites adjoining single storey contributory/ individually significant heritage site.

Upper level setbacks for non-contributory sites

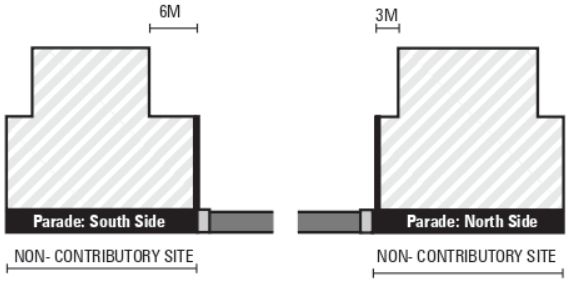
The purpose of the upper level setback is to:

- Respond to key views to the Shot Tower.
- Retain prominence of local landmarks.
- Provide a clear distinction between 'base' and 'top'.
- Create a degree of consistency for upper levels that comprises a mix of heritage and non- heritage forms.
- Ensure the new upper level does not visually overwhelm the streetscapes and to balance the sense of openness, enclosure and a pedestrian scaled setting.
- Ensure no unreasonable overshadowing of the public realm (taller buildings may require upper level setback greater than 3m to meet the overshadowing requirement).

For these reasons, **a 'default' 3m upper level setback** (from the facade to the new built form including balcony line) is applied to all non-contributory sites.

Variation to the default upper level setback is recommended (6m upper level setback) for the following areas:

- **The northern side of Alexandra Parade** preserving key views to the Clifton Hill Shot Tower and minimising overshadowing of the central median;
- **Smith Street** for a visually dominant street wall and to achieve a degree of consistency with development on heritage sites;
- **Gore and George Street** (green streets) to meet the overshadowing requirements and transition to residential precincts to the south of the study area;
- **Cecil Street** for heritage streetscape and to minimise overshadowing of residential properties (south side);
- **Council and Noone Streets** for heritage streetscape consideration and transition to residential precincts outside the study area.



Preferred setbacks behind Alexandra Parade interfaces (north and south sides)

Transition

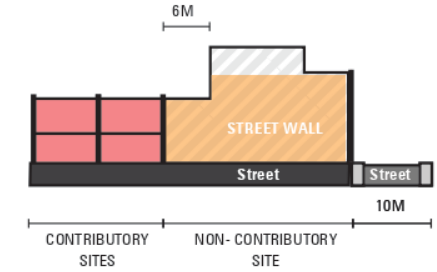
In this part of Fitzroy, Collingwood and Clifton Hill, the transition in building height is gradual. Large sites are often redeveloped as mutiple buildings, maintaining the sense of 'grain' and separation between forms.

Transitions in scale are an existing characteristic of the broader area. There are many examples of older commercial or warehouse forms side by side with fine grained dwellings. In this context a change in streetwall height of one storey is common within the streetscapes of the precinct.

The broader skyline is generally low, but punctuated by mid-rise and high-rise forms along the commercial spine of Smith Street - including towards its junction with Alexandra Parade (upwards of 10 storeys with 3-4 storey street walls). There is limited evidence of recent construction along the northern side of Alexandra Parade within the precinct, with the established residential hinterland formling the skyline further north.

Larger sites may be able to accommodate for gradual transitions through recessive upper levels and transition in scale in response to abutting heritage forms. In order to avoid undesirable 'wedding cake' forms, minimal 'steps' in built form massing is encouraged. Transitions in scale should, as a minimum, occur in paired levels.

In some instances, sites have direct abuttals to contributory heritage sites. New street wall should transition from taller street wall to respond to the abutting heritage parapet for a length of pproximately 6m or to the nearest property boundary (if less than 6m).



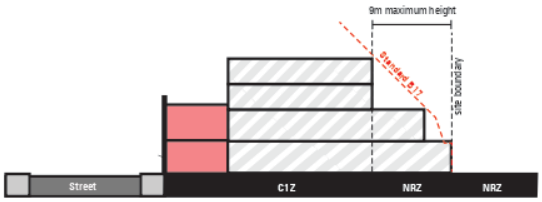
Preferred street wall transition for corner sites

Contributory/individually signiciant building

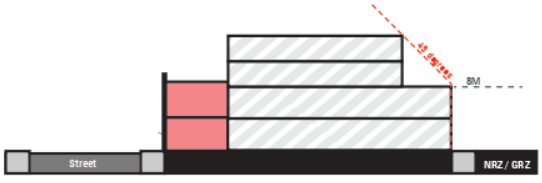
Upper Level Expression

The design of upper levels of new development should:

- Be well articulated and break up the building mass;
- Distinguish between the lower and upper levels through materials and articulation;
- Be designed so that side walls are articulated and read as part of the overall building design and not detract from the streetscape when viewed from direct and oblique views along the streetscape; and
- Provide passive surveillance of adjacent streets and public open space.



Preferred built form transition where NRZ is applied to rear of site



Preferred built form transition to residential zone land (GRZ/NRZ)

Residential Interfaces (including laneway)

The Alexandra Parade Precinct comprises a number of lots with rear and side interfaces with Residential Zoned land. Generally, these interfaces are separated by rear laneways. There are few instances where lots have a direct abuttal to residential properties, specifically on lots fronting Hilton Street and the north-south aligned laneway between Reeves and Hilton Streets. East of Wellington Street, lots within the precinct boundary that directly abut Residential Zoned land are also zoned GRZ.

Residential interfaces are often defined by secondary frontage or party walls (1- 2 storeys). Along these residential interfaces (with, or without laneway separation), an 8m (2 storeys) form built to the boundary is required with a recessive upper-level setback (behind a 45- degree setback envelope) to ensure residential amenity is protected.

Non-Residential Interfaces (including laneway)

The precinct comprises a mix of rear interface conditions including laneways of varying widths and rear abuttals. Future development should respond these mixed conditions. Where new development is separated from adjoining non-residential sites by a laneway (typically 3m wide), it should present a maximum 11.2m (3 storeys) form at the interface, with any built form above set back 4.5m from the centreline of the laneway. This ensures a minimum distance of 9m is provided between adjoining sites to facilitate equitable development achieving adequate separation between dwellings.

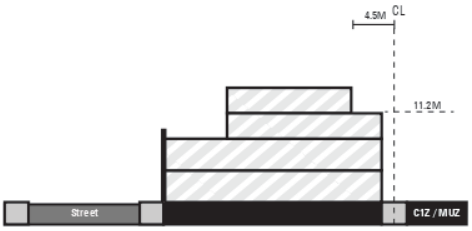
Building Separation, Amenity & Equitable Development

New development should provide a design response that considers the existing condition and future development opportunities of adjacent properties in terms of outlook, daylight and solar access to windows for both residential and commercial development. Development should be setback from common boundaries to provide separation between buildings at the upper levels:

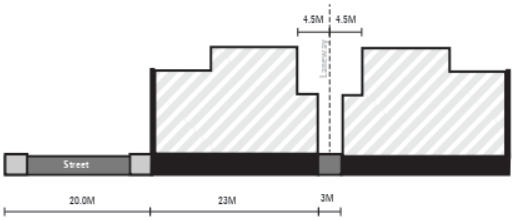
- A minimum of 4.5m from the boundary where a habitable room window is proposed;
- A minimum for 4.5m from the edge of a proposed balcony or terrace.
- A minimum of 3m from the boundary where a non-habitable room window or commercial window is proposed;
- Where the common side boundary is a laneway, the setback is measured from the centre of the laneway.

Sites in Residential Zone

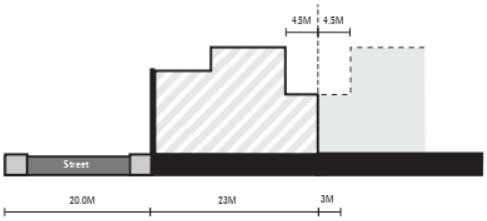
Built form recommendations for sites in residential zones have adopted the mandatory maximum permissible height allowed by the zone. No key views to the Shot Tower and local landmarks are affected by this built form parameter.



Preferred built form transition to MUZ or C1Z sites

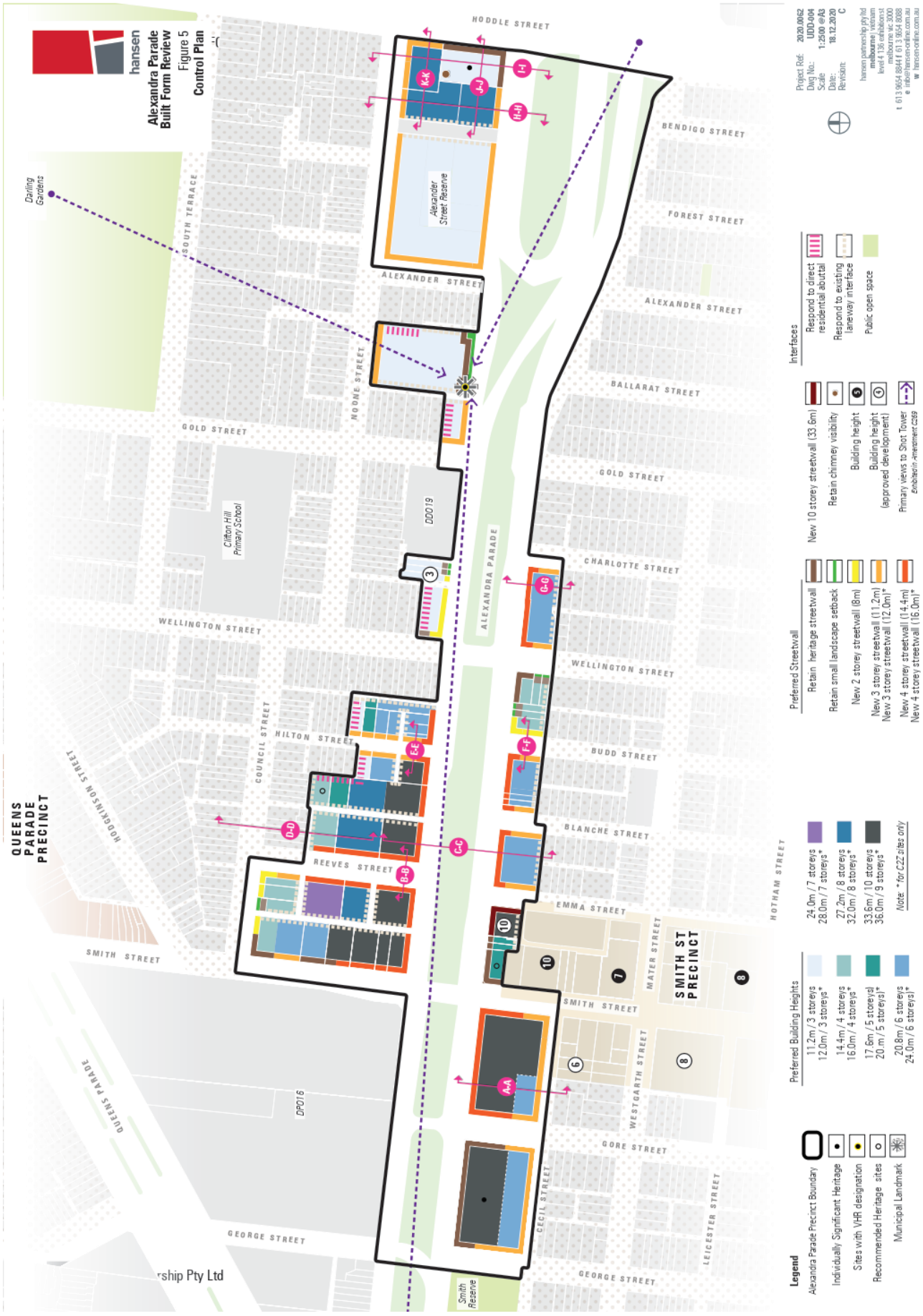


Preferred 4.5m setback of upper levels from centreline of laneway (minimum 3m wide)



Preferred 4.5m setback of upper levels from rear boundary

Attachment 1 - Attachment 1 - Alexandra Parade Built Form Framework



PART 4: RECOMMENDED CONTROLS

4.1 Methodology

The formulation of future building heights and streetwall conditions within the Alexandra Parade Precinct has been influenced by many factors, including:

- Planning Policy Framework;
- Local Planning Policy Framework, including Zones and Overlays;
- Practice Note No. 60 – Height and Setback Controls for Activity Centre;
- Practice Note No. 59 – The Role of Mandatory Provisions in Planning Schemes;
- City of Yarra Housing Strategy (Adopted 4 September 2018);
- Review & Development of the City of Yarra Landmarks Policy (March 2018);
- Urban Design Guidelines for Victoria, 2017;
- Anticipated scale and form of development outside the study area (i.e. within Residential and Employment Zones);
- Views to existing municipal and local landmarks from the public realm;
- Recognition of Yarra's heritage skyline;
- Recent development approvals (including those currently under-construction);
- 3D computer modelling of built form testing for the study area;
- Independent heritage advice and existing character considerations, consistent with the expert heritage advice provided by Council's heritage advisors (GJM Heritage);
- The overall Brunswick Street and Smith Street Built Form Review Background Report (November, 2019); and
- Extensive site inspections and workshops with Council's officers.
- Planning Panel Recommendations for:
  - Johnston Street Local Area Plan (C220);
  - Queens Parade Built Form Review (C223);
  - Swan Street Built Form Review (C191).

4.2 Assumptions

Formula for Deriving Numerical Building Heights

The maximum building heights has been calculated to a higher (than minimum) floor to floor heights in order to:

- Respond to the typical heights found within heritage buildings (between 8-11.2m);
- Accommodate for greater than minimum standards and provide flexibility for future uses;
- Allowance for other design elements to be accommodated, such as parapets, railings, etc.

The following numerical floor to floor dimensions were employed:

- Ground Floor and First Floor: 4m
- Second floor and above: 3.2m, except in land zone C2Z where 4m floor to floor heights are accounted for.

Note: Higher numerical floor levels for mixed use development may be required at upper levels.

Formula for Deriving Numerical Streetwall Heights

The maximum streetwall heights have been calculated based on the above floor to floor heights, plus additional height to allow for parapets, balustrades and minor architectural features.

Zero front setback

New buildings within Activity Centres and inner urban areas such as Gertrude Street should generally be built to the street frontage in order to:

- Respond to the prevailing built form character of the area;
- Provide a clear definition at the street edge; and
- Maximise the developable area.

With the exception of retaining existing front setbacks, all new street walls within the commercial and mixed use zone should be built to boundary.

Top Floor Depth

A minimum depth of approximately 10m for the upper most level has been considered in determining overall building heights. This minimum dimension is based on a typical apartment depth, and provision of efficient access.

4.3 Precincts

Based on the linear extent of Alexandra Parade and the distinction in future built form character along the corridor and to perpendicular side streets as determined by the Built Form Framework Plan the study area is divided into several precincts including:

- Alexandra Parade West (between George and Emma Streets on south side; between Smith and Hilton Lane on north side).
- Alexandra Parade Central (between Emma and Charlotte Streets on south side; between Wellington and the eastern boundary of 60 Alexandra Parade, Clifton Hill).
- Alexandra Parade East (between Gold and Hoddle Streets, excluding NRZ properties fronting Alexander Street).

PRECINCTS	STREET WALLS / GROUND LEVEL SETBACKS	PREFERRED MAXIMUM BUILDING HEIGHTS
ALEXANDRA PARADE WEST	▪ Retain heritage frontage (and garden setback). ▪ Match adjoining heritage eaves/ parapet, or lower. ▪ 3 storeys (11.2m-12.0m*) to 4 storeys (14.4m-16.0m*). ▪ Minimum 6m upper-level setback on properties fronting Alexandra Parade (north side), Smith Street and Council Street. ▪ Minimum 3m upper-level setback, or greater if required for overshadowing requirement elsewhere.	3 storeys (11.2-12.0m*) to 9-10 storeys (33.6m - 36.0m*).
ALEXANDRA PARADE CENTRAL	▪ Retain heritage frontage (and garden setback). ▪ Match adjoining heritage eaves/ parapet, or lower. ▪ 2 storeys (8m), 3 storeys (11.2m) to 4 storeys (14.4m). ▪ Minimum 6m upper-level setback on the north side of Alexandra Parade and south side of Alexandra Parade (between Budd Street and Wellington Street). ▪ Minimum 3m upper-level setback, or greater if required for overshadowing requirement elsewhere.	3 storeys (11.2m) to 6 storeys (20.8m).
ALEXANDRA PARADE EAST	▪ Retain heritage frontage. ▪ Retain existing curtilage around the base of the Clifton Hill Shot Tower (approximately 6m from the street frontage). ▪ 3 storeys (11.2m-12.0m*). ▪ Minimum 6m upper-level setback.	3 storeys (11.2-12.0m*) to 8 storeys (27.2m to 32.0m*)

Note: * for C2Z sites only.

The following diagram illustrates a breakdown of these precinct boundaries (overleaf).

Attachment 1 - Attachment 1 - Alexandra Parade Built Form Framework

PRECINCT 1: ALEXANDRA PARADE WEST

The precinct comprises urban blocks and lots on both sides of Alexandra Parade between George Street (to the south-west) and rear of properties fronting Hilton Street (to the north-east) in Commercial Zone (C1Z and C2Z). To its north and south, the precinct is bound by a mix of streets and laneways, including Cecil Street to the south and Council Street to the north.

Preferred precinct character statement

Future development in Precinct 1 will retain primary view to the Shot Tower and reinforce the boulevard quality of Alexandra Parade as the entry into inner Melbourne and the Smith Street MAC (north end). The diversity of mixed heritage industrial and commercial forms will be preserved while high change around the Smith Street MAC entrance and moderate change elsewhere will be accommodated.

Taller developments around the junctions of Alexandra Parade with Smith Street will transition down to the north and south in response to the established surrounding heritage neighbourhoods. Further east, future development will be moderate due to heritage neighbourhood influence, assisting in maintaining the visual prominence of the Shot Tower in the broader context. Streetscapes within the precinct will support pedestrian amenity that balances the sense of enclosure through adopting new street walls without being overwhelming. Larger sites will be redeveloped to minimise continuous walling and to support visual permeability, as well as pedestrian linkages where possible.

Built Form Objectives

In addition to objectives found in the City of Yarra DDO2:

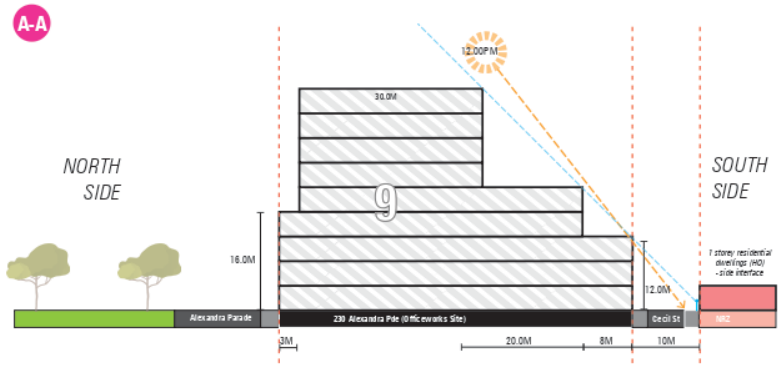
- To enhance the role of the boulevard by protecting its sense of openness.
- To protect the primary view to the Shot Tower.
- To retain heritage frontages.
- To realise high change around the Smith Street MAC that respects heritage and streetscape character, and moderate change elsewhere.
- To demarcate the northern entrance into the Smith Street MAC.
- To retain visual prominence of local landmarks.
- To support the permeability of pedestrian access and visual breaks of large urban blocks in the precinct.
- To minimise overshadowing impact on footpaths and the public realm.
- To ensure a visually more prominent street wall.
- To ensure a suitable transition to its residential interfaces towards the north and south of the precinct.

Precinct 1 Extent

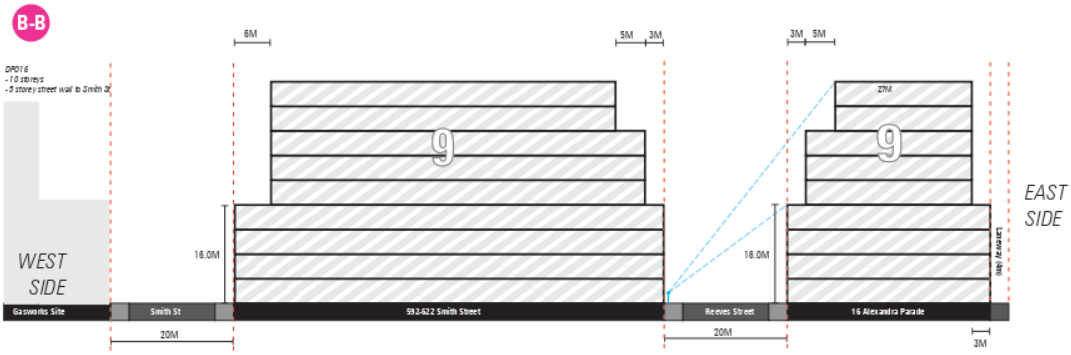
The southern side of Alexandra Parade within Precinct 1

Guidelines

1. Establish a clear distinction between a moderate street wall and rising form behind to maintain the sense of openness.
2. Ensure new infill street walls match the parapet height of adjoining heritage forms and achieve a balance between sense of enclosure and pedestrian scale and openness.
3. Retain existing front setbacks of contributory buildings, including front gardens.
4. Protect the primary view to the Shot Tower from Brunswick Street and Alexandra Parade intersection (north-east corner of the central median).
5. Retain the visual prominence of local landmarks at the Gasometer Hotel (484 Smith Street, Collingwood) and the former British United Shoes Machinery Co. Pty Ltd Factory (200 Alexandra Parade, Fitzroy).
6. Ensure new development on corner sites is designed in the round and 'turns the corner' to address all street frontages.
7. Encourage development that is made up of parts on large, non-contributory sites.
8. Ensure tall buildings do not appear as a continuous wall.
9. Ensure development fronting streets creates a continuous building edge at street levels and an integrated streetscape.
10. Encourage continuation of awnings over footpaths along Smith Street.
11. Ensure new development maintains solar access at the Spring Equinox (September 22) to:
    - Ensure new development minimises overshadowing of the Alexandra Parade central median at 12pm.
    - The western footpaths (3m from property bo undary) at 10 am and eastern footpaths (3m from property bo undary) at 2 pm.
    - Ensure new development minimise overshadowing of the first floor on the opposite side of Hilton Street at 10 am and 2 pm.
12. Ensure new development avoids the presentation of overly stepped or 'wedding-cake' profile.

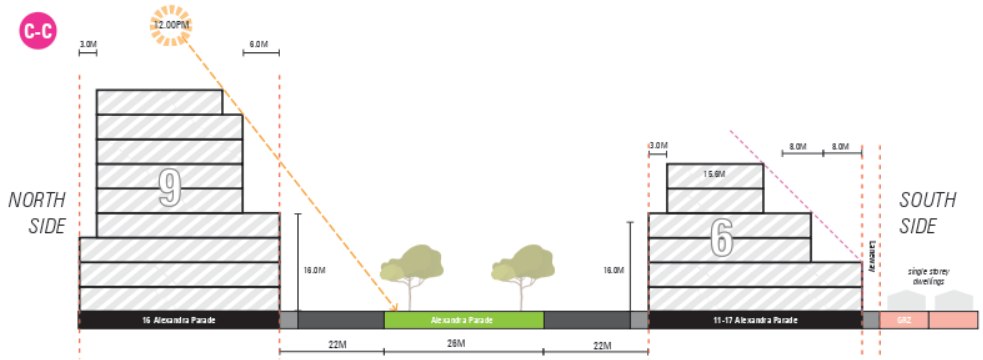


Alexandra Parade: indicative cross section AA

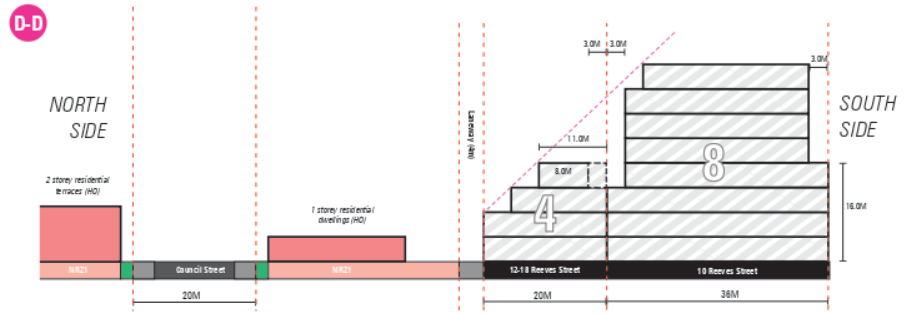


Alexandra Parade: indicative cross section BB

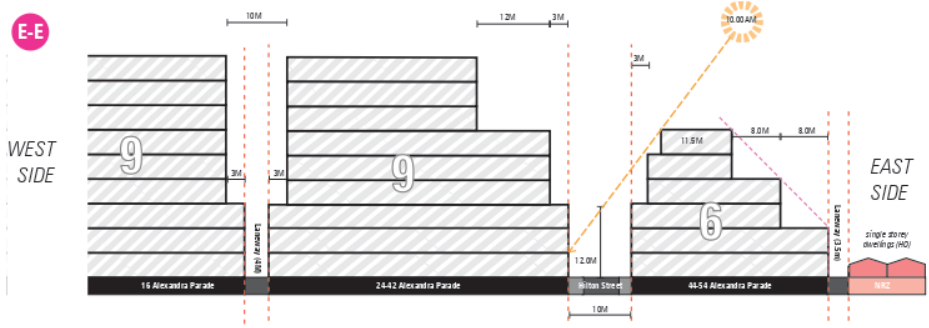
Attachment 1 - Attachment 1 - Alexandra Parade Built Form Framework



Alexandra Parade: indicative cross section CC



Reeves Street: indicative cross section DD



Alexandra Parade: cross section EE

Contributory/individually signiciant building

PRECINCT 2: ALEXANDRA PARADE CENTRAL

This precinct comprises lots with a primary frontage to Alexandra Parade in Mixed Use Zone (MUZ) and Residential Zone (GRZ4) between Emma Street and Charlotte Street to the south and between 406-412 Wellington Street and 60 Alexandra Parade to the north.

Preferred precinct character statement

The varied pattern of subdivision and building fabric to either side of Alexandra Parade will continue to enhance the Boulevard character of Alexandra Parade, retaining the sense of openness and solar access to the central median. New moderate infill development will be recessed behind the street wall along Alexandra Parade, gradually stepping down toward the east to heritage fabric and residential areas. Upper-level setbacks will be shaped befitting a 'street wall and setback' model, comprising a more robust response on the southern side of the boulevard and shaped along the northern side to protect key view lines towards the Clifton Hill Shot Tower and its residential influence.

Built Form Objectives

In addition to objectives found in the City of Yarra DDO2:

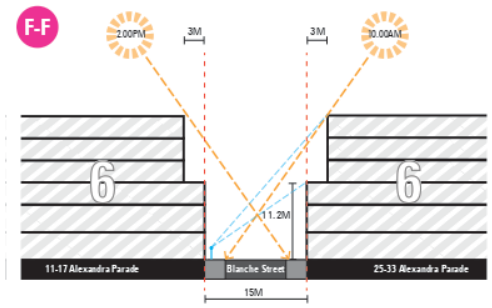
- To enhance the role of the boulevard by protecting its sense of openness.
- To protect the primary view to the Shot Tower.
- To retain visual prominence of the local landmark.
- To support incremental and moderate change that respects the heritage and the streetscape character.
- To retain heritage frontages.
- To minimise overshadowing impact on footpaths and the public realm.
- To ensure a visually more prominent street wall for infill sites.
- To ensure a suitable transition along its residential interfaces to the south.

Precinct 2 Extent

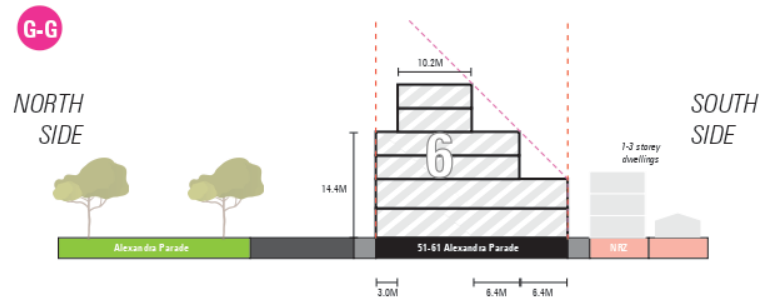
A non-contributory allotment within Precinct 2 between Wellington & Charlotte St

Guidelines

1. Establish a clear distinction between a low to moderate street wall and rising form behind to maintain the sense of openness.
2. Ensure new infill street walls match the parapet height of adjoining heritage forms.
3. Retain existing front setbacks of contributory buildings including front gardens.
4. Protect the primary view to the Shot Tower from Brunswick Street and Alexandra Parade intersection (north-east corner of the central median).
5. Retain the visual prominence of local landmarks at the Fox Hotel (351 Wellington Street, Collingwood).
6. Ensure new development on corner sites is designed in the round and 'turns the corner' to address all street frontages.
7. Encourage development that is made up of parts on large sites.
8. Ensure new development maintains solar access at the Spring Equinox (September 22) to:
   - Ensure new development minimises overshadowing of the Alexandra Parade central median at 12pm.
   - The western footpaths (3m from property boundary) at 10 am and eastern footpaths (3m from property boundary) at 2 pm.
9. Ensure new development complements the precinct heritage features (grain and rhythm).
10. Ensure new development avoids the presentation of overly stepped or 'wedding-cake' presentation.



Blanche Street: cross section FF



Alexandra Parade: cross section GG

PRECINCT 3: ALEXANDRA PARADE EAST

This precinct comprises lots in Commercial (C2Z) and Residential Zone (GRZ3) with a primary frontage to Alexandra Parade (north side) between Gold Street and Hoddle Street, forming the western boundary of the precinct.

Preferred precinct character statement

Incremental to moderate change is expected to occur across Precinct 3, consistent with its existing residential zoning regime. Moderate change is anticipated towards the Hoddle Street intersection, on commercial sites with frontage to the freeway reservation.

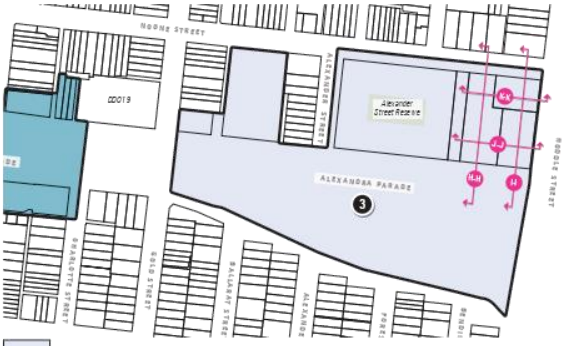
Future development will be shaped by retaining primary views to the Shot Tower and retaining its visual prominence in the local setting. Sites with development capacity will respond sensitively to the Murray Co. Wool Works building (local landmark) at the Hoddle Street corner, while managing a transition to surrounding heritage neighbourhood to the north and west.

Built Form Objectives

In addition to objectives found in the City of Yarra DDO2:

- To enhance the role of the boulevard by protecting its sense of openness.
- To support incremental and moderate change that respects the heritage and the streetscape character.
- To protect primary views to the Shot Tower.
- To retain visual prominence of the Municipal and local landmarks.
- To retain heritage frontages.
- To minimise overshadowing impact on footpaths and the public realm.
- To ensure a visually more prominent street wall.
- To support the permeability of pedestrian access and visual breaks of large urban blocks in the precinct.
- To ensure a suitable transition along its residential interfaces to the north.

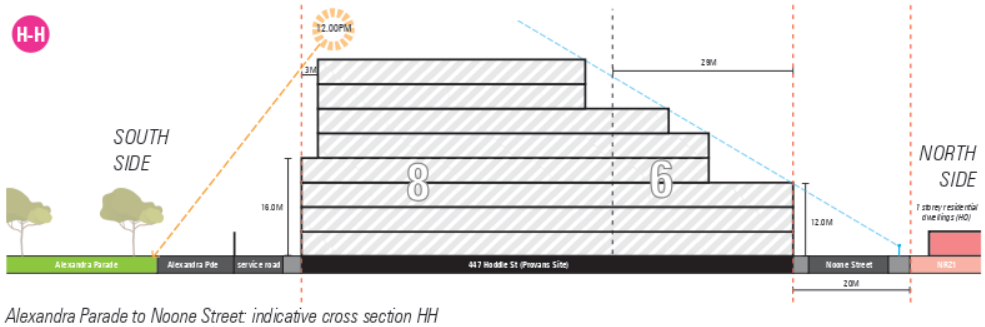
Existing conditions along Noone Street within Precinct 3



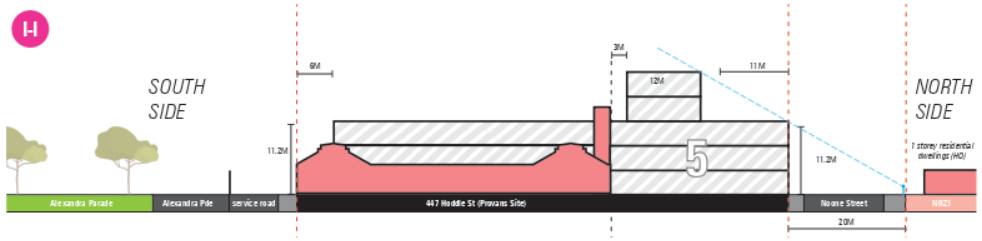
Precinct 3 Extent

Guidelines

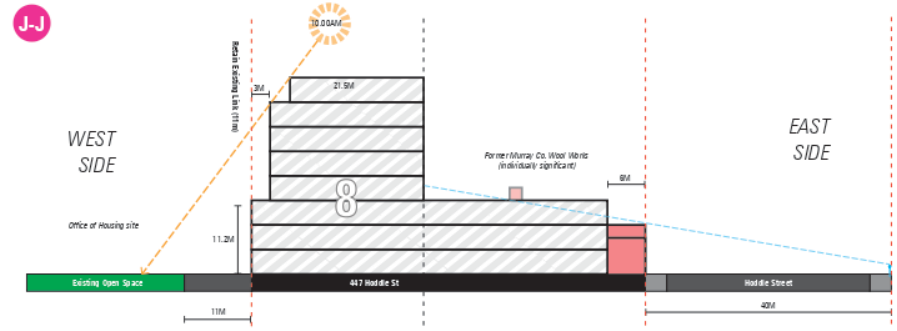
1. Ensure new development continues to support a predominantly low rise perimeter block form.
2. Recessive upper levels are to be presented as a distinctive element behind the street wall.
3. Ensure retention of the Shot Tower and its curtilages (6m from the base of the Shot Tower).
4. Protect primary views to the Shot Tower from Darling Gardens (Rotunda) and the Eastern Freeway (west of the Hoddle Street overpass).
5. Encourage retention of secondary and complementary views to the Shot Tower from:
   - Roseneath Street and Hoddle Street intersection (secondary view).
   - Gold Street and Queens Parade intersection (secondary view).
   - Alexandra Parade and Hoddle Street north-eastern intersection (complementary view).
6. Retain visual prominence of the local landmark at the former Murray Co. Wool Works (457 Hoddle Street) when viewed from the north eastern corner of Alexandra Parade and Hoddle Street.
7. Ensure new upper levels are designed to provide a 'neutral', or 'calm' backdrop to the heritage chimney at the former Murray Co. Wool Works site (457 Hoddle Street).
8. Ensure new infill street walls match the parapet height of adjoining heritage form.
9. Ensure new development on corner sites is designed in the round and 'turns the corner' to address all street frontages.
10. Encourage development that is made up of parts on large sites.
11. Encourage the retention of the existing mid-block laneway along the eastern boundary of the Office of Housing site (43 Noone Street) for pedestrian and visual permeability.
12. Ensure development fronting Noone Street is visually concealed above a 3-storey street wall when viewed from the northern footpath.
13. Ensure new development maintains solar access at the Spring Equinox (September 22) to:
    - Ensure new development minimises overshadowing of the Alexandra Parade central median at 12pm.
    - The western footpaths (3m from property boundary) at 10 am and eastern footpaths (3m from property boundary) at 2 pm.
    - Ensure new development minimise overshadowing of the existing open space at 43 Noone Street at 10am.
14. Ensure new development complements the precinct heritage features (grain and rhythm).
15. Ensure new development avoids the presentation of overly stepped or 'wedding-cake' profile.



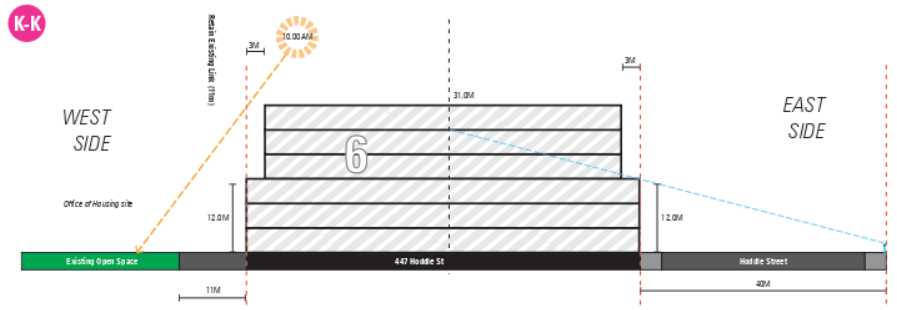
Alexandra Parade to Noone Street: indicative cross section HH



Alexandra Parade to Noone Street: indicative cross section II



Hoddle Street: indicative cross section JJ



Hoddle Street: indicative cross section KK

Contributory/individually significiant building

4.4 General Built Form Guidelines

Built Form Recommendations

A range of specific built form recommendations and design guidelines have been developed for all precincts.

These built form guidelines focus on the Alexandra Parade Precinct, where future development is anticipated and design guidance is required.

Visually distinct additions and upper levels

Given the heritage character of the precinct, new buildings or additions should be designed to have a visually distinctive architectural expression from the heritage element. This is in order to ensure that new form can be clearly 'read' and understood as a more recent component. It also encourages contemporary architectural responses which will contribute to the 'richness' and diversity of built form.

Lightweight materials, colours and finishes that contrast with the prevailing masonry forms are also encouraged to assist in the clear distinction between new and old, while also assist in visually recessing new forms.

Architectural Considerations

To street frontages, expansive blank walls should be avoided and where visible from within the public realm, any blank walls need to be visually divided into small elements through architectural treatments or artistic decoration to reduce visual mass.

Fenestration patterns and facade solid to void proportions need to reflect the prevailing streetscape rhythm and presentation.

New forms should 'fit' within the prevailing streetscape character. Avoid overly busy and complex architectural expressions.

New forms should also ensure exposed party walls to side boundaries are designed to be visually dynamic to minimise visual bulk.

Equitable Development

Facilitate equitable development outcomes by adopting:

- A minimum of 4.5m from the boundary where a habitable room window is proposed.
- A minimum for 4.5m from the edge of a proposed balcony or terrace.
- A minimum of 3m from the boundary where a non-habitable room window or commercial window is proposed.
- Where the common side boundary is a laneway, the setback is measured from the centre of the laneway.
- ResCode applies to sites in residential zoned land.

Active and Semi Frontages

In Activity Centres and Mixed Use areas, buildings must provide sufficient activation at street level to foster 'life' on the street and provide opportunities to maximise safety via passive surveillance. Along commercial street such as Smith Street, active ground frontages are encouraged.

Along other streets, semi-active frontages are more appropriate. As these 'less active' frontages still maintain an appropriate level of passive surveillance, while also providing more privacy and seclusion to the inside of the building, befitting the nature of the use as a dwelling or office.

Direct pedestrian entries into ground floor uses is encouraged, particular on larger sites, with broad frontages.

Upper levels also provide opportunities for 'eyes on the street' and contribute to passive surveillance of the public realm. Windows and balconies that orientate towards the street (rather than to side boundaries) are encouraged.

Public Open Space provision

Public open space is an important element within urban areas, as is its spatial provision. In inner urban areas such as Collingwood, Fitzroy and Clifton Hill the provision of public parks is important to the social health and well-being of a local community. The Office of Housing Site at 43 Noone Street comprises a small (privately owned) pocket park central to the site.

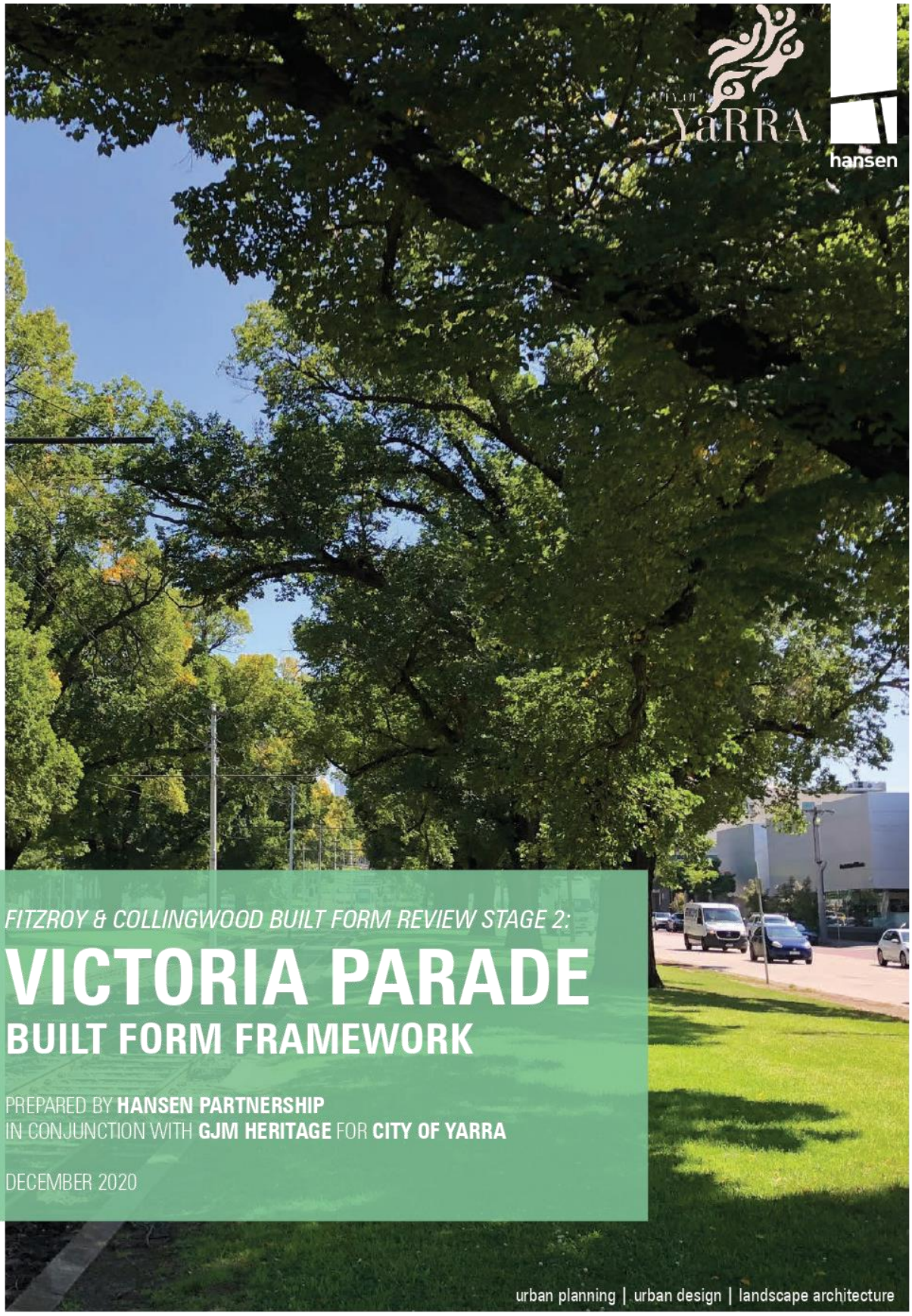
While there are no current plans for future pocket parks in the precinct, opportunity may exist when large sites are redeveloped, as well as along intersecting green streets where there are presently kerb outstands providing wider footpaths and landscape.

Services and Vehicle access

Ensure servicing and car parking is provided from secondary side streets or rear laneways.

The consolidation of services into basement levels is highly encouraged to mitigate extent of inactive, blank walls to the public realm.

Attachment 2 - Attachment 2 - Victoria Parade Built Form Framework



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The existing low-scale street wall framing the broad Boulevard of Victoria Parade.

Version	Final
Issue Date	December 2020

** Note: This Draft document is a part of a broader Built Form Review for the Brunswick Street and Smith Street Activity Centres : Built Form Review. It is a component of a broader body of work that sets out a future proposition for two of Yarra's key Activity Centre spines and their adjoining mixed use precincts.*

Preamble

The following urban design report has been prepared for the City of Yarra as the basis for an urban design vision for the Victoria Parade Precinct. It sets out a preferred built form framework underpinned by integrated urban design and heritage assessment.

The report has been prepared by a multidisciplinary team comprising Hansen Partnership (Urban Design) and GJM Heritage (Heritage) with the support of the City of Yarra's internal working group.

The study area is identified in Figure 1.

This report sets out the rationale for proposed built from controls for Victoria Parade and is underpinned by key components, namely:

Part 1: Victoria Parade - Context

Part 2: Victoria Parade - Influences

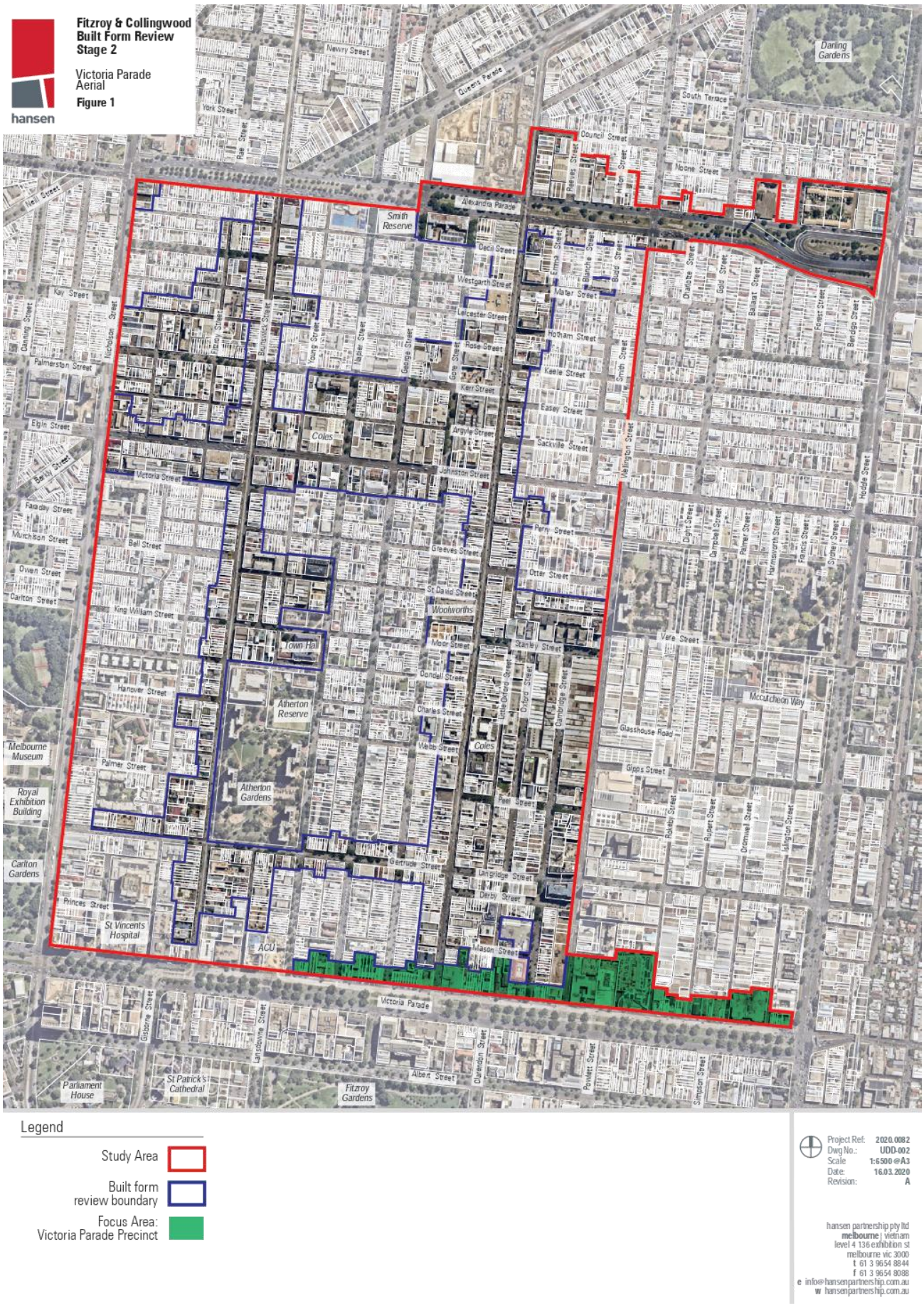
Part 3: Victoria Parade - Built Form Proposition

Part 4: Recommended Controls

The report is part of a broader Built Form Review.

Oblique View of the Victoria Parade Study Area and Surrounding Context

Attachment 2 - Attachment 2 - Victoria Parade Built Form Framework



PART 1: VICTORIA PARADE CONTEXT

The Brunswick Street and Smith Street Built Form Review is a broader urban design program to set a clear framework for future change within two of Yarra's key Activity Centres and their adjoining Mixed Use areas. Planning policy identifies such Activity Centres as areas for accommodating growth and change.

Therefore, these are the areas that must be carefully planned and managed in order to accommodate progressive change while protecting (or indeed enhancing) existing established character and heritage values.

Stage 1 of the project was initiated in May 2017 and encompasses large areas bound by Alexandra Parade (to the north), Victoria Parade (to the south), Wellington Street (to the east) and Nicholson Street (to the west).

Stage 1 of the project comprised the preparation of Built Form Frameworks for Gertrude, Brunswick and Smith Streets in 2019. The Johnston St Precinct and Fitzroy East Precinct reports were completed in June 2019 and a Collingwood Precinct report was prepared in June 2018.

As part of the the Stage 1 process, extensive analysis of the existing conditions was undertaken and documented within an overall Background report. This comprehensive analysis identified and divided the overall Review Area into ten 'place- specific' precincts. Furthermore, a series of guiding objectives were identified to be contemplated across ten defined precincts.

This report addresses the **Victoria Parade Precinct** (Figure 1 overleaf), forming part of the Stage 2 Built Form Review. A key consideration in the preparation of a Detailed Precinct Review for Victoria Parade relates to its highly mixed built form character including a mix of fine grain heritage forms and commercial and warehouse buildings occupying large non-heritage affected allotments. Two separate reports were also prepared for Fitzroy West 'Mixed Use Area' Precinct and the Alexandra Parade 'Boulevard' Precinct in 2020 (as part of Stage 2).

1.1 Overarching Built Form Objectives

The following 8 objectives have been identified for the Brunswick and Smith Streets Built Form Review:

Objectives:

1. Recognise and carefully manage potential in key areas within the Activity Centres.
2. Highlight the character distinctions between the different retail Streets and mixed use precincts within the Activity Centres.
3. Reinforce the traditional Victorian cityscape of heritage Streetscapes as dominant elements, including significant corner elements and identified local landmarks.
4. Ensure continued diversity through sensitive infill within traditional Victorian Streetscapes.
5. Shape the retail Streets and mixed use areas to ensure high quality, people-oriented public realm.
6. Ensure development encourages walking, cycling and public transport usages through layout and design responses.
7. Ensure new development is sustainable and adaptive over time.
8. Manage the built form profile of new development to avoid adverse impact to surrounding areas, including heritage places, Streetscapes and residential interfaces.

The central median of the Victoria Parade boulevard, a boundary between the City of Melbourne (south - left) and the City of Yarra (north - right)

10 Precincts

The 10 precincts within the Brunswick & Smith Street Built Form Review are:

Stage 1 (May 2017 to November 2019)

- Precinct 1: Brunswick Street (B);
- Precinct 2: Smith Street (S);
- Precinct 3: Gertrude Street (G);
- Precinct 4: Johnston Street (J);
- Precinct 6: Fitzroy East (FE);
- Precinct 7: Collingwood (C);
- Precinct 8: Town Hall (TH);

Stage 2 (Commenced February 2020)

- Precinct 5: Fitzroy West (FW);
- Precinct 9: Alexandra Parade (A); and
- Precinct 10: Victoria Parade (V).

This report addresses **Precinct 10: Victoria Parade.**

1.2 Built Form Precincts

Based on the initial analysis phase of the project the following Precincts were identified spatially as relatively coherent parts. The Precincts are largely defined by function as either:

- An Activity Spine;
- A Mixed Use Area; or
- A Boulevard.

Activity Spines

The Activity Spines are defined by the 'traditional' retail and commercial functions along the four main Streets within the review area of:

- Brunswick Street;
- Smith Street;
- Gertrude Street; and
- Johnston Street.

Mixed Use Areas

The Mixed Use Areas are defined by the mixed use functions present in the non-residential land located generally in local Streets, behind the Spines. The four renewal areas within the review area are:

- Fitzroy West;
- Fitzroy East;
- Collingwood; and
- Town Hall.

Boulevards

The Boulevards are the non-residential land to the northern and southern edges of the review area which front the broad road corridors of:

- Alexandra Parade; and
- Victoria Parade (this report).

Attachment 2 - Attachment 2 - Victoria Parade Built Form Framework

Figure 2

PART 2: PRECINCT INFLUENCES

As one of Yarra's main boulevards, Victoria Parade forms defining edges to some of Yarra's neighbourhoods (Fitzroy, Collingwood) including some of its premier Major Activity Centres along Smith and Brunswick Streets. It is anchored by major north-south movement corridors including Hoddle Street to the east and Nicholson Street to the west. The study area itself terminates at the intersection of Victoria Parade and Napier Street.

Victoria Parade is not a designated activity centre in the Yarra Planning Scheme. However, it is well serviced by public transport and nearby health, education and community infrastructure bounding the Precinct to the west.

The extent of the Victoria Parade Precinct is set out in Figure 2 and described below.

Boundary Description

This precinct comprises land subject to the Commercial 1 Zone (C1Z) on the northern side of Victoria Parade between Napier Street in the west and Hoddle Street in the east, except for one C2Z property between Rupert and Cromwell streets and one MUZ property to the rear of Victoria Parade.

The Precinct predominantly comprises properties fronting Victoria Parade, with a key anomaly of the Collingwood English Language School, extending the precinct boundary across Mason Street, extending north along Cambridge Street to the end of the PUZ3 boundary with the Mixed Use Zone (MUZ) beyond.

The extent of the Victoria Parade Precinct is set out in Figure 2.

Built Form Character

Victoria Parade is a diverse precinct from a built form perspective. However, the grand boulevard presentation of the streetscape comprising a broad central median and established street trees create a strong, unifying public realm condition. The Precinct forms the southern boundary of the broader study area between Napier Street to the west and Hoddle Street to the east. The study investigates properties on the northern side of Victoria Parade that are intercepted by a number of north-south streetscapes including George, Gore, Smith, Cambridge, Rokeby, Rupert, Cromwell, Islington and Wellington Streets.

These north-south streets represent a diverse road network comprising a mix of narrow one-way and broad, tree-lined streets. Lining them and Victoria Parade are a range of building typologies on a varied subdivision pattern, speaking to the ad-hoc nature of development occurring in this part of Collingwood since the mid-19th century. This varied subdivision is generally finer grained toward the western extent at Napier Street, hosting rows of traditional Victorian terraces.

The consistent, fine grain subdivision generally erodes to the east of Wellington Street into larger allotments comprising both ageing and contemporary warehouse forms. However, segments of Victoria Parade are also interspersed with clusters of the fine grain terrace buildings. Recent development within the study area is generally limited to refurbishments, extensions to heritage terraces and commercial tenancies occupying large landholdings toward Hoddle Street. These generally comprise a mix of commercial typologies including contemporary large format showroom buildings and big-box retailers such as Bunnings. Despite a mixed urban form and wide corridor, Victoria Parade generally has a low street edge (within the study area) that can be observed when traversing to the east.

The Baden Powell Hotel (local landmark) and adjoining fine-grain terraces fronting Victoria Parade

2.1 Foundations

Setting a vision for the Victoria Parade Precinct must be underpinned by an understanding of the diverse physical conditions, including the fabric of existing and approved developments, pattern of heritage forms, critical views as well as other relevant considerations which form the 'foundations' of a future built form framework and development recommendations. This is illustrated in Figure 3 and can be described as follows:

Heritage

All properties between Napier and Wellington Streets are subject to Heritage Overlay (HO344 South Fitzroy Precinct), comprising a mix of individually significant and contributory intact buildings from the Victorian and Edwardian-era. The heritage building stock on these blocks fronting Victoria Parade predominantly includes fine-grain dwellings with some cases of commercial and small warehouse forms. A VHR listed Edwardian-era terrace building is located at 203 Victoria Parade. The single non-heritage site is a large land holding on the western corner of Smith Street currently occupied by a low commercial form (McDonald's site at 1-13 Victoria Parade). HO334 (Victoria Parade Precinct) between Smith and Wellington Streets includes the Former St. Saviours Church and Collingwood English Language School.

East of Wellington Street, only 4 properties subject to Heritage Overlay. These are HO138 (Prince Patrick Hotel and Shops) and HO139 (Former Ebenezer Particular Baptist Church), both identified as 'local landmarks.' These properties both occupy corner locations, bookending otherwise more contemporary medium and large format commercial and warehouse forms. While not under Heritage Overlay, the eastern boundary of the Precinct is formed by a row of single and double storey traditional 'shop' buildings between Islington and Hoddle Streets.

Local Landmarks

Like many main roads and boulevards, Victoria Parade comprises a number of local landmarks which act as wayfinding elements along the length of the Boulevard. These more distinct and noticeable buildings display articulated corners which punctuate the streetscape with distinguishing architectural features. Along Victoria Parade, 4 of these 'local landmarks' buildings have been identified in collaboration with GJM Heritage. These local landmarks are identified as:

- Baden Powell Hotel (61-65 Victoria Parade);
- former John Franklin Hotel (75-77 Victoria Parade);
- Prince Patrick Hotel & Shops (135-141 Victoria Parade); and
- former Ebenezer Baptist Church (139 Victoria Parade).

The VHR 'Henkell Brothers' terrace at 203 Victoria Parade

Collingwood English Language School

Former Ebenerzer Particular Baptist Church (Ruper Street corner)

The Prince Patrick Hotel & Shops

Fine-grain heritage

Clustered rows of continuous, attached, 1-2 storey Victorian dwellings and shops are a defining character of the precinct west of Wellington Street, occasionally interrupted by larger footprint commercial and warehouse forms. The traditional forms vary in architectural style, detail and finishes, but represent the traditional residential and shop buildings typical of the Collingwood residential and commercial spines. Examples of consistent edges of fine-grain heritage buildings are found on the urban block between Smith and Cambridge Streets and between George and Gore Streets. Traditional residential forms are distinguished from shop buildings by upper level balconies and either garden setbacks or narrow colonade setbacks inset from the street boundary.

A row of fine grain terraces between Napier and George Street

Non-contributory sites

There are several non-contributory, broad frontage sites across the precinct. These sites are typically located on corners between clustered rows of heritage fine-grain buildings. The urban block between Gore and Smith Street almost completely comprises non-contributory buildings fronting Victoria Parade, except for the individually significant and Victorian Heritage Registered 2-storey terrace at 203 Victoria Parade.

Commercial warehouse extending between Cromwell and Islington Streets

Warehouses & Commercial Stores

Unlike the majority of other precincts in the broader study area, heritage warehouses are not a defining feature of the building stock within the Victoria Parade precinct. Complementing and bookending clusters and rows of terraces and larger non-heritage commercial buildings. More contemporary commercial warehouse forms can be found east of Wellington Street, such as the Porsche dealership and Bunnings Warehouse – recently converted from a commercial office building. These typically comprise a 2-3 storey scale, wide extents of opaque glazing and a departure from the traditional architectural style of the Precinct surrounds.

Example of a contemporary commercial form east of Wellington Street

Recent development trends

Urban blocks west of Wellington Street has experienced limited levels of change in the form of medium density housing such as a 6-storey residential development set behind a traditional 2-storey street wall (33 Victoria Parade, Collingwood). There are approvals for 3 different 3-storey proposals within the study area, generally 'pop-ups' above traditional building stock. East of Wellington Street, development in recent years has predominantly comprised large format commercial buildings such as Bunnings Warehouse. The edges of the precinct have undergone greater degrees of change including a 12-storey building under construction at ACU on the western corner of Napier Street (beyond the study area boundary), as well at 1-35 Wellington Street upwards of 11 storeys - maintaining the existing corner heritage building fronting Victoria Parade, within the study area. Significant development has also occurred opposite Victoria Parade (outside the study area) within the City of Melbourne, upwards of 14-storeys.

Example of a contemporary development behind the traditional street wall

Varied allotment configurations

The study area comprises a significant variance of allotment sizes, frontage widths and depths contributing to the diverse character of the precinct. As described in the Statement of Significance for the South Fitzroy Heritage Precinct (HO344) *"the lack of controls on the size and orientation of subdivision allotments and the width of roads, together with a general lack of cooperation or coordination between landowners, led to the emergence of an ad-hoc street pattern and layout of allotments…"*

While this variance is clear in the Victoria Parade Precinct, fine-grain allotments are rarely found in isolation and are typically grouped together. Singular medium and large allotments are more commonly anomalous within an urban block and streetscape, than fine-grain lots. The depth of allotments is generally influenced by the availability of rear access which tends to both extend or shorten the rear boundary of allotments as they historically sought interface and access to laneways.

Rear interfaces

Unlike other precincts within the Built Form Review, allotments in the study area do not have a consistent rear laneway condition. Given the varied allotment configurations, land use pattern and street network pattern, rear interfaces within the study area comprise a mix of laneway and direct abuttal conditions to both residential and commercial allotments. There are also instances of lots along Victoria Parade between Smith and Wellington Streets with a rear interface to the Mixed Use Zone. East of Wellington Street, the study area boundary is formed by Commercial 2 Zoned lot, generally without laneways. A number of these allotments within and outside the study area have internal private service access lanes along the study area interface. This varied pattern of interfaces (along with other factors) will continue to guide a varied built form response throughout the precinct.

Street width

The study area comprises a clear hierarchy of street widths, contributing to a structured experience and streetscape character. The widest street is the boulevard typology of Victoria Parade, which generally widens from 70m at the western extent of the study area, to 75m toward the east near Hoddle Street.

Between and including Napier and Wellington Streets, the north-south streets are consistently 20m wide, but are distinguishable due to streetscape attributes and the type of activity they draw. Some streets, such as George Street have limited entry/exit access from Victoria Parade during peak hour traffic times. Streets east of Wellington Street are all 10m wide, representing the narrowest streets in the hierarchy, accommodating one-way traffic movement and on-street parking. The study area also has an interface with Hoddle Street, a 45m wide arterial road. Pedestrian connectivity across the parade is limited to key intersections at Smith, Clarendon, Wellington and Hoddle Streets.

Example of a rear interface between commercial allotments

Laneway interface between NRZ and C1Z allotments

20m wide, one-way streets west of Wellington Street (Gore Street pictured)

10m wide, one-way streets east of Wellington Street (Islington Street pictured)

Boulevard & Green Streets

The boulevard profile is generally symmetrical across its entire length with carriageway widths varying to include turning lanes at key junctions. The grassed area south of the tram corridor is generally wider than that of the northern grassed area. Frequent canopy trees are evenly distributed along both sides of the grassed median across the extent of the study area. Some segments of the median contain paved footpaths, without any west of Smith Street.

Along with Victoria Parade, the 20m wide Napier, George and Gore Streets comprise significant mature canopy vegetation (deciduous Plane Trees) within the road reserve, enclosing the streetscape. Other streets within the precinct typically have limited street trees and vegetation. Wellington Street footpaths are lined with street trees to a degree, but without the same density and maturity as seen in the north-south streets further east. These green streets contribute to the 19th Century character complementing fine-grain traditional building stock. North-south pedestrian cycle connections across Victoria Parade are available at key junctions including Smith, Clarendon Wellington and Powlett Streets. Dedicated and protected bike lanes are available along Smith Street (south of Gertrude Street) and Wellington Street respectively.

Key Junctions

Key junctions in the Precinct occur at the Smith Street and Wellington Street intersections, which are considered prominent junctions serving as important wayfinding elements, contributing to the clear division in character along the Parade. These key junctions also accommodate movement corridors including key bicycle routes. These are important connections in navigating modes of transport across the Parade that experiences high volumes of east-west traffic. Hoddle Street is a major intersection at the eastern edge of the study area and a key entrance to the Victoria Street MAC. The junction accommodates tram and vehicle movements with limited pedestrian and cyclist amenity.

Open Space

There is a lack of notable public open space within the precinct, however the significant Fitzroy Gardens and smaller scaled Powlett Reserve are located 200m south of Victoria Parade along the southern edge of Albert Street (City of Melbourne).

Topography

The landform along Victoria Parade falls gradually from west to east, with a noticeable slope occurring between Smith and Wellington Streets. Some of the larger and particularly wider sites along Victoria Parade comprise sections of raised ground floors as broad building floorplate fail to respond to the change in natural ground level at the street frontage. The landform towards Hoddle Street flattens.

Interlinking canopy vegetation of George Street

The central median of the Victoria Parade boulevard accommodating tram lines

Hoddle Street intersection looking toward Victoria Street

The eastern fall of topography along Victoria Parade east of Smith Street

Adjoining built form precincts

The eastern portion of the Victoria Parade Precinct adjoins two other precincts of the broader study area. These are the Smith Street Activity Spine and the Collingwood Mixed Use Precinct. The Smith Street corridor represents a Major Activity Centre within the City of Yarra comprising continuous segments of intact heritage retail streetscapes. The southern end of the precinct is subject to a request for an interimm DDO37 proposing a built form response upwards of 24m in building height.

The Collingwood Mixed Use Precinct continues to undergo considerable urban renewal, guided by the interim DDO23. This includes development sites immediately abutting the Victoria Parade study area including at 1-35 Wellington Street within the adjoining Mixed Use Zone. Further west of the Precinct along Victoria Parade is the southern termination of the Brunswick Street Activity Spine which like the Smith Street Activity Spine, intersects the Gertrude Street Activity Spine. Further east beyond Hoddle Street is the Victoria Street Activity Centre, having recently undergone a Planning Scheme Amendment introducing updated built form controls under the interim DDO22.

Hinterland influences

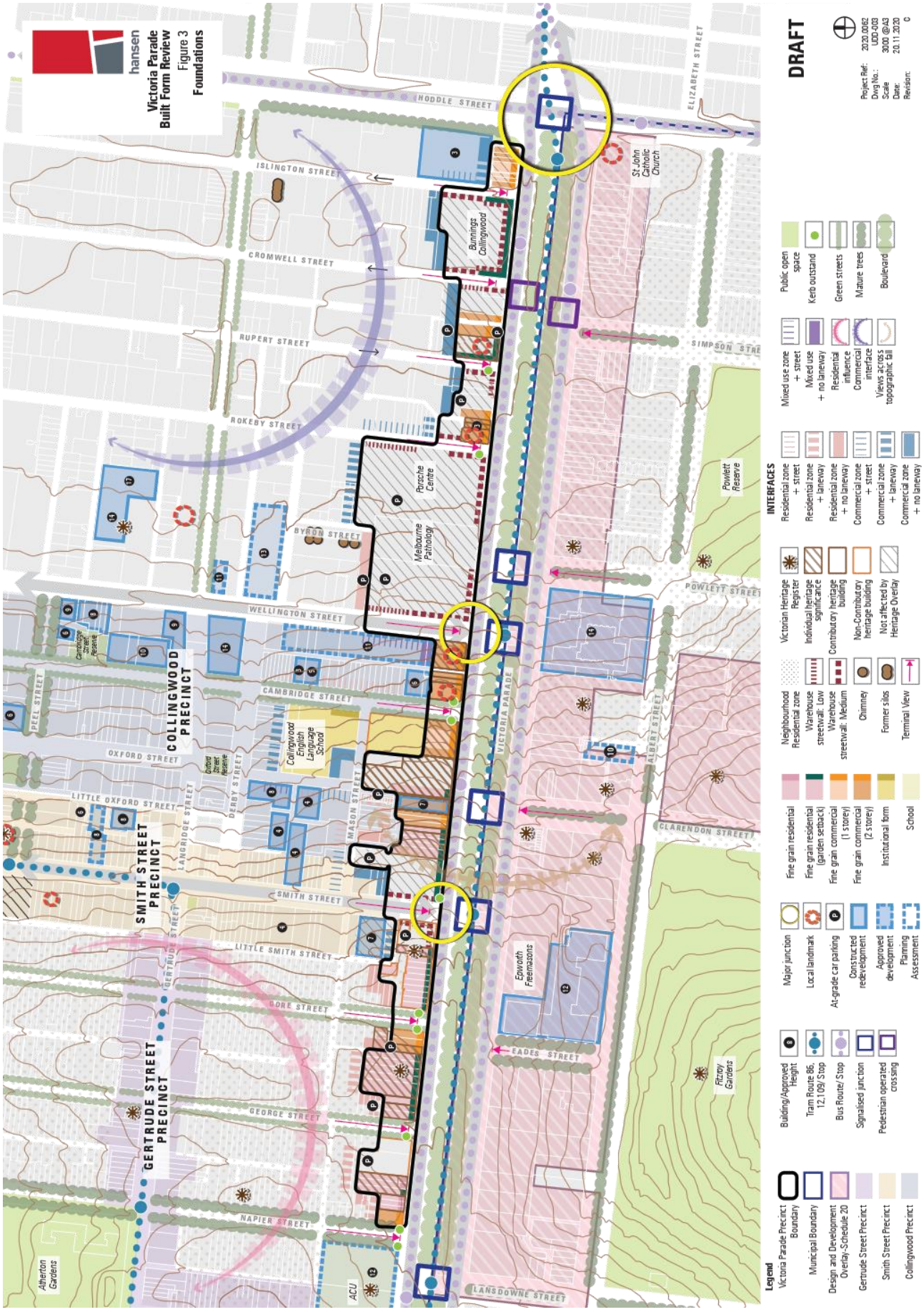
The built form pattern along the Victoria Parade corridor is strongly influenced by the nature of the streets and inboard land use of the surrounding hinterland areas. Along the northern side of Victoria Parade are three different hinterland precincts. These areas are divided by Smith and Wellington Streets, with land to the west of Smith Street comprising the residential Streets of Fitzroy. Land between Smith and Wellington Streets comprises a mixed use pocket at the southern extent of the 'Collingwood Slope'. To the east of Wellington Street the hinterland reflects its industrial past and presently comprises a diverse mix of warehouse and commercial forms.

Land undergoing development in the adjoining Collingwood Mixed Use Precinct

The historic industrial hinterland influence east of Smith Street

The historic residential hinterland influence west of Smith Street

Attachment 2 - Attachment 2 - Victoria Parade Built Form Framework



2.2 Victoria Parade Precinct Built Form Framework

In response to foundation matters, a Built Form Framework has been advanced to reinforce locations for varying levels of change within the study area. A Framework is not definitive (like a Built Form Control Plan), instead it seeks to identify critical 'gestures' of the City. In this instance, the framework recognises the importance of the following attributes- Refer to Figure 4:

Capacity

The urban blocks east of Wellington Street predominantly lack heritage fabric and consistency. They are also distinguished from the blocks west, to the broader and deeper nature of lots (occupying large portions or entire urban blocks) land use patterns and building typologies; currently comprising showroom and large format retail and commercial buildings.

Future urban forms on these capacity blocks should reference the established and finer grained character west of Wellington Street, ensuring new development is pedestrian scaled at lower levels and are made up of 'parts' as to not be intepreted as large, single masses. This will contribute to unifying the streetscape character along Victoria Parade helping to re-emphasise the boulevard.

Varied Streetscape Profile

Western urban blocks between Napier Street and Wellington Street have a more varied streetscape profile. While there are segments in the streetscape baring a more ordered resemblance, these segments are generally broken by larger and deeper non-contributory sites, particularly at corners, such as at the Smith Street junction. The streetscape profile of continuous rows of attached contributory and individually significant buildings between Wellington Street and Smith Street are varied in streetscape profile due to varied uses and subdivision pattern.

Future built form should reference the 'varied' condition and adopt a more customised response while acknowledging the sensitivity of its residential interface to the rear. Continuation of street wall definition along Victoria Parade should also be contemplated, as the current experience traversing through the corridor gives a relatively consistent low street edge condition (albeit slightly raised where the topography falls towards the east). This impression should generally be retained in future development.

Boulevard Address

Victoria Parade defines a key traditional approach between the north-east corner of the Hoddle Grid and the main north-south movement corridor of Hoddle Street to the east. It also defines the municipal boundary between the City of Yarra and the City of Melbourne. Its broad central median is lined to mature canopy planting and comprises a central tram line provision within an otherwise spacious grassed verge. Solar access to the central median will maintain ensure long term viability of the canopy planting, retain attractive presentation into Melbourne's CBD and maintain pedestrian amenity along footpaths and at tram stops. Future development should continue to ensure solar access to the central median is protected.

The transition to larger allotments east of Wellington Street

Large Smith Street junction allotments bookending finer-grain rows

Corner hotels, set back residential terraces and shop buildings contributing to the varied streetscape profile

The Victoria Parade boulevard environs

Varied Subdivision Pattern

The rhythm of block sizes is highly varied throughout the Precinct due to ranging lot widths and depths, warranting a varied response. West of Wellington Street, rows of fine grain allotments are bookended by larger corner lots. When compared to blocks further east, these allotments are significantly shallower with many immediately abutting residential and mixed-use allotments to their rear (north). In contrast, significant infill can occur at the eastern end of the Boulevard in response to deeper and larger lot sizes, generally not constrained by sensitive residential abuttals.

Large allotments east of Wellington Street present a contrast to finer grain urban blocks west, and will need to have regard to improving visual and physical permeability through upper level separation, or ground level linkages that line up with perpendicular laneways and streets. This is key to ensuring a pedestrian friendly environment is achieved and in breaking up potential built form mass.

Key Junctions

Future built form can contribute to junction definition, to assist in wayfinding and sense of place. The 'boulevard' condition already exhibits a strong sense of place. However, where the parade intersects with other 'main streets' at Smith, Wellington and Hoddle Streets, future forms should be shaped to retain primacy of the boulevard condition. Pedestrian amenity (solar, sense of enclosure and ground level activation) should be prioritised at these key corners given the increased footfall associated with commercial activities. A number of secondary, T-junctions occur at the termination of several streets at the parade, resulting in terminal views to and from the boulevard. The built form environs framing these views should be considered to ensure the boulevard character visually projects into side streets.

Key Pedestrian Connections

Smith, Wellington and Napier Streets are important perpendicular streets with designated sustainable transport routes between Collingwood and Clifton Hill. At the Victoria Parade junctions, these north-south links are provided with signalised pedestrian and cycle crossings. Where increased pedestrian footfall can be expected, street level activation and long term amenity to public realm (solar access, wind effect, pedestrian scale consideration) along these streets should be prioritised.

East of Wellington Street, properties are within a 500m walk of North Richmond station. Therefore, streets in this range are also likely to expect increased pedestrian footfall.

An increase in pedestrian permeability can be contemplated via the continuation of Byron Street in future redevelopment of the urban block between Wellington and Rokeby Streets.

The triple fronted Bunnings allotment as viewed along Islington Street

An anamalous allotment boasting mulitple street frontages

Southwest corner of the Wellington Street junction undergoing change

Wellington Street provides bicycle connection to the northern Alexandra Parade

Green Streets

The Precinct is punctuated by the north-south 'green streets' of Napier, George and Gore Streets, all comprising 20m road reserves and are defined by the large established canopy trees. These streets are primarily residential and their junctions comprise higher amenity thresholds, through the provision of kerb extensions and public 'pause places' for traffic calmning and ease of pedestrian movement. It is imperative that future development continues to support high amenity environments for pedestrian movement, including the protection of solar access.

Slope

There is a gradual slope from west to east along Victoria Parade, noticeably falling beyond the Smith Street junction. Larger sites with broad frontages should respond to the natural fall in the land, stepping future buildings and their ground floors to enable active and engaging street level conditions, avoiding the presentation of blank walls at ground level.

Heritage Values

The western urban blocks between Napier and Wellington Streets have considerable heritage value with a significant number of allotments graded contributory or individually significant. This includes two Victorian Heritage Registered buildings, both mid-block between George and Smith Streets. Other assets include corner pub buildings and rows of Victorian terraces. Adjoining these blocks are perpendicular residential streets (within the NRZ). They are typified by low rise, fine grain heritage buildings. There is limited opportunity for a significant change along these residential streetscapes. Future development along Victoria Parade will have to consider its implication on this interface. A key anomaly to the western heritage fabric is the Smith Street junction, where both corner allotments have no heritage value.

Blocks east of Wellington Street extending to Hoddle Street present a stark contrast, with only four properties under Heritage Overlay, including the Former Ebenezer Particular Baptist Church. These blocks represent a clear departure from the fine grain traditional fabric to the west, typified by larger and deeper allotments occupied by more contemporary commercial forms.

Transition to the rear (north)

To the north, behind the Victoria Parade spine is a distinct pattern of primarily moderate grain commercial properties to the east of Wellington Street and fine grain residential properties to the west of Smith Street. The central section (between Smith Street and Wellington Street) comprises a varied condition and a gradual transition between the two clear hinterland conditions. All properties within the precinct front onto the boulevard as their primary address, with northern boundaries forming their rear interfaces. Site's abutting the more sensitive residential properties will need to respect the low-scale character and amenity conditions from abutting backyards. Sites abutting commercial properties will be less constrained, however building separation and equitable development considerations are relevant.

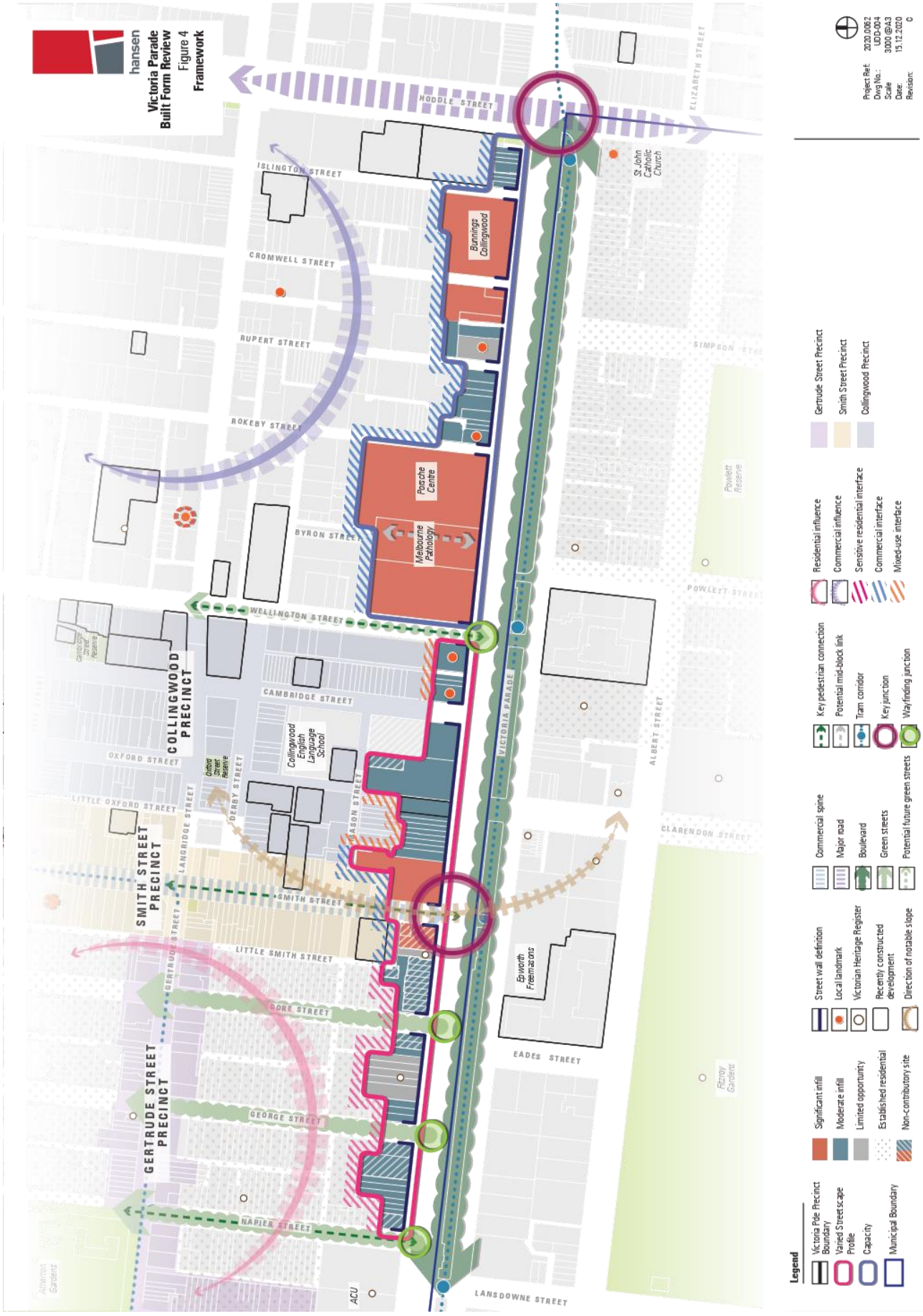
Example of a Green Street carrying the boulevard setting further north

A row of attached terrace buildings west of Wellington Street

The VHR listed Henkell Brothers terrace adjoining a site with no heritage value

Perpendicular heritage streetscapes west of Wellington Street

Attachment 2 - Attachment 2 - Victoria Parade Built Form Framework



Future Character Statement

Given this 'Framework' for change, the following future character statement is recommended.

Victoria Parade will continue to be primarily influenced by its boulevard address, key to the image and address to the municipality.

Overall, future development will reinforce the Victoria Parade boulevard as the key eastern approach into the CBD, through greater street-edge consistency and demaracation of key junctions. The built form proposition will recognise important pedestrian movement between public transport, employment areas and Activity Centres in the broader precinct.

The western end of the precinct will comprise moderate infill development that respects the prominent heritage fabric and varied street wall conditions. Opportunity for a higher development scale to the east will be realised, while creating a consistent street edge that balances enclosure and openness at the street wall to achieve a pedestrian scaled environment. Uppermost levels of taller development east of Wellington Street will be shaped by the retention of the high-amenity boulevard setting.

Framework Principles

In response to this distinction in the precinct's urban fabric, the preferred future-built form character will seek to build on its key attributes to re-emphasise the grand boulevard setting by adopting the following principles:

1. Establish an urban form that is shaped by retaining the amenity of the open streetscape profile of Victoria Parade, central median and its established street trees to ensure a pedestrian scale in an emerging employment and Activity Centre context.
2. Respond to the eastern urban blocks with greater capacity for moderate change and demarcate the southern entrance into the Smith Street MAC.
3. Establish a consistent and strong street edge definition that provides a transition in street wall along Victoria Parade to lower, and heritage sensitive building fabric.
4. Respond to the predominant heritage fabric west of Smith Street with generally moderate infill and lower street walls.
5. Provide transition where urban blocks adjoin established residential edges to the north.
6. Respond to the scale and form of existing and approved development within the Precinct and at its edges.

PART 3: BUILT FORM PROPOSITION

The Built Form Proposition has been derived from the Built Form Framework which was informed by the Foundations Analysis and underpinned by the overall Background Analysis.

The Victoria Parade Precinct Built Form Proposition demonstrates block by block and street by street parameters for the precincts' evolution of new development. The identified parameters are neither fixed, or absolute but are intended to guide future change. The proposed proposition or 'controls' are represented in Figure 4 and are derived from the following basis:

- Heritage assessment and advice;
- Municipal Housing Strategy;
- Precinct character;
- Street proportions;
- Parade Presence;
- Solar access to the Public Realm;
- Local landmarks;
- Heritage Street walls and upper levels;
- Heritage frontage;
- New street walls and upper level setbacks;
- Upper level setbacks for non-contributory sites;
- Street corners;
- Transitions;
- Residential interfaces (including laneway);
- Non-Residential Interfaces (including laneway);
- Building separation, amenity and equitable development;
- Sites in Residential Zone; and
- Future Shared Streets.

The rationale for height parameters is outlined as follows:

3.1: Basis for Height Parameters

Heritage Input

GJM Heritage provided extensive heritage input based on comprehensive analysis comprising:

- The heritage grading of each property within the Heritage Overlays;
- The currency of existing Statements of Significance;
- Confirmation of places with Victorian Heritage Register nomination; and
- Recommended built form parameters to appropriately manage development within the heritage context.

Refer to Victoria Parade Heritage Analysis & Recommendations (GJM Heritage) for details.

Housing Strategy

With reference to the adopted Housing Strategy for the Municipality (adopted 2018), the Victoria Parade study area is mostly located within the Brunswick & Smith Street Major Activity Centre (MAC), west of Wellington Street. The study area is designated for moderate change, given its mixed lot sizes, proximity to activity centres with heritage significance and its excellent access to services, open space and public transport.

The Housing Strategy identifies future development to be in the form of mixed use, infill and shop-top apartment development on individual and consolidated lots that respond to existing heritage character of streetscapes.

Precinct Character

Key characteristics that distinguish the Victoria Parade Precinct are attributed to a grand boulevard presentation of the streetscape comprising a broad central median and established street trees create a strong, unifying public realm condition. Diversity in built form is attributed to a subdivision pattern that significantly varies west and east of Wellington Street, with rows of intact heritage fabric and a residential hinterland more common to the west, with mixed land use patterns and built form typologies and a commercial hinterland to the east.

Existing built form is generally low scale in street edge and overall height, with some more contemporary office buildings presenting higher at the street walls where the land falls away towards east beyond Wellington Street.

New development should seek to respond to the unique contextual characteristics and respond to unique sensitivities as required.

Street Proportions

Default preferred maximum building heights have been derived in relation to the adjoining street width. This has been based on considerable analysis and documentation of the existing relationships throughout the broader study area, which has shown there to be a strong correlation between the width, function and character of the street to the height and profile of the buildings which line it.

This study also recognises that street width relationship to the ovarall building height also has a strong correlation with the street's function and streetscape character.

However, in order to respond to the prevailing streetwall scale, set backs to upper levels are required. They are also determined by the size and depth of lots, noting need for rear boundary transition conditions.

In the context of Victoria Parade, future development will continue to respond to the street-based built form outcome, by adopting a street wall scale and upper levels setbacks influenced by retaining solar access to the public realm, a pedestrian scale and the influence of heritage fabric. They are also determined by the size and depth of lots, noting the need for rear boundary transition conditions west of Smith Street.

It acknowledges that the street width to building height ratio is not seen as a 'target'. Rather this consideration must also be complemented by the ability for future development to respond to its streetscape character and heritage setting

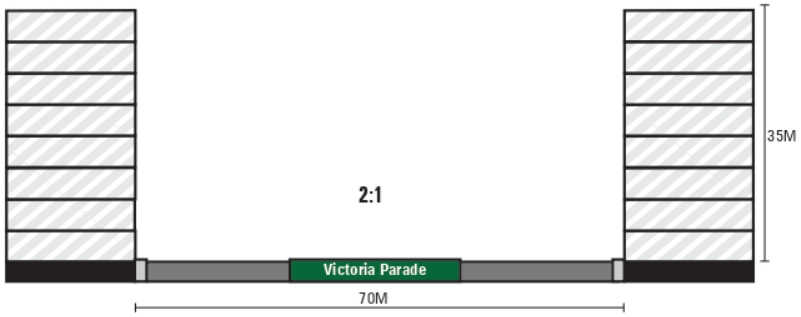
Parade Presence

Victoria Parade (70-75m) is distinctively characterised by its broad profile with a wide central median planting to incorporating avenue tree planting and a tram corridor in the central median.

Therefore, as a starting point, the preferred overall building height of new forms along these open streets will seek to balance the opportunity presented by the generous road proportion with retaining the sense of openness and relative consistency in the street edge conditions.

Importantly, it is also critical that future development continue to respond to its broader streescape character and heritage setting. The following is recommended:

- Up to 2:1 – Street width to overall building height ratio (main road corridors at key junction locations, large size lots).



A street width to building height ratio 2:1 for parade and transport corridor

Solar Access to the Public Realm

In inner urban areas such as Fitzroy and Collingwood, solar access to the public realm is an important consideration. Therefore, future urban form should protect solar access to key streets and open spaces appropriately to ensure 'life and attraction' at the street level for residents and visitors.

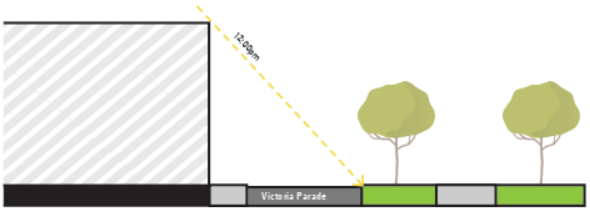
The Urban Design Guidelines for Victoria contains the following relevant Objectives and Guidelines:

'Objective 5.1.3 To ensure buildings in activity centres provide equitable access to daylight and sunlight', and

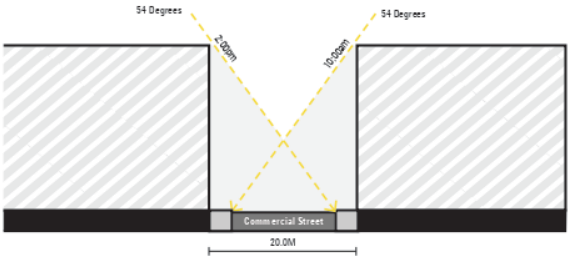
'5.1.3a Locate and arrange the building to allow daylight and winter sun access to key public spaces and key established street spaces.'

Within the Victoria Parade Precinct we recommend the following solar access measures to maintain appropriate solar access to the public realm, measured on 22 September (equinox):

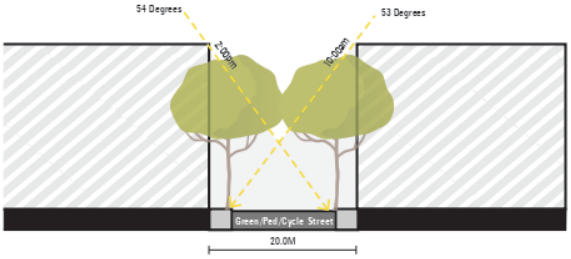
- Along **Victoria Parade** (Boulevard), avoid overshadowing of the northern edge of the central median at 12pm. This will ensure the viability of median vegetation in refinorcing the image of the boulevard and provide solar access to pedestrian nodes including tram stops, and footpaths.
- Along **Commercial Streets** (Smith Street): avoid additional overshadowing of the opposite western footpath from 10am; and the opposite eastern footpath at 2pm. Kerb-outstands at intersections should also be protected.
- Along **Green Streets** (George, Gore and Napier Streets) and **Key Pedestrian Priority/ Cycle Links** (Wellington Street): avoid additional overshadowing of the opposite western footpath from 10am; and the opposite eastern footpath at 2pm. Kerb-outstands at intersections should also be protected.
- Along **Other Streets within the Study Area** (Cambridge Street): avoid overshadowing of the opposite western footpath at 10am; and the opposite eastern footpath at 2pm.
- Along **Narrow Streets within the Study Area** (Rokeby, Rupert, Cromwell and Islington Streets) avoid additional overshadowing above the ground floor of buildings. On narrower streets, some overshadowing of footpaths is inevitable. It is determined that protection of solar access to first floor is acceptable in these locations.
- **Other streets (outside the study area):** avoid overshadowing of footpaths to opposite sides of the street between 10am to 2pm.



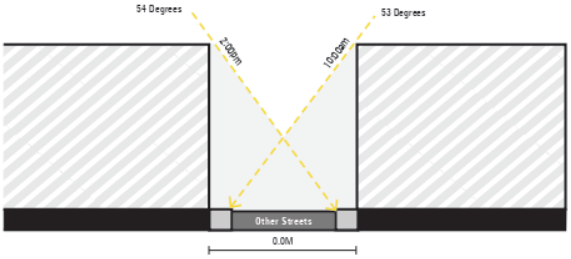
12pm exquinox solar angle along Victoria Parade



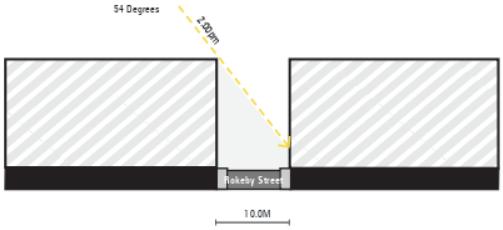
Exquinox solar angles along 20m wide Commercial Streets



Exquinox solar angles along Green Streets & Pedestrian Priority/Cycle Links



Exquinox solar angles along 20m wide 'Other Streets' (eg. Cambridge Street)



2pm exquinox solar angles along Narrow Streets (eg. Rokeby Street)

Local landmarks

A total of four local landmarks are identified in the Study Area, occupying corner sites. Prominent corner buildings are a heritage feature and a key characteristic of Fitzroy and Collingwood. Retaining views to and 'space' behind these prominent corner forms is important to ensure they remain visually prominent and 'hold' the corner. The following are identified as local landmarks in the study area:

- Baden Powell Hotel at 61-65 Victoria Parade, Collingwood (HO336);
- former John Franklin Hotel at 75-77 Victoria Parade, Collingwood (HO336);
- Prince Patrick Hotel and shops, 135-141 Victoria Parade Collingwood (HO138); and
- former Ebenzer Baptist Church at 139 Victoria Parade (HO139).

Baden Powell Hotel

former John Franklin Hotel

Heritage Street Walls and Upper Levels

Within the Victoria Parade study area, there is extensive heritage fabric which is to be retained and enhanced. The recommended upper level setback parameters for contributory or individually significant sites draw on the objectives and provisions of Clause 22.02, 22.10, Clause 22.14 and DDO2 (Main Roads & Boulevards) as well as hertiage advice from GJM Heritage.

A **default 6m measurement** (to the new built form and balcony line) is applied to all sites fronting Commercial Streets including Victoria Parade, Smith Street and Wellington Street. This is to ensure adequate protection of the primary heritage 'volume' and features (including chimneys, and exposed roof forms). The default upper level setback will also protect facade articulation in the streetscape elevation with spatial separation between the street wall frontage and recessive upper levels (behind).

Where opportunity for taller development exists behind the heritage volume, a default upper level setback of 6m will be required in addition to consideration of a sensitive architectural design treatment (massing, form and materiality) to ensure the new form does not visually compete with the heritage element.

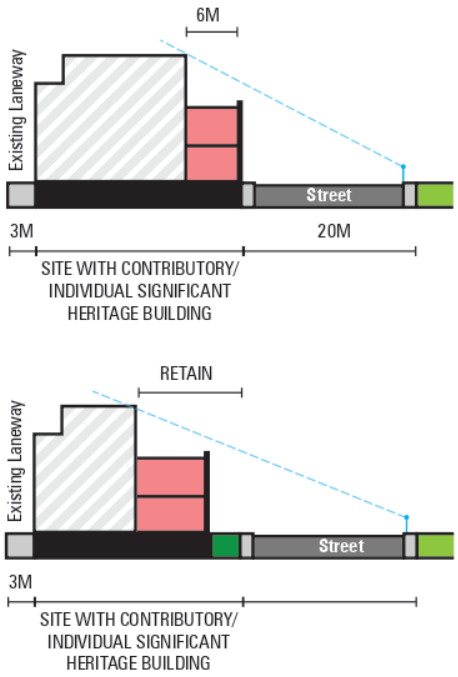
Heritage frontage

Based on an understanding of heritage advice including the distinct built form character to the west of Wellington Street, the following parameters guide the preferred built form response for heritage frontages in the study area:

- Heritage forms (both VHR and Non-VHR) should retain existing heritage frontages, including front setbacks. This is particularly relevant to Victoria Parade where existing heritage forms are setback from the street frontage for front gardens and terraces.
- Retention of all built fabric within sites with VHR designation (169-179 and 203 Victoria Parade). It also precludes new built form within the 'air right' above VHR buildings.
- If the extent of heritage fabric of a VHR site were to change or diminish a 'default' 4 storey maximum would apply to the site, as well as specific heritage guideance.
- Where new buildings are proposed within the side or rear setback of VHR sites, they are to be positioned behind existing structures, ensuring heritage frontages are not concealed by new forms from streetscape views.
- New built form to the rear of individually significant residential heritage forms, including single and two storey terraces should ensure upper levels are highly recessive in views.
- Retain existing heritage frontages, including street setbacks.

New street wall and upper levels

In urban areas, urban design guidelines typically seek to introduce a 'street wall' and 'upper level front setback' measure. The purpose for such a distinction and separation is to maintain the prominence of the 'traditional' frontages within the streetscape, while enabling new and increased heights in a recessive order. Upper level setbacks also retain a sense of openness to the street, which is prominent in a pedestrian's field of vision and reinforces the traditional street wall scale.



Preferred setback above and behind heritage frontage

Contributory/individually significant building
Existing landscape setback
Boulevard median

New street wall heights

Along Victoria Parade, heritage street walls vary in parapet height but in most cases comprise 2 storey terrace buildings. The only exception is the former church building on the eastern Rupert Street corner. To retain an orderly streetscape characteristic, any new street wall should match the adjoining heritage forms. On wider allotments with greater capacity for change, street walls should 'step' down to match adjoining heritage forms, but can accomodate higher street walls after a minimum 6m from the adjoining boundary.

Importantly, new street walls should not diminish the heritage qualities of the streetscape. Where a site is adjacent to a single storey heritage form, a street wall transition is considered appropriate in ensuring the traditional form is not overwhelmed by new development.

The following is recommended for Victoria Parade:

- A 'default' **street wall height of 3 storeys (11.2m)** is recommended for non-contributory sites in response to prevailing low rise forms (2-3 storeys) in residential zones unlikely to change significantly in the long terms such as George and Gore Streets. Along Rokeby, Rupert and Islington Streets, new street walls should reference the prevailing street wall heights of recent infill development at 3 storeys (11.2m).
- At the major junction of Smith Street and Victoria Parade a taller street wall height of 4 storeys (14.4m) is considered appropriate in demarcating a notable junction in the precinct, where future developments will contribute to wayfinding. However, to sensitively respond to abutting heritage properties a transition down to 3 storeys (11.2m) is recommended.
- For large sites to the east of Wellington Street which have capacity for change a more robust street wall height of 4 storeys (14.4m) is considered appropriate.
- On allotments with corners to narrow side streets (10m) it is expected that high street walls will step down before wrapping the corner where low-scale heritage street walls exist opposite.

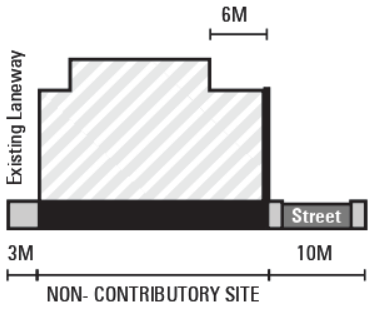
Upper level setbacks for non-contributory sites

The purpose of the upper level setback is to:

- Retain prominence of local landmarks.
- Provide a clear distinction between 'base' and 'top'.
- Create a degree of consistency for upper levels that comprises a mix of heritage and non-heritage forms.
- Ensure the new upper level does not visually overwhelm the streetscapes.
- Ensure no unreasonable overshadowing of the public realm (taller buildings may require upper level setback greater than 6m to meet the overshadowing requirement).

For these reason, **a 'default' 6m upper level setback** (from the facade to the new built form including balcony line) is applied to all non-contributory sites fronting:

- The northern side of **Victoria Parade** preserving a distinction between street wall and upper levels and minimising overshadowing of the central median;
- **Smith Street** for a visually dominant street wall and to achieve a degree of consistency with development on heritage sites;
- **Wellington Street** for a visually dominant street wall;
- **Napier, Gore and George Street** (Green Streets) to meet the overshadowing requirements and transition to residential precincts to the south of the study area.
- **Rokeby, Rupert, Cromwell and Islington Streets** for a visually dominant street wall.

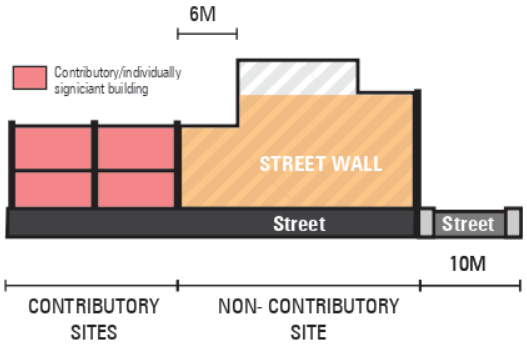


Preferred upper level setback above new street wall

Street Corners

The streetwall presentation along local streets needs to 'turn the corner' and transition appropriately. Fitzroy and Collingwood's local street network comprises both 20m and 10m wide streets with a high frequency of corner sites. In some instances, corner sites have direct abuttals to contributory heritage sites which are typically defined by 1-2 storey heritage street walls, or heritage frontage. A sensitive street wall transition is sought at these corner locations.

New development should return the taller street wall around the corner and into the perpendicular street and transition to respond to the abutting heritage parapet for a length of approximately 6m or to the nearest property boundary (if less than 6m).



Preferred street wall transition for corner sites

Upper Level Expression

The design of upper levels of new development should:

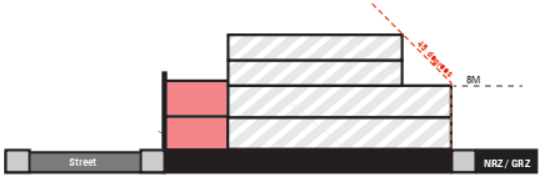
- Be well articulated and break up the building mass;
- Distinguish between the lower and upper levels through materials and articulation;
- Be designed so that side walls are articulated and read as part of the overall building design and not detract from the streetscape when viewed from direct and oblique views along the streetscape; and
- Provide passive surveillance of adjacent streets and public open space.
- Minimise visual bulk on large corner sites where taller urban form is anticipated.
- On large sites, new forms should be designed as a collection of parts to avoid the presentation of continuous and unbroken building mass.
- On forms greater than 10 storeys, the upper levels should be further set back in order to be visually recessive.

Transition

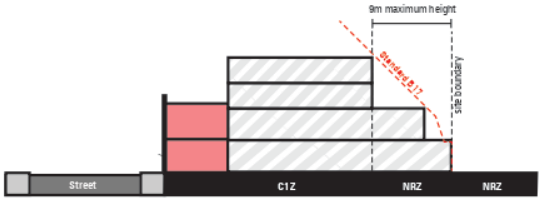
Gradual transitions in scale are an existing characteristic of the broader Fitzroy and Collingwood area. There are many examples of older commercial or warehouse forms side by side with fine grained dwellings. In this context a change in streetwall height of one storey is common within the streetscapes of the precinct.

The broader skyline is primarily dominated by mid-rise and high-rise forms on the southern side of the boulevard (City of Melbourne) and mid-rise forms associated with institutional and education facilities further east. There is limited evidence of recent construction along the northern side of Victoria Parade within the precinct, however across the road are recent constructions upwards of 14 storeys with street walls of 4-6 storeys.

Larger sites may be able to accommodate for gradual transitions through recessive upper levels and transition in scale in response to abutting heritage forms. In order to avoid undesirable 'wedding cake' forms, minimal 'steps' in built form massing is encouraged. Transitions in scale should, as a minimum, occur in paired levels.



Preferred built form transition to residential zone land (GRZ/NRZ)



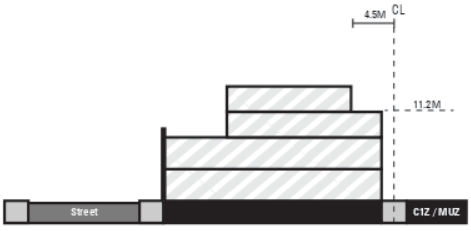
Preferred built form transition where NRZ is applied to rear of site

Contributory/individually signiciant building

Residential Interfaces (including laneway)

Most residential properties are generally located predominantly to the west of Smith Street to the rear of the precinct boundary, usually separated by a laneway, or street. There are limited instances where the study area has a direct abuttal to residential properties, which generally occurs where a side boundary within the study area abuts the rear boundary of an allotment in a perpendicular street (i.e. between Napier and George Streets). There are limited direct abuttals to private open spaces.

Along these residential interfaces (with, or without laneway separation), an 8m (2 storeys) form built to the boundary is required with a recessive upper-level setback (behind a 45-degree setback envelope) to ensure residential amenity is protected.



Preferred built form transition to MUZ or C1Z sites

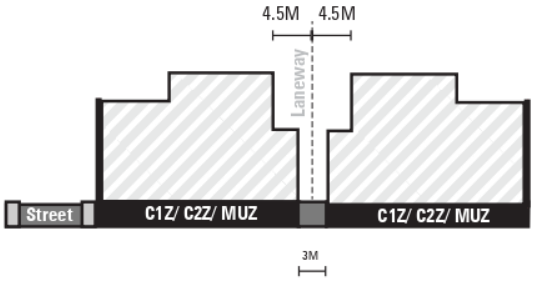
Non-Residential Interfaces (including laneway)

Built form should continue to respond to laneway interfaces with C1Z and C2Z land. Within the study area the existing laneways, their function, widths and arrangements vary. Future development should respond to these mixed conditions. Where new development is separated from adjoining non-residential sites by a laneway (typically 3m wide), it should present a maximum 11.2m (3 storeys) form at the interface, with any built form above set back 4.5m from the centreline of the laneway. This ensures a minimum distance of 9m is provided between adjoining sites to facilitate equitable development achieving adequate separation between dwellings.

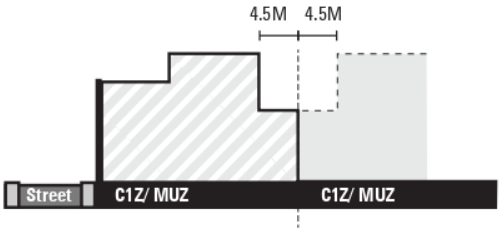
Building Separation, Amenity & Equitable Development

New development should provide a design response that considers the existing condition and future development opportunities of adjacent properties in terms of outlook, daylight and solar access to windows. Development should be setback from common boundaries to provide separation between buildings at the upper levels (above the street wall):

- A minimum of 4.5m from the boundary where a habitable room window is proposed;
- A minimum of 3m from the boundary where a non-habitable room window or commercial window is proposed; and
- A minimum for 4.5m from the edge of a proposed balcony or terrace.
- Where the common side boundary is a laneway, the setback is measured from the centre of the laneway
- Where the common side boundary is a laneway, the setback is measured from the centre of the laneway.



Preferred 4.5m setback of upper levels from centreline of laneway (minimum 3m wide)



Preferred 4.5m setback of upper levels from common boundary

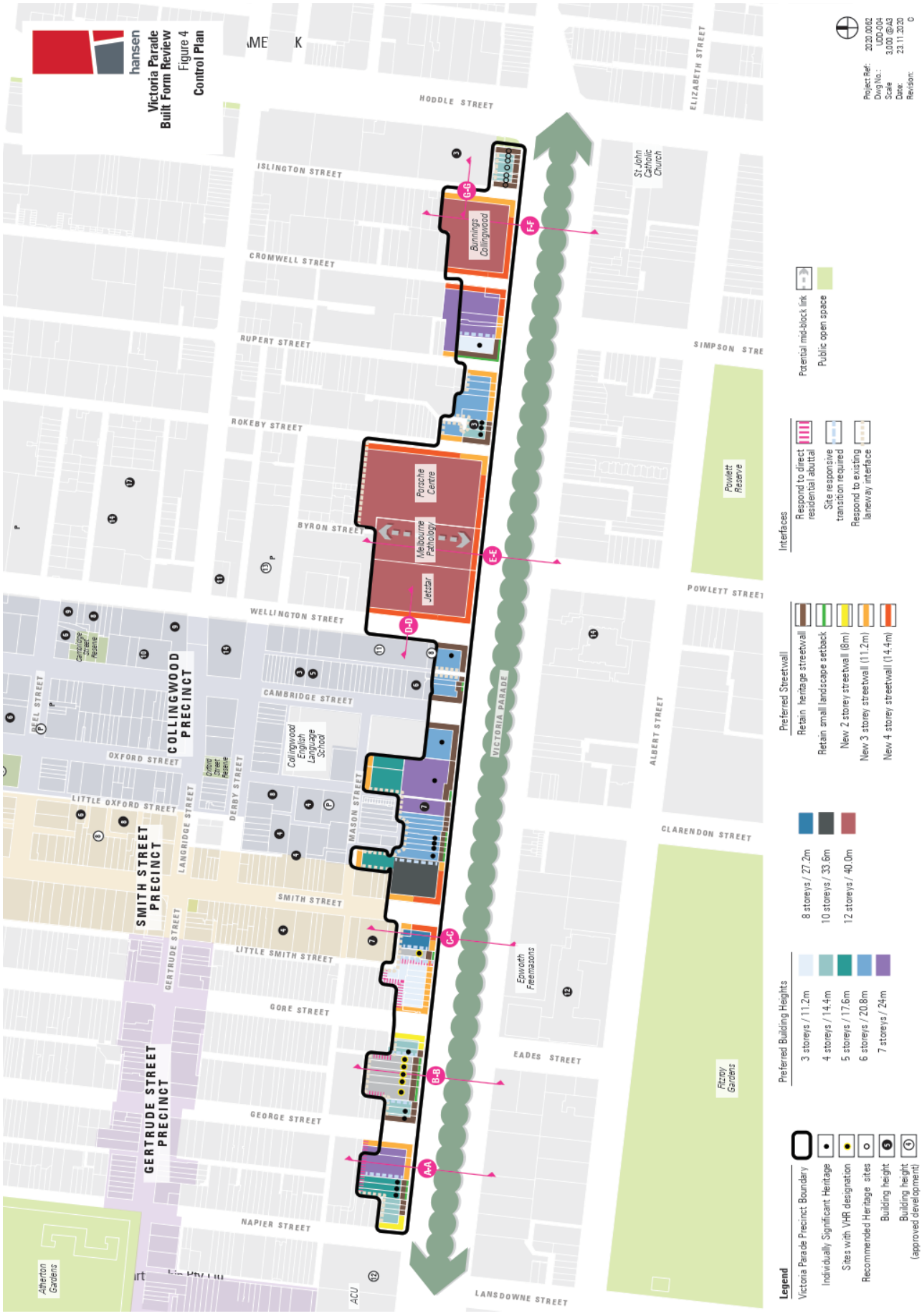
Sites in Residential Zone

Built form recommendations for sites in residential zones have adopted the mandatory maximum permissible height allowed by the zone. No key views to the local landmarks are affected by this built form parameter.

Future Shared Street

On large sites to the east of Wellington Street there is potential to create new shared street/s, in order to provide a more permeable pedestrain network and create stronger connections to the existing streets and laneways. In order to ensure an inviting and safe environment development abutting any future shared street, must maximise opportunities to provide for passive surveillance of the public realm and seek to appropriately address and activate the edges.

Attachment 2 - Attachment 2 - Victoria Parade Built Form Framework



PART 4: RECOMMENDED CONTROLS

4.1 Methodology

The formulation of future building heights and streetwall conditions within the Victoria Parade Precinct has been influenced by many factors, including:

- Planning Policy Framework;
- Local Planning Policy Framework, including Zones and Overlays;
- Practice Note No. 60 – Height and Setback Controls for Activity Centre;
- Practice Note No. 59 – The Role of Mandatory Provisions in Planning Schemes;
- City of Yarra Housing Strategy (Adopted 4 September 2018);
- Review & Development of the City of Yarra Landmarks Policy (March 2018);
- Urban Design Guidelines for Victoria, 2017;
- Anticipated scale and form of development outside the study area (i.e. within Residential and Employment Zones);
- Views to existing municipal and local landmarks from the public realm;
- Recognition of Yarra's heritage skyline;
- Recent development approvals (including those currently under-construction);
- 3D computer modelling of built form testing for the study area;
- Independent heritage advice and existing character considerations, consistent with the expert heritage advice provided by Council's heritage advisors (GJM Heritage);
- The overall Brunswick Street and Smith Street Built Form Review Background Report (November, 2019); and
- Extensive site inspections and workshops with Council's officers.
- Planning Panel Recommendations for:
  - Johnston Street Local Area Plan (C220);
  - Queens Parade Built Form Review (C223);
  - Swan Street Built Form Review (C191).

4.2 Assumptions

Formula for Deriving Numerical Building Heights

The maximum building heights has been calculated to a higher (than minimum) floor to floor heights in order to:

- Respond to the typical heights found within heritage buildings (between 8-11.2m);
- Accommodate for greater than minimum standards and provide flexibility for future uses;
- Allowance for other design elements to be accommodated, such as parapets, railings, etc.

The following numerical floor to floor dimensions were employed:

- Ground Floor and First Floor: 4m
- Second floor and above: 3.2m

Note: Higher numerical floor levels for mixed use development may be required at upper levels.

Formula for Deriving Numerical Streetwall Heights

The maximum streetwall heights have been calculated based on the above floor to floor heights, plus additional height to allow for parapets, balustrades and minor architectural features.

Zero front setback

New buildings within Activity Centres and inner urban areas such as Victoria Parade Precinct should generally be built to the street frontage in order to:

- Respond to the prevailing built form character of the area;
- Provide a clear definition at the street edge; and
- Maximise the developable area.

With the exception of retaining existing front setbacks, all new street walls within the commercial and mixed use zone should be built to boundary.

Top Floor Depth

A minimum depth of approximately 10m for the upper most level has been considered in determining overall building heights. This minimum dimension is based on a typical apartment depth, and provision of efficient access.

4.3 Precincts

Based on the linear extent of Victoria Parade and the distinction in future built form character along the corridor and to perpendicular side Streets as determined by the Built Form Framework Plan the study area is divided into several precincts including:

- Victoria Parade West (West of Smith Street);
- Victoria Parade Central (Between Smith and Wellington Street)
- Victoria Parade East (East of Wellington Street);

PRECINCTS	STREET WALLS / GROUND LEVEL SETBACKS	PREFERRED MAXIMUM BUILDING HEIGHTS
VICTORIA PARADE EAST (EAST OF SMITH STREET)	▪ Retain existing frontage setback. ▪ Match adjoining heritage eaves/ parapet, or lower. ▪ Preserve existing buildings on VHR sites. ▪ Retain heritage frontage (and garden setback). ▪ 3 storeys (11.2m) to 4 storeys (14.4m) ▪ Minimum upper level setback 6m ▪ 17m upper level setback above VHR terraces between 169-179 Victoria Parade.	11.2m (3 storeys) to 24m (7 storeys)
VICTORIA PARADE CENTRAL (BETWEEN SMITH & WELLINGTON STREET)	▪ Retain existing frontage setback. ▪ Match adjoining heritage eaves/ parapet, or lower. ▪ Preserve existing buildings on VHR sites. ▪ Retain heritage frontage (and garden setback). ▪ 3 storeys (11.2m) to 4 storeys (14.4m). ▪ Minimum upper level setback 6m.	11.2m (3 storeys) to 33.6m (10 storeys)
VICTORIA PARADE WEST (WEST OF WELLINGTON STREET)	▪ Retain existing frontage setback. ▪ Match adjoining heritage eaves/parapet, or lower; or ▪ 3 storeys (11.2m) to 4 storeys (14.4m). ▪ Minimum upper level setback 6m.	11.2m (3 storeys) to 40.0m (12 storeys)

The following diagram illustrates a breakdown of these precinct boundaries (overleaf).

Attachment 2 - Attachment 2 - Victoria Parade Built Form Framework

PRECINCT 1: VICTORIA PARADE WEST

This precinct comprises lots with a primary frontage to Victoria Parade (north side of the street) between Napier Streeet and the western boundary of the corner allotment at the Smith Street intersection (207-209 Victoria Parade).

Preferred precinct character statement

There is generally low to moderate change expected to occur across Precinct 1 due to the configuration of narrow allotments, presence of heritage fabric including VHR sitses, interface with residential areas to the north as well as the General Residential Zone covering allotments (east of Gore Street) permitting a maximum 3 storeys. An anomalous site at the western corner of George Street where there is greater capacity for change which is responsive to both adjoining residential and heritage fabric.

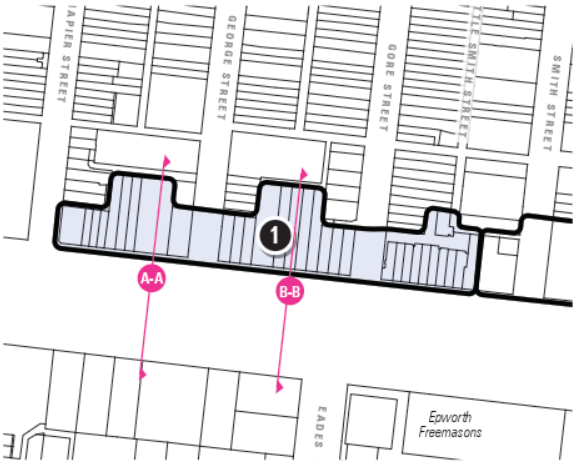
Infill development opportunities within the precinct will be recessive, adopting a 'street wall and setback' model to retain the prominence and consistency of the heritage parapet when viewed from within the street corridor. New upper levels will turn the corner to the broad 'green' street frontages and transition to residential interfaces at the rear. Development on larger allotments will adopt new 3 storey street walls, reinforcing the low and orderly street wall characteristics of this precinct.

Built Form Objectives

In addition to objectives found in City of Yarra DDO2:

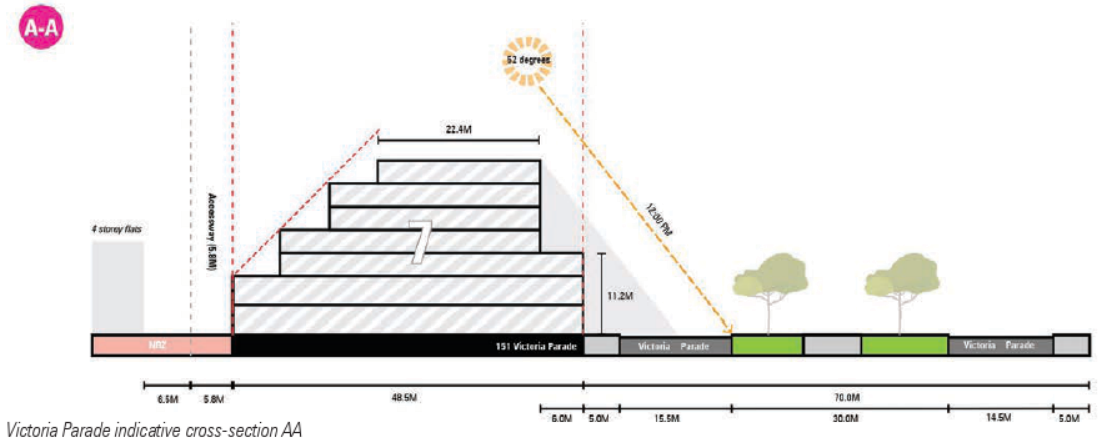
- To enhance the role of the boulevard by protecting it sense of openness.
- To protect existing built form fabric with VHR designation.
- To retain heritage frontages.
- To realise a moderate change that respects the heritage and the streetscape character.
- To enhance a consistent and orderly streetscape presentation to this side of Victoria Parade.
- To ensure the heritage frontage remains the visually dominant element along this section of Victoria Parade with new development is visually recessive and does not dominate the streetscape.
- To minimise overshadowing impact on footpaths and the public realm.
- To ensure a suitable transition along its residential interface.

139 Victoria Parade

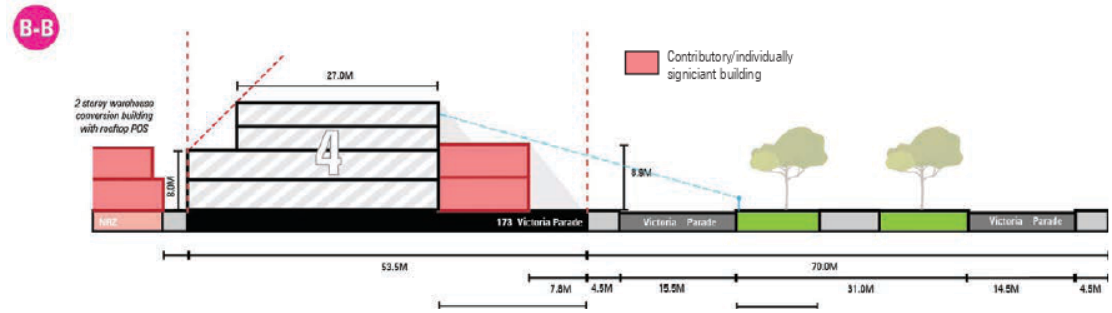


Guidelines

1. Ensure new infill street walls match the parapet height of adjoining heritage forms.
2. Encourage retention and repurposing of existing built form on VHR sites.
3. Retain existing front setbacks of contributory buildings, including front gardens.
4. Ensure new development on corner sites is designed in the round and 'turns the corner' to address all street frontages.
5. Ensure new development maintains solar access at the Spring Equinox (September 22) to:
   - The northern edge of the **Victoria Parade** central median at 12pm.
   - The western footpaths of **streets** (3m from property boundary) at 10am; and the opposite eastern footpaths (3m from property boundary) at 2pm.
6. Ensure new development reinforces domestic character of residential streets through facade articulation and material treatment.
7. Facilitate equitable development outcomes to adjacent sites through adequate building separation to side or rear boundaries.
8. Ensure new development at residential edges avoids the presentation of overly stepped or 'wedding-cake' profile.



Victoria Parade indicative cross-section AA



Victoria Parade indicative cross-section BB

PRECINCT 2: VICTORIA PARADE CENTRAL

This precinct comprises lots with a primary frontage to Victoria Parade (north side of the street) between western side of Smith Street and Wellington Street, within the C1Z and MUZ Zones.

Preferred precinct character statement

Victoria Parade Central will continue to be defined by a varied streetscape condition, comprising rows of 2-storey heritage terraces punctuated by large non-contributory sites at the Smith Street MAC entrance. At this junction, acknowledge development opportunities on larger allotments that will manifest with rising forms set back behind the prevailing street wall profile rising at the MAC entrance.

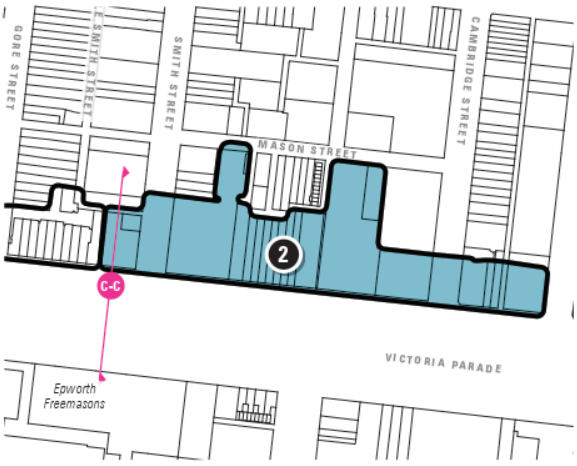
New moderate infill with be recessive in profile, befitting a 'street wall and setback' model with transition to residential surrounds with a more robust response to adjoining commercial interfaces. To either side of the main street junctions, reinforce the consistent and orderly street wall character.

Built Form Objectives

In addition to objectives found in City of Yarra DDO2:

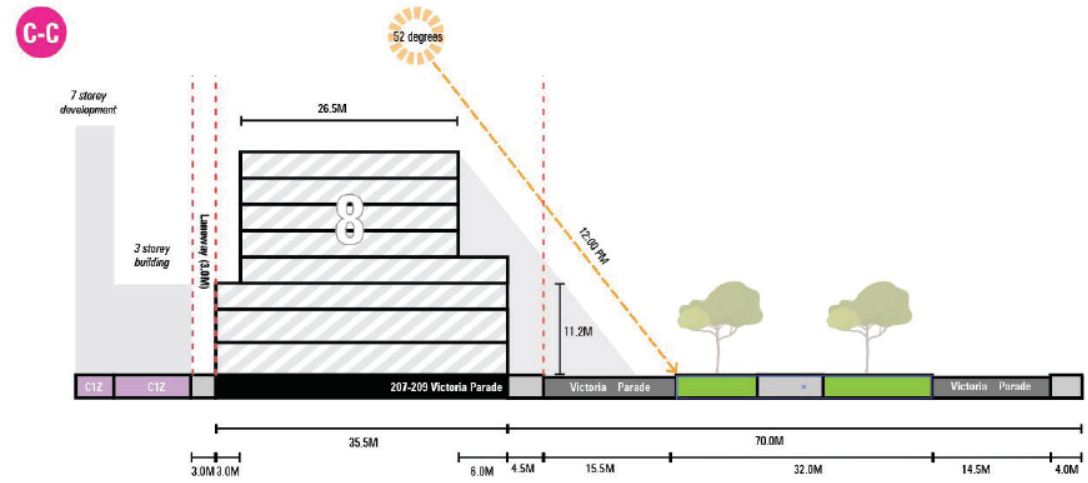
- To enhance the role of the boulevard by protecting it sense of openness.
- To realise moderate change that respects the heritage and streetscape values of the precinct.
- To retain heritage frontages.
- To retain visual prominence of local landmarks.
- To carefully demarcate the southern entrance into the Smith Street MAC.
- To ensure the heritage frontage remains the visually dominant element of built form east of Smith Street and that new development is visually recessive and does not dominate the streetscape.
- To support development that contributes to an active, high quality and pedestrian-friendly environment.
- To minimise overshadowing impact on footpaths and the public realm.

Corner Victoria Parade and Smith Street



Guidelines

1. Ensure new infill street walls matches the parapet height of adjoining heritage forms.
2. Ensure new development provides site responsive transition to adjoining VHR and heritage buildings.
3. Retain the visual prominence of local landmarks (Baden Powell Hotel at 61-65 Victoria Parade and the former John Franklin Hotel 75-77 Victoria Parade).
4. Ensure that new development on corner sites address multiple street frontages by 'turning' the corner.
5. Ensure new development complements precinct heritage features (grain and rhythm).
6. Ensure new development maintains solar access at the Spring Equinox (September 22) to:
   - The northern edge of the **Victoria Parade** central median at 12pm.
   - The eastern and western footpaths of **Smith Street** (3m from property boundary) between 10am and 2pm.
   - The eastern footpath of **Wellington Street** (3m from property boundary) at 2pm.
   - The eastern and western footpaths of **Cambridge Street** (3m from property boundary) between 10am and 2pm.
7. Encourage continuation of awnings over footpaths in commercial settings.
8. Ensure new development at residential edges avoids the presentation of overly stepped or 'wedding-cake' profile.



Victoria Parade indicative cross-section CC

PRECINCT 3: VICTORIA PARADE EAST

This precinct comprises lots with a primary frontage to Victoria Parade (north side) between Wellington Street and Hoddle Street, forming the eastern boundary of the precinct, within C1Z and a small portion of C2Z to the rear.

Preferred precinct character statement

There is a moderate to high level of change expected for Victoria Parade East. Development on large sites unaffected by Heritage Overlay will defined by a pedestrian scaled, consistent street wall condition along Victoria Parade with an increased building height regime recessed behind. Despite lack of Heritage Overlay on these urban blocks, the redevelopment of the precinct will be responsive to the existing and emerging urban morphology of the adjoining and broader setting.

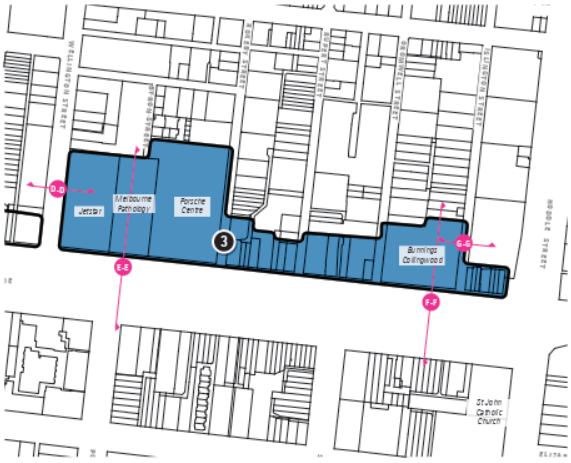
On urban blocks comprising finer grain allotments with heritage attributes, a more orderly and consistent street wall condition will be reinforced.

Built Form Objectives

In addition to objectives found in City of Yarra DDO2:

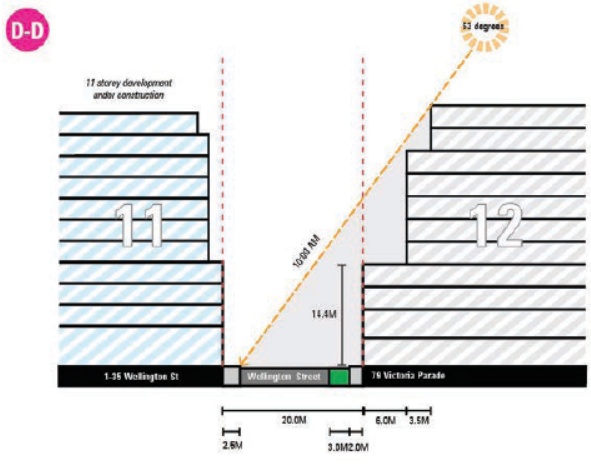
- To enhance the role of the boulevard by protecting it sense of openness.
- To realise moderate to high change that respects the heritage and streetscape value of the precinct and surrounds.
- To retain visual prominence of local landmarks.
- To retain heritage frontages.
- To support the permeability of pedestrian access and visual breaks of large urban blocks in the precinct.
- To minimise overshadowing impact on footpaths and the public realm.

Corner Victoria Parade and Wellington Street

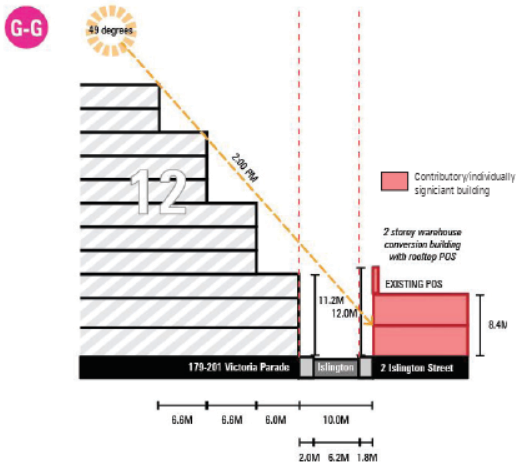


Guidelines

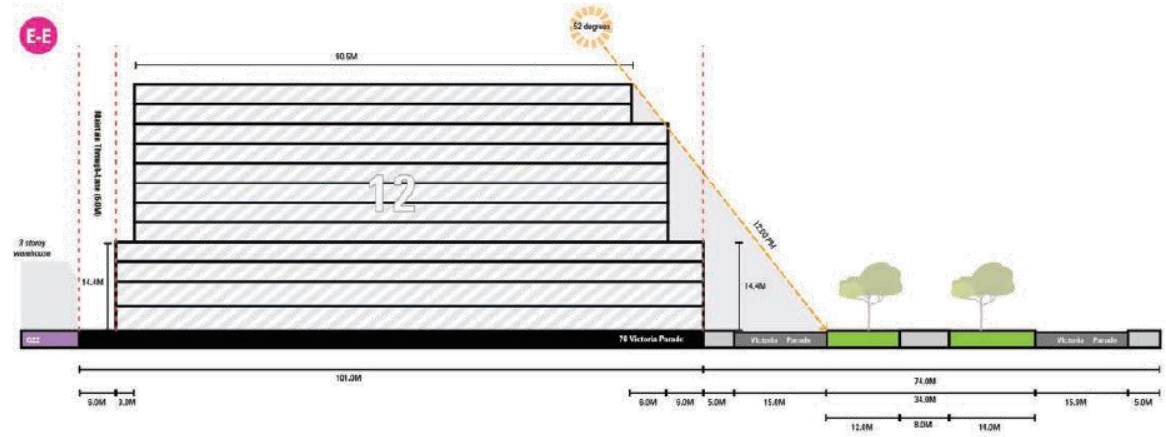
1. Establish a clear distinction between a lower to moderate street wall and rising form behind.
2. Ensure new development on large sites adopt a robust street wall condition to the boulevard that steps down toward corners to respect scale of side streetscapes.
3. Ensure new infill street walls matches the parapet height of adjoining heritage forms.
4. Retain the visual prominence of local landmarks (former Prince Patrick Hotel and shops at 135-141 Victoria Parade and former Ebenezer Baptist Church at 139 Victoria Parade).
5. Ensure that new development on corner sites address multiple street frontages by 'turning' the corner.
6. Encourage development that is made up of parts on large sites.
7. Ensure new development complements precinct heritage features (grain and rhythm).
8. Ensure new development maintains solar access at the Spring Equinox (September 22) to:
   - The northern edge of the **Victoria Parade** central median at 12pm.
   - The western footpath of **Wellington Street** (3m from property boundary) at 10am.
   - Along **Rokeby, Rupert, Cromwell and Islington Streets** to the first floor above ground level between 10am and 2pm.
9. Encourage laneway extension or widening to accommodate servicing, parking access and increased pedestrian permeability through large non-contributory sites.
10. Ensure new development at residential edges avoids the presentation of overly stepped or 'wedding-cake' profile.



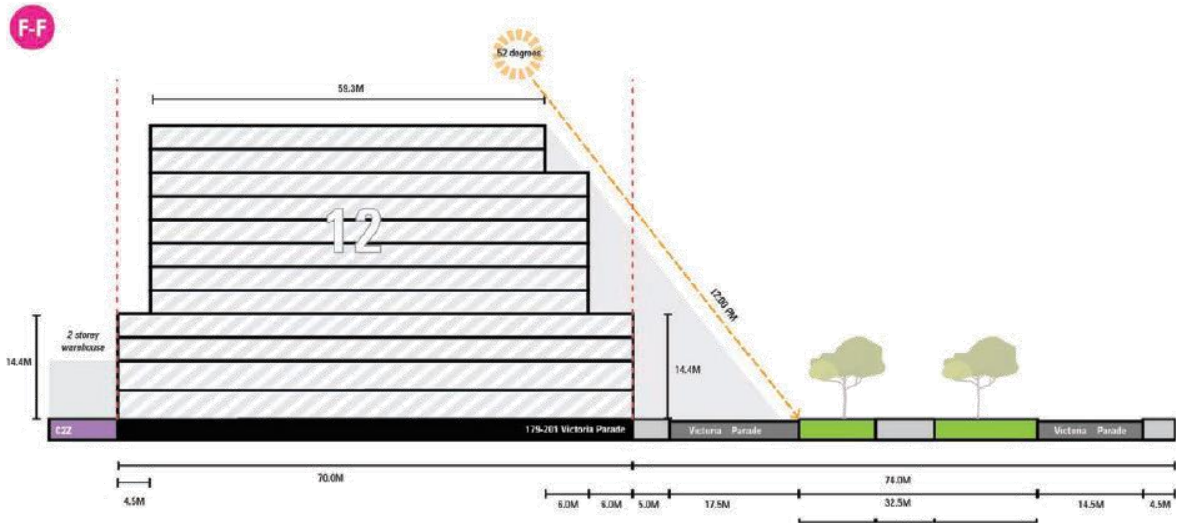
Victoria Parade indicative cross-section DD



Victoria Parade indicative cross-section GG



Victoria Parade indicative cross-section EE



Victoria Parade indicative cross-section FF

4.4 General Built Form Guidelines

Built Form Recommendations

A range of specific built form recommendations and design guidelines have been developed for all precincts.

These built form guidelines focus on the Victoria Parade Precinct, where future development is anticipated and design guidance is required.

Public Open Space provision

Public open space is an important element within urban areas, as is its spatial provision. There are presently no 'pocket parks' within the study area. Therefore, there is a clear lack of open space provision within this precinct. In inner urban areas such as Victoria Parade the provision of footpaths and 'pause points' at kerb outstands are important to the social health and well-being of a local community. It highlights the importance of maintaining sunlight to footpaths and kerb outstands.

Visually distinct additions and upper levels

Given the presence of heritage fabric along parts of Victoria Parade, new buildings or additions should be designed to have a visually distinctive architectural expression from the heritage element. This is in order to ensure that new form can be clearly 'read' and understood as a more recent component. It also encourages contemporary architectural responses which will contribute to the 'richness' and diversity of built form.

Lightweight materials, colours and finishes that contrast with the prevailing masonry forms are also encouraged to assist in the clear distinction between new and old, while also assist in visually recessing new forms.

Architectural Considerations

To street frontages, expansive blank walls should be avoided and where visible from within the public realm, any blank walls need to be visually divided into small elements through architectural treatments or artistic decoration to reduce visual mass.

Fenestration patterns and facade solid to void proportions need to reflect the prevailing streetscape rhythm and presentation.

New forms should 'fit' within the prevailing streetscape character. Avoid overly busy and complex architectural expressions.

Services and Vehicle access

Ensure servicing and car parking is provided from secondary side streets or rear laneways.

The consolidation of services into basement levels is highly encouraged to mitigate extent of inactive, blank walls to the public realm.

Equitable Development

Facilitate equitable development outcomes by adopting:

- A minimum of 4.5m from the boundary where a habitable room window is proposed.
- A minimum for 4.5m from the edge of a proposed balcony or terrace.
- A minimum of 3m from the boundary where a non-habitable room window or commercial window is proposed.
- Where the common side boundary is a laneway, the setback is measured from the centre of the laneway.
- ResCode applies to sites in residential zoned land.

Active and Semi-Active Frontages

In Activity Centres and Mixed Use areas, buildings must provide sufficient activation at street level to foster 'life' on the street and provide opportunities to maximise safety via passive surveillance.

Along the key movement corridors active ground frontages are encouraged. This is particularly relevant for Victoria Parade east of Smith Street including its corner allotments, and Smith and Wellington Street.

Along local streets and mixed use areas, semi-active frontages are more appropriate. As these 'less active' frontages still maintain an appropriate level of passive surveillance, while also providing more privacy and seclusion to the inside of the building, befitting the nature of the use being either primarily office or dwelling.

Direct pedestrian entries into ground floor uses is encouraged, particular on larger sites, with broad frontages.

Upper levels also provide 'eyes on the street' and contribute to passive surveillance of the public realm. Windows and balconies that orientate towards the street are encouraged.

Public Open Space provision

Public open space is an important element within urban areas, as is its spatial provision. In inner urban areas such as Collingwood and Fitzroy and the provision of public parks is important to the social health and well-being of a local community.

While there are no current plans for future pocket parks in the precinct, opportunity may exist when large sites are redeveloped, as well as along intersecting green streets where there are presently kerb outstands providing wider footpaths and landscape.

Attachment 3 - Attachment 3 - Fitzroy West Built Form Framework

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Issue Date	December 2020	

** Note: This Draft document is a part of a broader Built Form Review for the Brunswick Street and Smith Street Activity Centres : Built Form Review. It is a component of a broader body of work that sets out a future proposition for two of Yarra's key Activity Centre spines and their adjoining mixed use precincts.*

Preamble

The following urban design report has been prepared for the City of Yarra as the basis for an urban design vision for the Fitzroy West Precinct. It sets out a preferred built form framework underpinned by an integrated urban design and heritage assessment.

The report has been prepared by a multidisciplinary team comprising Hansen Partnership (Urban Design) and GJM Heritage (Heritage) with the support of the City of Yarra's internal working group.

The study area is identified in Figure 1.

This report sets out the rationale for proposed built from controls for Fitzroy West and is underpinned by key components, namely:

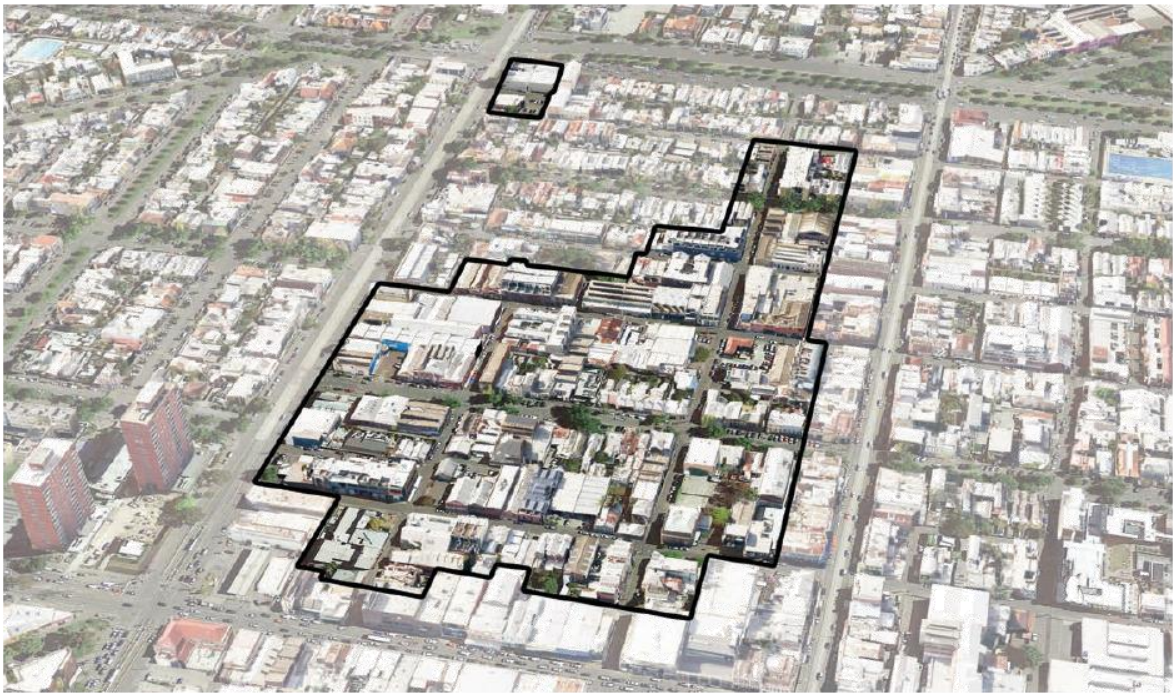
Part 1:Fitzroy West Context

Part 2: Precinct - Influences

Part 3: Built Form Proposition

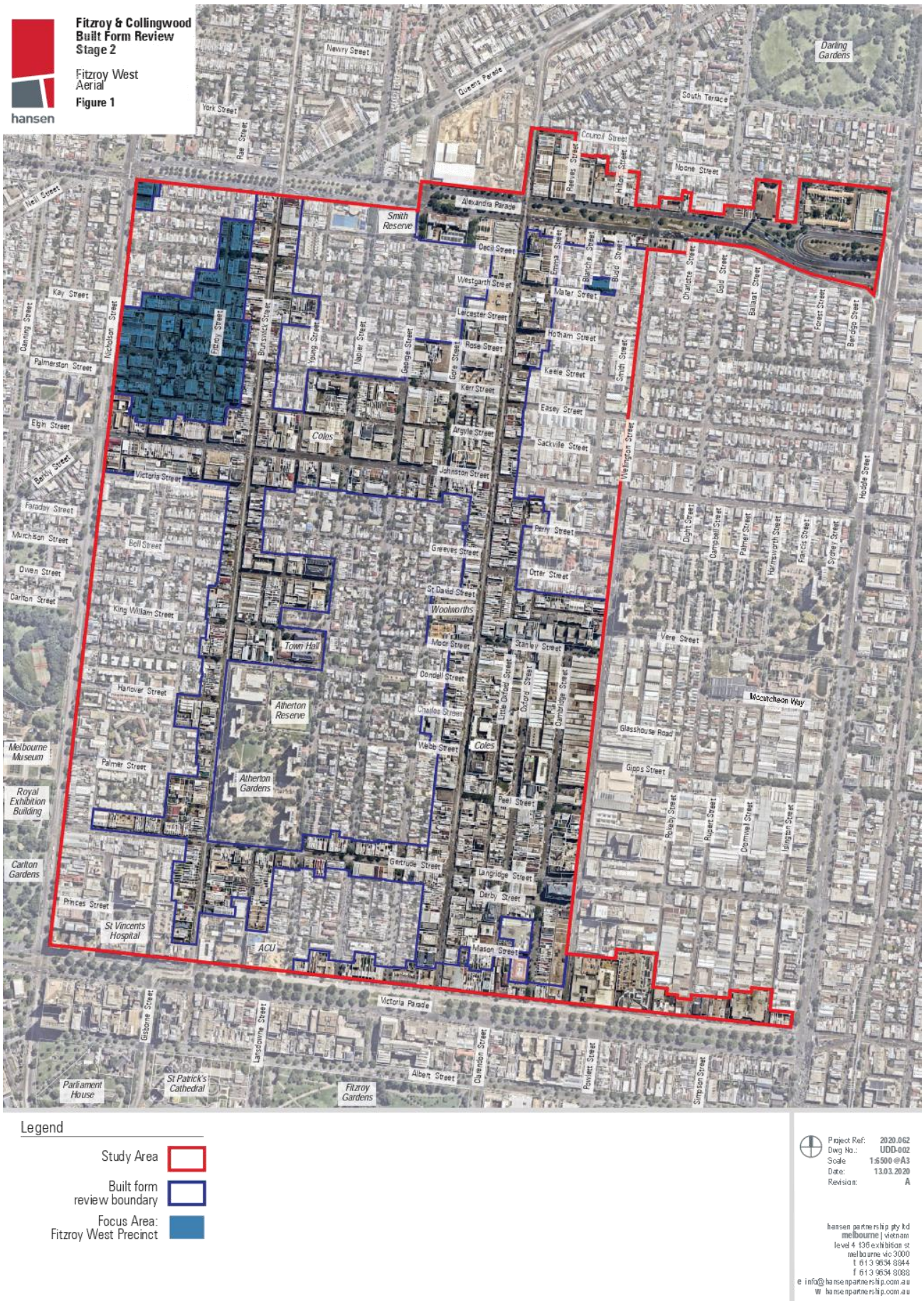
Part 4: Recommended Controls

The report is part of a broader Built Form Review.



Oblique View of the Fitzroy West Study Area and Surrounding Context

Attachment 3 - Attachment 3 - Fitzroy West Built Form Framework



PART 1: FITZROY WEST CONTEXT

The Brunswick Street and Smith Street Built Form Review is a broader urban design program to set a clear framework for future change within two of Yarra's key Activity Centres and their adjoining Mixed Use areas. Planning policy identifies such Activity Centres as areas for accommodating growth and change. Therefore, these are the areas that must be carefully planned and managed in order to accommodate progressive change while protecting (or indeed enhancing) existing established character and heritage values.

Stage 1 of the project was initiated in May 2017 and encompasses large areas bound by Alexandra Parade (to the north), Victoria Parade (to the south), Wellington Street (to the east) and Nicholson Street (to the west).

Stage 1 of the project comprised the preparation of Built Form Frameworks for Gertrude, Brunswick and Smith Streets in 2019. A Johnston St Precinct and Fitzroy East Precinct reports were completed in June 2019 and a Collingwood Precinct report was prepared in June 2018.

As part of the Stage 1 process, extensive analysis of the existing conditions was undertaken and documented within an overall Background report. This comprehensive analysis identified and divided the overall Review Area into ten 'place- specific' precincts. Furthermore, a series of guiding objectives were identified to be contemplated across ten defined precincts.

This report addresses the **Fitzroy West Precinct** (Figure 1 overleaf), forming part of the Stage 2 Built Form Review. A key consideration in the preparation of a Built Form Framework for Fitzroy West relates to its highly mixed built form character including a mix of heritage forms and emerging apartment developments. Two separate reports were also prepared for Victoria Parade and Alexandra Parade 'Boulevard' Precincts in 2020 (as part of Stage 2).

1.1 Overarching Built Form Objectives

The following 8 objectives have been identified for the Brunswick and Smith Streets Built Form Review (the Study Area):

Objectives:

1. Recognise and carefully manage potential in key areas within the Activity Centres.
2. Highlight the character distinctions between the different retail Streets and mixed use precincts within the Activity Centres.
3. Reinforce the traditional Victorian cityscape of heritage Streetscapes as dominant elements, including significant corner elements and identified local landmarks.
4. Ensure continued diversity through sensitive infill within traditional Victorian Streetscapes.
5. Shape the retail Streets and mixed use areas to ensure high quality, people-oriented public realm.
6. Ensure development encourages walking, cycling and public transport usages through layout and design responses.
7. Ensure new development is sustainable and adaptive over time.
8. Manage the built form profile of new development to avoid adverse impact to surrounding areas, including heritage places, Streetscapes and residential interfaces.

View of varied built form along Argyle Street

10 Precincts

The 10 precincts within the Brunswick & Smith Street Built Form Review are:

Stage 1 (May 2017 to November 2019)

- Precinct 1: Brunswick Street (B);
- Precinct 2: Smith Street (S);
- Precinct 3: Gertrude Street (G);
- Precinct 4: Johnston Street (J);
- Precinct 6: Fitzroy East (FE);
- Precinct 7: Collingwood (C);
- Precinct 8: Town Hall (TH);

Stage 2 (Commenced February 2020)

- Precinct 5: Fitzroy West (FW);
- Precinct 9: Alexandra Parade (A); and
- Precinct 10: Victoria Parade (V).

This report addresses **Precinct 5: Fitzroy West.**

1.2 Built Form Precincts

Based on the initial analysis phase of the project the following Precincts were identified spatially as relatively coherent parts. The Precincts are largely defined by function as either:

- An Activity Spine;
- A Mixed Use Area; or
- A Boulevard.

Activity Spines

The Activity Spines are defined by the 'traditional' retail and commercial functions along the four main streets within the review area of:

- Brunswick Street;
- Smith Street;
- Gertrude Street; and
- Johnston Street.

Mixed Use Areas

The Mixed Use Areas are defined by the mixed use functions present in the non-residential land located generally in local streets, behind the Spines. The four renewal areas within the review area are:

- Fitzroy West (this report);
- Fitzroy East;
- Collingwood; and
- Town Hall.

Boulevards

The Boulevards are the non-residential land to the northern and southern edges of the review area which front the broad road corridors of:

- Alexandra Parade; and
- Victoria Parade.

Attachment 3 - Attachment 3 - Fitzroy West Built Form Framework

Figure 2

PART 2: PRECINCT INFLUENCES

Boundary Description

This precinct comprises land subject to the Mixed Use Zone and Commercial 2 Zone between Nicholson Street in the west and to the rear of lots to Brunswick Street in the east.

As oulined in Figure 2, the Fitzroy West precinct extends north-south between the rear of lots to Johnston Street and properties with a frontage to Alexandra Parade at the corner with Nicholson Street. The precinct excludes land within the Neighbourhood Residential Zone on Leicester, Westgarth and Cecil Streets.

Built Form Character

Fitzroy West is a highly diverse precinct, positioned behind the Brunswick Street and Johnston Street Activity Centre spines and divided by land subject to the Neighbourhood Residential Zone.

The character of the precinct speaks to the ad-hoc nature of development occurring across Fitzroy from the mid-1800s. The precinct comprises a network of narrow one-way streets and broad, tree-lined streets in combination with an eclectic mix of building typologies arranged on a varied subdivision pattern.

The precinct is defined by clusters of attached traditional Victorian dwellings of 1 and 2 storeys, larger contributory and non-contributory warehouses as well as scattered Victorian retail and commercial forms, found along Nicholson Street and to corners along Fitzroy Street. There are also several commercial car parks (which also function as weekend markets) on larger sites to Rose Street.

Recent medium density development is evident, with the most recent typically occurring along Rose and Argyle Streets, comprising apartments between 3 to 6 storeys, generally built to all boundaries.

Contributory and non-contributory warehouse forms along Kerr Street

2.1 Foundations

Setting a vision for the Fitzroy West Precinct must be underpinned by an understanding of the diverse physical conditions, including the fabric of existing and approved developments, pattern of heritage forms, critical views as well as other relevant considerations which form the 'foundations' of a future built form framework and development recommendations. This is illustrated in Figure 3 and can be described as follows:

Heritage

Most of the study area is subject to the Heritage Overlay (HO334 South Fitzroy Precinct), comprising a mix of individually significant and contributory intact buildings from the Victorian and Edwardian-era. The heritage building stock includes fine-grain dwellings, commercial forms, warehouses and several proud corner hotels. There is also a site within the Victorian Heritage Regiester (VHR) inside the study area, forming part of the former cordial factory at 8-12 Spring Street and 14-16 Argyle Street.

There is an urban block in the study area which is not subject to the Heritage Overlay. Land bound by Nicholson Street, Henry Street, Spring Street and Argyle Street (except for No. 7 Henry Street) does not form part of HO334 or an individual heritage overlay.

Fine-grain heritage

Rows of continuous, attached, one and two storey Victorian dwellings are a defining character of the precinct. These forms vary in architectural style, detail and finishes, but represent the traditional residential neighbourhoods of Fitzroy found behind the commercial spines of Brunswick and Smith Streets. Clusters of these houses are typically found along Kerr Street (both sides), Henry Street (north side), Westgarth Street (both sides) and the southern end of Fitzroy and Spring Streets, behind Johnston Street.

Heritage warehouses

Another defining feature of the precinct, contributing to the diversity of built form within the precinct, are the presence of traditional single and double storey warehouses, many of which are found to the south side of Kerr Street. Warehouses are typically constructed of red brick with lighter brick or render detailing to windows and parapets. Several warehouse forms comprise pitched parapets and roofs, presenting as a defining feature of the street.

Contributory dwelling at Argyle and Spring Streets

Contributory dwellings along Westgarth and Fitzroy Streets

Individually significant warehouse along Leicester Street

Individually significant warehouse along Argyle and Spring Streets (VHR)

Non-contributory sites

There are several non-contributory, broad frontage sites across the precinct. These sites are typically located on Rose Street and Nicholson Street. A number of these sites accommodate large format post-war warehouse forms comprising commercial and light industrial uses. This includes the 2 sites on Rose Street hosting the Fitzroy and Rose Street Markets (No. 54 and 75 Rose Street).

Recent development trends

The precinct has experienced varying levels of change in the form of medium density housing over recent years. The highest level of change has occurred along Rose Street, with examples of townhouse and apartment typologies ranging between 3 and 6 storeys including street wall heights of typically 3 storeys (generally built to all boundaries). Recent approvals in the precinct include new buildings on large corner sites of up to 7 storeys. This includes a 6 storey mixed-use development comprising the retention of a heritage warehouse façade at No. 75 Argyle Street. Along Kerr Street, there are examples of recent medium-density development comprising setbacks to the street (commensurate with neighbouring single dwellings) accommodating ground level terraces. Other development trends in the surrounds includes infill townhouse and apartment forms between 3 and 5 storeys.

Commercial 2 and Mixed Use Zones

The precinct is defined by 2 land use zones, which prescribe important considerations when contemplating future built form. To Nicholson Street, sites within the study area are subject to the Commercial 2 Zone, where residential uses are prohibited under the zone. New development in the C2Z will typically be in the form of office and/or retail uses, with a primary frontage to Nicholson Street. The remainder of the study area (behind the north-south commercial spines) is subject to the Mixed Use Zone. Under the Planning Scheme, the MUZ is inherently a residential zone, although allowing for the integration of retail and commercial uses (typically at the ground and occasionally first floor). This policy condition is a necessary consideration when contemplating future rear interface controls to these sites.

Non-contributory sites along Westgarth Street

Recent 4 storey development along Kerr Street

4 to 6 storey development on Kerr and Rose Streets

Narrow road profile along Rose Street (10m)

Street width

The study area comprises a mix of street widths contributing to the diverse experience and character of the area. Most of the streets are aligned in an east-west direction. Westgarth and Kerr Street are both 20m wide comprising designated 'sharrow' cycle functions and marked angled parking to both sides of the street. Cecil, Rose and Argyle Streets are 10m wide streets comprising one-way traffic west bound and unmarked parallel parking. Fitzroy and Spring Streets are 10m wide north-south oriented streets, with parallel parking to both sides. Fitzroy Street is a one-way designation (south bound) and serves as an important connection between Alexandra and Victoria Parades.

The study area also has a frontage with Nicholson Street, a 30m wide road reserve, extending between Brunswick East in the north and Victoria Parade in the south. This street accommodates tram route 96, with recently completed tram super stops located at Johnston Street and Leicester Street. The north of the study area, has a direct interface with Alexandra Parade (north), a 30m-60m wide boulevard accommodating high volumes of vehicle traffic in an east-west direction.

Subdivision Pattern

The study area comprises a significant variance of allotment sizes, frontage widths and depths contributing to the diverse character of the precinct. As described in the Statement of Significance for the South Fitzroy Heritage Precinct (HO344) *"the lack of controls on the size and orientation of subdivision allotments and the width of roads, together with a general lack of cooperation or coordination between landowners, led to the emergence of an ad-hoc street pattern and layout of allotments…"*. Recent development and lot consolidation has also contributed to the diversity of the subdivision pattern.

Adjoining built form precincts

The Fitzroy West Precinct is flanked to the east by the Brunswick Street Precinct, one of Yarra's Major Activity Centres and to the south by Johnston Street Precinct, a Neighbourhood Activity Centre. Both corridors comprise some of Melbourne's most intact heritage retail streetscapes. These streets perform as important municipal destinations, defined by a walkable network of fine grain retail and commercial uses, benefiting from overlapping public transport routes within close proximity to Melbourne CBD and the fine residential street grid between the activity centres.

Broad road profile of Kerr Street (20m)

Varied subdivision pattern comprising dwellings, warehouses & recent development

Rear interface between MUZ sites

C2Z site on Nicholson Street with interface to NRZ

Rear interfaces

Unlike other precincts within the Built Form Review, allotments in the study area do not have a consistent rear laneway condition. Given the varied allotment configurations and street network pattern, rear interfaces within the study area comprise a mix of laneway and direct abuttal conditions. To Nicholson Street, there are also instances of lots with a rear interface between mixed use zone and Commercial 2 Zoned lots both with and without laneways. The study area also sits to either side of Neighbourhood Residential Zoned land (between Leicester and Alexandra Parade) and abuts Commercial 1 Zoned land to the south along Johnston Street, comprising rear interfaces with laneways. This varied pattern of interfaces (along with other factors) will continue to guide a varied built form response throughout the precinct.

Interface condition between C1Z and MUZ

Green Streets

The linear east-west streets of Kerr and Westgarth Streets comprise significant mature canopy vegetation (deciduous Plane Trees) within the road reserve, enclosing the streetscape. These streets are a stark contrast to other streets within the precinct, which typically have limited street trees and vegetation. These broad 20m wide streets, combined with a high proportion of contributory or individually significant rows of attached dwellings, contribute to the predominant traditional residential character of the streets.

Westgarth Street green street condition

Open Space

There is a lack of notable public open space in the precinct. The only open space or 'park' of note is the Garyowen Park, outside of the study area to the north west on Leicester Street. This open space, surrounded by lower-order dwellings provides a reprieve in built form with large mature canopy trees providing shade and amenity. Rose Street serves as an important pedestrian link between the markets and Brunswick Street. Yarra Council have implemented a temporary shared street trial for Rose to test whether and if, how a permanent conversion could be realised to improve the public realm and prioritise pedestrian movement and safety.

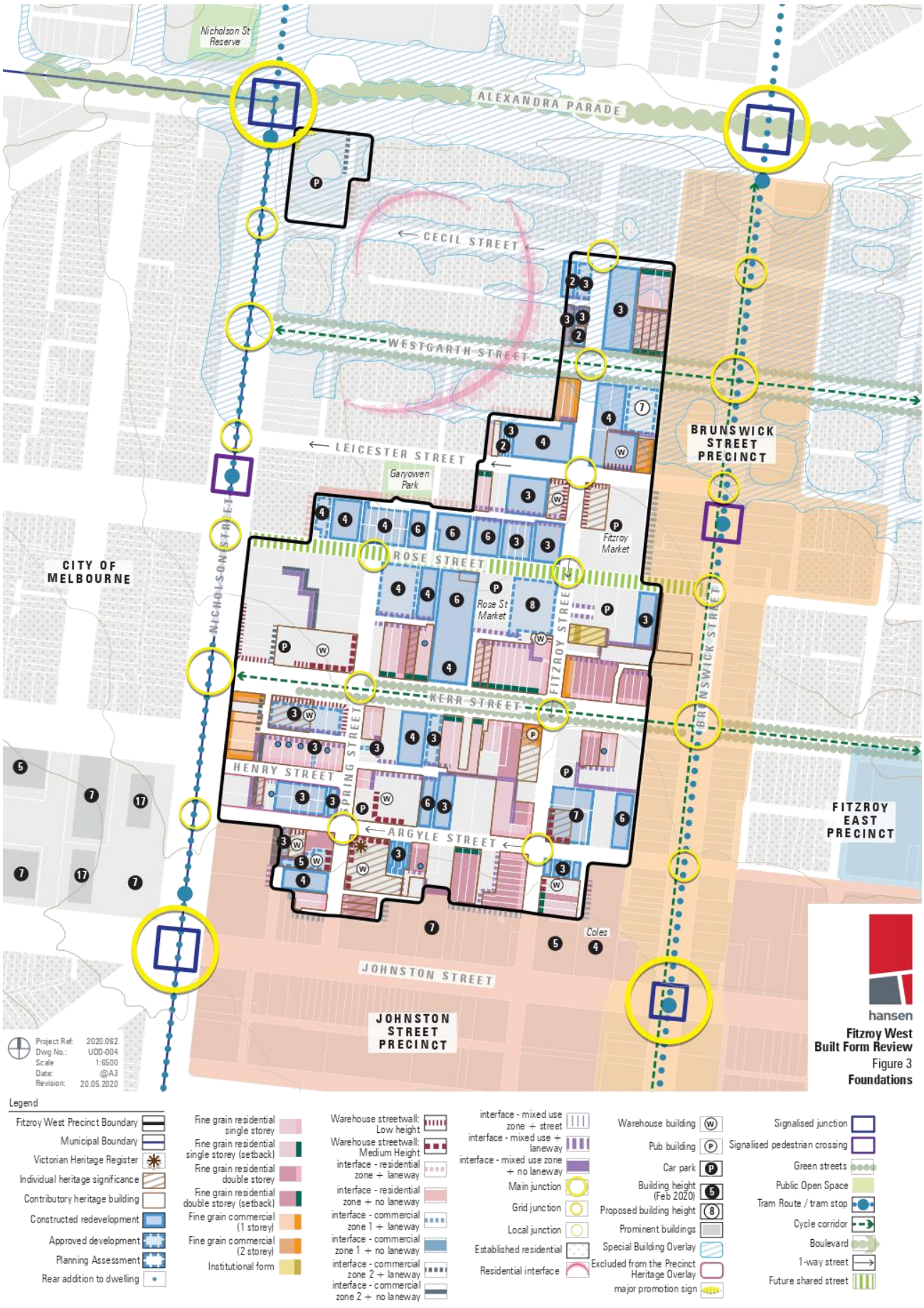
Streetscape condition of Spring Street comprising no street trees

Special Building Overlay

Land to the north of the study area, including lots to Alexandra Parade, Cecil and Westgarth Streets are subject to the Special Building Overlay. According to the Planning Scheme, an application must be referred to Melbourne Water in accordance with Section 55 of the Act. There may be instances where the water authority may require a raised ground floor to mitigate any potential flooding impacts.

Area within the SBO to the north-west of the study area

Attachment 3 - Attachment 3 - Fitzroy West Built Form Framework



2.2 Fitzroy West Precinct Built Form Framework

In response to foundation matters, a Built Form Framework has been advanced to reinforce locations for varying levels of change within the study area. A Framework is not definitive (like a Built Form Control Plan), instead it seeks to identify critical 'gestures' of the City. In this instance, the framework recognises the importance of the following attributes with reference to Figure 4:

Heritage values

This precinct has notable heritage values, including most commonly clusters of fine grained 1 and 2 storey residential forms, fine-grained commercial forms and traditional 1 and 2 storey red brick warehouses, many of which are positioned to corners. There is a notable shift in the prevalence of heritage buildings across the study area. The allotments fronting Kerr and Argyle Street comprises a higher portion of contributory buildings compared to the area between Rose and Cecil Streets (and Alexandra Parade). Future built form in these areas must, to varying degrees, respond to the prevailing character of traditional buildings within the streetscape. Modest new additions may be supportable on contributory lots, ensuring the host building remains the predominant element.

Main Roads

Lots with frontages to Nicholson Street and Alexandra Parade comprise considerable opportunity to accommodate a higher level of change, in absence of heritage sensitivity. The broad street widths can potentially allow taller street wall heights compared to the traditional main road spines in Fitzroy and Collingwood, while enhancing the public realm condition at building frontages. Acknowledging these areas are subject to the Commercial 2 Zone, new development is unlikely to be residential unless rezoned in the future. The side and rear interfaces of new buildings should also seek to manage amenity impacts to neighbouring residential land.

Green Streets

Kerr Street and Westgarth Streets are broad streets with a strong residential character framed by dense roadside canopy cover while also serving a critical role in local east-west access (walking and cycling). Future built form will be moderate to reinforce the traditional and domestic attributes of the streets, including the integration of garden setbacks where found adjacent. While there are limited non-contributory sites in these streets, new buildings should adopt a street wall or base height respective of neighbouring contributory forms and ensure no unreasonable overshadowing of the footpath occurs to the south side of the street at the equinox.

Heritage values along Spring Street

Mixed heritage values along Argyle Street

Green Street character of Kerr Street

Frontages to Nicholson Street

Mixed Streets

The area surrounding Argyle Street, Spring Street (south of Kerr) and Fitzroy Street (south of Kerr) is an intact pocket of contributory buildings of varying typologies including clusters of traditional dwellings and warehouses positioned behind the Johnston Street spine. Similarly the small portion of lots along Cecil and Leicester Streets comprise a mix of building typologies, transitioning from the Brunswick Street spine to a low-order residential character outside of the study area to the west. A moderate level of change will occur in this precinct. Future built form should reference this varied condition and adopt a more customised streetscape response while ensuring heritage forms remain visually dominant and provide an appropriate transition to any sensitive residential interfaces.

Regeneration Streets

There is limited contributory heritage fabric along Rose Street with a high proportion of recently completed regeneration on consolidated sites. Future development on the remaining sites is to reinforce the street profile, through complementary street wall heights and a generally consistent upper level presentation.

Subdivision grain

The precinct as a whole is characterised by a diverse subdivision pattern comprising fine-grained lots with residential and commercial stock integrated with broader sites containing traditional industrial warehouse forms. These attributes should not substantially constrain opportunity; however, it is vital for the subdivision pattern (and heritage values) to be retained in all precincts to reinforce the fragmented fabric that references the early development pattern of Fitzroy.

Junctions

The definition of street junctions and local corners assists in the legibility of the area. In Fitzroy West, traditional residential, pubs or warehouse buildings often mark the corners on wide streets (20m) and smaller streets (10m). Future built form to junctions should ensure heritage buildings remain the defining elements of corners adopting complementary street wall profiles and recessive upper levels. The major wayfinding junctions of Nicholson Street, Green Streets and key pedestrian streets also provide opportunity for potential public realm improvements such as kerb outstands.

Recent development on Leicester and Fitzroy Street

Mixed street character of Argyle Street

Recent development along Rose Street

Corner profile of Westgarth and Fitzroy Street

Transition

Properties to the north of the precinct including along Rose, Leicester, Westgarth and Cecil Streets perform as an area of transition behind the Brunswick Street and Johnston Street Spines toward the residential area to the north-west (within the NRZ). While the northern extent of the study area comprises recent development and some non-contributory sites, modest renewal should occur in these areas and provide a meaningful stepping down of form toward 1 and 2 storey dwellings outside of the precinct. A similar principle applies to the sites at the corner with Alexandra and Nicholson Street, where new buildings should transition down to the south-east.

Non-contributory building to Rose Street

Key Pedestrian Connections

Rose Street is an important east-west connection between Brunswick Street, the arts markets and tram stops along Nicholson Street. This street may gradually transform into a shared street arrangement based on Council's future ambitions for the streetscape. While the majority of lots to the north side of the street comprise recent development, it is critical that future built form does not unreasonably overshadow the opposite footpath (south side) at the equinox and avoids contributing to an overly car dominant environment through street frontage presentation.

Residential land along Leicester Street

Leicester Street and Argyle Street are also identified as an important east-west pedestrian connection due to its proximity to tram stops on both Nicholson Street and Brunswick Street. These continuous east-west streets also have a key role in 'stitching' various activity nodes within the broader Brunswick Street, Johnston Street and Smith Street activity centres. The future built form should ultimately seek to enhance the pedestrian experience along these streetscapes.

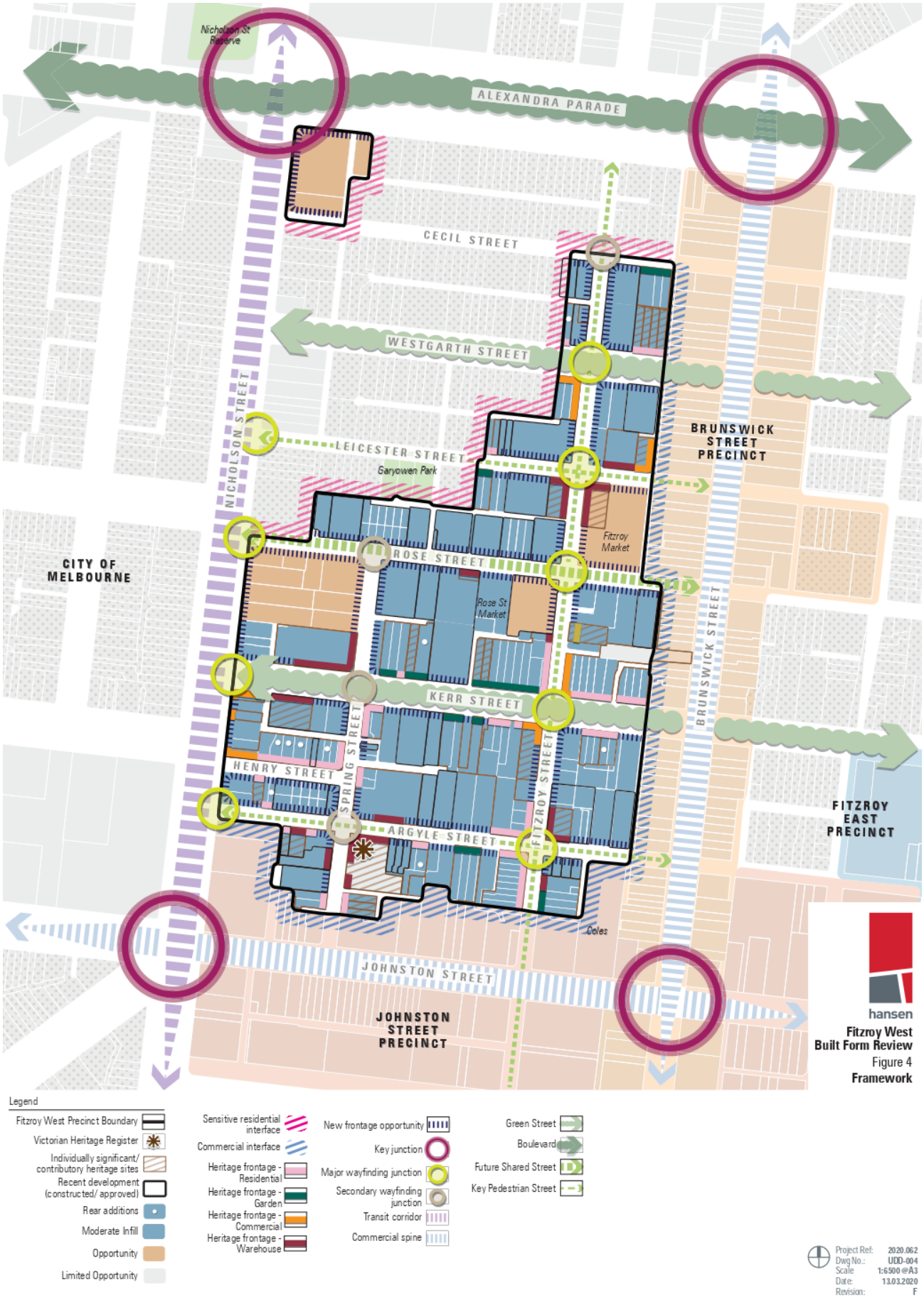
Rose Street- a key pedestrian connection & potential future shared street

Fitzroy Street is also an important north-south pedestrian connection, extending the entire Built Form Review study area length between the Alexandra Parade and Victoria Parade. The north and south of Kerr Street demonstrate a clear distinction in the potential for new development along this street. To the north of Kerr Street, much of Fitzroy Street comprises new street wall opportunity on sites currently presenting a secondary frontage or building 'sideage'. To the south of Kerr Street, there is a higher presence of contributory buildings with frontages to Fitzroy Street with limited opportunity for new development.

Where increased pedestrian footfall can be expected along these streets, street level activation and management of long term amenity impacts to the public realm should be prioritised (including solar access, wind mitigation, pedestrian scale considerations).

Fitzroy Street - important north-south pedestrian link

Attachment 3 - Attachment 3 - Fitzroy West Built Form Framework



Future Character Statement

Given this 'Framework' for change, the following future character statement is recommended.

Fitzroy West embodies a strong mixed heritage residential and industrial character and serves as an area of transition between the more active commercial spines along Brunswick and Johnston Streets and the established low-order residential area to the north-west.

This precinct is defined mostly by its grid street arrangement, with prominent east- west streets providing key pedestrian links between activity spines and transit corridors. The precinct is also characterised by a high frequency of corner sites, often defined by heritage forms. Future development will continue to retain prominence of these heritage corners while contributing to wayfinding experience within and to the periphery of the precinct.

Any new development within this precinct should be incremental in scale and must relate most strongly to its heritage context and street profile, which will continue to be framed by a variety of low-rise heritage residential and mid-rise contemporary infill on larger allotments and former industrial sites behind a low street wall profile in response to the heritage streetscape and sense of openness.

Framework Principles

In response to this distinction in the precinct's urban fabric, the preferred future-built form character will seek to build on its key attributes by adopting the following principles:

1. Retain and respond to low-rise heritage residential and industrial character of the precinct with incremental infill opportunity across the precinct.
2. Accommodate contemporary moderate, infill forms along Alexandra Parade, Nicholson Street and on large sites along Rose Street and Argyle Street.
3. Retain the diverse subdivision pattern referencing the narrative of early development within Fitzroy.
4. Retain the predominantly low-rise street wall and ensure stret walls turn the corner.
5. Reinforce the wide and narrow street definitions as relevant to the street.
6. Acknowledge existing and approved development.
7. Maintain solar access to opposite footpaths along key pedestrian streets and green streets.
8. Transition to existing heritage and adjoining residential sites.

PART 3: BUILT FORM PROPOSITION

The Built Form Proposition has been derived from the Built Form Framework which was informed by the Foundations Analysis and underpinned by the overall Background Analysis.

The Fitzroy West Precinct Built Form Proposition demonstrates block by block and street by street parameters for the precincts' evolution of new development. The identified parameters are neither fixed, or absolute but are intended to guide future change. The proposed proposition or 'controls' are represented in Figure 4 and are derived from the following basis:

- Heritage assessment and advice;
- Municipal Housing Strategy;
- Precinct character;
- Solar access;
- Local views and vistas;
- Heritage Street walls and upper levels;
- New street walls and upper level setbacks;
- Heritage frontage (including front setback);
- Transitions;
- Residential interfaces and amenity; and
- Building separation, amenity and equitable development.

The rationale for height parameters is outlined as follows:

3.1: Basis for Height Parameters

Heritage Input

GJM Heritage provided extensive heritage input based on comprehensive analysis comprising:

- The heritage grading of each property within the Heritage Overlays;
- The currency of existing Statements of Significance;
- Confirmation of places with Victorian Heritage Register nomination;
- Identification of local landmarks; and
- Recommended built form parameters to appropriately manage development within the heritage context.

Refer to GJM Heritage Report for details.

Housing Strategy

With reference to the adopted Housing Strategy for the Municipality (adopted 2018), the Fitzroy West precinct is identified as a part of the Brunswick Street Major Activity Centre, designated for incremental change, given presence of a cohesive and highly intact heritage and fine grain buildings. The Housing Strategy identifies future development to be in the form of smaller scale apartment developments and alterations and additions to existing buildings.

Precinct Character

Key characteristics that distinguish the Fitzroy West Precinct are attributed to intact heritage fabric, presence of mature street trees along east-west 'green' streets, narrow streets and varied street setbacks. Diversity in built form is attributed to a variation in the subdivision pattern, land use function and built form typology (dwellings, traditional shop fronts or warehouses). New development should seek to respond to the unique contextual characteristics and respond to unique sensitivities as required.

Street Proportions

Default preferred maximum building heights have been derived in relation to the adjoining street width. This has been based on considerable analysis and documentation of the existing relationships throughout the broader study area, which has shown there to be a strong correlation between the width, function and character of the street to the height and profile of the buildings which line it.

This study also recognises that street width relationship to the overall building height also has a strong correlation with the street's function and streetscape character.

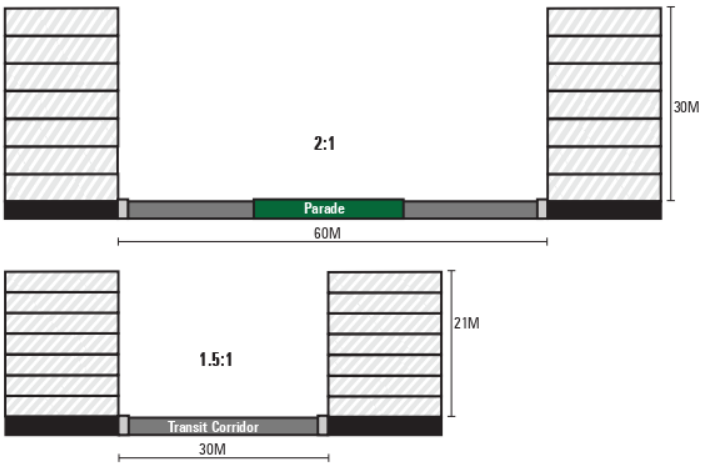
However, in order to respond to the prevailing streetwall scale, set backs to upper levels are required. They are also determined by the size and depth of lots, noting need for rear boundary transition conditions.

Parade Presence & Transit Corridor

Alexandra Parade (60m) and Nicholson Street (30m) are distinctively characterised by open, broad profile with a wide central median planting to Alexandra Parade and a tram corridor in the central median along Nicholson Street.

Therefore, as a starting point, the preferred overall building height of new forms along these open streets will seek to balance the opportunity presented by the generous road proportion with retaining the sense of openness. Importantly, it is also critical that future development continue to respond to its broader streescape character and heritage setting. The following is recommended:

- Up to 2:1 – Street width to overall building height ratio (main road corridors at key junction locations, large size lots).



A street width to building height ratio of up to 2:1 for parade and transport corridor

Typical streets

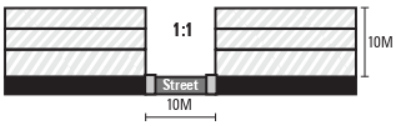
Based on analysis, a proportionate relationship between street width and building height suitably balances a street edge definition, pedestrian scale consideration at the street level and outdoor amenity.

Therefore, as a starting point, the preferred overall building height of new forms can be determined by the width of the street which ranges between 10-20m in the context of Fitzroy West. The size and depth of allotments and lack of sensitive interfaces was another factor when considering an increase in the default ratio as small and shallow lots would not be able to accommodate taller forms.

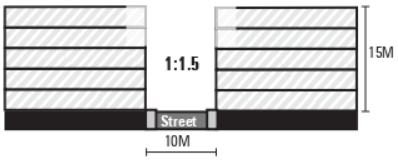
The proportionate relationship between street width and overall building heights for Fitzroy West along its narrow streets, seeks to retain an open view to the sky from within the footpaths and ensure future development does not overwhelm the heritage setting.

The following is recommended:

- Up to 1:1 – Default street width to overall building height ratio (for fine grained lots on streets between 10m-20m wide).
- Up to 1:1.5 – Increased street width to overall building height ratio (for moderate size lots on streets between 10-20m wide).



A default street width to building height ratio 1:1 for local streets (10-20m) for fine grained lots



A default street width to building height ratio 1:1.5 for local streets (10-20m) for moderate sized lots

Solar Access to the Public Realm

In inner urban areas such as Fitzroy, solar access to the public realm is an important consideration. Therefore, future urban form should protect solar access to key streets and open spaces appropriately to ensure 'life and attraction' at the street level for residents and visitors.

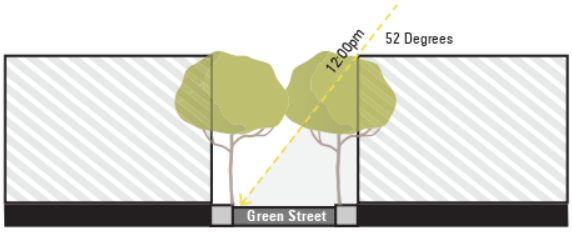
The Urban Design Guidelines for Victoria contains the following relevant Objectives and Guidelines:

'Objective 5.1.3 To ensure buildings in activity centres provide equitable access to daylight and sunlight', and

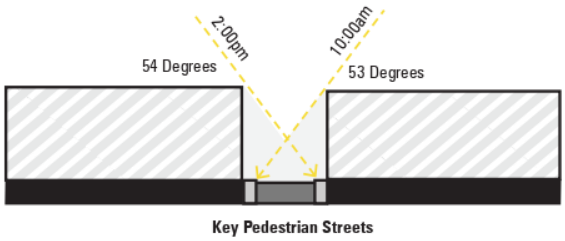
'5.1.3a Locate and arrange the building to allow daylight and winter sun access to key public spaces and key established street spaces.'

Within the Fitzroy West Precinct we recommend the following solar access measures to maintain appropriate solar access to the public realm, measured on 22 September (the equinox):

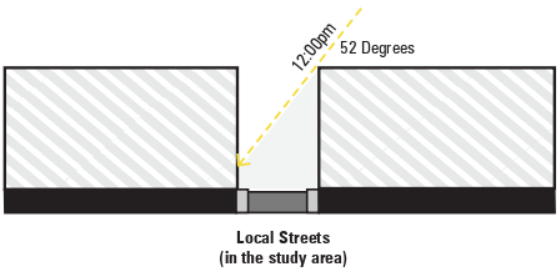
- **Green streets:** along Westgarth Street and Kerr Street, avoid overshadowing of the southern footpath between 10am and 2pm.
- **Key pedestrian streets and key east-west streets:** along Leicester Street and Argyle Street avoid additional overshadowing of opposite footpaths between 10am and 2pm.
- Parts of footpaths along Rose Street (west of Fitzroy Street) and part of Fitzroy Street (between Kerr Street and Rose Street) are already overshadowed by recent construction. New development should minimise additional overshadowing of opposite footpaths along these key streets between 10am and 2pm.
- **Other streets (within the study area)**: along Spring Street and Henry Street, avoid overshadowing above the ground floor of buildings. On narrower perpendicular side streets, some overshadowing of footpath (south side) is inevitable. It was determined that protection of solar access to first floor should be supported.
- **Other streets (outside the study area):** avoid overshadowing of footpaths to opposite side of the street between 10am to 2pm.



12pm exquinox solar angle along 20m wide Green Street



10am and 2pm exquinox solar angles along 10m wide key pedestrian street (north- south)



12pm exquinox solar angles along 10m wide streets (in the study area)

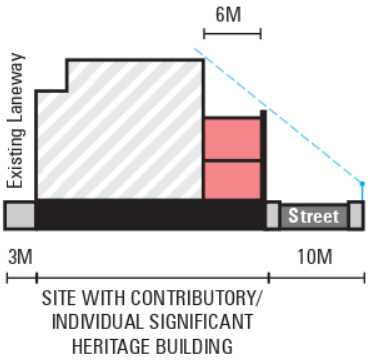
Heritage Street Walls and Upper Levels

Within the Fitzroy West study area, there is extensive heritage fabric which is to be retained and enhanced. The recommended upper level setback parameters for contributory or individually significant sites draw on the objectives and provisions of Clause 22.02, 22.10 and 22.14 as well as hertiage advice from GJM Heritage.

A **default 6m measurement** (from the facade) to the new built form including balcony line) is applied to all contributory and individually significant sites.

This is to ensure adequate protection of the primary heritage 'volume' (including chimneys, and exposed roof forms). The default upper level setback will also protect facade articulation in the streetscape elevation with spatial separation between the street wall or frontage and recessive upper levels (behind).

Where opportunity for taller development exists behind the heritage volume, an upper level setback greater than the default 6m will be required in addition to consideration of a sensitive architectural design treatments (massing, form and materiality) to ensure the new form does not visually compete with the heritage element.

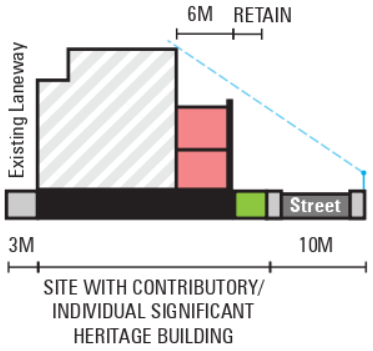


Preferred setback above heritage street wall

Heritage Frontages

Based on an understanding of heritage advice and the distinct built form character across the precinct, the following parameters guide the preferred built form response for heritage frontages in the study area:

- Heritage forms (both VHR and Non-VHR) should retain existing heritage frontages, including front setbacks. This is particularly relevant to Kerr Street, Westgarth Street, Argyle Street, Cecil Stret and Fitzroy Street where existing heritage forms (including single-storey residential) are setback from the street frontage for front gardens and terrace.
- Retention of all built fabric within sites with VHR designation (14-16 Spring Street). It also precludes new built form within the 'air rights' above VHR buildings.
- Where new buildings are proposed within the side or rear setback of VHR sites, they are to be positioned behind existing structures, ensuring heritage frontages are not concealed by new forms from streetscape views.
- New built form to the rear of individually significant residential heritage forms, including single and two storey terraces should ensure upper levels are highly recessive in view.



Preferred setback above and behind heritage frontage

New Street Wall and Upper Levels

In urban areas, urban design guidelines typically seek to introduce a 'street wall' and 'upper-level front setback' measure. The purpose of such a distinction and separation is to maintain the prominence of 'traditional' frontages within the streetscape while enabling new and increased heights in a recessive order. Upper-level setbacks also retain a sense of openness to the street, which is prominent in a pedestrian's field of vision and reinforces the traditional street wall scale.

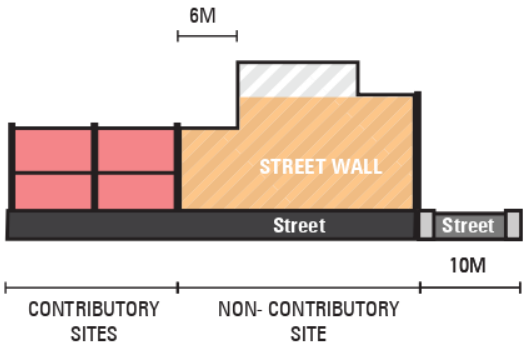
New street wall heights

The Fitzroy West precinct has a diverse mix of street wall and frontage heights, including pockets with narrow front garden setbacks. New street walls should acknowledge the prevailing height of adjacent contributory or individually significant heritage forms and adopt a complementary street wall height.

Importantly, new street walls should not diminish the heritage qualities of the streetscape. Where a site is adjacent to a single storey heritage form, a street wall transition is considered appropriate in ensuring the traditional form is not overwhelmed by new development.

The following is recommended:

- A **'default' street wall height of 2 storeys** (8m) is applicable for sites adjoining contributory/ individual significant heritage sites, or where a prevailing heritage streetscape is present, such as Cecil Street, Westgarth Street, Leicester Street, Kerr Street, Argyle Street, Spring Street and Fitzroy Street. The 2 storeys street walls at non- contributory corner sites will also respond to key junctions which are currently framed by heritage corners on two or three sides including:
  - Fitzroy Street with Leicester Street (2 sides).
  - Fitzroy Street with Kerr Street (3 sides).
  - Fitzroy Stret and Argyle Street (3 sides).
  - Spring Street and Kerr Street (2 sides).
- An increased **street wall height of 3 storeys (11.2m)** is recommended for non-contributory sites. The 3 storey street wall reponds to the prevailing low-rise forms (2-3 storeys) within the outside the study area and the narrow street profile. Along Rose Street, new street walls should reference the prevailing street wall heights of recent infill development at 3 storeys (11.2m). This complements the role of the street as a future shared street, maximising opportunities for passive surveillance and activity to the public realm. Where future developments contribute to wayfinding and where heritage and residential sensitivites are limited, a street wall height of 3 storeys (11.2m) is also recommended for corner sites including at the following junctions:
  - Fitzroy Street and Rose Street.
  - Spring Street and Rose Street.
  - Nicholson Street and Rose Street, Kerr Street, Henry Street and Argyle Street.
- At the corner of **Nichsolson and Alexandra Parade** a taller street wall height of 4 storeys (14.4m) is considered appropriate in demarcating a notable junction in the precinct and acknowledging the lack of sensitive interfaces to the north and west of the site. This street wall height also complements the controls applied to the corner of Johnston and Nicholson Street in the south (refer Johnston Street Built Form Framework).
- In some instances, sites have direct abuttals to contributory heritage sites. New street wall should **transition** from taller street wall to respond to the abutting heritage parapet for a length of approximately 6m or to the nearest property boundary (if less than 6m).



Preferred street wall transition for corner sites

Upper level setbacks for non-contributory sites

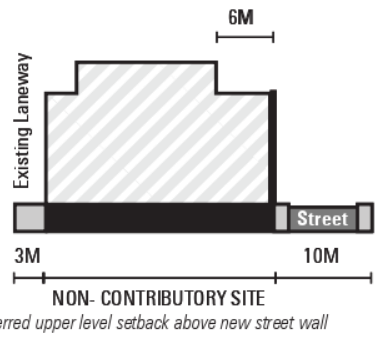
The purpose of the upper level setback is to:

- Provide a clear distinction between 'base' and 'top'.
- Create a degree of consistency for upper levels that comprises a mix of heritage and non-heritage forms.
- Ensure the new upper level does not visually dominate the streetscapes.
- Ensure no unreasonable overshadowing of the public realm (taller buildings may require upper level setback greater than 3m to meet the overshadowing requirement).

To ensure the visual distinction between new street walls from upper levels, to retain a visually dominant street wall and in response to heritage streetscape, **a 'default' 6m upper level setback** (from the street boundary to building facade including balcony line) is applied to all non-contributory sites fronting:

- Nicholson Street and Alexandra Parade for emphasizing a dominant street wall, to respond to the open profile and prevailing streetscape character.
- Cecil, Westgarth, Kerr and Argyle Streets to be visually recessive and subservient to heritage fabric in response to more intact streetscapes and to retain an open sky view from the within the public realm.
- Key corners at intersections of Leicester and Fitzroy Streets, Argyle and Spring Streets and Argyle and Fitzroy Streets to retain visual prominence of the industrial buildings at key corners.

A reduced setback (3m) is applicable to Rose Street, Fitzroy Street, Spring Street (north of Kerr Street), Henry Street where solar access to the public/ private realm can be achieved and the visual exposure of new upper levels does not compete with the street wall or adjacent heritage form or where there is already an established setback line from recent development.In the context of the study area, Fitzroy Street and Spring Street are mostly presented with 'sideages' to fine grain properties. A reduced setback is considered an appropriate response to the fine-grained subdivision pattern.



Preferred upper level setback above new street wall

Upper Level Expression

The design of upper levels of new development should:

- Be well articulated and break up the building mass;
- Distinguish between the lower and upper levels through materials and articulation;
- Be designed so that sidewalls are articulated and read as part of the overall building design and not detract from the streetscape when viewed from direct and oblique views along the streetscape; and
- Provide passive surveillance of adjacent streets and public open space.

Transition

In this part of Fitzroy, the transition in building height is gradual and is guided by the character of the main road corridors that border the precinct.

Brunswick Street is an important traditional retail spine to the east. New built form proposition behind heritage frontages is in the order of 3 to 5 storeys to maintain the prominence of heritage buildings (refer to Brunswick Street Built Form Framework). While taller built form can be accommodated on larger lots behind the spine, future built form in the precinct should acknowledge the important view corridor along Brunswick Street and ensure the height of buildings does not overwhelm the backdrop of traditional fine grain frontages.

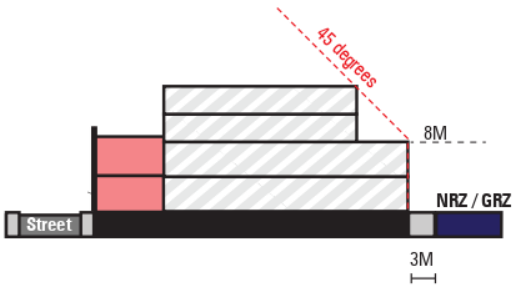
Johnston Street retail spine defines the precinct's southern boundary. New built form proposition behind heritage and non-heritage frontages is in the order 5 to 7 storeys, with an opportunity for a corner definition at the north eastern junction of Jonston Street and Nicholson Street (refer to Johnston Street West Built Form Framework). Consistent with the Brunswick Street spine approach, built form heights in the Fitzroy West precinct does not seek to compete with the urban morphology envisaged for key activity spines.

To Nicholson Street (west) and Alexandra Parade (north) the width of the road allows increased building heights toward this edge. New built form should seek to transition in height to existing residential and heritage forms found on east-west streets to the east. Within the Fitzroy West precinct, larger sites may be able to accommodate a gradual transition within its own site, through recessive upper levels, or variation in street wall heights. Overly stepped forms, or 'wedding cake' outcomes should be avoided.

Future development with an immediate abuttal to individually significant heritage sites, or sites with VHR designation should also accommodate height and potential setback, to avoid overwhelming and visually dominating the heritage forms. The appropriate level of transition should be assessed on a case by case basis during town planning application phase.

Residential Interfaces (including laneway)

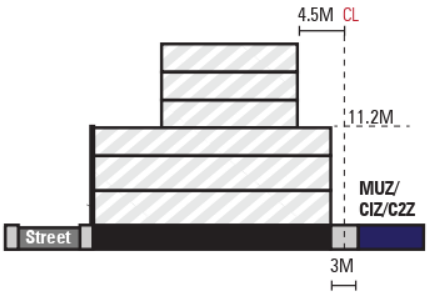
Fitzroy West does not comprise a significant number of lots with a rear interface with Residential Zoned land. The majority of residential interfaces are separated by rear laneways and there are few instances where lots have a direct abuttal to residential properties. Residential interfaces are often defined by secondary frontage or party walls (1- 2 storeys). Along these residential interfaces (with, or without laneway separation), an 8m (2 storeys) form built to the boundary is required with a recessive upper-level setback (behind a 45- degree setback envelope) to ensure residential amenity is protected.



Preferred built form transition to residential zone land (GRZ/NRZ)

Non-Residential Interfaces (including laneway)

The precinct comprises a mix of rear interface conditions including laneways of varying widths and rear abuttals. Future development should respond to these mixed conditions. Where new development is separated from adjoining non-residential sites by a laneway (typically 3m wide), it should present a maximum 11.2m (3 storeys) form at the interface, with any built form above set back 4.5m from the centreline of the laneway. This ensures a minimum distance of 9m is provided between adjoining sites to facilitate equitable development achieving adequate separation between dwellings.



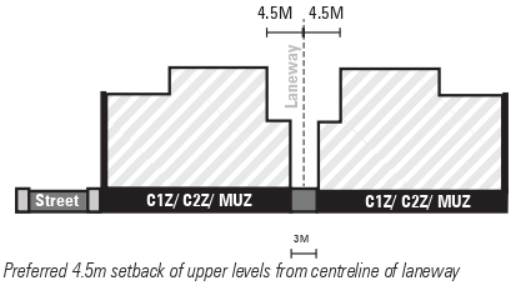
Preferred built form transition to MUZ or C1Z sites

Building Separation, Amenity & Equitable Development

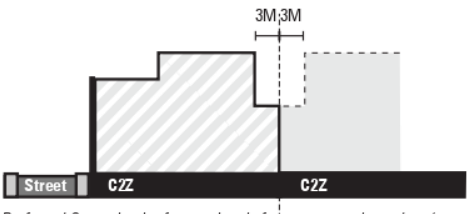
New development should provide a design response that considers the existing condition and future development opportunities of adjacent properties in terms of outlook, daylight and solar access to windows. Development should be setback from common boundaries to provide separation between buildings at the upper levels (above the street wall):

- A minimum of 4.5m from the boundary where a habitable room window is proposed;
- A minimum of 3m from the boundary where a non-habitable room window or commercial window is proposed; and
- A minimum for 4.5m from the edge of a proposed balcony or terrace.

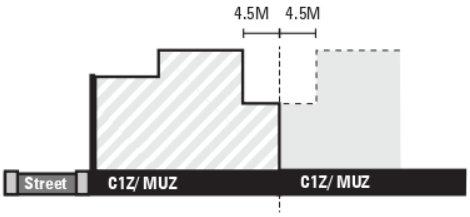
Where the common side boundary is a laneway, the setback is measured from the centre of the laneway.



Preferred 4.5m setback of upper levels from centreline of laneway (minimum 3m wide)

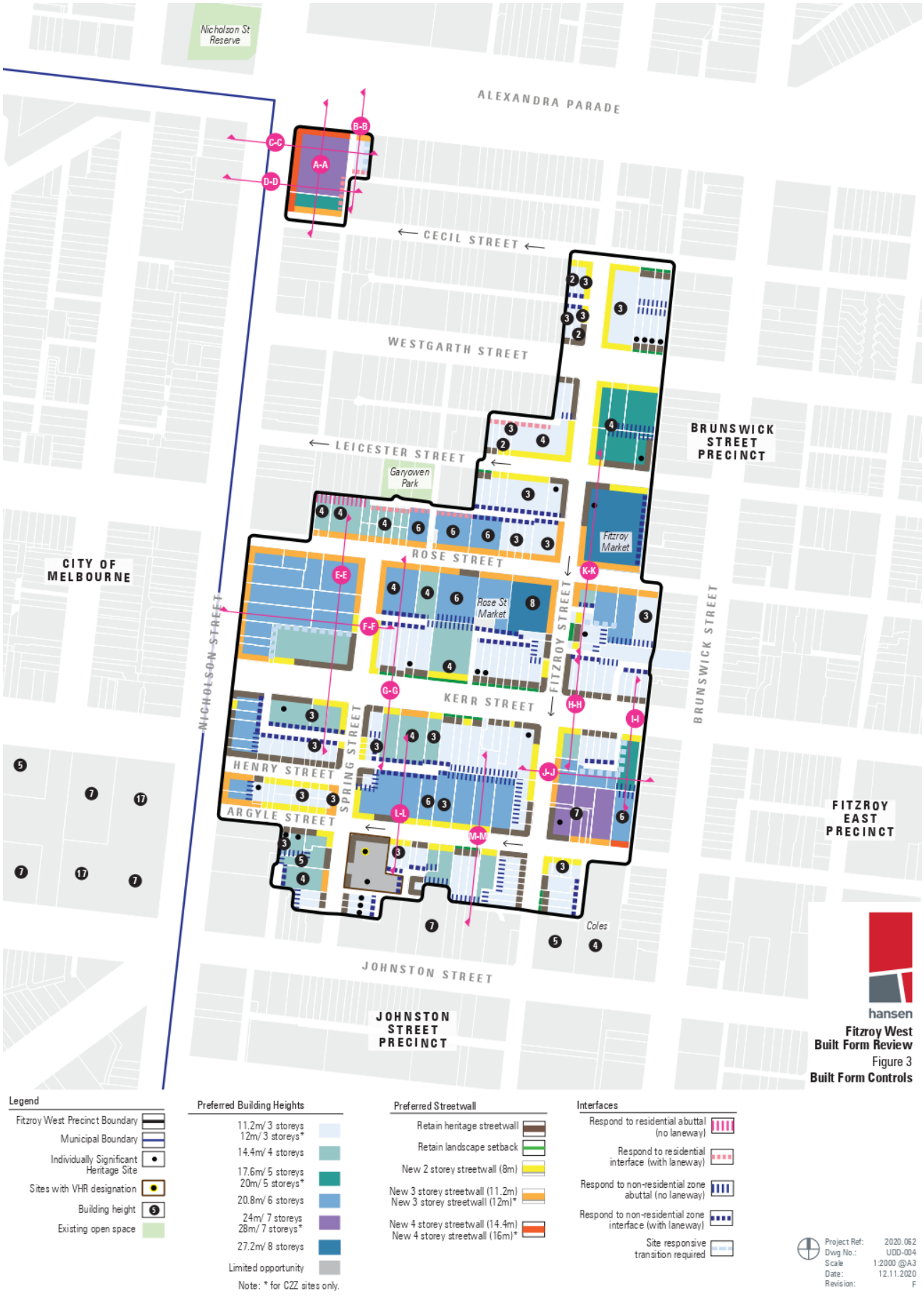


Preferred 3m setback of upper levels from common boundary (secondary outlook)



Preferred 4.5m setback of upper levels from common boundary (primary outlook)

Attachment 3 - Attachment 3 - Fitzroy West Built Form Framework



PART 4: RECOMMENDED CONTROLS

4.1 Methodology

The formulation of future building heights and streetwall conditions within the Fitzroy West Precinct has been influenced by many factors, including:

- Planning Policy Framework;
- Local Planning Policy Framework, including Zones and Overlays;
- Practice Note No. 60 – Height and Setback Controls for Activity Centre;
- Practice Note No. 59 – The Role of Mandatory Provisions in Planning Schemes;
- City of Yarra Housing Strategy (Adopted 4 September 2018);
- Review & Development of the City of Yarra Landmarks Policy (March 2018);
- Urban Design Guidelines for Victoria, 2017;
- Anticipated scale and form of development outside the study area (i.e. within Residential and Employment Zones);
- Views to existing municipal and local landmarks from the public realm;
- Recognition of Yarra's heritage skyline;
- Recent development approvals (including those currently under-construction);
- 3D computer modelling of built form testing for the study area;
- Independent heritage advice and existing character considerations, consistent with the expert heritage advice provided by Council's heritage advisors (GJM Heritage);
- The overall Brunswick Street and Smith Street Built Form Review Background Report (November, 2019); and
- Extensive site inspections and workshops with Council's officers.
- Planning Panel Recommendations for:
  - Johnston Street Local Area Plan (C220);
  - Queens Parade Built Form Review (C223);
  - Swan Street Built Form Review (C191).

4.2 Assumptions

Formula for Deriving Numerical Building Heights

The maximum building heights has been calculated to a higher (than minimum) floor to floor heights in order to:

- Respond to the typical heights found within heritage buildings (between 8-11.2m);
- Accommodate for greater than minimum standards and provide flexibility for future uses;
- Allowance for other design elements to be accommodated, such as parapets, railings, etc.

The following numerical floor to floor dimensions were employed:

- Ground Floor and First Floor: 4m
- Second floor and above: 3.2m

Note: Higher numerical floor levels for mixed use development may be required at upper levels.

Formula for Deriving Numerical Streetwall Heights

The maximum streetwall heights have been calculated based on the above floor to floor heights, plus additional height to allow for parapets, balustrades and minor architectural features.

Zero front setback

New buildings within a commercial and mixed use setting and inner urban areas such as Fitzroy West should generally be built to the street frontage in order to:

- Respond to the prevailing built form character of the area;
- Provide a clear definition at the street edge; and
- Maximise the developable area.

With the exception of retaining existing front setbacks, all new street walls within the commercial and mixed use zone should be built to boundary.

Top Floor Depth

A minimum depth of approximately 10m for the upper most level has been considered in determining overall building heights. This minimum dimension is based on a typical apartment depth, and provision of efficient access.

4.3 Precincts

The preceeding proposition indicated that the Fitzroy West Precinct's propensity for change is primarily influenced by the site's primary frontage to wider and higher order streets, opportunity for land consolidation or narrower local streets.

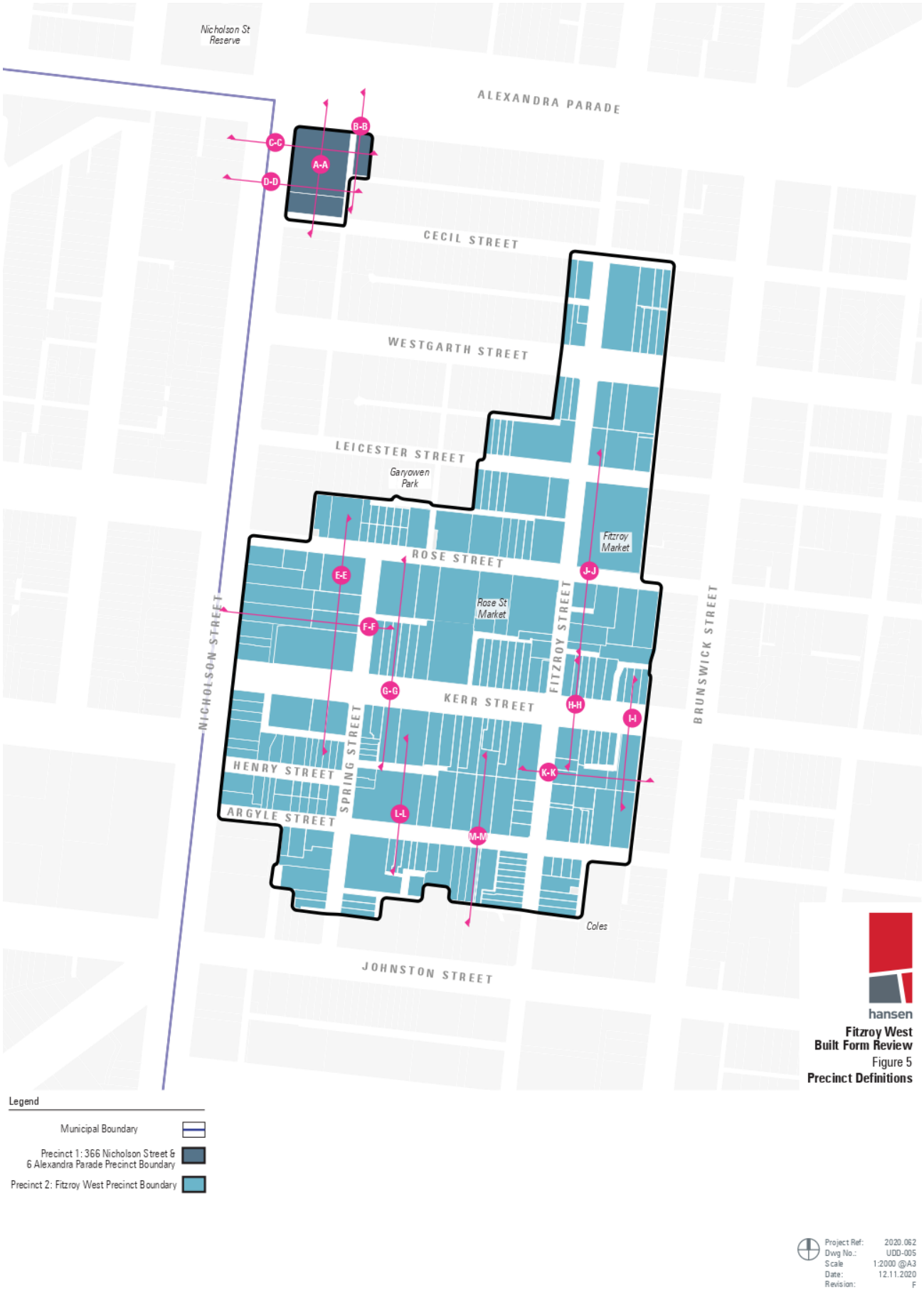
Given the relatively confined and diverse nature of the Fitzroy West precinct, it was considered appropriate not to divide it into smaller precincts. Instead, the sub-precinct definition are intended to identify key areas where site-specific response is warranted given its size and particular conditions.

These are:

SUB-PRECINCT	STREET WALLS / GROUND LEVEL SETBACKS	PREFERRED MAXIMUM BUILDING HEIGHTS
ALEXANDRA PARADE (366 NICHOLSON STREET & 6 ALEXANDRA PARADE)	▪ 3 storeys (12m) to 4 storeys (16m).	3-7 storeys (12m to 28m)
FITZROY WEST	▪ Retain existing front setback (as relevant). ▪ Match adjoining heritage eaves/ parapet, or lower. ▪ 2 storeys (8m) to 3 storeys (11.2m). ▪ Preserve existing buildings on VHR sites.	3- 8 storeys (11.2m to 27.2m)

The following diagram illustrates a breakdown of these precinct boundaries (overleaf).

Attachment 3 - Attachment 3 - Fitzroy West Built Form Framework



PRECINCT 1: ALEXANDRA PARADE

366 NICHOLSON STREET & 6 ALEXANDRA PARADE

This site comprises lots with a primary frontage to Alexandra Parade (south side of the Parade) and Nicholson Street (east side of the street), holding the north eastern junction of this notable intersection.

It is noted that the site is currently in Commercial Zone (C2Z) and not identified within the Brunswick Street and Smith Street Major Activity Centre (City of Yarra Housing Strategy, Adopted 2018).

Preferred precinct character statement

There is a moderate level of change expected to occur at this Municipal threshold, contributing to the boulevard character of Alexandra Parade while recognising its immediate residential context is unlikely to change considerably in the long term.

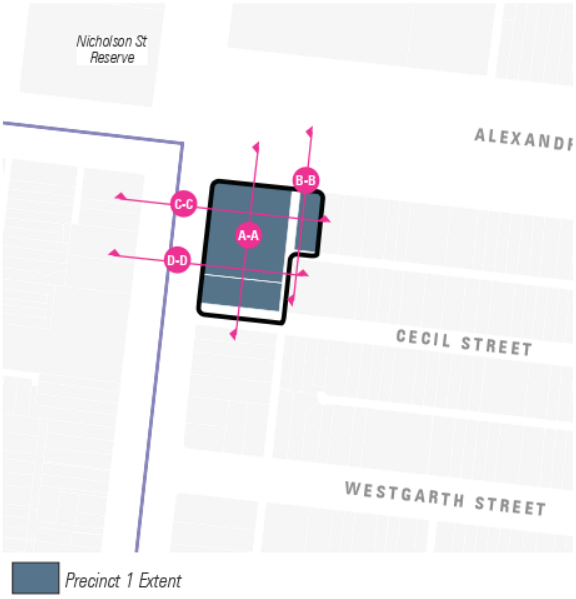
Future development will embrace its corner, main road and heritage influences by adopting new stret walls and a taller building profile along its Alexandra Parade frontage and transition to its sensitive southern and eastern interfaces.

New upper levels will be visually recessive when viewed from Cecil Street in the oblique, ensuring future upper level additions do not overwhelm the pedestrian experience and avoid overshadowing of footpath on the south side.

Built Form Objectives

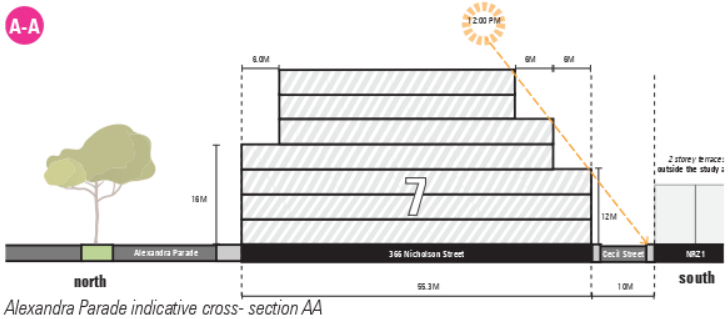
- To encourage a new built form character on the western junction of Alexandra Parade.
- To maintain a sense of openness within the streetscape.
- To ensure a clear distinction between streetwall profile and rising form behind.
- To encourage development that is made up of parts to reinforce the profile of urban blocks in the precinct.
- To sensitively respond to abutting low-rise and heritage forms.
- To provide a transition to residential neighbourhood to the south and east.

Cecil Street looking east

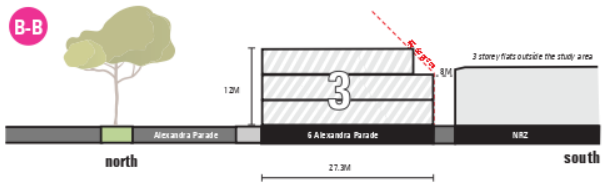


Guidelines

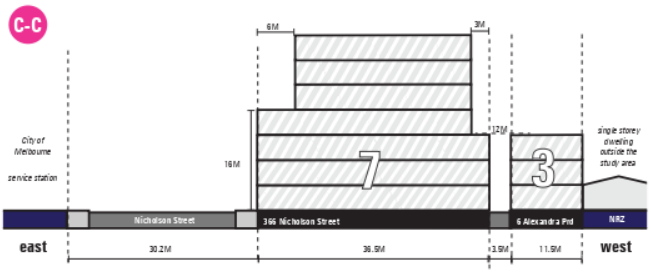
1. Ensure new development reinforces a dominant street wall presentation.
2. Ensure new development on corner sites is designed in the round and 'turns the corner' to address all street frontages.
3. Ensure new development maintains solar access to footpath on opposite side of Cecil Street between 10am to 2pm at the equinox (21 September).
4. Encourage ground level to be setback from the Alexandra Parade and Nicholson Street corner frontage for footpath widening.
5. Ensure servicing and car parking is provided from Cecil Street or side and rear laneways.
6. Facilitate equitable development outcomes to adjacent sites through adequate building separation to rear boundaries.
7. Ensure new development provides opportunities for improved passive surveillance to streets at ground and upper levels.
8. Ensure new development avoids the presentation of overly stepped or 'wedding-cake' presentation.



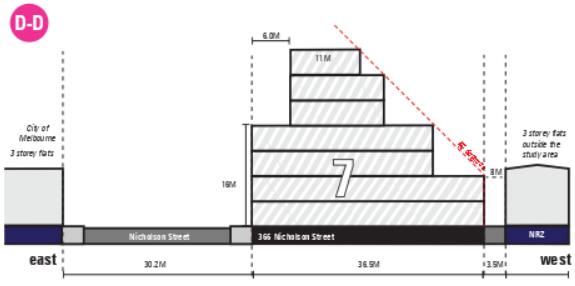
Alexandra Parade indicative cross- section AA



Alexandra Parade indicative cross- section BB



Nicholson Street indicative cross-section CC



Nicholson Street indicative cross-section DD

PRECINCT 2: FITZROY WEST

This precinct comprises lots with primary frontages to local streets, mostly towards east- west streets between Brunswick Street in the east and Nicholson Street to the west. There is a high frequency of intersections with limited subdivisions oriented east- west fronting Nicholson Street, Fitzroy Street and Spring Street at the southern part.

Preferred precinct character statement

Fitzroy West will continue to be defined by a diverse mix of heritage residential and industrial built forms in Mixed Use Zone, between Brunswick Street and Nicholson Street. Future development will respond to this mixed character by adopting low and mid rise infill forms that are carefully shaped by its heritage, subdivision and streetscape influences.

Areas for increased opportunity for contemporary mid-rise development along Nicholson Street and on larger allotments with limited heritage and residential sensitivity fronting Rose Street and the north-eastern part of Leicester Street, acknowledging recently completed and approved mid-rise developments.

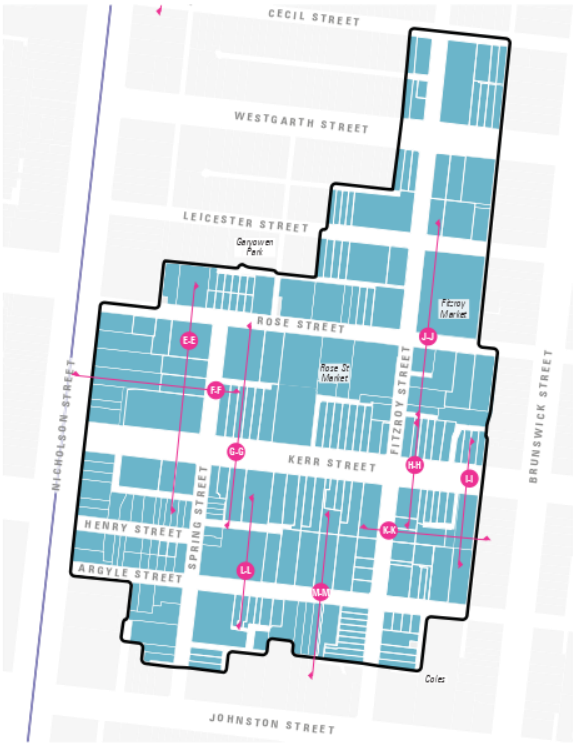
Infill development opportunities within the precinct will be recessive, adopting a 'street wall and setback' model to retain the prominence and diversity of the heritage frontages, as well as the open sky view when viewed from within the street corridor. New upper levels will turn the corner and transition to residential interfaces at the side and rear.

Future development in this precinct will continue to recognise the importance of junctions and corner sites for wayfinding and sense of place. New street walls and setback upper levels will respond to the prevailing heritage feature of the junction. Additionally, the junction of Fitzroy and Rose Streets play an important wayfinding role being at the intersection of two key pedestrian connections.

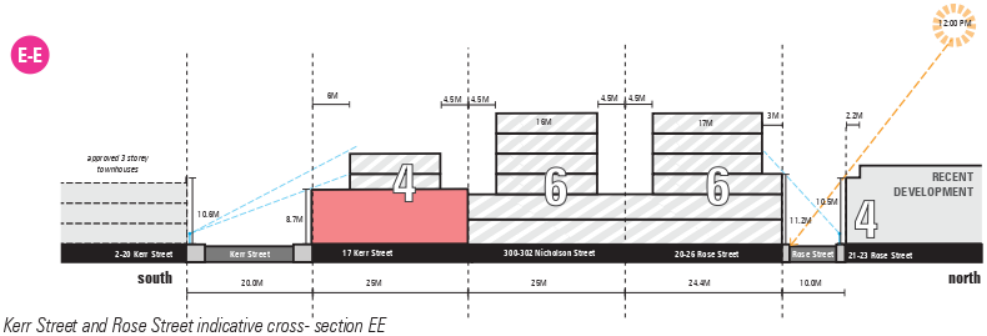
Westgarth Street looking west from within Fitzroy Street

Built Form Objectives

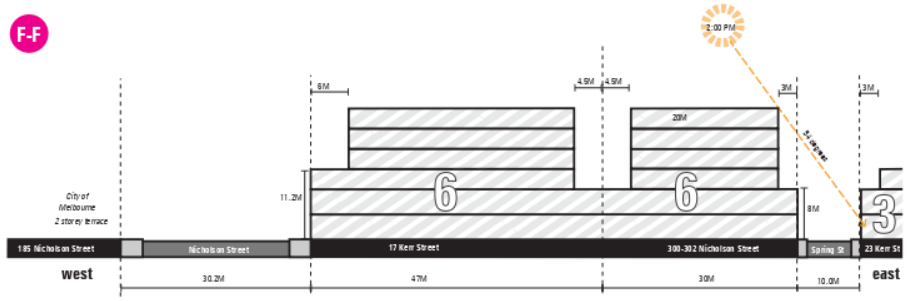
- To support modest development opportunity that respects the heritage values of the precinct.
- To support contemporary mid-rise development on large site with limited heritage and residential sensitivity.
- To retain the prevailing low-rise streetscape presentation.
- To ensure the heritage frontage remains the visually dominant element of built form and new development is visually recessive and does not dominate the streetscape.
- To encourage development that is made up of parts on large, non-contributory sites to reinforce the profile of urban blocks in the precinct.
- To retain existing built fabric on VHR sites.
- To support development that contributes to an active, high quality and pedestrian-friendly environment.
- To maintain solar access to footpaths on key pedestrian streets and green streets.
- To provide adequate transitions to residential interfaces.



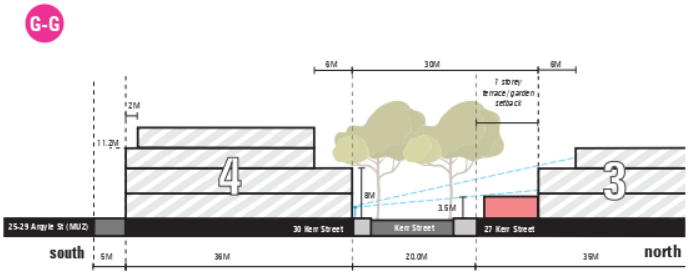
Precinct 2 Extent



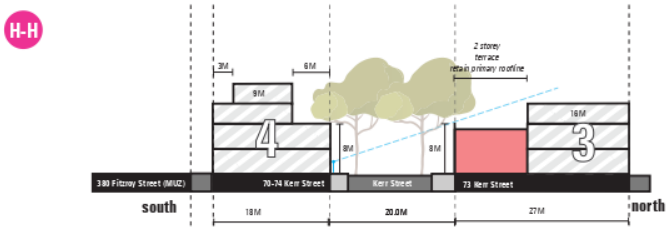
Kerr Street and Rose Street indicative cross- section EE



Nicholson Street and Spring Street indicative cross- section FF



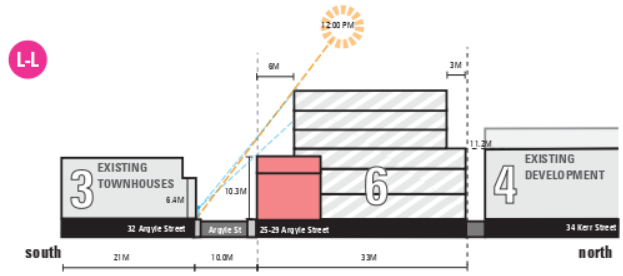
Kerr Street indicative cross- section GG



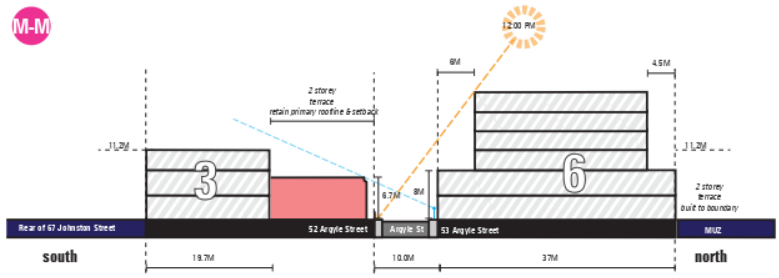
Kerr Street indicative cross- section HH

Guidelines

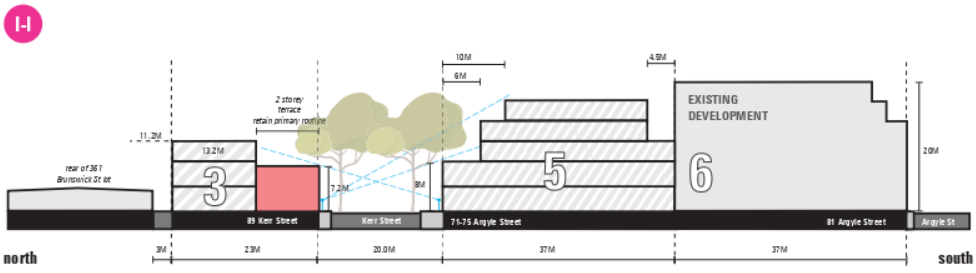
1. Ensure new street walls match the parapet height of adjoining heritage forms.
2. Avoid new single storey street wall.
3. Establish a clear distinction between street wall and rising form behind.
4. Encourage retention and repurposing of existing built form on VHR sites.
5. Ensure new development complements heritage architectural features (grain and rhythm).
6. Ensure new development on corner sites is designed in the round and 'turns the corner' to address all street frontages.
7. Ensure upper levels behind heritage street wall adopt a 'recessive' architectural language and material palette.
8. Ensure new development avoids the presentation of overly stepped or 'wedding-cake' presentation.
9. Ensure new development recognise heritage sensitivity along the Brunswick Street spine.
10. Ensure new development maintains solar access to:
    - The footpath on the south side of Westgarth Street and Kerr Street between 10am and 2pm at the equinox.
    - To footpath on the west side of Fitzroy Street at 10am at the equinox.
    - To footpath on the east side of Fitzroy Street at 2pm at the equinox.
    - For other streets within the study area, to level 1 (above ground level) between 10am and 2pm at the equinox (21 September).
11. Facilitate equitable development outcomes to adjacent sites through adequate building separation to side and rear boundaries.
12. Ensure exposed party walls to side boundaries are designed to be visually interesting.
13. Ensure servicing and car parking is provided from secondary side streets or rear laneways.
14. Ensure new development provides opportunities for improved passive surveillance to streets at ground and upper levels.



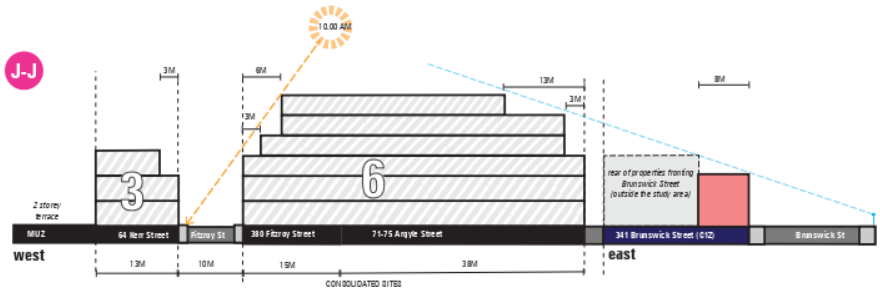
Argyle Street indicative cross- section LL



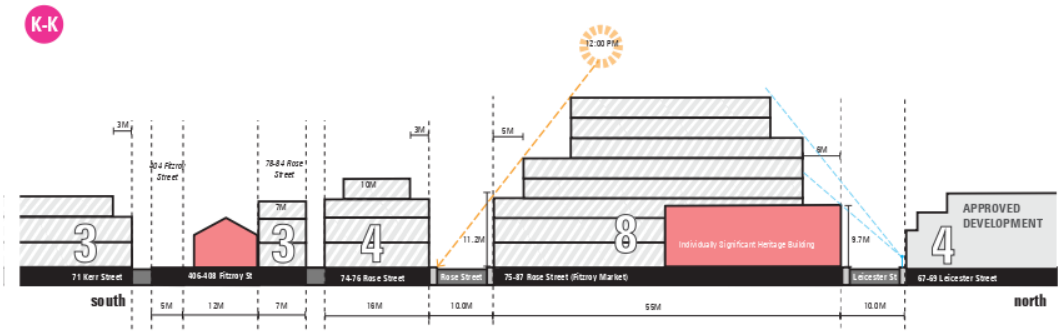
Argyle Street indicative cross- section MM



Kerr Street indicative cross- section II



Rose Street and Leicester Street indicative cross- section JJ



Fitzroy Street indicative cross- section KK

4.4 General Built Form Guidelines

Built Form Recommendations

A range of specific built form recommendations and design guidelines have been developed for all precincts.

These built form guidelines focus on the Fitzroy West Precinct, where future development is anticipated and design guidance is required.

Visually distinct additions and upper levels

Given the diverse character of Fitzroy West, new buildings or additions should be designed to have a visually distinctive architectural expression from the heritage element. This is in order to ensure that new form can be clearly 'read' and understood as a more recent component. It also encourages contemporary architectural responses which will contribute to the 'richness' and diversity of built form.

Lightweight materials, colours and finishes that contrast with the prevailing masonry forms are also encouraged to assist in the clear distinction between new and old, while also assist in visually recessing new forms.

Architectural Considerations

To street frontages, expansive blank walls should be avoided and where visible from within the public realm, any blank walls need to be visually divided into small elements through architectural treatments or artistic decoration to reduce visual mass.

Fenestration patterns and facade solid to void proportions need to reflect the prevailing streetscape rhythm and presentation.

New forms should 'fit' within the prevailing streetscape character. Avoid overly busy and complex architectural expressions.

New forms should also ensure exposed party walls to side boundaries are designed to be visually dynamic to minimise visual bulk.

Active and Semi Frontages

In Activity Centres and Mixed Use areas, buildings must provide sufficient activation at street level to foster 'life' on the street and provide opportunities to maximise safety via passive surveillance. Along the key movement corridors such as Rose Street, Leicester Street, Fitzroy Street and Nicholson Street, active ground frontages are encouraged.

Along local streets and mixed use areas, semi-active frontages are more appropriate. As these 'less active' frontages still maintain an appropriate level of passive surveillance, while also providing more privacy and seclusion to the inside of the building, befitting the nature of the use as a dwelling or office.

Direct pedestrian entries into ground floor uses is encouraged, particular on larger sites, with broad frontages.

Upper levels also provide opportunities for 'eyes on the street' and contribute to passive surveillance of the public realm. Windows and balconies that orientate towards the street (rather than to side boundaries) are encouraged.

Public Open Space provision

Public open space is an important element within urban areas, as is its spatial provision. In inner urban areas such as the Fitzroy West Precinct the provision of streets as extension of public space is important to the social health and well-being of a local community. There are presently no 'pocket parks', or open space within the study area. The potential for a permanent shared zone arrangement at Rose Street is being investigated and from an urba ndesign perspective, it is an appropriate response to the anticipated increase in pedestrian footfall and improvement to pedestrian amenity when footpath widening, or road closure may not be achievable.

Services and Vehicle access

Ensure servicing and car parking is provided from secondary side streets or rear laneways.

The consolidation of services into basement levels is highly encouraged to mitigate extent of inactive, blank walls to the public realm. Ensure provision of servicing and car parking do not dominate the street.

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BUILT FORM REVIEW:

ALEXANDRA PARADE

HERITAGE ANALYSIS & RECOMMENDATIONS

PREPARED FOR:	City of Yarra
DATE:	November 2020
FILE:	2020-008

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As is the case for 37.5% of Victoria, no Traditional Owners have been formally recognized for parts of the land included in the study area. The land to the north of Alexandra Parade, however, forms part of the traditional lands of the Wurundjeri People, who are represented by the Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation.

This report is limited in its scope to consideration of post-contact cultural heritage and does not provide advice on any Aboriginal cultural heritage significance. Nonetheless, we acknowledge the Traditional Owners of the land at this place, including the Wurundjeri People, and pay our respects to their Elders past, present and emerging. For more information on the Wurundjeri People, please visit https://www.wurundjeri.com.au.

PROJECT TEAM

Jim Gard'ner | Director

Renae Jarman | Director

Ros Coleman | Associate

Jessica Hogg | Heritage Consultant

Cover Image: *Alexandra Parade looking east towards the Clifton Hill Shot Tower from the intersection with Wellington Street*

GLOSSARY OF ABBREVIATIONS

Appendix 8	Incorporated Document 'City of Yarra Review of Heritage Overlay Areas 2007: Appendix 8 (revised May 2018)'
C1Z	Commercial 1 Zone
C2Z	Commercial 2 Zone
DDO	Design and Development Overlay
DELWP	Department of Environment, Land, Water and Planning
GRZ	General Residential Zone
HO	Heritage Overlay
MAC	Major Activity Centre
MUZ	Mixed Use Zone
NAC	Neighbourhood Activity Centre
NRZ	Neighbourhood Residential Zone
PPN	Planning Practice Note
VHR	Victorian Heritage Register

All photos taken by GJM Heritage in March 2020 unless otherwise stated.

DOCUMENT VERSIONS

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	Final Draft v0.2	City of Yarra	10 November 2020
	FInal	City of Yarra	16 November 2020

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EXECUTIVE SUMMARY

Hansen Partnership, on behalf of the City of Yarra (Council), has prepared a Built Form Review of three precincts: Alexandra Parade, Victoria Parade and Fitzroy West. This forms part of a larger project that considers built form controls for commercial high streets and mixed use / commercial zoned precincts within Fitzroy, Collingwood and (part) Clifton Hill (Figure 1). The purpose of this Built Form Review work is to determine where and how new development can appropriately occur. The desired built form outcomes will be translated into Design and Development Overlay (DDO) controls for the study area.

This report specifically considers the Alexandra Parade Precinct (also referred to as the 'study area' in this report) which includes land within the southern part of Clifton Hill and the northern parts of Collingwood and Fitzroy. The heritage advice contained within this report will help ensure that the Built Form Review and the subsequent DDO controls appropriately respond to the heritage fabric and values within the study area.

This advice then considers the built form parameters that are required to ensure that the values of the heritage places within the Alexandra Parade Precinct are appropriately managed and protected, and that good heritage outcomes are being achieved for potential future new development or redevelopment on land subject to, or abutting, the Heritage Overlay. This includes a consideration of the impact of development on the Clifton Hill Shot Tower (VHR H0709), views of which are identified in the Landmarks and Tall Structures Policy at Clause 22.03 of the Yarra Planning Scheme.

Part II of this report provides an analysis of gaps, inconsistencies and inaccuracies in the current heritage controls within the study area and provides recommendations for addressing these issues. This has resulted in the recommendation to include two additional properties on the Heritage Overlay a Quonset Warehouse at 20 Reeves Street, Clifton Hill and the Gasometer Hotel, 484 Smith Street, Collingwood.

This Heritage Analysis and Recommendation Report is presented in three parts:

Part I: The Project and Planning Framework

Part I introduces the project, the methodology applied to the project and the planning framework in which the project is occurring.

Part II: Heritage Analysis

Part II contains a heritage analysis of the study area. It details the heritage qualities and values of the study area, identifies any gaps or issues in the existing heritage framework and provides recommendations for appropriately managing heritage places within the study area.

Part III: Built Form Recommendations

Part III contains specific built form recommendations to ensure heritage places and values are appropriately managed within a changing urban context. The specific recommendations are informed by modelling prepared by Hansen Partnership.

***Figure 1**: Brunswick and Smith Street Study Area*
Source: 'Figure 2: Brunswick & Smith Street Built Form Review - Precincts' from the Alexandra Parade Built Form Framework (Hansen Partnership, December 2020). The area in green denoted by the letter A is the Alexandra Parade Precinct subject of this report.

PART I: THE PROJECT AND PLANNING FRAMEWORK

1.0 INTRODUCTION

1.1 YARRA'S HIGH STREETS & BOULEVARDS

The City of Yarra is endowed with one of the largest and most highly intact collections of turn of the century 'High Streets' in the State of Victoria. These High Streets include the Major Activity Centres of Swan Street and Bridge Road in Richmond, Brunswick Street in Fitzroy, Smith Street straddling the suburbs of Fitzroy and Collingwood and Victoria Street, in Abbotsford and Richmond. They also include a number of Neighbourhood Activity Centres, including Gertrude Street in Fitzroy, Johnston Street in Fitzroy & Collingwood, Rathdowne Street and Nicholson Street in Carlton North, St Georges Road in Fitzroy North, and Queens Parade in Fitzroy North & Clifton Hill.

These High Streets contrast with the wide boulevards of Alexandra and Victoria Parade, which retain their wide median strips. Unlike the more typical commercial High Street, these boulevards do not exhibit a consistency of use or built form. Nonetheless, while the built form, character and heritage values of these boulevards differ greatly over their length, the pockets of heritage buildings warrant special consideration as does the interfaces to the generally low-scale residential heritage areas they directly abut. Like the historic High Streets, it is necessary to manage the tension between the desire to retain the heritage values of these areas and meet the growth objectives of the Yarra Planning Scheme.

1.2 BRIEF DESCRIPTION OF THE ALEXANDRA PARADE PRECINCT

Alexandra Parade is a major arterial road running east-west connecting to Princes Street at Nicholson Street and the Eastern Freeway at the Hoddle Street interchange. It has a 60m wide carriageway with three to four lanes of traffic either side of a wide (20m-25m) grassed median strip, with traffic running in both directions. The median is planted at the western end with a regular avenue of trees and less formal rows and groups of trees toward the east. Street trees are planted along the majority of the footpaths. The major north-south oriented roads (including Brunswick, Napier, George, Smith, Wellington and Gold streets) align across Alexandra Parade, but minor streets and block lengths differ between the northern and southern side of the boulevard.

***Figure 2**: Alexandra Parade precinct – outlined in red.*
Source: Nearmap, 4 June 2020

The precinct extends along the north side of Alexandra Parade between Smith Street in the west and Hoddle Street in the east, with the exception of the Neighbourhood Residential Zoned (NRZ) properties addressing Alexander and Wellington streets and the parcel of land at 64 Alexandra Parade, Clifton Hill (which is subject to the site-specific Design and Development Overlay (DDO19)). The precinct extends to the north up the eastern side of Smith Street and both sides of Reeves and Hilton streets to the extent of Commercial 2 Zone (C2Z) land. The whole of the block bounded by Noone Street, Hoddle Street, Alexandra Parade and Alexander Street is included within the precinct including the Department of Health and Human Services (DHHS) low-rise housing estate. On the south side of Alexandra Parade the precinct extends one property deep between George Street in the west and Charlotte Street in the east.

The built form of the Alexandra Parade Precinct is highly varied, ranging from large industrial sites such as the former British United Shoes Machinery Co. Pty. Ltd. Factory (200 Alexandra Parade, Fitzroy [HO334]) at the western end of the precinct, the former Murray Co. Wool Works (457 Hoddle Street, Clifton Hill [HO89]), and the State heritage listed Clifton Hill Shot Tower at the eastern end of the precinct, to smaller commercial and factory buildings on Smith Street, and late nineteenth and early twentieth century hotels and single-storey terraced housing addressing Alexandra Parade. There is little visual cohesion within the precinct. The areas of land subject to the Heritage Overlay is limited to short runs of streetscape on Alexandra Parade and Smith Street or individual properties.

The Gasometer Hotel at 484 Smith Street was also considered as part of the Brunswick and Smith Street Built Form Review and an assessment of its heritage

values was undertaken as part of that project. The Gasometer Hotel is not currently included in the Heritage Overlay but was recommended for inclusion as an individual heritage place as part of the Brunswick and Smith Street Built Form Review (see also Appendix II for the (draft) citation for the Gasometer Hotel).

1.3 BRIEF HISTORY OF ALEXANDRA PARADE

This historical summary is based on the City of Yarra Heritage Review Thematic History (Allom Lovell & Associates, 1998) with additional sources as cited.

Alexandra Parade (first called Darebin, then Reilly Street) was evident on both James Kearney's 1855 map of Melbourne and its suburbs, and Clement Hodgkinson's 1858 map of East Collingwood, extending from Nicholson Street in the west to the Yarra River in the east, and marking the northern boundary of the early suburbs of Fitzroy (originally called Newtown) and Collingwood. By the late 1850s, Alexandra Parade had undergone very little development between Smith and Hoddle streets, with only a group of slaughter houses and approximately six buildings - presumably residences - located on the south side, as evident on Proeschel's c1855 map of Collingwood and Hodgkinson's 1858 map of East Collingwood. In 1859, an open drain was constructed along what was then known as Reilly Street (now under the median strip of Alexandra Parade) to drain the crown land in Clifton Hill. This was, however, an immediate failure, overflowing into the Collingwood Flat the first winter after it was constructed. The drain continued to be a health hazard and was referred to as 'the sickly Reilly Street drain' (Garryowen; cited in Lovell 1998:69) until it was enclosed in sections in the early 1900s (*Age*, 5 Dec 1905:6; 16 Jan 1906:6).

An early development along Alexandra Parade was the Collingwood, Fitzroy and District Gas and Coke Company gasworks, established on the north-west corner of Smith and Reilly Street in 1861. From the late-Victorian period onwards, industrial sites consolidated along the route of the Reilly Street drain. Buildings such as the Clifton Hill Shot Tower (1882; 94 Alexandra Pde, Clifton Hill) and Murray and Co. Wool Works (1918; 457 Hoddle Street, Clifton Hill) remain as evidence of this development. The 1882 Clifton Hill Shot Tower has long been a dominant landmark in the area, and is the earliest and tallest of the two remaining shot towers in Victoria (VHD).

Prominent corner sites along Alexandra Parade were occupied by hotels from the Victorian period onwards. Within the study area, these included the Gasometer Hotel (c1859-60; 484 Smith Street, Collingwood) and Fox's Hotel (351 Wellington Street, Collingwood), which was first built in 1871 and renamed the Tower Hotel (Figure 3) after the nearby Clifton Hill Shot Tower in 1882 (the hotel was substantially remodelled during the Interwar period) (Holmes, 2015). Residential development increased along, and within the vicinity of, Alexandra Parade in the late-Victorian and Edwardian periods. In 1878 Fitzroy Council changed the name of Reilly Street (between Nicholson and Smith streets) to Alexandra Parade (*Mercury and Weekly Courier*, 28 Sep 1878:2). While Collingwood Council voted to change the name to Alexandra Parade East in 1908 (*Age*, 23 Sep 1908:11).

Light industrial development became more prevalent in the precinct during the Interwar and Postwar periods. The larger industrial buildings were often praised for their 'fine' and 'modern' appearance and for the facilities they could offer in terms

of improved working conditions. Evidence of this was the British United Shoe Machinery Co factory (1932; 200 Alexandra Parade, Fitzroy) (Figure 4).

Figure 3: *(left) The Tower Hotel (built 1871 as Fox's Hotel; remodelled during the Interwar period) at 351 Wellington Street, Collingwood. Photo dated c1886-c1898). ('Contributory' within HO321) Source: Royal Historical Society of Victoria, Object number GN-GN-1018*

Figure 4: *The British United Shoe Machinery Co factory at 200 Alexandra Parade, Fitzroy, in 1948 ('Individually Significant' within HO334) Source: Picture Victoria, ID: 15232*

From the 1960s onwards, a mix of residential and large industrial and commercial developments have been established along this part of Alexandra Parade. In the 1970s Alexandra Parade was widened as part of the construction of the Eastern Freeway to the east, which established it as a major east-west route.

Sources:

Allom Lovell & Associates (1998), City of Yarra Heritage Review, Thematic History.

Hodgkinson, Clement, Noone, John, and Wilkinson, John, (1858), *Plan shewing the streets and buildings in existence in East Collingwood on January 1st 1858 : with schedule of heights of bench-marks above low water datum at Queen's wharf* [cartographic material]. Printed by De Gruchy & Leigh [Melbourne].

Holmes, Anne (Dec 2015) 'Fordes at the Fox', at Collingwood Historical Society Inc, <https://collingwoodhs.org.au/fordes-at-the-fox/>, accessed 10 June 2020.

Kearney, James (draughtsman), Brown, James D. and Tulloch, David (engravers) (1855), *Melbourne and its suburbs* [cartographic material].

Mercury and Weekly Courier [Vic.].

Picture Victoria.

Proeschel, F. (c1855), *Map of Collingwood, Showing the Western part (of Fitzroy ward) as it will be in a very short time, according to the Collingwood improvement act, and the Eastern part as it is, with indication (by dotted lines) of a few alterations which if adopted would greatly improve its thoroughfare* [cartographic material]. Campbell & Fergusson, Lithographers [Melbourne].

Royal Historical Society of Victoria, online picture collection.

The Age.

Victorian Heritage Database (VHD), Heritage Victoria's citation for 'Shot Tower, 94 Alexandra Parade Clifton Hill, Yarra City', <https://vhd.heritagecouncil.vic.gov.au/places/295>, accessed 10 June 2020.

1.2 SCOPE OF THE HERITAGE ANALYSIS & RECOMMENDATIONS REPORT

GJM Heritage has been commissioned to provide a detailed analysis of the heritage considerations for the Brunswick and Smith Street Built Form Review project area and to detail recommendations for the future management of these areas in the context of potential new development. This report considers the Alexandra Parade Precinct and has been prepared simultaneously with those considering the Victoria Parade and Fitzroy West Mixed Use precincts.

The following precincts have previously been considered in the *Brunswick and Smith Street Built Form Review*, GJM Heritage, 25 November 2019:

- Brunswick Street Activity Centre Spine
- Town Hall Mixed Use Precinct
- Smith Street Activity Centre Spine
- Johnston Street Activity Centre Spine
- Fitzroy East Mixed Use Precinct.

The proposed Gertrude Street Precinct and the MUZ area south of Gertrude Street between Young and Little Napier Streets was reviewed through the *Gertrude Street Built Form Framework: Heritage Analysis & Recommendations,* GJM Heritage, 9 December 2019.

The Collingwood Mixed Use Precinct was considered as part of a separate study: *Collingwood Mixed Use Pocket Heritage Analysis & Recommendations*, GJM Heritage, 6 June 2018.

The Alexandra Parade Precinct is located in close proximity to the area considered as part of the *Queens Parade Built Form Heritage Analysis & Recommendations*, GJM Heritage, 11 December 2017. That report, along with the *Queens Parade Built Form Review*, (Hansen Partnership, 15 December 2017) and subsequent modelling by Ethos Urban, informed the preparation of DDO16 and DDO20 applied to Queens Parade through Amendments C262yara and C241yara respectively. Yarra Amendment C231 Part 1 was gazetted on 1 October 2020. It replaced DDO16 and DDO20, which included interim controls, with a new DDO16 that introduced permanent controls, and applied the Heritage Overlay to various sites within the Queens Parade Neighbourhood Activity Centre and modified building gradings amongst other things. Amendment C231yara Part 3 was also gazetted on 1 October 2020 and introduced permanent built form controls to 141-167 Queens Parade, Clifton Hill by replacing DDO20 with the new DDO16.

The purpose of our advice as part of this project is to ensure that any DDO controls arising from the Built Form Review take proper account of the heritage values of the precincts and individual buildings within the study area, in order to ensure appropriate weight is given to heritage when considering new development.

The analysis within this report builds on previous built form reviews and heritage analysis work conducted for the City of Yarra, and considers the parameters necessary to appropriately manage increased commercial and residential development within the Alexandra Parade Precinct. Of particular relevance to this precinct is its role in protecting the key views to the Clifton Hill Shot Tower which is

included on the Victorian Heritage Register (VHR) and is identified as a valued landmark within the City of Yarra at Clause 22.03.

1.3 METHODOLOGY

The key background documents on which the heritage analysis is based are:

- Yarra Planning Scheme Heritage Overlay Map 2HO
- Relevant Statements of Significance for heritage places and precincts within the study area and associated heritage studies
- Incorporated Document 'City of Yarra Review of Heritage Overlay Areas 2007: Appendix 8 (revised May 2018)' (Appendix 8)
- City of Yarra Heritage Grading Maps
- 'Review & Development of the City of Yarra Landmarks Policy – Landmarks & Views Assessment' prepared by Ethos Urban for the City of Yarra, October 2019.

The above documents have been reviewed in the context of the following clauses of the Yarra Planning Scheme and the relevant Planning Practice Notes (PPNs) published by the Department of Environment, Land, Water and Planning (DELWP):

- The relevant provisions of the Yarra Planning Scheme, in particular, are:
  - Clause 15.03-1S 'Heritage conservation'
  - Clause 21.05-1 'Heritage'
  - Clause 22.02 'Development Guidelines for Sites Subject to the Heritage Overlay'
  - Clause 22.03 'Landmarks and Tall Structures'
  - Clause 22.10 'Built Form and Design Policy'
  - Clause 43.01 'Heritage Overlay'
  - Clause 43.01 'Schedule to the Heritage Overlay'
  - Clause 71.02-3 'Integrated Decision Making'
- PPN 1: *Applying the Heritage Overlay* (August 2018) (PPN1)
- PPN 59: *The role of mandatory provisions in the planning schemes* (September 2018) (PPN59)
- PPN 60: *Height and setback controls for activity centres* (September 2018) (PPN60).

We note that the Minister for Planning has authorised the preparation and exhibition of Amendment C269yara to introduce a new Municipal Planning Strategy, local policies and supporting documents into the Yarra Planning Scheme. This amendment has gone on exhibition but is at an early stage of the amendment process, therefore the advice provided in this report has been informed by the relevant existing Local Planning Policy, in particular clauses 22.02, 22.03 and 22.10.

The following Planning Panels Victoria (Panel) reports are relevant to the implementation of the Built Form Review, particularly as many consider the appropriateness of DDOs (containing both mandatory and discretionary provisions) within Activity Centres (or in the case of Melbourne Amendment C240, the Capital City Zone) that are also subject, in part, to the Heritage Overlay:

- Boroondara C108 'Neighbourhood Centres and Commercial Corridors' (26 February 2014)
- Moreland Planning Scheme Amendment C134 'Brunswick Activity Centre' (15 May 2015)
- Melbourne Planning Scheme Amendment C240 'Bourke Hill' (4 May 2015)
- Bayside Planning Scheme Amendments C113, C114 and C115 'Mandatory provisions for the Sandringham Village, Bay Street and Church Street Activity Centres' (14 January 2015)
- Whitehorse Planning Scheme Amendment C175 'Box Hill Metropolitan Activity Centre' (6 October 2017).
- Stonnington Planning Scheme Amendment C223 'Glenferrie Road and High Street Activity Centre' (15 December 2017)
- Darebin Planning Scheme Amendment C161 'Fairfield Village' (3 December 2018)
- Yarra Planning Scheme Amendment C220 'Johnston Street Built Form Controls' (22 February 2019)
- Melbourne Planning Scheme Amendment C308 'Central Melbourne Urban Design' (16 May 2019)
- Melbourne Planning Scheme Amendment C258 'Heritage Policies Review' (21 May 2019)
- Yarra Planning Scheme Amendment C231 'Queens Parade Built Form Review' (31 October 2019)
- Yarra Planning Scheme Amendment C191 'Swan Street Built Activity Centre' (15 October 2020).

The following reports have also informed this study:

- 'Review & Development of the City of Yarra Landmarks Policy – Landmarks & Views Assessment' prepared by Ethos Urban for the City of Yarra, October 2019.
- 'Fitzroy & Collingwood Built Form Review Stage 2: Alexandra Parade Built Form Framework', Hansen Partner, April 2020.
- Previous heritage built form reports and analysis prepared by GJM Heritage for Brunswick and Smith Street and Queens Parade study areas.

We have approached the preparation of our heritage analysis as follows:

1. Completion of a desktop review of the above listed documents, heritage mapping and grading information, and the Statements of Significance for heritage places within the study area, including those places included in the VHR. The extent of the Heritage Overlays were cross-checked against Google Streetview and VicPlan. This preliminary review familiarised the project team with the heritage fabric of the study area prior to fieldwork being undertaken.
2. Completion of fieldwork by Jim Gard'ner. All buildings and structures within the study area were inspected from the public realm with particular attention paid to the presentation of heritage buildings to the public realm

(principally the street frontage). The rear and side interfaces to the neighbouring residential areas subject to the Heritage Overlay were also considered, where relevant. The purpose of the fieldwork was to:

- Review the suitability of the extent of the existing Heritage Overlays and to identify if gaps or anomalies existed.
- Review the suitability of the existing Statements of Significance for heritage places against the extant heritage fabric and to identify where the Statements required updating for the purposes of properly considering built form recommendations.
- Review the extant heritage fabric against the heritage gradings contained within Appendix 8 and the Yarra Heritage Grading Map to identify any inconsistencies and inaccuracies.
- Review the heritage buildings and streetscapes within the study area to identify the architectural and streetscape heritage features (e.g. parapets, roof forms, view lines, corner sites) that are relevant to a consideration of built form recommendations.

3. Participation in a workshop with Council and Hansen Partnership. The workshop:

   - Reviewed the proposed 'built form precincts' within the study area, characterised by existing built form characteristics.
   - Identified the desired future built form character of the precincts against heritage analysis and State and local planning policy drivers.
   - Reviewed the key views of landmarks identified in Clause 22.03 – Landmarks and Tall Structures, in particular the Clifton Hill Shot Tower.
   - Identified local landmarks within each streetscape or precinct.
   - Tested built form parameters for new development against the existing heritage fabric utilising both cross-sectional drawings, with sight-lines taken at natural eye level (1.6m) on the public footpath, and 3D modelling prepared by Hansen Partnership. Views were only considered from public streets; laneway and private realm views were not assessed.

4. Finalisation of heritage recommendations for new built form parameters having considered the above.

2.0 ANALYSIS OF THE PLANNING CONTEXT

2.1 ACTIVITY CENTRE PLANNING AND HERITAGE

The *Planning & Environment Act 1987* and the Victoria Planning Provisions (VPPs) requires planning and responsible authorities to take a balanced approach to strategic and statutory planning functions that consider potentially competing objectives in an integrated manner to deliver a net community benefit for current and future generations.

The objectives of planning in Victoria as set out in Section 4(1) of the Planning and Environment Act are:

- *To provide for the fair, orderly, economic and sustainable use and development of land.*
- *To provide for the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity.*
- *To secure a pleasant, efficient and safe working, living and recreational environment for all Victorians and visitors to Victoria.*
- *To conserve and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value.*
- *To protect public utilities and other assets and enable the orderly provision and coordination of public utilities and other facilities for the benefit of the community.*
- *To facilitate development in accordance with the objectives set out in the points above.*
- *To facilitate the provision of affordable housing in Victoria.*
- *To balance the present and future interests of all Victorians.*

Clause 71.02-3 of the VPP addresses 'integrated decision making', and states:

> *Society has various needs and expectations such as land for settlement, protection of the environment, economic well-being, various social needs, proper management of resources and infrastructure. Planning aims to meet these by addressing aspects of economic, environmental and social wellbeing affected by land use and development.*
>
> *Planning and responsible authorities should endeavour to integrate the range of panning policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations. However, in bushfire affected areas, planning and responsible authorities must prioritise the protection of human life over all other policy considerations.*
>
> *Planning authorities should identify the potential for regional impacts in their decision making and coordinate strategic planning with their neighbours and other public bodies to achieve sustainable development and effective and efficient use of resources.*

Activity Centres that are also subject to Heritage Overlay controls, such as parts of the Alexandra Parade Precinct, are an example of where the tension between competing planning objectives must be resolved in a balanced way. The Alexandra Parade Precinct has excellent public transport connections, and is in close proximity to vibrant retail, commercial and hospitality centres. The precinct also includes a number of sites of various sizes that can accommodate new, larger scale development without adversely affecting the heritage values of surrounding heritage places. In order to balance the demand for more intensive development with the management of heritage values embodied in buildings and precincts, it is considered necessary that any DDO – and the background work that underpins it – specifically includes heritage considerations.

Amendment C269 proposes to introduce Clause 11.03-1L to the Yarra Planning Scheme which provides local policy in relation to Major, Neighbourhood and Local Activity Centres and designates the majority of the southern side of Alexandra Parade as a Major Activity Centre (MAC) (Figure 5).

Figure 5. *Major and Neighbourhood Activity Centres in Fitzroy (Council-endorsed version of Clause 11.03-1L)*

2.2 YARRA PLANNING SCHEME – HERITAGE PROVISIONS

Council has well-established heritage provisions within its planning scheme at Clauses 21.05-1 and 22.02. Also of relevance to the protection of the heritage values of the study area is Clause 22.03, which includes policy to protect the visual prominence of landmarks visible from within the study area, and Clause 22-10 which includes policy for new development abutting land within the Heritage Overlay.

2.2.1 Heritage Policy

The relevant objective within Clause 21.05-1 'Heritage' of the Municipal Strategic Statement (MSS) is *Objective 14: To protect and enhance Yarra's heritage places.* The strategies to implement this objective are:

- *Strategy 14.1 - Conserve, protect and enhance identified sites and areas of heritage significance including pre-settlement ecological heritage.*
- *Strategy 14.2 - Support the restoration of heritage places.*
- *Strategy 14.3 - Protect the heritage skyline of heritage precincts.*
- *Strategy 14.4 - Protect the subdivision pattern within heritage places.*
- Strategy 14.5 - *Protect the significant landscape and heritage within streets, parks, gardens, waterways or other open spaces*
- *Strategy 14.6 - Protect buildings, streetscapes and precincts of heritage significance from the visual intrusion of built form both within places and from adjoining areas.*
- *Strategy 14.7 Protect sites of significance to Aboriginal people.*
- *Strategy 14.8 Apply the Development Guidelines for sites subject to a Heritage Overlay policy at clause 22.02.*
- *Strategy 14.9 Apply the Landmarks and Tall Structures policy at clause 22.03.*

Objective 14 and its associated strategies are considered to be generally compatible with appropriately sited and scaled higher-density development within the Alexandra Parade Precinct where it is subject to the Heritage Overlay. Strategy 14.3 to 'Protect the heritage skyline of heritage precincts' would not be achieved unless new upper-level development was to be of such low scale that it was fully concealed when viewed from the opposite side of the street as defined by the sightline tests described in Figures 2 and 3 of Clause 22.02. Avoiding any new visible built form above existing buildings within the Heritage Overlay - although achieving the 'best' heritage outcome - would not enable a level of development that may reasonably be expected to be achieved within this MAC, nor meet other strategic directions of the Yarra Planning Scheme. A balance therefore needs to be struck between achieving the outcome sought by Strategy 14.3 and meeting the development objectives of the City of Yarra. An acceptable heritage outcome would be one where, although new built fabric is visible above the parapets, rooflines or chimneys of these buildings, the development is of a scale, setback and massing such that it retains the primacy of the heritage streetscape and avoids visually dominating the existing buildings.

Clause 22.02 'Development Guidelines for Sites Subject to the Heritage Overlay' provides detailed guidance for the development of places within the Heritage Overlay, including demolition. The relevant objectives of Clause 22.02 are:

- *To conserve Yarra's natural and cultural heritage.*
- *To conserve the historic fabric and maintain the integrity of places of cultural heritage significance.*
- *To retain significant view lines to, and vistas of, heritage places.*
- *To preserve the scale and pattern of streetscapes in heritage places.*
- *To encourage the preservation, maintenance, restoration and where appropriate, reconstruction of heritage places.*
- *To ensure the adaptation of heritage places is consistent with the principles of good conservation practice.*
- *To ensure that additions and new works to a heritage place respect the significance of the place.*
- *To encourage the retention of 'individually significant' and 'contributory' heritage places.*
- *To protect archaeological sites of cultural heritage significance.*

Again, these objectives do not preclude higher-density development within the Alexandra Parade Precinct, with the possible exception of '*To preserve the scale … of streetscapes in heritage places'*.

The demolition policy provided at Clause 22.02-5.1 encourages the retention of 'individually significant' and 'contributory' buildings within a heritage precinct. Removal of part of a heritage place or a contributory element is contemplated if (in general terms) it can be demonstrated that the removal of the part will not adversely affect the significance of the building, or, for a contributory building, the part is not visible from the street, abutting a park or public open space.

With the exception of those heritage places included on the VHR – and therefore regulated under the *Heritage Act 2017* – the significance of the heritage buildings and precincts within the study area lies primarily in fabric visible from the public realm. Therefore, in most circumstances, the heritage controls within the Yarra Planning Scheme effectively limits the control of heritage fabric within the study area to that which is visible from the street, including primary building facades, rear laneway views (where they exist) and visible roof and chimney elements.

In relation to 'New Development, Alterations and Additions', Clause 22.02-5.7.1 sets out the following policy:

> ***General***
>
> *Encourage the design of new development and alterations and additions to a heritage place or a contributory element to a heritage place to:*
>
> - *Respect the pattern, rhythm, orientation to the street, spatial characteristics, fenestration, roof form, materials and heritage character of the surrounding historic streetscape.*

- *Be articulated and massed to correspond with the prevailing building form of the heritage place or contributory elements to the heritage place.*
- *Be visually recessive and not dominate the heritage place.*
- *Be distinguishable from the original historic fabric.*
- *Not remove, cover, damage or change original historic fabric.*
- *Not obscure views of principle façades.*
- *Consider the architectural integrity and context of the heritage place or contributory element.*

Encourage setbacks from the principal street frontage to be similar to those of adjoining contributory buildings; where there are differing adjoining setbacks, the greater setback will apply.

Encourage similar façade heights to the adjoining contributory elements in the street. Where there are differing façade heights, the design should adopt the lesser height.

Minimise the visibility of new additions by:

- *Locating ground level additions and any higher elements towards the rear of the site.*
- *Encouraging ground level additions to contributory buildings to be sited within the 'envelope' created by projected sight lines (see Figure 1).*
- *Encouraging upper level additions to heritage places to be sited within the 'envelope' created by projected sight lines (for Contributory buildings refer to Figure 2 and for Individually significant buildings refer to Figure 3).*
- *Encouraging additions to individually significant places to, as far as possible, be concealed by existing heritage fabric when viewed from the front street and to read as secondary elements when viewed from any other adjoining street.*

Discourage elements which detract from the heritage fabric or are not contemporary with the era of the building such as unroofed or open upper level decks or balconies, reflective glass, glass balustrades and pedestrian entrance canopies.

The policy for full or partial concealment of rear additions to residential buildings as described in Figures 2 and 3 of the General Policy at Clause 22.02 is modified by the Specific Requirements at Clause 22.02-5.7.2 that applies to corner sites and sites with dual frontages, and industrial, commercial and retail heritage places:

Corner Sites and Sites with Dual Frontages

Encourage new building and additions on a site with frontages to two streets, being either a corner site or a site with dual street frontages, to respect the built form and character of the heritage place and adjoining or adjacent contributory elements to the heritage place.

Encourage new buildings on corner sites to reflect the setbacks of buildings that occupy other corners of the intersection.

...

Industrial, Commercial and Retail Heritage Place or Contributory Elements

Encourage new upper level additions and works to:

- *Respect the scale and form of the existing heritage place or contributory elements to the heritage place by being set back from the lower built form elements. Each higher element should be set further back from lower heritage built forms.*
- *Incorporate treatments which make them less apparent.*

The specific provisions prevail over the general policy where there is a conflict or inconsistency. This establishes an expectation that new development behind industrial, commercial and retail buildings within the Heritage Overlay is not going to be fully or substantially concealed from public realm views. In addition, it should be noted that Alexandra Parade, being a boulevard with multi-lane carriageways and a broad median strip, is 60m wide (building line to building line) where the residential examples shown in Figures 2 and 3 of Clause 22.02-5.7.1 show a sightline test from across an approx. 10m wide residential street. In effect, the wider the street, the more visible a new rear development will be.

Although a greater level of concealment would generally provide a better heritage outcome, this specific sightline-based guidance in the heritage policy is designed to preserve and enhance the character and appearance of predominantly one and two-storey dwellings within more typical narrow residential streets and is not readily applied to the circumstances found within the Alexandra Parade Precinct.

It is also considered that the policy at 22.02-5.7.1 to 'Discourage elements which … are not contemporary with the era of the building such as … reflective glass, glass balustrades and pedestrian entrance canopies' may not achieve an appropriate urban design and architectural outcome within a commercial and industrial setting such as that present at the Alexandra Parade Precinct. In such areas, a 'contrasting' or 'interpretative' design approach for new taller development above the heritage building is likely to be more recessive than a 'respectful' or 'historicist' one that would lead to the new additions inappropriately mimicking the historic form and potentially being more visually intrusive.

2.2.2 Landmarks and Tall Structures

Clause 22.03 – 'Landmarks and Tall Structures' identifies a number of landmark buildings and advertising signs to which views should be protected and provides the following policies:

- *Maintain the prominence of Yarra's valued landmark signs.*
- *Protect views to the silhouette and profile of Yarra's valued landmarks to ensure they remain as the principal built form reference.*
- *Ensure the profile and silhouette of new tall structures adds to the interest of Yarra's urban form and skyline.*

Of particular relevance to Alexandra Parade are the views of the Clifton Hill Shot Tower.

As a prominent feature of Alexandra Avenue, multiple views are afforded of the shot tower. This includes close-range views of the tower, and dynamic views which can be obtained while moving along Alexandra Avenue, generally between Queens Parade and the Eastern Freeway, and from Punt Road.

There are also numerous glimpses of the tower from surrounding streets and open spaces.

To retain the visual prominence of the structure, it is recommended that 'Primary' views include visibility of at least a third of the height of the structure.

***Figure 6**: Diagram of viewsheds to the Clifton Hill Shot Tower.*

Note: viewpoints 1, 2 and 3 are identified as 'Primary' while 4 and 5 are identified as 'Secondary'.

(from 'Landmarks and Views Assessment' page 24, October 2019, prepared by Ethos Urban).

VIEW 1

VIEW 2

VIEW 3

***Figure 7**: 'Primary' Views 1, 2 and 3 to the Clifton Hill Shot Tower.*

(from 'Landmarks and Views Assessment' page 24, October 2019, prepared by Ethos Urban).

VIEW 4

VIEW 5

***Figure 8:** 'Secondary' Views 4 and 3 to the Clifton Hill Shot Tower.*

(from 'Landmarks and Views Assessment' page 24, October 2019, prepared by Ethos Urban).

While the Ethos Urban analysis only identified a limited number of 'primary' and 'secondary' view points, there are additional distant and proximate views of the Clifton Hill Shot Tower accessible to motor vehicle users from the north carriageway and to pedestrians from the southern footpath of Alexandra Parade.

2.2.3 Heritage Overlay

The head heritage provision of the VPP, Clause 43.01 'Heritage Overlay', has the following purpose:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To conserve and enhance heritage places of natural or cultural significance.*
- *To conserve and enhance those elements which contribute to the significance of heritage places.*

- *To ensure that development does not adversely affect the significance of heritage places.*
- *To conserve specifically identified heritage places by allowing a use that would otherwise be prohibited if this will demonstrably assist with the conservation of the significance of the heritage place.*

Clause 43.01-8 sets out 'Decision Guidelines' – in addition to those included in Clause 65 – that the Responsible Authority must consider before determining a permit application. These are:

- *The Municipal Planning Strategy and the Planning Policy Framework.*
- *The significance of the heritage place and whether the proposal will adversely affect the natural or cultural significance of the place.*
- *Any applicable statement of significance (whether or not specified in the schedule to this overlay), heritage study and any applicable conservation policy.*
- *Any applicable heritage design guideline specified in the schedule to this overlay*
- *Whether the location, bulk, form or appearance of the proposed building will adversely affect the significance of the heritage place.*
- *Whether the location, bulk, form and appearance of the proposed building is in keeping with the character and appearance of adjacent buildings and the heritage place.*
- *Whether the demolition, removal or external alteration will adversely affect the significance of the heritage place.*
- *Whether the proposed works will adversely affect the significance, character or appearance of the heritage place.*
- *Whether the proposed subdivision will adversely affect the significance of the heritage place.*
- *Whether the proposed subdivision may result in development which will adversely affect the significance, character or appearance of the heritage place.*
- *Whether the proposed sign will adversely affect the significance, character or appearance of the heritage place.*
- *Whether the lopping or development will adversely affect the health, appearance or significance of the tree.*
- *Whether the location, style, size, colour and materials of the proposed solar energy facility will adversely affect the significance, character or appearance of the heritage place.*

While some of these considerations are not obviously consistent with intensification of development associated with heritage buildings, the first purpose of 43.01 and the first decision guideline encompasses the whole Municipal Planning Strategy and the Planning Policy Framework (integrated decision-making). Therefore, a balance is to be struck by the Responsible Authority between achieving the objectives of the Heritage Overlay and meeting the objectives of other parts of the VPPs, including Activity Centre policy and commercial zoning. There is established precedent for

new rear development to be accommodated behind heritage buildings in commercial precincts throughout inner Melbourne without substantially compromising the identified heritage values of these heritage places.

3.0 HERITAGE IN DESIGN AND DEVELOPMENT OVERLAYS – PANEL FINDINGS

Planning Panels Victoria has considered a number of Planning Scheme Amendments that are of particular relevance to this project: Bayside Amendments C113, C114 and C115, Boroondara C108, Darebin Amendment C161, Moreland Amendment C134, Melbourne Amendment C240, Stonnington Amendment C223, Whitehorse Amendment C175 and Yarra Amendments C220, C231 and C191.

Panels for these Amendments considered the appropriateness of mandatory controls in the context of PPN59 and, in their recommendations, provided guidance on which circumstances mandatory controls should be applied. In response to submissions, they also considered the issue of whether or not the DDO control should include objectives to protect heritage or whether this should be the sole domain of the Heritage Overlay provisions. In addition to these Panel reports, Amendment C123 to the Banyule Planning Scheme, approved via ministerial intervention, provides further instruction as to the use and role of mandatory controls.

These reports also provide useful guidance on the form and wording of DDO controls.

In summary, Panel has concluded that:

- The Heritage Overlay identifies what is of heritage significance within an Activity Centre.
- Heritage is an appropriate issue for DDOs to provide guidance on to inform future development.
- Mandatory controls should be used only in exceptional circumstances and their application should be guided by PPN59 and PPN60.
- Formulae defining the proportion of new built form that can be viewed above the street wall may be an appropriate mechanism for informing the design and massing of new built form.

In this project, the approach taken in the formulation of the built form controls to manage development affecting heritage places is to complement existing policy. Clause 22.02 - 'Development Guidelines for Sites Subject to the Heritage Overlay' and relevant parts of Clause 22.10 – 'Built Form and Design Policy' have been taken as the starting point for the development of these complementary controls and policy.

Where existing policy is considered to be satisfactory, no additional policy has been recommended. However, specific policy has been recommended where it is considered necessary to provide guidance to recognise the current role of the Alexandra Parade Precinct as a major boulevard and to enable its future development while protecting its heritage values.

A discussion of the most relevant of the Panel reports is provided below, and at Section 3.9 the recommendations of each Panel are summarised with comment on the implications of the outcome.

3.1 YARRA PLANNING SCHEME AMENDMENT C231

GJM Heritage prepared the Queens Parade Built Form Heritage Analysis and Recommendations (11 December 2017) which informed C231yara. C231yara applied built form controls in the form of DDOs to Queens Parade (Fitzroy North and Clifton Hill) and amended Heritage Overlay controls within the study area. Precinct 4 within DDO20 covers the commercial shopping strip that forms part of the Queens Parade Neighbourhood Activity Centre. Queens Parade, as a 60m wide boulevard, is of a similar width to Alexandra Parade, however the built form of each differs considerably. Whereas the heritage places within the Alexandra Parade Precinct are generally isolated and do not form a cohesive streetscape, Queens Parade has a highly consistent commercial strip with traditional two-storey shop/residence built form of high architectural quality.

Of relevance to the Alexandra Parade Precinct, the Panel for Amendment C231 found that the strategic work undertaken in support of the Amendment was strong and that it assisted in justifying the majority of the built form parameters recommended in the DDOs, particularly with respect to mandatory controls. At p29 of the Panel Report, the Panel noted that:

> *Exceptional circumstances exist for the application of mandatory controls for development as the QPAC (Queens Parade Activity Centre) includes a number of significant and contributory heritage places and heritage fabric set within a consistent streetscape form.*

The Panel recognised that the wider, boulevard context would lead to a high visibility of upper-level development, which in turn warranted the application of height limits, and linked the use of mandatory (instead of preferred) controls to the consistency of the heritage streetscape.

The Panel supported the mandatory upper-level setback of 8m within the Council preferred DDO and the combination of mandatory and preferred height controls where this provided certainty where distinctive heritage fabric warranted greater protection. It also recognised that an Activity Centre with diverse built form can have areas of little change where growth can be accommodated elsewhere within the Centre. Further, the Panel agreed that it was appropriate for the proposed mandatory built form controls within DDO16 to protect the key views of local landmarks and those identified in Clause 22.03.

3.2 YARRA PLANNING SCHEME AMENDMENT C220

Johnston Street in Collingwood and the western part of Abbotsford (west of the railway viaduct) is a highly intact, predominantly Victorian/early-Edwardian era streetscape covered by the Heritage Overlay. C220yara introduced DDO controls along Johnston Street.

Of note, the Panel stated:

> *In urban design terms, the 6 metre setback will retain the 'human scale' of Johnston Street, secure the distinction between the street wall and upper levels and will reduce the potential for overshadowing and adverse wind conditions.*

...

The Panel does not agree that less significant sections [of Johnston Street] warrant a different treatment. Less significant areas equally deserve to exhibit the overall urban design outcome: a strong street wall with a distinct setback to the mid level form.

To achieve these objectives, the Panel recommended that a building envelope requirement be established that, rather than being based on a sightline test from the opposite side of the street new, required new development to be within a 45° 'angular plane' drawn from the maximum street wall height. In combination with upper-level front setbacks and maximum building heights, the angular plane creates a further upper-level setback consistent with the application of the policy objective at Clause 22.02-5.7.1 that each higher element to industrial, commercial and retail buildings should be set further back from the lower heritage built form.

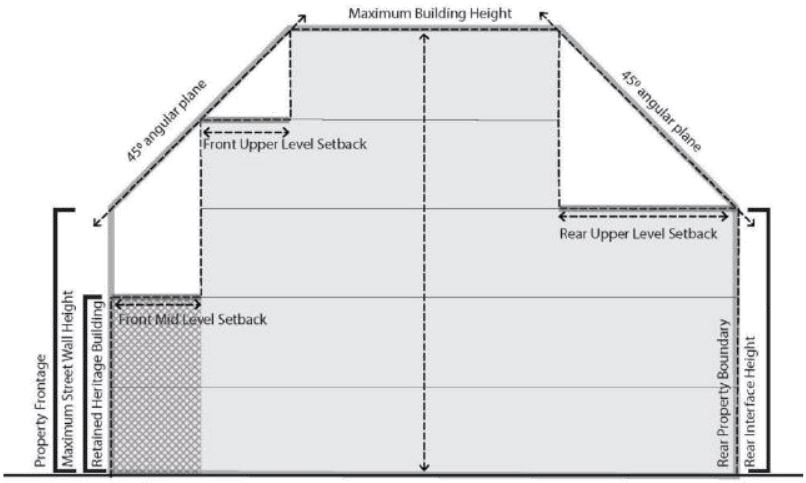

***Figure 9**: Building envelope requirement – Heritage Building (Figure 1 in Schedule 15 to Clause 43.02 Design and Development Overlay).*

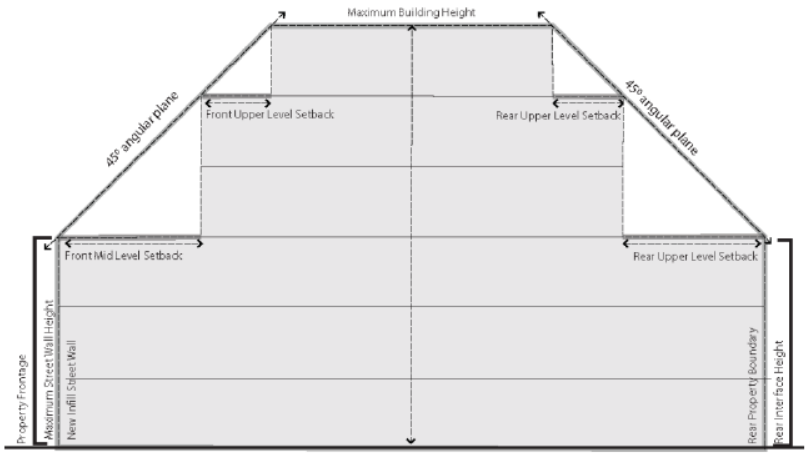

***Figure 10**: Building envelope requirement – Infill Building (Figure 2 in Schedule 15 to Clause 43.02 Design and Development Overlay).*

3.3 YARRA AMENDMENT C191

Swan Street, Richmond is a Major Activity Centre with a highly intact turn of the century 'High Street' occupying a large proportion of its length, as well as smaller precincts and individual heritage places dispersed along its full extent.

Amendment C191yara proposes to introduce four DDOs (DDO25, DDO26, DDO27 and DDO28) to the Activity Centre, with the different controls reflecting the different existing physical conditions and the potential development opportunities evident throughout the Activity Centre.

In its report of 15 October 2020, the Panel supported the use of mandatory controls for street wall and 6m upper-level setbacks for individually significant heritage places and intact heritage streetscapes, as well as mandatory controls for overall building heights in intact heritage streetscapes. Mandatory controls were also supported to protect views to local landmarks.

For parts of the Activity Centre that present a less consistent and more diverse built form expression, discretionary controls were considered to be appropriate.

In contrast to the Panel considering C220yara, the C191yara Panel considered that it was unnecessary to provide additional parameters to guide the form of upper level development, instead finding that the combination of specified heights, setbacks and design requirements for new upper-level development to be "visually recessive", were sufficient.

3.4 MORELAND AMENDMENT C134

Sydney Road, Brunswick is a Major Activity Centre with a highly intact, predominantly Victorian streetscape that is subject to the Heritage Overlay. Gazetted on 11 August 2016, C134more introduced DDO18, DDO19 and DDO20. DDO18 set mandatory street wall heights on Sydney Road north of Brunswick Road of between 8m and 11m.

DDO18 provides a preferred minimum 5m setback for development above the street wall and establishes a preferred ratio of ¾ : ¼ street wall to new built form through the following design objective:

- *Be designed to ensure that it occupies no more than one quarter of the vertical angle defined by the whole building in the view from an eye-level of 1.7 metres on the opposite side of the street, as illustrated in Figure 1 below.*

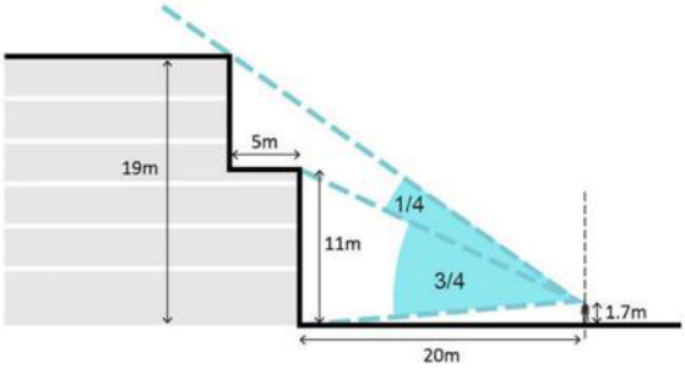

***Figure 11**: Upper-level setbacks along Sydney Road (Figure 1 in Moreland DDO18, retrieved 2 June 2017).*

DDO18 also provides a useful model for dealing with upper-level development where an existing heritage building in the heritage streetscape has a street wall height of less than the 11m street wall height provided in that control:

- *Where an existing building with a street wall height of less than 11 metres is to be retained for heritage reasons new development may occupy more than one quarter of the vertical angle defined by the whole building outlined in Figure 1 above* [Figure 11 of this Built Form Review].

3.5 BOROONDARA AMENDMENT C108

The Panel considering C108boro discussed the use of mandatory street wall height, upper-level setbacks and overall heights across 31 Neighbourhood Activity Centres and three commercial corridors (Camberwell Road/Burwood Road and Canterbury Road).

In its report dated 26 February 2014, the Panel noted its strong support for the protection of heritage assets in Boroondara and recommended reinstatement of policy in the exhibited Amendment that encouraged new development on or adjoining a heritage place to be moderated. In particular, the Panel recommended that policy guidance be included that:

> *The combination of the height, setbacks and design treatment of new buildings should ensure a heritage place on or adjoining the site is not overwhelmed or dominated.*

The Panel also considered the use of mandatory height and setback controls, and recognised that the version of *Plan Melbourne* at that time foreshadowed stronger policy support for the use of mandatory provisions in neighbourhood centres (and residential areas) to increase planning certainty.

The Panel report recognised that mandatory provisions that prescribed standards without a capacity for departures have been supported in areas of consistently high heritage value with consistent character. While acknowledging the heritage values and 'main street' character of the Neighbourhood Activity Centres subject to C108, the Panel also recognised that new development will be visible behind the retained façades – particularly from oblique views – and that invisibility of upper-level development is either unreasonable or not necessary to maintain the primacy of the street wall.

In conclusion, the Panel accepted some use of mandatory controls within Boroondara's neighbourhood centres, but not in the commercial corridors:

> *The Panel recognises that Plan Melbourne foreshadows stronger policy support for the use of mandatory provisions in neighbourhood centres (and residential areas) to increase certainty. The Panel considers the combination of the street wall and upper level setbacks is critical in neighbourhood centres to maintain the established main street character and in these situations mandatory controls can be justified. However, we consider development with elements that exceed the nominated height and/or adopt alternative setbacks should not be precluded as they may produce better outcomes in some circumstances. The overall maximum height limits should therefore remain discretionary to allow for such circumstances.*

It was the Panel's conclusion that mandatory street wall heights which reflected the dominant character of the neighbourhood centres were acceptable (either 8m or 11m, depending on the context). It also found that if mandatory upper-level setbacks were to be adopted, they should be sufficient to ensure that in most cases the upper-storey will be clearly distinguishable from the street wall of the heritage building and be a recessive element in neighbourhood centre streetscapes. To achieve this, the Panel identified 5m as being an appropriate mandatory minimum setback for upper-level development in the context of Boroondara's Neighbourhood Activity Centres.

3.6 WHITEHORSE AMENDMENT C175

C175whit sought to implement the *Box Hill Metropolitan Activity Centre Built Form Guidelines* (Hansen Partnership, 2016) by rezoning land, introducing the Built Form Guidelines as a reference document and applying a new DDO Schedule to introduce built form controls. In its consideration of this Amendment, the Panel Report, dated 6 October 2017, stated:

> *The Panel would have benefited from a more sophisticated analysis of the heritage precinct that utilised three-dimensional modelling, sight lines and view-sheds to help understand the rationale for the proposed heritage related controls. Without this basic information, it is difficult to determine whether the proposed controls are appropriate…*

and concluded that in the absence of this modelling:

- *The Built Form Responses regarding Heritage should not proceed in their current form.*

The absence of 3D modelling, and sight line and view-shed analysis in relation to those areas of the Box Hill Activity Centre that are subject to the Heritage Overlay appears to have been critical in Panel recommending that the proposed built form controls not be applied to address heritage.

3.7 STONNINGTON AMENDMENT C223

The Glenferrie Road and High Street Major Activity Centre encompasses the two linear commercial strips of Glenferrie Road and High Street in Malvern, as well as two peripheral areas. The Heritage Overlay, which covers all of Glenferrie Road and most of High Street, acknowledges the area for its '*metropolitan significance as one of the major strip shopping centres to have retained its role into the late twentieth century, and for the quality and integrity of its Victorian, Federation and Interwar building stock*'.[1] C223ston sought to apply new built form provisions through the application of DDO19 to the entire Activity Centre, with precincts A and B covering the commercial and heritage precincts of Glenferrie Road and High Street respectively.

While the Amendment proposed an 8-10m setback above the street wall for precincts A and B, the Panel found it to be effectively a concealment of upper-level additions, supporting instead a 5m setback as adequate to respect heritage values without removing development capacity. This was derived from the precedent in the Boroondara Planning Scheme and was seen to equate to the typical first room of a Victorian-era building. The Amendment was otherwise generally supported by the Panel as an appropriate balance between protecting heritage values and enabling growth. Discretionary preferred maximum building heights between 14.5 metres (4 storeys) and 21 metres (6 storeys) were supported through precincts A and B.

The Panel also reviewed the drafting of discretionary and mandatory provisions, addressing the appropriateness of the terms 'should' and 'must'. The Panel noted that confusion arose from the DDO parent clause, and until such time as the clause is redrafted, the term 'must' is to be used for schedule requirements with the addition of further clarification if it can be varied with a permit.

3.8 DAREBIN AMENDMENT C161

C161dare proposed to implement the '*Fairfield Village Heritage Assessment, 2017*' (Heritage Intelligence) and '*Fairfield Village Built Form Guidelines 2017*' (Hansen Partnership) through the application of Heritage Overlay HO313 and DDO21 to the Fairfield Village Neighbourhood Centre. DDO21 created two sub-precincts: Area 1 to

[1] Retrieved from Victorian Heritage Database, 18 January 2018 (https://vhd.heritagecouncil.vic.gov.au/places/31530)

be applied to the proposed HO313 precinct; with the remainder of the Neighbourhood Centre covered by Area 2.

The Panel found the application of the Heritage Overlay in conjunction with the DDO would enable the precinct *'to support a variety of housing typologies at increased densities'* in a way that '*allows the heritage place to be identified and understood*'. Further, the Panel supported the application of a mixture of mandatory and discretionary controls to Area 1 of the DDO in the form of:

- Mandatory maximum building heights at 14.5m and 17.5m (four and five storey), triggered by a lot width of 24m for five-storey.
- Mandatory maximum street wall height to be the greater of 8.5m or the adjacent street wall.
- Discretionary minimum front setbacks above the street wall at generally 4m, and 8m if constructing to a fifth level.
- The addition of a 3m side setback at the fifth-floor level – introduced as a discretionary provision to prevent the creation of a dominating wall of development along Station Street.

3.9 SUMMARY

Table 1 – Summarised recommendations and implications

YARRA AMENDMENT C231	
Recommendation	*Implications*
Combination of preferred and mandatory heights.	The use of a balanced combination of preferred and mandatory heights is appropriate to respond to varied conditions.
Limiting heights within heritage precincts while allowing housing capacity to be met elsewhere in the broader precinct.	The most highly intact areas warrant low heights to protect heritage place. Larger scale development should be encouraged outside these heritage places.
Mandatory controls provide appropriate protection of key views of landmarks.	Views of landmarks (such as the Clifton Hill Shot Tower) may be protected through the use of mandatory controls.
YARRA AMENDMENT C220	
Recommendation	*Implications*
A 6m upper-level setback will retain the 'human scale' of Johnston Street, securing the distinction between the [heritage] street wall and upper-levels.	A 6m mandatory upper-level setback is an appropriate minimum.
In combination with upper-level front setbacks and maximum building heights the angular plane creates a further upper-level setback from the mid-level setback.	Upper-level development should be set further back from the street wall consistent with the guidance at 22.02-5.7.2.
YARRA AMENDMENT C191	

Recommendation	*Implications*
Combination of preferred and mandatory heights.	The use of a balanced combination of preferred and mandatory heights is appropriate to respond to varied conditions.
Limiting heights within heritage precincts while allowing housing capacity to be met elsewhere in the broader precinct.	The most highly intact areas warrant low heights to protect heritage place. Larger scale development should be encouraged outside these heritage places.
A 6m upper-level setback is necessary to avoid facadism and to retain the prominence of the heritage street wall	A 6m mandatory upper-level setback is an appropriate minimum for site-specific Heritage Overlays and intact heritage streetscapes.
The combination of upper-level front setbacks, maximum building heights and design requirements in respect of upper-level development is sufficient to manage taller built form in heritage contexts.	Further guidance in the form of a sight-line test or angular plane formulae is not warranted. Note: this conclusion differs from that of the Panel that considered C220yara.
MORELAND AMENDMENT C134	
Recommendation	*Implications*
The application of mandatory street wall heights to Sydney Road is justified.	Provides a justification for the application of mandatory street wall heights within intact and consistent heritage streetscapes.
BOROONDARA AMENDMENT C108	
Recommendation	*Implications*
The combination of the height, setbacks and design treatment of new buildings should ensure a heritage place on or adjoining the site is not overwhelmed or dominated.	The DDO can included height, setback and design treatment controls to avoid new development dominating heritage places.
New development will be visible behind the retained façades and that invisibility of upper-level development is not necessary.	Some visibility of new upper-level development (including from oblique views) will be acceptable and complete concealment is not necessary.
Mandatory upper-level setbacks to the commercial corridors are justified.	Provides a justification for the application of mandatory upper-level setbacks within the study area.
WHITEHORSE AMENDMENT C175	
Recommendation	*Implications*
In the absence of modelling, built form heritage controls should not proceed.	That 3D modelling, sightlines and viewshed analysis should inform built form controls.
STONNINGTON AMENDMENT C223	

Recommendation	*Implications*
Panel supported a 5m upper-level setback instead of the 8-10m setbacks proposed that effectively concealed upper-level development.	There is an expectation that the visibility of some new upper-level built from will be acceptable and complete concealment is not necessary.
Application of the words 'should' and 'must' within controls.	Use 'should' for preferred controls and 'must' for mandatory controls.
DAREBIN AMENDMENT C161	
Recommendation	*Implications*
The application of mandatory street wall heights to Fairfield Village is justified.	Provides a justification for the application of mandatory street wall heights within intact and consistent heritage streetscapes.
The application of mandatory street wall heights to Fairfield Village is justified.	Provides a justification for the application of mandatory street wall heights within the Study Area.

4.0 MANDATORY AND DISCRETIONARY HEIGHT AND SETBACK CONTROLS

Planning Practice Note 59: The Role of Mandatory Provisions in Planning Schemes (September 2018) (PPN59) notes that the VPPs are predominantly performance-based and that mandatory provisions are the exception. The PPN sets out a series of five criteria against which to test proposed mandatory provisions, being:

- Is the mandatory provision strategically supported?
- Is the mandatory provision appropriate to the majority of proposals?
- Does the mandatory provision provide for the preferred outcome?
- Will the majority of proposals not in accordance with the mandatory provision be clearly unacceptable?
- Will the mandatory provision reduce administrative costs?

Planning Practice Note 60: Height and Setback Controls for Activity Centres (PPN60) provides specific guidance on the use of mandatory height and setback controls in Activity Centres. In September 2018, DELWP published an updated version of PPN60 following the completion of the pilot project *Better Height Controls in Activity Centres*[2].

Of relevance to this matter, PPN60 provides an additional justification for the use of mandatory controls based on 'comprehensive strategic work', which reads:

> *Mandatory height or setback controls should only be applied where:*
>
> - *exceptional circumstances exist; or*
> - *council has undertaken comprehensive strategic work and is able to demonstrate that mandatory controls are appropriate in the context, and*
> - *they are absolutely necessary to achieve the preferred built form outcomes and it can be demonstrated that exceeding these development parameters would result in unacceptable built form outcomes.*

In relation to 'exceptional circumstances', PPN60 states:

> *Exceptional circumstances may be identified for individual locations or specific and confined precincts, and might include:*
>
> - *significant heritage places where other controls are demonstrated to be inadequate to protect unique heritage values.*
> - *sites of recognised State significance where building heights can be shown to add to the significance of the place, for example views to the Shrine of Remembrance...*

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[2] Refer to the Panel Report to Yarra C220 chapter 1.2 for further discussion on the pilot project and the amendment to PPN60.

To pursue mandatory controls, PPN60 also states:

> *Where exceptional circumstances are identified, mandatory height and setback controls should only be applied where they are absolutely necessary to achieve the built form objectives or outcomes identified from the comprehensive built form analysis. Where mandatory controls are proposed, it will need to be demonstrated that discretionary controls could result in an unacceptable built form outcome.*

The amended version of PPN60 reflects a broader shift over time within the application of the VPPs in favour of the use of mandatory controls.

For this project, the purpose of the Hansen Built Form Review and this report is to provide a comprehensive strategic basis for height and setback controls within the study area.

The Panels that considered C108boro, C161dare, C134, C220yara, C191yara and C231yara provide further guidance on the application of mandatory built form controls along Alexandra Parade.

These Panels concluded that for Heritage Overlays within Activity Centres:

- Mandatory controls were appropriate for street wall heights along Sydney Road, in 31 neighbourhood centres in Boroondara and Area 1 of the Fairfield Village Neighbourhood Centre
- Mandatory upper level setbacks were appropriate in many of Boroondara's neighbourhood centres
- Mandatory heights were appropriate for Area 1 of the Fairfield Village Neighbourhood Centre
- Mandatory setbacks were appropriate for Johnston Street with a mixture of preferred and mandatory height limited combined with a 45 degree angular plane test.
- Mandatory height and upper level setback controls were appropriate to protect the most highly consistent and intact parts of Queens Parade and to protect views to key landmarks.

The Alexandra Parade Precinct does not include consistent, intact or cohesive streetscapes or large numbers of heritage places that warrant the widespread use of mandatory controls. Mandatory height controls are appropriate to protect key views of landmarks, such as the Clifton Hill Shot Tower. Mandatory minimum upper level setback controls are also warranted where it is necessary to protect the legibility and heritage fabric of buildings that are subject to the Heritage Overlay.

PART II: HERITAGE ANALYSIS

5.0 STUDY AREA ANALYSIS

5.1 PRECINCT BOUNDARY

***Figure 12**: Aerial image - Alexandra Parade Study Area outlined in black. Source: adapted from VicPlan*

As noted previously, this report focuses on the Alexandra Parade Precinct, as shown in Figure 12 above. The following precincts were considered in the *Brunswick and Smith Street Built Form Review*, GJM Heritage, 25 November 2019:

- Brunswick Street Activity Centre Spine
- Town Hall Mixed Use Precinct
- Smith Street Activity Centre Spine
- Johnston Street Activity Centre Spine
- Fitzroy East Mixed Use Precinct.

Gertrude Street was the subject of the *Gertrude Street Built Form Framework: Heritage Analysis & Recommendations*, GJM Heritage, 9 December 2019.

The Collingwood Mixed Use Precinct was considered as part of a separate study: *Collingwood Mixed Use Pocket Heritage Analysis & Recommendations*, GJM Heritage, 6 June 2018.

The Fitzroy West Mixed-Use and the Victoria Parade Boulevard precincts are subject of separate reports prepared as part of this study.

The following sections contain an analysis of the heritage components and qualities of the Alexandra Parade Precinct, including significant views. An analysis of future built form character considerations has also been provided, along with recommended built form parameters to appropriately manage heritage values.

5.2 HERITAGE CHARACTERISTICS

The Alexandra Parade Precinct does not include any cohesive or linear heritage streetscapes. The precinct includes only two individual heritage places: Clifton Hill

Shot Tower (VHR H0709) and the former Murray Co. Wool Works at 457 Hoddle Street, Clifton Hill (HO89). The former is a municipal-wide landmark of State-level significance, while the latter is a locally significant single-storey brick factory dating to 1918.

The remaining properties subject to the Heritage Overlay are located in precincts that are generally residential in character. These precincts include small-scale early-twentieth century factory buildings (612-614, 616-622 and 628-632 Smith Street; within HO317), the large multi-storey Interwar British United Shoes Machinery Machinery Co. Pty Ltd factory (200 Alexandra Parade, Fitzroy, within HO334) and the former Haliburton Wool Works (94-100 Alexandra Parade, Clifton Hill, within HO317). Other graded heritage properties within the study area include the modest single-storey terraced, semi-detached or freestanding houses at 1 Council Street, Clifton Hill (HO317); 58 & 60 Alexandra Parade, Clifton Hill (HO317); 47 & 49 Alexandra Parade, Collingwood (HO321); and 347 & 347a Wellington Street, Collingwood (HO321). The precinct includes two corner hotels, the Gasometer Hotel at 484 Smith Street, Collingwood dating from c.1859 (not Heritage Overlay at the time of writing, but recommended for inclusion as an individual heritage place as part of the Brunswick and Smith Street Built Form Review) and the Fox Hotel (formerly the Tower Hotel) at 351 Wellington Street dating from the 1930s in its current form (HO321).

The built form within the study area exhibits little visual cohesion and the areas of land subject to the Heritage Overlay is limited to individual buildings or short runs of heritage precinct streetscape on Alexandra Parade, Smith Street and Wellington Street.

***Figure 13**: (left) British United Shoes Machinery Co. Pty Ltd factory, 200 Alexandra Parade ('Individually significant' within HO334).*

***Figure 14:** (right) Former Spry Bros. Boot Factory, 628-632 Smith Street, Clifton Hill ('Contributory' within HO317)*

***Figure 15**: Gasometer Hotel, 484 Smith Street, Collingwood (recommended for inclusion on the Heritage Overlay as an individual heritage place)*

***Figure 16:** (right) View of the Clifton Hill Shot Tower (VHR H0709) from the intersection of Alexandra Parade and Wellington Street (note this is not one of the primary views identified in the Ethos Urban 'Landmarks and Views Assessment')*

Figure 17: *(left) Fox Hotel, 351 Wellington Street and terraced houses, 47 & 49 Alexandra Parade, Collingwood ('Contributory' within HO321).*

Figure 18: *(right) Semidetached pair of houses, 347 & 347A Wellington Street and the Fox Hotel, 351 Wellington Street, Collingwood ('Contributory' within HO321)*

Figure 19: *(left) 56, 58 & 60 Alexandra Parade, Clifton Hill (no. 56 graded 'Not-contributory', nos. 58 & 60 graded 'Contributory' within HO321)*

Figure 20: (right) *Former Haliburton Wool Works, 94-100 Alexandra Parade, Clifton Hill ('Contributory' within HO321).*

Figure 21: *(left) Former Haliburton Wool Works, 94-100 Alexandra Parade, Clifton Hill viewed from Noone Street ('Contributory' within HO321).*

Figure 22: *(left) Former Murray Co. Wool Works, 457 Hoddle Street, Clifton Hill (individual heritage place HO89).*

5.3 LOCAL LANDMARKS

While municipal-wide landmarks within the City of Yarra are identified within Clause 22.03 'Landmarks and Tall Structures' of the Yarra Planning Scheme, the location, scale, function and architectural form and detail of some other buildings within the study area has resulted in these buildings acting as local landmarks. These buildings serve as markers, wayfinding aids or landmarks in the local streetscape context due to their siting at key intersections, or their scale within the surrounding streetscape.

In identifying these local landmarks, this report has also considered the Ethos Urban report entitled *Landmarks & Views Assessment* (October 2019). Chapter 2.2.2 of this report considers the views of the Clifton Hill Shot Tower which is identified at Clause 22.03-4 of the Yarra Planning Scheme.

In the context of the Alexandra Parade Precinct, the local landmarks are limited to two corner hotels and a large industrial building, as described in Table 2.

Table 2 – Local landmark buildings

Address	Building Name	Type	Corner	Grading	Photograph
200 Alexandra Parade, Fitzroy	British United Shoes Machinery Co. Pty Ltd factory	Large industrial building occupying an entire block	Alexander Parade and George & Gore streets	Individually significant (HO334)	©City of Yarra (VHD)
457 Hoddle Street, Clifton Hill	Former Murray Co Wool Works	Industrial building on a prominent corner site with highly visible roof slopes and a prominent chimney	Alexandra Parade and Hoddle Street	Individually signficant (HO89)	©City of Yarra (VHD)
484 Smith Street, Collingwood	Gasometer Hotel	Hotel on a prominent corner site	Alexander Parade and Smith Street	Not within an HO	
351 Wellington Street, Collingwood	Fox Hotel (former Tower Hotel)	Hotel on a prominent corner site	Alexander Parade and Wellington Street	Contributory (HO321)	

The Fox Hotel dates from 1871 but underwent an external remodelling in the interwar period, which was commonplace at this time. The Gasometer Hotel is more intact to its c.1859 form. These two buildings share similar characteristics, namely:

- two storey height
- parapeted form (only in part to the Fox Hotel)
- visible roof form (only in part to the Gasometer Hotel)
- visible chimneys
- masonry construction with less than 40% of the upper-level street wall face comprised with openings such as windows and doors
- splayed corners with return façades to both street frontages.

The British United Shoes Machinery Co. Pty Ltd and former Murray Co Wool Works building are imposing industrial buildings located in prominent corner locations.

6.0 ALEXANDRA PARADE HERITAGE ANALYSIS

6.1 HERITAGE STATUS

6.1.1 Existing conditions

The majority of the Alexandra Parade Precinct is not subject to any heritage controls. The study area includes two individual heritage places, one of which is included on the VHR (H0709 - Clifton Hill Shot Tower). The remaining properties subject to the Heritage Overlay are located at the southern boundary of HO317 – Clifton Hill West Precinct; or at the northern boundary of HO321 – Gold Street Precinct, Collingwood and HO334 – South Fitzroy Precinct.

Figure 23: Heritage Overlay and VHR map – Alexandra Parade precinct outlined in black. Source: adapted from VicPlan

Note: the only VHR site that falls within the study area is the Clifton Hill Shot Tower (H0709), the extent of registration for which is indicated by yellow circle.

Figure 24: Current heritage gradings from Appendix 8 – Alexandra Parade precinct outlined in black. Source: adapted from VicPlan

Note: the only VHR site that falls within the study area is the Clifton Hill Shot Tower (H0709), the extent of registration for which is indicated.

The existing heritage status for the buildings within the study area are listed in Table 3. We note however that there is some inconsistency between the street addresses provided within Appendix 8 and those identified in VicPlan. The addresses, dates of construction and gradings provided below are taken directly from Appendix 8.

Table 3 – Existing heritage status

VICTORIAN HERITAGE REGISTER				
VHR #	*Name*	*Address*	*Heritage Overlay*	*Date*
H709	[Clifton Hill] Shot Tower	94 ALEXANDRA PARADE CLIFTON HILL	HO85	1882
INDIVIDUAL HERITAGE OVERLAYS				
Heritage Overlay #	*Name*	*Address*	*Appendix 8 Grading*	*Date*
HO89	Former Murray Co Wool Works	457 HODDLE STREET CLIFTON HILL	Individually significant	1918
PRECINCT HERITAGE OVERLAYS				
Heritage Overlay #	*Name*	*Address*	*Appendix 8 Grading*	*Date*
HO317	Clifton Hill West Precinct	628-632 Smith Street: Factory, former Spry Bros. Boot Factory Site	Contributory	1910
		628-632a Smith Street: Factory & Offices (Cantarella)	Not Contributory	1960 -1970
		616-622 Smith Street: Factory, former	Contributory	1900 – 1925
		612-614 Smith Street: Factory	Contributory	1900 – 1915?
		1 Council Street: House	Contributory	1880 -1890
		1a Council Street: Factory	Not Contributory	1930 -1950
		7 Council Street	Contributory	1900 -1915
		9 Council Street	Contributory	1900 -1915
		11 Council Street	Contributory	1900 – 1915
		13 Council Street	Contributory	1880 -1890
		15 Council Street	Contributory	1850 -1890
		15a Council Street	Ungraded	
		20 Reeves Street	Ungraded	

		406 Wellington Street: Factory	Not contributory	1930 -1940
		406a Wellington Street	Contributory	1880 -1890
		406b Wellington Street	Contributory	1880 -1890
		56 Alexandra Parade	Not contributory	1880 -1890
		58 Alexandra Parade	Contributory	1880 -1890
		60 Alexandra Parade	Contributory	1880 1890
		88-92 Alexandra Parade: Factory complex	Not contributory	??
		94 Alexandra Parade: Haliburton Wool Works. Former (& Shot Tower)	Contributory	1880 – 1890[1]
HO321	Gold Street Precinct, Collingwood	43-45 Alexandra Parade: Flats	Not contributory	1960 – 1970
		47 Alexandra Parade	Contributory	1870 – 1890
		49 Alexandra Parade	Contributory	1870 – 1890
		351 Wellington Street: Tower Hotel, former later The Office Inn	Contributory	1850 – 1930[2]
		347a Wellington Street	Contributory	1925 – 1930
		347 Wellington Street	Contributory	1925 – 1930
		51-61 Alexandra Parade: Factory	Not contributory	1915 – 1925
HO334	South Fitzroy Precinct	200 Alexandra Parade: British United Shoe Machinery Co. Pty Ltd Factory	Individually significant	1932

[1] The history and analysis prepared for the former Haliburton Wool Works did not identify any extant fabric dating from pre-1945 with the exception of brickwork associated with the shot tower.

[2] The history prepared as part of this report identified the original construction of the Tower Hotel as 1871.

6.1.2 Recommended Changes

The review of the existing extent and grading of buildings was limited to substantial omissions and anomalies. The review did not include a complete re-assessment of the 'Individually significant' / 'Contributory' / 'Not-contributory' gradings of individual buildings. A table of the identified anomalies is provided at Appendix I.

The Gasometer Hotel at 484 Smith Street, Collingwood was identified as warranting inclusion on the Heritage Overlay as an individual heritage place in the field work undertaken for the Brunswick and Smith Street Built Form Review, and a citation was prepared (see Appendix II).

In addition, it was noted that neither the Quonset Warehouse-type prefabricated building at 20 Reeves Street nor the former Haliburton Wool Works at 94-100 Alexandra Parade, Clifton Hill demonstrate the identified heritage characteristics of HO317 – Clifton Hill West Precinct and assessments have been undertake to determine whether or not these warrant inclusion on the Heritage Overlay as individual heritage places. The Quonset Warehouse was associated with former industrial uses within this part of Clifton Hill and it is recommended that it be included as an individual heritage place in the Schedule to the Heritage Overlay; the citation for this building is provided at Appendix III. The extant fabric of the former Haliburton Wool Works dates from after 1945 and does not contribute to the heritage values of HO317, nor is it considered to meet the threshold for inclusion on the Heritage Overlay in its own right as an individual heritage place.

The former British United Shoe Machinery Co. Pty Ltd Factory at 200 Alexandra Parade, Fitzroy is located within the predominantly low-rise residential South Fitzroy Precinct (HO334). While HO334 includes industrial complexes including the former MacRobertson Confectionary factory, the former British United Shoe Machinery Co. Pty Ltd Factory does not form part of a consistent heritage context and is located at the northern edge of the Heritage Overlay precinct, separated physically from other heritage fabric. We note the Statement of Significance prepared for this building included in the Reference Document 'City of Yarra Review of Heritage Precincts 2007: Appendix 7 - Individually significant places not from the main development era', which should inform the redevelopment of this heritage place.

Other recommended changes are:

- Re-grading the substantially altered terraced houses at 58 and 60 Alexandra Parade, Clifton Hill from 'Contributory' to 'Not-contributory' within HO317 to recognise the extent of their alteration, lack of heritage context, and lack of contribution to a heritage streetscape;
- Removing 51-61 Alexandra Parade, Collingwood from the extent of HO321 as this large parcel of land does not contain heritage fabric;
- Seeking an amendment to the extent of registration of the Clifton Hill Shot Tower to provide an adequate curtilage and to include the nineteenth century fabric at the base of the structure; and
- Amend Appendix 8 to identify the Clifton Hill Shot Tower as a place on the VHR.

6.2 ZONING

6.2.1 Existing conditions

The carriageway and median strip of Alexandra Parade, as a major east-west thoroughfare, is zoned Road Zone (RDZ1). The land within the study area on the northern side of Alexandra Parade is variously zoned Commercial 2 Zone (C2Z), General Residential Zone (GRZ) and Mixed Use Zone (MUZ). Along the southern side of Alexandra Parade the land is zone Commercial 1 Zone (C1Z), C2Z and MUZ. These zones generally reflect the historic and contemporary land use of the Alexandra Parade Precinct.

The land to the north and south of the Alexandra Parade Precinct is generally zoned Neighbourhood Residential Zone (NRZ), the majority of which is also included within HO317, HO321 or HO334.

***Figure 25**: Zone map - Alexandra Parade Precinct outlined in black. Source: adapted from VicPlan*

6.2.2 Recommended Changes

The currenting zoning of land within the Alexandra Parade Precinct is considered to be appropriate in heritage terms and no changes are recommended.

6.3 POTENTIAL FUTURE CHARACTER CONSIDERATIONS

Alexandra Parade is an area of highly variable built form, the majority of which is not subject to the Heritage Overlay. There are no cohesive heritage streetscapes within the study area, with the continuous runs of heritage buildings limited to no more than three graded buildings in a row. The limited heritage fabric, coupled with the significant variation in the form and character of the graded buildings (from large factory complexes to modest terraced housing) means that heritage considerations will have a more limited role in informing the overall preferred future character of the Alexandra Parade Precinct than in many other parts of the City of Yarra.

Where the Heritage Overlay applies[3], new development within, or adjacent to, these sites should consider the heritage values of that place and be sited, massed and designed to retain the visual prominence of the heritage building. For example, the Former Murray Co Wool Works at 457 Hoddle Street, Clifton Hill, has highly visible roof slopes and a prominent chimney that is visible from the eastern side of Hoddle Street. These features, as well as being integral to the heritage form of the building, help communicate its historic use and function and should be retained within any future development.

The Alexandra Parade Precinct has sensitive interfaces to the north and south which are characterised by a transition to single and two-storey terraced, semi-detached and detached housing dating from the mid-late nineteenth century through to the early twentieth century. These residential areas are generally located within the NRZ and are subject to HO317, HO321 or HO334. New development should consider the impacts on these heritage precincts in terms of the visual and physical interfaces, as well as amenity considerations.

6.4 RECOMMENDED BUILT FORM PARAMETERS

Any DDO proposed for the Alexandra Parade Precinct should apply built form guidance to ensure that new built form is respectful of the heritage places within the area.

A DDO control applied to properties within the Alexandra Parade Precinct that are subject to – or immediately adjacent to – the Heritage Overlay should ensure new development respects the heritage significance of the place and is sited, massed and designed to be visually recessive and to not dominate the heritage place. This includes ensuring that appropriate interfaces are provided between the generally smaller-scale heritage buildings within predominantly residential precincts and potential new development along Alexandra Parade.

A DDO control should also ensure that key views to the State-significant Clifton Hill Shot Tower are maintained and not diminished by future development.

To develop appropriate built form parameters for the Alexandra Parade Precinct, Hansen Partnership, the City of Yarra and GJM Heritage undertook the following analysis:

- Heritage and urban context information, known planning scheme amendments, and past and current planning applications was collected and analysed; and

[3] With the exception of that land which is recommended to be removed from the extent of the Heritage Overlay, namely 51-61 Alexandra Parade, Collingwood.

- Built form parameters from the above analysis were drawn and then tested, firstly via cross-sectional drawings and then via a 3D model to determine their appropriateness.

Informed by the analysis and testing methodology outlined above, it is recommended that a DDO should seek built form outcomes that:

- Ensure new development does not obscure 'primary' views of the Clifton Hill Shot Tower and retains 'secondary' (as identified in 'Landmarks and Views Assessment', Ethos Urban, October 2019) and other views from street intersections.
- Retain the visual prominence of local landmarks in the streetscape.
- Retain chimneys and principal roof forms visible from the public realm (excluding laneways) in new development within the Heritage Overlay.
- Ensure new development within the Heritage Overlay does not visually dominate the existing heritage fabric.
- Ensure any upper-level or infill development is subservient to heritage fabric and is visually recessive in mass, scale and materiality.
- Encourage the top-most level (or levels) of new development to be set further back from a principal heritage frontage (as encouraged at Clause 22.02-5.7.2) and treated as a visually separate roof top element.
- Retain the visual prominence of the return façades of buildings that address both Alexandra Parade and cross streets (particularly at the principal intersection with Smith and Wellington streets) by setting back new upper-level built form from both street frontages.
- Ensure that the heritage buildings remain prominent within the streetscape and retain their three-dimensional form as viewed from the public realm to avoid 'facadism'.

7.0 BUILT FORM TESTING

To assist in the translation of the 'Recommended Built Form Parameters' in Part II into specific guidance that could be translated into a DDO control, the heritage analysis was reviewed against cross-sectional drawings of potential development envelopes and 3D computer modelling prepared by Hansen Partnership and the City of Yarra to test the appropriateness of particular built form outcomes that achieved the intent of the 'Recommended Built Form Parameters'.

As well as the cross-sectional drawing studies, 3D computer modelling using Sketchup Pro™ of potential bulk and massing envelopes for the study area was also interrogated. The existing built form was modelled along with approved, but not yet constructed, development in the Alexandra Parade Precinct. It was used as a 'working' massing model to inform heights and setbacks on key development sites and to provide a comparative visual analysis. Given the relatively small proportion of the study area that is subject to the Heritage Overlay, the 3D modelling was particularly useful in testing the generally more generous built form parameters applied to the larger, less-encumbered potential development sites rather than those with intact heritage buildings.

The Sketchup model was also interrogated to consider the impact of new buildings from the natural eye level (1.6m) on the public footpath.

Extensive field work was undertaken and site visits were used to inform the recommendations made in this report. Views of heritage places were only considered from the public footpath with particular emphasis placed on intersections where pedestrians are likely to dwell.

PART III: BUILT FORM RECOMMENDATIONS

8.0 BUILT FORM RECOMMENDATIONS

Any DDO applied to the Alexandra Parade Precinct should include provisions to complement, but not duplicate, the decision guidelines at Clause 43.01-8 (Heritage Overlay), State Planning Policy at Clause 15.03-1S and local policy within Clauses 22.02, 22.03 and 22.10 (or as translated into the post-VC148 Planning Policy Framework) of the Yarra Planning Scheme to inform new development.

Having regard to the heritage conditions within the study area as well as cross-sectional drawings and 3D modelling prepared by Hansen Partnership and the City of Yarra, it is recommended that the built form controls set out in 8.1 below be applied to new development to ensure appropriate weight is given to the heritage values within the study area. The cross-sectional drawings and 3D modelling helped assess whether or not the upper-level development would 'be visually recessive and not dominate the heritage place' as sought at Clause 22.02-5.7.1.

The lack of any consistent streetscapes within the Heritage Overlay removes the need for a ¾ : ¼ ratio of street wall to new built form sightline (from Moreland DDO18) or a '45° angular plane' test (from Yarra DDO15) to protect the visual prominence of the street wall. Likewise, the lack of consistent heritage streetscape, the wide variety of heritage built form, and the need to allow for a range of design outcomes means that preferred, rather than mandatory, height controls should be applied.

The protection of the views to – and visual backdrop of – the Clifton Hill Shot Tower would normally warrant the application of mandatory upper-level setback and overall height controls, however in this case the land at 94-100 Alexandra Parade, Clifton Hill is zoned GRZ and is subject to Schedule 4 which provides a mandatory maximum height limit of 11.5m. While GRZ4 provides an exemption "…for the construction of a new building that exceeds the specified building height which does not exceed the height of immediately adjacent buildings facing the same street"[4], it is assumed that this does not establish a policy position that development on this site can match, or even approach, the 68.97m[5] height of the Shot Tower. Likewise, the land to the north, east and west of this site is zoned NRZ1 which provides for a mandatory maximum height of 9m and two (2) storeys, protecting the backdrop and setting of the shot tower. Should the zoning regime change in this location, insofar

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[4] The mandatory height limit of 11.5m is subject to the following exemptions:

- An extension of an existing building that exceeds the specified building height provided that the extension does not exceed the existing building height.
- An extension of an existing building or the construction of a new building that exceeds the specified building height which does not exceed the height of immediately adjacent buildings facing the same street.
- The rebuilding of a lawful building or works which have been damaged or destroyed.
- A building which exceeds the specified building height for which a valid building permit was in effect prior to the introduction of this provision.

[5] Statement of Significance - Shot Tower, 94 Alexandra Parade, Clifton Hill (VHR H0709) (VHD Place ID 295)

as mandatory height controls within the NRZ and GRZ zones, built form parameters should be reviewed and mandatory height limits introduced to protect the views to the Shot Tower.

Buildings graded 'Individually Significant' and 'Contributory' are referred to as 'heritage buildings' within the table below and those graded 'Not-contributory' or that are vacant are considered 'infill sites'.

8.1 RECOMMENDED DDO CONTROLS

Built Form Element	Mandatory	Preferred	Rationale
New built form	New built form must: – not impede views to the Clifton Hill Shot Tower from: 1) Brunswick Street and Alexandra Parade Intersection (north-east corner of centre median) 2) Eastern Freeway (west of the Hoddle Street Overpass) 3) Darling Gardens (Rotunda);	Retain the Clifton Hill Shot Tower as the principal built form landmark when viewed from the south side of Alexandra Parade between Brunswick and Hoddle streets. Encourage the retention of views of the Clifton Hill Shot Tower from: 4) Roseneath Street and Hoddle Street Intersection 5) Gold Street and Queens Parade intersection.	The Clifton Hill Shot Tower is a State-significant structure that is identified as a landmark of municipal significance in Clause 22.03. Note: while it is policy at Clause 22.03-4 that "New buildings within the vicinity of the following landmarks should be designed to ensure the landmarks remain as the principal built reference" additional guidance is required to protect the 'Primary' and 'Secondary' views identified in the from 'Landmarks and Views Assessment' (Ethos Urban, October 2019).
Street wall height (infill development) within or immediately adjacent to land subject to the Heritage Overlay	-	Match the parapet height of the adjacent heritage building to the width of the property boundary or for a distance of 6m, whichever is less. (preferred)	To ensure new built form responds to its immediate heritage context. A preferred control is appropriate given the highly varied heritage fabric and interface conditions.
Front setback (infill development) within or immediately adjacent to land subject to the Heritage Overlay	-	Match the setback of the principal façade of the adjacent heritage building (preferred)	To ensure new built form responds to the heritage context which generally has a small or no setback.
Minimum setbacks above street wall within or immediately adjacent to land subject to the Heritage Overlay	6m minimum for heritage buildings Note: the setbacks for individual heritage places should also be informed by their Statements of Significance and the	6m minimum for sites immediately abutting land subject to the Heritage Overlay	The built form of heritage buildings varies across the Alexandra Parade Precinct. The application of a mandatory 6m setback is consistent with that through DDO25, DDO26, DDO27 and DDO28 proposed to

	historic fabric of the heritage place.		be introduced through C191yara. A larger setback from the principal facades of heritage buildings may be required development to be set back, and for the retention of an appropriate and legible three-dimensional heritage form.
Maximum building heights within the Heritage Overlay	-	43-45 Alexandra Parade, Collingwood – 14m 47 & 49 Alexandra Parade and 347, 347a & 351 Wellington Street, Collingwood – 11m 200 Alexandra Parade, Fitzroy – 32m 1 Council Street, Clifton Hill – 11m 457 Hoddle Street – 11m 20 Reeves Street, Clifton Hill – 9m 484 Smith Street, Collingwood – 14m 612-632 Smith Street, Clifton Hill – 21m	The variety of heritage building stock, existing urban form and interface conditions require a range of maximum building heights. The overall height that can be accommodated on large former industrial buildings such as the former British United Shoes Machinery factory is much greater than may be achieved on sites occupied by two storey corner hotels or single storey houses without adversely affecting their heritage values. A preferred control will enable a wide range of design responses. Note: 408-412 Wellington Street, Clifton Hill and 56-60, 88-92 & 94-100 Alexandra Parade, Clifton Hill are zoned GRZ4 and therefore have a mandatory 11.5m height limited applied. Therefore, no height limited is required to be established in the DDO.

8.2 ADDITIONAL GUIDANCE

The heritage policy proposed as part of C269yara includes specific strategies to address new development and alterations to commercial and industrial heritage places. If these provisions are implemented, additional heritage design requirements are not likely to be needed within a DDO. However, if new development is to be informed by the existing heritage provisions at Clauses 15.03-1S, 21.05-1, 22.02 and 43.01 of the Yarra Planning Scheme, we recommend that the following heritage design requirements be applied to a DDO:

- New infill development within heritage precincts should:
  - Interpret the historic façade rhythm, including fenestration patterns and proportions, the relationship between solid and void, and the existing module of structural bays.
  - Retain the visual prominence of prominent corner buildings and local landmarks.

  - Be distinguishable from the original heritage fabric and adopt a high quality and respectful contextual design response.
  - Ensure façade treatments and the articulation of new development are simple and do not compete with the heritage fabric.
  - Avoid the replication of existing decorative features and architectural detail.
- The adaptation of existing heritage buildings should:
  - Discourage highly reflective glazing in historic openings.
  - Ensure the inter-floor height of the existing building is maintained and avoid new floor plates and walls cutting through historic openings.
  - Encourage the retention of solid built form behind retained facades and avoid balconies behind existing openings.
- New upper-level development behind existing heritage buildings should:
  - Retain the visual prominence of parapet and roof-top elements including parapets, balustrades, pediments, visible roof forms, chimneys, lanterns, urns and other architectural features, where these exist.
  - Be set back to retain the visual prominence of prominent corner buildings and local landmarks.
  - Ensure that the design and setback of the addition does not visually dominate the heritage building or surrounding heritage places.
  - Retain the primacy of the three-dimensional form of the heritage building.
  - Incorporate materials and finishes that are recessive in texture and colour.
  - Generally utilise visually lightweight, but high quality, materials that create a juxtaposition with the heavier masonry of the heritage facades.
  - Incorporate simple architectural detailing so it does not detract from significant elements of the existing building or streetscape.
  - Provide a recessive backdrop to the heritage streetscape within precincts and to individual heritage buildings.
  - Avoid highly articulated facades with recessed and projecting elements.
  - Avoid highly contrasting or vibrant primary colours.
  - Avoid unarticulated façades that give a bulky appearance, especially from oblique views.
  - Be articulated to reflect the fine-grained character of narrow sites.
- New development on land immediately abutting heritage places should:

- Provide a sensitive site-responsive transition between the existing heritage fabric and the new proposed built form.
- Retain the visual prominence of prominent corner buildings and local landmarks.
- Be distinguishable from the original heritage fabric and adopt a high quality and respectful contextual design response.
- Ensure façade treatments and the articulation of new development are simple and do not compete with the heritage fabric.
- Avoid the replication of existing decorative features and architectural detail.

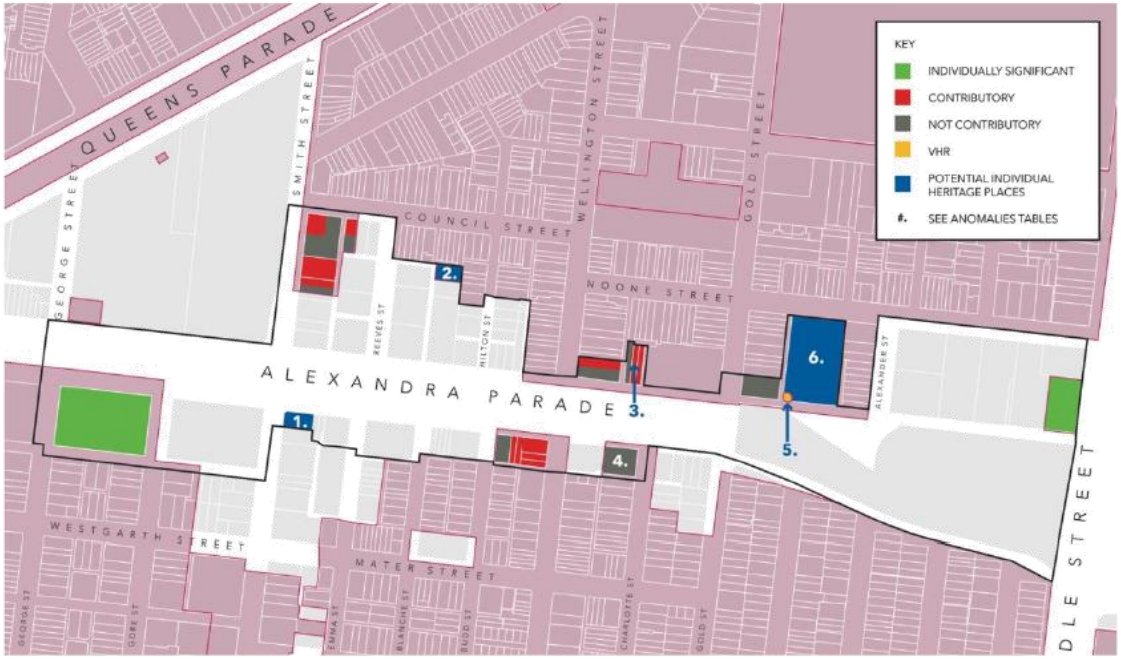
Attachment 4 - Attachment 4 - Alexandra Parade Heritage Review

APPENDIX I - Alexandra Parade Precinct Anomalies

A1.1 Qualifications

- Only obvious omissions and anomalies have been identified
- Review of individual gradings across the precinct has not been undertaken
- Photos taken by GJM March 2020 unless otherwise noted.

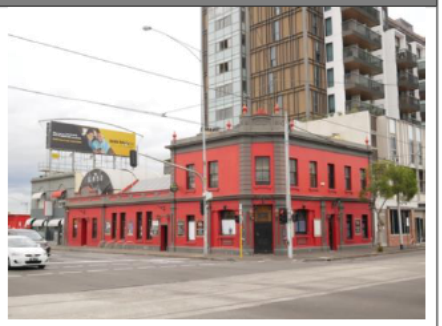
A1.2 Anomalies Map



Attachment 4 - Attachment 4 - Alexandra Parade Heritage Review

A1.3 Anomalies

Recommendations are provided in **bold.**

MAP REF	ADDRESS (HO NUMBER)	CURRENT GRADING APPENDIX 8	CURRENT GRADING PRECINCT MAP	PROPOSED GRADING	COMMENTS / RECOMMENDATION (BOLD)	IMAGES
1.	The Gasometer Hotel, 484 Smith Street, Collingwood (No HO)	Not within HO	-	Individual heritage place	The Gasometer Hotel is an intact mid nineteenth century hotel on the prominent Smith Street / Alexandra Parade intersection. It is similar to other hotels currently graded individually significant within Appendix 8 and warrants inclusion on the HO. Assessment and citation prepared by GJM August 2019. **Include the Gasometer Hotel as an individual heritage place on the Schedule to the Heritage Overlay. Refer to Appendix II for citation.**	
2.	20 Reeves Street, Clifton Hill (HO317)	No grading	No grading	Reviewed	The building located at 20 Reeves Street is a steel framed corrugated metal clad building in a Quonset Warehouse-form. It does not display any of the characteristics of the Clifton Hill Western Precinct Statement of Significance but warrants inclusion on the HO in its own right. An assessment has identified that this building was associated with former industrial uses within this part of Clifton Hill and warrants inclusion on	

Attachment 4 - Attachment 4 - Alexandra Parade Heritage Review

					the Heritage Overlay as an individual place. **Include the steel building at 20 Reeves Street, Clifton Hill as an individual heritage place on the Schedule to the Heritage Overlay. Refer to Appendix III for citation.**	
3.	56, 58 and 60 Alexandra Parade, Clifton Hill (HO317)	56 Alexandra Pde - Not contributory 58 Alexandra Pde - Contributory 60 Alexandra Pde - Contributory	56 Alexandra Pde - Not contributory 58 Alexandra Pde - Contributory 60 Alexandra Pde - Contributory	56 Alexandra Pde - Not contributory 58 Alexandra Pde - Not contributory 60 Alexandra Pde - Not contributory	These three single-storey terraced houses are identified in Appendix 8 as dating from 1880-90. All have undergone very substantial alterations such that their original form is no longer readily discernible. Additionally, they have no cohesive residential context as defined by the Clifton Hill Western Precinct Statement of Significance. Collectively, and individually, they make little or no contribution to HO317. **Prepare an assessment to inform a potential amendment to Appendix 8.**	
4.	51-61 Alexandra Parade, Collingwood (HO321)	Not contributory	Not contributory	Remove from HO321	The Gold Street Precinct (HO321) extends north of the laneway at the rear of 51-61 Alexandra Pde to include an isolated factory building dating from 1915-25 that is graded 'Not-contributory' in Appendix 8. **Amend the extent of HO321 and Appendix 8 to omit 51-61 Alexandra Parade.**	

Attachment 4 - Attachment 4 - Alexandra Parade Heritage Review

6.	Shot Tower, 94 Alexandra Parade, Clifton Hill (VHR H0709; HO85)	Contributory	Individually significant	VHR – amend extent	The Shot Tower at 94 Alexandra Parade is included in the VHR "to the extent of all of the whole of the Shot Tower building and the land ... the extent of 1.5 metres of circulating space surrounding the base of the Shot Tower". It is considered that this does not provide an adequate curtilage for the structure. **It is recommended that an application be made under s.62(1) of the *Heritage Act 2017* to amend the VHR entry to include an appropriate area of land at the base of the Shot Tower that includes associated nineteenth century fabric.** Appendix 8 and the grading map do not accurately reflect the VHR registration. **Amend Appendix 8 and the grading map to identify the Shot Tower as a place included on the VHR.**	

Attachment 4 - Attachment 4 - Alexandra Parade Heritage Review

7.	Former Haliburton Wool Works, 94-100 Alexandra Parade, Clifton Hill (HO317)	Contributory	Non-contributory	Reviewed	The Former Haliburton Wool Works complex is located adjacent to the Shot Tower. While it is identified in Appendix 8 as being constructed between 1880-90 and is graded 'Contributory', the built fabric on site dates from after 1945. It does not display any of the characteristics of the Clifton Hill Western Precinct Statement of Significance. The assessment concluded that the post-war factory complex does not contribute to the heritage values of HO317, nor does it warrant inclusion on the Heritage Overlay in its own right. **Amend Appendix 8 and the grading map to identify this site as 'Not-contributory'.**	

APPENDIX II – Citation and Statement of Significance: The Gasometer Hotel, 484 Smith Street, Collingwood

GJM Heritage

Heritage Citation

GASOMETER HOTEL

Address: **484 Smith Street, Collingwood**
Prepared by: GJM Heritage
Date: August 2019

Place type: Hotel	**Architect:** Not known
Grading: Locally significant	**Builder:** Not known
Integrity: High	**Construction Date:** c1859
Recommendation: Include in the Heritage Overlay	**Extent of Overlay:** To property title boundaries

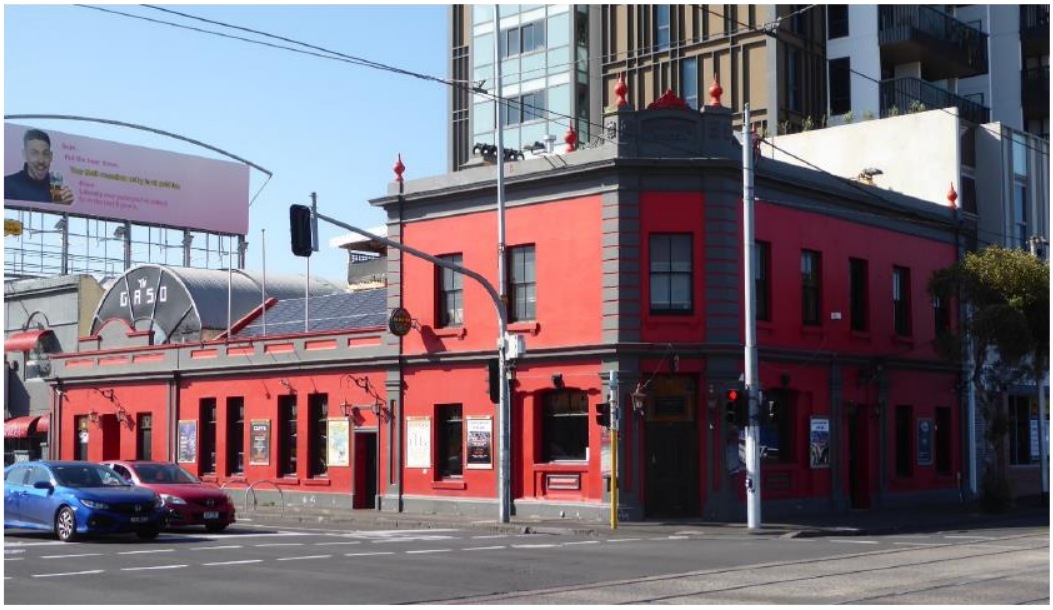


Figure 1. 484 Smith Street, Collingwood (GJM Heritage, October 2019)

Statement of Significance

What is significant?

The Gasometer Hotel, 484 Smith Street, Collingwood, built c1859.

Elements that contribute to the significance of the place include (but are not limited to):

- The original external form, materials and detailing of the building
- The high level of integrity to its original design
- Façade parapet, with pitched roofs behind
- No front setbacks
- Rendered walls
- Rendered detailing and ornament including pilasters, quoining and ball finials
- Horizontal lines formed by parapet, cornice, string course and rows of windows
- Repetitive upper floor fenestration patterns
- Splayed corner with entrance, pilasters, quoining and pediment.

Later alterations and additions, including the barrel-vaulted roofed section to the east, are not significant.

How is it significant?

The Gasometer Hotel, 484 Smith Street, Collingwood is of local historical and architectural significance to the City of Yarra.

Why is it significant?

The Gasometer Hotel, 484 Smith Street, Collingwood is of significance as a suburban hotel constructed at a prominent corner location in Collingwood. The hotel has operated on this site since c1859 (Criterion A).

The Gasometer Hotel, 484 Smith Street, Collingwood is an intact and representative example of a Victorian-era hotel. It displays typical characteristics of the early Victorian period in Collingwood and across Melbourne more broadly, including a plain parapeted façade with repetitive upper floor fenestration, rendered facades and a prominent splayed corner entrance with pilasters, quoining and pediment (Criterion D).

Historical Themes

The place illustrates the following themes as outlined in the *City of Yarra Thematic History* (1998):

7.0 Leisure and Entertainment in the Suburbs

- 7.1 Licensed Hotels and 'Sly Grog'

Place History

This corner building was not evident on the 1858 Clement Hodgkinson map of Collingwood; the map shows the east side of Smith Street, between what is now Keele Street and Alexandra Parade as vacant land.

The earliest found reference to the hotel was an advertisement published in March 1860 in *The Argus* (20 March 1860:1) entitled 'Gasometer Hotel, Collingwood Gas Works, to Let, on Lease', describing the property as follows:

> *erected as a pioneer to the settlement of a populous neighbourhood. The whole paddock adjoining is surveyed, with plans for sale in allotments at a low price, with deferred payments. The new market contiguous is fenced. The great and increasing traffic of Smith-street, with the numerous employees at the gasworks, give assurance for the establishment of a good business within a short period.*

This indicates that the hotel was built c1859-60, while the parapet of the building records the date 1861. The hotel was presumably named after the three large gasometers that were located opposite at the

Fitzroy Gasworks (north-west corner of Smith Street and Alexandra Parade, gasometers dismantled 1978) (Lovell, 1998: Vol 1, 71). In 1861, tenders were requested from carpenters for the erection of a stable and verandah, with applicants to apply to the Gasometer Hotel, Smith Street, Collingwood (*Argus*, 19 Nov, 1861:1).

The 1864 rate books record that Charles A. Mater was the owner of the stone hotel on the site, letting to George Pashley, licensed victualler. The 1867 rate books described the 'Gasometer Hotel' as a brick and stone building with twelve rooms, still owned by Mater. By 1874 the hotel was owned by Richard Benham and the following year ownership passed to Johanna Benham, licensed victualler (Ward, 1995:553). Richard and Johanna Benham retained ownership of the hotel for many years, until at least 1906 (*Age*, 19 Feb 1906:9), and by 1916 their son Richard William Benham was the owner (*Argus*, 12 Feb 1916:11; 22 Feb 1916:4).

A Melbourne and Metropolitan Board of Works (MMBW) plan (Figure 2) show the extent of the hotel and its outbuildings in 1896. The 1900 MMBW detail plan (Figure 3) showed the corner hotel and outbuildings annotated with their use. The rear of the property had a pitched, open space bordered along the east and south boundaries by stables, a wash house and water closets, with access provided off Alexandra Parade (then called Reilly Street).

Plans of the property dating to 1956 show footprints of the hotel building and outbuildings and records the occupant and owner at this date as S. Moore (Figure 4). The plan appears to show that the accessway off Alexandra Parade and stables, set back from the front title boundary (as in figure 3), remained at this date (PSP). Later additions and structures now occupy the south-east portion of the property; a barrel-vaulted building occupies the site of the original stable, washhouse and accessway.

The building continues to serve as the Gasometer Hotel in 2019.

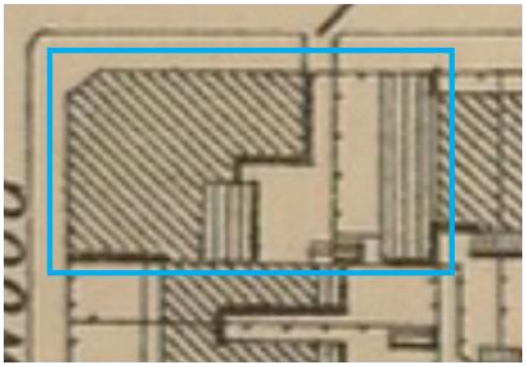


Figure 2. A footprint of the corner hotel and its outbuildings in 1896 (subject site indicated by blue polygon). The diagonal hatching indicates buildings constructed of brick or stone; vertical/horizontal hatching indicates buildings constructed of timber (MMBW 29, dated 1896).

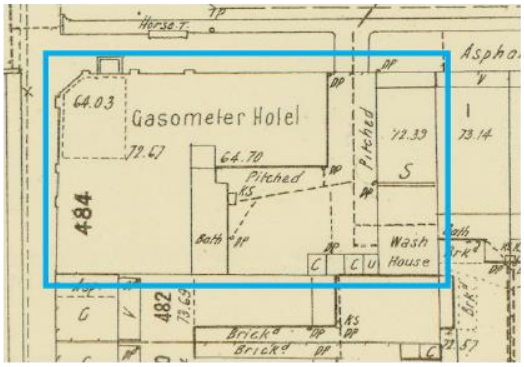


Figure 3. A footprint of the Gasometer Hotel dated 1900 (subject site indicated by blue polygon) (MMBW Detail Plan 1214, dated 1900).

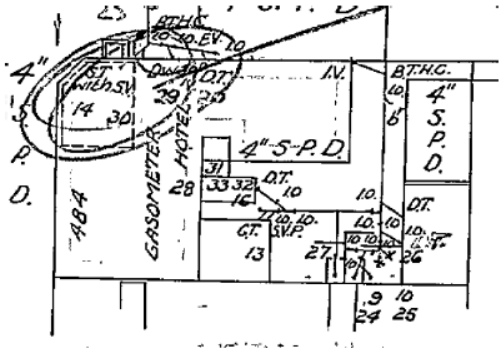


Figure 4. A plan of the site showing footprints of the buildings extant in 1956, annotated with sewerage works (PSP).

Physical Description

The Gasometer Hotel, 484 Smith Street, Collingwood is prominently located on the south-east corner of Smith Street and Alexandra Parade. Built in the early Victorian period, the building comprises a two-storey element addressing the street corner, an adjoining single-storey wing to the east and additional buildings further to the east along Alexandra Parade.

The two-storey corner hotel is a rendered stone (overpainted) building with two corrugated steel-clad, hipped roofs which run in a north-south direction, and two large rendered chimneys at the southern end. A third broad chimney is situated at the east wall of the two-storey building, behind the Alexandra Parade façade. The building has a splayed corner with ground floor entrance door, window at first floor level and pediment above which contains the description 'Gasometer Hotel' and the date '1861'. The ground floor façades contain a variety of window and door openings and are articulated with plain pilasters, while the corners of the upper façades are quoined. The upper-level fenestration comprises regularly spaced rectangular windows – six in the longer Smith Street façade and two facing Alexandra Parade. Openings are frameless and window sills are supported on plain corbels. A simple cornice forms the parapet of the building and a string course between the ground and upper floor relieves the plain façades.

An adjacent single-storey wing, facing Alexandra Parade, has a simple gable-roof which runs parallel to the front façade and is parapeted at the eastern end. The detailing of the corner building is repeated in this wing, with simple pilasters and frameless rectangular windows. The string course of the adjacent two-storey building continues to form the base of the single storey parapet which contains a row of recessed panels.

A barrel-vaulted roofed section, located further to the east in Alexandra Parade, is set behind a single-storey, parapeted façade. Constructed across an original accessway from Alexandra Parade to an internal courtyard at some stage after 1956, the façade of this later addition appears to repeat some of the earlier detailing of the original building.

Integrity

The Gasometer Hotel, 484 Smith Street, Collingwood retains a high degree of integrity to the early Victorian period in fabric, form and detail. While the building has undergone some additions to the east, these do not diminish the ability to understand and appreciate the place as a fine example of an early Victorian hotel.

Comparative Analysis

The Gasometer Hotel, 484 Smith Street, Collingwood is an intact and representative example of an early Victorian corner hotel. There are a substantial number of hotels included in the Heritage Overlay of the

Yarra Planning Scheme as individually significant buildings, including some built in the 1850 to 1870 period. Direct comparison can be made with the following examples:

- Birmingham Hotel, 333 Smith Street, Fitzroy (1853-), 'individually significant' in HO333, Smith Street Precinct
- Former Liverpool Arms Hotel, 299 Brunswick Street, Fitzroy (1860-70), 'individually significant' in HO311, Brunswick Street Precinct.

Figure 5. Birmingham Hotel, 333 Smith Street, Fitzroy (VHD)

Figure 6. Former Liverpool Arms Hotel, 299 Brunswick Street, Fitzroy (VHD, photo dated 2009)

These comparators are representative of hotel buildings constructed in the early Victorian period and are architecturally significant as intact examples of hotels from this period. Like the places above, the Gasometer Hotel displays a range of early Victorian characteristics including:

- Façade parapet, with pitched roof behind
- No front setbacks
- Rendered walls and detailing
- Horizontal lines formed by parapet, cornice, string course and rows of windows
- Repetitive upper floor fenestration patterns
- Splayed corner with entrance.

The Gasometer Hotel remains highly intact to demonstrate the key characteristics of this early type of hotel development in the City of Yarra.

Assessment Against Criteria

Following is an assessment of the place against the recognised heritage criteria set out in *Planning Practice Note 1: Applying the Heritage Overlay* (August 2018).

Criterion A: *Importance to the course or pattern of our cultural or natural history (historical significance).*

The Gasometer Hotel, 484 Smith Street, Collingwood is of significance as a suburban hotel constructed at a highly prominent corner location in Collingwood. The hotel has operated on this site since c1859.

Criterion D: *Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness).*

The Gasometer Hotel, 484 Smith Street, Collingwood is an intact and representative example of a Victorian-era Hotel. It displays typical characteristics of the early Victorian period in Collingwood and across Melbourne more broadly, including a plain parapeted façade with repetitive upper floor fenestration, rendered facades and a prominent splayed corner entrance with pilasters, quoining and pediment.

Grading and Recommendations

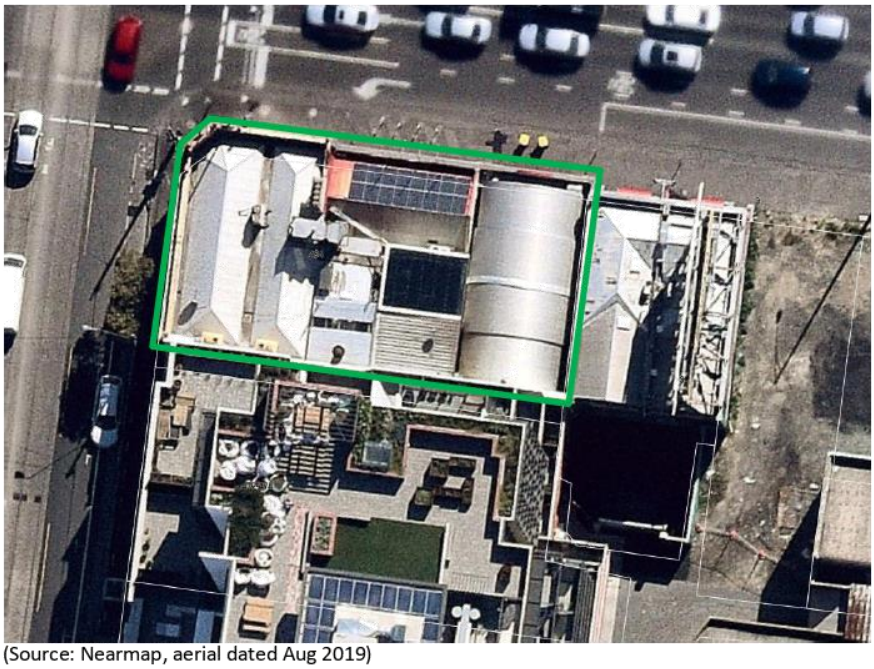
It is recommended that the place be included in a site-specific Heritage Overlay in the Yarra Planning Scheme as an individually significant heritage place.

Recommendations for the Schedule to the Heritage Overlay (Clause 43.01) in the Yarra Planning Scheme:

External Paint Controls?	No
Internal Alteration Controls?	No
Tree Controls?	No
Outbuildings or Fences not exempt under Clause 43.01-3?	No
Prohibited Uses Permitted?	No
Incorporated Plan?	No
Aboriginal Heritage Place?	No

Extent of the recommended Heritage Overlay

To the property title boundary, as indicated by the green polygon on the aerial below.



(Source: Nearmap, aerial dated Aug 2019)

Identified by:

Andrew C Ward & Associates (1989), *Collingwood Conservation Study* & (1995) *Collingwood Conservation Study Review* :

Recommended for Planning Scheme protection.

Significance: The "Gasometer" hotel is important as a prominent and early hotel which recalls the existence of the former Metropolitan Gas Co. premises opposite.

GJM Heritage (2019), *Brunswick Street and Smith Street Built Form Review, Heritage Assessments.*

References:

Allom Lovell & Associates (1998), *City of Yarra Heritage Review.*

Andrew Ward & Associate (1995), *Collingwood Conservation Study Review.*

Clement Hodgkinson, 'Plan shewing the streets and buildings in existence in East Collingwood on January 1st 1858' compiled from surveys executed under the direction of Clement Hodgkinson.

Melbourne and Metropolitan Board of Works: Plan 29 (scale 160ft to 1 inch), Fitzroy & Collingwood, dated 1896; Detail Plan 1214, dated 1900.

Property Sewerage Plan (PSP), No. 53022.

The Age.

The Argus.

Victorian Heritage Database (VHD), place records.

APPENDIX III – Citation and Statement of Significance: Quonset Warehouse, 20 Reeves Street, Clifton Hill

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QUONSET WAREHOUSE

20 REEVES STREET, CLIFTON HILL, 3068

Figure 1. 20 Reeves Street, Clifton Hill (GJM Heritage, March 2020).

DATE: 27 August 2020 - DRAFT

FILE: 2020-008

QUONSET WAREHOUSE

20 REEVES STREET, CLIFTON HILL

Place type: Prefabricated wartime building	**Architect:** Not applicable
Construction Date: Erected on site between 1945 and 1951	**Builder:** Not applicable
Recommendation: Remove from HO317 and include in a site-specific Heritage Overlay	**Extent of Overlay:** To the property title boundary (see plan at Figure 18).

Contextual history

Nissen, Romney and Quonset huts

The Nissen hut is a prefabricated steel and corrugated iron structure developed in 1916 by Major Peter Nissen, an Officer in the Royal Engineers, and extensively by British and Commonwealth forces during World War II. The Romney hut is a larger variation of the Nissen hut. The Quonset hut is another variation of the Nissen hut type and was developed by the American Navy in 1941.

Although Australian troops became familiar with Nissen and Romney huts through overseas service during the war, they were not used in Australia until they were sourced to provide migrant accommodation in the late 1940s.

In 1949, 860 Nissen huts and 100 Romney huts were bought from the British Ministry of Works and a supply of at least 50 Quonset huts was acquired from an ex-US base on Manus Island off Papua New Guinea. These were dismantled and shipped to Australia by January 1950. Later that year another 1500 Nissen huts and 50 Romney huts were bought from the Ministry of Works for £20,000. A further 2000 prefabricated huts of various sizes were bought from private dealers. These prefabricated huts were distributed amongst migrant centres throughout the country.

By 1953 there was a surplus of these huts and they began to be used for other Commonwealth uses such as at military bases and airports, as well as for civilian uses where they became a popular temporary structure for community organisations such as the scouts, local clubs and church groups. A number also found their way into private use, particularly as farm structures (VHD).

Nissen huts had standard sizes, being either 16ft, 24ft or 30ft wide (4.9m, 7.3m or 9.1m) with longitudinal bays in multiples of 6ft (1.8m). The Quonset hut measured either 16ft x 36ft (4.9m x 11.0m) or 24ft x 60ft (7.3m x 18.2m) and the Stran-Steel Quonset measured either 20ft x 40ft (6.1m x 12.2) or 20ft x 56ft (6.1m x 17.1m) (Stuart).

Quonset warehouses

A 'warehouse' version of the Quonset hut was developed, providing floor space of 40ft x 100ft (12.2m x 30.5m). About 300 of these were produced. These were later replaced by a Quonset-type warehouse which had the same measurements but also had the option of a concrete floor. These buildings were often called Elephant Houses and in Australia, attracted the name of SAAR Hut (possibly a corruption of Stran-Steel Arched Rib) (Stuart).

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Place History

The Quonset warehouse was constructed at 20 Reeves Street in the immediate post-World War II period. The site was originally occupied by a small, timber building in the late nineteenth-century, which had been demolished by the turn of the century. The 1901 Melbourne and Metropolitan Board of Works (MMBW) plan (Figure 3) indicates the site was under the same ownership as 25 Council Street, located to the north, from the early 1900s (LV: V1973/F453). From 1919 to 1940, John Kavanagh, wool classer of 25 Council Street, Clifton Hill, owned the subject site. Following Kavanagh's death in August 1940, the property was transferred to Clifford Duffy, then Lewis Wyatt, draughtsman of Surrey Hills in October 1940 (LV:V1973/F453).

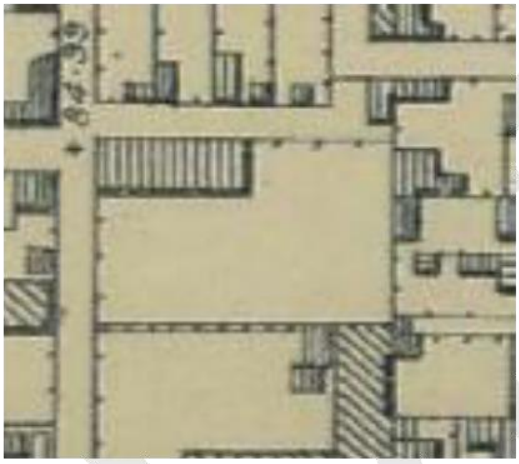

Figure 2. The subject site in 1896, occupied by a small timber building (MMBW No. 29, dated 1896).

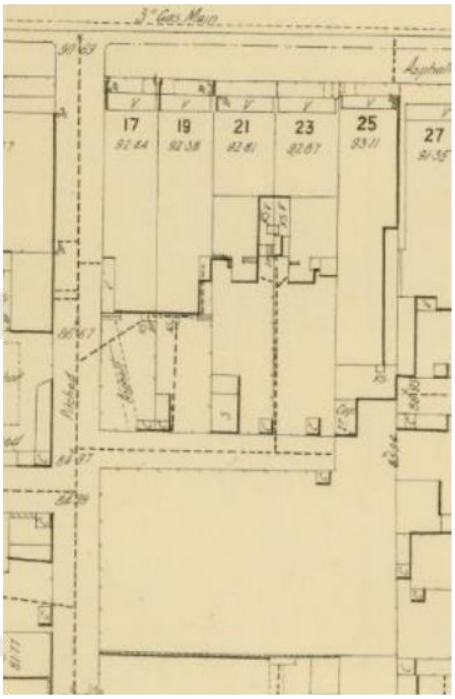

Figure 3. The subject site in 1901 with an apparent link to 25 Council St to the north (MMBW DP No. 1215, dated 1901).

In August 1947, E T Brown Limited of 14 Alexandra Parade, Clifton Hill, purchased the subject site (LV:V1973/F453). An aerial photo dated 1945 (Figure 4) shows the site occupied by earlier buildings at the time while an aerial dated January 1951 shows the extant hut erected at the subject site (Figure 5), indicating the structure was erected between 1945 and 1951. The date of erection indicates that the warehouse was bought directly from the supplier, rather than being a surplus or re-purposed military structure. The structure at the subject site measures approximately 12.5m x 24m (approx. 41ft x 78ft), suggesting the building was originally constructed as a 40ft wide Quonset warehouse but with a truncated length to suit the dimensions of the site.

Figure 4. The subject site in 1945, which appears to show earlier buildings occupying the lot (Landata).

Figure 5. The subject site in January 1951, occupied by the extant hut (Landata).

E T Brown, engineers, had been located on the block immediately west of the subject site, at 14 Reilly Parade (now 16 Alexandra Parade) from the 1880s (*Herald*, 12 Jun 1935:28). From the 1920s they expanded their operations to 14-24 Alexandra Parade, with Watson Brothers, ironworkers occupying the eastern portion of this property (east of the right-of-way) from c1925 (S&Mc). A new building was constructed for E T Brown on the north-east corner of Alexandra Parade and Reeves Street in 1935, which was entered off Reeves Street (*Herald*, 12 Jun 1935:28). The company evolved into Brownbuilt Ltd, with their steel equipment division occupying 14-24 Alexandra Parade until at least the mid-1970s (S&Mc).

From c1955 to c1965, the Sands & McDougall Directories listed E T Brown Ltd as the occupant of 18 Reeves Street (the last property listed on the east side of Reeves Street before Council Street). This part of the site was used by the company for storage. The company, now called Brownbuilt Ltd (steel equipment division), continued to be listed at 18 Reeves Street until at least the mid-1970s (S&Mc). Watson Brothers, who had occupied the eastern portion of the Alexandra Parade property from c1925, continued to be listed to the east of Watsons Lane (the previously unnamed right-of-way) until c1965. It is unclear whether the subject site was utilised by E T Brown or Watson Bros, as both listings in the Directory have the potential to refer to the subject property.

In September 1979, the subject site was sold to Wagon Mound Nominees Pty Ltd, of '230-240 Alexandra Parade, Clifton Hill' and Etka Nominees Pty Ltd of Caulfield. From 1982, Wagon Mound Nominees were the sole owners, now located at 14 Alexandra Parade, Clifton Hill. Subsequent owners were Lesellen Services (Central) Pty Ltd of South Melbourne from 1983, and Cathedral Arch Pty Ltd, of '14-24 Alexandra Avenue', Clifton Hill, from October 1986 (LV:V2973/F453).

In 2006, the building was unoccupied (Figure 6) before undergoing works c.2009 and c.2012 to be converted for office use (YCC BP; Nearmap). Drawings dated 2009 (Figure 8 – Figure 11) indicate that the works comprised the unboarding and either repair or replacement of windows to match existing on the side (north and south) elevations, removal of existing windows and addition of new windows to the west elevation, new doors to the

south and west elevations, and a new balcony on the south elevation (mezzanine level). Annotations note that the steel structure and existing roof and wall cladding were to be retained (YCC BP).

From c.2014 the building served as both an office and caretaker's residence for the nearby factory under the same ownership (YCC BP).

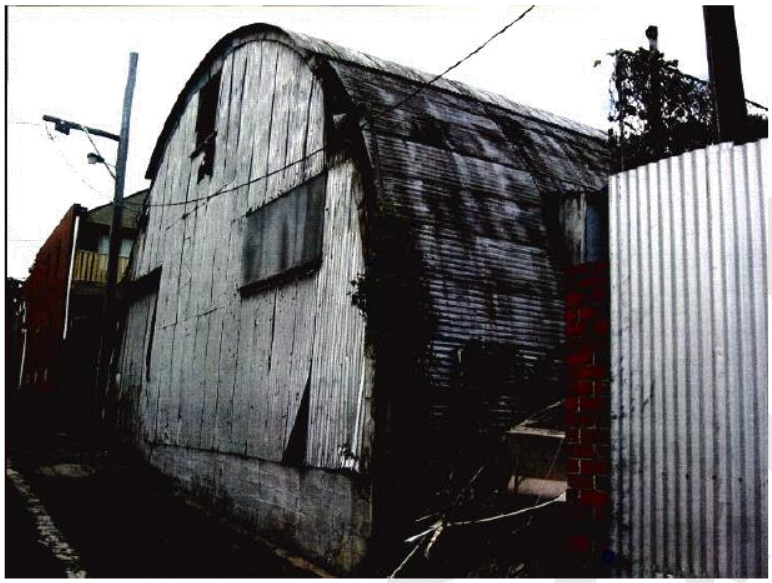

Figure 6. The west and south elevations of the vacant building in April 2006 prior to conversion (YCC BP).

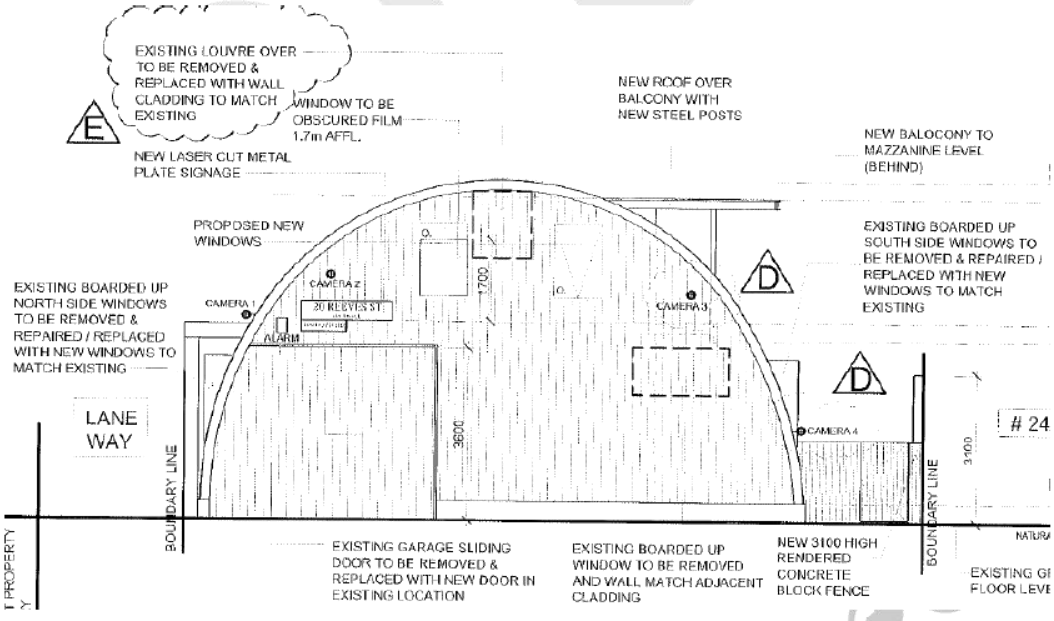

Figure 8. West elevation showing proposed works. Drawing dated 2009 (YCC BP).

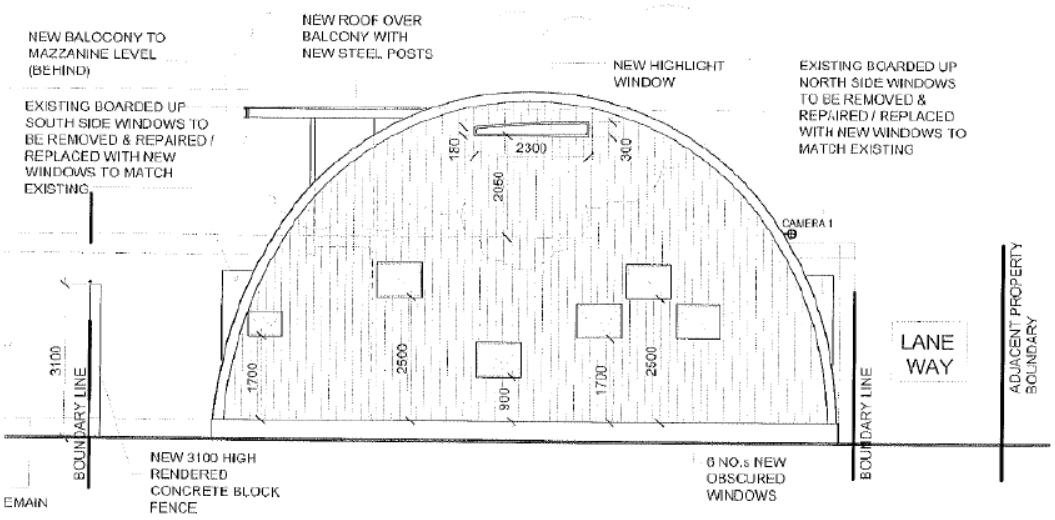

Figure 9. East elevation showing proposed works. Drawing dated 2009 (YCC BP).

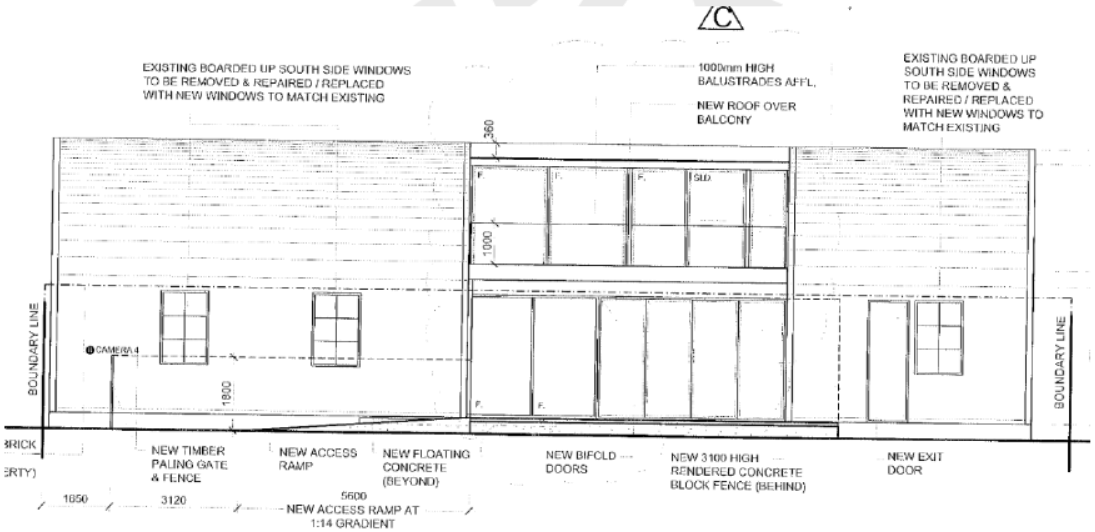

Figure 10. South elevation showing proposed works. Drawing dated 2009 (YCC BP).

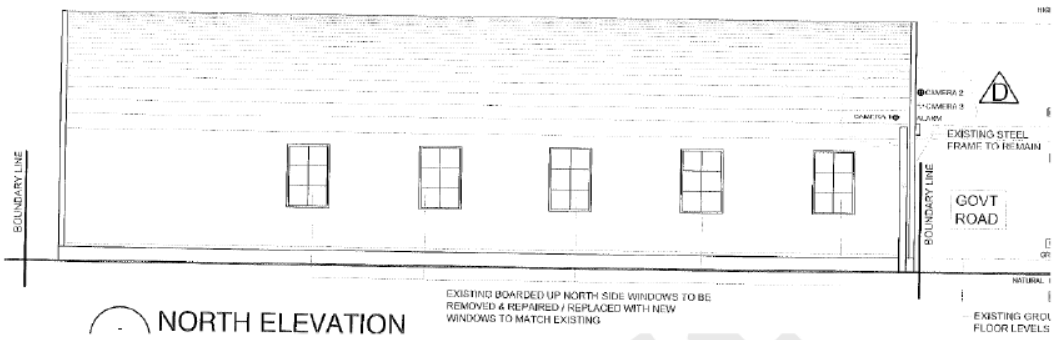

Figure 11. North elevation showing proposed works. Drawing dated 2009 (YCC BP).

Historical Themes

The place illustrates the following themes as outlined in the *City of Yarra Thematic History* (1998):

4 Developing local economies

- 4.2 Secondary Industry

Description

The Quonset warehouse at 20 Reeves Street addresses a bluestone laneway (Watsons Lane) that connects Reeves Street to the east boundary of the site and bisects the block created by Alexandra Parade to the south, Council Street to the north, Reeves Street to the west and Hilton Street to the east (Figure 12). The building occupies almost the whole of the land parcel with side access provided to the south of the Quonset warehouse.

The building is a prefabricated, semi-cylindrical structure comprising steel framing, corrugated steel cladding and a concrete foundation. It measures approximately 12.5m wide x 24m deep (41ft x 78ft), with the apex of the structure at approximately 7.1m in height.

The corrugated steel cladding is laid horizontally on the north and south walls and is overlaid with a separate metal sheet that acts as the 'roof' (Figure 14). The end walls (east and west elevations) are clad in corrugated steel laid vertically. The junctions of the 'roof' and side walls are flashed with steel sheet. A large sliding door is located on the left-hand side of the western end wall and is supported by a steel post and beam (with an I-profile) (Figures 14-15). Two introduced sash windows are located above the sliding door. No windows are visible at the north elevation, and the east elevation is not visible from the public realm. The 2009 drawings indicate that new openings have been introduced to the south elevation, including glazed bifold doors at the ground level with a balcony covered by a flat roof above (Figure 17) as well as new window openings to the east elevation.

Alterations include the bifold doors and roofed balcony extension to the south elevation, the replacement of the sliding door to the west elevation and new windows or window openings to the south, east and west elevations. The building has also been completely re-clad.

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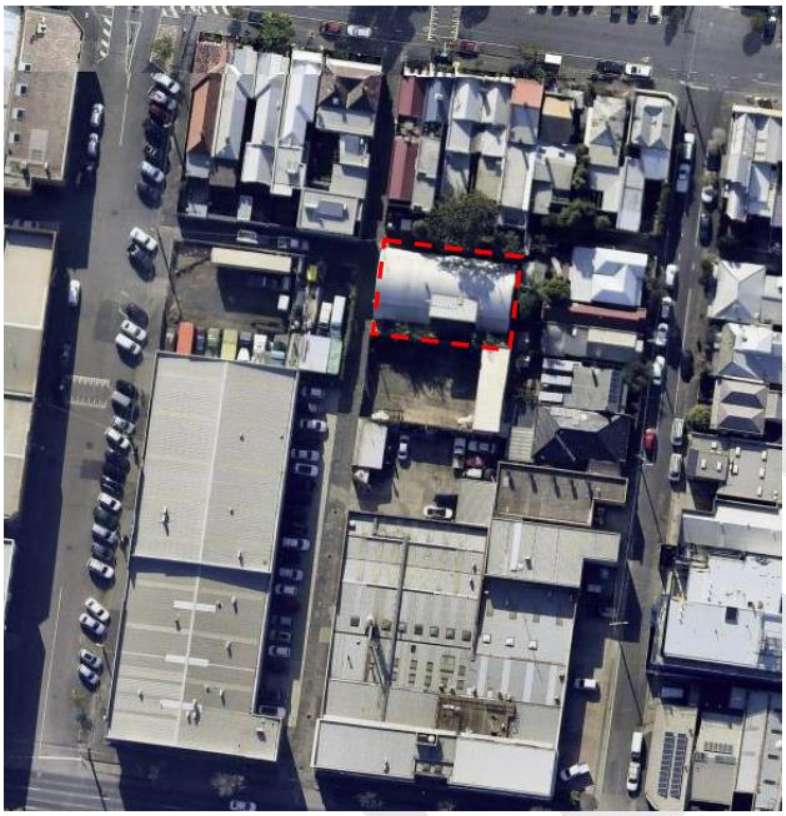

Figure 12. Aerial of the site (indicated) dated 4 June 2020, showing relationship of Wastons Lane to Reeves Street (west), Alexandra Parade (south) and Council Street (north). Hilton Street at right. Note location of later roofed balcony to the south elevation of the building. (Source: Nearmap, accessed July 2020)

Figure 13. West elevation of the structure, showing later window suites above the sliding door.

Figure 14. North elevation of the structure, showing 'eave' line. The walls drain directly to the laneway surface.

Figure 15. Looking southeast along Watsons Lane, showing the (later) sliding garage door at the northwest corner of the building with external post-and-beam steel support.

Figure 16. The southwest corner of the building, showing the formed concrete foundation.

Figure 17. Looking northeast from the rear of 10 Reeves Street to the subject site, showing later balcony extension.

Integrity/Intactness

The Quonset Warehouse at 20 Reeves Street retains a high degree of integrity in its form and materiality to its period of construction in the early post-war period. Despite some external modifications, including the introduction of the roofed balcony extension, new window openings to the west and south elevation and the replacement of the cladding, the place can be readily understood and appreciated as a Quonset Warehouse.

Comparisons

The Quonset Warehouse at 20 Reeves Street, Clifton Hill is of note as a rare example of a wartime prefabricated building in the City of Yarra.

No other examples of this class of place are currently included in the Heritage Overlay of the Yarra Planning Scheme and the subject building appears to have no direct comparators in the City of Yarra. The Porter Prefabricated Iron Store, previously located at 111 Queens Parade, Fitzroy North (VHR H2243), is another pre-fabricated metal structure in the municipality; however, this dates to the 1850s and isn't directly comparable to this mid-twentieth century structure.

Assessment Against Criteria

Following is an assessment of the place against the recognised heritage criteria set out in *Planning Practice Note 1: Applying the Heritage Overlay* (August 2018).

Criterion A: Importance to the course or pattern of our cultural or natural history

The Quonset Warehouse at 20 Reeves Street, Clifton Hill is historically significant as an example of a wartime prefabricated building utilised for industrial, and later commercial, use. It has a clear association with the post-World War II shortage of building materials when newly constructed or military-surplus huts were utilised for a range of government and private purposes such as migrant accommodation, churches, light industry, storage, agricultural use and community gathering spaces.

Criterion B: Possession of uncommon, rare or endangered aspects of our cultural or natural history

The Quonset Warehouse at 20 Reeves Street, Clifton Hill is a rare example of a prefabricated military building in the City of Yarra. Once commonly utilised practice across Victoria in the post-war period to address building restrictions and to curtail shortages in building supplies, examples of these prefabricated structures are

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becoming increasingly rare and there are no other known examples within the City of Yarra. The place remains sufficiently intact to clearly demonstrate this rare building type in the municipality.

Grading and Recommendations

It is recommended that the place be removed from HO317 (Clifton Hill Western Precinct) and included in the Heritage Overlay of the Yarra Planning Scheme as a site-specific heritage place.

Recommendations for the Schedule to the Heritage Overlay (Clause 43.01) in the Yarra Planning Scheme:

External Paint Controls?	No
Internal Alteration Controls?	No
Tree Controls?	No
Outbuildings or Fences not exempt under Clause 43.01-3?	No
Prohibited Uses Permitted?	No
Aboriginal Heritage Place?	No

Extent of the Recommended Heritage Overlay

To the property title boundary, as indicated by the red polygon on the aerial below.

Figure 18. Recommended Extent of Heritage Overlay (Basemap Source: Nearmap, February 2020)

References

Landata, historical aerial photographs.

Landata Victoria (LV), Certificates of Title, as cited.

Melbourne and Metropolitan Board of Works:

Plan No. 29, dated 1896

Detail Plan No. 1215, dated 1901.

Nearmap, aerial photography.

Sands & McDougall Directories (S&Mc).

Stuart, Dr Ian, 'The Diffusion of the Quonsets to Australia (1942-1948)', published in the CHS Newsletter (2009). *An abridged version of a paper given at the 2009 Pacific Connection Conference.*

The Herald.

Victorian Heritage Database (VHD), Heritage Victoria citation for 'Former Maribyrnong Migrant Hostel, 61-71 Hampstead Road Maidstone, Maribyrnong City', < https://vhd.heritagecouncil.vic.gov.au/places/35583>, accessed June 2020.

Yarra City Council (YCC), Building Permit information provided by Council.

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Quonset Warehouse, 20 Reeves Street, Clifton Hill
Statement of Significance, August 2020 [DRAFT]

Heritage place: Quonset Warehouse, 20 Reeves Street, Clifton Hill, 3068	PS ref no.: HO TBC

What is significant?

The Quonset Warehouse at 20 Reeves Street, Clifton Hill.

Elements that contribute to the significance of the place include (but are not limited to):

- The form, material type and detailing of the Quonset Warehouse including original or reconstructed fenestration.

The later additions dating from c.2009-2012 are not significant.

How is it significant?

The Victoria Parade East Precinct at 205-219 Victoria Street is of local historical and rarity significance to the City of Yarra.

Why is it significant?

The Quonset Warehouse at 20 Reeves Street, Clifton Hill is historically significant as an example of a wartime prefabricated building utilised for industrial, and later commercial, use. It has a clear association with the post-World War II shortage of building materials when newly constructed or military-surplus huts were utilised for a range of government and private purposes such as migrant accommodation, churches, light industry, storage, agricultural use and community gathering spaces (Criterion A).

The Quonset Warehouse at 20 Reeves Street, Clifton Hill is a rare example of a prefabricated military building in the City of Yarra. Once commonly utilised practice across Victoria in the post-war period to address building restrictions and to curtail shortages in building supplies, examples of these prefabricated structures are becoming increasingly rare and there are no other known examples within the City of Yarra. The place remains sufficiently intact to clearly demonstrate this rare building type in the municipality (Criterion B).

Primary source:

Alexandra Parade: Heritage Analysis and Recommendations, GJM Heritage, August 2020

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ARBV: 16044

BUILT FORM REVIEW:

VICTORIA PARADE

HERITAGE ANALYSIS & RECOMMENDATIONS

PREPARED FOR:	City of Yarra
DATE:	November 2020
FILE:	2020-008

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This report is limited in its scope to consideration of post-contact cultural heritage and does not provide advice on any Aboriginal cultural heritage significance. The subject site forms part of the 37.5% of Victoria where there is currently no formally recognized Traditional Owner groups. Nonetheless, we acknowledge the Traditional Owners of the land at this place and pay our respects to their Elders past, present and emerging. For more information, please visit https://www.aboriginalvictoria.vic.gov.au

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Cover Image: *the south side of Victoria Parade looking east from the intersection with Napier Street*

GLOSSARY OF ABBREVIATIONS

Appendix 8	Incorporated Document 'City of Yarra Review of Heritage Overlay Areas 2007: Appendix 8 (revised May 2018)'
C1Z	Commercial 1 Zone
C2Z	Commercial 2 Zone
DDO	Design and Development Overlay
DELWP	Department of Environment, Land, Water and Planning
GRZ	General Residential Zone
HO	Heritage Overlay
MAC	Major Activity Centre
MUZ	Mixed Use Zone
NAC	Neighbourhood Activity Centre
NRZ	Neighbourhood Residential Zone
PPN	Planning Practice Note
VHR	Victorian Heritage Register

All photos taken by GJM Heritage in March 2020 unless otherwise stated.

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EXECUTIVE SUMMARY

Hansen Partnership, on behalf of the City of Yarra (Council), has prepared a Built Form Review of three precincts: Alexandra Parade, Victoria Parade and Fitzroy West. This forms part of a larger project that considers built form controls for commercial high streets and mixed use / commercial zoned precincts within Fitzroy, Collingwood and (part) Clifton Hill (Figure 1). The purpose of this Built Form Review work is to determine where and how new development can appropriately occur. The desired built form outcomes will be translated into Design and Development Overlay (DDO) controls for the study area.

This report specifically considers the Victoria Parade Precinct (also referred to as the 'study area' in this report) which includes land within the southern part of Collingwood and Fitzroy. The heritage advice contained within this report will help ensure that the Built Form Review and the subsequent DDO controls appropriately respond to the heritage fabric and values of the study area.

This advice then considers the built form parameters that are required to ensure the values of heritage places within the Victoria Parade Precinct are appropriately managed and protected, and that good heritage outcomes are being achieved for potential new development or redevelopment on land subject to, or abutting, the Heritage Overlay.

Part II of this report provides an analysis of gaps, inconsistencies and inaccuracies in the current heritage controls within the study area and provides recommendations for addressing these issues. This has resulted in the assessment of one potential heritage place, a row of late nineteenth century shop/residences at 205-219 Victoria Parade, Collingwood.

This Heritage Analysis and Recommendation Report is presented in three parts:

Part I: The Project and Planning Framework

Part I introduces the project, the methodology applied to the project and the planning framework in which the project is occurring.

Part II: Heritage Analysis

Part II contains a heritage analysis of the study area. It details the heritage qualities and values of each precinct, identifies any gaps or issues in the existing heritage framework and provides recommendations for appropriately managing heritage places within the study area.

Part III: Built Form Recommendations

Part III contains specific built form recommendations to ensure heritage places and values are appropriately managed within a changing urban context. The specific recommendations are informed by modelling prepared by Hansen Partnership.

***Figure 1**: Brunswick and Smith Street Study Area*
Source: 'Figure 2: Brunswick & Smith Street Built Form Review - Precincts' from the Victoria Parade Built Form Framework (Hansen Partnership, December 2020).

The Victoria Parade Precinct is denoted by the 'V' and is dark green in colour.

PART I: THE PROJECT AND PLANNING FRAMEWORK

1.0 INTRODUCTION

1.1 YARRA'S HIGH STREETS

The City of Yarra is endowed with one of the largest and most highly intact collections of turn of the century 'High Streets' in the State of Victoria. These High Streets include the Major Activity Centres of Swan Street and Bridge Road in Richmond, Brunswick Street in Fitzroy, Smith Street straddling the suburbs of Fitzroy and Collingwood and Victoria Street, in Abbotsford and Richmond. They also include a number of Neighbourhood Activity Centres, including Gertrude Street in Fitzroy, Johnston Street in Fitzroy & Collingwood, Rathdowne Street and Nicholson Street in Carlton North, St Georges Road in Fitzroy North, and Queens Parade in Fitzroy North & Clifton Hill.

These High Streets contrast with the wide boulevards of Alexandra and Victoria Parade, both of which are now multi-lane major arterial routes. These boulevards both retain their wide median strips. Unlike the more typical commercial High Street, these boulevards do not exhibit a consistency of use or built form. Nonetheless, while the built form, character and heritage values of these boulevards differ greatly over their length, the pockets of heritage buildings warrant special consideration as do the interfaces to the generally low-scale residential heritage areas they directly abut. Like the historic High Streets, it is necessary to manage the tension between the desire to retain the heritage values of these areas and meet the growth objectives of the Yarra Planning Scheme.

1.2 BRIEF DESCRIPTION OF THE VICTORIA PARADE STUDY AREA

Victoria Parade is a major arterial road running east-west connecting to Victoria Street at Nicholson Street to the west and Hoddle Street to the east. Victoria Parade forms the boundary between the City of Melbourne to the south and the City of Yarra to the north. It has a 60m wide carriageway with three lanes of traffic (plus a bus lane) running in each direction. A light-rail tram line runs within the centre of the 35m wide grassed median strip that separates the northern and southern carriageways. The median is planted with a mature avenue of Dutch Elms. Street trees are planted less regularly along the northern and southern footpaths. The north and south oriented roads do not generally align across Victoria Parade.

The study area extends along the north side of Victoria Parade from Napier Street in the west to Hoddle Street in the east, generally to the depth of one property (noting that individual properties range in depth from as little as 20m to over 100m).

The built form of the Victoria Parade Precinct is highly varied ranging from large, low-rise late twentieth century offices and showrooms towards the eastern end to highly intact turn of the century shop/residences and terraced housing at the western end, including the State heritage listed Blanche Terrace at 169-179 Victoria Parade, Fitzroy (VHR H0177-H0182) and McClelland House at 203 Victoria Parade, Fitzroy (VHR H0590). Beyond the heritage-listed shop/residences and terraced housing at the western end of the precinct, and the small run of un-listed nineteenth century shop/residences between Islington and Hoddle Streets, there is little visual

cohesion within the precinct. Approximately half the length of the precinct as it addresses Victoria Parade is (intermittently) subject to the Heritage Overlay.

***Figure 2**: Victoria Parade precinct – outlined in red.*
Source: Nearmap, 4 June 2020

1.3 BRIEF HISTORY OF VICTORIA PARADE

This historical summary is based on the City of Yarra Heritage Review Thematic History (Allom Lovell & Associates, 1998) with additional sources as cited.

Victoria Parade was evident on James Kearney's 1855 map of Melbourne and its suburbs, extending between Nicholson Street and Hoddle Street, and marking the boundary between the early suburbs of East Melbourne to the south and Fitzroy (originally called Newtown) and Collingwood to the north.

The western end of Victoria Parade rises to what was originally called Eastern Hill. This elevated area was where many of Melbourne's wealthier and more influential early residents settled and built fine, often architect-designed houses (Lewis 1989:21). Many residences, medium to large in scale, were built fronting Victoria Parade (particularly the western end) from the 1860s and throughout the Victorian period, often in the terrace form which dominated Fitzroy from the 1850s (Lewis 1989:21). Evidence of this remains within the study area at Blanche Terrace (1867; 169-179 Victoria Parade, Fitzroy), Russell House (1862; 181 Victoria Parade, Fitzroy), Alexandra Terrace (1864-65; 145-149 Victoria Parade, Fitzroy), the pair of terrace houses at 163-165 Victoria Parade, Fitzroy (1868), and Irwell Terrace (1868; 19-23 Victoria Parade, Collingwood). These residences within the western portion of the study area were located amongst a small number of doctors, businesses and trades in the 1860s (S&Mc).

***Figure 3**: Looking east down Victoria Parade, showing Fitzroy and Collingwood to the left. Photo dated c1905-c1910 (COYL, Image CL PIC 558).*

***Figure 4:** Looking east down Victoria Parade, near the corner of Cambridge Street, Collingwood. Photo dated c1906-c1918 (COYL, Image CL PIC 594)*

Down the hill, the eastern portion of Victoria Parade was largely developed by 1858, occupied by buildings of various form and scale, as evident on Clement Hodgkinson's 1858 map of East Collingwood. The 1860 Sands & McDougall Directory indicates that this part of the study area, east of Wellington Street, comprised a high number of commercial buildings and a majority of occupants practicing trades – carpenters, butchers, plumbers, bricklayers, carters and bootmakers.

The proceeding decades saw the erection of the former Ebenezer Baptist Church (1870; 159 Victoria Parade, Collingwood) and further residences such as Floraston (1876; 39 Victoria Parade, Collingwood), McLelland House Terrace (1882; 203 Victoria Parade, Fitzroy) and Portia (1889; 15-17 Victoria Parade, Collingwood) within the study area. Commercial endeavours of the 1880s included the Prince Patrick Hotel and shops (1887; 135-141 Victoria Parade, Collingwood) and the

former John Franklin Hotel (1880s; 75a-77 Victoria Parade, Collingwood). Some light industrial development occurred immediately north of Victoria Parade including the former Smalley & Harkness Boot Factory (1898; 16 Islington Street, Collingwood). A tramline was established along Victoria Parade in the 1880s (and a new electrified line with overhead tram poles was constructed down the centre of the road reserve in the 1920s) (Vines 2011:24).

While the precinct was predominantly developed during the Victorian period, some construction occurred in the first half of the twentieth century. An example is the former Melbourne After Care Home (1926, 1936; 45-47 Victoria Parade, Collingwood), built during the Interwar period. Since the 1970s, the eastern portion of the precinct towards Hoddle Street has seen an increase in development, with a mix of residential, and often large-scale, commercial and office buildings erected.

Sources

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Lewis, Miles (1989) 'The First Suburb', in Fitzroy History Society & Cutten History Committe, *Fitzroy : Melbourne's first suburb*, South Yarra [Vic].

Sands & McDougall Directory (S&Mc).

Vines, Gary (2011), *Melbourne Metropolitan Tramways Study, Heritage Places*

1.4 SCOPE OF THE HERITAGE ANALYSIS & RECOMMENDATIONS REPORT

GJM Heritage has been commissioned to provide a detailed analysis of the heritage considerations for the Brunswick and Smith Street Built Form Review project area and to detail recommendations for the future management of these areas in the context of potential new development. This report considers the Victoria Parade Precinct and has been prepared simultaneously with those considering the Alexandra Parade and Fitzroy West Mixed Use precincts.

The following precincts have previously been considered in the *Brunswick and Smith Street Built Form Review*, GJM Heritage, 25 November 2019:

- Brunswick Street Activity Centre Spine
- Town Hall Mixed Use Precinct
- Smith Street Activity Centre Spine
- Johnston Street Activity Centre Spine
- Fitzroy East Mixed Use Precinct.

The proposed Gertrude Street Precinct and the MUZ area south of Gertrude Street between Young and Little Napier Streets was reviewed through the *Gertrude Street Built Form Framework: Heritage Analysis & Recommendations,* GJM Heritage, 9 December 2019.

The Collingwood Mixed Use Precinct was considered as part of a separate study: *Collingwood Mixed Use Pocket Heritage Analysis & Recommendations*, GJM Heritage, 6 June 2018.

The purpose of our advice as part of this project is to ensure that any DDO controls arising from the Built Form Review take proper account of the heritage values of the precincts and individual buildings within the study area, in order to ensure appropriate weight is given to heritage when considering new development within the Victoria Parade Precinct.

The analysis within this report builds on the previous built form reviews and heritage analysis work conducted within the City of Yarra, and considers the parameters necessary to appropriately manage increased commercial and residential development within the Victoria Parade Precinct.

1.5 METHODOLOGY

The key background documents on which the heritage analysis is based are:

- Yarra Planning Scheme Heritage Overlay Maps 5 HO and 6HO
- Relevant Statements of Significance for heritage places and precincts within the study area and associated heritage studies
- Incorporated Document 'City of Yarra Review of Heritage Overlay Areas 2007: Appendix 8 (revised May 2018)' (Appendix 8)
- City of Yarra Heritage Grading Maps

The above documents have been reviewed in the context of the following clauses of the Yarra Planning Scheme and the relevant Planning Practice Notes (PPNs) published by the Department of Environment, Land, Water and Planning (DELWP):

- The relevant provisions of the Yarra Planning Scheme, in particular, are:
  - Clause 15.03-1S 'Heritage conservation'
  - Clause 21.05-1 'Heritage'
  - Clause 22.02 'Development Guidelines for Sites Subject to the Heritage Overlay'
  - Clause 22.10 'Built Form and Design Policy'
  - Clause 43.01 'Heritage Overlay'
  - Clause 43.01 'Schedule to the Heritage Overlay'
  - Clause 71.02-3 'Integrated Decision Making'
- PPN 1: *Applying the Heritage Overlay* (August 2018) (PPN1)
- PPN 59: *The role of mandatory provisions in the planning schemes* (September 2018) (PPN59)
- PPN 60: *Height and setback controls for activity centres* (September 2018) (PPN60).

We note that the Minister for Planning has authorised the preparation and exhibition of Amendment C269yara to introduce a new Municipal Planning Strategy, local policies and supporting documents into the Yarra Planning Scheme. This amendment has gone on exhibition but is at an early stage of the amendment

process, therefore the advice provided in this report has been informed by the relevant existing Local Planning Policy, in particular clauses 22.02, 22.03 and 22.10.

The following Planning Panels Victoria (Panel) reports are relevant to the implementation of the Built Form Review, particularly as many consider the appropriateness of DDOs (containing both mandatory and discretionary provisions) within activity centres (or in the case of Melbourne Amendment C240, the Capital City Zone) that are also subject, in part, to the Heritage Overlay:

- Boroondara C108 'Neighbourhood Centres and Commercial Corridors' (26 February 2014)
- Moreland Planning Scheme Amendment C134 'Brunswick Activity Centre' (15 May 2015)
- Melbourne Planning Scheme Amendment C240 'Bourke Hill' (4 May 2015)
- Bayside Planning Scheme Amendments C113, C114 and C115 'Mandatory provisions for the Sandringham Village, Bay Street and Church Street Activity Centres' (14 January 2015)
- Whitehorse Planning Scheme Amendment C175 'Box Hill Metropolitan Activity Centre' (6 October 2017).
- Stonnington Planning Scheme Amendment C223 'Glenferrie Road and High Street Activity Centre' (15 December 2017)
- Darebin Planning Scheme Amendment C161 'Fairfield Village' (3 December 2018)
- Yarra Planning Scheme Amendment C220 'Johnston Street Built Form Controls' (22 February 2019)
- Melbourne Planning Scheme Amendment C308 'Central Melbourne Urban Design' (16 May 2019)
- Melbourne Planning Scheme Amendment C258 'Heritage Policies Review' (21 May 2019)
- Yarra Planning Scheme Amendment C231 'Queens Parade Built Form Review' (31 October 2019)
- Yarra Planning Scheme Amendment C191 'Swan Street Built Activity Centre' (15 October 2020).

The following reports have also informed this study:

- 'Review & Development of the City of Yarra Landmarks Policy – Landmarks & Views Assessment' prepared by Ethos Urban for the City of Yarra, October 2019.
- 'Fitzroy & Collingwood Built Form Review Stage 2: Victoria Parade Built Form Framework', Hansen Partnership, April 2020.
- Previous heritage built form reports and analysis prepared by GJM Heritage for Brunswick and Smith Street and Queens Parade study areas.

We have approached the preparation of our heritage analysis as follows:

1. Completion of a desktop review of the above listed documents, heritage mapping and grading information, and the Statements of Significance for

heritage places within the study area, including those places included in the Victorian Heritage Register (VHR). The extent of the Heritage Overlays were cross-checked against Google Streetview and VicPlan. This preliminary review familiarised the project team with the heritage fabric of the study area prior to fieldwork being undertaken.

2. Completion of fieldwork by Jim Gard'ner. All buildings and structures within the study area were inspected from the public realm with particular attention paid to the presentation of heritage buildings to the public realm (principally the street frontage). The rear and side interfaces to the neighbouring residential areas subject to the Heritage Overlay were also considered, where relevant. The purpose of the fieldwork was to:
   - Review the suitability of the extent of the existing Heritage Overlays and to identify if gaps existed.
   - Review the suitability of the existing Statements of Significance for heritage places against the extant heritage fabric and to identify where the statements required updating for the purposes of properly considering built form recommendations.
   - Review the extant heritage fabric against the heritage gradings contained within Appendix 8 and the Yarra Heritage Grading Map to identify any inconsistencies and inaccuracies.
   - Review the heritage buildings and streetscapes within the study area to identify the architectural and streetscape heritage features (e.g. parapets, roof forms, view lines, corner sites) that are relevant to a consideration of built form recommendations.
3. Participation in a workshop with Council and Hansen Partnership. The workshop:
   - Reviewed the proposed 'built form precincts' within the study area, characterised by existing built form characteristics.
   - Identified the desired future character of the built form precincts against heritage analysis and state and local planning policy drivers.
   - Identified local landmarks within each streetscape or precinct.
   - Tested built form parameters for new development against the existing heritage fabric utilising cross-sectional drawings with sight-lines taken at natural eye level (1.6m) on the public footpath, and 3D modelling prepared by Hansen Partnership. Views were only considered from public streets; laneway and private realm views were not assessed.
4. Finalisation of heritage recommendations for new built form parameters having considered the above.

2.0 ANALYSIS OF THE PLANNING CONTEXT

2.1 ACTIVITY CENTRE PLANNING AND HERITAGE

The *Planning & Environment Act 1987* and the Victoria Planning Provisions (VPPs) requires planning and responsible authorities to take a balanced approach to strategic and statutory planning functions that consider potentially competing objectives in an integrated manner to deliver a net community benefit for current and future generations.

The objectives of planning in Victoria as set out in Section 4(1) of the Planning and Environment Act are:

- *To provide for the fair, orderly, economic and sustainable use and development of land.*
- *To provide for the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity.*
- *To secure a pleasant, efficient and safe working, living and recreational environment for all Victorians and visitors to Victoria.*
- *To conserve and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value.*
- *To protect public utilities and other assets and enable the orderly provision and coordination of public utilities and other facilities for the benefit of the community.*
- *To facilitate development in accordance with the objectives set out in the points above.*
- *To facilitate the provision of affordable housing in Victoria.*
- *To balance the present and future interests of all Victorians.*

Clause 71.02-3 of the VPP addresses 'integrated decision making', and states:

> *Society has various needs and expectations such as land for settlement, protection of the environment, economic well-being, various social needs, proper management of resources and infrastructure. Planning aims to meet these by addressing aspects of economic, environmental and social wellbeing affected by land use and development.*
>
> *Planning and responsible authorities should endeavour to integrate the range of panning policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations. However, in bushfire affected areas, planning and responsible authorities must prioritise the protection of human life over all other policy considerations.*
>
> *Planning authorities should identify the potential for regional impacts in their decision making and coordinate strategic planning with their neighbours and other public bodies to achieve sustainable development and effective and efficient use of resources.*

Activity Centres that are also subject to Heritage Overlay controls, such as parts of the Victoria Parade Precinct, are an example of where the tension between competing planning objectives must be resolved in a balanced way. The Victoria Parade Precinct has excellent public transport connections, and is in close proximity to vibrant retail, commercial and hospitality centres. The precinct also includes a number of sites of various sizes that can accommodate new, larger scale, development without adversely affecting the heritage values of surrounding heritage places. In order to balance the demand for more intensive development with the management of heritage values embodied in buildings and precincts, it is considered necessary that any DDO – and the background work that underpins it – specifically includes heritage considerations.

Amendment C269 proposes to introduce Clause 11.03-1L to the Yarra Planning Scheme which provides local policy in relation to Major, Neighbourhood and Local Activity Centres and designates the majority of the northern side of Victoria Parade between Nicholson and Wellington streets as a Major Activity Centre (MAC) (Figure 5).

Figure 5. *Major and Neighbourhood Activity Centres in Fitzroy (Council endorsed version of Clause 11.03-1L)*

2.2 YARRA PLANNING SCHEME – HERITAGE PROVISIONS

Council has well-established heritage provisions within its planning scheme at Clauses 21.05-1 and 22.02. Also of relevance to the protection of the heritage values of the study area is Clause 22.03, which includes policy to protect the visual prominence of landmarks visible from within the study area and Clause 22-10 which includes policy for new development abutting land within the Heritage Overlay.

2.2.1 Heritage Policy

The relevant objective within Clause 21.05-1 'Heritage' of the Municipal Strategic Statement (MSS) is *Objective 14: To protect and enhance Yarra's heritage places.* The strategies to implement this objective are:

- *Strategy 14.1 - Conserve, protect and enhance identified sites and areas of heritage significance including pre-settlement ecological heritage.*
- *Strategy 14.2 - Support the restoration of heritage places.*
- *Strategy 14.3 - Protect the heritage skyline of heritage precincts.*
- *Strategy 14.4 - Protect the subdivision pattern within heritage places.*
- Strategy 14.5 - *Protect the significant landscape and heritage within streets, parks, gardens, waterways or other open spaces*
- *Strategy 14.6 - Protect buildings, streetscapes and precincts of heritage significance from the visual intrusion of built form both within places and from adjoining areas.*
- *Strategy 14.7 Protect sites of significance to Aboriginal people.*
- *Strategy 14.8 Apply the Development Guidelines for sites subject to a Heritage Overlay policy at clause 22.02.*
- *Strategy 14.9 Apply the Landmarks and Tall Structures policy at clause 22.03.*

Objective 14 and its associated strategies are considered to be generally compatible with appropriately sited and scaled higher density development within the Victoria Parade Precinct where it is subject to the Heritage Overlay. Strategy 14.3 to 'Protect the heritage skyline of heritage precincts' would not be achieved unless new upper-level development was to be of such low scale that it was fully concealed when viewed from the opposite side of the street as defined by the sightline tests described in Figures 2 and 3 of Clause 22.02. Avoiding any new visible built form above existing buildings within the Heritage Overlay - although achieving the 'best' heritage outcome - would not enable a level of development that may reasonably be expected to be achieved within this MAC, nor meet other strategic directions of the Yarra Planning Scheme. A balance therefore needs to be struck between achieving the outcome sought by Strategy 14.3 and meeting the development objectives of the City of Yarra. An acceptable heritage outcome would be one where, although new built fabric is visible above the parapets, roofline or chimneys of these buildings, the development is of a scale, setback and massing such that it retains the primacy of the heritage streetscape and avoids visually dominating the existing buildings.

Clause 22.02 'Development Guidelines for Sites Subject to the Heritage Overlay' provides detailed guidance for development of places within the Heritage Overlay, including demolition. The relevant objectives of Clause 22.02 are:

- *To conserve Yarra's natural and cultural heritage.*
- *To conserve the historic fabric and maintain the integrity of places of cultural heritage significance.*
- *To retain significant view lines to, and vistas of, heritage places.*
- *To preserve the scale and pattern of streetscapes in heritage places.*
- *To encourage the preservation, maintenance, restoration and where appropriate, reconstruction of heritage places.*
- *To ensure the adaptation of heritage places is consistent with the principles of good conservation practice.*
- *To ensure that additions and new works to a heritage place respect the significance of the place.*
- *To encourage the retention of 'individually significant' and 'contributory' heritage places.*
- *To protect archaeological sites of cultural heritage significance.*

Again, these objectives do not preclude higher density development within the Victoria Parade Precinct with the possible exception of *'To preserve the scale … of streetscapes in heritage places'*.

The demolition policy provided at Clause 22.02-5.1 encourages the retention of 'individually significant' and 'contributory' buildings within a heritage precinct. Removal of part of a heritage place or a contributory element is contemplated if (in general terms) it can be demonstrated that the removal of the part will not adversely affect the significance of the building, or – for a contributory building – the part is not visible from the street, abutting a park or public open space.

With the exception of those heritage places included on the VHR – and therefore regulated under the *Heritage Act 2017* – the significance of the heritage buildings and precincts within the study area lies primarily in fabric visible from the public realm. Therefore, in most circumstances, the heritage controls within the Yarra Planning Scheme effectively limits the control of heritage fabric within the study area to that which is visible from the street, including primary building facades, rear laneway views (where they exist) and visible roof and chimney elements.

In relation to 'New Development, Alterations and Additions', Clause 22.02-5.7.1 sets out the following policy:

General

Encourage the design of new development and alterations and additions to a heritage place or a contributory element to a heritage place to:

- *Respect the pattern, rhythm, orientation to the street, spatial characteristics, fenestration, roof form, materials and heritage character of the surrounding historic streetscape.*

- *Be articulated and massed to correspond with the prevailing building form of the heritage place or contributory elements to the heritage place.*
- *Be visually recessive and not dominate the heritage place.*
- *Be distinguishable from the original historic fabric.*
- *Not remove, cover, damage or change original historic fabric.*
- *Not obscure views of principle façades.*
- *Consider the architectural integrity and context of the heritage place or contributory element.*

Encourage setbacks from the principal street frontage to be similar to those of adjoining contributory buildings; where there are differing adjoining setbacks, the greater setback will apply.

Encourage similar façade heights to the adjoining contributory elements in the street. Where there are differing façade heights, the design should adopt the lesser height.

Minimise the visibility of new additions by:

- *Locating ground level additions and any higher elements towards the rear of the site.*
- *Encouraging ground level additions to contributory buildings to be sited within the 'envelope' created by projected sight lines (see Figure 1).*
- *Encouraging upper level additions to heritage places to be sited within the 'envelope' created by projected sight lines (for Contributory buildings refer to Figure 2 and for Individually significant buildings refer to Figure 3).*
- *Encouraging additions to individually significant places to, as far as possible, be concealed by existing heritage fabric when viewed from the front street and to read as secondary elements when viewed from any other adjoining street.*

Discourage elements which detract from the heritage fabric or are not contemporary with the era of the building such as unroofed or open upper level decks or balconies, reflective glass, glass balustrades and pedestrian entrance canopies.

The policy for full or partial concealment of rear additions to residential buildings as described in Figures 2 and 3 of the General Policy at Clause 22.02 is modified by the Specific Requirements at Clause 22.02-5.7.2 that applies to corner sites and sites with dual frontages, and industrial, commercial and retail heritage places:

Corner Sites and Sites with Dual Frontages

Encourage new building and additions on a site with frontages to two streets, being either a corner site or a site with dual street frontages, to respect the built form and character of the heritage place and adjoining or adjacent contributory elements to the heritage place.

Encourage new buildings on corner sites to reflect the setbacks of buildings that occupy other corners of the intersection.

…

Industrial, Commercial and Retail Heritage Place or Contributory Elements

Encourage new upper level additions and works to:

- *Respect the scale and form of the existing heritage place or contributory elements to the heritage place by being set back from the lower built form elements. Each higher element should be set further back from lower heritage built forms.*
- *Incorporate treatments which make them less apparent.*

The specific provisions prevail over the general policy where there is a conflict or inconsistency. This establishes an expectation that new development behind industrial, commercial and retail buildings within the Heritage Overlay is not going to be fully or substantially concealed from public realm views. In addition, it should be noted that Victoria Parade, being a boulevard with multi-lane carriageways and a broad median strip, is 60m wide (building line to building line) where the residential examples shown in Figures 2 and 3 of Clause 22.02-5.7.1 show a sightline test from across an approx. 10m wide residential street. In effect, the wider the street, the more visible a new rear development will be.

Although a greater level of concealment would generally provide a better heritage outcome, this specific sightline-based guidance in the heritage policy is designed to preserve and enhance the character and appearance of predominantly one and two-storey dwellings within more typical narrow residential streets and is not readily applied to the wider form of Victoria Parade.

It is also considered that the policy at 22.02-5.7.1 to 'Discourage elements which … are not contemporary with the era of the building such as … reflective glass, glass balustrades and pedestrian entrance canopies' may not achieve an appropriate urban design and architectural outcome within a commercial and industrial setting such as that present at the Alexandra Parade Precinct. In such areas, a 'contrasting' or 'interpretative' design approach for new taller development above the heritage building is likely to be more recessive than a 'respectful' or 'historicist' one that would lead to the new additions inappropriately mimicking the historic form and potentially being more visually intrusive.

2.2.2 Landmarks and Tall Structures

Clause 22.03 – 'Landmarks and Tall Structures' identifies a number of landmark buildings and advertising signs to which views should be protected. None of the landmarks and tall structures are located within the study area, nor does the study area provide any 'primary' or 'secondary' views of these structures as defined by the *Landmarks & Views Assessment* (Ethos Urban, October 2019).

2.2.3 Heritage Overlay

The head heritage provision of the VPP, Clause 43.01 'Heritage Overlay', has the following purpose:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To conserve and enhance heritage places of natural or cultural significance.*
- *To conserve and enhance those elements which contribute to the significance of heritage places.*
- *To ensure that development does not adversely affect the significance of heritage places.*
- *To conserve specifically identified heritage places by allowing a use that would otherwise be prohibited if this will demonstrably assist with the conservation of the significance of the heritage place.*

Clause 43.01-8 sets out 'Decision Guidelines' – in addition to those included in Clause 65 – that the Responsible Authority must consider before determining a permit application. These are:

- *The Municipal Planning Strategy and the Planning Policy Framework.*
- *The significance of the heritage place and whether the proposal will adversely affect the natural or cultural significance of the place.*
- *Any applicable statement of significance (whether or not specified in the schedule to this overlay), heritage study and any applicable conservation policy.*
- *Any applicable heritage design guideline specified in the schedule to this overlay*
- *Whether the location, bulk, form or appearance of the proposed building will adversely affect the significance of the heritage place.*
- *Whether the location, bulk, form and appearance of the proposed building is in keeping with the character and appearance of adjacent buildings and the heritage place.*
- *Whether the demolition, removal or external alteration will adversely affect the significance of the heritage place.*
- *Whether the proposed works will adversely affect the significance, character or appearance of the heritage place.*
- *Whether the proposed subdivision will adversely affect the significance of the heritage place.*
- *Whether the proposed subdivision may result in development which will adversely affect the significance, character or appearance of the heritage place.*
- *Whether the proposed sign will adversely affect the significance, character or appearance of the heritage place.*
- *Whether the lopping or development will adversely affect the health, appearance or significance of the tree.*

- *Whether the location, style, size, colour and materials of the proposed solar energy facility will adversely affect the significance, character or appearance of the heritage place.*

While some of these considerations are not obviously consistent with the addition of higher density development behind heritage buildings, the first purpose of 43.01 and the first decision guideline encompasses the whole Municipal Planning Strategy and the Planning Policy Framework (integrated decision-making). Therefore, a balance must be struck by the Responsible Authority between achieving the objectives of the Heritage Overlay and meeting the objectives of other parts of the VPPs including Activity Centre policy and commercial zoning. There is established precedent for new rear development to be accommodated behind heritage buildings in commercial precincts throughout inner Melbourne without substantially compromising the identified heritage values of these heritage places.

3.0 HERITAGE IN DESIGN AND DEVELOPMENT OVERLAYS – PANEL FINDINGS

Planning Panels Victoria has considered a number of Planning Scheme Amendments that are of particular relevance to this project: Bayside Amendments C113, C114 and C115, Boroondara C108, Darebin Amendment C161, Moreland Amendment C134, Melbourne Amendments C240, Stonnington Amendment C223, Whitehorse Amendment C175 and Yarra Amendments C220, C231 and C191.

Panels for these Amendments considered the appropriateness of mandatory controls in the context of PPN59 and, in their recommendations, provided guidance on which circumstances mandatory controls should be applied. In response to submissions, they also considered the issue of whether or not the DDO control should include objectives to protect heritage or whether this should be the sole domain of the Heritage Overlay provisions. In addition to these panel reports, Amendment C123 to the Banyule Planning Scheme, approved via ministerial intervention, provides further instruction as to the role of mandatory controls.

These reports also provide useful guidance on the form and wording of DDO controls.

In summary, Panel has concluded that:

- The Heritage Overlay identifies what is significant within an Activity Centre.
- Heritage is an appropriate issue for DDOs to provide guidance on to inform future development.
- Mandatory controls should be used only in exceptional circumstances and their application should be guided by PPN59 and PPN60.
- Formulae defining the proportion of new built form that can be viewed above the street wall is an appropriate mechanism for informing the design and massing of new built form.

In this project, the approach taken in the formulation of the built form controls to manage development affecting heritage places is to complement existing policy. Clause 22.02 - 'Development Guidelines for Sites Subject to the Heritage Overlay' and relevant parts of Clause 22.10 – 'Built Form and Design Policy' have been taken as the starting point for the development of these complementary controls and policy.

Where existing policy is considered to be satisfactory, no additional policy has been recommended. However, specific policy has been recommended where it is considered necessary to provide guidance to recognise the current role of the Victoria Parade Precinct as a major boulevard and to enable its future development while protecting their heritage values.

A discussion of the most relevant of the Panel reports is provided below, and at Section 3.9 the recommendations for each panel are summarised with comment on the implications of the outcome.

3.1 YARRA PLANNING SCHEME AMENDMENT C231

GJM Heritage prepared the Queens Parade Built Form Heritage Analysis and Recommendations (11 December 2017) which informed C231yara. C231yara seeks to apply built form controls in the form of DDOs to Queens Parade, Fitzroy North and Clifton Hill and amend Heritage Overlay controls that apply within the study area. Precinct 4 within DDO20 covers the commercial shopping strip that forms part of the Queens Parade Neighbourhood Activity Centre. Like Queens Parade, Victoria Parade as a 60m wide boulevard albeit without the same degree of consistency of built form found within that commercial High Street.

Of relevance to the Alexandra Parade Precinct, the Panel for Amendment C231 found that the strategic work undertaken in support of the Amendment was strong and that it assisted in justifying the majority of the built form parameters recommended in the DDOs, particularly with respect to mandatory controls. At p29 of the Panel Report, the Panel notes that:

> *Exceptional circumstances exist for the application of mandatory controls for development as the QPAC (Queens Parade Activity Centre) includes a number of significant and contributory heritage places and heritage fabric set within a consistent streetscape form.*

The Panel recognised that the wider, boulevard context would lead to a high visibility of upper-level development, which in turn warranted the application of height limits, and linked the use of mandatory (instead of preferred) controls to the consistency of the heritage streetscape.

The Panel supported the mandatory upper-level setback of 8m within the Council preferred DDO and the combination of mandatory and preferred height controls where this provided certainty where distinctive heritage fabric warranted greater protection. It also recognised that an Activity Centre with diverse built form can have areas of little change where growth can be accommodated elsewhere within the Centre. Further, the Panel agreed that it was appropriate for the proposed mandatory built form controls within DDO16 to protect the key views of local landmarks and those identified in Clause 22.03.

3.2 YARRA PLANNING SCHEME AMENDMENT C220

Johnston Street in Collingwood and the western part of Abbotsford (west of the railway viaduct) is a highly intact, predominantly Victorian/early Edwardian-era streetscape covered by the Heritage Overlay. Those parts of Victoria Parade included within the Heritage Overlay have similarly high proportion of 'Contributory' and 'Individually Significant' buildings with a high level of integrity, and similar existing street wall heights (generally between 8m and 11m) as Johnston Street.

C220yara introduced built form controls along Johnston Street in the form of DDO15. The Panel report recommended the inclusion of the following DDO objective which is also relevant to those parts of Victoria Parade subject to the Heritage Overlay:

To preserve the valued heritage character of the streetscape and ensure that the predominantly two storey (heritage scale) street-wall remains the visually prominent built form of Johnston Street west of the railway line bridge...

The Panel report provides commentary which is of relevance to a consideration of the proposed built form controls for Victoria Parade. In particular, the Panel stated:

In urban design terms, the 6 metre setback will retain the 'human scale' of Johnston Street, secure the distinction between the street wall and upper levels and will reduce the potential for overshadowing and adverse wind conditions.

...

The Panel does not agree that less significant sections [of Johnston Street] warrant a different treatment. Less significant areas equally deserve to exhibit the overall urban design outcome: a strong street wall with a distinct setback to the mid level form.

To achieve these objectives Panel recommended that a building envelope requirement be established that, rather than being based on a sightline test from the opposite side of the street new, required new development to be within a 45° 'angular plane' drawn from the maximum street wall height. In combination with upper-level front setbacks and maximum building heights the angular plane creates a further upper-level setback consistent with the application of the policy objective at Clause 22.02-5.7.1 that each higher element to industrial, commercial and retail buildings should be set further back from the lower heritage built form.

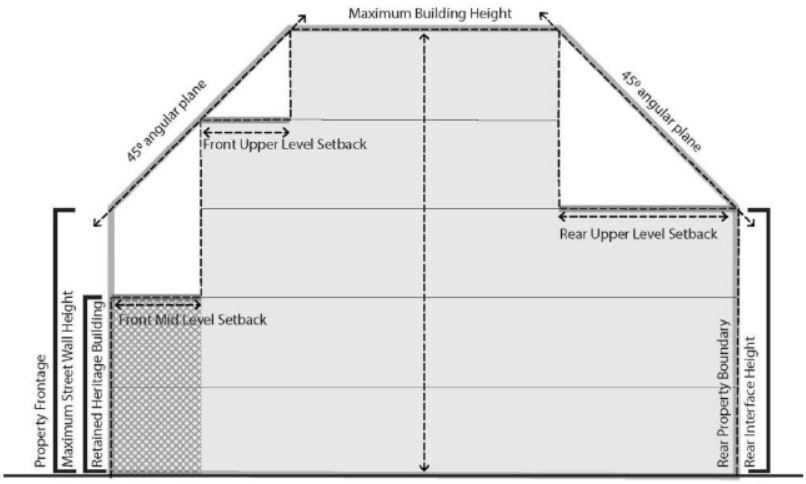

***Figure 6**: Building envelope requirement – Heritage Building (Figure 1 in Schedule 15 to Clause 43.02 Design and Development Overlay).*

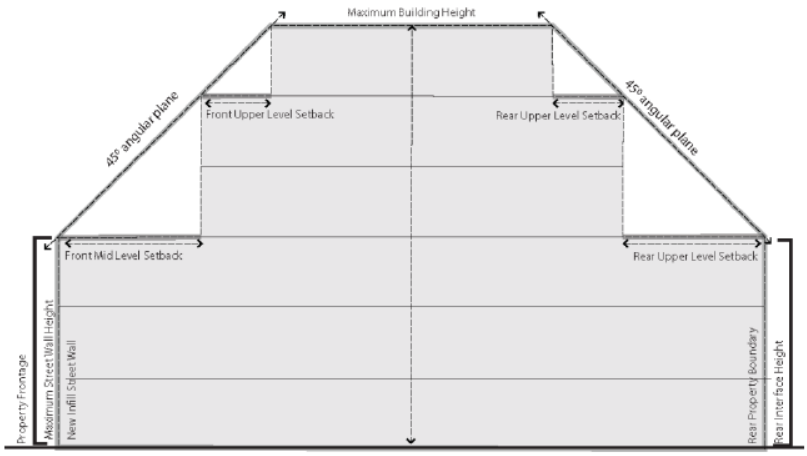

Figure 7: Building envelope requirement – Infill Building (Figure 2 in Schedule 15 to Clause 43.02 Design and Development Overlay).

3.3 YARRA AMENDMENT C191

Swan Street, Richmond is a Major Activity Centre with a highly intact turn of the century 'High Street' occupying a large proportion of its length, as well as smaller precincts and individual heritage places dispersed along its full extent.

Amendment C191yara proposes to introduce four DDOs (DDO25, DDO26, DDO27 and DDO28) to the Activity Centre, with the different controls reflecting the different existing physical conditions and the potential development opportunities evident throughout the Activity Centre.

In its report of 15 October 2020, the Panel supported the use of mandatory controls for street wall and 6m upper-level setbacks for individually significant heritage places and intact heritage streetscapes, as well as mandatory controls for overall building heights in intact heritage streetscapes. Mandatory controls were also supported to protect views to local landmarks.

For parts of the Activity Centre that present a less consistent and more diverse built form expression, discretionary controls were considered to be appropriate.

In contrast to the Panel considering C220yara, the C191yara Panel considered that it was unnecessary to provide additional parameters to guide the form of upper level development, instead finding that the combination of specified heights, setbacks and design requirements for new upper-level development to be "visually recessive", were sufficient.

3.4 MORELAND AMENDMENT C134

Sydney Road, Brunswick is a Major Activity Centre with a highly intact, predominantly Victorian streetscapes that is subject to the Heritage Overlay. Gazetted on 11 August 2016, C134more introduced DDO18, DDO19 and DDO20. DDO18 set mandatory street wall heights on Sydney Road north of Brunswick Road of between 8m and 11m.

DDO18 provides a preferred minimum 5m setback for development above the street wall and to establish a preferred ratio of ¾ : ¼ street wall to new built form through the following design objective:

- *Be designed to ensure that it occupies no more than one quarter of the vertical angle defined by the whole building in the view from an eye-level of 1.7 metres on the opposite side of the street, as illustrated in Figure 1 below.*

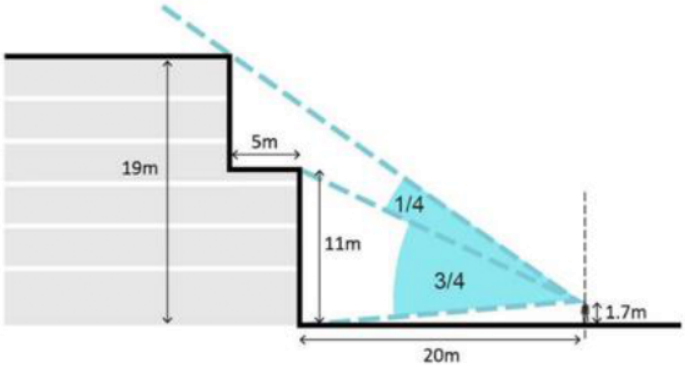

***Figure 8**: Upper-level setbacks along Sydney Road (Figure 1 in Moreland DDO18).*

DDO18 also provides a useful model for dealing with upper-level development where an existing heritage building in the heritage streetscape has a street wall height of less than the 11m street wall height provided in that control:

- *Where an existing building with a street wall height of less than 11 metres is to be retained for heritage reasons new development may occupy more than one quarter of the vertical angle defined by the whole building outlined in Figure 1* [Figure 8 of this report] *above*.

3.5 BOROONDARA AMENDMENT C108

The Panel considering C108boro discussed the use of mandatory street wall height, upper-level setbacks and overall heights across 31 Neighbourhood Activity Centres and three commercial corridors (Camberwell Road/Burwood Road and Canterbury Road).

In its report dated 26 February 2014, the Panel noted its strong support for the protection of heritage assets in Boroondara and recommended reinstatement of policy in the exhibited Amendment that encouraged new development on or adjoining a heritage place to be moderated. In particular, the Panel recommended that policy guidance be included that:

> *The combination of the height, setbacks and design treatment of new buildings should ensure a heritage place on or adjoining the site is not overwhelmed or dominated.*

The Panel also considered the use of mandatory height and setback controls, and recognised that the version of *Plan Melbourne* at that time foreshadowed stronger policy support for the use of mandatory provisions in neighbourhood centres (and residential areas) to increase planning certainty.

The Panel report recognised that mandatory provisions that prescribed standards without a capacity for departures have been supported in areas of consistently high heritage value with consistent character. While acknowledging the heritage values and 'main street' character of the Neighbourhood Activity Centres subject to C108, the Panel also recognised that new development will be visible behind the retained façades – particularly from oblique views – and that invisibility of upper-level development is either unreasonable or not necessary to maintain the primacy of the street wall.

In conclusion, the Panel accepted some use of mandatory controls within Boroondara's neighbourhood centres , but not in the commercial corridors:

> *The Panel recognises that Plan Melbourne foreshadows stronger policy support for the use of mandatory provisions in neighbourhood centres (and residential areas) to increase certainty. The Panel considers the combination of the street wall and upper level setbacks is critical in neighbourhood centres to maintain the established main street character and in these situations mandatory controls can be justified. However, we consider development with elements that exceed the nominated height and/or adopt alternative setbacks should not be precluded as they may produce better outcomes in some circumstances. The overall maximum height limits should therefore remain discretionary to allow for such circumstances.*

It was the Panel's conclusion that mandatory street wall heights which reflected the dominant character of the neighbourhood centres were acceptable (either 8m or 11m, depending on the context). It also found that if mandatory upper-level setbacks were to be adopted, they should be sufficient to ensure that in most cases the upper-storey will be clearly distinguishable from the street wall of the heritage building and be a recessive element in neighbourhood centres streetscapes. To achieve this, the Panel identified 5m as being an appropriate mandatory minimum setback for upper-level development in the context of Boroondara's Neighbourhood Activity Centres.

3.6 WHITEHORSE AMENDMENT C175

C175whit sought to implement the *Box Hill Metropolitan Activity Centre Built Form Guidelines* (Hansen Partnership, 2016) by rezoning land, introducing the Built Form Guidelines as a reference document and applying a new DDO Schedule to introduce built form controls. In its consideration of this Amendment, the Panel Report dated 6 October 2017 stated:

> *The Panel would have benefited from a more sophisticated analysis of the heritage precinct that utilised three-dimensional modelling, sight lines and view-sheds to help understand the rationale for the proposed heritage related controls. Without this basic information, it is difficult to determine whether the proposed controls are appropriate…*

and concluded that in the absence of this modelling:

- *The Built Form Responses regarding Heritage should not proceed in their current form.*

The absence of 3D modelling, and sight line and view-shed analysis in relation to those areas of the Box Hill Activity Centre that are subject to the Heritage Overlay appears to have been critical in Panel recommending that the proposed built form controls not be applied to address heritage.

3.7 STONNINGTON AMENDMENT C223

The Glenferrie Road and High Street Major Activity Centre encompasses the two linear commercial strips of Glenferrie Road and High Street in Malvern as well as two peripheral areas. The Heritage Overlay, which covers all of Glenferrie Road and most of High Street, acknowledges the area for its '*metropolitan significance as one of the major strip shopping centres to have retained its role into the late twentieth century, and for the quality and integrity of its Victorian, Federation and Interwar building stock*'.[1] C223ston sought to apply new built form provisions through the application of DDO19 to the entire Activity Centre, with precincts A and B covering the commercial and heritage precincts of Glenferrie Road and High Street respectively.

While the Amendment proposed an 8-10m setback above the street wall for precincts A and B, the Panel found it to be effectively a concealment of upper-level additions, supporting instead a 5m setback as adequate to respect heritage values without removing development capacity. This was derived from the precedent in the Boroondara Planning Scheme and was seen to equate to the typical first room of a Victorian-era building. The Amendment was otherwise generally supported by the Panel as an appropriate balance between protecting heritage values and enabling growth. Discretionary preferred maximum building heights between 14.5 metres (4 storeys) and 21 metres (6 storeys) were supported through precincts A and B.

The Panel also reviewed the drafting of discretionary and mandatory provisions, addressing the appropriateness of the terms 'should' and 'must'. The Panel noted that confusion arose from the DDO parent clause, and until such time as the clause is redrafted, the term 'must' is to be used for schedule requirements with the addition of further clarification if it can be varied with a permit.

3.8 DAREBIN AMENDMENT C161

C161dare proposed to implement the '*Fairfield Village Heritage Assessment, 2017*' (Heritage Intelligence) and '*Fairfield Village Built Form Guidelines 2017*' (Hansen Partnership) through the application of Heritage Overlay (HO313) and DDO21 to the Fairfield Village Neighbourhood Centre. DDO21 created two sub precincts: Area 1 to

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[1] Retrieved from Victorian Heritage Database, 18 January 2018 (https://vhd.heritagecouncil.vic.gov.au/places/31530)

be applied to the proposed HO313 precinct; with the remainder of the Neighbourhood Centre covered by Area 2.

The Panel found the application of the Heritage Overlay in conjunction with the DDO would enable the precinct *'to support a variety of housing typologies at increased densities'* in a way that '*allows the heritage place to be identified and understood*'. Further, the Panel supported the application of a mixture of mandatory and discretionary controls to Area 1 of the DDO in the form of:

- Mandatory maximum building heights at 14.5m and 17.5m (four and five storey), triggered by a lot width of 24m for five-storey.
- Mandatory maximum street wall height to be the greater of 8.5m or the adjacent street wall.
- Discretionary minimum front setbacks above the street wall at generally 4m, and 8m if constructing to a fifth level.
- The addition of a 3m side setback at the fifth-floor level – introduced as a discretionary provision to prevent the creation of a dominating wall of development along Station Street.

3.9 SUMMARY

Table 1 – Summarised recommendations and implications

YARRA AMENDMENT C231	
Recommendation	*Implications*
Significant and contributory heritage places and heritage fabric set within a consistent streetscape form.	Gertrude Street displays similar levels of consistency in heritage streetscape to warrant mandatory controls.
8m setbacks.	An 8m mandatory setback can be justified for highly intact heritage streetscape.
Combination of preferred and mandatory heights.	The use of a balanced combination of preferred and mandatory heights is appropriate to respond to varied conditions.
Limiting heights within heritage precincts while allowing housing capacity to be met elsewhere in the broader precinct.	The most highly intact areas warrant low heights to protect heritage streetscapes.
YARRA AMENDMENT C220	
Recommendation	*Implications*
A 6m upper-level setback will retain the 'human scale' of Johnston Street, secure the distinction between the [heritage] street wall and upper-levels.	A 6m mandatory upper-level setback is an appropriate minimum.
The less significant sections of Johnston Street do not warrant lesser built from controls.	The same controls should be applied within the DDO irrespective of the significance of the street.

A preferred ratio of 2/3:1/3 street wall to new upper-level built from should be replaced with a 45 degree angular plane.	A 45 degree angular plane above a nominal 11m street wall height can inform the preferred mid-level built form rather than a ratio based sightline test.
In combination with upper-level front setbacks and maximum building heights the angular plane creates a further upper-level setback from the mid-level setback.	Upper-level development should be set further back from the street wall consistent with the guidance at 22.02-5.7.2.
YARRA AMENDMENT C191	
Recommendation	***Implications***
Combination of preferred and mandatory heights.	The use of a balanced combination of preferred and mandatory heights is appropriate to respond to varied conditions.
Limiting heights within heritage precincts while allowing housing capacity to be met elsewhere in the broader precinct.	The most highly intact areas warrant low heights to protect heritage place. Larger scale development should be encouraged outside these heritage places.
A 6m upper-level setback is necessary to avoid facadism and to retain the prominence of the heritage street wall	A 6m mandatory upper-level setback is an appropriate minimum for site-specific Heritage Overlays and intact heritage streetscapes.
The combination of upper-level front setbacks, maximum building heights and design requirements in respect of upper-level development is sufficient to manage taller built form in heritage contexts.	Further guidance in the form of a sight-line test or angular plane formulae is not warranted. Note: this conclusion differs from that of the Panel that considered C220yara.
MORELAND AMENDMENT C134	
Recommendation	***Implications***
The application of mandatory street wall heights to Sydney Road is justified.	Provides a justification for the application of mandatory street wall heights within the Study Area.
Established a preferred ratio of ¾ : ¼ street wall to new upper-level built form.	The use of a sightline test to inform new upper-level built from is appropriate.
BOROONDARA AMENDMENT C108	
Recommendation	***Implications***
The combination of the height, setbacks and design treatment of new buildings should ensure a heritage place on or adjoining the site is not overwhelmed or dominated.	The DDO can included height, setback and design treatment controls to avoid new development dominating heritage places.
New development will be visible behind the retained façades – particularly from oblique views – and that invisibility of	Some visibility of new upper-level development (including from oblique

upper-level development is either unreasonable or not necessary to achieve the primacy of the street wall.	views) will be acceptable and complete concealment is not necessary.
Mandatory upper-level setbacks to the commercial corridors are justified.	Provides a justification for the application of mandatory upper-level setbacks within the study area.
WHITEHORSE AMENDMENT C175	
Recommendation	***Implications***
In the absence of modelling, built form heritage controls should not proceed.	That 3D modelling, sightlines and viewshed analysis should inform built form controls.
STONNINGTON AMENDMENT C223	
Recommendation	***Implications***
Panel supported a 5m upper-level setback instead of the 8-10m setbacks proposed that effectively concealed upper-level development.	There is an expectation that the visibility of some new upper-level built from will be acceptable and complete concealment is not necessary.
Application of the words 'should' and 'must' within controls.	Use 'should' used for preferred controls and 'must' for mandatory controls.
DAREBIN AMENDMENT C161	
Recommendation	***Implications***
The application of mandatory building heights to Fairfield Village is justified.	Provides a justification for the application of mandatory building heights within the Study Area.
The application of mandatory street wall heights to Fairfield Village is justified.	Provides a justification for the application of mandatory street wall heights within the Study Area.

4.0 MANDATORY AND DISCRETIONARY HEIGHT AND SETBACK CONTROLS

Planning Practice Note 59: The Role of Mandatory Provisions in Planning Schemes (September 2018) (PPN59) notes that the VPPs are predominantly performance-based and that mandatory provisions are the exception. The PPN sets out a series of five criteria against which to test proposed mandatory provisions, being:

- Is the mandatory provision strategically supported?
- Is the mandatory provision appropriate to the majority of proposals?
- Does the mandatory provision provide for the preferred outcome?
- Will the majority of proposals not in accordance with the mandatory provision be clearly unacceptable?
- Will the mandatory provision reduce administrative costs?

Planning Practice Note 60: Height and Setback Controls for Activity Centres (PPN60) provides specific guidance on the use of mandatory height and setback controls in Activity Centres. In September 2018, DELWP published an updated version of PPN60 following the completion of the pilot project *Better Height Controls in Activity Centres*[2].

Of relevance to this matter, PPN60 provides an additional justification for the use of mandatory controls based on 'comprehensive strategic work', which reads:

> *Mandatory height or setback controls should only be applied where:*
>
> - *exceptional circumstances exist; or*
> - *council has undertaken comprehensive strategic work and is able to demonstrate that mandatory controls are appropriate in the context, and*
> - *they are absolutely necessary to achieve the preferred built form outcomes and it can be demonstrated that exceeding these development parameters would result in unacceptable built form outcomes.*

In relation to 'exceptional circumstances', PPN60 states:

> *Exceptional circumstances may be identified for individual locations or specific and confined precincts, and might include:*
>
> - *significant heritage places where other controls are demonstrated to be inadequate to protect unique heritage values.*

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[2] Refer to the Panel Report to Yarra C220 chapter 1.2 for further discussion on the pilot project and the amendment to PPN60.

- *sites of recognised State significance where building heights can be shown to add to the significance of the place, for example views to the Shrine of Remembrance...*

To pursue mandatory controls, PPN60 also states:

> *Where exceptional circumstances are identified, mandatory height and setback controls should only be applied where they are absolutely necessary to achieve the built form objectives or outcomes identified from the comprehensive built form analysis. Where mandatory controls are proposed, it will need to be demonstrated that discretionary controls could result in an unacceptable built form outcome.*

The amended version of PPN60 reflects a broader shift over time within the application of the VPPs in favour of the use of mandatory controls.

For this project, the purpose of the Hansen Built Form Review and this report is to provide a comprehensive strategic basis for height and setback controls within the study area.

PPN60 identifies the following criteria for 'exceptional circumstances' that *"...may be identified for individual locations or specific and confined precincts"*. These include (as relevant):

- *significant heritage places where other controls are demonstrated to be inadequate to protect unique heritage values*
- *sites of recognised State significance where building heights can be shown to add to the significance of the place, for example views to the Shrine of Remembrance...*

To pursue mandatory controls, PPN60 also states:

> *Where exceptional circumstances are identified, mandatory height and setback controls should only be applied where they are absolutely necessary to achieve the built form objectives or outcomes identified from the comprehensive built form analysis. Where mandatory controls are proposed, it will need to be demonstrated that discretionary controls could result in an unacceptable built form outcome.*

The Panels that considered C108boro, C161dare, C134, C220yara, C191yara and C231yara provide further guidance on the application of mandatory built form controls along Victoria Parade.

These Panels concluded that for Heritage Overlays within Activity Centres:

- Mandatory controls were appropriate for street wall heights along Sydney Road, in 31 neighbourhood centres in Boroondara and Area 1 of the Fairfield Village Neighbourhood Centre
- Mandatory upper level setbacks were appropriate in many of Boroondara's neighbourhood centres

- Mandatory heights were appropriate for Area 1 of the Fairfield Village Neighbourhood Centre
- Mandatory setbacks were appropriate for Johnston Street with a mixture of preferred and mandatory height limited combined with a 45 degree angular plane test.
- Mandatory height and upper level setback controls were appropriate to protect the most highly consistent and intact parts of Queens Parade and to protect views to key landmarks.
- Mandatory height and upper level setback controls were appropriate to protect the most highly consistent and intact parts of Queens Parade.

Parts of the Victoria Parade Precinct have - albeit short- lengths of highly consistent, intact or cohesive streetscapes that warrant mandatory controls. Mandatory height limits are appropriate to protect the visual primacy of the heritage streetscapes in these locations. Mandatory minimum upper level setback controls are also warranted where it is necessary to protect the legibility and heritage fabric of buildings that are subject to the Heritage Overlay

PART II: HERITAGE ANALYSIS

5.0 STUDY AREA ANALYSIS

5.1 PRECINCT BOUNDARY

***Figure 9**: Victoria Parade Study Area (black) overlaid on an aerial image (Source: adapted from VicPlan).*

As noted previously, this report focuses on the Victoria Parade Precinct as shown in Figure 9 above. The following precincts were considered in the *Brunswick and Smith Street Built Form Review*, GJM Heritage, 25 November 2019:

- Brunswick Street Activity Centre Spine
- Town Hall Mixed Use Precinct
- Smith Street Activity Centre Spine
- Johnston Street Activity Centre Spine
- Fitzroy East Mixed Use Precinct.

Gertrude Street was the subject of the *Gertrude Street Built Form Framework: Heritage Analysis & Recommendations*, GJM Heritage, 9 December 2019.

The Collingwood Mixed Use Precinct was considered as part of a separate study: *Collingwood Mixed Use Pocket Heritage Analysis & Recommendations*, GJM Heritage, 6 June 2018.

The Fitzroy West Mixed-Use and the Alexandra Parade Boulevard precincts are subject of separate reports prepared as part of this study.

The following sections contain an analysis of the heritage components and qualities of the Victoria Parade Precinct, including significant views. An analysis of future built form character considerations has also been provided, along with recommended built form parameters to appropriately manage heritage values.

5.2 HERITAGE CHARACTERISTICS

The buildings within the Heritage Overlay at the western end of the Victoria Parade Precinct are typically two-storey terraced houses dating from the late nineteenth century. These include the State heritage-listed Blanche Terrace (169-179 Victoria Parade, Fitzroy; VHR H0177-H0182) and McClelland Terrace (203 Victoria Parade, Fitzroy; VHR H0590). The heritage buildings in the study area within HO334 – South

Fitzroy Precinct are interspersed with non-contributory post-war buildings including a service station, offices and the Victoria Peak Townhouses at 187-201 Victoria Street, Fitzroy.

***Figure 10**: (left) South side of Victoria Parade looking east from the intersection with Napier Street.*

***Figure 14:** (right) Terraced housing, 139-143 Victoria Parade, Fitzroy ('Contributory' within HO334)*

***Figure 15**: (left) Alexandra Terrace, 145-149 Victoria Parade, Fitzroy ('Individually significant' within HO334)*

***Figure 16:** (right) Pair of terraced houses, 163-165 Victoria Parade, ('Individually significant' within HO334) and terraced house, 167 Victoria Parade, Fitzroy ('Contributory' within HO334)*

***Figure 17**: Blanche Terrace, 169-179 Victoria Parade, Fitzroy (VHR H0177-H0182).*

Figure 18: *(left) Russell House, 181 Victoria Parade ('Individually significant' within HO334) and c.1970s offices, 183 Victoria Parade, Fitzroy ('Not-contributory' within HO334)*

Figure 19: (right) *Victoria Peak Townhouses, 187-201 Victoria Parade, Fitzroy ('Not-contributory' within HO334)*

Figure 20: *(left) McClelland Terrace, 203 Victoria Parade, Fitzroy (VHR H0590)*

Figure 21: (right) *Intersection of Victoria Parade and Smith Street looking northwest.*

The terraced houses and shop / residences towards the centre of the study area (between Smith and Wellington streets) are included within the Heritage Overlay (HO336 – Victoria Parade Precinct, Collingwood). Between Wellington and Islington street, the study area is typified by large post-war offices and showrooms without any identified heritage value.

Common to other major streets in the City of Yarra, the precinct includes a number of corner hotels: the Baden Powell Hotel (61-65 Victoria Parade, Collingwood; within HO336), the former John Franklin Hotel (75-77 Victoria Parade, Collingwood; within HO336) and the Prince Patrick Hotel (135-141 Victoria Parade, Collingwood; HO138).

As well as common terraced-form residential and commercial building types, the study area includes two single storey Edwardian-era houses (71 & 73 Victoria Parade, Collingwood; within HO336), the Inter-war Melbourne After Care Home (45-47 Victoria Parade, Collingwood; within HO336) and the Former Ebenezer Baptist Church (159 Victoria Parade, Collingwood; HO139).

***Figure 22**: (left)) Intersection of Victoria Parade and Smith Street looking northeast*

***Figure 23:** (right) 'Portia', 15-17 Victoria Parade; Irwell Terrace 19-23 Victoria Parade, ('Individually significant' within HO336); single storey terraced house, 25 Victoria Parade, Collingwood ('Contributory' within HO336)*

***Figure 24**: Shop / residences, 27-37 Victoria Parade, Collingwood ('Contributory' within HO336)*

***Figure 25:** (right) 'Floraston', 39 Victoria Parade; Melbourne After Care Home, 45-47 Victoria Parade, Collingwood ('Individually significant' within HO336)*

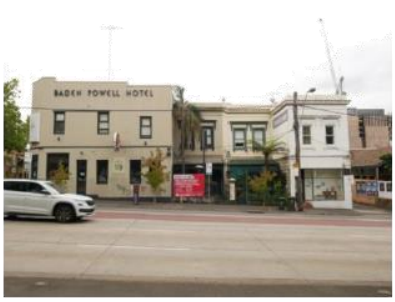


***Figure 26:** (left) Shop/residences , 49-59 Victoria Parade, Collingwood ('Contributory' within HO336)*

***Figure 27:** (right) Baden Powell Hotel, 61-63 Victoria Parade; terraced houses 65-67 Victoria Parade; shop/residence, 69 Victoria Parade, Collingwood ('Contributory' within HO336)*

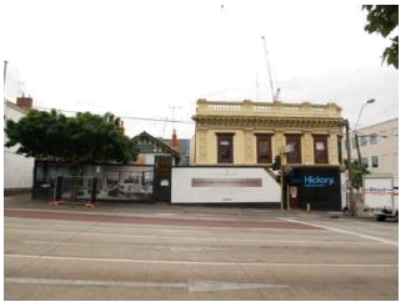


***Figure 28:** (left) Houses, 71-73 Victoria Parade ('Contributory' within HO336); former John Franklin Hotel, 75-77 Victoria Parade, Collingwood ('Individually significant' within HO336)*

***Figure 29:** (right) Large showrooms, west of Rokeby Street*

Figure 30: *(left) Prince Patrick Hotel and shops, 135-141 Victoria Parade, Collingwood (HO138)*

Figure 31: (right) Former Ebenezer Baptist Church, 139 Victoria Parade, Collingwood (HO139)

At the eastern end of the study area, between Islington Street and Hoddle Street, there is an intact row of Victorian-era single and two-storey shop residences (205-219 Victoria Parade, Collingwood) that are not included within the Heritage Overlay, but are recommended for inclusion following a heritage assessment undertaken by GJM in August 2020.

Figure 32*: Shop/residences, 205-219 Victoria Pasrade, Collingwood (not included within an HO).*

The heritage buildings found throughout the study area generally share the following characteristics:

- Attached terraced construction
- Masonry construction with less than 40% of the upper-level street wall face comprised with openings such as windows and doors (see Figure 33)
- Painted render or face brick façades
- Parapeted front facades with solid parapets, open balustrades or more elaborate gables
- No setback from the street boundary
- Early or altered shop fronts taking up the majority of the ground floor often with recessed entries
- Splayed corners to return façades or end-of-terrace elevations to laneways and side streets
- Architectural features such as belvederes and towers at prominent corner site
- Verandahs or later canopies

- Visible chimneys normally set back between 3m and 4m from the front of the building.

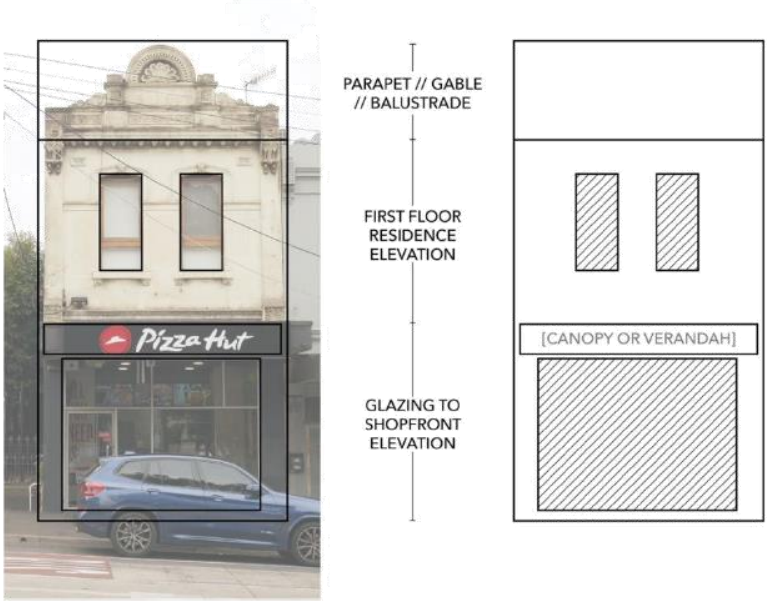


***Figure 33**: Two-storey shop residence (27 Victoria Parade, Collingwood, within HO336) showing the typical relationship between solid (walls) and void (windows) on the front (street) façade. The first-floor windows make up less than 40% of the wall area (excluding the parapet, pediment or balustrade). The early (or more recent – as in this case) shopfront glazing occupies the majority of the ground floor façade.*

The following examples show typical building types found within the study area. It must be noted that buildings of a particular type will not necessarily demonstrate all the features identified below, and may include other features such as visible roofs and chimneys.

***Figure 34**: Two-storey terraced house ('Floraston', 39 Victoria Parade, Collingwood within HO336).*

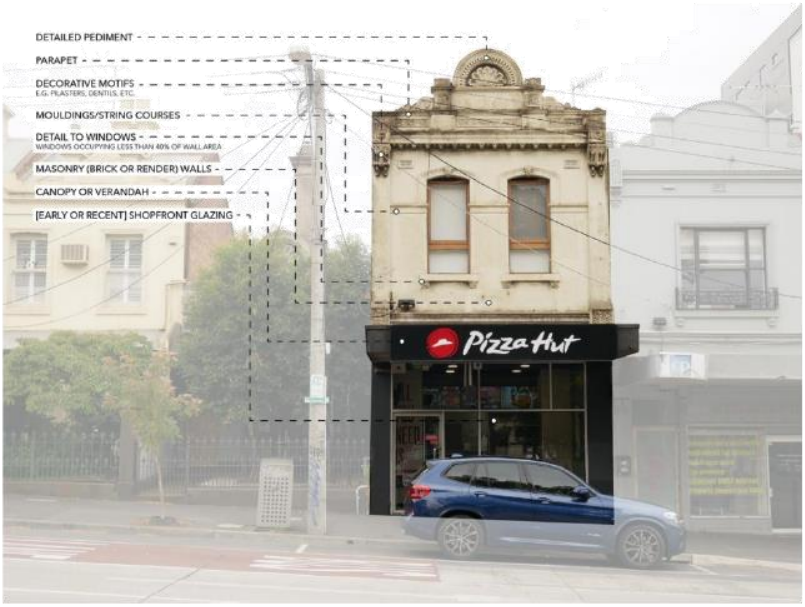


***Figure 35**: Shop / Residence (27 Victoria Parade, Collingwood, within HO336)*

***Figure 36**: Corner hotel / commercial building (Prince Patrick Hotel, corner Victoria Parade and Rokeby Street, HO138)*

5.3 LOCAL LANDMARKS

Victoria Parade Precinct does not include any of the municipal-wide landmarks within the City of Yarra that are identified within Clause 22.03 'Landmarks and Tall Structures' of the Yarra Planning Scheme nor any of the views of these landmarks included in the report entitled *Landmarks & Views Assessment* (Ethos Urban, October 2019). Having said that, the location, scale, function and architectural form and detail of some buildings within the study area has resulted in them acting as local landmarks. These buildings serve as markers, wayfinding aids or landmarks in the local streetscape context due to their siting at key intersections or their scale within the surrounding streetscape.

In the context of the Victoria Parade Precinct, the local landmarks are described in Table 2.

Table 2 – Local landmark buildings

Address	Building Name	Type	Corner	Grading	Photograph
61-65 Victoria Parade, Collingwood	Baden Powell Hotel	Hotel on a prominent corner site	Victoria Parade and Cambridge Street	Contributory (HO336)	

75-77 Victoria Parade, Collingwood	former John Franklin Hotel	Former hotel on a prominent corner site	Victoria Parade and Wellington Street	Individually Significant (HO336)	
135-141 Victoria Parade, Collingwood	Prince Patrick Hotel and shops	Hotel on a prominent corner site	Victoria Parade and Rokeby Street	Individual heritage place (HO138)	
139 Victoria Parade, Collingwood	Former Ebenezer Baptist Church	Place of worship	Victoria Parade and Rupert Street	Individual heritage place (HO139)	

6.0 HERITAGE ANALYSIS

6.1 HERITAGE STATUS

6.1.1 Existing conditions

Approximately half of the length of the Victoria Parade Precinct is (intermittently) included within the extent of the Heritage Overlay. The western part of the precinct is subject to HO334 – South Fitzroy Precinct (between Napier and Smith streets) and HO336 – Victoria Parade Precinct (between Smith and Wellington streets) with two individual Heritage Overlays (HO138 – Prince Patrick Hotel and shops; HO139 – former Ebenezer Baptist Church) located in the eastern half of the precinct. Two places are included on the VHR namely Blanche Terrace at 169-179 Victoria Parade), Fitzroy (VHR H0177-H0182[3]) and McClelland Terrace at 203 Victoria Parade, Fitzroy (VHR H0590).

While not included within the study area, HO188 affects the street trees along the boulevard.

***Figure 37**: Heritage Overlay and VHR map – Victoria Parade precinct outlined in black.*
Source: adapted from VicPlan.

Heritage Overlay shaded in pink

VHR places shaded in yellow

[3] The individual listing of each of the six near-identical terraced houses that make up Blanche Terrace on the VHR is contrary to current practice and reflects the early registration of these buildings under the *Historic Buildings Act 1974*. It is also noted that the extent of registration includes no land (or curtilage) associated with these buildings. Under Heritage Council's longstanding practice these houses would be now be considered as a single heritage place and would include the land on which they are located to the extent of the cadastral block.

***Figure 38**: Current heritage gradings from Appendix 8 – Victoria Parade precinct outlined in black.*
Source: adapted from VicPlan

The existing heritage status for the buildings within the study area are listed in Table 3. We note that there is some inconsistency between the street addresses provided within Appendix 8 and those identified in VicPlan. The addresses, dates of construction and gradings provided below are taken directly from Appendix 8.

Table 3 – Existing heritage status

VICTORIAN HERITAGE REGISTER				
VHR #	*Name*	*Address*	*Heritage Overlay*	*Date*
H177	Blanche Terrace	169 VICTORIA PARADE FITZROY	HO191	1867
H178	Blanche Terrace	171 VICTORIA PARADE FITZROY	HO192	1867
H179	Blanche Terrace	173 VICTORIA PARADE FITZROY	HO193	1867
H180	Blanche Terrace	175 VICTORIA PARADE FITZROY	HO194	1867
H181	Blanche Terrace	177 VICTORIA PARADE FITZROY	HO195	1867
H182	Blanche Terrace	179 VICTORIA PARADE FITZROY	HO196	1867
H590	McClelland. Terrace	203 VICTORIA PARADE	HO197	1882

INDIVIDUAL HERITAGE OVERLAYS				
Heritage Overlay #	*Name*	*Address*	*Appendix 8 Grading*	*Date*
HO138	Prince Patrick Hotel and Shops	135-141 VICTORIA PARADE, COLLINGWOOD	Individually significant	1887
HO139	Former Ebenezer Baptist Church	159 VICTORIA PARADE, COLLINGWOOD	Individually significant	1870
PRECINCT HERITAGE OVERLAYS				
Heritage Overlay #	*Name*	*Address*	*Appendix 8 Grading*	*Date*
HO334	South Fitzroy Precinct	OFFICES, 133-137 VICTORIA PARADE	Not contributory	1930 – 1940
		139-143 VICTORIA PARADE	Contributory	1860 - 1880
		ALEXANDRA TERRACE, 145-149 VICTORIA PARADE	Individually significant	1864-5
		SERVICE STATION, 151-159 VICTORIA PARADE	Not contributory	1950 - 1980
		163-165 VICTORIA PARADE	Individually significant	1868
		167 VICTORIA PARADE	Contributory	1850 - 1860
		RUSSELL HOUSE, 181 VICTORIA PARADE	Individually significant	1862
		OFFICES, 183 VICTORIA PARADE	Not contributory	1970 - 1980
		VICTORIA PEAK TOWNHOUSES, 187-201 VICTORIA PARADE	Not contributory	1970 - 1980
		SHOPS/OFFICES, 205-209 VICTORIA PARADE	Not contributory	1970 - 1980
		SHOPS/OFFICES, 1-3 SMITH STREET	Not contributory	1970 – 1980
		APARTMENTS, 4 GORE STREET	Not contributory	1970 - 1980
HO336	Victoria Parade Precinct, Collingwood	PORTIA, 15-17 VICTORIA PARADE	Individually significant	1889
		IRWELL TERRACE, 19-23 VICTORIA PARADE	Individually significant	1868

		25 VICTORIA PARADE	Contributory	1880 – 1890
		SHOP & RESIDENCE, 27-37 VICTORIA PARADE	Contributory	1880 - 1890
		FLORASTON, 39 VICTORIA PARADE	Individually significant	1876
		MELBOURNE AFTER CARE HOME, LATER AFTER CARE HOSPITAL, MELBOURNE DISTRICT NURSING SOCIETY, 45-47 VICTORIA PARADE	Individually significant	1926, 1936
		SHOP & RESIDENCE, 49 VICTORIA PARADE	Contributory	1850-1890
		SHOP & RESIDENCE, 51 VICTORIA PARADE	Contributory	1880-1900
		SHOP & RESIDENCE, 53 VICTORIA PARADE	Contributory	1880-1900
		55 VICTORIA PARADE	Contributory	1850-1890
		57 VICTORIA PARADE	Contributory	1850-1890
		SHOP & RESIDENCE, 59 VICTORIA PARADE	Contributory	1850-1890
		BADEN POWELL HOTEL, 61-65 VICTORIA PARADE	Contributory	1880 – 1940
		67 VICTORIA PARADE	Contributory	1870 - 1890
	Shop & residence	69 VICTORIA PARADE	Contributory	1870 - 1890
		71 VICTORIA PARADE	Contributory	1900 – 1915
		73 VICTORIA PARADE	Contributory	1900 – 1915
	John Franklin Hotel, former	75A-77 VICTORIA PARADE	Individually significant	1880 - 1890

6.1.2 Recommended Changes

The review of the existing extent and grading of buildings was limited to substantial omissions and anomalies. The review did not include a complete re-assessment of

the 'Individually significant' / 'Contributory' / 'Not-contributory' gradings of individual buildings. A table of the identified anomalies is provided at Appendix I.

The row of Victorian-era shop/residences between Islington and Hoddle streets at the eastern end of the study area was identified as warranting inclusion on the Heritage Overlay as a small precinct and a citation has been prepared (see Appendix II).

It is noted that Blanche Terrace (VHR H0177, H0182) is included on the VHR as six individual buildings, when current practice would be to manage this as a single heritage place. Further, the Extent of Registration for Blanche Terrace (as gazetted in 1974) only includes the buildings themselves with no land or curtilage associated with the dwellings. While the land within each of these properties not occupied by a building or structure is also subject to HO334, this will not enable a holistic consideration of the heritage values of these properties when assessing permits under the *Planning and Environment Act 1987* or the *Heritage Act 2017*. We therefore recommend that an application be made under section 62(1) of the Heritage Act to amend the VHR entry to combine the properties into a single entry and include land to the extent of the cadastral blocks.

In addition, we recommend that the City of Yarra heritage grading map be updated to accurately reflect Appendix 8.

6.2 ZONING

6.2.1 Existing conditions

The carriageway and median strip of Victoria Parade, a major east-west thoroughfare, is zoned Road Zone (RDZ1). The land within the study area is generally zoned Commercial 1 Zone (C1Z). The land occupied by the Victoria Peak Townhouses (187-201 Victoria Parade, Collingwood) is General Residential Zone (GRZ). Small pockets on the northern edge of the study area are zoned Commercial 2 Zone (C2Z) (2-12 Rokeby Street, Collingwood), Mixed Use Zone (MUZ) (the rear of 29-35 Victoria Parade, Collingwood) and Neighbourhood Residential Zone (NRZ) (part 4 Gore Street).

The land to the north of the Victoria Parade Precinct within Fitzroy is generally zoned NRZ and is subject to HO334. Between Smith and Wellington streets the land north of the study area is generally zoned MUZ and is subject to HO336. East of Wellington Street the majority of the land north of the study area is zoned C2Z and is not subject to the Heritage Overlay.

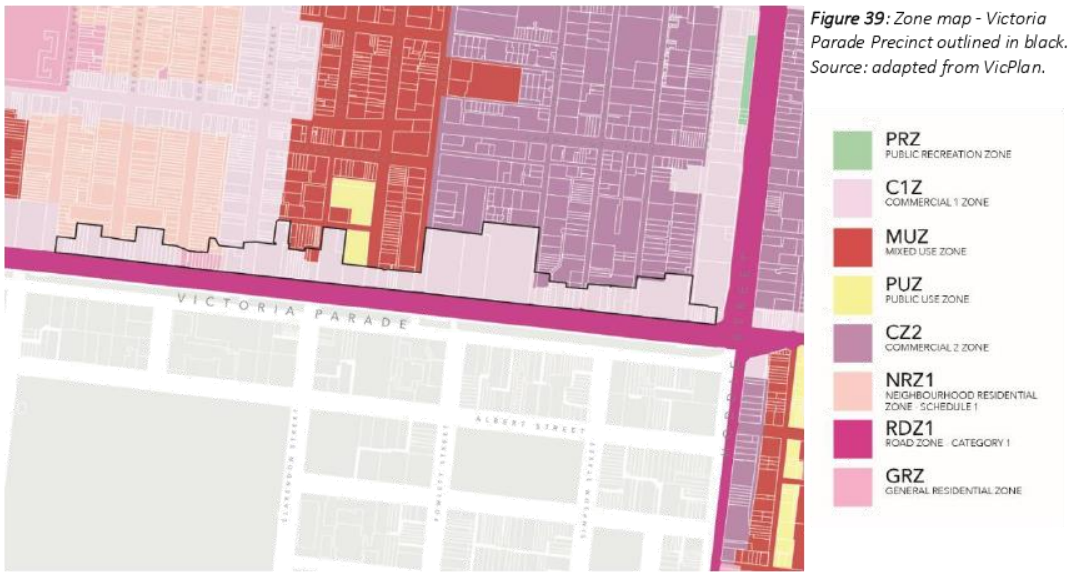


***Figure 39**: Zone map - Victoria Parade Precinct outlined in black. Source: adapted from VicPlan.*

6.2.2 Recommended Changes

The currenting zoning of land within the Victoria Parade Precinct is considered to be appropriate in heritage terms and no changes are recommended.

6.3 POTENTIAL FUTURE CHARACTER CONSIDERATIONS

The Victoria Parade Precinct has two principal built form characters. The first – found between Napier and Wellington streets to the west and Islington and Hoddle streets to the east – comprises fine grained, nineteenth century, two-storey terraced housing and shop/residences interspersed with later, low-rise residential and commercial development. The second character is typified by large format low- to medium-rise office, showroom and big-box retail buildings between Wellington and Islington Streets.

With the exception of the service station at 151-159 Victoria Parade, Fitzroy, the nineteenth century residential streetscape between Napier and Gore Streets is highly consistent in terms of building form (parapeted), setback (verandah with or without small garden), street wall height (two storey), materiality (rendered masonry) and architectural expression. While slightly less consistent in terms of building height and form, the buildings between the McDonalds Restaurant at the intersection of Victoria Parade and Smith Street to the west and Wellington Street to the east also have a high degree of integrity and visual cohesion. The row of shop/residences between Islington and Hoddle streets are largely intact, consistent in their age and architectural expression and have a high level of visual cohesion. In these three areas, with visual prominence of the consistent and cohesive heritage streetscapes should be retained and new development should remain recessive within the streetscape.

The large sites towards the eastern half of the study area have few sensitive interfaces and provide the opportunity for a significantly greater scale of development than within the intact heritage areas. Heritage considerations will have a more limited role in informing the overall preferred future character for this part of the Victoria Parade Precinct.

In relation to the individual heritage overlays (HO138 and HO139), future development proposals to these sites should consider the heritage values of that place and be sited, massed and designed to retain the visual prominence and three-dimensional form of these heritage places, namely: the Prince Patrick Hotel and shops (135-141 Victoria Parade, Collingwood) and the former Ebenezer Baptist Church (159 Victoria Street, Collingwood).

The Victoria Parade Precinct has sensitive heritage interfaces to the north between Gore and Little Smith streets (HO334) and between Smith and Wellington streets (HO336). New development should consider the impact on these heritage precincts in terms of visual and physical interface as well as amenity considerations

6.4 RECOMMENDED BUILT FORM PARAMETERS

Any DDO proposed for the Victoria Parade Precinct should apply built form guidance to ensure that new built form is respectful of the heritage places within the area.

A DDO control applied to properties within the Victoria Parade Precinct that are subject to – or immediately adjacent to – the Heritage Overlay should ensure new development respects the heritage significance of the graded buildings and is sited, massed and designed to be visually recessive and to not dominate the heritage place. This includes ensuring that appropriate interfaces are provided between the generally two-storey scale heritage buildings within heritage precincts and potential new development.

To develop appropriate built form parameters for the Victoria Parade Precinct, Hansen Partnership, the City of Yarra and GJM Heritage undertook the following analysis:

- Heritage and urban context information, known planning scheme amendments, and past and current planning applications was collected and analysed; and
- Built form parameters from the above analysis were drawn and then tested, firstly via cross-sectional drawings and then via a 3D model to determine their appropriateness.

Informed by the analysis and testing methodology outlined above, it is recommended that a DDO should seek built form outcomes that:

- Retain the visual prominence of local landmarks in the streetscape.
- Retain chimneys and principal roof forms visible from the public realm (excluding laneways).
- Ensure new development within the Heritage Overlay does not visually dominate the existing heritage fabric.

- Ensure any upper-level or infill development is subservient to heritage fabric and is visually recessive in mass, scale and materiality.
- Encourage the top-most level (or levels) of new development to be set further back from a principal heritage frontage (as encouraged at Clause 22.02-5.7.2) and treated as a visually separate roof top element.
- Retain the visual prominence of the return façades of buildings that address both Victoria Parade and cross streets (particularly at George Street (eastern side), Cambridge Street (both sides), Wellington Street (western side), Rokeby Street (eastern side) and Rupert Street (eastern side)) by setting back new upper-level built form from both street frontages.
- Establish a street wall height for infill development within consistent heritage streetscapes between Napier and Wellington streets that reflects the established two (Victorian-era) storey scale of those precincts.
- Encourage the ground level setback to match the lesser setback of any neighbouring heritage buildings.
- Ensure that the heritage buildings remain prominent within those parts of the Victoria Parade streetscape that are subject to the Heritage Overlay and retain their three-dimensional form as viewed from the public realm to avoid 'facadism'. This will require new upper-level development to be set back a minimum of 6m from the street wall and for redevelopment to respect the existing inter-floor heights of the heritage fabric.

7.0 BUILT FORM TESTING

To assist in the translation of the 'Recommended Built Form Parameters' in Part II into specific guidance that could be translated into a DDO control, the heritage analysis was reviewed against cross-sectional drawings of potential development envelopes and 3D computer modelling prepared by Hansen Partnership and the City of Yarra to test the appropriateness of particular built form outcomes that achieved the intent of the 'Recommended Built Form Parameters'.

As well as the cross-sectional drawing studies, 3D computer modelling using Sketchup Pro™ of potential bulk and massing envelopes for the study area was also interrogated. The existing built form was modelled along with approved, but not yet constructed, development in the Victoria Parade Precinct. It was used as a 'working' massing model to inform heights and setbacks on key development sites and to provide a comparative visual analysis. Given the relatively small proportion of the study area that is subject to the Heritage Overlay the 3D modelling was particularly useful in testing the generally more generous built form parameters applied to the larger, less-encumbered potential development sites rather than those with intact heritage buildings.

The Sketchup model was also interrogated to consider the impact of new buildings from the natural eye level (1.6m) on the public footpath.

Extensive field work was undertaken and site visits were used to inform the recommendations made in this report. Views of heritage places were only considered from the public footpath or from the central median strip with particular emphasis placed on intersections and tram stops where pedestrians are likely to dwell.

PART III: BUILT FORM RECOMMENDATIONS

8.0 BUILT FORM RECOMMENDATIONS

Any DDO applied to the Victoria Parade Precinct should include provisions to complement, but not duplicate, the decision guidelines at Clause 43.01-8 (Heritage Overlay), State Planning Policy at Clause 15.03-1S and local policy within Clauses 22.02, 22.03 and 22.10 (or as translated into the post-VC148 Planning Policy Framework through Amendment C269yara) of the Yarra Planning Scheme to inform new development.

Having regard to the heritage conditions within the study area as well as cross-sectional drawings and 3D modelling prepared by Hansen Partnership and the City of Yarra, it is recommended that the built form controls set out in 8.1 below be applied to new development to ensure appropriate weight is given to the heritage values within the study area. The cross-sectional drawings and 3D modelling helped assess whether or not the upper-level development would 'be visually recessive and not dominate the heritage place' as sought at Clause 22.02-5.7.1.

The cross-section diagrams and 3D modelling helped assess whether or not the upper-level development would 'be visually recessive and not dominate the heritage place' as sought at Clause 22.02-5.7.1 and proposed Clause 15.03-1L as endorsed by Council. While we note that the Panel considering C191yara did not consider a The use of mandatory upper-level setback controls and the application of a '45° angular plane' test (from Yarra DDO15) to protect the visual prominence of the street wall remains relevant tools for development behind the intact and cohesive heritage streetscapes between Napier and Gore streets, Smith and Wellington streets, and Islington and Hoddle Streets.

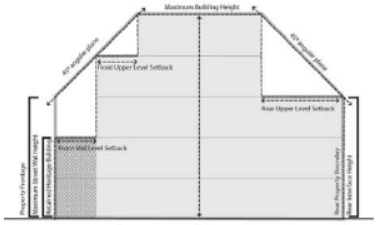
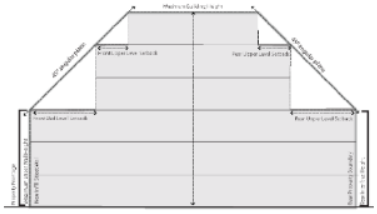
Buildings graded 'Individually Significant' and 'Contributory' or included in the VHR are referred to as 'heritage buildings' within the table below and those graded 'Not-contributory' or that are vacant are considered 'infill sites'. The Executive Director, Heritage Victoria will be the principal decision maker in relation to any redevelopment of the VHR places within the Victoria Parade Precinct[4] and the controls identified below should be established to protect the heritage values of the precincts within which these State-listed heritage places are located.

8.1 RECOMMENDED DDO CONTROLS

Built Form Element	Mandatory	Preferred	Rationale
Street wall height (infill development) within or immediately adjacent to land	11m maximum 8m minimum	Match the parapet height of the adjacent heritage building to the width of the property boundary or	To ensure new built form responds to its immediate heritage context. A mandatory maximum and minimum street wall height is necessary to maintain

[4] Blanche Terrace, 169-179 Victoria Parade, Fitzroy (VHR H0177-H0182) and McClelland Terrace, 203 Victoria Parade, Fitzroy (VHR H0590)

subject to the Heritage Overlay		for a distance of 6m whichever is less.	the two (Victorian-scale) storey form of the heritage streetscapes. The preferred control encourages new built form to match the height of the neighbouring heritage building.
Front setback (infill development) within or immediately adjacent to land subject to the Heritage Overlay	-	Match the setback, from any and all street frontages excluding laneway frontages, of the adjacent heritage building	To ensure new built form responds to the heritage context which generally has a small or no setback.
Minimum setbacks above street wall within or immediately adjacent to land subject to the Heritage Overlay	6m from the façade to Victoria Parade and Wellington Street Note: the setbacks for individual heritage places should be informed by their Statements of Significance and an analysis of the historic fabric of the heritage place.	6m from George, Cambridge, Rokeby, Rupert and Islington Streets 6m minimum for sites immediately abutting land subject to the Heritage Overlay	While the built form of heritage buildings varies across the Victoria Parade Precinct, there are largely intact heritage streetscapes within the precinct. A mandatory minimum 6m setback from the Victoria Parade and Wellington Street boundaries is appropriate given the highly consistent two-storey built form and the need to protect the visual prominence of the heritage street wall on these major thoroughfares. This distance will also retain the majority of visible chimneys and roof forms. The application of a mandatory 6m setback is consistent with that through DDO25, DDO26, DDO27 and DDO28 proposed to be introduced through C191yara. A larger setback from the principal facades of heritage buildings may be required development to be set back, and for the retention of an appropriate and legible three-dimensional heritage form. A preferred setback is appropriate from George, Cambridge, Rokeby, Rupert and Islington Streets to allow for the range of building forms and to recognise the more minor nature of these cross streets.
Maximum building heights within the Heritage Overlay	-	Land subject to HO334 11m (three storeys) (shallow sites) to 14m (four storeys) (deep sites) Land subject to HO336	The variety of site depths, existing urban form and interface conditions require a range of maximum building heights. Shallow sites are those less than range from approximately 25-30m in depth. Deep sides range from approximately 30m to 50m in depth.

14m (4 storeys) (shallow sites) to 21m (6 storeys) (deep sites) <u>Land subject to HO138</u> (135-141 Victoria Street, Collingwood) 14m (4 storeys) <u>Land subject to HO139</u> (159 Victoria Street, Collingwood) 11m (3 storeys) Note: there is limited opportunity for development on the former Baptist Church site beyond the rear car park area) <u>Land recommended for inclusion on the Heritage Overlay (205-219 Victoria Parade, Collingwood)</u> 14m (4 storeys)	A preferred control will enable a wide range of design responses. The overall height and building form should be informed by the preferred building envelope defined by the 45° angular plane described in DDO15. *Heritage Building*  *Infill building* 

8.2 ADDITIONAL GUIDANCE

The heritage policy proposed as part of C269yara includes specific strategies to address new development and alterations to commercial and industrial heritage places. If these provisions are implemented through Amendment C269yara, additional heritage design requirements are not likely to be needed within a DDO. However, if new development is to be informed by the existing heritage provisions at Clauses 15.03-1S, 21.05-1, 22.02 and 43.01 of the Yarra Planning Scheme, we recommend that the following heritage design requirements be applied to a DDO:

- New infill development within heritage precincts should:
  - Interpret the historic façade rhythm, including fenestration patterns and proportions, the relationship between solid and void, and the existing module of structural bays.
  - Retain the visual prominence of prominent corner buildings and local landmarks.
  - Be distinguishable from the original heritage fabric and adopt a high quality and respectful contextual design response.

  - Ensure façade treatments and the articulation of new development are simple and do not compete with the heritage fabric.
  - Avoid the replication of existing decorative features and architectural detail.
- The adaptation of existing heritage buildings should:
  - Discourage highly reflective glazing in historic openings.
  - Ensure the inter-floor height of the existing building is maintained and avoid new floor plates and walls cutting through historic openings.
  - Encourage the retention of solid built form behind retained facades and avoid balconies behind existing openings.
- New upper-level development behind existing heritage buildings should:
  - Retain the visual prominence of parapet and roof-top elements including parapets, balustrades, pediments, chimneys, lanterns, urns and other architectural features, where these exist.
  - Be set back to retain the visual prominence of prominent corner buildings and local landmarks.
  - Ensure that the design and setback of the addition does not visually dominate the heritage building or surrounding heritage places.
  - Retain the primacy of the three-dimensional form of the heritage building.
  - Incorporate materials and finishes that are recessive in texture and colour.
  - Generally utilise visually lightweight, but high quality, materials that create a juxtaposition with the heavier masonry of the heritage facades.
  - Incorporate simple architectural detailing so it does not detract from significant elements of the existing building or streetscape.
  - Provide a recessive backdrop to the heritage streetscape within precincts and to individual heritage buildings.
  - Avoid highly articulated facades with recessed and projecting elements.
  - Avoid highly contrasting or vibrant primary colours.
  - Avoid unarticulated façades that give a bulky appearance, especially from oblique views.
  - Be articulated to reflect the fine-grained character of narrow sites.
  - Encourage that upper-level development behind rows of identical or similar shop/residences is consistent in form, massing and façade treatment as existing upper-level development (where this exists).

- New development on land immediately abutting heritage places should:
  - Provide a sensitive site-responsive transition between the existing heritage fabric and the new proposed built form.
  - Retain the visual prominence of prominent corner buildings and local landmarks.
  - Be distinguishable from the original heritage fabric and adopt a high quality and respectful contextual design response.
  - Ensure façade treatments and the articulation of new development are simple and do not compete with the heritage fabric.
  - Avoid the replication of existing decorative features and architectural detail.

APPENDIX I - Victoria Parade Precinct Anomalies

A1.1 Qualifications

- Only obvious omissions and anomalies have been identified
- Review of individual gradings across the precinct has not been undertaken
- Photos taken by GJM in October 2018 and March 2020 unless otherwise noted.

A1.2 Anomalies Map

Attachment 5 - Attachment 5 - Victoria Parade Heritage Review

A1.3 Anomalies

Recommendations are provided in **bold.**

MAP REF	ADDRESS (HO NUMBER)	CURRENT GRADING APPENDIX 8	CURRENT GRADING GRADING MAP	PROPOSED GRADING	COMMENTS / RECOMMENDATION (BOLD)	IMAGES
1.	Blanch Terrace, 169-179 Victoria Parade, Fitzroy 169 Victoria Parade (VHR H0177; HO191) 171 Victoria Parade (VHR H0178; HO192) 173 Victoria Parade (VHR H0179; HO193) 175 Victoria Parade (VHR H0180; HO194) 177 Victoria Parade (VHR H0181; HO195) 179 Victoria Parade (VHR H0182; HO196)	VHR	Individually significant	VHR (single heritage place)	This terrace of six houses dating from 1867 are included on the VHR as six separate entries. No land is associated with the registration meaning only the land itself is included on the VHR. Blanch Terrace, a whole is a heritage place and a single VHR entry with associated land should be applied to the heritage place. It is recommended that application be made under s.62(1) of the Heritage Act 2017 to amend the VHR entry. **Make application to amend the extent to include land associated with the buildings and combine VHR H0177, H0178, H0178, H0179, H0180, H0181 & H0182.**	

Attachment 5 - Attachment 5 - Victoria Parade Heritage Review

2.	71 Victoria Parade, Collingwood (HO336)	Contributory	Individually significant	Contributory	There is an inconsistency in grading between Appendix 8 and the grading map. **Update grading map to reflect Appendix 8 grading.**	
3.	73 Victoria Parade, Collingwood (HO336)	Contributory	Individually significant	Contributory	There is an inconsistency in grading between Appendix 8 and the grading map. **Update grading map to reflect Appendix 8 grading.**	

Attachment 5 - Attachment 5 - Victoria Parade Heritage Review

4.	205-219 Victoria Parade, Collingwood	No HO	No HO	Potential new HO precinct	Numbers 205, 207, 209, 211-13, 215 and 217 Victoria Street, Collingwood are an intact but small row of single and two-storey shop residences not included on the Heritage Overlay. The heritage assessment prepared by GJM identified that they are of local significance for their historical (Criterion A) and representational (Criterion D) values. **Include 205-217 Victoria Parade, Collingwood on the Schedule to the Heritage Overlay**	

APPENDIX II – Citations and Statement of Significance: Victoria Parade East Precinct, 205-217 Victoria Parade, Collingwood

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VICTORIA PARADE EAST PRECINCT

205-219 VICTORIA PARADE, COLLINGWOOD, 3066

205-219 Victoria (GJM Heritage, March 2020).

DATE: 27 August 2020 - DRAFT

FILE: 2020-008

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VICTORIA PARADE EAST PRECINCT

205-219 VICTORIA PARADE, COLLINGWOOD

Place type: Commercial shops & residences	**Architect:** Not known
Construction Date: Victorian period	**Builder:** Not known
Recommendation: Include in the Heritage Overlay as a heritage precinct comprising seven (7) 'Contributory' buildings	**Extent of Overlay:** To the extent of the property boundries including the rear laneway. Refer to the plan at Figure 13.

Precinct History

Commercial development within the Victoria Parade East Precinct commenced in the 1860s, with three timber shops built by 1870 (S&Mc; RB). The Sands & McDougall Directories and Rate Books appear to indicate that the current structures at 211 and 219 Victoria Parade were the first brick buildings constructed in the row. They were constructed in the early-to-mid 1870s for Daniel and Richard Roberts to replace earlier timber buildings in these locations (no. 211 appears to be incorrectly shown as a timber building in the 1897 Melbourne and Metropolitan Board of Works [MMBW] plan at Figure 1). In the 1870s, other occupants of the row included a general dealer and fruiterer and greengrocer (in timber shops), and a timber and stone workshop at the corner of Islington Street. At the far east end of the block, on the corner of Hoddle Street (outside of the precinct, since demolished), was the Junction Hotel that was established in the early 1870s.

The remainder of the row was constructed in the 1880s, with the rate books listing seven brick shops within the precinct by 1884. These shops were built for three owners – the aforementioned Daniel Roberts (current 215-219) and Richard Roberts (current 211-213), and William Pearce (current 205-209) (RB). The property at 211-213 Victoria Parade, owned and occupied by Richard Roberts, bootmaker, was addressed as one property at this time (no. 205). The Net Annual Value of Roberts' property increased in the early 1880s, suggesting works to the property. In the 1880s, occupants within the precinct included a haberdasher, milliner, bootmaker, leather seller, plumber, tobacconist and furniture broker (S&Mc).

The 1897 and 1899 MMBW plans (Figures 1 and 2) show the developed commercial strip, and the original extent of the block before the eastern section was demolished in the 1970s to make way for the expansion of Hoddle Street. The 1899 plan shows the earlier address numbers, with the buildings at the current 205-219 Victoria Parade addressed as 199-213, with no shopfront verandahs to the row. The 1897 plan suggests that the current 211 Victoria Parade was constructed of timber at that date (with horizontal hatching), however the rate books record the building as brick.

Between 1907 and 1910 the numbering along Victoria Parade changed, establishing the current address numbers. Occupants of the commercial row in 1905 comprised a hairdresser and tobacconist, bookseller, bootmaker, leather dealer, news agent and stationer, confectioner and plumber. The strip retained its commercial character throughout the twentieth century. In the early 1970s the buildings east of the precinct were demolished to facilitate the widening of Hoddle Street (S&Mc).

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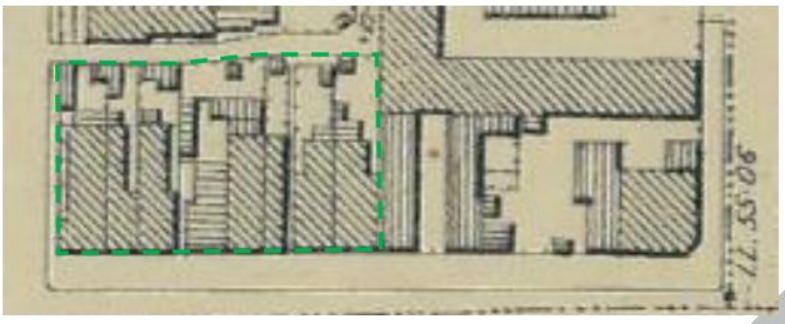

Figure 1. The commercial strip in 1897. The extent of the precinct is indicated in green. Diagonal hatching indicates a brick or stone building, while the horizontal hatching indicates a building constructed of wood (MMBW No 28, dated 1897)

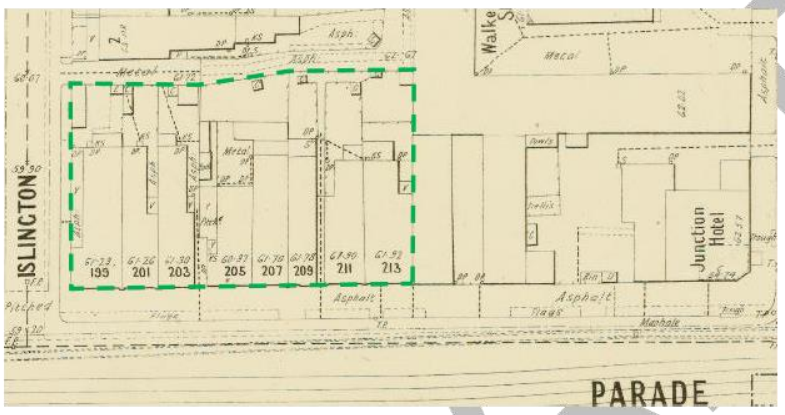

Figure 2. The commercial row in 1899. The extent of the precinct is indicated in green. Nos. 199 to 213 shown are the current 205-219 Victoria Parade (MMBW DP No. 1210, dated 1899)

Historical Themes

The place illustrates the following themes as outlined in the *City of Yarra Thematic History* (1998):

4.0 Developing local economy

- 4.4 Smaller Retailers: Strip Shopping

Description

The row of commercial buildings at 205-219 Victoria Parade is in the inner-northern suburb of Collingwood on the north side of Victoria Parade and to the west of the intersection with Hoddle Street. The row is bordered by Islington Street to the west and a bluestone laneway to the north. A small grassed reserve to the east separates the row from Hoddle Street. The buildings have no front or side setbacks but a narrow pedestrian laneway separates nos. 209 and 211. All buildings are of brick construction and have rendered facades with roofs set behind parapets.

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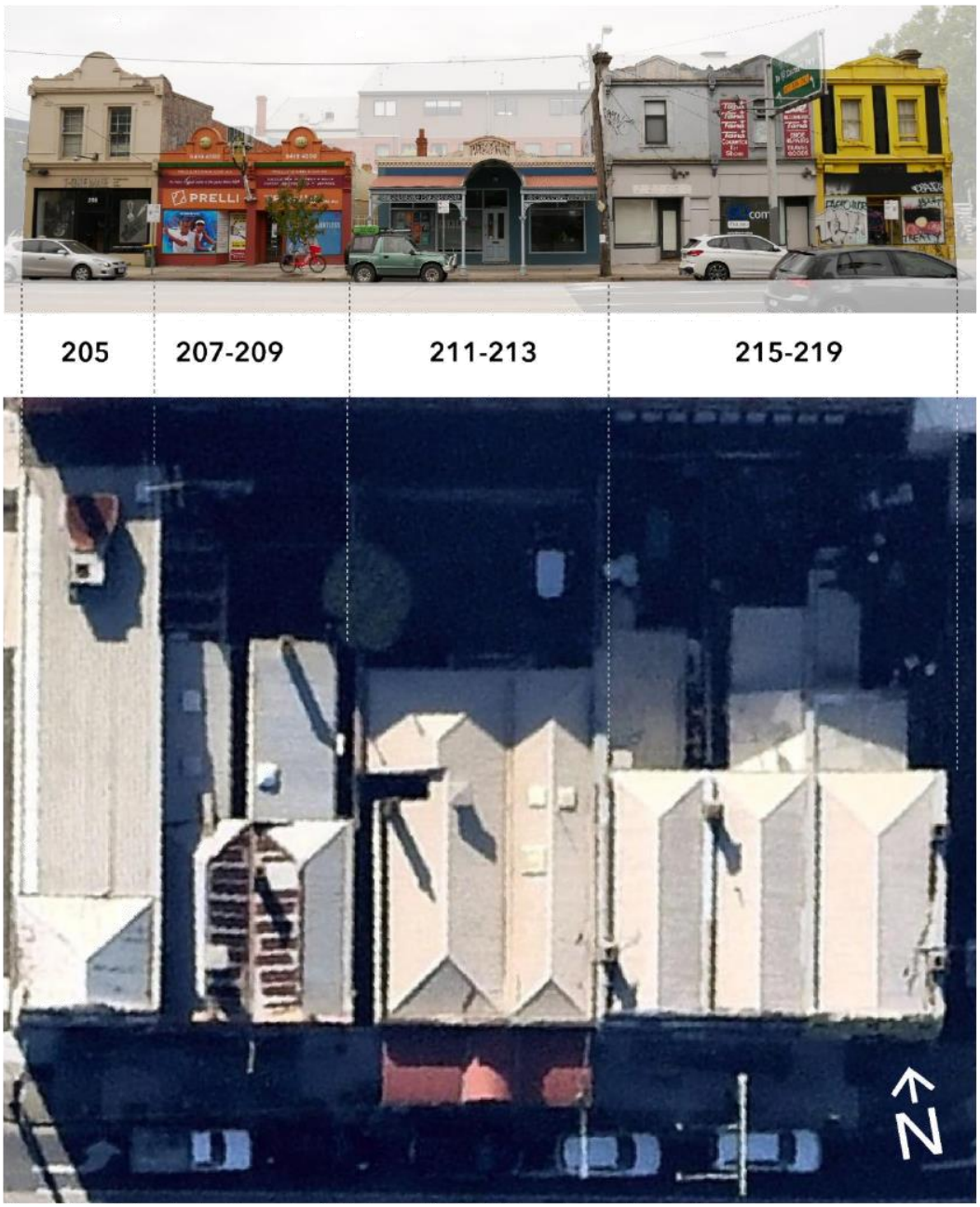

Figure 3. Victoria Parade elevations and aerial photograph (aerial photograph source: Nearmap)

205 and 207-209 Victoria Parade

205-209 Victoria Parade comprises three shops constructed as a group. 205 is a two-storey shop-residence, and 207-209 are two single-storey shops. The shops are of rendered masonry construction, each with a hipped roof clad in corrugated sheet metal concealed behind a parapet featuring semicircular pediments to each address. The upper façade of no. 205 contains two timber-framed sliding sash windows with moulded

surrounds, and the ground floor façade has been modified through the introduction of shopfront glazing, which flank the central recessed entry. At 207-209, large shopfront glazing is also present, and the recessed entrance to each of 207-209 is adjacent to the party wall the properties share. The party walls featured vermiculated semicircular corbels. Lions heads are present above these at the central and eastern party walls. A narrow easement is located immediately to the east of the building, and a later two-storey addition has been constructed to the rear of no. 205.

211-213 Victoria Parade

211-213 Victoria Parade comprises a single-storey shop with canopy to the street. The building is a rendered masonry structure with two hipped-roof volumes clad in corrugated sheet metal concealed by a low parapet with dogtooth brick course and a simple central pediment. The western hip of the roof is wider than the eastern hip and has a corbeled chimney with cylindrical terracotta pot. The street façade is punctuated with large expanses of timber-framed shopfront glazing. The entrance is centrally located with a half-glazed four-panel timber door. The verandah is a later addition and comprises a central barrel-vault over the entry, which is clad in painted corrugated metal, with concave sections to either side and decorative cast iron valances and brackets. The rear of the site is at-grade carpark, accessed from the rear laneway via Islington Street. A narrow easement is located immediately to the west of the building.

215-219 Victoria Parade

215-219 Victoria Parade comprises a row of three two-storey shop-residences. The buildings are of rendered masonry construction with the three facades exhibiting the same detailing to the parapets and window openings and surrounds. Party walls are articulated at the upper and lower string course by moulded corbels featuring a Queen's head motif. One of four urns to the parapet remains extant, and each shop features its own pediment. Three rendered brick chimneys remain extant – two at the east elevation of 219 and one to the west elevation of 215.

The upper-storey windows of each shop have identical moulded surrounds, with one central window to each of nos. 215 & 217 and a pair of centrally positioned windows to no. 219. Nos. 215 & 217 contain non-original timber-framed windows and no. 219 appears to retain the original timber-framed sliding sash windows. The shopfronts at ground floor level have been modified through the introduction of shopfront glazing. The recessed entries at nos. 215 & 217 are located to the east of the shopfront window while the entry to no. 219 is centrally located. An additional door is located to the east of the main entry of no. 215 and comprises a later timber door with fanlight above. Various single-storey structures are located to the rear of the building.

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Figure 4. The precinct as viewed from the road reserve at the centre of Victoria Parade, looking northeast. Islington Street at left.

Figure 5. Looking northeast to 211-213 Victoria Parade, with canopy at front, and 215-219 Victoria Parade at right.

Figure 6. 207-209 Victoria Parade, showing extant parapets and lion's head moulding to party wall.

Figure 7. Looking east to the canopy at 211-213, showing later steel structure above cast iron verandah posts.

Figure 8. Looking southwest to the rear of 215-219 Victoria Parade, showing extant chimneys to the east elevation and single-storey outbuildings (at right).

Integrity/Intactness

The buildings retain a high degree of integrity to the Victorian period in fabric, form and detail. While the buildings have undergone some alterations, including the replacement of windows and doors, the loss of shopfronts at street level, the loss of some decorative detailing, and the construction of a verandah canopy at no. 211-213, these do not diminish the ability to understand and appreciate the precinct as a highly intact row of Victorian commercial premises.

Comparisons

The row of commercial premises at 205-219 Victoria Parade, Collingwood are of note as an intact and representative row of Victorian-era commercial buildings, constructed in the City of Yarra.

Substantial numbers of commercial buildings were constructed in the City of Yarra in the 1870s and 1880s. Those of the late nineteenth century typically incorporated classical elements and motifs into symmetrical parapeted facades with varying degrees of elaboration. Rendered facades were most common, with some facades of red brick and contrasting render and others of polychromatic brickwork. Rendered decoration, in the form of classical elements such as cornices, architraves, balustrading, urns, stringcourses and pediments, was commonly applied to facades. Windows were typically rectangular, sometimes arch-headed, and these were repeated regularly across upper facades.

Commercial buildings from this period were most commonly of two-storeys, with some single-storey and three or four-storey premises constructed. They were typically built as rows of attached buildings, as pairs, or as individual buildings with no side setbacks from adjoining properties and no front setback.

Within the City of Yarra, large numbers of commercial premises built in the Victorian periods are included in the Heritage Overlay as individually significant and contributory places within precincts. Comparative groups of buildings within existing, larger precincts, which broadly display characteristics similar to the precinct at 205-219 Victoria Parade, include amongst others:

- 409-417 Swan Street, Richmond (Burnley Street Precinct, HO474)

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- 91-101 Swan Street, Richmond (Swan Street Precinct, HO335)
- 129-141 Bridge Road, Richmond (Bridge Road Precinct, HO310)
- 178-186 Bridge Road, Richmond (Bridge Road Precinct, HO310)
- 97-135 Church Street, Richmond (Church Street North Precinct, HO454)
- 233-251 Victoria Street, Abbotsford (Victoria Street West Precinct, HO444).

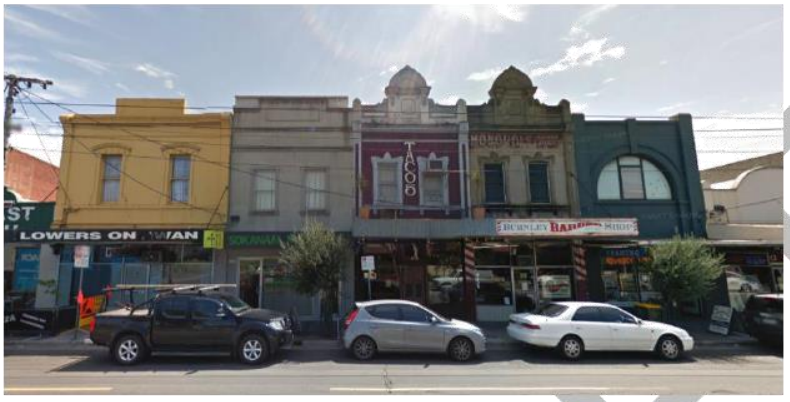

Figure 9. 409-417 Swan Street, Richmond (Burnley Street Precinct, HO474) (Google, Feb 2017).

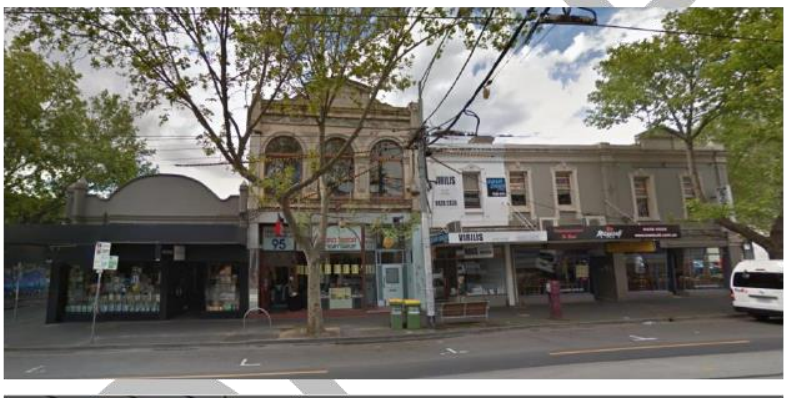

Figure 10. 91-101 Swan Street, Richmond (Swan Street Precinct, HO335) (Google, Oct 2016).

Figure 11. 129-141 Bridge Road, Richmond (Bridge Road Precinct, HO310) (Google, Nov 2016).

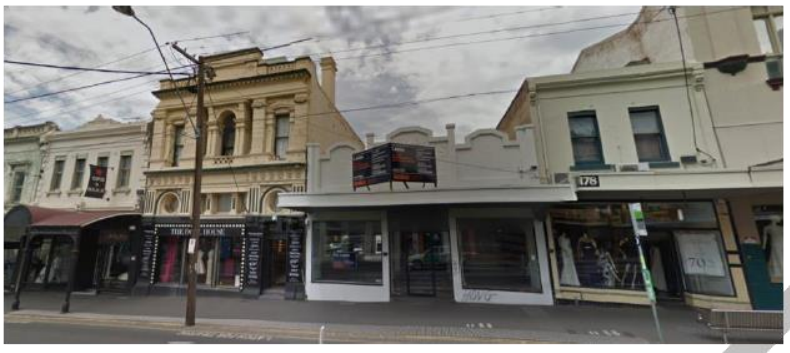

Figure 12. 178-186 Bridge Road, Richmond (Bridge Road Precinct, HO310) (Google, Oct 2016).

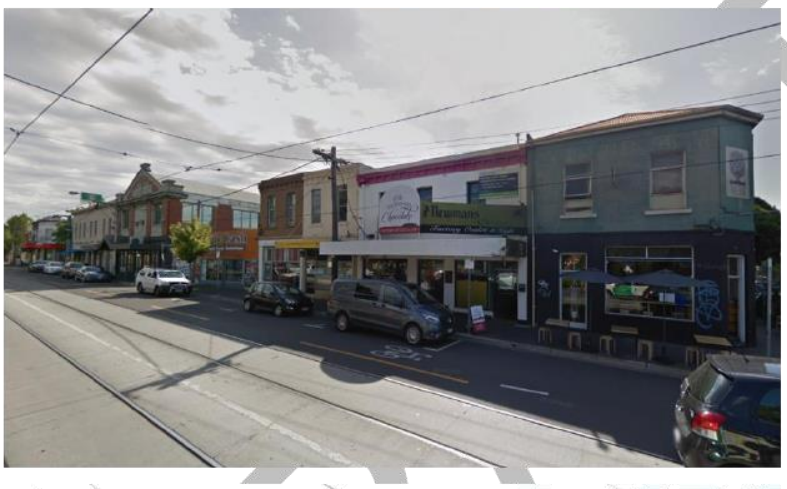

Figure 13. 97-135 Church Street, Richmond (Church Street North Precinct, HO454) (Google, Oct 2016)

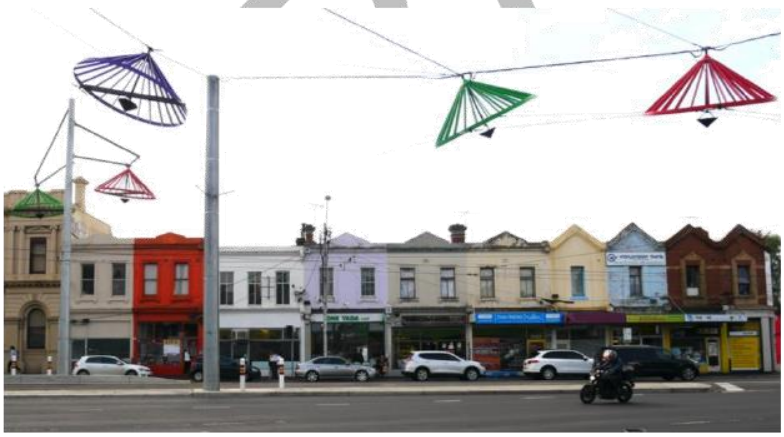

Figure 14. 233-251 Victoria Street, Abbotsford (Victoria Street West Precinct, HO444) (GJM, Sepotember 2017).

Like these places, the row at 205-219 Victoria Parade, Collingwood displays a range of characteristics which have strong associations with the Victorian period and the precinct remain highly intact to demonstrate these associations.

The commercial row at 205-219 Victoria Parade demonstrate the following Victorian characteristics:

- A variety of simple facade parapets, with pitched roofs behind;
- No front setbacks;

- Rendered walls;
- Rendered window frames, sills and hoods to upper storeys;
- Horizontal lines formed by parapets, cornices, and string courses; and
- Repetitive upper floor fenestration patterns.

Assessment Against Criteria

Following is an assessment of the place against the recognised heritage criteria set out in *Planning Practice Note 1: Applying the Heritage Overlay* (August 2018).

Criterion A: Importance to the course or pattern of our cultural or natural history

The Victoria Parade East Precinct, comprising 205-219 Victoria Parade, Collingwood, is illustrative of the historical development that occurred along a major, early commercial thoroughfare in the City of Yarra, particularly in the 'boom' period of the 1880s.

Criterion D: Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness)

The Victoria Parade East Precinct, comprising 205-219 Victoria Street, Collingwood is an intact, representative example of a row of Victorian commercial premises. The buildings clearly demonstrate the principal characteristics of nineteenth century development found along major thoroughfares within the City of Yarra and display typical features of the Victorian architectural style popular in Collingwood and across Melbourne more broadly, including parapeted facades with repetitive upper floor fenestration, rendered facades with decorative moulding and ground floor shopfronts.

Grading and Recommendations

It is recommended that the precinct be included in the Heritage Overlay of the Yarra Planning Scheme as a heritage place comprising seven 'Contributory' buildings.

Recommendations for the Schedule to the Heritage Overlay (Clause 43.01) in the Yarra Planning Scheme:

External Paint Controls?	No
Internal Alteration Controls?	No
Tree Controls?	No
Outbuildings or Fences not exempt under Clause 43.01-3?	No
Prohibited Uses Permitted?	No
Aboriginal Heritage Place?	No

Extent of the Recommended Heritage Overlay

To the property title boundaries, as indicated by the polygon on the aerial below.

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Figure 15. Recommended Extent of Heritage Overlay (Basemap Source: Nearmap, June 2020)

DRAFT

References

Hodgkinson, Clement, Noone, John, and Wilkinson, John, (1858), Plan shewing the streets and buildings in existence in East Collingwood on January 1st 1858 : with schedule of heights of bench-marks above low water datum at Queen's wharf [cartographic material]. Printed by De Gruchy & Leigh [Melbourne].

Melbourne and Metropolitan Board of Works (MMBW): Map No 28, dated 1897; Detail Plan No. 1210, dated 1899.

Sands & McDougall Directories (S&MC).

Rate Books (RB): Borough, then City of Collingwood, Barkly Ward, South Glasshouse Division: 1864, entries 137-140; 1870, entries 157-161; 1876, entries 172-177; 1879, entries 178-182; 1882, entries 178-182; 1883, entries 176-182; 1884, entries 181-187; 1885, entries 182-188; 1888, entries 234-241; 1893, entries 235-243; 1898-1900, entries 225-233.

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Victoria Parade East Precinct, 205-219 Victoria Parade, Collingwood Statement of Significance, August 2020 [DRAFT]

Heritage place: Victoria Parade East Precinct, 205-219 Victoria Parade, Collingwood, 3066	PS ref no.: HO TBC

What is significant?

The terraced row of late nineteenth century shop residences at 205-219 Victoria Parade, Collingwood.

Elements that contribute to the significance of the place include (but are not limited to):

- The terraced row's form, materials and detailing from its Victorian era period of construction, including its Victoria Parade elevation, fenestration, decorative parapets, mouldings and other details.
- Original roof forms and chimneys.
- Cast iron elements of the verandah to nos. 211-213 Victoria Parade.

The later (twentieth century) additions including rear additions, later shopfront glazing and the steel structure above the cast iron verandah posts to nos. 211-213 Victoria Parade are not significant.

How is it significant?

The Victoria Parade East Precinct at 205-219 Victoria Street is of local historical and architectural (representative) significance to the City of Yarra.

Why is it significant?

The Victoria Parade East Precinct, comprising 205-219 Victoria Parade, Collingwood, is illustrative of the historical development that occurred along a major, early commercial thoroughfare in the City of Yarra, particularly in the 'boom' period of the 1880s (Criterion A).

The Victoria Parade East Precinct, comprising 205-219 Victoria Street, Collingwood is an intact, representative example of a row of Victorian commercial premises. The buildings clearly demonstrate the principal characteristics of nineteenth century development found along major thoroughfares within the City of Yarra

and display typical features of the Victorian architectural style popular in Collingwood and across Melbourne more broadly, including parapeted facades with repetitive upper floor fenestration, rendered facades with decorative moulding and ground floor shopfronts (Criterion D).

Primary source:

Victoria Parade: Heritage Analysis and Recommendations, GJM Heritage, August 2020

Draft

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BUILT FORM REVIEW:
FITZROY WEST MIXED USE PRECINCT
HERITAGE ANALYSIS & RECOMMENDATIONS

PREPARED FOR:	City of Yarra
DATE:	12 November 2020
FILE:	2020-008

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This report is limited in its scope to consideration of post-contact cultural heritage and does not provide advice on any Aboriginal cultural heritage significance. The subject site forms part of the 37.5% of Victoria where there is currently no formally recognized Traditional Owner groups. Nonetheless, we acknowledge the Traditional Owners of the land at this place and pay our respects to their Elders past, present and emerging. For more information, please visit https://www.aboriginalvictoria.vic.gov.au

PROJECT TEAM

Jim Gard'ner | Director
Renae Jarman | Director
Felicity Coleman | Senior Heritage Consultant
Jessica Hogg | Heritage Consultant

Cover Image: *the south side of Kerr Street looking east from the intersection with Fitzroy Street (October 2018)*

GLOSSARY OF ABBREVIATIONS

Appendix 8	Incorporated Document 'City of Yarra Review of Heritage Overlay Areas 2007: Appendix 8 (revised May 2018)'
C1Z	Commercial 1 Zone
C2Z	Commercial 2 Zone
DDO	Design and Development Overlay
DPO	Development Plan Overlay
DELWP	Department of Environment, Land, Water and Planning
GRZ	General Residential Zone
HO	Heritage Overlay
I3Z	Industrial 3 Zone
MAC	Major Activity Centre
MUZ	Mixed Use Zone
NAC	Neighbourhood Activity Centre
NRZ	Neighbourhood Residential Zone
PPN	Planning Practice Note
VHR	Victorian Heritage Register

All photos taken by GJM Heritage in October 2018 and March 2020 unless otherwise stated.

DOCUMENT VERSIONS

Project No.	Version	Issued To	Date Issued
2020-008	Draft v0.1	City of Yarra	27 August 2020
	Final Draft v0.2	City of Yarra	12 November 2020

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EXECUTIVE SUMMARY

Hansen Partnership, on behalf of the City of Yarra (Council), has prepared a Built Form Review of three precincts: Alexandra Parade, Victoria Parade and Fitzroy West. This forms part of a larger project that considers built form controls for commercial high streets and mixed use / commercial zoned precincts within Fitzroy, Collingwood and (part) Clifton Hill (Figure 1). The purpose of this Built Form Review work is to determine where and how new development can appropriately occur. The desired built form outcomes will be translated into Design and Development Overlay (DDO) controls for the study area.

This report specifically considers the Fitzroy West Precinct (also referred to as the 'study area' in this report) which generally includes land within the northern part of Fitzroy between Nicholson and Brunswick Streets. The heritage advice contained within this report will help ensure that the Built Form Review and the subsequent DDO controls appropriately respond to the heritage fabric and values of the study area.

This report considers the built form parameters that are required to ensure the values of heritage places within the Fitzroy West Precinct are appropriately managed and protected, and that good heritage outcomes are being achieved for potential new or redevelopment on land subject to, or abutting, the Heritage Overlay.

Part II of this report provides an analysis of gaps, inconsistencies and inaccuracies in the current heritage controls within the study area and provides recommendations for addressing these issues.

This Heritage Analysis and Recommendation Report is presented in three parts:

Part I: The Project and Planning Framework

Part I introduces the project, the methodology applied to the project and the planning framework in which the project is occurring.

Part II: Heritage Analysis

Part II contains a heritage analysis of the study area. It details the heritage qualities and values of each precinct, identifies any gaps or issues with the existing heritage framework and provides recommendations for appropriately managing heritage places within the study area.

Part III: Built Form Recommendations

Part III contains specific built form recommendations to ensure heritage places and values are appropriately managed within a changing urban context. The specific recommendations are informed by modelling prepared by Hansen Partnership.

Figure 1. *Brunswick and Smith Street Study Area*
Source: 'Figure 2: Brunswick & Smith Street Built Form Review - Precincts' from the Victoria Parade Built Form Framework (Hansen Partnership, December 2020).

The Fitzroy West Precinct is denoted by the 'FW' and is mid-blue in colour.

PART I: THE PROJECT AND PLANNING FRAMEWORK

1.0 INTRODUCTION

1.1 YARRA'S HIGH STREETS & MIXED USE POCKETS

The City of Yarra is endowed with one of the largest and most highly intact collections of turn of the century 'High Streets' in the State of Victoria. These High Streets include the Major Activity Centres of Swan Street and Bridge Road in Richmond, Brunswick Street in Fitzroy, Smith Street straddling the suburbs of Fitzroy and Collingwood and Victoria Street, in Abbotsford and Richmond. They also include a number of Neighbourhood Activity Centres, including Gertrude Street in Fitzroy, Johnston Street in Fitzroy & Collingwood, Rathdowne Street and Nicholson Street in Carlton North, St Georges Road in Fitzroy North, and Queens Parade in Fitzroy North & Clifton Hill. Interspersed within these areas are various mixed use and commercial pockets, such as the Fitzroy West Precinct, that combine low scale residential development, former industrial and warehousing sites and local commercial offerings.

The value of these areas to the community is recognised by their inclusion in the Heritage Overlay of the Yarra Planning Scheme. However, the Activity Centre status of these High Streets and mixed use precincts presents a challenge: how do we manage the tension between the desire to retain these heritage values of these areas and the need to ensure the long-term sustainability of these centres and meet the growth objectives of the Yarra Planning Scheme?

1.2 BRIEF DESCRIPTION OF THE FITZROY WEST STUDY AREA

The Fitzroy West study area comprises the Mixed Use Zoned (MUZ) land within the area generally bounded by Alexandra Parade to the north, Brunswick Street to the east, Johnston Street to the south and Nicholson Street the west. It also includes the Commercial 2 Zoned (C2Z) land fronting Nicholson Street between Rose and Kerr streets and at the southeast corner of the intersection of Alexandra Parade and Nicholson Street. The majority of this area is designed as a Major Activity Centre within the Yarra Planning Scheme.

Streets are generally narrow (10m wide) with the exception of Westgarth and Kerr streets which have wider carriageways (20m) and are treelined.

The majority of the area is low-rise in scale with a diverse range of uses and building forms, including retail showrooms to Nicholson Street, small-scale factories and warehousing, offices and retail interspersed with residential uses. The study area includes rows of terraced housing, shop/residences, late nineteenth century and early twentieth century former factory buildings and single storey mid-late twentieth century factory and warehouse buildings. The nineteenth and early twentieth century buildings do not exceed two storeys in height. Buildings are generally constructed of face-brick or rendered masonry with punched window openings and a variety of hipped, pitched and saw-tooth roof forms.

Recent apartment developments on Kerr and Rose Street rise to around six storeys in height. No high-rise (10+ storey) development has occurred in the Fitzroy West Precinct.

The land to the north of the study area is predominately occupied by terraced housing dating from the late-nineteenth and early twentieth centuries. The Brunswick Street commercial High Street is located east of the study area, with the Johnston Street commercial High Street located to the south.

The small pocket at the southeast corner of the intersection of Alexandra Parade and Nicholson Street is occupied by a retail showroom, two low-rise office buildings and an at-grade car park dating from the second half of the twentieth century. These sites abut nineteenth century terraced housing to the east and south.

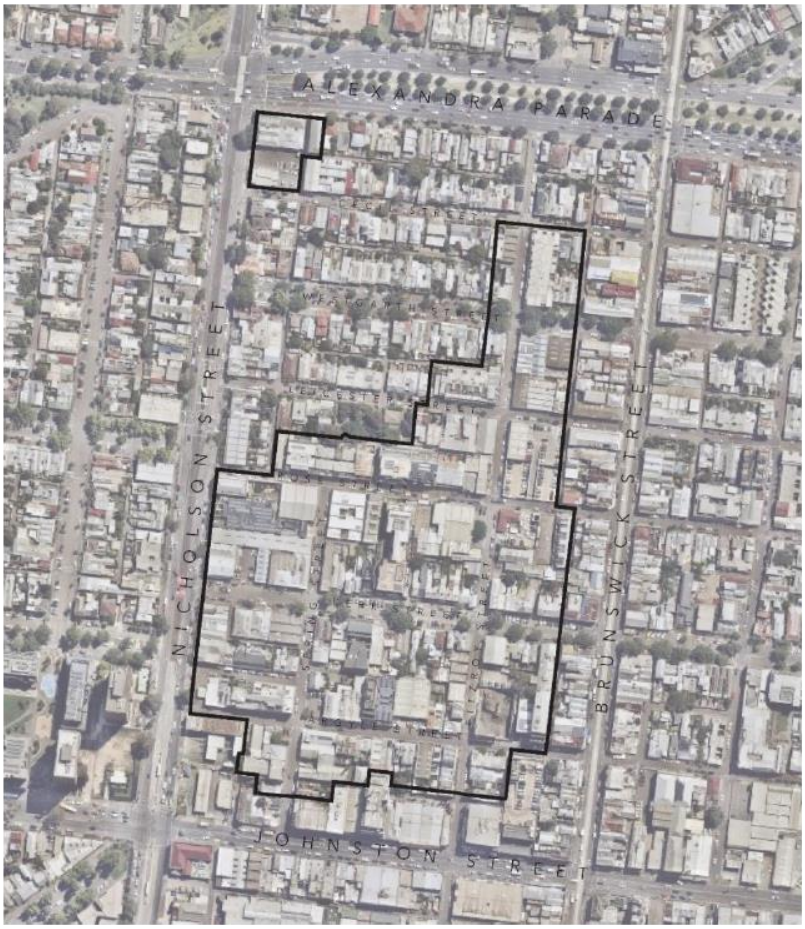

***Figure 2**: Fitzroy West precinct – outlined in black.*
Source: nearmap, 17 February 2020

1.3 BRIEF HISTORY OF FITZROY WEST

This historical summary is based on the City of Yarra Heritage Review Thematic History (Allom Lovell & Associates, 1998).

Land within Newtown (now Fitzroy) was first offered for sale in 1838, as part of the first 'suburban' land allotments outside of the Melbourne Town Reserve. It was the landowners that laid out the first major streets in the southern portion of Fitzroy – Brunswick and Gertrude Streets. Early development was subsequently concentrated in the south of Fitzroy, while the land to the north remained largely undeveloped, comprising mainly paddocks and semi-rural sites such as dairies, with housing developing primarily after 1850. Following the discovery of gold in Victoria in 1851 and the resultant gold immigration, Fitzroy became the fastest growing ward in Melbourne, with development increasing dramatically in the 1850s.

The Fitzroy West Precinct is located in the north-west portion of Fitzroy, essentially bound by Nicholson Street, Johnson Street, Brunswick Street and Alexandra Parade. From the 1850s this area established as a primarily residential area, with some light industrial development. The densely packed buildings of varying forms and scales are evident on the 1900 Melbourne and Metropolitan Board of Works (MMBW) plan (Figure 3). Evidence of the Victorian-period residential development within the precinct remains at 4 Henry Street (1858), the pair of houses at 51-53 Kerr Street (1860s), the cottage at 10 Argyle Street (c1850-c1880), terrace houses at 2-6 Spring Street (c1870-c1890) and the houses at 81-87 Westgarth Street (1880-1890). Interspersed amongst the residences were light industrial complexes, such as the Arthur Engineering Co. factory (c1870-c1890; 71 Argyle Street), the factory at 66 Leicester Street (c1864; later served as the Melbourne Chess Club), the former Cordial Factory (1870-1890; 14-16 Argyle Street) and the factory/warehouse at 70 Leicester Street (1873). Serving the surrounding community were the former Wesleyan Church (c1850-c1870; 406-408 Fitzroy Street) and the corner hotels, such as the West of England Hotel (c1860-c1890; 385-393 Fitzroy Street) and Leicester Arms Hotel (1872; 81 Leicester Street).

Following the 1890s Depression, the economic fortunes of Victoria recovered and development within the precinct continued at a slower but steady pace throughout the first half of the twentieth century. Some residences and industrial complexes were constructed during the Edwardian period, retaining the mixed character of the area. However, development during the Interwar and Postwar periods was chiefly industrial, with the construction of new factories and warehouses. Since the 1970s the precinct has again seen an increase in development, with approximately one in five properties re-developed with light industrial factories, warehouses, and residential buildings.

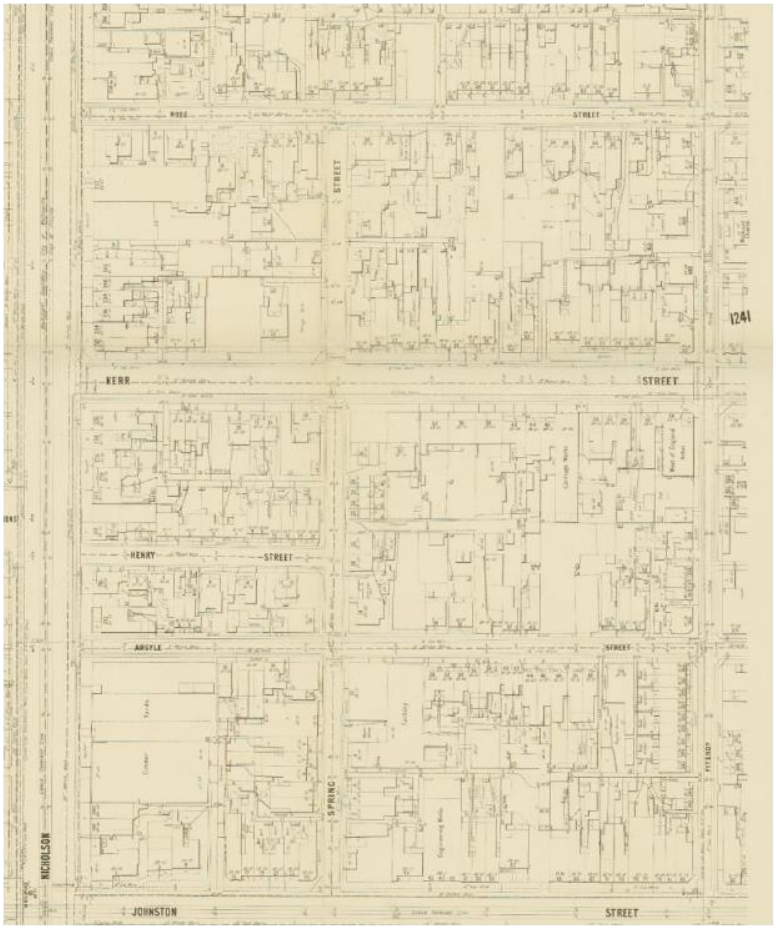

***Figure 3**: The dense development of the area between bounded by Rose, Brunswick, Johnston and Nicholson streets is evident by 1900. (MMBW Detail Plan 1241, dated 1900)*

***Figure 4**: Fitzroy Street, Fitzroy during road reconstruction c1927 (COYL, Images FL1169)*

***Figure 5:** Harrison's Cordial Factory from the corner of Argyle and Spring streets n.d. (COYL, Images FL1471)*

Sources

Allom Lovell & Associates (1998), City of Yarra Heritage Review, Thematic History.

City of Yarra Libraries (COYL), online picture collection.

Melbourne and Metropolitan Board of Works (MMBW) Detail Plan No. 1242, dated 1900.

1.4 SCOPE OF THE HERITAGE ANALYSIS & RECOMMENDATIONS REPORT

GJM Heritage has been commissioned to provide a detailed analysis of the heritage considerations for the Brunswick and Smith Street Built Form Review project area and to provide recommendations for the future management of these areas in the context of potential new development. This report considers the Fitzroy West Precinct and has been prepared simultaneously with those considering the Alexandra Parade and Victoria Parade precincts.

The following precincts have previously been considered in the *Brunswick and Smith Street Built Form Review*, GJM Heritage, 25 November 2019:

- Brunswick Street Activity Centre Spine
- Town Hall Mixed Use Precinct
- Smith Street Activity Centre Spine
- Johnston Street Activity Centre Spine
- Fitzroy East Mixed Use Precinct.

The proposed Gertrude Street Precinct and the MUZ area south of Gertrude Street between Young and Little Napier Streets was reviewed through the *Gertrude Street Built Form Framework: Heritage Analysis & Recommendations,* GJM Heritage, 9 December 2019.

The Collingwood Mixed Use Precinct was considered as part of a separate study: *Collingwood Mixed Use Pocket Heritage Analysis & Recommendations*, GJM Heritage, 6 June 2018.

The principal purpose of our engagement as part of this project is to ensure that any DDO controls arising from the Built Form Review take proper account of the heritage values of the precincts and individual buildings within the study area, in order to ensure appropriate weight is given to heritage when considering new development within the Fitzroy West Precinct.

The analysis within this report builds on the previous built form reviews and heritage analysis work conducted within the City of Yarra, and considers the parameters necessary to appropriately manage increased commercial and residential development within the precinct.

1.5 METHODOLOGY

The key documents informing the heritage analysis are:

- Yarra Planning Scheme Heritage Overlay Maps 1HO and 5HO
- Relevant Statements of Significance for heritage places and precincts within the study area and associated heritage studies
- Incorporated Document 'City of Yarra Review of Heritage Overlay Areas 2007: Appendix 8 (revised May 2018)' (Appendix 8)
- City of Yarra Heritage Grading Maps.

The above documents have been reviewed in the context of the following clauses of the Yarra Planning Scheme and the relevant Planning Practice Notes (PPNs) published by the Department of Environment, Land, Water and Planning (DELWP):

- The relevant provisions of the Yarra Planning Scheme, in particular, are:
  - Clause 15.03-1S 'Heritage conservation'
  - Clause 21.05-1 'Heritage'
  - Clause 22.02 'Development Guidelines for Sites Subject to the Heritage Overlay'
  - Clause 22.10 'Built Form and Design Policy'

  - Clause 43.01 'Heritage Overlay'
  - Clause 43.01 'Schedule to the Heritage Overlay'
  - Clause 71.02-3 'Integrated Decision Making'
- PPN 1: *Applying the Heritage Overlay* (August 2018) (PPN1)
- PPN 59: *The role of mandatory provisions in the planning schemes* (September 2018) (PPN59)
- PPN 60: *Height and setback controls for activity centres* (September 2018) (PPN60).

We note that the Minister for Planning has authorised the preparation and exhibition of Amendment C269yara to introduce a new Municipal Planning Strategy, local policies and supporting documents into the Yarra Planning Scheme. This amendment has gone on exhibition but is at an early stage of the amendment process, therefore the advice provided in this report has been informed by the relevant existing Local Planning Policy, in particular clauses 22.02, 22.03 and 22.10.

The following Planning Panels Victoria (Panel) reports are relevant to the implementation of the Built Form Review, particularly as many consider the appropriateness of DDOs (containing both mandatory and discretionary provisions) within activity centres (or in the case of Melbourne Amendment C240, the Capital City Zone) that are also subject, in part, to the Heritage Overlay:

- Boroondara C108 'Neighbourhood Centres and Commercial Corridors' (26 February 2014)
- Moreland Planning Scheme Amendment C134 'Brunswick Activity Centre' (15 May 2015)
- Melbourne Planning Scheme Amendment C240 'Bourke Hill' (4 May 2015)
- Bayside Planning Scheme Amendments C113, C114 and C115 'Mandatory provisions for the Sandringham Village, Bay Street and Church Street Activity Centres' (14 January 2015)
- Whitehorse Planning Scheme Amendment C175 'Box Hill Metropolitan Activity Centre' (6 October 2017).
- Stonnington Planning Scheme Amendment C223 'Glenferrie Road and High Street Activity Centre' (15 December 2017)
- Darebin Planning Scheme Amendment C161 'Fairfield Village' (3 December 2018)
- Yarra Planning Scheme Amendment C220 'Johnston Street Built Form Controls' (22 February 2019)
- Melbourne Planning Scheme Amendment C308 'Central Melbourne Urban Design' (16 May 2019)
- Yarra Planning Scheme Amendment C231 'Queens Parade Built Form Review' (31 October 2019)
- Yarra Planning Scheme Amendment C223 '81-95 Burnley Street and 26 Doonside Street, Richmond' (23 July 2020)
- Yarra Planning Scheme Amendment C191 'Swan Street Built Activity Centre' (15 October 2020).

The following reports have also informed this study:

- 'Review & Development of the City of Yarra Landmarks Policy – Landmarks & Views Assessment' prepared by Ethos Urban for the City of Yarra, October 2019.
- 'Fitzroy & Collingwood Built Form Review Stage 2: Fitzroy West Built Form Framework', Hansen Partnership, April 2020.
- Previous heritage built form reports and analysis prepared by GJM Heritage for the Brunswick and Smith Street, Swan Street and Queens Parade study areas.

We have approached the preparation of our heritage analysis as follows:

1. Completion of a desktop review of the above listed documents, heritage mapping and grading information, and the Statements of Significance for heritage places within the study area, including those places included in the Victorian Heritage Register (VHR). The extent of the Heritage Overlays were cross-checked against Google Streetview and VicPlan. This preliminary review familiarised the project team with the heritage fabric of the study area prior to fieldwork being undertaken.
2. Completion of fieldwork by Jim Gard'ner and Ros Coleman of GJM Heritage. All buildings and structures within the study area were inspected from the public realm with particular attention paid to the presentation of heritage buildings to the public realm (principally the street frontage). The purpose of the fieldwork was to:
   - Review the suitability of the extent of the existing Heritage Overlays and to identify if gaps existed.
   - Review the suitability of the existing Statements of Significance for heritage places against the extant heritage fabric and to identify where the statements required updating for the purposes of properly considering built form recommendations.
   - Review the extant heritage fabric against the heritage gradings contained within Appendix 8 and the Yarra Heritage Grading Map to identify any significant inconsistencies or inaccuracies.
   - Review the heritage buildings and streetscapes within the study area to identify the architectural and streetscape heritage features (e.g. parapets, roof forms, view lines, corner sites) that are relevant to a consideration of built form recommendations.
3. Participation in a workshop with Council and Hansen Partnership. The workshop:
   - Reviewed the proposed 'built form precincts' within the study area, characterised by existing built form characteristics.
   - Identified the desired future character of the built form precincts against heritage analysis and state and local planning policy drivers.

- Identified local landmarks.
- Tested built form parameters for new development against the existing heritage fabric utilising cross-sectional drawings with sight-lines taken at natural eye level (1.6m) on the public footpath, and 3D modelling prepared by Hansen Partnership. Views were only considered from public streets; laneway and private realm views were not assessed.

4. Finalisation of heritage recommendations for new built form parameters having considered the above.

2.0 ANALYSIS OF THE PLANNING CONTEXT

2.1 ACTIVITY CENTRE PLANNING AND HERITAGE

The *Planning & Environment Act 1987* and the Victoria Planning Provisions (VPP) requires planning and responsible authorities to take a balanced approach to strategic and statutory planning functions that consider potentially competing objectives in an integrated manner to deliver a net community benefit for current and future generations.

The objectives of planning in Victoria as set out in Section 4(1) of the Planning and Environment Act are:

- *To provide for the fair, orderly, economic and sustainable use and development of land.*
- *To provide for the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity.*
- *To secure a pleasant, efficient and safe working, living and recreational environment for all Victorians and visitors to Victoria.*
- *To conserve and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value.*
- *To protect public utilities and other assets and enable the orderly provision and coordination of public utilities and other facilities for the benefit of the community.*
- *To facilitate development in accordance with the objectives set out in the points above.*
- *To facilitate the provision of affordable housing in Victoria.*
- *To balance the present and future interests of all Victorians.*

Clause 71.02-3 of the VPP addresses 'integrated decision making', and states:

> *Society has various needs and expectations such as land for settlement, protection of the environment, economic well-being, various social needs, proper management of resources and infrastructure. Planning aims to meet these by addressing aspects of economic, environmental and social wellbeing affected by land use and development.*
>
> *Planning and responsible authorities should endeavour to integrate the range of panning policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations. However, in bushfire affected areas, planning and responsible authorities must prioritise the protection of human life over all other policy considerations.*
>
> *Planning authorities should identify the potential for regional impacts in their decision making and coordinate strategic planning with their neighbours and other public bodies to achieve sustainable development and effective and efficient use of resources.*

Activity Centres and mixed use precincts that are also subject to extensive Heritage Overlay controls, such as the majority of the Fitzroy West study area, are an example of where the tension between competing planning objectives must be resolved in a balanced way. Fitzroy West has excellent public transport connections, vibrant retail, commercial and hospitality uses and a high demand for housing choice. The Fitzroy West Precinct houses a diverse range of uses and building types within which there are areas of highly intact late nineteenth century terraced housing and individual heritage buildings that are highly valued by the local community. A balance between the demand for more intensive development with the management of heritage values is therefore required. To achieve this, it is considered necessary that any DDO – and the background work that underpins it – specifically includes heritage considerations which frames the design objectives.

Amendment C269yara proposes to introduce Clause 11.03-1L to the Yarra Planning Scheme which provides local policy in relation to Major, Neighbourhood and Local Activity Centres and designates the majority of the Fitzroy West study area as a Major Activity Centre (MAC) (Figure 6). Note: the small part of the study area located at the southeast corner of the Intersection of Alexandra Parade and Nicholson Street does not form part of any proposed or designated Activity Centre.

Figure 6. *Major and Neighbourhood Activity Centres in Fitzroy (Council endorsed version of Clause 11.03-1L)*

2.2 YARRA PLANNING SCHEME – HERITAGE PROVISIONS

Council has well-established heritage provisions within its planning scheme at Clauses 21.05-1 and 22.02. Also of relevance to the protection of the heritage values of the study area is Clause 22.03, which includes policy to protect the visual prominence of landmarks visible from within the study area and Clause 22-10 which includes policy for new development abutting land within the Heritage Overlay

2.2.1 Heritage Policy

The relevant objective within Clause 21.05-1 'Heritage' of the Municipal Strategic Statement (MSS) is *Objective 14: To protect and enhance Yarra's heritage places*. The relevant strategies to implement this objective are:

- *Strategy 14.1 - Conserve, protect and enhance identified sites and areas of heritage significance including pre-settlement ecological heritage.*
- *Strategy 14.2 - Support the restoration of heritage places.*

- *Strategy 14.3 - Protect the heritage skyline of heritage precincts.*
- *Strategy 14.4 - Protect the subdivision pattern within heritage places.*
- Strategy 14.5 - *Protect the significant landscape and heritage within streets, parks, gardens, waterways or other open spaces*
- *Strategy 14.6 - Protect buildings, streetscapes and precincts of heritage significance from the visual intrusion of built form both within places and from adjoining areas.*
- *Strategy 14.7 Protect sites of significance to Aboriginal people.*
- *Strategy 14.8 Apply the Development Guidelines for sites subject to a Heritage Overlay policy at clause 22.02.*
- *Strategy 14.9 Apply the Landmarks and Tall Structures policy at clause 22.03.*

Objective 14 and its associated strategies are considered to be generally compatible with appropriately sited and scaled higher density development within those parts of the Fitzroy West Precinct that are not solely occupied by rows of terraced housing. Strategy 14.3 to 'Protect the heritage skyline of heritage precincts' would not be achieved unless new upper-level development was to be of such low scale that it was fully concealed when viewed from the opposite side of the street as defined by the sightline tests described in Figures 2 and 3 of Clause 22.02. Avoiding any new visible built form above the parapets of buildings within the Heritage Overlay - although achieving the 'best' heritage outcome - would not enable a level of development that may reasonably be expected to be achieved within this diverse mixed use precinct, nor meet other strategic directions of the Yarra Planning Scheme. A balance therefore needs to be struck between achieving the outcome sought by Strategy 14.3 and meeting the development objectives of the City of Yarra. An acceptable heritage outcome would be one where, although new built fabric is visible above the parapets, roofline or chimneys of these buildings, the development is of a scale, set back and massing such that it retains the primacy of the heritage streetscape and avoids visually dominating existing heritage buildings and streetscapes.

It is considered that those areas of the study area containing only rows of single- or two-storey terraced housing cannot reasonably achieve higher density development without compromising the heritage value of these areas.

Clause 22.02 'Development Guidelines for Sites Subject to the Heritage Overlay' provides detailed guidance for development of places within the Heritage Overlay, including demolition. The relevant objectives of Clause 22.02 are:

- *To conserve Yarra's natural and cultural heritage.*
- *To conserve the historic fabric and maintain the integrity of places of cultural heritage significance.*
- *To retain significant view lines to, and vistas of, heritage places.*
- *To preserve the scale and pattern of streetscapes in heritage places.*
- *To encourage the preservation, maintenance, restoration and where appropriate, reconstruction of heritage places.*

- *To ensure the adaptation of heritage places is consistent with the principles of good conservation practice.*
- *To ensure that additions and new works to a heritage place respect the significance of the place.*
- *To encourage the retention of 'individually significant' and 'contributory' heritage places.*
- *To protect archaeological sites of cultural heritage significance.*

Again, these objectives do not preclude higher density development within the Fitzroy West Precinct with the exception of those parts of the study area occupied by single- and two-storey terraced housing. Larger scale development in these areas would be incompatiable with the objective '*To preserve the scale … of streetscapes in heritage places*'.

The demolition policy provided at Clause 22.02-5.1 encourages the retention of 'individually significant' and 'contributory' buildings within a heritage precinct. Removal of part of a heritage place or contributory element is contemplated if (in general terms) it can be demonstrated that the removal of the part will not adversely affect the significance of the building, or – for a contributory building – the part is not visible from the street, abutting a park or public open space.

Given that the significance of most heritage places within the Fitzroy West Precinct lies predominantly in their presentation to the public realm, including facade detailing and the fine-grained pattern of subdivision, it is considered that a certain amount of rear demolition and redevelopment can be contemplated under the existing (or proposed) heritage policy.

With the exception of those heritage places included on the VHR – and therefore regulated under the *Heritage Act 2017* – the heritage controls within the Yarra Planning Scheme effectively limits the control of heritage fabric within the study area to that which is visible from the street, including primary building facades, rear laneway views (where they exist) and visible roof and chimney elements..

In relation to 'New Development, Alterations and Additions', Clause 22.02-5.7.1 sets out the following policy:

General

Encourage the design of new development and alterations and additions to a heritage place or a contributory element to a heritage place to:

- *Respect the pattern, rhythm, orientation to the street, spatial characteristics, fenestration, roof form, materials and heritage character of the surrounding historic streetscape.*
- *Be articulated and massed to correspond with the prevailing building form of the heritage place or contributory elements to the heritage place.*
- *Be visually recessive and not dominate the heritage place.*
- *Be distinguishable from the original historic fabric.*
- *Not remove, cover, damage or change original historic fabric.*

- *Not obscure views of principle façades.*
- *Consider the architectural integrity and context of the heritage place or contributory element.*

Encourage setbacks from the principal street frontage to be similar to those of adjoining contributory buildings; where there are differing adjoining setbacks, the greater setback will apply.

Encourage similar façade heights to the adjoining contributory elements in the street. Where there are differing façade heights, the design should adopt the lesser height.

Minimise the visibility of new additions by:

- *Locating ground level additions and any higher elements towards the rear of the site.*
- *Encouraging ground level additions to contributory buildings to be sited within the 'envelope' created by projected sight lines (see Figure 1).*
- *Encouraging upper level additions to heritage places to be sited within the 'envelope' created by projected sight lines (for Contributory buildings refer to Figure 2 and for Individually significant buildings refer to Figure 3).*
- *Encouraging additions to individually significant places to, as far as possible, be concealed by existing heritage fabric when viewed from the front street and to read as secondary elements when viewed from any other adjoining street.*

Discourage elements which detract from the heritage fabric or are not contemporary with the era of the building such as unroofed or open upper level decks or balconies, reflective glass, glass balustrades and pedestrian entrance canopies.

The policy for full or partial concealment of rear additions to residential buildings as described in Figures 2 and 3 of the General Policy at Clause 22.02 is modified by the Specific Requirements at Clause 22.02-5.7.2 that applies to corner sites and sites with dual frontages, and industrial, commercial and retail heritage places:

Corner Sites and Sites with Dual Frontages

Encourage new building and additions on a site with frontages to two streets, being either a corner site or a site with dual street frontages, to respect the built form and character of the heritage place and adjoining or adjacent contributory elements to the heritage place.

Encourage new buildings on corner sites to reflect the setbacks of buildings that occupy other corners of the intersection.

…

Industrial, Commercial and Retail Heritage Place or Contributory Elements

Encourage new upper level additions and works to:

- *Respect the scale and form of the existing heritage place or contributory elements to the heritage place by being set back from the lower built form elements. Each higher element should be set further back from lower heritage built forms.*
- *Incorporate treatments which make them less apparent.*

The specific provisions prevail over the general policy where there is a conflict or inconsistency. This establishes an expectation that new development behind industrial, commercial and retail buildings within the Heritage Overlay is not going to be fully or substantially concealed from public realm views. In addition, it should be noted that Kerr and Westgarth streets, like the typical commercial high streets in the City of Yarra, are 20m wide (building line to building line) whereas the remaining streets within the study area are approximately 10m wide, consistent with the residential examples shown in Figures 2 and 3 of Clause 22.02-5.7.1. In effect, the wider the street, the more visible a new rear development will be.

Although a greater level of concealment would generally provide a better heritage outcome, this specific sightline-based guidance in the heritage policy is designed to preserve and enhance the character and appearance of predominantly one and two-storey dwellings within typical narrow residential streets and the policy does not require that this be applied to multi-storey development of commercial or industrial buildings.

Further, the policy at 22.02-5.7.1 to 'Discourage elements which … are not contemporary with the era of the building such as … reflective glass, glass balustrades and pedestrian entrance canopies' may not achieve an appropriate urban design and architectural outcome in the industrial parts of the Fitzroy West Precinct. In such areas, a 'contrasting' or 'interpretative' design approach for new taller development above the heritage building is likely to be more recessive than a 'respectful' or 'historicist' one that would lead to the new additions inappropriately mimicking the historic form and potentially being more visually intrusive. Additions to the streetscapes of intact terraced housing and shop/residences should be more strictly informed by the materiality, rhythm, fenestration, roof forms and general heritage character of the streetscape.

2.2.2 Landmarks and Tall Structures

Clause 22.03 – 'Landmarks and Tall Structures' identifies a number of landmark buildings and advertising signs to which views should be protected. None of the landmarks and tall structures are located within the study area, nor does the study area provide any 'primary' or 'secondary' views of these structures as defined by the *Landmarks & Views Assessment* (Ethos Urban, October 2019).

2.2.3 Heritage Overlay

The head heritage provision of the VPP, Clause 43.01 'Heritage Overlay', has the following purpose:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*

- *To conserve and enhance heritage places of natural or cultural significance.*
- *To conserve and enhance those elements which contribute to the significance of heritage places.*
- *To ensure that development does not adversely affect the significance of heritage places.*
- *To conserve specifically identified heritage places by allowing a use that would otherwise be prohibited if this will demonstrably assist with the conservation of the significance of the heritage place.*

Clause 43.01-8 sets out 'Decision Guidelines' – in addition to those included in Clause 65 – that the Responsible Authority must consider before determining a permit application. These are:

- *The Municipal Planning Strategy and the Planning Policy Framework.*
- *The significance of the heritage place and whether the proposal will adversely affect the natural or cultural significance of the place.*
- *Any applicable statement of significance (whether or not specified in the schedule to this overlay), heritage study and any applicable conservation policy.*
- *Any applicable heritage design guideline specified in the schedule to this overlay*
- *Whether the location, bulk, form or appearance of the proposed building will adversely affect the significance of the heritage place.*
- *Whether the location, bulk, form and appearance of the proposed building is in keeping with the character and appearance of adjacent buildings and the heritage place.*
- *Whether the demolition, removal or external alteration will adversely affect the significance of the heritage place.*
- *Whether the proposed works will adversely affect the significance, character or appearance of the heritage place.*
- *Whether the proposed subdivision will adversely affect the significance of the heritage place.*
- *Whether the proposed subdivision may result in development which will adversely affect the significance, character or appearance of the heritage place.*
- *Whether the proposed sign will adversely affect the significance, character or appearance of the heritage place.*
- *Whether the lopping or development will adversely affect the health, appearance or significance of the tree.*
- *Whether the location, style, size, colour and materials of the proposed solar energy facility will adversely affect the significance, character or appearance of the heritage place.*

While some of these considerations are not obviously consistent with the addition of higher density development behind heritage buildings, the first purpose of 43.01

and the first decision guideline encompasses the whole Municipal Planning Strategy and the Planning Policy Framework (integrated decision-making). Therefore, a balance must be struck by the Responsible Authority between achieving the objectives of the Heritage Overlay and meeting the objectives of other parts of the VPPs including Activity Centre policy and mixed use or commercial zoning. There is established precedent for new rear development to be accommodated behind the front part of heritage buildings in commercial and industrial precincts throughout inner Melbourne without substantially compromising the identified heritage values of these heritage places.

3.0 HERITAGE IN DESIGN AND DEVELOPMENT OVERLAYS – PANEL FINDINGS

Planning Panels Victoria has considered a number of Planning Scheme Amendments that are of particular relevance to this project: Bayside Amendments C113, C114 and C115, Boroondara C108, Darebin Amendment C161, Moreland Amendment C134, Melbourne Amendments C240, Stonnington Amendment C223, Whitehorse Amendment C175, and Yarra Amendments C220 and C231 and C191. While these mainly consider the commercial High Street typology they provide useful guidance for this mixed use precinct that also forms part of a Major Activity Centre.

Panels for these Amendments considered the appropriateness of mandatory controls in the context of PPN59 and, in their recommendations provide guidance on which circumstances mandatory controls should be applied. In response to submissions, they also considered the issue of whether or not the DDO control should include objectives to protect heritage or whether this should be the sole domain of the Heritage Overlay provisions. In addition to these panel reports, Amendment C123 to the Banyule Planning Scheme, approved via ministerial intervention, provides further instruction as to the role of mandatory controls.

In addition, Yarra Amendment C223, while not introducing a DDO does consider the appropriateness of design guidelines to protect the heritage values of industrial buildings, such as those located in the study area.

These reports also provide useful guidance on the form and wording of DDO controls.

In summary, Panel has concluded that:

- The Heritage Overlay identifies what is significant within an Activity Centre.
- Heritage is an appropriate issue for DDOs to provide guidance on to inform future development.
- Mandatory controls should be used in exceptional circumstances and their application should be guided by PPN59 and PPN60.
- Formulae defining the proportion of new built form that can be viewed above the street wall is an appropriate mechanism for informing the design and massing of new built form.

The approach taken in the formulation of the built form controls to manage development affecting heritage places is to complement existing policy. Clause 22.02 - 'Development Guidelines for Sites Subject to the Heritage Overlay' and relevant parts of Clause 22.10 – 'Built Form and Design Policy' have been taken as the starting point for the development of these complementary controls and policy.

Where existing policy is considered to be satisfactory, no additional policy has been recommended. However, specific policy has been recommended where it is considered necessary to provide guidance to recognise the current role of the Fitzroy West Precinct as diverse mixed use area and to enable this future development while protecting its heritage values.

A discussion of the most relevant of the Panel reports is provided below, and at Section 3.10 the recommendations for each panel are summarised with comment on the implications for this review.

3.1 YARRA PLANNING SCHEME AMENDMENT C231

GJM Heritage prepared the Queens Parade Built Form Heritage Analysis and Recommendations (11 December 2017) which informed C231yara. C231yara seeks to apply built form controls in the form of DDOs to Queens Parade, Fitzroy North and Clifton Hill and amend Heritage Overlay controls that apply within the study area.

Of relevance to the Fitzroy West Precinct, the Panel for Amendment C231 found that the strategic work undertaken in support of the Amendment was strong and that it assisted in justifying the majority of the built form parameters recommended in DDO16, particularly with respect to mandatory controls. At p29 of the Panel Report, the Panel notes that:

> *Exceptional circumstances exist for the application of mandatory controls for development as the QPAC (Queens Parade Activity Centre) includes a number of significant and contributory heritage places and heritage fabric set within a consistent streetscape form.*

Panel recognised that the wider, boulevard urban context would lead to a high visibility of upper-level development which in turn warrants the application of height limits, and linked the use of mandatory (instead of preferred) controls to the consistency of the heritage streetscape.

The Panel supported the mandatory upper-level setback of 8m within the Council preferred DDO and the combination of mandatory and preferred height controls where this will provide certainty where distinctive heritage fabric warrants greater protection. It also recognised that an Activity Centre with diverse built form can have areas of little change where growth can be accommodated elsewhere.

3.2 YARRA PLANNING SCHEME AMENDMENT C220

Johnston Street in Collingwood and the western part of Abbotsford (west of the railway viaduct) is a highly intact, predominantly Victorian/early-Edwardian era streetscape covered by the Heritage Overlay. C220yara introduced DDO controls along Johnston Street.

The Panel report provides commentary which is of relevance to a consideration of the proposed built form controls for Fitzroy West Precinct. In particular, the Panel stated stated:

> *In urban design terms, the 6 metre setback will retain the 'human scale' of Johnston Street, secure the distinction between the street wall and upper levels and will reduce the potential for overshadowing and adverse wind conditions.*
>
> ...

The Panel does not agree that less significant sections [of Johnston Street] warrant a different treatment. Less significant areas equally deserve to exhibit the overall urban design outcome: a strong street wall with a distinct setback to the mid level form.

To achieve these objectives the Panel recommended that a building envelope requirement be established that, rather than being based on a sightline test from the opposite side of the street new, required new development to be within a 45° 'angular plane' drawn from the maximum street wall height. In combination with upper-level front setbacks and maximum building heights, the angular plane creates a further upper-level setback consistent with the application of the policy objective at Clause 22.02-5.7.1 that each higher element to industrial, commercial and retail buildings should be set further back from the lower heritage built form.

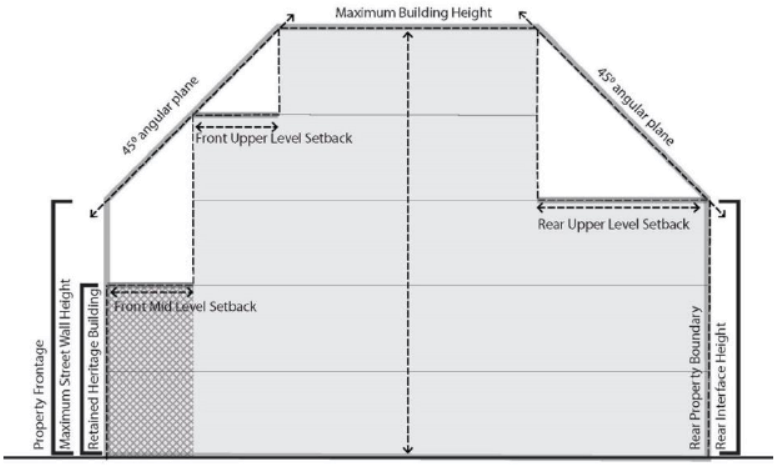

***Figure 7**: Building envelope requirement – Heritage Building (Figure 1 in Schedule 15 to Clause 43.02 Design and Development Overlay).*

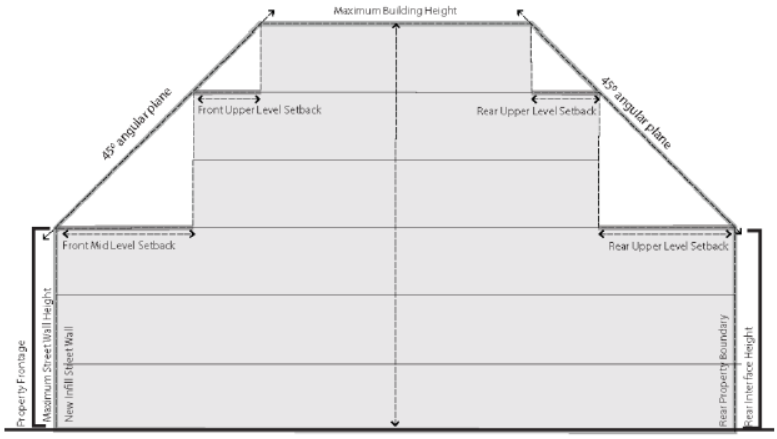

***Figure 8**: Building envelope requirement – Infill Building (Figure 2 in Schedule 15 to Clause 43.02 Design and Development Overlay).*

3.3 YARRA AMENDMENT C191

Swan Street, Richmond is a Major Activity Centre with a highly intact turn of the century 'High Street' occupying a large proportion of its length, as well as smaller precincts and individual heritage places dispersed along its full extent.

Amendment C191yara proposes to introduce four DDOs (DDO25, DDO26, DDO27 and DDO28) to the Activity Centre, with the different controls reflecting the different existing physical conditions and the potential development opportunities evident throughout the Activity Centre.

In its report of 15 October 2020, the Panel supported the use of mandatory controls for street wall and 6m upper-level setbacks for individually significant heritage places and intact heritage streetscapes, as well as mandatory controls for overall building heights in intact heritage streetscapes. Mandatory controls were also supported to protect views to local landmarks.

For parts of the Activity Centre that present a less consistent and more diverse built form expression, discretionary controls were considered to be appropriate.

In contrast to the Panel considering C220yara, the C191yara Panel considered that it was unnecessary to provide additional parameters to guide the form of upper level development, instead finding that the combination of specified heights, setbacks and design requirements for new upper-level development to be "visually recessive", were sufficient.

3.4 MORELAND AMENDMENT C134

Sydney Road, Brunswick is a Major Activity Centre with highly intact, predominantly Victorian streetscapes covered by the Heritage Overlay. Gazetted on 11 August 2016, C134 introduced DDO18, DDO19 and DDO20. DDO18 set mandatory street wall heights on Sydney Road north of Brunswick Road of between 8m and 11m.

DDO18 provides a preferred minimum 5m setback for development above the street wall and to establish a preferred ratio of ¾ : ¼ street wall to new built form through the following design objective:

- *Be designed to ensure that it occupies no more than one quarter of the vertical angle defined by the whole building in the view from an eye-level of 1.7 metres on the opposite side of the street, as illustrated in Figure 1 below.*

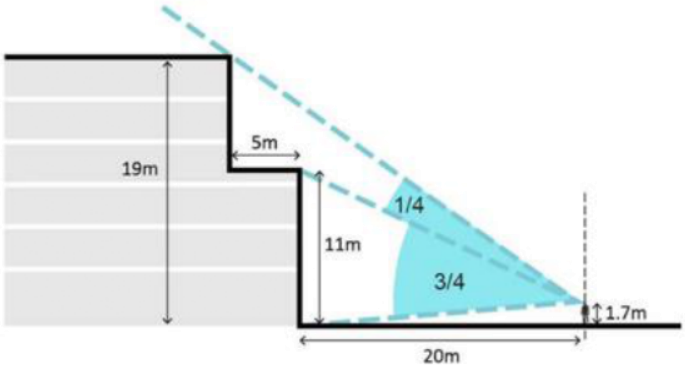

***Figure 9**: Upper-level setbacks along Sydney Road (Figure 1 in Moreland DDO18).*

DDO18 also provides a useful model for dealing with upper level development where the existing heritage building has a street wall height of less than the 11m street wall height provided in that control:

- *Where an existing building with a street wall height of less than 11 metres is to be retained for heritage reasons new development may occupy more than one quarter of the vertical angle defined by the whole building outlined in Figure 1* [Figure 9 of this report] *above.*

3.5 BOROONDARA AMENDMENT C108 (C108)

The Panel considering C108boro discussed the use of mandatory street wall height, upper-level setbacks and overall heights across 31 Neighbourhood Activity Centres and three commercial corridors (Camberwell Road/Burwood Road and Canterbury Road).

In its report dated 26 February 2014, the Panel noted its strong support for the protection of heritage assets in Boroondara and recommended reinstatement of policy in the exhibited Amendment that encouraged new development on or adjoining a heritage place to be moderated. In particular, the Panel recommended that policy guidance be included that:

> *The combination of the height, setbacks and design treatment of new buildings should ensure a heritage place on or adjoining the site is not overwhelmed or dominated.*

The Panel also considered the use of mandatory height and setback controls, and recognised that the version of *Plan Melbourne* at that time foreshadowed stronger policy support for the use of mandatory provisions in neighbourhood centres (and residential areas) to increase planning certainty.

The Panel report recognised that mandatory provisions that prescribed standards without a capacity for departures have been supported in areas of consistently high heritage value with consistent character. While acknowledging the heritage values and 'main street' character of the Neighbourhood Activity Centres subject to C108, the Panel also recognised that new development will be visible behind the retained façades – particularly from oblique views – and that invisibility of upper-level development is either unreasonable or not necessary to maintain the primacy of the street wall.

In conclusion, the Panel accepted some use of mandatory controls within Boroondara's neighbourhood centres, but not in the commercial corridors:

> *The Panel recognises that Plan Melbourne foreshadows stronger policy support for the use of mandatory provisions in neighbourhood centres (and residential areas) to increase certainty. The Panel considers the combination of the street wall and upper level setbacks is critical in neighbourhood centres to maintain the established main street character and in these situations mandatory controls can be justified. However, we consider development with elements that exceed the nominated height and/or adopt alternative setbacks should not be precluded as they may produce better outcomes in some circumstances. The overall maximum height limits should therefore remain discretionary to allow for such circumstances.*

It was the Panel's conclusion that mandatory street wall heights which reflected the dominant character of the neighbourhood centres were acceptable (either 8m or 11m, depending on the context). It also found that if mandatory upper-level setbacks were to be adopted, they should be sufficient to ensure that in most cases the upper-storey will be clearly distinguishable from the street wall of the heritage building and be a recessive element in neighbourhood centre streetscapes. To achieve this, the Panel identified 5m as being an appropriate mandatory minimum setback for upper-level development in the context of Boroondara's Neighbourhood Activity Centres.

3.6 WHITEHORSE AMENDMENT C175

C175whit sought to implement the *Box Hill Metropolitan Activity Centre Built Form Guidelines* (Hansen Partnership, 2016) by rezoning land, introducing the Built Form Guidelines as a reference document and applying a new DDO Schedule to introduce built form controls. In its consideration of this Amendment, the Panel Report dated 6 October 2017 stated:

> *The Panel would have benefited from a more sophisticated analysis of the heritage precinct that utilised three-dimensional modelling, sight lines and view-sheds to help understand the rationale for the proposed heritage related controls. Without this basic information, it is difficult to determine whether the proposed controls are appropriate…*

and concluded that in the absence of this modelling:

- *The Built Form Responses regarding Heritage should not proceed in their current form.*

The absence of 3D modelling, and sight line and view-shed analysis in relation to those areas of the Box Hill Activity Centre that are subject to the Heritage Overlay appears to have been critical in Panel recommending that the proposed built form controls not be applied to address heritage.

3.7 STONNINGTON AMENDMENT C223

The Glenferrie Road and High Street Major Activity Centre encompasses the two linear commercial strips of Glenferrie Road and High Street in Malvern as well as two peripheral areas. The Heritage Overlay, which covers all of Glenferrie Road and most of High Street, acknowledges the area for its '*metropolitan significance as one of the major strip shopping centres to have retained its role into the late twentieth century, and for the quality and integrity of its Victorian, Federation and Interwar building stock*'.[1] C223ston sought to apply new built form provisions through the application of DDO19 to the entire Activity Centre, with precincts A and B covering the commercial and heritage precincts of Glenferrie Road and High Street respectively.

While the Amendment proposed an 8-10m setback above the street wall for precincts A and B, the Panel found it to be effectively a concealment of upper-level additions, supporting instead a 5m setback as adequate to respect heritage values without removing development capacity. This was derived from the precedent in the Boroondara Planning Scheme and was seen to equate to the typical first room of a Victorian-era building. The Amendment was otherwise generally supported by the Panel as an appropriate balance between protecting heritage values and enabling growth. Discretionary preferred maximum building heights between 14.5 metres (4 storeys) and 21 metres (6 storeys) were supported through precincts A and B.

The Panel also reviewed the drafting of discretionary and mandatory provisions, addressing the appropriateness of the terms 'should' and 'must'. The Panel noted that confusion arose from the DDO parent clause, and until such time as the clause is redrafted, the term 'must' is to be used for schedule requirements with the addition of further clarification if it can be varied with a permit.

3.8 DAREBIN AMENDMENT C161

C161 proposed to implement the '*Fairfield Village Heritage Assessment, 2017*' (Heritage Intelligence) and '*Fairfield Village Built Form Guidelines 2017*' (Hansen Partnership) through the application of Heritage Overlay (HO313) and DDO21 to the Fairfield Village Neighbourhood Centre. DDO21 created two sub precincts: Area 1 to

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[1] *Retrieved from Victorian Heritage Database, 18 January 2018 (https://vhd.heritagecouncil.vic.gov.au/places/31530)*

be applied to the proposed HO313 precinct; with the remainder of the Neighborhood Centre covered by Area 2.

The Panel found the application of the Heritage Overlay in conjunction with the DDO would enable the precinct *'to support a variety of housing typologies at increased densities'* in a way that '*allows the heritage place to be identified and understood*'. Further, the Panel supported the application of a mixture of mandatory and discretionary controls to Area 1 of the DDO in the form of:

- Mandatory maximum building heights at 14.5m and 17.5m (four and five storey), triggered by a lot width of 24m for five-storey.
- Mandatory maximum street wall height to be the greater of 8.5m or the adjacent street wall.
- Discretionary minimum front setbacks above the street wall at generally 4m, and 8m if constructing to a fifth level.
- The addition of a 3m side setback at the fifth-floor level – introduced as a discretionary provision to prevent the creation of a dominating wall of development along Station Street.

3.9 YARRA AMENDMENT C223

81-95 Burnley Street and 26 Doonside Street is a strategic development site occupied – in part – but two individual heritage places (HO252 and HO375) that formed part of the Repco factory, offices and laboratory. C231yara is a proponent-led Amendment that seeks to rezone the land from Industrial 3 Zone (I3Z) to Mixed Use Zone and introduce a Development Plan Overlay Schedule 15 (DPO15) to inform new development. The Panel considered, amongst other things, the appropriateness of including setback and height controls within DPO15, and found that an 8m preferred upper-level setback was appropriate above the intact Burnley Street façade of the former Repco factory building. Of relevance to the Fitzroy West Precinct, and the former factory buildings that occupy whole blocks or address prominent corner sites within the study area in particular, is Panel's conclusion that it was appropriate that the Built Form Requirements within DPO15 include an objective for new development to retain the three-dimensional form of the heritage building.

3.10 SUMMARY

Table 1 – Summarised recommendations and implications

YARRA AMENDMENT C231	
Recommendation	*Implications*
8m mandatory setbacks appropriate	An 8m mandatory setback can be justified for highly intact heritage streetscape.
Combination of preferred and mandatory heights.	The use of a balanced combination of preferred and mandatory heights is appropriate to respond to varied conditions.

Limiting heights within heritage precincts while allowing housing capacity to be met elsewhere in the broader precinct.	The most highly intact areas warrant low heights to protect heritage streetscapes.
YARRA AMENDMENT C220	
Recommendation	***Implications***
A 6m upper-level setback will retain the 'human scale' of Johnston Street, securing the distinction between the [heritage] street wall and upper-levels.	A 6m mandatory upper-level setback is an appropriate minimum.
The less significant sections of Johnston Street do not warrant lesser built from controls.	The same controls should be applied within the DDO irrespective of the significance of the street.
A preferred ratio of 2/3:1/3 street wall to new upper-level built from should be replaced with a 45 degree angular plane.	A 45 degree angular plane above a nominal 11m street wall height can inform the preferred mid-level built form rather than a ratio based sightline test, within a two-storey streetscape.
In combination with upper-level front setbacks and maximum building heights, the angular plane creates a further upper-level setback from the mid-level setback.	Upper-level development should be set further back from the street wall consistent with the guidance at 22.02-5.7.2.
YARRA AMENDMENT C191	
Recommendation	***Implications***
Combination of preferred and mandatory heights.	The use of a balanced combination of preferred and mandatory heights is appropriate to respond to varied conditions.
Limiting heights within heritage precincts while allowing housing capacity to be met elsewhere in the broader precinct.	The most highly intact areas warrant low heights to protect heritage place. Larger scale development should be encouraged outside these heritage places.
A 6m upper-level setback is necessary to avoid facadism and to retain the prominence of the heritage street wall	A 6m mandatory upper-level setback is an appropriate minimum for site-specific Heritage Overlays and intact heritage streetscapes.
The combination of upper-level front setbacks, maximum building heights and design requirements in respect of upper-level development is sufficient to manage taller built form in heritage contexts.	Further guidance in the form of a sight-line test or angular plane formulae is not warranted. Note: this conclusion differs from that of the Panel that considered C220yara.
MORELAND AMENDMENT C134	
Recommendation	***Implications***

The application of mandatory street wall heights to Sydney Road is justified.	Provides a justification for the application of mandatory street wall heights within streetscapes with consistent street wall heights.
Established a preferred ratio of ¾ : ¼ street wall to new upper-level built form.	The use of a sightline test to inform new upper-level built from is appropriate.
BOROONDARA AMENDMENT C108	
Recommendation	***Implications***
The combination of the height, setbacks and design treatment of new buildings should ensure a heritage place on or adjoining the site is not overwhelmed or dominated.	The DDO can included height, setback and design treatment controls to avoid new development dominating heritage places.
New development will be visible behind the retained façades – particularly from oblique views – and that invisibility of upper-level development is either unreasonable or not necessary to achieve the primacy of the street wall.	Some visibility of new upper-level development (including from oblique views) will be acceptable and complete concealment is not necessary.
Mandatory upper-level setbacks to the commercial corridors are justified.	Provides a justification for the application of mandatory upper-level setbacks within the study area.
WHITEHORSE AMENDMENT C175	
Recommendation	***Implications***
In the absence of modelling, built form heritage controls should not proceed.	That 3D modelling, sightlines and viewshed analysis should inform built form controls.
STONNINGTON PLANNING SCHEME AMENDMENT C223	
Recommendation	***Implications***
Panel supported a 5m upper-level setback instead of the 8-10m setbacks proposed that effectively concealed upper-level development.	There is an expectation that the visibility of some new upper-level built from will be acceptable and complete concealment is not necessary.
Application of the words 'should' and 'must' within controls.	Use 'should' for preferred controls and 'must' for mandatory controls.
DAREBIN AMENDMENT C161	
Recommendation	***Implications***
The application of mandatory building heights to Fairfield Village is justified.	Mandatory building heights within the study area may be appropriate to protect heritage values.
The application of mandatory street wall heights to Fairfield Village is justified.	Mandatory street wall heights within the study area may be appropriate to protect the heritage street wall.

The use of 'Valued Street Façade' provision not supported.	Confirms reliance on the Heritage Overlay to protect valued streetscapes.
YARRA AMENDMENT C223	
Recommendation	*Implications*
It is appropriate for built form guidance to include provisions to retain the three-dimensional form of heritage buildings.	Provides a justification for seeking to maintain the legibility of three-dimensional form of buildings that occupy whole, or a substantial part of the block or turn the corner such the former factories within the Fitzroy West Precinct.

4.0 MANDATORY AND DISCRETIONARY HEIGHT AND SETBACK CONTROLS

Planning Practice Note 59: The Role of Mandatory Provisions in Planning Schemes (September 2018) (PPN59) notes that the VPPs are predominantly performance-based and that mandatory provisions are the exception. The PPN sets out a series of five criteria against which to test proposed mandatory provisions, being:

- Is the mandatory provision strategically supported?
- Is the mandatory provision appropriate to the majority of proposals?
- Does the mandatory provision provide for the preferred outcome?
- Will the majority of proposals not in accordance with the mandatory provision be clearly unacceptable?
- Will the mandatory provision reduce administrative costs?

Planning Practice Note 60: Height and Setback Controls for Activity Centres (PPN60) provides specific guidance on the use of mandatory height and setback controls in Activity Centres. In September 2018, DELWP published an updated version of PPN60 following the completion of the pilot project *Better Height Controls in Activity Centres*[2].

Of relevance to this matter, PPN60 provides an additional justification for the use of mandatory controls based on 'comprehensive strategic work', which reads:

> *Mandatory height or setback controls should only be applied where:*
>
> - *exceptional circumstances exist; or*
> - *council has undertaken comprehensive strategic work and is able to demonstrate that mandatory controls are appropriate in the context, and*
> - *they are absolutely necessary to achieve the preferred built form outcomes and it can be demonstrated that exceeding these development parameters would result in unacceptable built form outcomes.*

In relation to 'exceptional circumstances', PPN60 states:

> *Exceptional circumstances may be identified for individual locations or specific and confined precincts, and might include:*
>
> - *significant heritage places where other controls are demonstrated to be inadequate to protect unique heritage values.*
> - *sites of recognised State significance where building heights can be shown to add to the significance of the place, for example views to the Shrine of Remembrance...*

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[2] Refer to the Panel Report to Yarra C220 chapter 1.2 for further discussion on the pilot project and the amendment to PPN60.

To pursue mandatory controls, PPN60 also states:

> *Where exceptional circumstances are identified, mandatory height and setback controls should only be applied where they are absolutely necessary to achieve the built form objectives or outcomes identified from the comprehensive built form analysis. Where mandatory controls are proposed, it will need to be demonstrated that discretionary controls could result in an unacceptable built form outcome.*

The amended version of PPN60 reflects a broader shift over time within the application of the VPPs in favour of the use of mandatory controls.

For this project, the purpose of the Hansen Built Form Review and this report is to provide a comprehensive strategic basis for height and setback controls within the study area.

The Panels that considered C108boro, C161dare, C134, C220yara, C191yara and C231yara provide further guidance on the application of mandatory built form controls within the Fitzroy West Precinct.

These Panels concluded that for Heritage Overlays within Activity Centres:

- Mandatory controls were appropriate for street wall heights along Sydney Road, in 31 neighbourhood centres in Boroondara and Area 1 of the Fairfield Village Neighbourhood Centre
- Mandatory upper level setbacks were appropriate in many of Boroondara's neighbourhood centres
- Mandatory heights were appropriate for Area 1 of the Fairfield Village Neighbourhood Centre
- Mandatory setbacks were appropriate for Johnston Street with a mixture of preferred and mandatory height limited combined with a 45 degree angular plane test.
- Mandatory height and upper level setback controls were appropriate to protect the most highly consistent and intact parts of Queens Parade and to protect views to key landmarks.
- Mandatory height and upper level setback controls were appropriate to protect the most highly consistent and intact parts of Queens Parade.

Substantial parts of the Fitzroy West Precinct have intact rows of terraced housing or shop/residences where mandatory controls are appropriate to protect the visual primacy of the heritage buildings in these locations. The areas within the Fitzroy West Precinct without graded heritage buildings or intact streetscapes do not require the application of mandatory height or setback controls to protect the identified heritage values of HO334.

PART II: HERITAGE ANALYSIS

5.0 STUDY AREA ANALYSIS

5.1 PRECINCT BOUNDARY

***Figure 10**: Fitzroy West Study Area (black) overlaid an aerial image Source: adapted from VicPlan.*

As noted previously, this report focuses on the Fitzroy West Precinct, as shown in Figure 10 above. The following precincts were considered in the *Brunswick and Smith Street Built Form Review*, GJM Heritage, 25 November 2019:

- Brunswick Street Activity Centre Spine
- Town Hall Mixed Use Precinct
- Smith Street Activity Centre Spine
- Johnston Street Activity Centre Spine
- Fitzroy East Mixed Use Precinct.

Gertrude Street was the subject of the *Gertrude Street Built Form Framework: Heritage Analysis & Recommendations*, GJM Heritage, 9 December 2019.

The Collingwood Mixed Use Precinct was considered as part of a separate study: *Collingwood Mixed Use Pocket Heritage Analysis & Recommendations*, GJM Heritage, 6 June 2018.

The Fitzroy West Mixed-Use and the Victoria Parade Boulevard precincts are subject of separate reports prepared as part of this study.

The following sections contain an analysis of the heritage components and qualities of the Fitzroy West Precinct, including significant views. An analysis of future built

form character considerations has also been provided, along with recommended built form parameters to appropriately manage heritage values.

5.2 HERITAGE CHARACTERISTICS

The graded heritage buildings are typically two-storey shop/residences or single- and two-storey terraced housing. A number of the nineteenth century dwellings and shop/residences located in otherwise industrial streetscapes lack a cohesive heritage context. The graded factory buildings within the study area are typically constructed of masonry (often face brick) and have pitched roofs expressed through the gable end. Window openings are normally regularly spaced with larger openings on the ground floor for horse-drawn and motorised vehicle access.

The three buildings located in the isolated part of the study area at the intersection of Alexandra Parade and Nicholson Street are all graded 'not-contributory'.

The photos below are generally ordered from north to south and west to east within the study area.

***Figure 11**: (left) Southeast corner of the intersection of Alexandra Parade and Nicholson Street ('not-contributory' within HO334).*

***Figure 12:** (right) Houses, 76-80 Cecil Street, Fitzroy ('Contributory' within HO334)*

***Figure 13**: (left) Houses and former shop/residence, 65-69 Westgarth Street, Fitzroy (no. 65 to the left outside study area and is zoned NRZ) ('Contributory' within HO334)*

***Figure 14:** (right) Terraced houses, 81-87 Westgarth Street, Fitzroy ('Individually significant' within HO334)*

Figure 15: *(left) Shop/residences, 60-66 Westgarth Street, Fitzroy (no. 60 to the right outside the study area and zoned NRZ) ('Contributory' within HO334)*

Figure 16*: (right) Houses, 43-45 Leicester Street, Fitzroy (no. 43 outside the study area and zoned NRZ) ('Contributory' within HO334).*

Figure 17: *(left) former David Marshall Factory, 71 Leicester Street, Fitzroy ('Contributory' within HO334)*

Figure 18*: (right) former Leicester Arms Hotel, 81 Leicester Street, Fitzroy ('Individually significant' within HO334).*

Figure 19: *(left) Houses, 44-46 Leicester Street, Fitzroy) ('Contributory' within HO334).*

Figure 20: (right) *former factory, 62-66 Leicester Street, Fitzroy ('Individually significant' within HO334).*

Figure 21: *(left) former factory, 70 Leicester Street, Fitzroy ('Individually significant' within HO334).*

Figure 22: (right) *Fitzroy Market site from intersection of Fitzroy and Rose streets (ungraded within HO334).*

Figure 23: *(left) former Enginerring Company Workshop, 50-52 Rose Street, Fitzroy (now only a façade) ('Contributory' within HO334)*

Figure 24: *(right) Factory/warehouse (now only a façade), 21-23 Rose Street, Fitzroy ('Contributory' within HO334).*

Figure 24: *(left) 282-298 Nicholson Street, Fitzroy (ungraded within HO334).*

Figure 26: *(right) former Wesleyan Church, 406-408 Fitzroy Street, Fitzroy ('Individually significant' within HO334).*

Figure 27: *(left) Factory/warehouse, 15-19 Kerr Street, Fitzroy ('Contributory' within HO334).*

Figure 28: *(right) Terraced houses, 51-67 Kerr Street, Fitzroy (nos 51-53 'Individually significant'; nos 55-67 'Contributory' within HO334).*

Figure 29: *(left) Shop/residences and terraced houses, 71-81 Kerr Street, Fitzroy ('Contributory' within HO334).*

Figure 30: *(right) Shop/residences and terraced houses, 85-91 Kerr Street, Fitzroy ('Contributory' within HO334).*

Figure 31: *(left) former Gumleaf Papers Pty. Ltd. Factory, 2 Kerr Street, Fitzroy ('Individually significant' within HO334).*

Figure 32: *(right) Terraced houses, 76-84 Kerr Street, Fitzroy ('Contributory' within HO334).*

Figure 33: *(left) Terraced houses, north side of Henry Street, Fitzroy ('Contributory' within HO334).*

Figure 34: *(right) House, 4 Henry Street, Fitzroy (Individual Heritage Overlay - HO422).*

Figure 35: *(left) Warehouse/workshop (later Jenkins Hall offices), 25 Argyle Street, Fitzroy ('Contributory' within HO334)*

Figure 36: *(right) Warehouses and apartments on the north side of Argyle Street, Fitzroy ('Not-contributory' within HO334 except no. 35-41 (now only a façade) which is 'Contributory' within HO334)*

Figure 37: *(left) Former Arthur Engineering Co. factory), 71 Argyle Street, Fitzroy ('Individually significant' within HO334) (October 2018)*

Figure 38: *(right) Façade of the former Arthur Engineering Co. factory under development (May 2020)*

Figure 39: *(left) Houses and warehouse, 10-16 Argyle Street, Fitzroy (no. 10 'Individually significant'; no. 12 'Contributory'; no. 16-14 "Jubilee" 'Contributory' within HO334). Note: numbering in Appendix 8 does not accord with current street addresses*

Figure 40: *(right) Former Harrison's Cordial Factory at 8-12 Spring Street and 14-16 Argyle Street, Fitzroy (VHR H2257).*

Figure 41: *(left) Former Union Hotel, 38-38A Argyle Street and house, 36 Argyle Street, Fitzroy ('Contributory' within HO334)*

Figure 42: *(right) Terraced houses, 48-52 Argyle Street, Fitzroy ('Contributory' within HO334)*

Figure 43: *(left) Terraced houses, 347-363 Fitzroy Street, Fitzroy ('Contributory' within HO334)*

Figure 44: *(right) Pair of terraced houses, 1-3 Spring Street, Fitzroy ('Contributory' within HO334)*

Figure 45: *(left) Terraced houses, 2-6 Spring Street, Fitzroy ('Individually significant' within HO334)*

Figure 46: *(right) Factory/warehouse, 1 Harrison Place, Fitzroy (ungraded within HO334)*

5.3 HERTIAGE TYPOLOGIES

The heritage buildings within the study area generally share the same typical characteristics which include:

- Attached terraced construction
- Masonry construction with less than 40% of the wall face comprised with openings such as windows and doors
- Painted render or face brick façades
- Parapeted front facades with solid parapets, open balustrades or more elaborate gables
- Either no setback from the street boundary, or a small garden setback
- Early or altered shop fronts to the shop/residences
- Verandahs or later canopies, particularly on the south side of the street
- Visible chimneys normally set back between 3m and 4m from the front elevation of terraced houses and shop/residences.

The following examples show typical building typologies found within the study area. It must be noted that buildings of a particular type will not necessarily demonstrate all the features identified below, and may include other features such as visible roofs and chimneys.

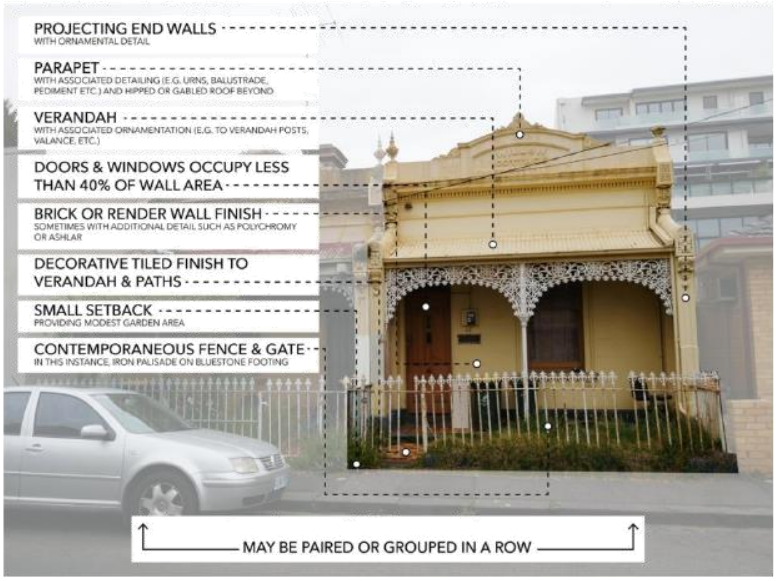


Figure 47: *Single storey terraced houses (46 Leicester Street, Fitzroy; 'Contributory' within HO334)*

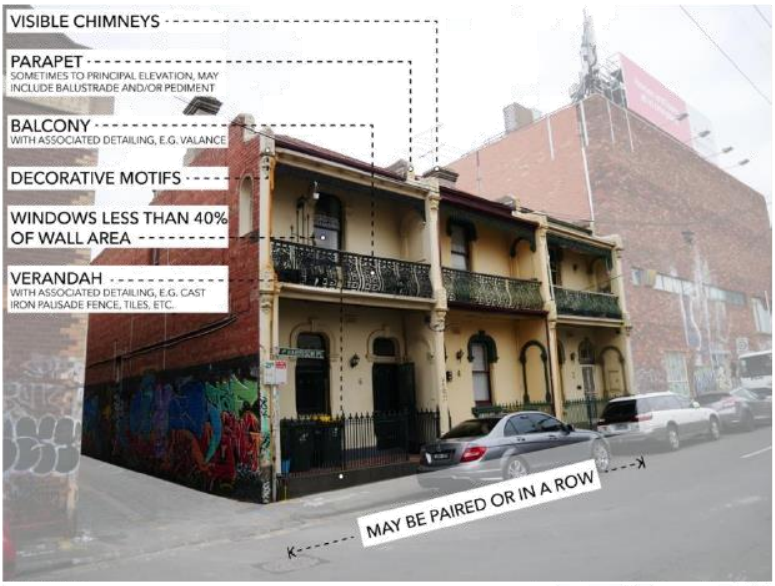


Figure 48: *Two storeyed terraced houses with verandahs (2-6 Spring Street, Fitzroy; 'Individually significant' within HO334)*

Figure 49: *Two-storeyed terraced houses without verandahs (71-81 Kerr Street, Fitzroy ('Contributory' within HO334)*

Figure 50: *Prominent corner building, (former Leicester Arms Hotel, 81 Leicester Street, Fitzroy; 'Individually significant' within HO334)*

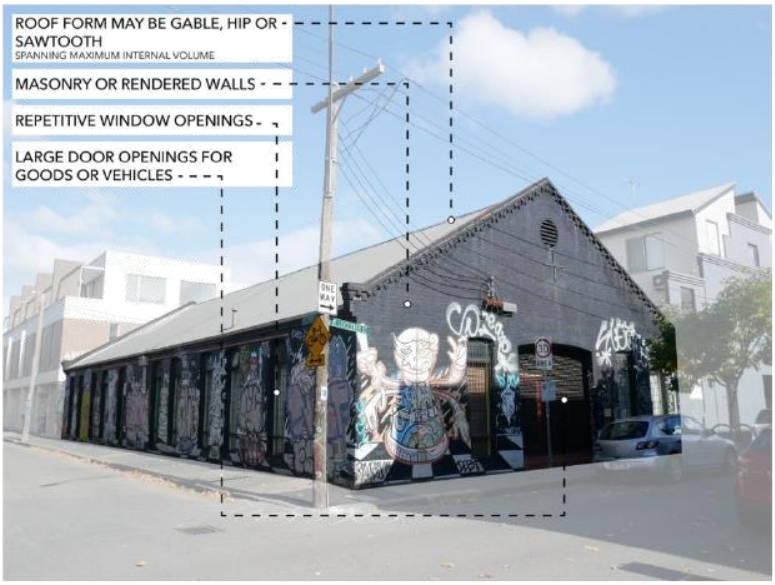


Figure 51: *Small scale (single storey) factory building (62-66 Leicester Street, Fitzroy; 'Individually significant' within HO334)*

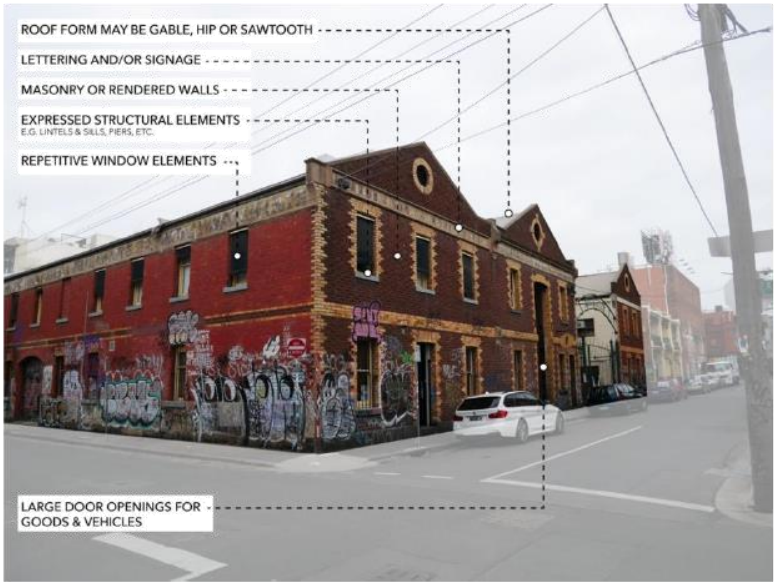


Figure 52: *Larger scale (two storey) factory building (Former Harrison's Cordial Factory at 8-12 Spring Street and 14-16 Argyle Street, Fitzroy; VHR H2257)*

5.4 LOCAL LANDMARKS

The Fitzroy West Precinct does not include any of the municipal-wide landmarks within the City of Yarra that are identified within Clause 22.03 'Landmarks and Tall Structures' of the Yarra Planning Scheme nor any of the views of these landmarks included in the report entitled *Landmarks & Views Assessment* (Ethos Urban, October 2019). Having said that, the location, scale, function and architectural form and detail of some buildings within the study area has resulted in them acting as local landmarks. These buildings serve as markers, wayfinding aids or landmarks in the local streetscape context due to their siting at key intersections or their scale within the surrounding streetscape.

In the context of the study area, the local landmarks include a number of the larger factory buildings and complexes on prominent street corners, and a place of worship (former Wesleyan Church). These buildings are generally identified within Appendix 8 as 'Individually Significant' or are included on the VHR and are described in Table 2.

Table 2 – Local landmark buildings

Address	Building Name	Type	Corner	Grading	Photograph
71 Argyle Street, Fitzroy	Former Arthur Engineering Co. factory	Two-storey factory on a prominent corner site (currently under development)	Argyle and Fitzroy streets	Individually Significant (HO334)	

406-408 Fiztroy Street, Fitzroy	*former Wesleyan Church*	Place of worship	-	Individually Significant (HO334)	
70 Leicester Street, Fitzroy	Former factory	Two storey-factory on a prominent corner site	Fitzroy and Leicester Streets	Individually Significant (HO334)	
8-12 Spring Street and 14-16 Argyle Street, Fitzroy	Former Harrison's Cordial Factory;	Two-storey factory complex on a prominent corner site	Argyle and Spring streets	VHR H2257	 Source: VHD, 28 May 2010

6.0 FITZROY WEST HERITAGE ANALYSIS

6.1 HERITAGE STATUS

6.1.1 Existing conditions

The vast majority of the Fitzroy West Precinct is subject to HO334 – South Fitzroy Precinct. The land not subject to HO334 is limited to the small area of land bounded by Henry Street to the north, Spring Street to the east, Argyle Street to the south and Nicholson Street to the west. There is a single place (Former Harrison's Cordial Factory at 8-12 Spring Street) included on the VHR within the study area and one individual Heritage Overlay place (the bluestone cottage at 4 Henry Street which is located just outside the western extent of HO334. Although the majority of the Fitzroy West Precinct is included within HO334, it has a diverse character with a large proportion of ungraded buildings within the study area (graded 'not-contributory' in Appendix 8). The majority of graded buildings are located in the southern part of the study area and address Argyle, Fitzroy, Henry, Kerr and Spring streets. Large parts of the study area, including whole streetscapes along Leicester and Rose streets, have few or no graded heritage buildings.

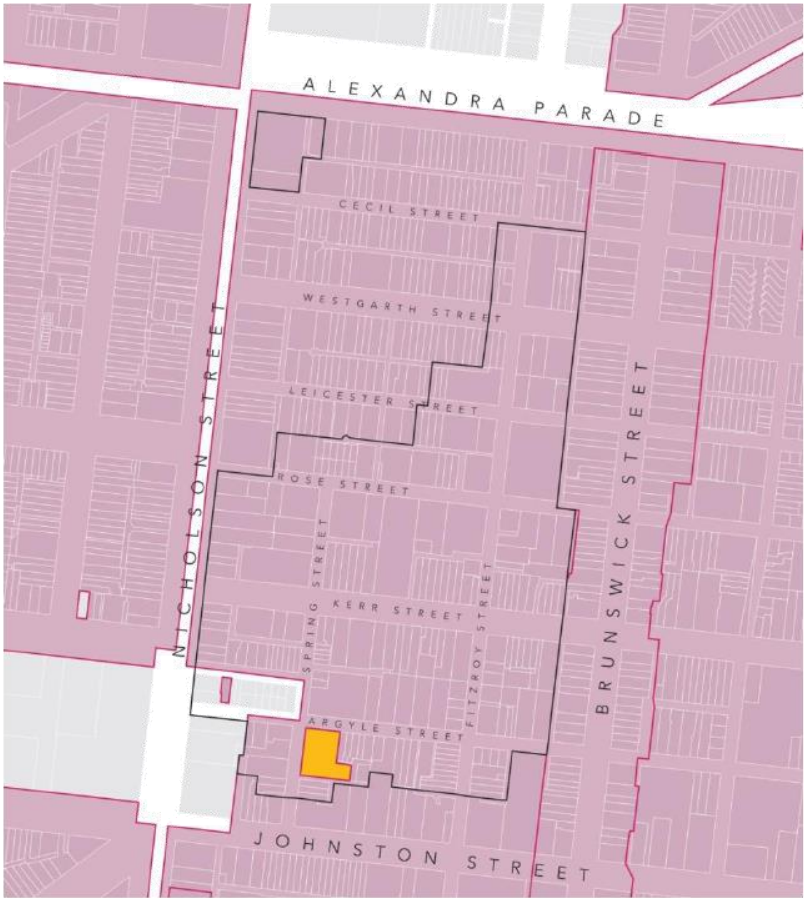


***Figure 53**: Heritage Overlay and VHR map – Victoria Parade precinct outlined in black.*
Source: adapted from VicPlan.

Heritage Overlay shaded in pink

VHR places shaded in yellow.

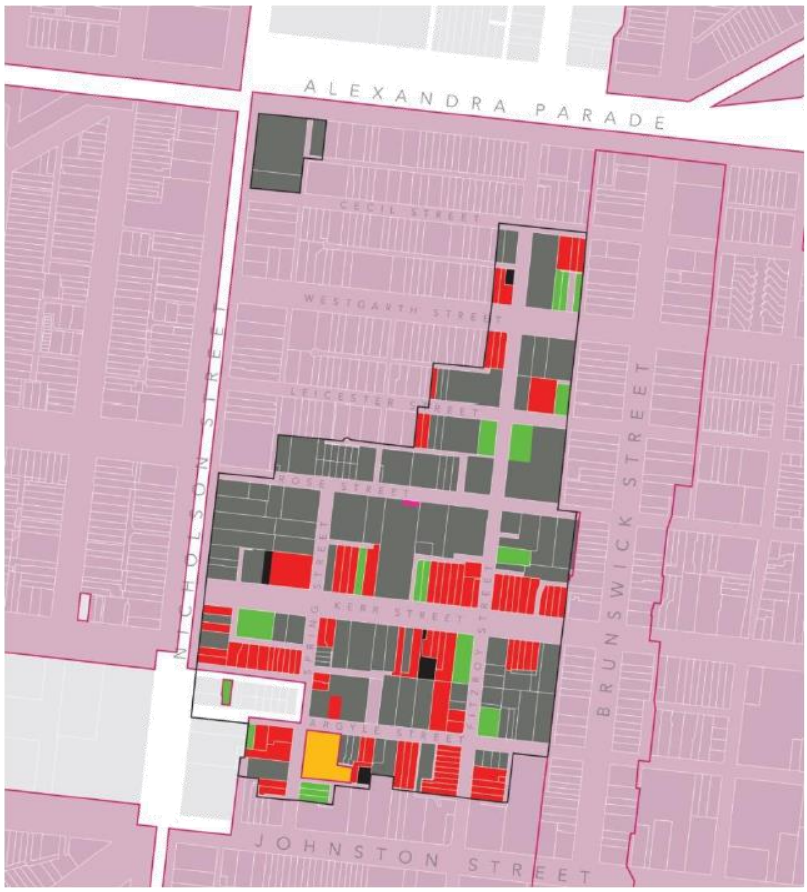


***Figure 54**: Current heritage gradings from Appendix 8 – Victoria Parade precinct outlined in black.*
Source: adapted from VicPlan

The existing heritage status for the buildings within the study area are listed in Table 3. We note that there are numerous inconsistencies between the street addresses provided within Appendix 8 and those identified in VicPlan. The addresses, dates of construction and gradings provided below are taken directly from Appendix 8.

Table 3 – Existing heritage status

VICTORIAN HERITAGE REGISTER				
VHR #	*Name*	*Address*	*Heritage Overlay*	*Date*
H2257	Former Cordial Factory	14-16 Argyle Street, Fitzroy	HO466	1870-1890
INDIVIDUAL HERITAGE OVERLAYS				

Heritage Overlay #	*Name*	*Address*	*Appendix 8 Grading*	*Date*
HO422		4 Henry Street, Fitzroy	Individually significant	1858
PRECINCT HERITAGE OVERLAYS				
Heritage Overlay #	*Name*	*Address*	*Appendix 8 Grading*	*Date*
HO334	South Fitzroy Precinct	6 Alexandra Parade: offices	Not contributory	1970 - 1980
		10 Argyle Street	Individually significant	1850 - 1880
		12 Argyle Street: Warehouse/workshop	Contributory	1850 - 1890
		25 Argyle Street: Warehouse/workshop, later Jenkins Hall offices	Contributory	1890 – 1910
		25-31 Argyle Street	Not contributory	1990 - 2000
		30-34 Argyle Street: Apartments	Not contributory	2000 - 2010
		35-41 Argyle Street: Warehouse/workshop	Contributory	1870 - 1910
		36 Argyle Street	Contributory	1880 – 1890
		38 Argyle Street (rear): Factory/warehouse / stable?	Contributory	1870 - 1890
		38-38a Argyle Street: Union Hotel, former	Contributory	1880 – 1890
		40-42 Argyle Street: warehouse/workshop	Not contributory	??
		43-47 Argyle Street: Factory, vacant land	Not contributory	1970 - 1980
		44-46 Argyle Street: Factory	Not contributory	??
		47-49 Argyle Street: Ungraded	Ungraded	??
		48-52 Argyle Street	Contributory	1870 - 1890
		51-53 Argyle Street: Factory	Not contributory	1970 - 1980
		54 Argyle Street: Factory	Not contributory	1970 - 1980

	55 Argyle Street: Exeter Cottages	Contributory	1850 - 1890
	56-60 Argyle Street: Apartments	Not contributory	1990 - 2000
	57 Argyle Street: Exeter Cottages	Contributory	1850 - 1890
	71 Argyle Street: Factory, Arthur Engineering Co.	Individually significant	1870 - 1890
	73-75 Argyle Street: vacant land	Not contributory	??
	77-79 Argyle Street: Factory/offices	Not contributory	1960 - 1970
	81-83 Argyle Street: Factory/workshop	Not contributory	1900 - 1915
	64 Cecil Street: Townhouse	Not contributory	1990 -2000
	66 Cecil Street	Not contributory	1940 – 1950
	70 Cecil Street: Apartments	Not contributory	1990 -2000
	76 Cecil Street	Contributory	1870 -1890
	78 Cecil Street	Contributory	1990 -1915
	80 Cecil Street	Contributory	1900 -1915
	347-363 Fitzroy Street	Contributory	1870 - 1890
	348-352 Fitzroy Street	Contributory	1870 – 1890
	354 Fitzroy Street: Factory, workshop	Contributory	1905 – 1915
	356 Fitzroy Street	Not contributory	1990 - 2000
	371 Fitzroy Street	Contributory	1870 - 1890
	373-379 Fitzroy Street: Factory	Not contributory	1990 - 2000
	380 Fitzroy Street	Ungraded	??
	385-393 Fitzroy Street: West of England Hotel	Individually significant	1860 - 1890
	403 Fitzroy Street	Contributory	1850 -1890
	405 Fitzroy Street: Factory/workshop	Contributory	1925 -1935

	406-408 Fitzroy Street: Wesleyan Church, former	Individually significant	1850 -1870
	467 Fitzroy Street	Ungraded	
	1 Harrison Place	Ungraded	??
	1-11 Henry Street	Contributory	1860 - 1870
	13-19 Henry Street	Contributory	1870 - 1880
	16-20 Kerr Street: Factory/warehouse	Not contributory	1930 - 1950
	23 Kerr Street: Factory/warehouse, offices	Not contributory	1930 -1940
	24-26 Kerr Street	Contributory	1900-1915
	25 Kerr Street	Contributory	1870 -1890
	27 Kerr Street	Contributory	1870 -1890
	29 Kerr Street	Contributory	1870 -1890
	30 Kerr Street: Factory/warehouse	Not contributory	??
	31 Kerr Street	Individually significant	1870 -1890
	32-34 Kerr Street: Factory/warehouse	Not contributory	??
	33-35 Kerr Street	Contributory	1870 1890
	36-38 Kerr Street: Factory/warehouse	Not contributory	1950 - 1960
	42 Kerr Street	Contributory	1870 – 1900
	44 Kerr Street	Contributory	1870 - 1890
	46 Kerr Street	Not contributory	1870 - 1890
	48 Kerr Street	Contributory	1900 – 1915
	51 Kerr Street	Individually significant	1860 – 1870
	52 Kerr Street	Ungraded	??
	53 Kerr Street	Individually significant	1860 -1870
	54 Kerr Street	Contributory	1870 – 1880
	55-63 Kerr Street	Contributory	1880 – 1890
	56 Kerr Street	Contributory	1870 – 1880
	58 Kerr Street	Contributory	1870 - 1890

	62 Kerr Street	Contributory	1870 – 1890
	64 Kerr Street: West of England Hotel	Individually significant	1860 - 1870
	65 Kerr Street	Contributory	1860 -1890
	67 Kerr Street: Shop & residence	Contributory	1860 -1870
	71 Kerr Street: Shop & residence	Contributory	1870 -1890
	73-81 Kerr Street	Contributory	1870 – 1890
	76-80 Kerr Street	Contributory	1870 - 1890
	82 Kerr Street	Contributory	1880 – 1890
	84 Kerr Street	Contributory	1880 – 1890
	85-91 Kerr Street	Contributory	1870 - 1890
	88-90 Kerr Street: Factory/warehouse	Not contributory	1960 – 1970
	44-46 Leicester Street Willow Cottage/Leicester Cottage	Contributory	1880 -1890
	45 Leicester Street: WH Veens Terrace	Contributory	1880 -1890
	47 Leicester Street	Not contributory	1990 -2000
	48 Leicester Street	Not contributory	1990 -2000
	49 Leicester Street	Not contributory	1990 -2000
	50 Leicester Street	Not contributory	1990 -2000
	56 Leicester Street	Not contributory	1990 -2000
	59-61 Leicester Street	Not contributory	1990 -2002
	66 Leicester Street: Factory, later the Melbourne Chess Club	Individually significant	1864?
	67-69 Leicester Street	Not contributory	1940 -1950
	70 Leicester Street: Factory/warehouse	Individually significant	1873
	71 Leicester Street: David Marshall Factory	Contributory	1912
	81 Leicester Street: Leicester Arms Hotel	Individually significant	1872

	268 Nicholson Street: J Wilson, Shop & residence, former	Contributory	1870 - 1890
	270-268 Nicholson Street: Factory/warehouse former?	Not contributory	??
	276 Nicholson Street: Shop	Contributory	1870 - 1890
	278 Nicholson Street: Shop	Not contributory	??
	280 Nicholson Street: Shop & residence	Contributory	1896
	282-298 Nicholson Street / 17 Kerr Street: Factory/warehouse	Contributory	1900 -1915
	300-302 Nicholson Street: Shop, showroom, factory/warehouse	Not contributory	
	304 Nicholson Street: factory/warehouse, offices	Not contributory	1930 -1940
	366 Nicholson Street: Offices	Not contributory	1990 - 2000
	368-370 (aka 372-374) Nicholson Street: Factory/warehouse, former, now Showroom	Not contributory	1925 – 1935
	15 Rose Street: Substation	Not contributory	1960 -1970
	17 Rose Street: Factory/warehouse	Not contributory	1960 -1970
	20-26 Rose Street: Factory/warehouse	Not contributory	1970 -1980
	21-23 Rose Street: Factory/warehouse	Contributory	1915 -1925
	25-33 Rose Street: Townhouses	Not contributory	1990 -2000
	35 Rose Street: Factory/warehouse	Not contributory	1930 -1950

	42-44 Rose Street: Units	Not contributory	2000 -2010
	45-53 Rose Street: Factory/warehouse	Not contributory	1960 -1970
	46-48 Rose Street: Factory/warehouse	Not contributory	1960 -1970
	50-52 Rose Street: Engineering Company Workshop	Contributory	1915 -1925
	54 Rose Street: Factory/warehouse	Not contributory	??
	61 Rose Street: Factory/warehouse	Not contributory	1970 -1980
	63-69 Rose Street: Townhouse	Not contributory	1990 -2000
	71-73 Rose Street: Martini Ice townhouses/units	Not contributory	1990 -2000
	74-76 Rose Street	Not contributory	1850 -1890
	75-87 Rose Street: Factory/warehouse	Not contributory	1950 -1970
	78-84 Rose Street	Not contributory	1930 -1940
	88-90 Rose Street: Apartments, former Factory/warehouse site	Not contributory	1990 -2000
	1-3 Spring Street	Contributory	1870 – 1890
	2-6 Spring Street	Individually significant	1870 - 1890
	5 Spring Street: Apartments	Not contributory	1990 - 2000
	11-13 Spring Street: Factory/warehouse, now offices	Contributory	1880 - 1930
	24-26 Spring Street	Contributory	1870 - 1890
	28-32 Spring Street: Factory/warehouse	Not contributory	1970 - 1980
	50 Spring Street: Factory/warehouse, now Apartments	Not contributory	1930 -1940

	62 Westgarth Street: shop & residence, former?	Contributory	1888
	64 Westgarth Street: shop & residence, former	Contributory	1888
	66 Westgarth Street: shop & residence, former	Contributory	1888
	67 Westgarth Street	Contributory	1880 -1890
	69 Westgarth Street: Shop, former	Contributory	1850 -1890
	70-76 Westgarth Street: Factory	Not contributory	1970 -1980
	78-82 Westgarth Street: Factory/warehouse	Not contributory	1960 -1970
	81 Westgarth Street	Individually significant	1880 -1890
	83 Westgarth Street	Individually significant	1880 -1890
	85 Westgarth Street	Individually significant	1880 -1890
	87 Westgarth Street	Individually significant	1880 -1890

6.1.2 Recommended Changes

The review of the existing extent and grading of buildings was limited to substantial omissions and anomalies. The review did not include a complete re-assessment of the 'Individually significant' / 'Contributory' / 'Not-contributory' gradings of individual buildings. As noted above, there are large areas of the study area that contain few, if any, graded buildings. These areas with few graded buildings lack visual cohesion and do not present as intact parts of a heritage precinct. They include the southeast corner of Alexandra Parade and Nicholson Street, and those properties that face Leicester and Rose streets.

A small number of extant properties are currently ungraded due to having been omitted from Appendix 8 (refer to Appendix I for the identified anomalies). These should be subject to a heritage assessment and included within the updated Incorporated Document entitled 'City of Yarra Database of Heritage Significant Areas' proposed to be introduced in the Yarra Planning Scheme through Amendment C245yara. Within the study area there are numerous errors in the gradings shown on the City of Yarra's heritage grading map which should be updated to accurately reflect Appendix 8 (or its successor document).

We also note that there is considerable inconsistency between the street addresses within Appendix 8 and those identified in VicPlan, particularly in the areas around the intersection of Argyle and Spring streets. In some cases, addresses are listed twice with different gradings provided for the sites listed. It is therefore recommended that Appendix 8 be redrafted to use VicPlan addresses to avoid confusion and the potential mis-identification of sites and their gradings. A thorough review of the addresses used in Appendix 8 did not form part of the scope of this study and errors in addresses have generally not been included in the table of the identified anomalies is provided at Appendix I.

6.2 ZONING

6.2.1 Existing conditions

The land within the Fitzroy West Precinct is zoned MUZ with the exception of the properties addressing Alexandra Parade and Nicholson Street (zoned C1Z).

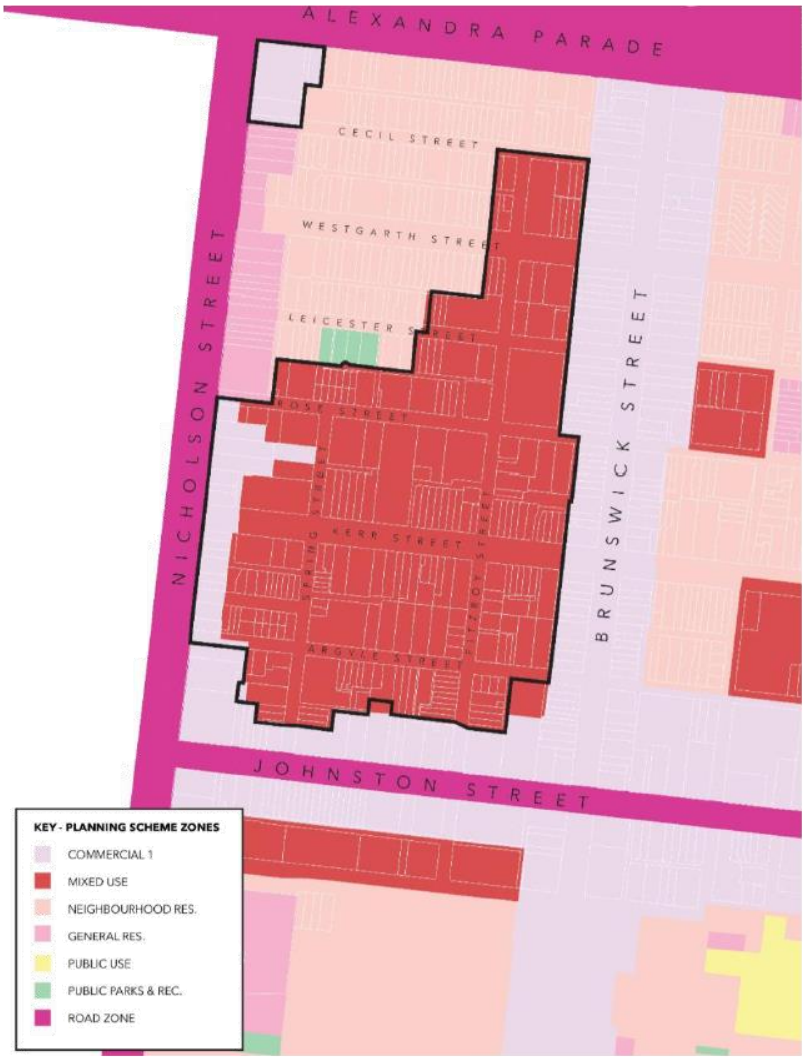


***Figure 55**: Zone map – Fitzroy West Precinct Outlined in black. Source: adapted from VicPlan.*

6.2.2 Recommended Changes

The zoning of the majority of the land MUZ reflects the historic and current mixed-use character of this part of Fitzroy. Having said that, there are a number of individual properties at the edges of the study area where one part of an identical terrace is zoned MUZ while the remaining part of this row (which is outside the study area) is zoned NRZ and is therefore subject to the more restrictive planning controls associated with that zone. In these instances, we recommend that those zoning anomalies be corrected so that the historic form and current use of the building is

reflected in the relevant zone, whether that be MUZ or NRZ. This includes the following recommended rezoning:

- pair of terraced houses at 44 and 46 Leicester Street from MUZ to NRZ;
- terraced house at 45 Leicester Street from MUZ to NRZ; and
- shop/residence at 60 Westgarth Street from NRZ to MUZ.

These examples of zoning inconsistency are illustrated in the table at Appendix I.

6.3 POTENTIAL FUTURE CHARACTER CONSIDERATIONS

The Fitzroy West Precinct contains a greater diversity of built form and a lower proportion of graded buildings than is typically found in Heritage Overlay precincts within the City of Yarra. This is particularly true of the northern part of the study area. Therefore, development within parts of the study area will be less constrained by heritage concerns than most other land subject to HO334. The land within the Fitzroy West Precinct at the intersection of Alexandra Parade and Nicholson Street has no heritage fabric and the lengths of Leicester and Rose streets within the study area lack any form of consistent or cohesive heritage built form. Having said that, these areas remain generally low rise with new development not exceeding six-storeys in height, and urban design considerations should inform their future preferred character. It is noted that a substantial proportion of Rose Street between Nicholson and Fitzroy streets has been developed over the past 10-20 years as multi-unit residential development of between four and six-storeys in height.

The majority of buildings that are graded 'Individually significant' or 'Contributory' within the precinct are rows of single and two-storey terraced houses. These terraces are made up of small, narrow sites that are generally not appropriate for multi-storey mixed-use development. New development associated with this type of heritage fabric would normally be moderated to two or three-storeys in height through the application of the NRZ or GRZ zoning respectively. The fine-grained character of these streetscapes should be maintained, and new development should be scaled to avoid visually dominating the historic terraced housing. In the cases of these terrace rows a DDO is required to moderate the height of future development.

The industrial (factory, warehouse or workshop) buildings are single or two-storey and are generally small in scale compared with the larger industrial complexes found elsewhere in the municipality such as in the eastern part of Fitzroy or within Collingwood. New development should respect the scale of these buildings, many of which define the urban form of the precinct, and maintain their visual prominence within the streetscape and as local landmarks.

6.4 RECOMMENDED BUILT FORM PARAMETERS

Any DDO proposed for the Fitzroy West Precinct should apply built form guidance to ensure that new built form is respectful of the heritage places within the area.

A DDO control applied to properties within the Fitzroy West Precinct should ensure new development respects the heritage significance of the graded buildings and is sited, massed and designed to be visually recessive and to not dominate the heritage

place. This includes ensuring that appropriate interfaces are provided between the single- and two-storey scale heritage buildings and potential new development.

There are a substantial number of historic residential dwellings including intact rows of single or two-storey terraced houses within the study area. While the inclusion of these within the MUZ appropriately reflects the diverse mix of uses within the study area as whole, these dwellings have little ability to be substantially redeveloped without adversely affecting their heritage values. In these instances, which are residential in history, built form and current use, height controls analogous to those within the NRZ or GRZ should be applied and the residential policies at Clause 22.02-5.7.1 of the Yarra Planning Scheme should inform new development.

GJM participated in the analysis of the Fitzroy West Precinct with Hansen Partnership and the City of Yarra, during which:

- Heritage and urban context information, known planning scheme Amendments, and past and current planning applications was collected and analyzed; and
- Built form parameters from the above analysis were drawn and then tested, firstly via cross-sectional drawings and then via a 3D model to determine their appropriateness.

Informed by the analysis and testing methodology outlined above, it is recommended that a DDO should seek built form outcomes that:

- Retain the visual prominence of local landmarks in the streetscape.
- Retain chimneys and principal roof forms visible from the public realm (excluding laneways).
- Ensure new development within the Heritage Overlay does not visually dominate the existing heritage fabric.
- Ensure any upper-level or infill development (in more intact streetscapes) is subservient to heritage fabric and is visually recessive in mass, scale and materiality.
- Avoid exceeding the six-storey (20m) scale of the existing and emerging built form on redevelopment sites and three-storeys (11m) behind graded terraced housing.
- Encourage the top-most level (or levels) of new development to be set further back from a heritage frontage (as encouraged at Clause 22.02-5.7.2) and treated as a visually separate roof top element.
- Retain the visual prominence of the industrial buildings at key corners, including at the intersections of Leicester and Fitzroy streets, Argyle and Spring streets and Argyle and Fitzroy streets.
- Establish a street wall height for infill development within consistent heritage streetscapes such as Kerr Street that reflects the established two (Victorian-era) storey scale of those precincts.
- Encourage the ground level setback to match the lesser setback of any neighbouring heritage buildings.

- Ensure that the heritage buildings remain prominent within the Fitzroy West Precinct and retain their three-dimensional form as viewed from the public realm to avoid 'facadism'. This will require new upper-level development to be set back a minimum of 6m from the street wall and for redevelopment to respect the existing inter-floor heights of the heritage fabric

7.0 BUILT FORM TESTING

To assist in the translation of the 'Recommended Built Form Parameters' in Part II into specific guidance that could be translated into a DDO control, the heritage analysis was reviewed against cross-sectional drawings of potential development envelopes and 3D computer modelling prepared by Hansen Partnership and the City of Yarra to test the appropriateness of particular built form outcomes that achieved the intent of the 'Recommended Built Form Parameters'.

As well as the cross-sectional drawing studies, 3D computer modelling using Sketchup Pro™ of potential bulk and massing envelopes for the study area was also interrogated. The existing built form was modelled along with approved, but not yet constructed, development in the Fitzroy West Precinct. It was used as a 'working' massing model to inform heights and setbacks on key development sites and to provide a comparative visual analysis. Given the relatively small proportion of the study area that is subject to the Heritage Overlay the 3D modelling was particularly useful in testing the generally more generous built form parameters applied to the larger, less-encumbered potential development sites rather than those with intact heritage buildings.

The Sketchup model was also interrogated to consider the impact of new buildings from the natural eye level (1.6m) on the public footpath.

Extensive field work was undertaken and site visits were used to inform the recommendations made in this report. Views of heritage places were only considered from the public footpath or from the central median strip with particular emphasis placed on intersections and tram stops where pedestrians are likely to dwell.

PART III: BUILT FORM RECOMMENDATIONS

8.0 BUILT FORM RECOMMENDATIONS

Any DDO applied to the Fitzroy West Precinct should include provisions to complement, but not duplicate, the decision guidelines at Clause 43.01-8 (Heritage Overlay), State Planning Policy at Clause 15.03-1S and local policy within Clauses 22.02, 22.03 and 22.10 (or as translated into the post-VC148 Planning Policy Framework through Amendment C269yara) of the Yarra Planning Scheme to inform new development.

Having regard to the heritage conditions within the study area as well as cross-sectional drawings and 3D modelling prepared by Hansen Partnership and the City of Yarra, it is recommended that the built form controls set out in 8.1 below be applied to new development to ensure appropriate weight is given to the heritage values within the study area.

The cross-sectional drawings and 3D modelling helped assess whether or not the upper-level development would 'be visually recessive and not dominate the heritage place' as sought at Clause 22.02-5.7.1. The setting back of new development in accordance with the sightline at Clause 22.02-5.7.1, combined with the recommended three-storey maximum building heights, should protect the heritage values of the terraced housing that makes up the majority of the historic built form within the study area.

The redevelopment of the graded industrial buildings within the precinct, should be considered in the context of the scale, heritage fabric, roof forms and the citation or Statement of Significance for the place (if available).

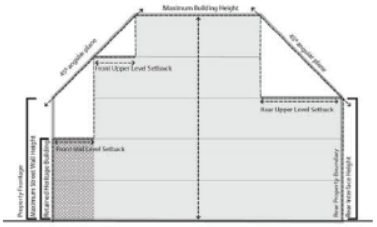
Buildings with prominent roof forms that contribute to their heritage significance - examples of which include the former factory at 62-66 Leicester Street or the former Wesleyan Church at 406-408 Fitzroy Street - will provide little or no opportunity for development above the historic form.

Buildings graded 'Individually significant' and 'Contributory' or included in the VHR are referred to as 'heritage buildings' within the table below and those graded 'Not-contributory' or that are vacant are considered 'infill sites'. The Executive Director, Heritage Victoria will be the principal decision-maker in relation to any redevelopment of the Former Harrison's Cordial Factory at 8-12 Spring Street and 14-16 Argyle Street, Fitzroy.

8.1 RECOMMENDED DDO CONTROLS

Built Form Element	Mandatory	Preferred	Rationale
Street wall height (infill development) within or immediately adjacent to land subject to the Heritage Overlay	-	Match the parapet height of the adjacent heritage building to the width of the property boundary for a distance of 6m, whichever is less.	To ensure new built form responds to its immediate heritage context.

Front setback (infill development) within or immediately adjacent to land subject to the Heritage Overlay	-	Match the lesser setback of the adjacent heritage building from any and all street frontages excluding laneway frontages.	To ensure new built form responds to the heritage context which generally has a small or no setback.
Minimum setbacks above street wall / front façade	6m from the principle street frontage. Note: the setbacks for individual heritage places should be informed by their Statements of Significance and the historic fabric of the heritage place.	6m from the secondary street frontage on corner sites.	While the built form of heritage buildings varies within the Fitzroy West Precinct, there are areas of largely intact heritage streetscapes within the precinct. A mandatory minimum 6m setback from the principle street frontage of heritage buildings is appropriate given the low scale built form and the need to protect the visual prominence of the heritage buildings. This distance will also retain the majority of visible chimneys and roof forms. The application of a mandatory 6m setback is consistent with that through DDO25, DDO26, DDO27 and DDO28 proposed to be introduced through C191yara. A larger setback from the principal facades of heritage buildings may be required development to be set back, and for the retention of an appropriate and legible three-dimensional heritage form. A preferred setback is appropriate from secondary street frontages to allow for the range of building forms. This preferred setback on corner sites will help retain the legibility of the heritage building's three dimensional form.
Maximum building heights within the Heritage Overlay (commercial and industrial buildings)	-	14m (4 storeys) to 24m (7 storeys) depending on the depth of the block, neighbouring built form and context.	The variety of site depths, existing urban form and interface conditions require a range of maximum building heights. A preferred control will enable a wide range of design responses. The overall height and building form above heritage buildings should be informed by the preferred building envelope defined by the 45° angular plane described in DDO15

			 *Heritage Building*
Maximum building heights within the Heritage Overlay (residential buildings)	11m (3 storeys)	-	The majority of heritage fabric within the study area are single- and two-storey residential buildings, many of which are located in intact terrace rows. This building type and use is generally included within NRZ or GRZ across the City of Yarra and elsewhere in metropolitan Melbourne. The application of a 11m (3 storey) height limit will moderate additions to that considered acceptable for this building type across Melbourne and will, with appropriate setbacks, ensure that the new built form will remain secondary to the retained heritage fabric. A mandatory provision is appropriate as it matches the nature of the control applied to buildings of this form and use elsewhere within the City of Yarra.

8.2 ADDITIONAL GUIDANCE

The heritage policy proposed as part of C269yara includes specific strategies to address new development and alterations to commercial and industrial heritage places. If these provisions are implemented through Amendment C269yara, additional heritage design requirements are not likely to be needed within a DDO. However, if new development is to be informed by the existing heritage provisions at Clauses 15.03-1S, 21.05-1, 22.02 and 43.01 of the Yarra Planning Scheme, we recommend that the following heritage design requirements be applied to a DDO:

- New infill development within intact or consistent heritage streetscapes should:
  - Interpret the historic façade rhythm, including fenestration patterns and proportions, the relationship between solid and void, and the existing module of structural bays.
  - Retain the visual prominence of prominent corner buildings and local landmarks.
  - Be distinguishable from the original heritage fabric and adopt a high quality and respectful contextual design response.

  - Ensure façade treatments and the articulation of new development are simple and do not compete with heritage buildings.
  - Avoid the replication of existing decorative features and architectural detail.
- The adaptation of existing heritage buildings should:
  - Discourage highly reflective glazing in historic openings.
  - Ensure the inter-floor height of the existing building is maintained and avoid new floor plates and walls cutting through historic openings.
  - Encourage the retention of solid built form behind retained facades and avoid balconies behind existing openings.
- New upper-level development behind existing heritage buildings should:
  - Retain the visual prominence of parapet and roof-top elements including balustrades, pediments, lanterns, towers, belvederes, urns and other architectural features, where these exist.
  - Be set back to retain the visual prominence of prominent corner buildings and local landmarks.
  - Ensure that the design and setback of the addition does not visually dominate the heritage building or surrounding heritage places.
  - Retain the primacy of the three-dimensional form of the heritage building.
  - Incorporate materials and finishes that are recessive in texture and colour.
  - Generally utilise visually lightweight, but high quality, materials that create a juxtaposition with the heavier masonry of the heritage facades.
  - Incorporate simple architectural detailing so it does not detract from significant elements of the existing building or streetscape.
  - Provide a recessive backdrop to the heritage street wall and individual heritage buildings.
  - Avoid highly articulated facades with recessed and projecting elements.
  - Avoid highly contrasting or vibrant primary colours.
  - Avoid unarticulated façades that give a bulky appearance, especially from oblique views.
  - Be articulated to reflect the fine-grained character of narrow sites.
  - Encourage that upper-level development behind rows of identical or similar shop/residences is consistent in form, massing and façade treatment as existing upper-level development (where this exists).

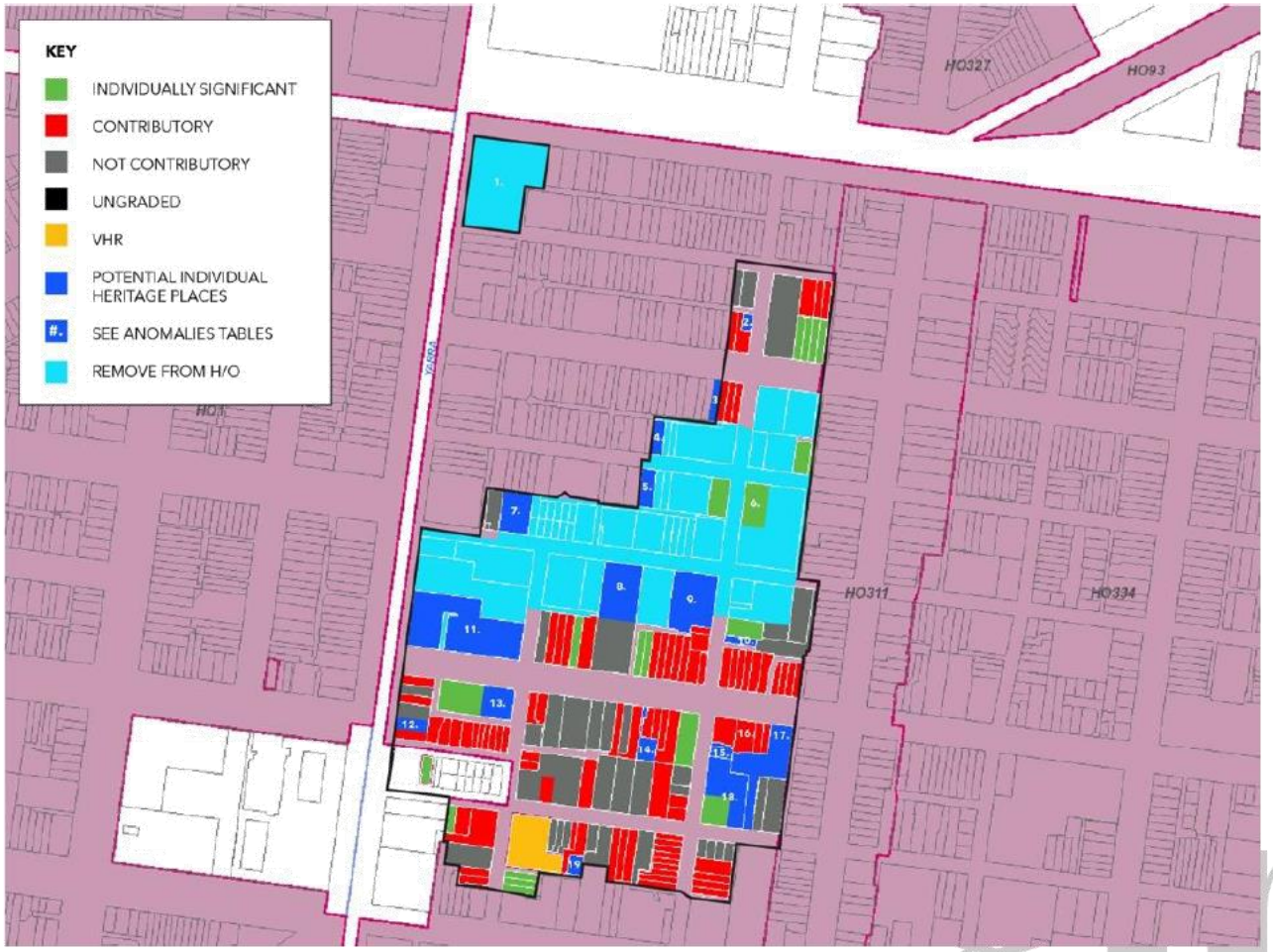
- New development on land immediately abutting heritage buildings should:
  - Provide a sensitive site-responsive transition between the existing heritage fabric and the new proposed built form.
  - Retain the visual prominence of prominent corner buildings and local landmarks.
  - Be distinguishable from the original heritage fabric and adopt a high quality and respectful contextual design response.
  - Ensure façade treatments and the articulation of new development are simple and do not compete with the heritage fabric.
  - Avoid the replication of existing decorative features and architectural detail.

APPENDIX I – Fitzroy Mixed Use Precinct Anomalies

A1.1 Qualifications

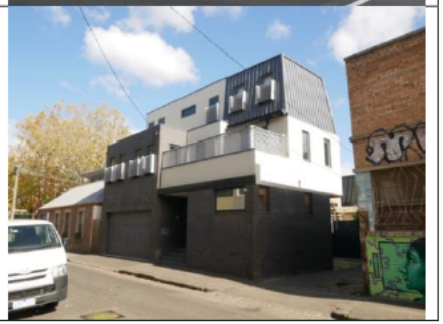
- Only obvious omissions and anomalies have been identified and inconsistencies in street addresses have not been identified
- Review of gradings across the precinct has not been undertaken
- Photos taken by GJM October 2018 and May 2020 unless otherwise noted.

A1.2 Anomalies Map



A1.3 Anomalies

Map references generally identified from west to east and north to south.

MAP REF	ADDRESS (HO NUMBER)	CURRENT GRADING APPENDIX 8	CURRENT GRADING PRECINCT MAP	PROPOSED GRADING	COMMENTS / RECOMMENDATION (BOLD)	IMAGES
1.	366-374 Nicholson Street and 6 Alexander Parade, Fitzroy (HO334)	Not-contributory	Not-contributory	Remove from HO334	There is no heritage fabric on these prominent sites at the intersection of Alexandra Parade and Nicholson Street and the redevelopment on this land should not trigger the heritage provisions of the Yarra Planning Scheme. **Remove land from the extent of HO334.**	
2.	467 Fitzroy Street, Fitzroy (HO334)	Ungraded	Ungraded	Not-contributory	This recently developed site does not appear within Appendix 8. **Update Appendix 8 and the grading map to show this property as 'Not-contirbutory'**	

Attachment 6 - Attachment 6 - Fitzroy West Heritage Review

3.	60 Westgarth Street, Fitzroy (HO334)	Contributory	Contributory	Contributory	60-66 Westgarth Street is a row of four two-storey shop/residences built as a terrace. Three of four buildings are zoned MUZ (numbers 62, 64 and 66). Number 60 is zoned NRZ. **Rezone 60 Westgarth Street from NRZ to MUZ**	
4.	45 Leicester Street, Fitzroy (HO334)	Contributory	Contributory	Contributory	45 Leicester Street (right of image) is a single storey terraced house. It is currently zoned MUZ whereas its pair at 43 Leicester Street (left of image) is zoned NRZ. This appears to be the result of an error in the mapping of the zone boundaries. **Rezone 45 Leicester Street from MUZ to NRZ.**	
5.	44 & 46 Leicester Street, Fitzroy (HO334)	Contributory	Contributory	Contributory	44 & 46 Leicester Street is a pair of highly intact single storey terraced houses. They currently zoned MUZ and form the boundary to NRZ zoned land to the west. This appears to be the result of an error in the mapping of the zone boundaries. **Rezone 44 & 46 Leicester Street from MUZ to NRZ.**	

Attachment 6 - Attachment 6 - Fitzroy West Heritage Review

6.	68-70 Leicester Street, Fitzroy (forms part of 75-87 Rose Street) (HO334)	Individually significant	Not-contributory	Individually significant	This two-storey brick factory building dates from 1873 and is located at the northwest corner of the Fitzroy Market site (75-87 Rose Street). It is included in Appendix 8 as 'Individually significant' (addressed as 70 Leicester Street) but is shown as 'Not-contributory' on the grading map. **Amend the grading map to show 68-70 Leicester Street as 'Individually significant'**	
7.	21-23 Rose Street, Fitzroy (HO334)	Contributory	Contributory	Not-contributory	21-23 Rose Street is identified in Appendix 8 as a factory/warehouse dating from 1915-25 and is graded 'Contributory'. This property has been redeveloped and no intact heritage fabric remains. **Amend Appendix 8 and grading map.**	
8.	46-48 and 50-52 Rose Street, Fitzroy (HO334)	46-48 Rose Street – Not-contributory (1960-70 Factory/warehouse use) 50-52 Rose Street – Contributory (1915-25, Engineering Company Warehouse)	48 Rose Street – Not-contributory 54 Rose Street - Contributory	48 Rose Street – Contributory (retained façade) 54 Rose Street – Not-contributory	48 Rose Street and 41 Kerr Street has been redeveloped as an apartment development which retains the remnant façade of the Engineering Company Warehouse with no heritage fabric behind. Appendix 8 incorrectly addresses that building at 50-52 Rose Street. 54 Rose Street is occupied by the various structures that make up the Rose Street Market.	

Attachment 6 - Attachment 6 - Fitzroy West Heritage Review

					Amend Appendix 8 and grading map.	
9.	415, 417 and 419 Fitzroy Street, Fitzroy (HO334)	Ungraded	Ungraded	Not-contributory	415, 417 and 419 Fitzroy Street are tilt-slab factory buildings dating from the late-twenieth century and do not contribute to the South Fitzroy Precinct. **Amend Appendix 8 and grading map to show these sites as 'Not-contributory'.**	 Source: Google Streetview, July 2019
10.	404-408 Fitzroy Street, Fiztroy (HO334)	406-408 Former Wesleyan Church – Individually significant Land immediately south 1/TP566748 - ungraded	406-408 Former Wesleyan Church – Individually significant Land immediately south 1/TP566748 - ungraded	406-408 Former Wesleyan Church – Individually significant Land immediately south 1/TP566748 – Not-contributory	The land immediately south of the former Wesleyan Church at 406-408 Fitzroy Street (top image) is occupied by substantially altered single storey factory/warehouse buildings and an access way to the rear of 71-77 Kerr Street. This parcel of land is currently not included in Appendix 8. **Amend Appendix 8 and the grading map to grade this property at 1/TP566748 'Not-contributory'**	

Attachment 6 - Attachment 6 - Fitzroy West Heritage Review

11.	7-19 Kerr Street and 282-298 Nicholson Street, Fitzroy (HO334)	15-19 Kerr Street – Contributory 17 Kerr Street – Contributory 282-298 Nicholson Street – Not contributory	15-19 Kerr Street – Contributory 17 Kerr Street – Contributory 282-298 Nicholson Street – Contributory	15-19 Kerr Street – Contributory 17 Kerr Street – Contributory 282-298 Nicholson Street – Not contributory	15-19 Kerr Street (top image) are two storey factory/warehouse buildings dating from 1900-15 and are graded 'Contributory' in Appendix 8. A separate entry for 17 Kerr Street, while apparently redundant, is also provided in Appendix 8. 7 Kerr Street (middle image) is occupied by a single storey brick factory warehouse dating from the Inter-war period – there is no refence to this building in Appendix 8. While forming part of the same parcel of land as 7-19 Kerr Street, 282-298 Nicholson Street is occupied by showrooms dating from c.1940-50. All the land is identified as 'Contributory' in the grading maps. **Assess 7 Kerr Street to determine whether or not a 'Contributory' grading is warranted.** **Amend the grading map to show 282-298 Nicholson Street as 'Not-contributory', and 15-19 Kerr Street as 'contributory.'**	

Attachment 6 - Attachment 6 - Fitzroy West Heritage Review

12.	270 Nicholson Street, Fitzroy (HO334)	270-268 Nicholson Street – Not-contributory	Contributory	Not-Contributory	This single storey showroom building does not contribute to the Fitzroy South Precinct but is identified as 'Contributory' in the grading map and is graded 'Not-contributory' in Appendix 8. **Amend the grading map to show 270 Nicholson Street as 'Not-contributory'.** Appendix 8 provides two entries for 268 Nicholson Street, one addressed 268 Nicholson Street and one 270-268 Nicholson Street. **Amend Appendix 8 to replace the address '270-268 Nicholson Street' with '270 Nicholson Street'.**	
13.	2-20 Kerr Street, Fitzroy (HO334)	Gumleaf Papers Pty. Ltd. Factory 2 Kerr Street – Individually significant 16-20 Kerr Street – Not contributory	2-20 Kerr Street – Individually significant	2 Kerr Street – Individually significant 16-20 Kerr Street – Not contributory	2-20 Kerr Street is occupied by single storey brick factory/warehouse buildings dating from 1939 (2 Kerr Street) and c.1930-50 (16-20 Kerr Street). Appendix 8 grades the former 'Individually significant' and the latter 'Not-contributory'. **Update grading map to reflect the grading within Appendix 8.**	

Attachment 6 - Attachment 6 - Fitzroy West Heritage Review

14.	52 Kerr Street, Fitzroy (HO334)	Ungraded	Ungraded	Contributory	52 Kerr Street is located at the rear of numbers 54 and 46 (note there is no number 50 Kerr Street) and was asserted at the time of its recent sale (October 2019) as dating from the 1880s. This property does not appear within Appendix 8 nor the grading maps. **Assess 52 Kerr Street to determine if it warrants inclusion within Appendix 8 as 'Contributory'.**	 Source: realestate.com.au/sold/property-house-vic-fitzroy-132109186
15.	70-74 Kerr Street and 380 Fitzroy Street, Fitzroy (HO334)	70-74 Kerr Street - Not-contributory 380 Fitzroy Street – Ungraded	70-74 Kerr Street - Not-contributory 380 Fitzroy Street – Ungraded	70-74 Kerr Street - Not-contributory 380 Fitzroy Street – Not-contributory	380 Fitzroy Street is located at the rear of 70-74 Kerr Street and is occupied by at grade car park. This land does not appear on Appendix 8 or the grading maps. **Amend Appendix 8 and the grading map to show 380 Fitzroy Street as 'Not-contributory'**	
16.	76, 78 & 80 Kerr Street, Fitzroy (HO334)	Contributory	Ungraded	Contributory	76, 78 and 80 Kerr Street are a row of three terraced houses dating from c.1870-90. They are graded 'Contributory' in Appendix 8 but do not appear on the grading map. **Update grading maps to show 76-80 Kerr Street as 'Contributory'.**	

Attachment 6 - Attachment 6 - Fitzroy West Heritage Review

17.	88-90 Kerr Street, Fitzroy (HO334)	Not-contributory	Individually significant	Not-contributory	88-90 Kerr Street is a c.1970-80s office building that is graded 'Not-contributory' in Appendix 8. It is shown as 'Individually significant' in the grading map. **Update grading maps to show 88-90 Kerr Street as 'Not-contributory'.**	 Scource: Google Streetview, July 2019.
18.	71-75 Argyle Street, Fitzroy (HO334)	Factory, Arthur Engineering Co., 71 Argyle Street - Individually significant 73-75 Argyle Street – Not-contributory	Part Individually Significant; Part ungraded	71 Argyle Street - Individually significant 73-75 Argyle Street – Not-contributory	71-75 Argyle Street is an irregularly shaped, consolidated site currently undergoing redevelopment. The Argyle and Fitzroy Street façades of the two-storey factory building at 71 Argyle Street dating from c.1870-90 have been retained. **Update grading map to reflect the grading within Appendix 8.**	
19.	1 Harrison Place (HO334)	Ungraded	Ungraded	Contributory	The freestanding building at 1 Harrison Place is a two-storey brick factory/warehouse building from c.1900 which has been converted to an office/residence. It is moderately intact but remains legible to its original period, form and design. **Assess 1 Harrison Place to determine if it warrants inclusion within Appendix 8 as a 'Contributory' building.**	

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

Traffix Group

Traffic Engineering Assessment

Brunswick Street and Smith Street Activity Centres – Extended Area

Prepared for
Yarra City Council

November, 2020

G22790R-02B

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Appendix A **Existing Traffic Management Conditions**

Appendix B **Existing Laneway Conditions**

Appendix C **Existing Access Arrangements**

1. Introduction

Yarra City Council has initiated Built Form Frameworks for activity centres in Fitzroy and parts of Collingwood (referred to as the 'Brunswick Street and Smith Street Activity Centres' through this report in keeping with the previous naming convention). These Built Form Frameworks will define the preferred future built form character of the precincts and include principles, guidelines and requirements to guide future development and to manage the level of change. Importantly, these frameworks will inform the preparation of future Design and Development Overlay (DDO) controls and policy for these areas.

Traffix Group has previously prepared a traffic study for Brunswick Street and Smith Street Activity Centres (report reference: G22790-01B, dated November, 2019). This report includes a detailed review of the whole study area, existing transport conditions and reviews the area in detail from a transport planning perspective.

Since that time, the area being studied by Council for the Brunswick Street and Smith Street Activity Centres have been extended further than that covered by the original traffic study. This report focuses only on the extended area, rather than the entire precinct.

Our review of the remaining areas of the Activity Centres can be found within our previous report (G22790-01B, dated November, 2019) and this report should be read as an extension and in conjunction with the main report.

2. Scope & Methodology

The adopted methodology for undertaking this study was as follows:

- Undertake thorough site inspections of the extended study areas to document and map (with a main focus on properties abutting arterial and higher order roads):
  - existing access arrangements for each individual property,
  - existing traffic management treatments for all arterial and local roads and rear laneways within the study areas,
  - existing configuration of each road and laneway within the study areas (including carriageway width and road reservation width), and
  - foreseeable access constraints to each individual property should development occur.
- Review and categorisation of laneways into 3 categories (unconstrained, partially constrained or highly constrained) in order to better understand their potential to currently accommodate additional traffic under their existing conditions and configuration. Key factors include laneway width, laneway length, laneway connections (i.e. continuous or dead-end) and physical layout (i.e. bends within the laneway network). These factors are discussed in more detail further in the report.
- Review of the capacity for laneways and local roads to accommodate the forecast level of traffic based on development potential and their existing configuration.
- Review of what configuration or adjustments may be necessary to laneways or local road configurations in order to accommodate this increase in vehicle movements and to

minimise potential for vehicle conflicts within the study areas. In particular, impacts on Arterial Roads to be minimised as much as practically possible.

- Make recommendations as to the location and form of new, altered and retained access arrangements and laneways required to provide appropriate access to future developments.
- Review draft wording for the traffic engineering aspects of the future Design and Development Overlays, which sets out design objectives and outcomes, permit application requirements, and decision guidelines for assessing future planning permit applications, based on the desired access outcomes for future development.

3. Existing Conditions

3.1. Study Areas

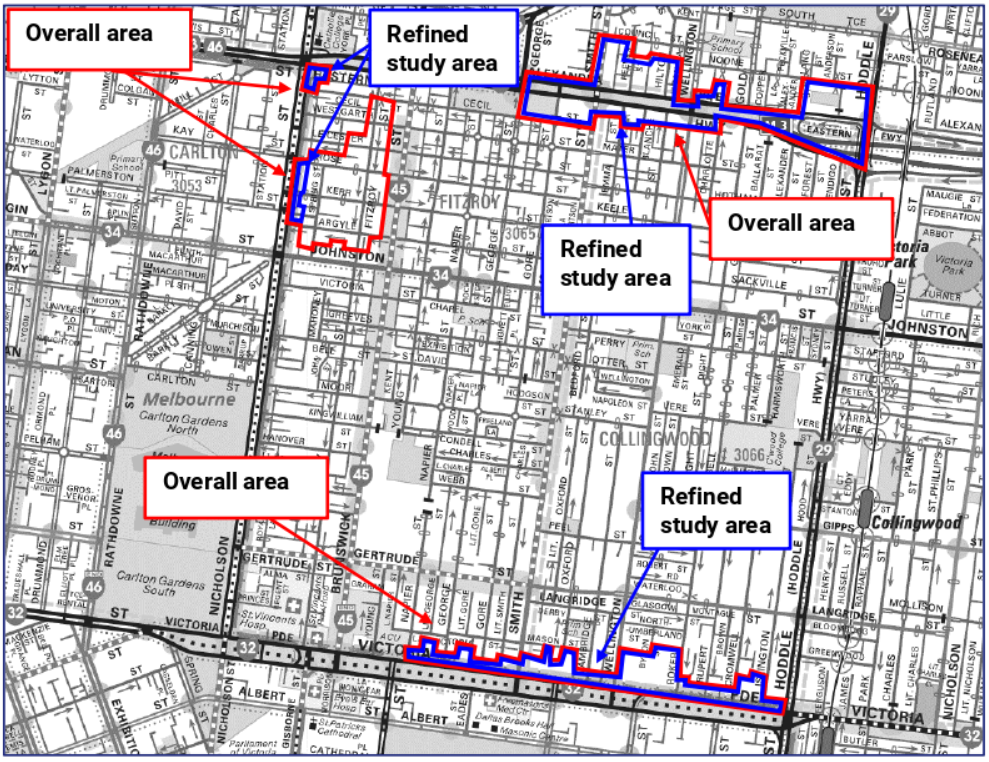
The new study area is divided into three areas as follows:

- Alexandra Parade Precinct
- Fitzroy West Precinct
- Victoria Parade Precinct

This is shown in the locality plan provided on the following page at Figure 1. Land within the study areas is generally zoned 'Commercial 1 Zone', 'Commercial 2 Zone' and 'Mixed Use Zone', as shown in Figure 2.

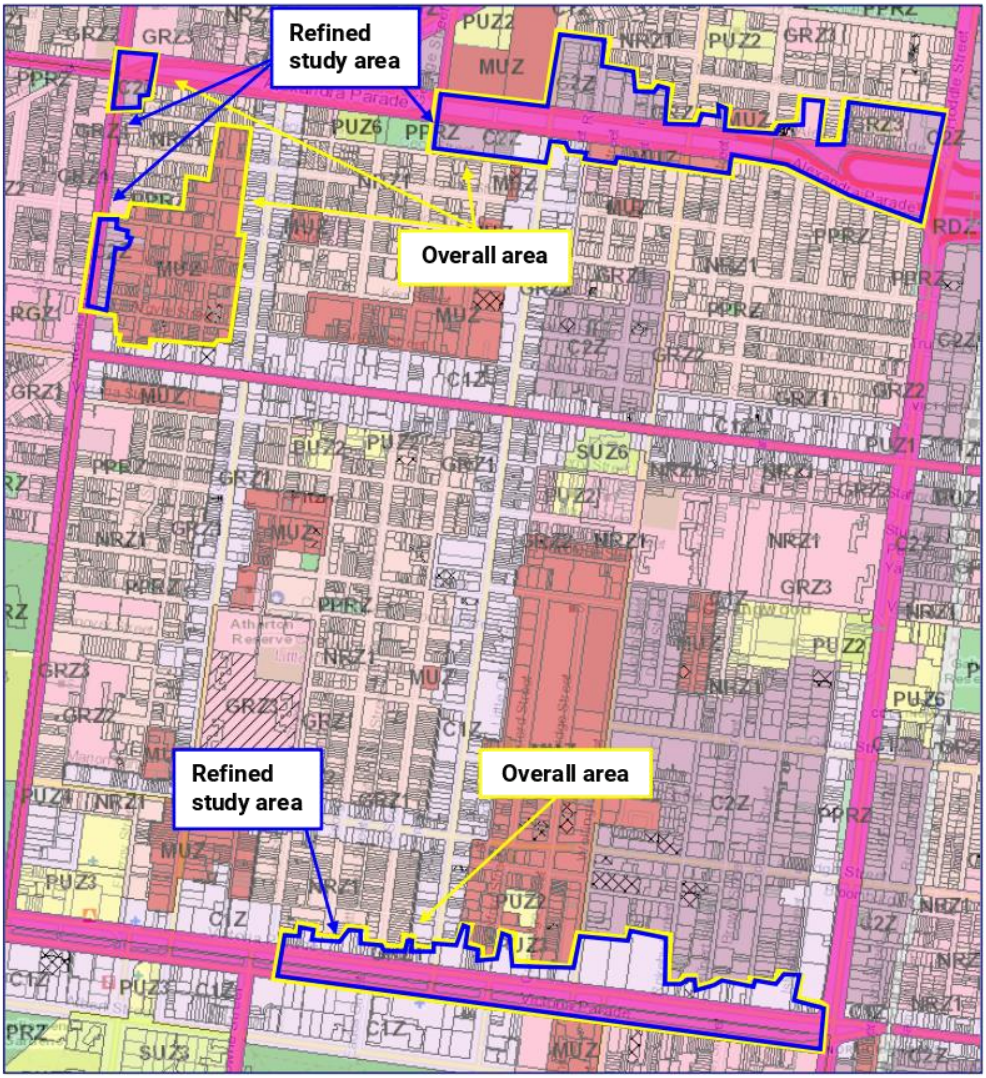
Both figures show the overall study area, in addition to the area of focus of this report (the refined study area), which includes all properties adjacent to arterial roads and higher order roads.

The Fitzroy West Precinct predominately comprises properties that do not abut arterial roads or laneways. It is made up of 'hinterland' areas where vehicle access location is not critical to the functioning of local road network. As per the previously completed study methodology, these areas have not been reviewed in detail from a traffic planning viewpoint. This is mainly due to the fact that none of these roads have direct frontage/potential access opportunities to arterial roads, and that access to either the local roads or laneways would both be appropriate for these sites.



Source: Melway

Figure 1: Locality map



Source: Planning Schemes Online

Figure 2: Land use zoning map

Detailed information regarding the existing conditions of the study area, including surrounding land uses, the road network, alternative modes of transport and local demographics are outlined in our previous report (report reference: G22790-01B, dated November, 2019).

4. Control of Vehicle Access Locations

Our previous report set out in detail vehicle access management principles and methods of access control.

Essentially, conventional planning practice dictates that the provision of vehicle access to private land should prioritise access to lower order roads where possible. There are numerous benefits of limiting vehicle access to arterial roads including creating a pedestrian friendly environment through increasing active frontage, removes conflict points, reduces the number of intersections, and increasing safety and efficiency of the overall road network.

This is further supported through local Council policy, which recognises the role of roads for movement via multiple transport modes. Council's transport modal hierarchy for decision making places pedestrians, cyclists and trams in the top three, and places vehicular traffic at the bottom.

This hierarchy recognises the importance of sustainable modes into the future and supports the recommended access management strategy to utilise rear laneways and side streets wherever possible. Direct access to arterial roads being a last resort (with consideration for "no parking provision" potentially being preferable for some sites).

However, it is also acknowledged that there are instances where direct vehicle access to arterial roads may need to be provided.

4.1. Control of Vehicle Access

The vehicle access hierarchy has been defined in accordance with the following hierarchy (from highest to lowest preference):

1. Laneways
2. Local Streets
3. Arterial Roads – no access unless there is no alternative

Arterial roads include:

- Brunswick Street
- Smith Street
- Wellington Street
- Gertrude Street/Langridge Street
- Johnston Street
- Nicholson Street
- Alexandra Parade
- Victoria Parade

It is recommended that this hierarchy is also included in the future planning controls for the study area.

In some instances, the strict use of laneways for sole vehicle access may overload the capacity of the laneways in their current form. The following section reviews the capacity of the existing laneways within the study area to accommodate additional development.

5. Right-of-Way Management

The following sections provide:

- An outline of the methodology behind our categorisation of laneways within the study area
- A description of laneway characteristics and how these affect the capacity of laneways to accommodate vehicles, pedestrians and cyclists.
- A detailed description for each of the options considered to improve the laneway network.

5.1. Categorisation of Laneways

As part of the review process of the current capacity of existing laneways to accommodate additional future development traffic volumes, we have reviewed and categorised laneways within the study areas into three categories (unconstrained, partially constrained or highly constrained) in order to better understand their potential to currently accommodate additional traffic under their existing conditions and configuration.

Key factors include laneway width, laneway length, laneway connections (i.e. continuous or dead-end) and physical layout (i.e. bends within the laneway network). These factors are discussed in more detail below.

The laneway assessment classified all laneways within the study area by their potential to accommodate additional traffic. Laneways have initially been classified at three levels:

Unconstrained – these laneways have very few, if any, development constraints. As a result, they are well suited to accommodating additional traffic. Changing the laneway to operate one-way (where possible) has not been considered as a constraint.

Partially Constrained – these laneways have some potential constraints that limit their capacity to accommodate traffic, however they are generally easily addressed. Common issues include insufficient width, long length and lack of splays at critical locations.

Highly Constrained – this laneway has fundamental issues that cannot easily resolved. This usually relates to very narrow laneways or heritage constraints that limit the opportunities to alter the laneways.

When assessing the capacity of laneways, a number of factors need to be considered. For most laneways, it is a combination of factors that contribute to its classification.

The key factors that influence the classification of a laneway are outlined below:

Laneway width. This is the single most important factor to the operation and capacity of a laneway. To provide a single traffic lane, a laneway should be at least 3.0m wide. A width slightly less than 3.0m (down to 2.8m) is also functional, although constrained. Laneways less than 2.8m wide are problematic for vehicle access and should be considered as pedestrian only laneways and/or have very limited development potential (it is acknowledged

that some narrow laneways within the study area are in practice used for vehicle access currently).

Laneways become capable of supporting simultaneous two-way traffic at a width of 5.5m if not built up (i.e. 5.5m between walls) or 6.0m wide between building walls. This width removes most capacity constraints of laneways and effectively makes them unconstrained.

One-way or two-way operation. For single width laneways, a one-way laneway has a significantly higher capacity than a laneway permitting two-way traffic. One-way operation eliminates vehicle conflict within the laneway and can support a high level of access/development from the laneway. One-way laneways are generally classified as unconstrained in this assessment.

Continuous. A continuous laneway can generally be made to operate in a one-way direction. Generally, a continuous, straight laneway was classified as unconstrained because it can be made one-way to address capacity constraints.

A dead end laneway has less capacity to handle additional traffic and the laneway cannot be made one-way to manage traffic flow. However, this factor is only relevant for single width laneways, a laneway wide enough for two-way traffic is not constrained just because it has a dead end.

Laneway Length. This factor ties into laneway width and whether it is a continuous laneway or not. A long, single width (3m up to 6.0m wide) laneway will experience a high level of vehicle conflict due to higher traffic volumes, higher development potential (more properties accessing it) and more chances of vehicles meeting the laneway.

There are no set rules regarding the 'tipping point' for when two-way traffic in a single width laneway reaches capacity. It is a combination of factors including traffic volume, configuration and length that contribute to a laneway's capacity. Laneway length is therefore a contributing factor that impacts on laneways in combination with other factors.

Physical layout. A straight laneway has the highest vehicle carrying capacity**.** Bends in laneways may create operational issues, particularly if:

- There are no splays around the inside corner of the bend to facilitate vehicle access. For instance, a 90° bend between two 3m wide laneways is inaccessible to vehicles without a splay.
- Due to a lack of sight distance, vehicles cannot see each other approaching the blind corner. For single lane laneways, this can be a serious issue if drivers meet near the bend, the laneways are long and there are no passing opportunities.

Number of Abutting Properties and Frontage. The number of properties and their frontages are relevant to the potential future traffic conditions of a laneway. There are a number of ways this factor can influence laneways:

- Short laneways may only serve a limited number properties and accordingly with a low development potential, a short laneway may effectively be 'unconstrained'.
- A large number of narrow lots might make widening a laneway problematic.
- If the number of abutting properties to the laneway is small, a short, narrow laneway is unlikely to be constrained.

Heritage constraints. We are not heritage experts and we have relied on information provided by Council in this regard. Properties that have heritage value may create issues in that they may not easily be modified and this was taken into account during our initial review. Heritage properties abutting a laneway may limit options to widen the laneway.

The follow factors were not considered when assessing the development potential of laneways:

- The condition of the laneway (does it need maintenance? Is it in disrepair?).
- The material the laneway is constructed with or type of surface treatment (gravel, asphalt, bluestone, etc.).

As existing Council assets, the condition of the laneway is not especially relevant. It is Council's on-going responsibly to maintain laneways as appropriate.

Some larger developments will warrant upgrading the surface of laneways (for instance, from gravel to asphalt). However, the condition of the laneway is less relevant than its physical configuration. Council also has a number of methods of upgrading the surfaces of laneways, including as permit conditions for significant developments or special charge schemes of abutting properties. These issues are easier to resolve than physical issues with a laneway's configuration.

Summary

From the above, it is apparent that the capacities of laneways are impacted by a large number of factors. In addition, it is challenging to concisely quantify how all the various factors influence each other. There are very few 'hard and fast' rules that define when a laneway is constrained or not and accordingly, this assessment is somewhat subjective and our assessment is based on our engineering judgement and experience.

5.2. Upgrading the Capacity of Laneway

Under Clause 56.06 of the Planning Scheme, Table C1 provides an outline of the design of roads, one of which includes an 'Access Lane', which is defined as *a side or rear lane principally providing access to parking on lots with another street frontage.* Table C1 continues on to state that an Access Lane has a traffic volume of up to 300 vehicles per day (vpd) and this is typically adopted as the environmental capacity laneway. This also represents an indicative peak volume of 30 vehicles per peak hour (two-way). This generally applies to single-width laneways (typically in the order of 3m width).

The options in terms of increasing the traffic capacity of existing laneways include conversion to a one-way operation, increasing laneway width, provision of splays around laneway corners and the provision of a passing area at the entrance to a laneway.

Upgrades for non-vehicle travel could also be undertaken on laneway, including converting appropriate laneways to shared areas.

5.3. Recommendations

Our recommendations regarding various laneway upgrades are summarised at Table 1.

The table provides the detailed reason behind the recommendations for the various laneways within the study area and references the laneways by the numbers defined in Appendix C.

Laneways not included in the following table are unlikely to require updates or modifications, either due to already being functional for higher traffic volumes or being within areas where the development potential (intensity of development) of abutting properties is low.

It is of note that laneways reviewed as a part of our previous report have been re-included if they are within the new study area boundaries and we have maintained their previous naming/numbering convention. All new laneways have been numbered starting at the end of the previous ROW list (i.e. starts at ROW 123).

Table 1: Recommendations for ROW upgrades

ROW	Classification	Modifications	Reason
59: ROW (from Emma St to Emma Street)	Partially constrained	Provide splay on southern corner No. #35 Emma St.	A splay is needed to make the ROW traversable at its southern end.
122: ROW (from Derby Street to Victoria Parade)	Partially constrained	One-way traffic flow	This laneway is long and abuts numerous properties.
128: ROW (from Council Street to Alexandra Parade)	Partially constrained	Modifications rely on outcome of current permit application	There is a current permit for the laneway is to be partially converted to private land in lieu of consolidated development on the block. This will result in a change to the way that the ROW operates. This is discussed in more detail in the following section.
129: ROW (from Council Street to Alexandra Parade)	Partially constrained	One-way traffic flow	This laneway is long and abuts numerous properties.
131: ROW (from Noone Street to Alexandra Parade)	Partially constrained	One-way traffic flow	This laneway is long and abuts numerous properties.
132: ROW (from Noone Street to Alexandra Parade)	Partially constrained	One-way traffic flow	This laneway is long and abuts numerous properties.
134: ROW (from Noone Street to Alexandra Parade)	Partially constrained	One-way traffic flow	This laneway is long and abuts numerous properties.

Following this review, it is evident the recommendations for various laneways generally fall into two groups. These are described below:

One-Way Laneways

There are many laneways within the study area that run parallel with the arterial road and are relatively short in length (under 100m) and provide straight, through links between two local roads. These generally serve properties that have preferred building heights of 5-6 storeys.

Instead of physical changes (such as widening), the recommended solution to increased traffic volumes is that these laneways are made one-way to eliminate capacity constraints. The direction of the one-way arrangement would be subject to consultation.

Council has the option to either:

- Pro-actively make these changes now, to provide certainty to all landowners and developers about the future operation of these laneways, or
- Change these laneways on a case-by-case basis as development proposal eventuate. We do not prefer this option, because it provides no certainty to developers or the community in regards to the laneway. The outcome of this uncertainty is each individual developments will apply a heterogeneous mix of solutions to improve the laneway for their individual needs and the simple solution of a one-way arrangement (avoiding land loss) is rarely implemented. As changes to one-way operation requires community consultation, there is no certainty of Council support to change a laneway to one-way if proposed by a development.

Geometrically constrained laneways

These laneways typically have physical issues such as:

- No splays on corners and limited ability to provide them with properties outside of the study area, new buildings that did not provide the splays or heritage issues.
- Limited ability to widened the ROW due to heritage issues, subdivision pattern or properties abutting the laneway falling outside the study area.
- Dead ends

These laneways have a finite capacity that is unlikely to be improved or the solutions are unfeasible in our view. In this case, it is recommended that Council encourage limited car parking on sites relying on these laneways.

5.3.1. ROW 128 Network

There is a current permit application for the development site of 592-622 Smith Street, 2-12 Alexandra Parade and 1-7 Reeves Street, Clifton Hill under Permit No. PLN19/0845.

An aerial photograph of this network is shown in Figure 3.

The proposal includes the closure of the east-west laneway that runs from Reeves Street to the north-west section of the ROW. This will become a private pedestrian link. This will have impacts on the operation of the ROW, turning it into more of an L-shaped ROW between Council Street and Reeves Street, with a short dead end section. In this case, it would be recommended to provide a splay on the north-eastern corner of the L-shaped bend (#1

Council Street) if the site is redeveloped to help facilitate the turning movement from Council Street to Reeves Street.

If the application does not eventuate, then a one-way arrangement could be facilitated along the north-south portion of the ROW in order to minimise vehicle conflict.

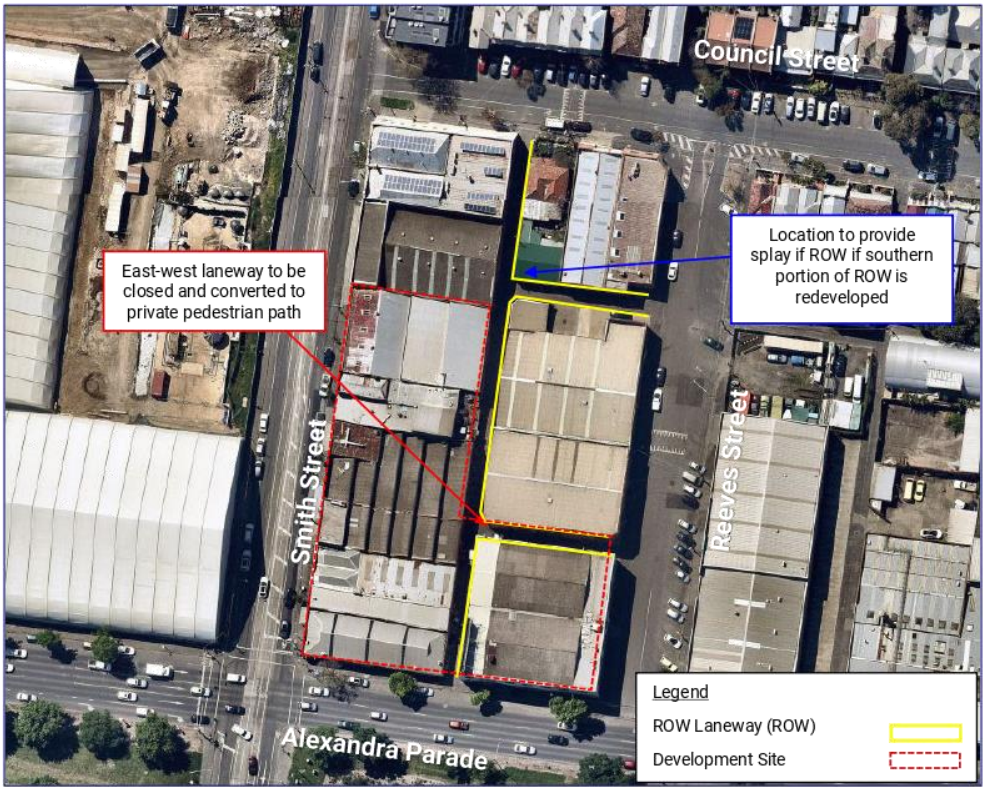


Figure 3: ROW 128

6. Design and Development Overlay – Draft Schedules

We have reviewed the Design and Development Overlay (DDO) draft schedule for all three of the study areas.

The following section reviews the items related to traffic engineering matters and provides our commentary. It is of note that most of the traffic engineering matters are universal across all of the study areas, and as such, these items have only been reviewed once.

The relevant sections of the DDO is copied out below:

Design and Development Overlay Schedule XX – All Areas

2.11 Access, Parking and Loading Areas Requirements

Pedestrian access to buildings should be achieved via streets and avoid primary access from laneways. Where pedestrian access from a laneway is appropriate, it should include a pedestrian refuge or landing.

Ensure pedestrian entrances are clearly visible, secure and have an identifiable sense of address.

Residential and commercial pedestrian entrances should be distinguishable from each other.

The common pedestrian areas of new buildings should be designed with legible and convenient access, with hallway and lobby areas of a size that reflects the quantity of apartments serviced and which can be naturally lit and ventilated.

Resident and staff bicycle parking should be located and designed to be secure and conveniently accessible from the street and associated uses.

Vehicle access should be achieved from laneways or side streets (in that order of preference).

Car parking should be located within a basement or concealed from the public realm.

Vehicle ingress and egress into development, including loading facilities and building servicing, should be designed to ensure a high standard of pedestrian amenity and limit potential conflict between vehicle movements and pedestrian activity.

Development with redundant vehicle access points should reinstate the kerb, line-marked parking bays, and relocate any parking signs.

Development with laneway access may require a ground level set back in order to achieve practicable vehicle access. Between ground level and first floor, a headroom clearance of 3.5m minimum should be achieved.

Properties on the inside corner of bends in laneways or at intersections between two laneways should provide a minimum 3m x 3m splay to facilitate vehicle access.

5.0 Application Requirements

The following application requirements apply to an application for a permit under Clause 43.02, in addition to those specified elsewhere in the scheme and must accompany an application, as appropriate, to the satisfaction of the responsible authority:

- *a Traffic Engineering Report prepared by a suitably qualified traffic engineer that demonstrates how the development:*
  - *minimises impacts on the level of service, safety and amenity of the arterial road network (including tram services);*
  - *reduces car dependence and promotes sustainable transport modes; and*
  - *which includes an assessment of the cumulative impacts of traffic and parking in the Precinct including an assessment of the ongoing functionality of laneway/s, where applicable.*

6.0 Decision Guidelines

The following decision guidelines apply to an application for a permit under Clause 43.02, in addition to those specified in Clause 43.02 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- *whether the requirements in Clauses 2.2 to 2.11 are met;*
- *whether the design of the streetscape interface makes a positive contribution to an active, pedestrian-oriented street environment and/or public realm;*
- *the cumulative impact of development on traffic and parking in the nearby area, including on the functionality of laneways; and*
- *whether the layout and appearance of areas set aside for vehicular access, loading and unloading and the location of any proposed car parking is practicable, safe and supports a pedestrian-oriented design outcome.*

Design and Development Overlay Schedule XX – Alexandra Parade

To encourage development designs that promote pedestrian activity and passive surveillance, contributes to a high quality public realm, and avoid overshadowing of opposite footpaths on Alexandra Parade, side streets and public spaces.

2.11 Access, Parking and Loading Areas Requirements

Development must not provide additional vehicular access from Alexandra Parade.

Ensure access to service laneways is maintained in order to facilitate commercial use of the properties fronting Alexandra Parade.

Design and Development Overlay Schedule XX – Fitzroy West

To encourage development designs that promote pedestrian activity and passive surveillance, contributes to a high quality public realm, and avoid overshadowing of opposite footpaths on the southern side along the key pedestrian and green streets of Westgarth, Leicester, Rose, Kerr and Argyle Streets.

Design and Development Overlay Schedule XX – Victoria Parade

To encourage development designs that promote pedestrian activity and passive surveillance, contributes to a high quality public realm, and avoid overshadowing of opposite footpaths, public spaces and the boulevard's central median.

2.11 Access, Parking and Loading Areas Requirements

Development must not provide additional vehicular access from Victoria Parade.

Ensure access to service laneways is maintained in order to facilitate commercial use of the properties fronting Victoria Parade.

6.1. Response to DDO Draft Schedule

The majority of the traffic related items in the DDO Draft Schedule were adopted from our previous recommendations within our traffic report (G22790-01B), and as such, we are satisfied that they are appropriate.

The only exception to this is within *2.11 Access, Parking and Loading Area Requirements* for both Victoria Parade and Alexandra Parade, whereby developments are restricted from providing any additional vehicular access to these arterial roads (by the word must).

We agree that there should be preference to access from lower order roads, however there are certain exceptions to this rule, and as such we do not consider that a blanket ban on access to these roads is appropriate. Key examples include properties with no other road frontages and those with high development intensity rear access outcomes may not be feasible (due to the capacity of the rear laneway) or desirable (it may introduce large volumes of non-local traffic into local streets).

The 'Porche' and 'Melbourne Pathology' sites in Victoria Parade are key examples where this may be the case.

Our view is this requirement should be modified from 'must' to 'should' or must with some caveats.

We would recommend that the wording within *2.11 Access, Parking and Loading Area Requirements* for both areas replace the word *'must not'* from *'Development must not provide additional vehicular access from Alexandra Parade/Victoria Parade'* to *'should not provide vehicle access to Alexandra Parade/Victoria Street, where possible'.*

7. Conclusions

The access arrangements for all properties within the extended Brunswick Street and Smith Street Activities centre have been reviewed.

A number of key recommendations regarding how vehicle access should be planned, and recommended changes to ROWs within the extended area has been proposed in order to facilitate safe and efficient vehicle access to abutting land within the review area.

This report also reviews proposed Design and Development Overlay Draft Schedule to apply within the activity centre at Section 6.1. We are satisfied with the wording of the controls but do recommend that some limited flexibility is provided regarding access control to Victoria Parade and Alexandra Parade.

Specifically, we would recommend that the wording within *2.11 Access, Parking and Loading Area Requirements* for both areas replace the word *'must not'* from *'Development must not provide additional vehicular access from Alexandra Parade/Victoria Parade'* to 'should not provide vehicle access to Alexandra Parade/Victoria Street, where possible'.

Appendix A

Existing Traffic Management Conditions

Traffix Group G22790R-02B

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

MAP NO.1

Legend

- Study Area Boundary
- Traffic Signals
- Left Turn Ban
- Threshold Treatment
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

MAP NO.2

Legend

- Study Area Boundary
- Traffic Signals
- Left Turn Ban
- Threshold Treatment
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

Appendix B

Brunswick Street & Smith Street Traffic Study – Extended Area: Existing Traffic Management Conditions

MAP NO.3

Legend

- Study Area Boundary
- Traffic Signals
- Left Turn Ban
- Threshold Treatment
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

MAP NO.4

Legend

- Study Area Boundary
- Traffic Signals
- Left Turn Ban
- Threshold Treatment
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

Appendix B

Brunswick Street & Smith Street Traffic Study – Extended Area: Existing Traffic Management Conditions

MAP NO.5

Legend

- Study Area Boundary
- Traffic Signals
- Left Turn Ban
- Threshold Treatment
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

Appendix B

Brunswick Street & Smith Street Traffic Study – Extended Area: Existing Traffic Management Conditions

MAP NO.6

Legend

- Study Area Boundary
- Traffic Signals
- Left Turn Ban
- Threshold Treatment
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade

Appendix B

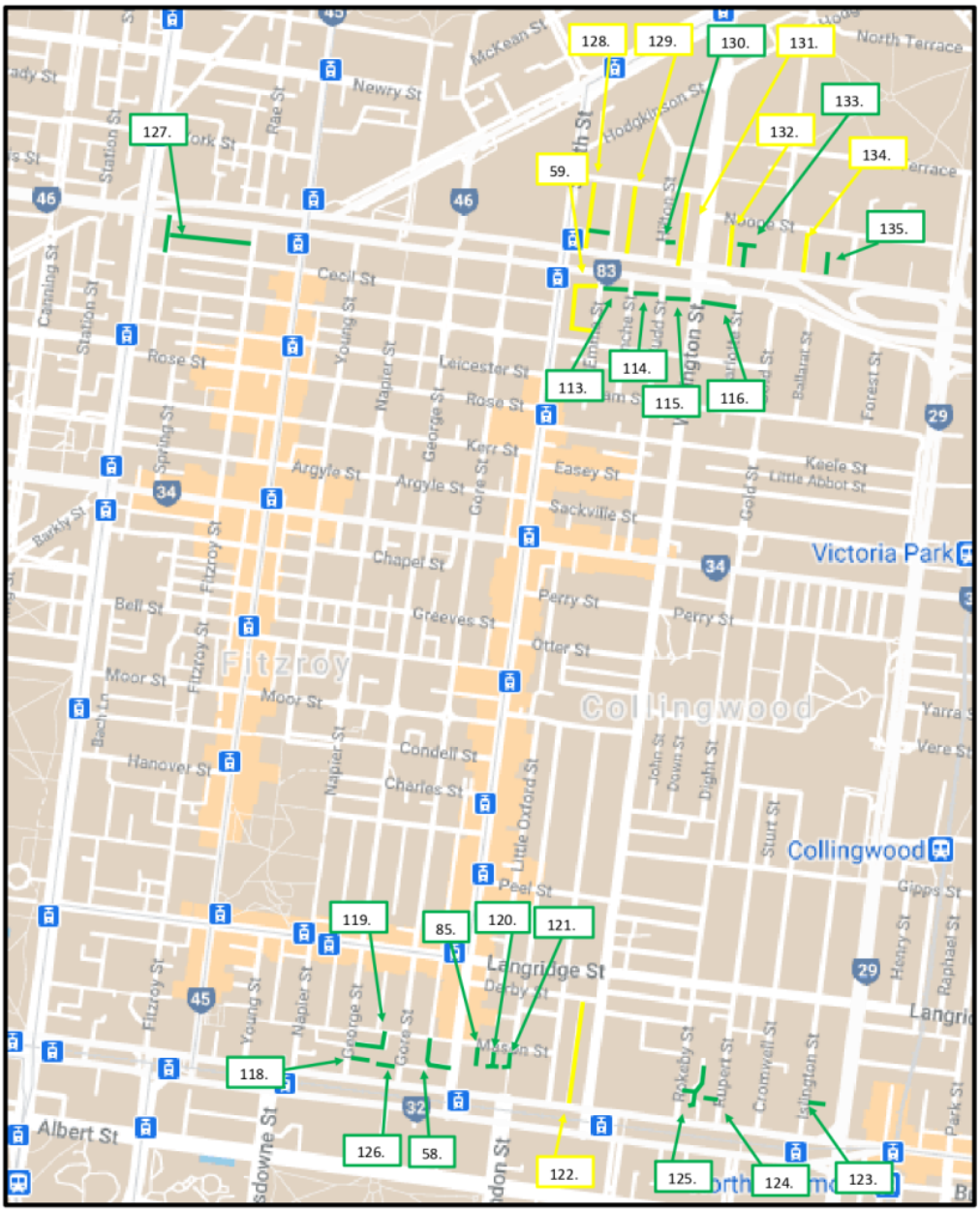
Existing Laneway Conditions

Traffix Group G22790R-02B

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

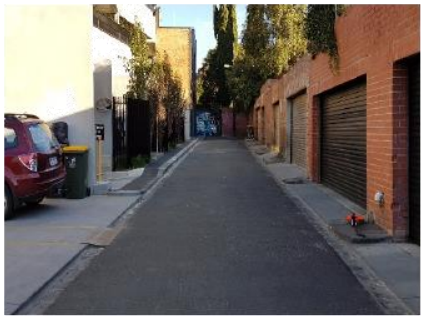
Appendix B

Brunswick Street & Smith St Activity Centre Traffic Study – Extended Area: Existing Road Network



Appendix B

Brunswick Street & Smith St Activity Centre Traffic Study – Extended Area: Existing Road Network

Street Name	Description	Photo
58: Little Smith Street (from Little Victoria Street to Smith Street)	**Existing Conditions:** • Carriageway width – 3.1m-4.5m • Road Reserve – 3.1m-6.2m • Traffic management – Two-way • Parking – No parking • Footpath – Narrow path/kerbing on both sides for north-south section, none for east-west section • Material – Asphalt and Bluestone • Layout features – there is a 90 degree bend in the ROW with a narrow kink from the property on the southwest corner making it difficult to traverse. **Constraints: Unconstrained Laneway** • Short in length • Corner does not need to be traversed	
59: ROW (from Emma St to Emma Street)	**Existing Conditions:** • Carriageway width – 2.9m-3.05m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – there are two 90 degree bends on the ROW, with a splay provided for the northern bend. The southern bend does not have a splay and is difficult to traverse. There is also construction going on adjacent to the ROW. **Constraints: Partially constrained** • Lack of splay on the southern bend	
85: ROW (from Mason Street to END)	**Existing Conditions:** • Carriageway width – 3.3m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Unsealed road **Constraints: Unconstrained laneway** • Short in length	

Appendix B

Brunswick Street & Smith St Activity Centre Traffic Study – Extended Area: Existing Road Network

Street Name	Description	Photo
113: ROW from Emma Street to Blanche Street)	**Existing Conditions:** • Carriageway width – 2.8m • Traffic management – Two-way, No entry from Alexandra Parade to both Blanche Street and Emma Street. Right turns are also not permitted from these streets to Alexandra Parade • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – There is a connecting ROW to the south, with splays provided on both corners at the intersection **Constraints: Unconstrained laneway** • Could be made one-way • Continuous	
114: ROW (from Blanche Street to Budd Street)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way, No entry from Alexandra Parade to both Blanche Street and Budd Street. Right turns are also not permitted from these streets to Alexandra Parade • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – There is a connecting ROW to the south, with a splay provided on the southeast corner. **Constraints: Unconstrained laneway** • Could be made one-way • Continuous	

Appendix B

Brunswick Street & Smith St Activity Centre Traffic Study – Extended Area: Existing Road Network

Street Name	Description	Photo
115: ROW (from Budd Street to Wellington Street)	**Existing Conditions:** • Carriageway width – 3.05m • Traffic management – Two-way, No entry from Alexandra Parade to Budd Street. Right turns are also not permitted from Budd Street to Alexandra Parade • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – There is a connecting ROW to the south, with a splay provided on the southeast corner. **Constraints: Unconstrained laneway** • Could be made one-way • Continuous	
116: ROW (from Wellington Street to Charlotte Street)	**Existing Conditions:** • Carriageway width – 3.15m • Traffic management – Two-way, No entry from Alexandra Parade to Charlotte Street. Right turns are also not permitted from Charlotte Street to Alexandra Parade • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – There is a connecting ROW to the south, with no splays provided. **Constraints: Unconstrained laneway** • Could be made one-way • Continuous	
118: ROW (from George Street to END)	**Existing Conditions:** • Carriageway width – 3.55m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Bluestone **Constraints: Unconstrained laneway** • Short in length	

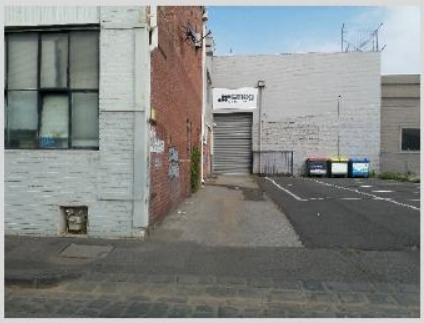
Appendix B

Brunswick Street & Smith St Activity Centre Traffic Study – Extended Area: Existing Road Network

Street Name	Description	Photo
119: ROW (from Little Victoria Street to END)	**Existing Conditions:** • Carriageway width – 3.2m-3.65m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – There is a 90 degree bend, with a splay provided on the northwest corner **Constraints: Unconstrained laneway** • Short in length	
120: ROW (from Mason Street to END)	**Existing Conditions:** • Carriageway width – 4m-6.2m • Road Reserve – 4.9m • Traffic management – Two-way • Parking – No parking • Footpath – Footpath on west side • Material – Asphalt • Layout features – There is a T-intersection at the south end of the ROW, with an open car park section which allows for turning **Constraints: Unconstrained laneway** • Wide road, which allows easy manoeuvrability	
121: ROW (from Mason Street to END)	**Existing Conditions:** • Carriageway width – 4.2m-4.45m • Traffic management – Two-way, Mason Street is one-way eastbound • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – There is a 90 degree bend at the south end of the ROW, with an open car park section which allows for turning **Constraints: Unconstrained laneway** • Short in length	

Appendix B

Brunswick Street & Smith St Activity Centre Traffic Study – Extended Area: Existing Road Network

Street Name	Description	Photo
122: ROW (from Derby Street to Victoria Parade)	**Existing Conditions:** • Carriageway width – 3.55m • Traffic management – Two-way, vehicles must enter/exit left at Victoria Parade • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – Long and has a large number of vehicles taking access **Constraints: Partially constrained** • Length • Should be one-way • High development potential	
123: ROW (from Islington Street to END)	**Existing Conditions:** • Carriageway width – 3.2m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Bluestone **Constraints: Unconstrained laneway** • Short in length	
124: ROW (from Rupert Street to END)	**Existing Conditions:** • Carriageway width – 2.9m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Concrete **Constraints: Unconstrained** • Narrow width • Short in length • Limited number of properties, and modifications can be utilised to increase width	

Appendix B

Brunswick Street & Smith St Activity Centre Traffic Study – Extended Area: Existing Road Network

Street Name	Description	Photo
125: ROW (from Rokeby Street to END)	**Existing Conditions:** • Carriageway width – 3.1m-3.4m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Partially bluestone, partially asphalt • Layout features – Has a T-intersection head, where the ROW splits into two directions. Splays are provided on both sides of the split **Constraints: Unconstrained laneway** • Wider around bends and splays provided at each corner, which facilitates adequate room to turn	
126: ROW (from Gore Street to END)	**Existing Conditions:** • Carriageway width – 4.6m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Bluestone **Constraints: Unconstrained laneway** • Short in length	
127: ROW (from Nicholson Street to Cecil Street)	**Existing Conditions:** • Carriageway width – 3.5m-3.8m • Traffic management – One-way (southbound) • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – Has a T-intersection head, where the ROW extends from the centre point of the N-S section to Young Street in the east. No splays are provided **Constraints: Unconstrained laneway** • Short in length • Already one-way • Bend does not require traversal	

Appendix B

Brunswick Street & Smith St Activity Centre Traffic Study – Extended Area: Existing Road Network

Street Name	Description	Photo
128: ROW (from Council Street to Alexandra Parade)	**Existing Conditions:** • Carriageway width – 3.8m-4.1m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – Has a T-intersection head, where the ROW extends from the the N-S section to Reeves Street in the east. A splay is only provided on the northern corner. **Constraints: Partially constrained** • Long and high development potential • Required works would depend on outcome of current permit application that proposed to convert a portion of the ROW to private land	
129: ROW (from Council Street to Alexandra Parade)	**Existing Conditions:** • Carriageway width – 4.2m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – Has two separate E-W sections connected to the northern portion via 90 degree bends, with no splays provided on any corners. **Constraints: Partially constrained** • Long and high development potential • Could be made one-way	
130: ROW (from Hilton Street to END)	**Existing Conditions:** • Carriageway width – 3.2m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Concrete **Constraints: Unconstrained laneway** • Short in length	

Appendix B

Brunswick Street & Smith St Activity Centre Traffic Study – Extended Area: Existing Road Network

Street Name	Description	Photo
131: Hilton Lane (from Council Street to Alexandra Parade)	**Existing Conditions:** • Carriageway width – 3.1m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Partially constrained** • Long and narrow • Could be made one-way	
132: ROW (from Noone Street to Alexandra Parade)	**Existing Conditions:** • Carriageway width – 4.6m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Partially constrained** • Could be made one-way • Limited development potential	
133: ROW (from Alexandra Parade to END)	**Existing Conditions:** • Carriageway width – 3.0m- 5.6m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – Has a T-head at its end, with no splays, however laneway is wider in vicinity of intersection. **Constraints: Unconstrained laneway** • Short in length • Limited development potential	

Appendix B

Brunswick Street & Smith St Activity Centre Traffic Study – Extended Area: Existing Road Network

Street Name	Description	Photo
134: Copper Lane (from Alexandra Parade to Noone Street)	**Existing Conditions:** • Carriageway width – 4.2m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – Has a T-head at its end, with no splays, however laneway is wider in vicinity of intersection. **Constraints: Partially constrained** • Could be made one-way • Limited development potential	
135: ROW (from Alexandra Parade to END)	**Existing Conditions:** • Carriageway width – 4.2m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Bluestone **Constraints: Unconstrained laneway** • Short in length • Limited development potential	

Appendix C

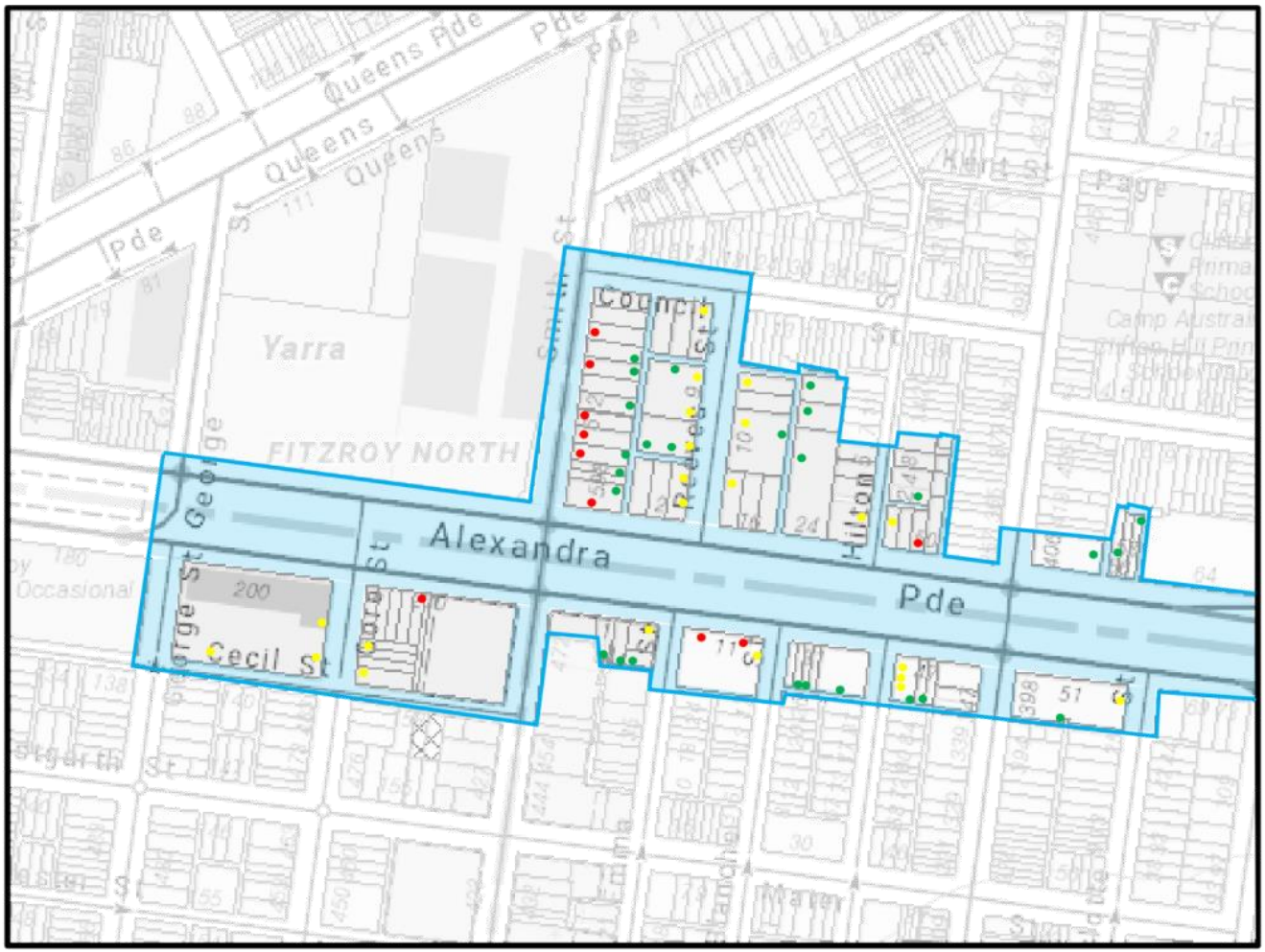
Existing Access Arrangements

Traffix Group G22790R-02B

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

Appendix C

Brunswick Street & Smith Street Traffic Study – Extended Area: Existing Access Conditions

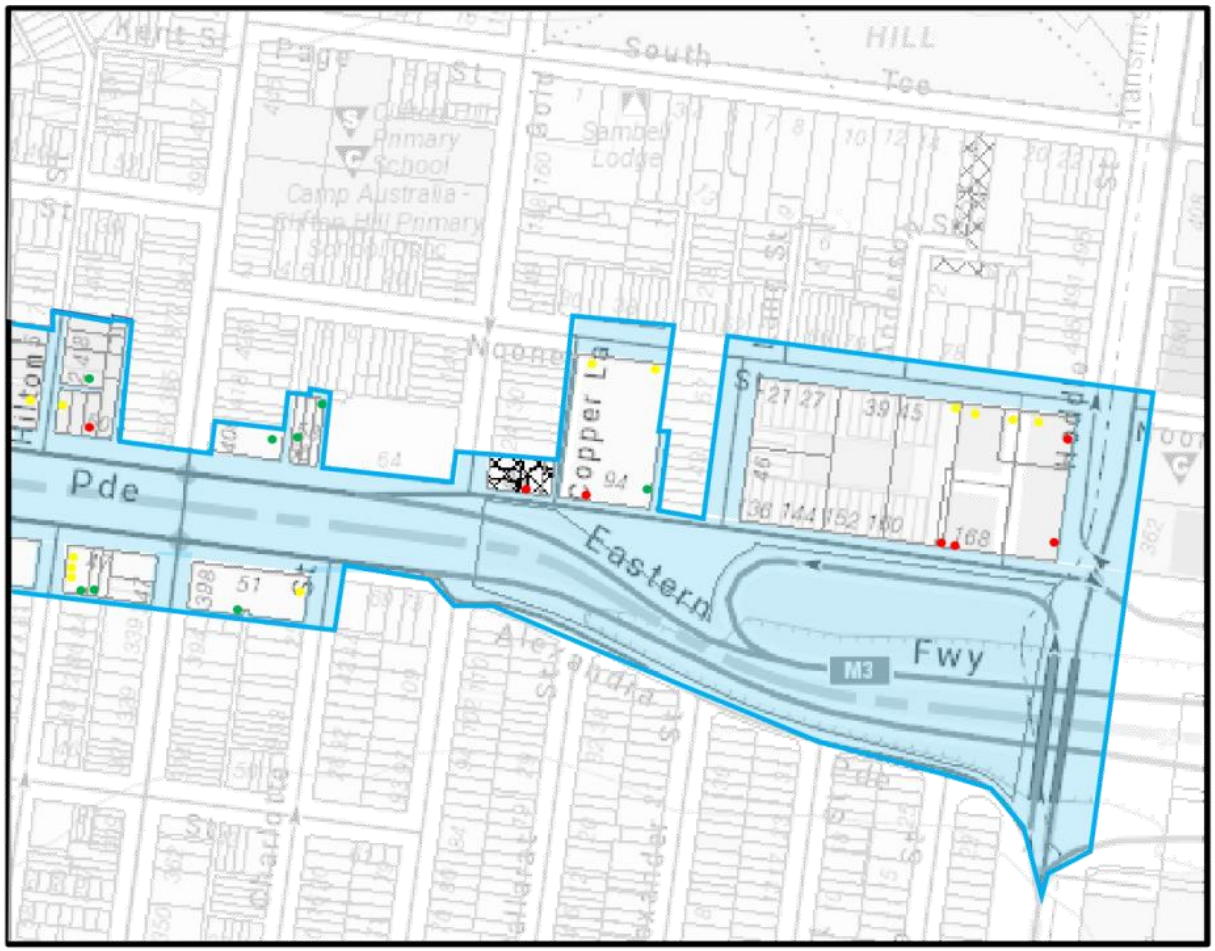


MAP NO.1

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

Appendix C

Brunswick Street & Smith Street Traffic Study – Extended Area: Existing Access Conditions



MAP NO.2

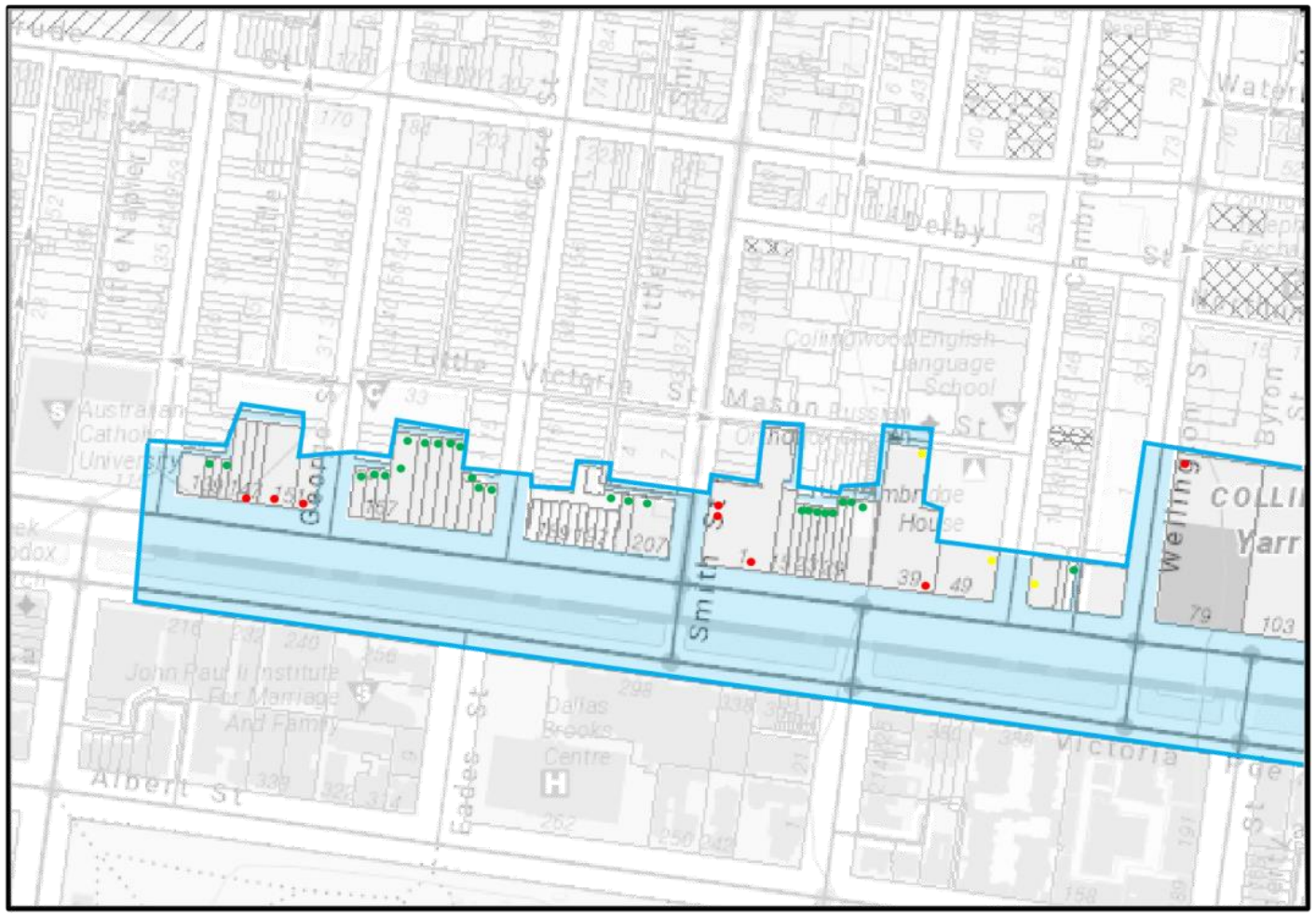
Legend

- Study Area Boundary
- Access to Alexandra Pde
- Access to RoW
- Access to side street

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

Appendix C

Brunswick Street & Smith Street Traffic Study – Extended Area: Existing Access Conditions

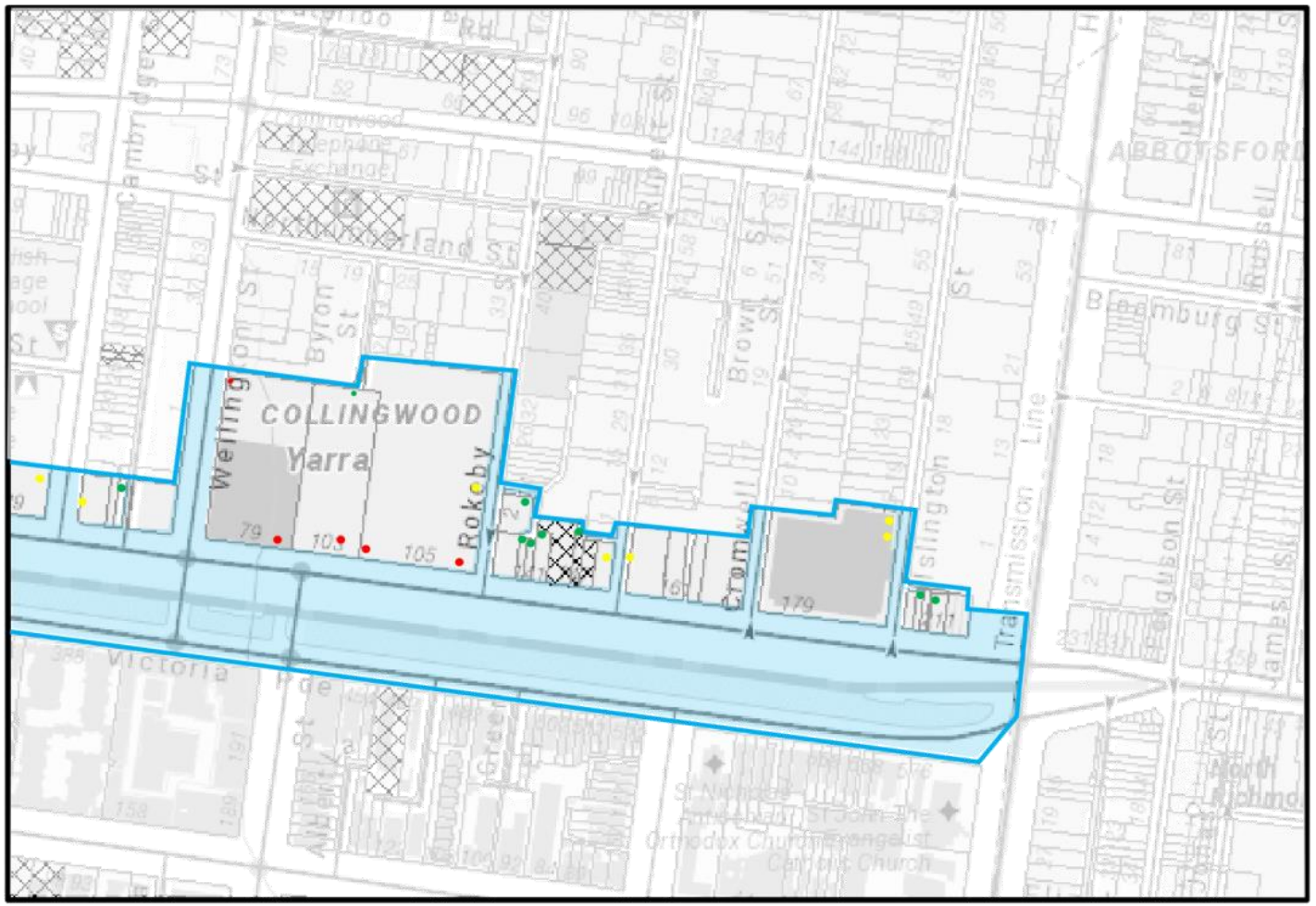


MAP NO.3

Attachment 7 - Attachment 7 - Traffic Engineering Assessment

Appendix C

Brunswick Street & Smith Street Traffic Study – Extended Area: Existing Access Conditions



MAP NO.4

Legend

- Study Area Boundary
- Access to Victoria Pde
- Access to RoW
- Access to side street

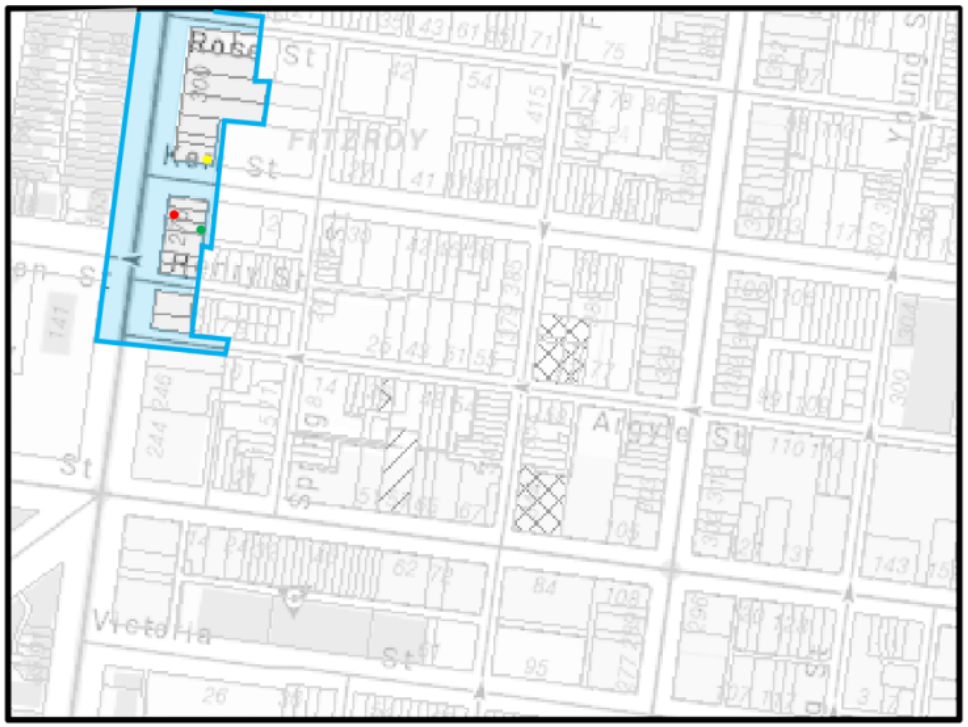
Attachment 7 - Attachment 7 - Traffic Engineering Assessment

MAP NO.5

Legend

- Study Area Boundary
- Access to Nicholson St
- Access to RoW
- Access to side street

Attachment 7 - Attachment 7 - Traffic Engineering Assessment



MAP NO.6

Legend

- Study Area Boundary
- Access to Nicholson St
- Access to RoW
- Access to side street

Design and Development Overlay Schedule 38 – Alexandra Parade

1 Objectives

To ensure development responds to the heritage character and varied streetscape of Alexandra Parade by supporting:

- a new mid-rise character (ranging from 3 to 10 storeys) behind a consistent street wall to the west of Emma Street on the south side and west of Hilton Lane on the north;
- a new lower- to mid-rise character (ranging from 3 to 6 storeys) behind a consistent street wall between Emma and Charlotte Streets on the south side; and
- a new mid-rise character (ranging from 3 to 8 storeys) behind a varied heritage street wall east of Gold Street on the north and south sides.

To ensure development retains view lines to the Clifton Hill Shot Tower (municipal landmark) and maintains the prominence and integrity of corner heritage buildings.

To ensure development maintains the prominence of the existing heritage street wall and fine-grain heritage character through recessive upper levels and a façade composition and articulation that complements the prevailing character.

To encourage development designs that promote pedestrian activity and passive surveillance, contributes to a high quality public realm, and avoid overshadowing of footpaths on the opposite side of streets, central median of Alexandra Parade and public spaces.

To ensure development responds to sensitive interfaces by ensuring the overall scale and form of new development provides a suitable transition to low scale residential areas and protects these properties from an unreasonable loss of amenity through visual bulk, overlooking and overshadowing.

2.0 Buildings and works

A permit is required to construct a building or construct or carry out works, except for:

- rear ground floor extensions no higher than 4 metres above natural ground level;
- an alteration to an existing building façade provided:
    - the alteration does not include the installation of an external roller shutter;
    - in a C1Z, at least 80 per cent of the building façade at ground floor level is maintained as an entry or window with clear glazing; and
    - in a MUZ, the alterations include and/or retain existing windows and pedestrian entry points and do not increase blank walls.
- construction of an awning to an existing building that projects over a road, if it is authorised by the relevant public land manager.

2.1 Definitions

Heritage building means any building subject to a Heritage Overlay and graded as either Contributory or Individually Significant, or any building on the Victorian Heritage Register.

Laneway means a road reserve of a public road 9 metres or less in width.

Parapet does not include features such as brackets, pediments, urns, finials or other decorative elements.

Public realm means all streets and spaces open to the public but does not include laneways.

Street wall means the façade of a building at the street boundary, or if the existing heritage building is set back from the street boundary, the front of the existing building.

Street wall height means the height of the street wall measured by the vertical distance between the footpath at the centre of the frontage and the highest point of the building, parapet, balustrade or eaves at the street edge; or in the case of a heritage building, if it is set back from the street from the natural ground level at the centre of the building frontage to the highest point of the building, parapet, balustrade or eaves.

Upper level means development above the height of the street wall.

Upper level setback means the setback of the upper level measured from the street wall of the building.

2.2 General Requirements

A permit cannot be granted under this Design and Development Overlay to vary a requirement expressed with the term 'must'.

The requirements below apply to an application to construct a building or construct or carry out works.

2.3 Street Wall Height Requirements

Street wall heights should not exceed the heights specified in Maps 1 or 2, as applicable and as stated below.

Infill development must match the parapet height of the adjacent heritage building to the width of the property boundary or 6m, whichever is the lesser.

Development should achieve a continuous street wall with no front setback to a street, unless the site is a heritage building and a front setback already exists.

The street wall on corner buildings should continue the main frontage street wall height for a minimum of 8 metres to the side street, with a transition in height to match the rear interface where required.

Development of non-heritage buildings on street corners should provide a corner splay at minimum of 1 x 1 meter along the site's corner boundaries.

Development should retain the visual prominence of:

- the heritage street wall in the vistas along the street; and
- heritage fabric of the return façades of heritage buildings on corner sites.

2.4 Upper Level Front and Side Setback Requirements

Upper levels above the street wall of heritage buildings must be set back by a minimum of 6 metres.

Upper levels above the street wall of sites immediately abutting land subject to the Heritage Overlay should be set back by a minimum of 6 metres.

Upper levels above the street wall of non-contributory buildings on the northern side of Alexandra Parade and along Cecil Street, Council Street, George Street, Gore Street and Smith Street should be setback by a minimum of 6 metres.

Upper levels above Noone Street should be of limited visibility from the opposite footpath.

Upper levels above all other non-contributory sites should be setback by a minimum of 3 metres.

Upper levels above secondary street wall should be set back by a minimum of 3 metres, unless specified otherwise.

Upper levels should:

- be visually recessive from main frontages and side streets to ensure development does not overwhelm the heritage streetscape and minimise upper level bulk;
- be set back from the street wall below to ensure that upper level additions as seen from the public realm do not detract from the character of the streetscape when viewed directly or obliquely along the street; and
- contain upper level setbacks above the street wall within a maximum of two steps (including the setback above the street wall below as one step) to avoid repetitive steps in the built form.

Projections such as building services and architectural features (other than shading devices, mouldings etc.), balconies and balustrades should not protrude into a setback.

For heritage buildings, upper level setbacks behind the street wall in excess of the minimum upper level setback should be provided where:

- it would facilitate the retention of a roof form and/or chimneys that are visible from the public realm, or a roof or any feature that the relevant statement of significance identifies as contributing to the significance of the heritage building or streetscape;
- it would maintain the perception of the three-dimensional form and depth of the building; and
- a lesser setback would detract from the character of the streetscape when viewed directly or obliquely along the street.

2.5 Overall Building Height Requirements

Development should not exceed the heights shown on Maps 1 and 2, as applicable.

A permit should only be granted to construct a building or carry out works which exceeds the building heights shown on Maps 1 and 2 where each of the following requirements are met to the satisfaction of the responsible authority:

- the minimum common boundary and building separation requirements in this schedule are exceeded by at least 1 metre for levels above the height;

- accessibility provision that achieves the standards in Clauses 55.07 and 58.05 (as relevant) for a minimum of 70% of dwellings;
- communal open space provision that exceeds the minimum standards in Clauses 55.07 and 58.03 by a minimum of 20%;
- secluded private open space provision that exceeds the minimum standards in Clauses 55.07 and 58.05 by a minimum of 20% for each dwelling;
- excellence for environmentally sustainable design measured as a minimum BESS project score of 70%; and
- no additional overshadowing to secluded private open space of residentially zoned properties outside of the schedule and/or opposite footpath, kerb outstands etc. beyond that which would be generated by a proposal that complies with the maximum building height.

Architectural features may exceed the building height.

Service equipment/structures including balustrades, unenclosed pergolas for communal areas, shading devices, plant rooms, lift overruns, stair wells, structures associated with pedestrian access, green roof areas and other such equipment may exceed the height provided that:

- the equipment and/or structures do not cause additional overshadowing of private open space to residential land, opposite footpaths, kerb outstands etc.;
- the equipment/structures are no higher than 2.6 metres above the proposed building height; and
- the equipment/structures occupy less than 50 per cent of the roof area (solar panels excepted).

Map 1: Street Wall and Building Heights (west of Wellington Street)

Map 2: Street Wall and Building Heights (east of Wellington Street)

2.6 Interface Requirements

Development on a rear boundary should not exceed the maximum heights in Table 1.

Table 1: Rear boundary wall heights

Adjoining Zone	Maximum rear boundary wall height
NRZ	8m – Whether or not separated by a laneway
GRZ	11.2m – Where there is an existing laneway 8m – Where there is no laneway
MUZ / C1Z / C2Z	11.2m – Whether or not separated by a laneway

Upper levels above a rear boundary wall must be set back from the rear boundary and be contained within a 45 degree setback envelope. The envelope's angle is to be measured perpendicular to the

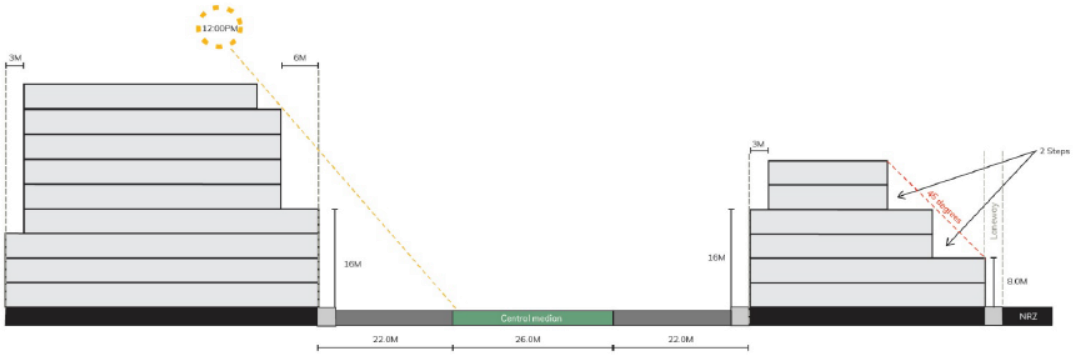
adjoining residential site's boundary, taken from the centre of the boundary. This does not apply to a Commercial 1 Zone and/or Mixed Use Zone interface.

Upper level setbacks above the rear boundary wall should be contained within a maximum of two steps (including the setback above the boundary wall below as one step) to avoid repetitive stepping of individual levels.

Development should respond to existing secluded private open spaces by setting back at upper levels to create a sense of separation, minimise overshadowing and reduce building bulk.

Development should not visually dominate adjoining residential sites, including where separated by a laneway.

Figure 1: Indicative Cross Section and Measurements



2.7 Overshadowing and Daylight Access

Development should meet the objective of Clause 55.04-5 Overshadowing for adjoining land within a Neighbourhood Residential Zone and/or General Residential Zone, including where separated by a laneway.

New development must not overshadow:

- the central median of Alexandra Parade at 12pm on 22 September;
- the footpath on the western side of any street (3m from property boundary, including the street) at 10am and eastern footpaths (3m from property boundary, including the street) at 2pm on 22 September;
- any opposite kerb outstands, seating and/or planting areas (as applicable), between 10am and 2pm at 22 September.

New development should not overshadow properties fronting Hilton Street, from the first floor upwards between 10am and 2pm on 22 September.

2.8 Common Boundary and Building Separation Requirements

Where development shares a common boundary within the overlay and/or adjoins a Commercial 1 Zone and/or Mixed Use Zone outside of the overlay, upper level development should:

- be set back a minimum of 4.5m from the common side boundary, where a habitable window or balcony facing the common boundary is proposed on the subject site or exists on the adjacent property; and
- be set back a minimum of 3m from the common side boundary where a commercial or non-habitable window facing the common boundary is proposed on the subject site or exists on the adjacent property (including the Commercial 2 Zone).

Where the common boundary is a laneway, the setback is measured from the centre of the laneway.

Where development consists of multiple buildings and/or separate upper levels, upper level development should:

- be set back a minimum of 9m from each other, where a habitable window or balcony is proposed; and
- be set back a minimum of 6m from each other where a commercial or non-habitable window is proposed.

2.9 Building Layout Requirements

Internal layout of commercial and residential units should show how they can be adapted over time, including demonstrating how commercial and residential units can be combined or divided without major structural remedial works.

Ensure shop front widths are not reduced to the extent they become commercially unviable.

Buildings in the Commercial 1 Zone and/or Mixed Use Zone should:

- be designed to accommodate commercial activity at the ground and first floor levels; and
- incorporate floor to floor heights suitable for commercial activity of at least 4 metres at ground and first floor level, where heritage elements are not a constraint.

2.10 Façade Design Requirements

Infill development in the Commercial 1 Zone fronting Alexandra Parade should achieve a fine-grain, shop front design at ground level that includes elements of:

- a stall riser;
- pilasters;
- a verandah or canopy (where applicable); and
- clerestory window.

Development should achieve active frontage design at ground level to create a pedestrian-oriented environment and passive surveillance towards the public realm.

Development façades should:

- relate to the vertical and horizontal proportions of the existing, varied retail, commercial and residential character, as applicable.
- create a suitable ratio of solid and void elements;

- create visual interest through the arrangement of fenestration, balconies and the application of architectural features such as external shading devices, window sills etc.;
- avoid overly busy façades that rely on a multitude of materials and colours;
- maintain existing openings and the inter-floor height of a heritage building and avoid new floor plates and walls cutting through historic openings;
- avoid highly reflective glazing in openings of heritage buildings;
- encourage the retention of solid built form behind retained heritage façades and avoid balconies behind existing openings;
- be simple and not compete with the more elaborate detailing of the heritage building(s) on the subject site or an adjoining site;
- avoid large expanses of glazing with a horizontal emphasis, except to ground floor shopfronts; and
- ensure projections such as balconies, building services, architectural features (other than shading devices, mouldings etc.) do not intrude into a setback and not dominate the façade.

Building services and service cabinets should be located away from the primary street frontage and should be designed and located so they complement the street frontage and character and appearance of the building.

Development should avoid blank walls visible to the public realm, including on side street frontages.

Blank side walls in a mid-block location which are visible permanently or temporarily from adjoining residential sites and/or the public realm should be designed to provide visual interest to passing pedestrians through colour, texture or finishes.

2.11 Access, Parking and Loading Areas Requirements

Pedestrian access to buildings should be achieved via streets and avoid primary access from laneways. Where pedestrian access from a laneway is appropriate, it should include a pedestrian refuge or landing.

Ensure pedestrian entrances are clearly visible, secure and have an identifiable sense of address.

Residential and commercial pedestrian entrances should be distinguishable from each other.

The common pedestrian areas of new buildings should be designed with legible and convenient access, with hallway and lobby areas of a size that reflects the quantity of apartments serviced and which can be naturally lit and ventilated.

Resident and staff bicycle parking should be located and designed to be secure and conveniently accessible from the street and associated uses.

Vehicle access should be achieved from laneways or side streets (in that order of preference).

At the intersection of laneways and footpaths, development to non-heritage buildings should provide a minimum 1 x 1 metre splay to ensure pedestrian safety.

Car parking should be located within a basement or concealed from the public realm.

Development must not provide additional vehicular access from Alexandra Parade.

Vehicle ingress and egress into development, including loading facilities and building servicing, should be designed to ensure a high standard of pedestrian amenity and limit potential conflict between vehicle movements and pedestrian activity.

Development with redundant vehicle access points should reinstate the kerb, line-marked parking bays, and relocate any parking signs.

Development with laneway access may require a ground level set back in order to achieve practicable vehicle access. Between ground level and first floor, a headroom clearance of 3.5m minimum should be achieved.

Ensure access to service laneways is maintained in order to facilitate commercial use of the properties fronting Alexandra Parade.

Properties on the inside corner of bends in laneways or at intersections between two laneways should provide a minimum 3m x 3m splay to facilitate vehicle access.

3.0 Subdivision

None specified.

4.0 Advertising

None specified.

5.0 Application Requirements

The following application requirements apply to an application for a permit under Clause 43.02, in addition to those specified elsewhere in the scheme and must accompany an application, as appropriate, to the satisfaction of the responsible authority:

- a site analysis and urban design context report which demonstrates how the proposal achieves the Design Objectives and requirements of this schedule;
- for development proposals for buildings over 20 metres in height should be accompanied by a wind study analysis to assess the impact of wind on the safety and comfort of the pedestrian environment on footpaths and other public spaces while walking, sitting and standing; and
- a Traffic Engineering Report prepared by a suitably qualified traffic engineer that demonstrates how the development:
  - minimises impacts on the level of service, safety and amenity of the arterial road network (including tram services);
  - reduces car dependence and promotes sustainable transport modes; and
  - which includes an assessment of the impacts of traffic and parking in the Precinct including an assessment of the ongoing functionality of laneway/s, where applicable.

6.0 Decision Guidelines

The following decision guidelines apply to an application for a permit under Clause 43.02, in addition to those specified in Clause 43.02 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- whether the requirements in Clauses 2.2 to 2.11 are met;
- whether the design of the streetscape interface makes a positive contribution to an active, pedestrian-oriented street environment and/or public realm;
- whether the design of development fronting Alexandra Parade adds to the high-amenity boulevard setting;
- whether development retains the prominence of the Clifton Hill Shot Tower in the precinct;
- whether heritage buildings on street corners retain their prominence when viewed from the opposite side of Alexandra Parade;
- whether heritage buildings retain their three-dimensional form as viewed from the public realm, including the opposite side of the street;
- whether upper level development above the heritage street wall is visually recessive and does not dominate or visually overwhelm the heritage buildings;
- whether a strong sense of separation between upper levels and street walls is achieved when viewed from the opposite side of the street;
- whether the development delivers design excellence, including but not limited to building siting, scale, massing, articulation and materials;
- whether upper side and rear setbacks are sufficient to limit the impact on the amenity of existing dwellings;
- the shadowing impacts of the development on opposite footpaths and public spaces are minimised;
- whether proposed roof decks are set back from lower levels and are recessive in appearance;
- whether the development mitigates negative wind effects;
- the cumulative impact of development on traffic and parking in the nearby area, including on the functionality of laneways; and
- whether the layout and appearance of areas set aside for vehicular access, loading and unloading and the location of any proposed car parking is practicable, safe and supports a pedestrian-oriented design outcome.

Expiry

The requirements of this schedule cease to have effect 2 years after publication in the Government Gazette *(Note: Minister to insert date)*

Reference Documents

Brunswick and Smith Street Built Form Review – Background Analysis Report, 2019

Built Form Review: Alexandra Parade – Heritage Analysis and Recommendations, 2020

Alexandra Parade Precinct Review and Built Form Framework, 2020

Traffic Engineering Assessment – Brunswick Street and Smith Street Activity Centres - Extended Area, 2020

Design and Development Overlay Schedule 39 – Victoria Parade

1 Objectives

To ensure development responds to the varied character and open streetscape of Victoria Parade by supporting:

- A new lower- to mid-rise character (ranging from 3 to 7 storeys) behind a varied heritage street wall west of Wellington Street, excluding the Smith Street junction;
- a new mid-rise character (ranging from 3 to 10 storeys) behind a consistent street wall at the Smith Street junction; and
- A new mid- to higher-rise character (ranging from 3 to 12 storeys) behind a new, consistent street wall east of Wellington Street.

To ensure development to the west of Wellington Street respects the low-scale, fine grain heritage street wall and buildings, through recessive upper levels and façade composition, and articulation that complements the heritage character.

To ensure new development responds to the grand, tree lined, boulevard character of Victoria Parade.

To encourage development designs that promote pedestrian activity and passive surveillance, contributes to a high quality public realm, and avoid overshadowing of opposite footpaths, public spaces and Victoria Parade's central median.

To ensure development responds to sensitive interfaces by ensuring the overall scale and form of new development provides a suitable transition to low scale residential areas and protects these properties from an unreasonable loss of amenity through visual bulk, overlooking and overshadowing.

2.0 Buildings and works

A permit is required to construct a building or construct or carry out works, except for:

- rear ground floor extensions no higher than 4 metres above natural ground level;
- an alteration to an existing building façade provided:
    - the alteration does not include the installation of an external roller shutter;
    - in a C1Z, at least 80 per cent of the building façade at ground floor level is maintained as an entry or window with clear glazing; and
    - in a MUZ, the alterations include and/or retain existing windows and pedestrian entry points and do not increase blank walls.
- construction of an awning to an existing building that projects over a road, if it is authorised by the relevant public land manager.

2.1 Definitions

Heritage building means any building subject to a Heritage Overlay and graded as either Contributory or Individually Significant, or any building on the Victorian Heritage Register.

Laneway means a road reserve of a public road 9 metres or less in width.

Parapet does not include features such as brackets, pediments, urns, finials or other decorative elements.

Public realm means all streets and spaces open to the public but does not include laneways.

Street wall means the façade of a building at the street boundary, or if the existing heritage building is set back from the street boundary, the front of the existing building.

Street wall height means the height of the street wall measured by the vertical distance between the footpath at the centre of the frontage and the highest point of the building, parapet, balustrade or eaves at the street edge; or in the case of a heritage building, if it is set back from the street from the natural ground level at the centre of the building frontage to the highest point of the building, parapet, balustrade or eaves.

Upper level means development above the height of the street wall.

Upper level setback means the setback of the upper level measured from the street wall of the building.

2.2 General Requirements

A permit cannot be granted under this Design and Development Overlay to vary a requirement expressed with the term 'must'.

The requirements below apply to an application to construct a building or construct or carry out works.

2.3 Street Wall Height and Setback Requirements

Street wall heights should not exceed the heights specified in Map 1s and 2, as applicable and as stated below.

Infill development must match the parapet height of the adjacent heritage building to the width of the property boundary or 6m, whichever is the lesser.

Development along Victoria Parade should achieve a continuous street wall with no front setback, unless the site is a heritage building and a front setback already exists.

The street wall on corner buildings should continue the main frontage street wall height for a minimum of 8 metres to the side street, with a transition in height to match the rear interface where required.

Development of non-heritage buildings on street corners should provide a corner splay at minimum of 1 x 1 meter along the site's corner boundaries.

Development should retain the visual prominence of:

- the heritage street wall in the vistas along the street; and
- heritage fabric of the return façades of heritage buildings on corner sites.

2.4 Upper Level Setback Requirements

Upper levels above the street wall within or immediately adjacent to land subject to the Heritage Overlay must be set back by a minimum of 6m on Victoria Parade and Wellington Street.

Upper levels above the street wall for all other sites should be set back by a minimum of 6m from the primary frontage.

Upper levels above the street wall should be set back by 3 metres from the secondary frontage.

Upper levels should:

- be visually recessive from main frontages and side streets to ensure development does not overwhelm the heritage streetscape and minimise upper level bulk;
- be set back from the street wall below to ensure that upper level additions as seen from the public realm do not detract from the character of the streetscape when viewed directly or obliquely along the street; and
- contain upper level setbacks above the street wall within a maximum of two steps (including the setback above the street wall below as one step) to avoid repetitive steps in the built form.

Projections such as building services and architectural features (other than shading devices, mouldings etc.), balconies and balustrades should not protrude into a setback.

For heritage buildings, upper level setbacks behind the street wall in excess of the minimum upper level setback should be provided where:

- it would facilitate the retention of a roof form and/or chimneys that are visible from the public realm, or a roof or any feature that the relevant statement of significance identifies as contributing to the significance of the heritage building or streetscape;
- it would maintain the perception of the three-dimensional form and depth of the building; and
- a lesser setback would detract from the character of the streetscape when viewed directly or obliquely along the street.

2.5 Overall Building Height Requirements

Development should not exceed the heights shown on Maps 1 and 2, as applicable.

For development greater than 10 storeys, the upper levels should be further set back in order to be visually recessive and achieve limited visibility from the surrounding public realm.

A permit should only be granted to construct a building or carry out works which exceeds the building heights shown on Maps 1 and 2 where each of the following requirements are met to the satisfaction of the responsible authority:

- the minimum common boundary and building separation requirements in this schedule are exceeded by at least 1 metre each for levels above the height;
- accessibility provision that achieves the standards in Clauses 55.07 and 58.05 (as relevant) for a minimum of 70% of dwellings;
- communal open space provision that exceeds the minimum standards in Clauses 55.07 and 58.03 by a minimum of 20%;

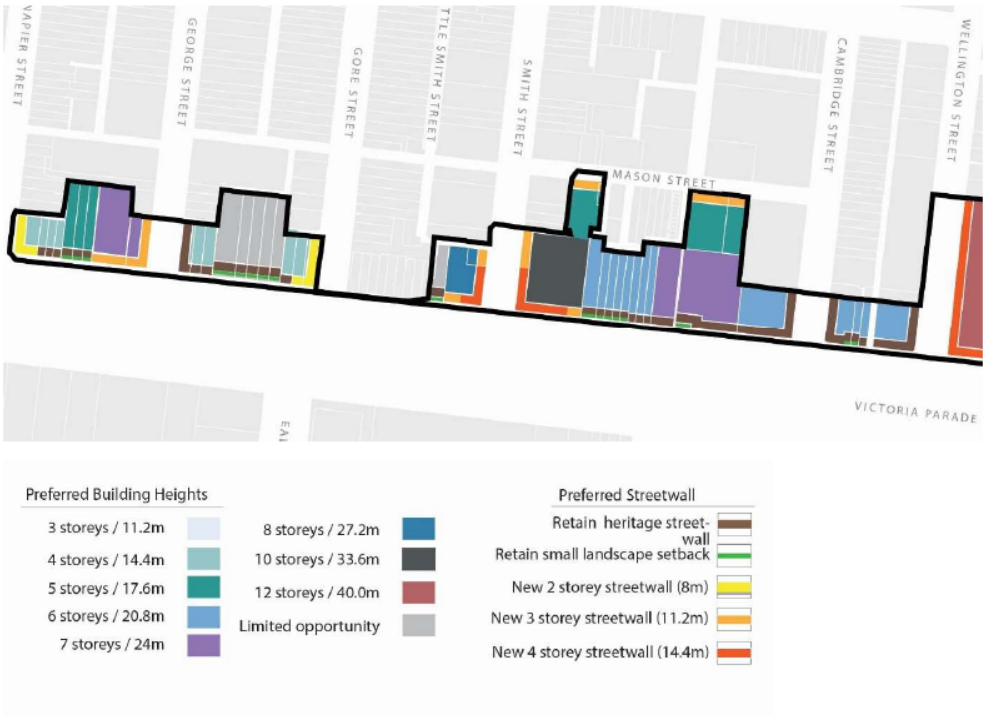
- secluded private open space provision that exceeds the minimum standards in Clauses 55.07 and 58.05 by a minimum of 20% for each dwelling;
- excellence for environmentally sustainable design measured as a minimum BESS project score of 70%; and
- no additional overshadowing to secluded private open space of residentially zoned properties outside of the schedule and/or opposite footpath, kerb outstands etc. beyond that which would be generated by a proposal that complies with the maximum building height.

Architectural features may exceed the building height.

Service equipment and/or structures including balustrades, unenclosed pergolas for communal areas, shading devices, plant rooms, lift overruns, stair wells, structures associated with pedestrian access, green roof areas and other such equipment may exceed the height provided that:

- the equipment/structures do not cause additional overshadowing of private open space to residential land, opposite footpaths, kerb outstands etc.; and
- the equipment/structures are no higher than 2.6 metres above the proposed building height; and
- the equipment/structures occupy less than 50 per cent of the roof area (solar panels excepted).

Map 1: Street Wall Heights and Building Heights (west of Wellington Street)



Map 2: Street Wall Heights and Building Heights (east of Wellington Street)

2.6 Interface Requirements

Development on a rear boundary should not exceed the maximum heights in Table 1.

Table 1: Rear boundary wall heights

Adjoining Zone	Maximum rear boundary wall height
NRZ	8m – Whether or not separated by a laneway
GRZ	11.2m – Where there is an existing laneway 8m – Where there is no laneway
MUZ / C1Z / C2Z	11.2m – Whether or not separated by a laneway

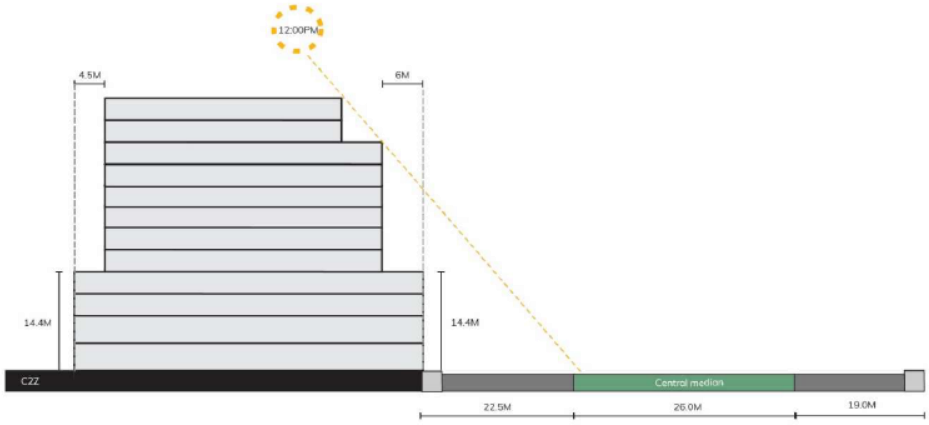
Upper levels above a rear boundary wall must be set back from the rear boundary and be contained within a 45 degree setback envelope. The envelope's angle is to be measured perpendicular to the adjoining residential site's boundary, taken from the centre of the boundary. This does not apply to a Commercial 1 Zone and/or Mixed Use Zone interface.

Upper level setbacks above the rear boundary wall should be contained within a maximum of two steps (including the setback above the boundary wall below as one step) to avoid repetitive stepping of individual levels.

Development should respond to existing secluded private open spaces by setting back at upper levels to create a sense of separation, minimise overshadowing and reduce building bulk.

Development should not visually dominate adjoining residential sites, including where separated by a laneway.

Figure 1: Indicative Cross Sections and Measurements



2.7 Overshadowing

Development should meet the objective of Clause 55.04-5 Overshadowing for adjoining land within a Neighbourhood Residential Zone and/or General Residential Zone, including where separated by a laneway.

New development must not overshadow:

- the northern edge of the Victoria Parade central median at 12pm on 22 September;
- the footpath on the western side of any street (3m from property boundary, including the street) at 10am and eastern footpaths (3m from property boundary, including the street) at 2pm on 22 September (except Cromwell, Islington, Rockeby and Rupert Streets);
- any opposite kerb outstands, seating and/or planting areas (as applicable), between 10am and 2pm at 22 September.

New development should not overshadow properties fronting Cromwell, Islington, Rokeby and Rupert Streets from the first floor upwards between 10am and 2pm on 22 September.

2.8 Common Boundary and Building Separation Requirements

Where development shares a common boundary within the overlay and/or adjoins a Commercial 1 Zone and/or Mixed Use Zone outside of the overlay, upper level development should:

- be set back a minimum of 4.5m from the common side boundary, where a habitable window or balcony facing the common boundary is proposed on the subject site or exists on the adjacent property; and

- be set back a minimum of 3.0m from the common side boundary where a commercial or non-habitable window facing the common boundary is proposed on the subject site or exists on the adjacent property (including Commercial 2 Zone).

Where the common boundary is a laneway, the setback is measured from the centre of the laneway.

Where development consists of multiple buildings and/or separate upper levels, upper level development should:

- be set back a minimum of 9m from each other, where a habitable window or balcony is proposed; and
- be set back a minimum of 6m from each other where a commercial or non-habitable window is proposed.

Development on large sites should achieve visual breaks in the urban block and create pedestrian access, as identified on Map 2.

2.9 Building Layout Requirements

Internal layout of commercial and residential units should show how they can be adapted over time, including demonstrating how commercial and residential units can be combined or divided without major structural remedial works.

Ensure shop front widths are not reduced to the extent they become commercially unviable.

Buildings in the Commercial 1 Zone and/or Mixed Use Zone should:

- be designed to accommodate commercial activity at the ground floor level; and
- incorporate floor to floor heights suitable for commercial activity of at least 4 metres at ground floor level, where heritage elements are not a constraint.

2.10 Façade Design Requirements

Development along Victoria Parade should achieve active frontage design at ground level to create a high-amenity, pedestrian-oriented environment and passive surveillance towards the public realm.

Development façades should:

- relate to the vertical and horizontal proportions of either:
    - the historic fine-grain residential and retail shop front character of Victoria Parade to the west of Wellington Street; or
    - the modern commercial character of Victoria Parade to the east of Wellington Street;
- create a suitable ratio of solid and void elements;
- create visual interest through the arrangement of fenestration, balconies and the application of architectural features such as external shading devices, window sills etc.;
- avoid overly busy façades that rely on a multitude of materials and colours;
- maintain existing openings and the inter-floor height of a heritage building and avoid new floor plates and walls cutting through historic openings;
- avoid highly reflective glazing in openings of heritage buildings;

- encourage the retention of solid built form behind retained heritage façades and avoid balconies behind existing openings;
- be simple and not compete with the more elaborate detailing of the heritage building(s) on the subject site or an adjoining site;
- avoid large expanses of glazing with a horizontal emphasis, except to ground floor shopfronts and former industrial buildings; and
- ensure projections such as balconies, building services, architectural features (other than shading devices, mouldings etc.) do not intrude into a setback and not dominate the façade.

Building services and service cabinets should be located away from the primary street frontage and should be designed and located so they complement the street frontage and character and appearance of the building.

Development should avoid blank walls visible to the public realm, including on side street frontages.

Blank side walls in a mid-block location which are visible permanently or temporarily from adjoining residential sites and/or the public realm should be designed to provide visual interest to passing pedestrians through colour, texture or finishes.

2.11 Access, Parking and Loading Areas Requirements

Pedestrian access to buildings should be achieved via streets and avoid primary access from laneways. Where pedestrian access from a laneway is appropriate, it should include a pedestrian refuge or landing.

Ensure pedestrian entrances are clearly visible, secure and have an identifiable sense of address.

Residential and commercial pedestrian entrances should be distinguishable from each other.

The common pedestrian areas of new buildings should be designed with legible and convenient access, with hallway and lobby areas of a size that reflects the quantity of apartments serviced and which can be naturally lit and ventilated.

Resident and staff bicycle parking should be located and designed to be secure and conveniently accessible from the street and associated uses.

Vehicle access should be achieved from laneways or side streets (in that order of preference).

At the intersection of laneways and footpaths, development to non-heritage buildings should provide a minimum 1 x 1 metre splay to ensure pedestrian safety.

Car parking should be located within a basement or concealed from the public realm.

Development should not provide additional vehicular access from Victoria Parade.

Vehicle ingress and egress into development, including loading facilities and building servicing, should be designed to ensure a high standard of pedestrian amenity and limit potential conflict between vehicle movements and pedestrian activity.

Development with redundant vehicle access points should reinstate the kerb, line-marked parking bays, and relocate any parking signs.

Development with laneway access may require a ground level set back in order to achieve practicable vehicle access. Between ground level and first floor, a headroom clearance of 3.5 meters minimum should be achieved.

Ensure access to service laneways is maintained in order to facilitate commercial use of the properties fronting Victoria Parade.

Properties on the inside corner of bends in laneways or at intersections between two laneways should provide a minimum 3m x 3m splay to facilitate vehicle access.

3.0 Subdivision

None specified.

4.0 Advertising

None specified.

5.0 Application Requirements

The following application requirements apply to an application for a permit under Clause 43.02, in addition to those specified elsewhere in the scheme and must accompany an application, as appropriate, to the satisfaction of the responsible authority:

- a site analysis and urban design context report which demonstrates how the proposal achieves the Design Objectives and requirements of this schedule;
- for development proposals for buildings over 20 metres in height should be accompanied by a wind study analysis to assess the impact of wind on the safety and comfort of the pedestrian environment on footpaths and other public spaces while walking, sitting and standing; and
- a Traffic Engineering Report prepared by a suitably qualified traffic engineer that demonstrates how the development:
    - minimises impacts on the level of service, safety and amenity of the arterial road network (including tram services);
    - reduces car dependence and promotes sustainable transport modes; and
    - which includes an assessment of the impacts of traffic and parking in the Precinct including an assessment of the ongoing functionality of laneway/s, where applicable.

6.0 Decision Guidelines

The following decision guidelines apply to an application for a permit under Clause 43.02, in addition to those specified in Clause 43.02 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- whether the requirements in Clauses 2.2 to 2.11 are met;

- whether the design of the streetscape interface makes a positive contribution to an active, pedestrian-oriented street environment and/or public realm;
- whether the design of development fronting Victoria Parade adds to the high-amenity boulevard setting;
- whether the design of development fronting Victoria Parade precinct achieves a fine grain shop-front character west of Wellington Street and a commercial character east of Wellington Street;
- whether development retains the prominence of the heritage street wall (west of Wellington Street) in the vistas along Victoria Parade;
- whether heritage buildings on street corners retain their prominence when viewed from the opposite side of Victoria Parade;
- whether heritage buildings retain their three-dimensional form as viewed from the public realm, including the opposite side of the street;
- whether upper level development above the heritage street wall is visually recessive and does not dominate or visually overwhelm the heritage buildings;
- whether a strong sense of separation between upper levels and street walls is achieved when viewed from the opposite side of the street;
- whether the development delivers design excellence, including but not limited to building siting, scale, massing, articulation and materials;
- whether upper side and rear setbacks are sufficient to limit the impact on the amenity of existing dwellings;
- the shadowing impacts of the development on opposite footpaths, public spaces and the central median are minimised;
- whether proposed roof decks are set back from lower levels and are recessive in appearance;
- whether the development mitigates negative wind effects;
- the cumulative impact of development on traffic and parking in the nearby area, including on the functionality of laneways; and
- whether the layout and appearance of areas set aside for vehicular access, loading and unloading and the location of any proposed car parking is practicable, safe and supports a pedestrian-oriented design outcome.

Expiry

The requirements of this schedule cease to have effect 2 years after publication in the Government Gazette *(Note: Minister to insert date)*

Reference Documents

Brunswick and Smith Street Built Form Review – Background Analysis Report, 2019

Built Form Review: Victoria Parade – Heritage Analysis and Recommendations, 2020

Victoria Parade Precinct Review and Built Form Framework, 2020

Traffic Engineering Assessment – Brunswick Street and Smith Street Activity Centres - Extended Area, 2020

Design and Development Overlay Schedule 40 - Fitzroy West

1 Objectives

To ensure development responds to the mixed typology and heritage character in the streetscape by supporting:

- A mid-rise character (ranging from 3 to 8 storeys) in the mixed use precinct of Fitzroy West which ensures the varied but low heritage street wall remains the visually dominant element of the streetscape and upper level developments are recessive providing a clear visual distinction between lower street walls and upper level development; and
- A new mid-rise character (ranging from 3 to 7 storeys) behind a new street wall in the Commercial 2 Zone land which reflects the Alexandra Parade corner, Nicholson Street frontages and surrounding heritage influences.

To ensure the façade composition and articulation of development responds to:

- the prominent heritage character of mixed industrial and residential heritage buildings within the streetscape of Fitzroy West; and
- the boulevard character of Alexandra Parade, transitioning down to sensitive interfaces behind the pocket of Commercial 2 Zone land at the western junction of Alexandra Parade.

To encourage development designs that promote pedestrian activity and passive surveillance, contributes to a high quality public realm, and avoid overshadowing of opposite footpaths and public spaces.

To ensure that development provides for equitable development outcomes through building separation and a design response that considers the development opportunities of neighbouring properties.

To ensure development responds to sensitive interfaces by ensuring the overall scale and form of new development provides a suitable transition to low scale residential areas and protects these properties from an unreasonable loss of amenity through visual bulk, overlooking and overshadowing.

2.0 Buildings and works

A permit is required to construct a building or construct or carry out works, except for:

- rear ground floor extensions no higher than 4 metres above natural ground level;
- an alteration to an existing building façade provided:
  - the alteration does not include the installation of an external roller shutter;
  - in a C1Z, at least 80 per cent of the building façade at ground floor level is maintained as an entry or window with clear glazing; and
  - in a MUZ, the alterations include and/or retain existing windows and pedestrian entry points and do not increase blank walls.
- construction of an awning to an existing building that projects over a road, if it is authorised by the relevant public land manager.

2.1 Definitions

Heritage building means any building subject to a Heritage Overlay and graded as either Contributory or Individually Significant, or any building on the Victorian Heritage Register.

Laneway means a road reserve of a public road 9 metres or less in width.

Parapet does not include features such as brackets, pediments, urns, finials or other decorative elements.

Public realm means all streets and spaces open to the public but does not include laneways.

Street wall means the façade of a building at the street boundary, or if the existing heritage building is set back from the street boundary, the front of the existing building.

Street wall height means the height of the street wall measured by the vertical distance between the footpath at the centre of the frontage and the highest point of the building, parapet, balustrade or eaves at the street edge; or in the case of a heritage building, if it is set back from the street from natural ground level at the centre of the building frontage to the highest point of the building, parapet, balustrade or eaves.

Upper level means development above the height of the street wall.

Upper level setback means the setback of the upper level measured from the street wall of the building.

2.2 General Requirements

A permit cannot be granted under this Design and Development Overlay to vary a requirement expressed with the term 'must'.

The requirements below apply to an application to construct a building or construct or carry out works.

2.3 Street Wall Height and Setback Requirements

Street wall heights should not exceed the heights specified in Map 1, as applicable and as stated below.

Infill development must match the parapet height of the adjacent heritage building to the width of the property boundary or 6m, whichever is the lesser.

If an immediately adjoining heritage building is set back from the street, then infill development should match the setback of the adjacent heritage building from the same street, excluding laneway frontages.

All other development should achieve a continuous street wall with no front setback to a street.

The street wall on corner buildings should continue the main frontage street wall height for a minimum of 8 metres to the side street, with a transition in height to match the rear interface where required.

Development of non-heritage buildings on street corners should provide a corner splay at minimum of 1 x 1 meter along the site's corner boundaries.

Development should retain the visual prominence of:

- the heritage street wall in the vistas along the street; and
- heritage fabric of the return façades of heritage buildings on corner sites.

2.4 Upper Level Setback Requirements

Upper levels above the primary street frontage:

- must be set back by a minimum of 6 metres for all heritage buildings, except for sites fronting Rose Street, Fitzroy Street, Spring Street (where north of Kerr Street) and Henry Street;
- should be setback by a minimum of 6m for non-contributory sites fronting Alexandra Parade, Argyle Street, Cecil Street, Kerr Street, Nicholson Street and Westgarth Street and corners at the intersections of Leicester and Fitzroy Streets, Argyle and Spring Streets and Argyle and Fitzroy Streets.
- should be setback by a minimum of 3m above the street frontage of Rose Street, Fitzroy Street, Spring Street (where north of Kerr Street) and Henry Street.

For development over 16.4 metres, the top most upper level above a heritage building should be set back a further 3.2 metres from the principal frontage

Upper levels above a side street wall of a heritage building on corner sites should be set back by 6 metres.

Upper levels above a side street wall should be set back by a minimum of 3 metres, unless specified otherwise.

Upper levels should:

- be visually recessive from main frontages and side streets to ensure development does not overwhelm the heritage streetscape and minimise upper level bulk;
- be set back from the street wall below to ensure that upper level additions as seen from the public realm do not detract from the character of the streetscape when viewed directly or obliquely along the street; and
- contain upper level setbacks above the street wall within a maximum of two steps (including the setback above the street wall below as one step) to avoid repetitive steps in the built form.

Projections such as building services and architectural features (other than shading devices, mouldings etc.), balconies and balustrades should not protrude into a setback.

For heritage buildings, upper level setbacks behind the street wall in excess of the minimum upper level setback should be provided where:

- it would facilitate the retention of a roof form and/or chimneys that are visible from the public realm, or a roof or any feature that the relevant statement of significance identifies as contributing to the significance of the heritage building or streetscape;

- it would maintain the perception of the three-dimensional form and depth of the building; and
- a lesser setback would detract from the character of the streetscape when viewed directly or obliquely along the street.

2.5 Overall Building Height Requirements

Development on sites shown as hatched on Map 1 must not exceed 11m (3 storeys). All other development should not exceed the heights shown on Map 1, as applicable.

A permit should only be granted to construct a building or carry out works which exceeds the building heights shown on Map 1 where each of the following requirements are met to the satisfaction of the responsible authority:

- the minimum common boundary and building separation requirements in this schedule are exceeded by at least 1 metre for levels above the height;
- accessibility provision that achieves the standards in Clauses 55.07 and 58.05 (as relevant)for a minimum of 70% of dwellings;
- communal open space provision that exceeds the minimum standards in Clauses 55.07 and 58.03 by a minimum of 20%;
- secluded private open space provision that exceeds the minimum standards in Clauses 55.07 and 58.05 by a minimum of 20% for each dwelling;
- excellence for environmentally sustainable design measured as a minimum BESS project score of 70%; and
- no additional overshadowing to secluded private open space of residentially zoned properties outside of the schedule and/or opposite footpath, kerb outstands etc. beyond that which would be generated by a proposal that complies with the maximum building height.

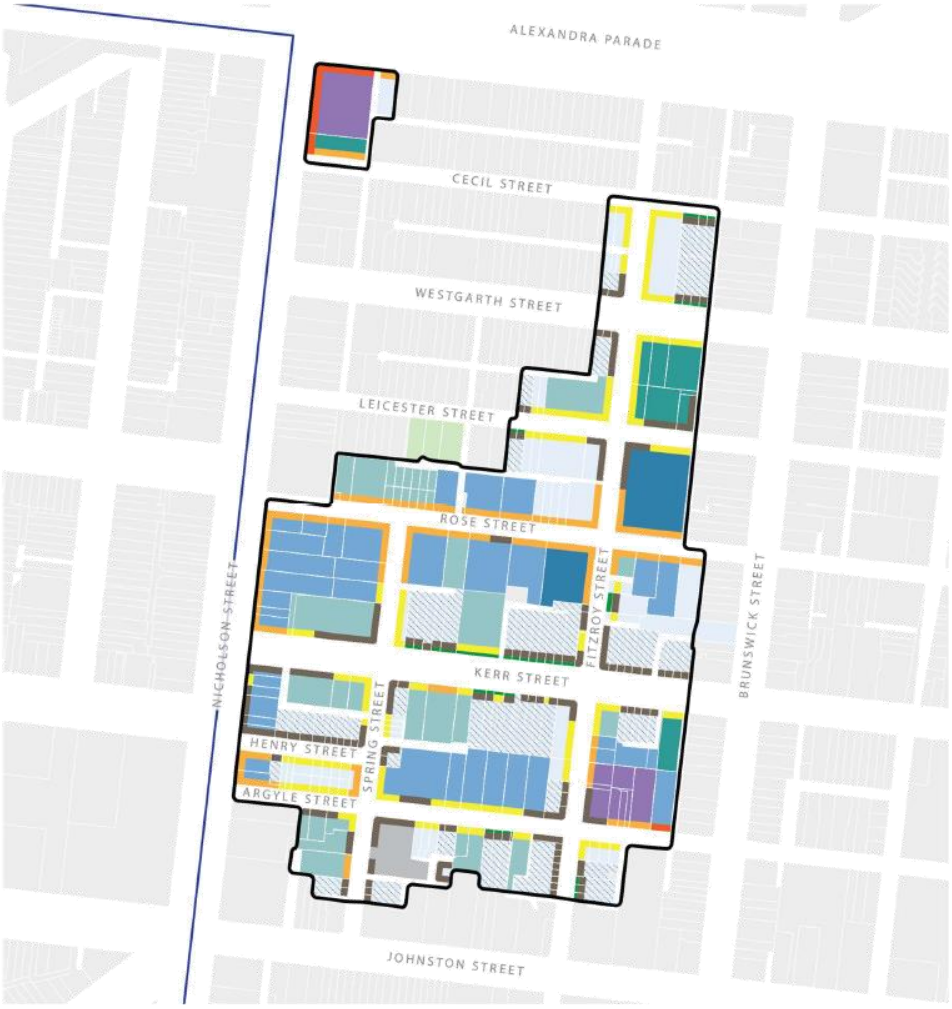
Architectural features may exceed the building height.

Service equipment and/or structures including balustrades, unenclosed pergolas for communal areas, shading devices, plant rooms, lift overruns, stair wells, structures associated with pedestrian access, green roof areas and other such equipment may exceed the height provided that:

- the equipment/structures do not cause additional overshadowing of private open space to residential land, opposite footpaths, kerb outstands etc.; and
- the equipment/structures are no higher than 2.6 metres above the proposed building height; and
- the equipment/structures occupy less than 50 per cent of the roof area (solar panels excepted).

Attachment 8 - Attachment 8 - DDO38, DDO39 and DDO40

Map 1: Street Wall Heights and Building Heights



Mandatory Building Heights

Victorian Terraces as marked by the dotted diagonal lines have a 11m/ 3 storey mandatory building height

Preferred Building Heights

- 11.2m/ 3 storeys
  12m/ 3 storeys*
- 14.4m/ 4 storeys
- 17.6m/ 5 storeys
  20m/ 5 storeys*
- 20.8m/ 6 storeys
- 24m/ 7 storeys
  28m/ 7 storeys*
- 27.2m/ 8 storeys
- Limited opportunity

Note: * for C2Z sites only.

Preferred Streetwall

- Retain heritage street-wall
- Retain landscape setback
- New 2 storey streetwall (8m)
- New 3 storey streetwall (11.2m)
  New 3 storey streetwall (12m)*
- New 4 storey streetwall (14.4m)
  New 4 storey streetwall (16m)*

2.6 Interface Requirements

Development on a rear boundary should not exceed the maximum heights in Table 1.

Table 1: Rear boundary wall heights

Adjoining Zone	Maximum rear boundary wall height
NRZ	8m – Whether or not separated by a laneway
GRZ	11.2m – Where there is an existing laneway 8m – Where there is no laneway
MUZ / C1Z / C2Z	11.2m – Whether or not separated by a laneway

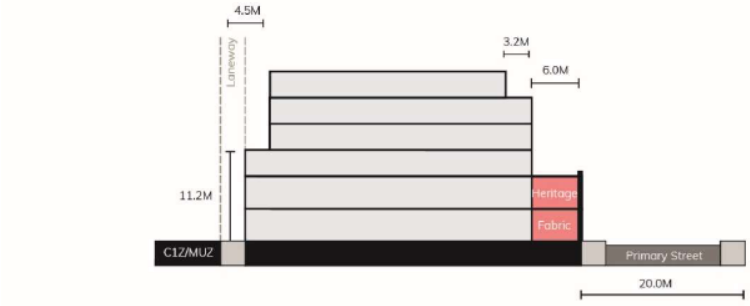
Upper levels above a rear boundary wall must be set back from the rear boundary and be contained within a 45 degree setback envelope. The envelope's angle is to be measured perpendicular to the adjoining residential site's boundary, taken from the centre of the boundary. This does not apply to a Commercial 1 Zone and/or Mixed Use Zone interface.

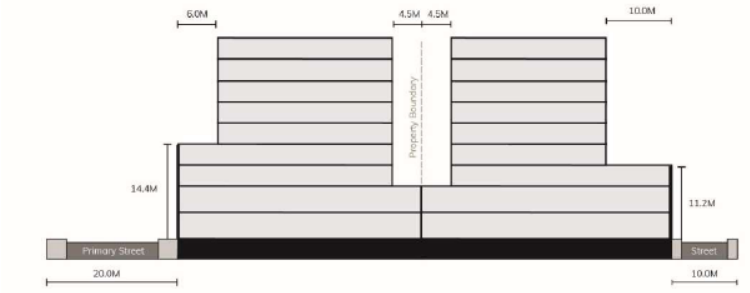
Upper level setbacks above a rear boundary wall should be contained within a maximum of two steps (including the setback above the boundary wall below as one step) to avoid repetitive stepping of individual levels.

Development should respond to existing secluded private open spaces by setting back at upper levels to create a sense of separation, minimise overshadowing and reduce building bulk.

Development should not visually dominate adjoining residential sites, including where separated by a laneway.

Figure 1: Indicative Cross Sections and Measurements





2.7 Overshadowing

Development should meet the objective of Clause 55.04-5 Overshadowing for adjoining land within the Mixed Use Zone, including where separated by a laneway.

New development must not overshadow:

- the opposite footpath of Cecil Street (3m from property frontage, including the street) between 10am and 2pm at 22 September;
- the southern footpath of Westgarth Street and Kerr Street (3m from property boundary, including the street) at 10am on 22 September; and
- any opposite kerb outstands, seating and/or planting areas (as applicable), between 10am and 2pm at 22 September.

New development on all other streets should not overshadow opposite buildings from the first floor upwards between 10am and 2pm on 22 September.

2.8 Building Separation Requirements

Where development shares a common boundary within the overlay and/or adjoins a Commercial 1 Zone, Commercial 2 Zone and/or Mixed Use Zone outside of the overlay, upper level development should:

- be set back a minimum of 4.5m from the common side boundary, where a habitable window or balcony facing the common boundary is proposed or exists on the adjacent property; and
- be set back a minimum of 3.0m from the common side boundary where a commercial or non-habitable window facing the common boundary is proposed or exists on the adjacent property (including the Commercial 2 Zone).

Where the common boundary is a laneway, the setback is measured from the centre of the laneway.

Where development consists of multiple buildings and/or separate upper levels, upper level development should:

- be set back a minimum of 9m from each other, where a habitable window or balcony is proposed; and
- be set back a minimum of 6m from each other where a commercial or non-habitable window is proposed.

2.9 Building Layout Requirements

Internal layout of commercial and residential units should show how they can be adapted over time, including demonstrating how commercial and residential units can be combined or divided without major structural remedial works.

Ensure shop front widths are not reduced to the extent they become commercially unviable.

Buildings in the Commercial 1 and/or Mixed Use Zone should:

- be designed to accommodate commercial activity at the ground floor level; and
- incorporate floor to floor heights suitable for commercial activity of at least 4 metres at ground floor level, where heritage elements are not a constraint.

2.10 Façade Design Requirements

Development should achieve active frontage design at ground level to create a pedestrian-oriented environment and passive surveillance towards the public realm.

Development façades should:

- relate to the vertical and horizontal proportions of either:
    - the mixed historic industrial warehouse and/or residential character of Fitzroy West, as applicable; or
    - the existing, varied commercial character for the Commercial 2 Zone land fronting Nicholson Street and at the western junction of Alexandra Parade, as appropriate.
- create a suitable ratio of solid and void elements;
- create visual interest through the arrangement of fenestration, balconies and the application of architectural features such as external shading devices, window sills etc.;
- avoid overly busy façades that rely on a multitude of materials and colours;
- maintain existing openings and the inter-floor height of a heritage building and avoid new floor plates and walls cutting through historic openings;
- avoid highly reflective glazing in openings of heritage buildings;
- encourage the retention of solid built form behind retained heritage façades and avoid balconies behind existing openings;
- be simple and not compete with the more elaborate detailing of the heritage building(s) on the subject site or an adjoining site;
- avoid large expanses of glazing with a horizontal emphasis, except to ground floor shopfronts and former industrial buildings; and
- ensure projections such as balconies, building services, architectural features (other than shading devices, mouldings etc.) do not intrude into a setback and not dominate the façade.

Building services and service cabinets should be located away from the primary street frontage and should be designed and located so they complement the street frontage and character and appearance of the building.

Development should avoid blank walls visible to the public realm, including on side street frontages.

Blank side walls in a mid-block location which are visible permanently or temporarily from adjoining residential sites and/or the public realm should be designed to provide visual interest to passing pedestrians through colour, texture or finishes.

2.11 Access, Parking and Loading Areas Requirements

Pedestrian access to buildings should be achieved via streets and avoid primary access from laneways. Where pedestrian access from a laneway is appropriate, it should include a pedestrian refuge or landing.

Ensure pedestrian entrances are clearly visible, secure and have an identifiable sense of address.

Residential and commercial pedestrian entrances should be distinguishable from each other.

The common pedestrian areas of new buildings should be designed with legible and convenient access, with hallway and lobby areas of a size that reflects the quantity of apartments serviced and which can be naturally lit and ventilated.

Resident and staff bicycle parking should be located and designed to be secure and conveniently accessible from the street and associated uses.

Vehicle access should be achieved from laneways or side streets (in that order of preference).

At the intersection of laneways and footpaths, development to non-heritage buildings should provide a minimum 1 x 1 metre splay to ensure pedestrian safety.

Car parking should be located within a basement or concealed from the public realm.

Vehicle ingress and egress into development, including loading facilities and building servicing, should be designed to ensure a high standard of pedestrian amenity and limit potential conflict between vehicle movements and pedestrian activity.

Development with redundant vehicle access points should reinstate the kerb, line-marked parking bays, and relocate any parking signs.

Development with laneway access may require a ground level set back in order to achieve practicable vehicle access. Between ground level and first floor, a headroom clearance of 3.5 meters minimum should be achieved.

Properties on the inside corner of bends in laneways or at intersections between two laneways should provide a minimum 3m x 3m splay to facilitate vehicle access.

3.0 Subdivision

None specified.

4.0 Advertising

None specified.

5.0 Application Requirements

The following application requirements apply to an application for a permit under Clause 43.02, in addition to those specified elsewhere in the scheme and must accompany an application, as appropriate, to the satisfaction of the responsible authority:

- a site analysis and urban design context report which demonstrates how the proposal achieves the Design Objectives and requirements of this schedule;
- for development proposals for buildings over 20 metres in height should be accompanied by a wind study analysis to assess the impact of wind on the safety and comfort of the pedestrian environment on footpaths and other public spaces while walking, sitting and standing; and
- a Traffic Engineering Report prepared by a suitably qualified traffic engineer that demonstrates how the development:

- minimises impacts on the level of service, safety and amenity of the arterial road network (including tram services);
- reduces car dependence and promotes sustainable transport modes; and
- which includes an assessment of the impacts of traffic and parking in the Precinct including an assessment of the ongoing functionality of laneway/s, where applicable.

6.0 Decision Guidelines

The following decision guidelines apply to an application for a permit under Clause 43.02, in addition to those specified in Clause 43.02 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- whether the requirements in Clauses 2.2 to 2.11 are met;
- whether the design of the streetscape interface makes a positive contribution to an active, pedestrian-oriented street environment and/or public realm;
- whether the design of development in the Fitzroy West precinct retains a mixed use heritage industrial and/or residential character;
- whether the design of development fronting Nicholson Street and Alexandra Parade achieves a fine grain commercial character;
- whether development retains the prominence of the heritage street wall in the vistas along the primary street frontage within the precinct;
- whether heritage buildings on street corners retain their prominence when viewed from the opposite side of the primary and secondary street;
- whether heritage buildings retain their three-dimensional form as viewed from the public realm, including the opposite side of the street;
- whether upper level development above the heritage street wall is visually recessive and does not dominate or visually overwhelm the heritage buildings;
- whether a strong sense of separation between upper levels and street walls is achieved when viewed from the opposite side of the street;
- whether the development delivers design excellence, including but not limited to building siting, scale, massing, articulation and materials;
- whether upper side and rear setbacks are sufficient to limit the impact on the amenity of existing dwellings;
- the shadowing impacts of the development on opposite footpaths and public spaces are minimised;
- whether proposed roof decks are set back from lower levels and are recessive in appearance;
- whether the development mitigates negative wind effects;
- the cumulative impact of development on traffic and parking in the nearby area, including on the functionality of laneways; and
- whether the layout and appearance of areas set aside for vehicular access, loading and unloading and the location of any proposed car parking is practicable, safe and supports a pedestrian-oriented design outcome.

Expiry

The requirements of this schedule cease to have effect 2 years after publication in the Government Gazette *(Note: Minister to insert date)*

Reference Documents

Brunswick and Smith Street Built Form Review – Background Analysis Report, 2019

Built Form Review: Fitzroy West – Heritage Analysis and Recommendations, 2020

Fitzroy West Precinct Review and Built Form Framework, 2020

Traffic Engineering Assessment – Brunswick Street and Smith Street Activity Centres - Extended Area, 2020

Planning and Environment Act 1987

YARRA PLANNING SCHEME

AMENDMENT C288YARA

EXPLANATORY REPORT

Who is the planning authority?

This amendment has been prepared by the Minister for Planning who is the planning authority for this amendment. The Amendment has been made at the request of Yarra City Council.

Land affected by the Amendment

The Amendment applies to the land as shown in Figure 1 below. The Amendment generally affects the land in a Mixed Use Zone, Commercial 1 Zone and Commercial 2 Zone with: a primary frontage to Alexandra Parade between George Street in the west and Hoddle Street in the east; the northern side of Victoria Parade between Napier Street to the west and Hoddle Street to the east; and land subject to the Mixed Use Zone and Commercial 2 Zone between Nicholson Street in the west and to the rear of lots to Brunswick Street in the east and north south between the rear lots of Johnston Street and properties with a frontage to Alexandra Parade at the corner of Nicholson Street.

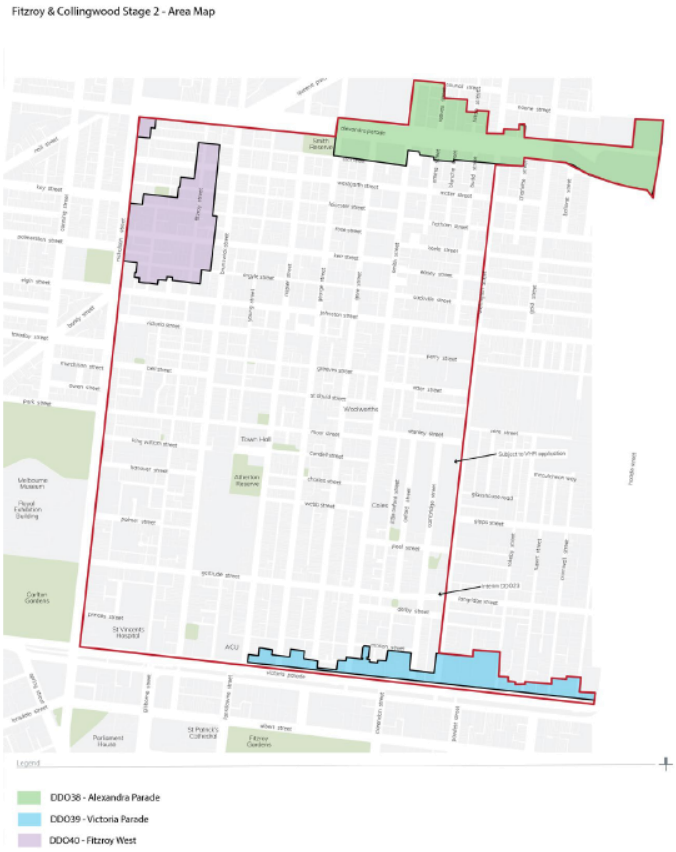


Figure 1: Proposed DDO areas along Alexandra Parade, Victoria Parade and the Fitzroy West Mixed Use Zone area

What the amendment does

The Amendment C288yara proposes to introduce built form controls to the land on an interim basis of 2 years (from gazettal) by making the following changes to the Yarra Planning Scheme:

- Apply and Insert Design and Development Overlay Schedule 38 (DDO38) to Alexandra Parade;
- Apply and Insert Design and Development Overlay Schedule 39 (DDO39) to Victoria Parade;
- Apply and Insert Design and Development Overlay Schedule 40 (DDO40) to the Fitzroy West Mixed Use Zone area;

Strategic assessment of the Amendment

Why is the Amendment required?

The scale and density of development approved and currently being proposed along the Fitzroy and Collingwood Activity Centres and corridors has increased substantially in recent years. Many current proposals in the area exceed the scale of development envisaged by the current planning scheme provisions in the area.

To ensure appropriate and orderly planning, the Yarra Planning Scheme needs to be urgently revised to better facilitate and guide the scale, massing and bulk of new development. This Amendment (C288yara) represents Stage 2 of built form controls for the Fitzroy and Collingwood Activity Centres and corridors. Stage 1 of the work sought interim controls for Brunswick, Smith, Johnston and Gertrude Streets and Mixed Use Zone areas behind those corridors and in Fitzroy East. Stage 1 (Amendment C270yara) is currently being considered for approval by the Minister for Planning.

Diversity and variation of the heritage building stock is an inherent characteristic of the Fitzroy and Collingwood area. Built form guidance is urgently needed to ensure future development responds appropriately to these unique characteristics and to achieve an appropriate balance between the existing character and potential development.

The current provisions do not provide sufficient guidance to ensure development appropriately considers the impacts on the heritage qualities and diversity of built form within the Fitzroy – Collingwood Activity Centres and corridors. Nor do the provisions provide sufficient guidance to safeguard appropriate amenity for current and future residents in the area. Interim DDOs will assist in protecting against inappropriate development and significant heritage character of Alexandra Parade, Victoria Parade and Fitzroy West whilst the normal amendment process progresses.

The interim controls provide design objectives and requirements which seek to improve the quality of development in Alexandra Parade, Victoria Parade and Fitzroy West. Building height and setback requirements (a mix of discretionary and mandatory) seek to achieve development that respects residential heritage and neighbourhood character.

The interim controls are required to ensure that each precinct is protected in the short term and that planning controls provide certainty to the Yarra community while further work is undertaken. A lack of existing built form controls can result in inappropriate built form outcomes.

The exemption from public notice and prompt approval of this Amendment and the interim controls will enable the protection of Alexandra Parade, Victoria Parade and Fitzroy West from inappropriate development in the short-term until the permanent controls are implemented.

How does the Amendment implement the objectives of planning in Victoria?

The amendment implements the following objectives of planning in Victoria (sections 4(1) and 12(1)(a) of the Act):

To provide for the fair, orderly, economic and sustainable use, and development of land.

To secure a pleasant, efficient and safe working, living and recreational environment for all Victorians and visitors to Victoria.

To conserve and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value.

To protect public utilities and other assets and enable the orderly provision and co-ordination of public utilities and other facilities for the benefit of the community.

To balance the present and future interests of all Victorians.

The amendment seeks to provide greater clarity regarding built form outcomes and expectations in Fitzroy and parts of Collingwood. In doing so, the proposed provisions will support more efficient and orderly planning processes. The application of interim controls will ensure that Council and the community's vision for Yarra's activity centres and corridors are not undermined by inappropriate developments, while permanent controls are implemented. The views of all affected parties will be sought through planning scheme amendment process to implement permanent controls.

The amendment implements provisions that support the protection of heritage and neighbourhood character in the activity centres, in both commercial and residential areas. The amendment seeks to provide greater clarity as to whether growth or heritage values should drive development outcomes.

How does the Amendment address any environmental, social and economic effects?

The Amendment is consistent with the overarching goal in the planning scheme to:

> *Integrate relevant environmental, social and economic factors in the interests of net community benefit and sustainable development.*

The Amendment will have positive social and economic benefits through the facilitation of well-designed buildings accommodating housing above commercial activity situated in an activity centre that is well served by public transport and other services.

Does the Amendment address relevant bushfire risk?

The amendment does not address bushfire risk, as the land subject to the amendment is not:

- Subject to a Bushfire Management Overlay;
- Within a designated bushfire prone area;
- Proposed to be used or developed in a way that may create a bushfire hazard.

Does the Amendment comply with the requirements of any Minister's Direction applicable to the amendment?

The Amendment complies with Ministerial Direction No. 9 in addressing and responding to the metropolitan planning strategy, *Plan Melbourne 2017-2050*.

The Amendment complies with the Direction on the form and content of planning schemes.

Amendment C288yara is consistent with the following Directions contained in *Plan Melbourne 2017-2050*:

> **Direction 1.1 - Create a city structure that strengthens Melbourne's competitiveness for jobs and investment** which seeks to strengthen the competitiveness of Melbourne's employment areas. The Amendment provides appropriate policy direction for the planning and development of the Activity Centre to ensure that the activity centre continues to meet community needs.
>
> **Direction 5.1 - Create a city of 20-minute neighbourhoods** which aims to cluster new housing in activity centres and other places that offer good access to jobs, services and public transport and includes policy for local governments to prepare structure plans for activity centres to accommodate growth. The amendment will facilitate renewal of the Major Activity Centre which will improve local employment, housing and commercial opportunities.

How does the Amendment support or implement the Planning Policy Framework and any adopted State policy?

The Amendment supports and implements State Planning Policy in responding to the following clauses:

Clause 11 - Settlement

- **Clause 11.02-1S Supply of Urban Land** – To ensure a sufficient supply of land is available for residential, commercial, retail, industrial, recreational, institutional and other community uses.

- **Clause 11.02-2S Structure Planning -** To facilitate the orderly development of urban areas.
- **Clause 11.03-1S Activity Centres -** To encourage the concentration of major retail, residential, commercial, administrative, entertainment and cultural developments into activity centres that are highly accessible to the community.

Clause 13 – Environmental risks and amenity

- **Clause 13.01-1S Natural Hazards and Climate Change -** To minimise the impacts of natural hazards and adapt to the impacts of climate change through risk-based planning.
- **Clause 13.04-1S Contaminated and Potentially Contaminated Land -** To ensure that potentially contaminated land is suitable for its intended future use and development, and that contaminated land is used safely.
- **Clause 13.05-1S Noise Abatement -** To assist the control of noise effects on sensitive land uses.

Clause 15.01 – Built environment

- **Clause 15.01-1S Urban Design -** To create urban environments that are safe, healthy, functional and enjoyable and that contribute to a sense of place and cultural identity.
- **Clause 15.01-1R Urban Design – Metropolitan Melbourne** - To create a distinctive and liveable city with quality design and amenity
- **Clause 15.01-2S Building Design -** To achieve building design outcomes that contribute positively to the local context and enhance the public realm.
- **Clause 15.01-4S Healthy Neighbourhood -** To achieve neighbourhoods that foster healthy and active living and community wellbeing.
- **Clause 15.01-4R Healthy Neighbourhood – Metropolitan Melbourne -** Create a city of 20 minute neighbourhoods that give people the ability to meet most of their everyday needs within a 20 minute walk, cycle or local public transport trip from their home.
- **Clause 15.01-5S Neighbourhood Character -** To recognise, support and protect neighbourhood character, cultural identity, and sense of place.

Clause 15.02 – Sustainable development

- **Clause 15.02-1S Energy and Resource Efficiency -** To encourage land use and development that is energy and resource efficient, supports a cooler environment and minimises greenhouse gas emissions.

Clause 15.03 - Heritage

- **Clause 15.03-1S Heritage Conservation -** To ensure the conservation of places of heritage significance.

Clause 16.01 – Residential Development

- **Clause 16.01-1S Integrated Housing** – To promote a housing market that meets community needs.
- **Clause 16.01-2S Location of Residential Development -** To locate new housing in designated locations that offer good access to jobs, services and transport.
- **Clause 16.01-3S Housing Diversity -** To provide for a range of housing types to meet diverse needs.
- **Clause 16.01-3R Housing Diversity – Metropolitan Melbourne –** Create mixed-use neighbourhoods at varying densities that offer more choice in housing.
- **Clause 16.01-4S Housing Affordability -** To deliver more affordable housing closer to jobs, transport and services.

Clause 17.01 Employment

- **Clause 17.01-1S Diversified Economy -** To strengthen and diversify the economy.
- **Clause 17.01-1R Diversified Economy – Metropolitan Melbourne -** Support the Central City to become Australia's largest commercial and residential centre by 2050, by planning for office, retail, residential, education, health, entertainment and cultural activity spaces.

Clause 17.02 Commercial

- **Clause 17.02-1S Business** - To encourage development that meets the community's needs for retail, entertainment, office and other commercial services.
- **Clause 17.02-2S Out-of-centre development -** To manage out-of-centre development.

Clause 17.03 Industry

- **Clause 17.03-1S Industrial Land Supply** - To ensure availability of land for industry.
- **Clause 17.03-2S Industrial Development Siting -** To facilitate the sustainable development and operation of industry.
- **Clause 17.03-3S State Significant Industrial Land -** To protect industrial land of state significance.

Clause 18 - Transport

- **Clause 18.01-2S Transport System -** To coordinate development of all transport modes to provide a comprehensive transport system.
- **Clause 18.02-1S Sustainable Personal Transport -** To promote the use of sustainable personal transport.
- **Clause 18.02-1R Sustainable Personal Transport – Metropolitan Melbourne -** Improve local travel options for walking and cycling to support 20 minute neighbourhoods.
- **Clause 18.02-2S Public Transport -** To facilitate greater use of public transport and promote increased development close to high-quality public transport routes.
- **Clause 18.02-2R Principal Public Transport Network –** Facilitate high-quality public transport access to job-rich areas.

Clause 19.02 – Community infrastructure

- **Clause 19.02-4S Social and Cultural Infrastructure** - To provide fairer distribution of and access to, social and cultural infrastructure.
- **Clause 19.02-6S Open Space -** To establish, manage and improve a diverse and integrated network of public open space that meets the needs of the community.
- **Clause 19.02-6S Open Space – Metropolitan Melbourne -** To strengthen the integrated metropolitan open space network.

The amendment also supports the Plan Melbourne Policy 2.1.4, 'Provide certainty about the scale of growth in the suburbs', by providing interim built form provisions to provide greater certainty while permanent provisions undergo the full planning scheme amendment process.

How does the Amendment support or implement the Local Planning Policy Framework, and specifically the Municipal Strategic Statement?

The Amendment is consistent with and facilitates the following Clauses of the Local Planning Policy Framework:

Clause 21.04-1 - Accommodation and Housing

- Objective 1 - To accommodate forecast increases in population.
- Strategy 1.2 Direct higher density residential development to Strategic Redevelopment Sites identified at clause 21.08 and other sites identified through any structure plans or urban design frameworks.

Clause 21.04-2 - Activity centres

- Objective 4 - To maintain a balance between local convenience and regional retail roles in Yarra's activity centres.
  - Strategy 4.1 Increase the range of retail, personal and business services, community facilities, and recreation activities, within individual centres.
  - Strategy 4.3 Support the role of all activity centres, including Neighbourhood Activity Centres, in providing local day-to-day needs of residents of all abilities.
- Objective 5 - To maintain the long term viability of activity centres.
  - Strategy 5.2 Support land use change and development that contributes to the adaptation, redevelopment and economic growth of existing activity centres.
  - Strategy 5.3 Discourage uses at street level in activity centres which create dead frontages during the day.
  - Strategy 5.4 Permit residential development that does not compromise the business function of activity centres.
- Objective 7 - To encourage the arts and arts venues.
  - Strategy 7.1 Support a diversity of arts uses such as live music venues, performance spaces, galleries and artist studios in appropriate and accessible locations.

Clause 21.04-3 – Industry, Office and Commercial

- Objective 8 - To increase the number and diversity of local employment opportunities.
  - Strategy 8.3 Encourage residential and business land use within the Mixed Use Zone to locate on the same site.
  - Strategy 8.5 Support opportunities for new uses on isolated industrial sites provided they reflect the predominant surrounding uses.

Clause 21.05-1 - Heritage

- Objective 14 - To protect and enhance Yarra's heritage places.
  - Strategy 14.1 Conserve, protect and enhance identified sites and areas of heritage significance including pre-settlement ecological heritage.
  - Strategy 14.2 Support the restoration of heritage places.

- Strategy 14.3 Protect the heritage skyline of heritage precincts.
- Strategy 14.6 Protect buildings, streetscapes and precincts of heritage significance from the visual intrusion of built form both within places and from adjoining areas.

Clause 21.05-2 - Urban design

- Objective 16 - To reinforce the existing urban framework of Yarra.
- Strategy 16.2 Maintain and strengthen the preferred character of each Built Form Character Type within Yarra.
- Objective 19 - To create an inner city environment with landscaped beauty.
- Strategy 19.1 Require well resolved landscape plans for all new development.
- Strategy 19.2 Encourage opportunities for planting suitable trees and landscape areas in new development.
- Objective 20 - To ensure that new development contributes positively to Yarra's urban fabric.
- Strategy 20.1 Ensure development is designed having particular regard to its urban context and specifically designed following a thorough analysis of the site, the neighbouring properties and its environs.
- Objective 21 - To enhance the built form character of Yarra's activity centres.
- Strategy 21.1 Require development within Yarra's activity centres to respect and not dominate existing built form.
- Strategy 21.2 Require new development within an activity centre to consider the context of the whole centre recognising that activity centres may consist of sub-precincts, each of which may have a different land use and built form character.
- Strategy 21.3 Support new development that contributes to the consolidation and viability of existing activity centres.

Does the Amendment make proper use of the Victoria Planning Provisions?

The Amendment makes suitable use of the Victoria Planning Provisions (VPP) through the selection of appropriate tools to achieve guidance for future land use and development outcomes for the precinct.

The amendment also addresses the requirements of Planning Practice Note 29: Ministerial Powers of intervention in Planning and Heritage matters, November 2004. The Practice Note states that the Minister would intervene where the matter will be the introduction of an interim provision or requirement and substantially the same provision or requirement is also subject to a separate process of review (such as the introduction of permanent controls in a planning scheme).

How does the Amendment address the views of any relevant agency?

Council sought the views of the Department of Environment, Land, Water and Planning (DELWP) in the drafting of the interim controls and built form review which informs the Amendment.

Further views of relevant agencies will be sought during exhibition of the Amendment for permanent controls following the resolution from Council in February 2021.

Does the Amendment address relevant requirements of the Transport Integration Act 2010?

The Amendment is consistent with the requirements of the *Transport Integration Act 2010* and will facilitate development outcomes that promote the principles of transit oriented development.

Particular consideration has been given to ensure that vehicular movements do not impact on the Principal Public Transport Network.

Resource and administrative costs

- **What impact will the new planning provisions have on the resource and administrative costs of the responsible authority?**

The Amendment will have some impact on the general operation of Council's statutory planning department as it will facilitate some new forms of development and land use.

The application of planning controls is considered to provide a more consistent assessment of planning permit applications. This is considered to reduce costs by providing more certainty for decision making.

Where you may inspect this Amendment

The Amendment is available for public inspection, free of charge, during office hours at the following places:

Planning Counter Richmond Town Hall 333 Bridge Road Richmond VIC 3121	Information Counter Collingwood Town Hall 140 Hoddle Street Abbotsford VIC 3067

Yarra City Council web-site - Amendment C288yara: www.yarracity.vic.gov.au/amendmentC288

The Amendment can also be inspected free of charge at the Department of Environment, Land, Water and Planning website at www.planning.vic.gov.au/public-inspection.

Planning and Environment Act 1987

YARRA PLANNING SCHEME

AMENDMENT C288

INSTRUCTION SHEET

The planning authority for this amendment is the Yarra City Council.

The Yarra Planning Scheme is amended as follows:

Planning Scheme Maps

The Planning Scheme Maps are amended by a total of 4 attached maps sheets.

Overlay Maps

1. Amend Planning Scheme Map Nos. 1DDO, 2DDO, 5DDO, 6DDO in the manner shown on the 4 attached maps marked "Yarra Planning Scheme, Amendment C288".

Planning Scheme Ordinance

The Planning Scheme Ordinance is amended as follows:

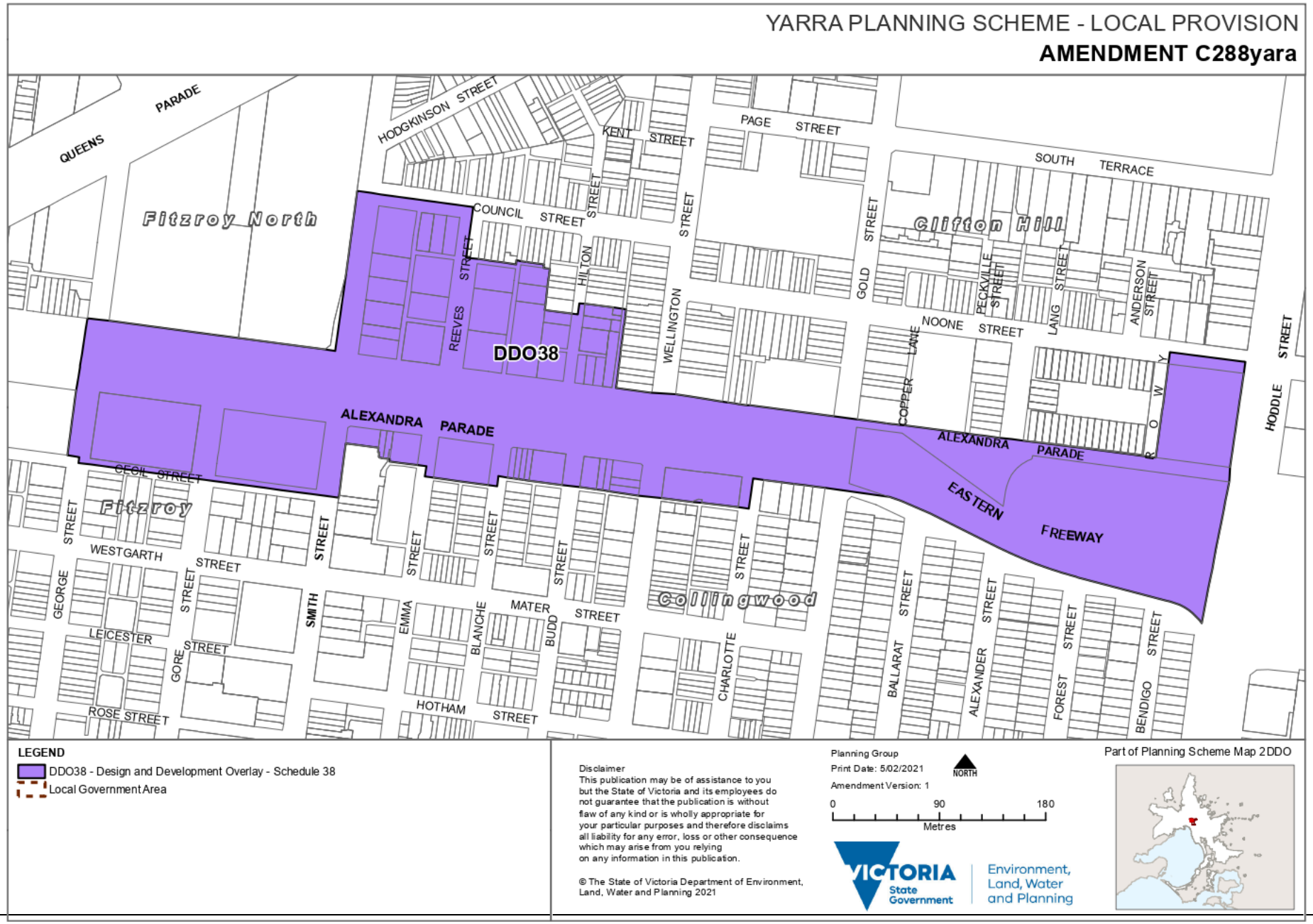
2. In **Overlays** – Clause 43.02, insert a new Schedule 38 in the form of the attached document.

3. In **Overlays** – Clause 43.02, insert a new Schedule 39 in the form of the attached document.

4. In **Overlays** – Clause 43.02, insert a new Schedule 40 in the form of the attached document.

End of document

Attachment 9 - Attachment 9 - Statutory Documentation



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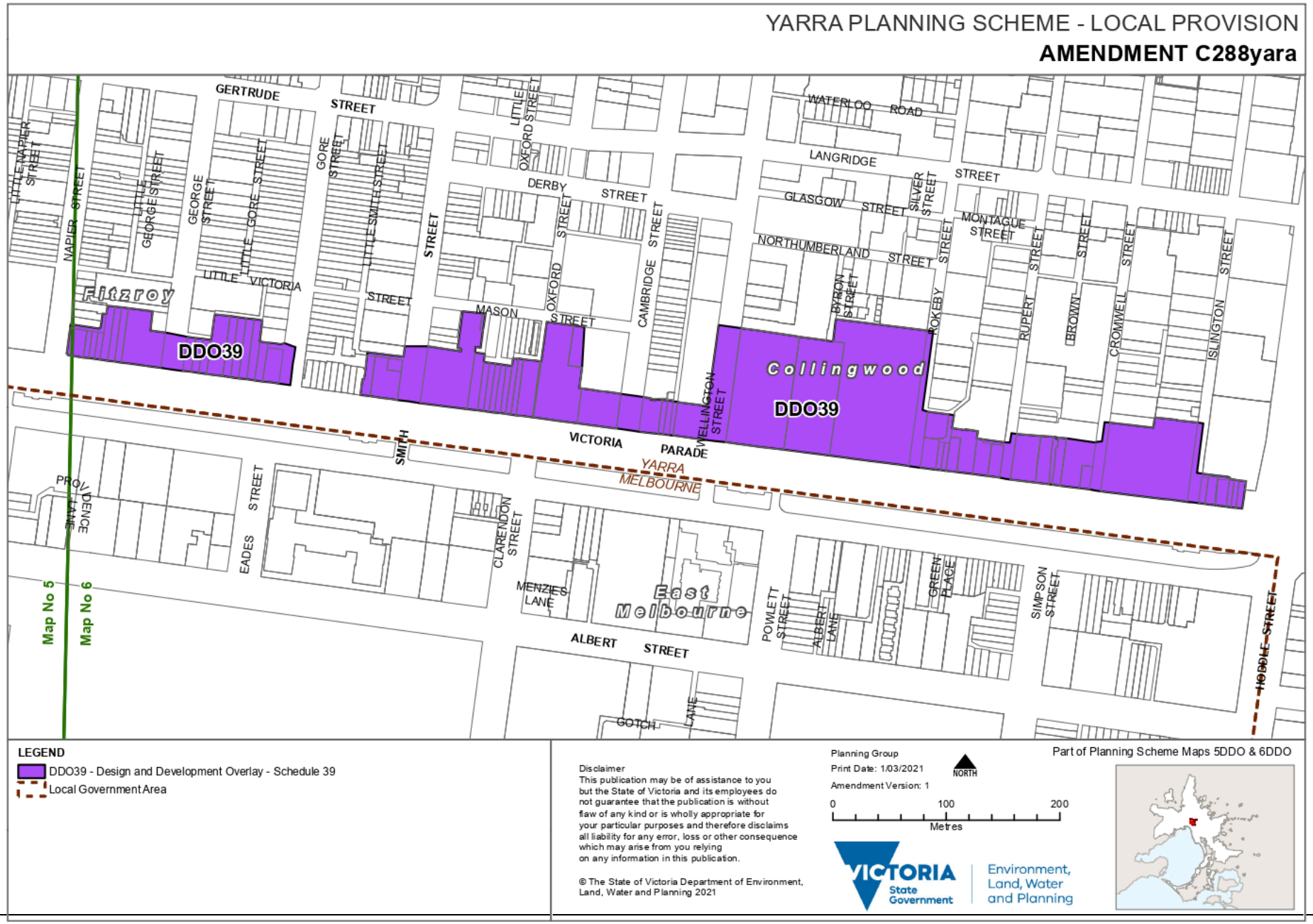

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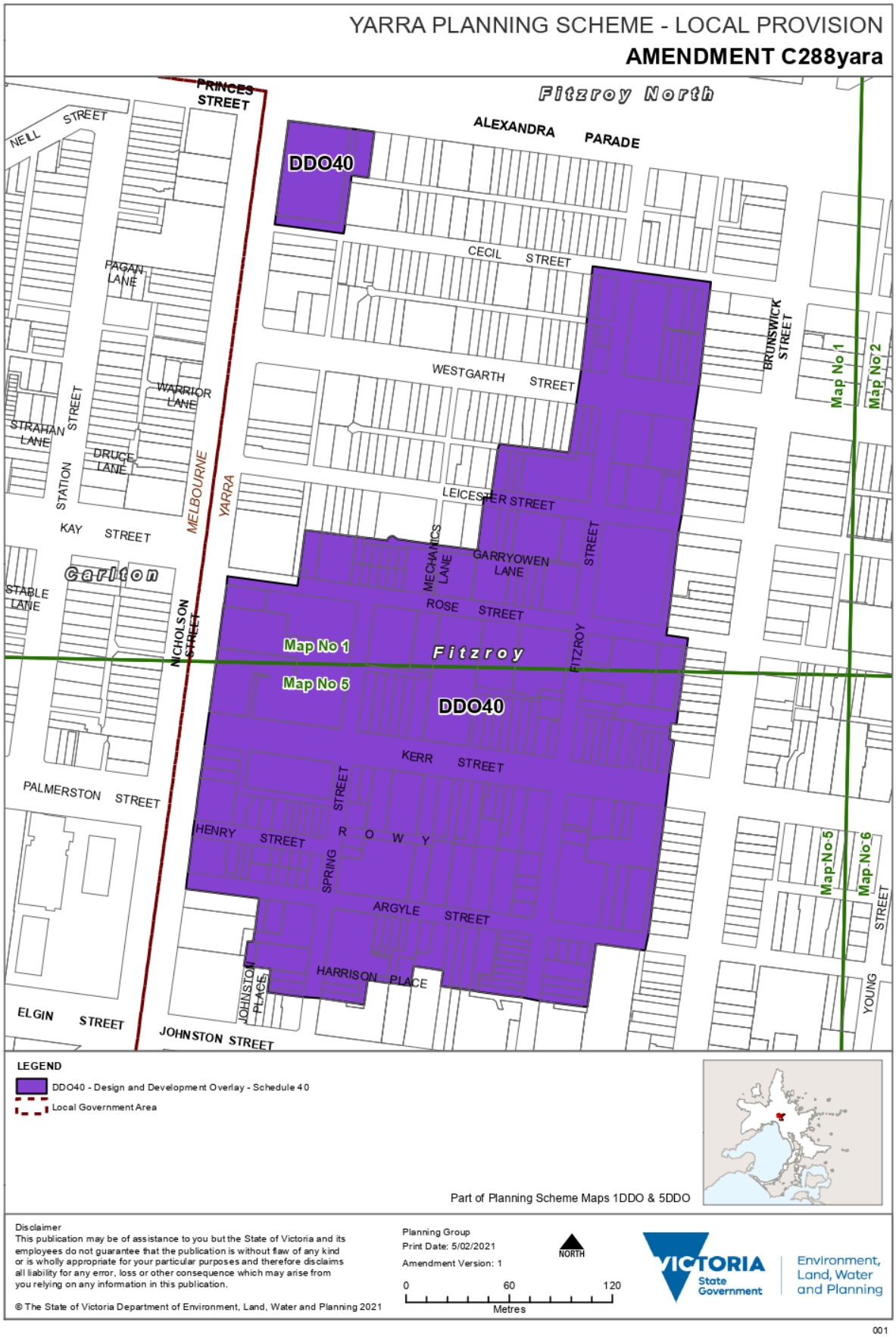

8.5 Implementation of the Climate Emergency Plan

Executive Summary

Purpose

To provide Council with an update on implementation of Council's Climate Emergency Plan 2020-2024.

Key Issues

Council adopted its first Climate Emergency Plan in June 2020, and since that time solid progress has been made to implement the plan.

75% of actions (89 out of 119 actions) are either completed, in progress or on-going and embedded into Council's business. There were 17 actions (14%) where implementation has been delayed to some extent, due to COVID-19 related delays and/or there's a need for funding for full implementation. The remaining actions were not due to start in this period.

A brief progress report on implementation of the Climate Emergency Plan, including the status of headline actions, is provided at Attachment A.

Financial Implications

There are no financial implications of this progress update, however during future budget deliberations, Council may consider funding further actions from the Climate Emergency Plan.

PROPOSAL

That Council notes the strong progress that has been made towards implementing actions in the Climate Emergency Plan.

8.5 Implementation of the Climate Emergency Plan

Reference	D21/14202
Author	Kelly Heffer - Sustainability Engagement Officer
Authoriser	Director Planning and Place Making

Purpose

1. To provide Council with an update on implementation of Council's Climate Emergency Plan 2020-2024.

Critical analysis

History and background

2. On 2 June 2020, Council adopted its first Climate Emergency Plan, acknowledging the increasing urgency and scale of the climate emergency. The plan sets out Yarra's priorities and proposed actions for the next four years.
3. At the time of adoption, Council recognised the opportunity for communities, businesses and governments to 'build back better': to recover from the COVID-19 pandemic and act on the climate emergency to create a healthier, more equitable, prosperous society.
4. The Climate Emergency Plan set objectives and targets, as well as a range of actions to:
   (a) accelerate carbon emission reductions;
   (b) create a climate adapted city — across green spaces, streets, and hard assets and infrastructure; and
   (c) support the community to act on the climate emergency, as well as to live with worsening climate impacts.
5. The plan has 34 numbered actions, each with several sub-points, totalling 119 actions. This includes 20 headline actions (page 8 of the Climate Emergency Plan).
6. When the plan was adopted the following key actions were highlighted:
   (a) introduce zero carbon standards for new commercial and residential developments, working with other government partners to amend the planning scheme;
   (b) enable the community to cut their carbon emissions, lead grassroots projects and collectively push for urgent climate action;
   (c) help residents and businesses take up renewable energy and facilitate solar installations;
   (d) 'get off gas' by transitioning all Council's buildings to be all electric, powered by renewable energy;
   (e) speed up the roll out of cycling infrastructure by trialling temporary protected bike lanes to inform permanent upgrades;
   (f) transition all Council's fleet to electric vehicles powered by renewable energy;
   (g) create climate adapted green spaces by harvesting more stormwater to irrigate parks; and
   (h) advocate for urgent climate action by other levels of government, including strong renewable energy and carbon emissions reduction targets, along with policy and economic measures that both enable recovery from the pandemic and drive emissions reductions.

7. In the period just prior to the Climate Emergency Plan being adopted, Council had responded to the COVID-19 pandemic by redirecting funds to business and community support packages, and experienced a downturn in revenue.

8. This COVID-19 response resulted in the deferral of some actions in the Climate Emergency Plan that would have been most likely funded in 20/21. It was recommended at the time that Council consider funding further action in future budgets.

9. Despite the deferral of some funding and pandemic-related disruption to Council's work, many actions have been progressed within normal budget resourcing allocations.

Discussion

Summary of progress to date

10. Solid progress has been made in the nine months since the Climate Emergency Plan was adopted in June 2020, with 75% of actions (89 out of 119 actions) either completed, in progress or on-going and embedded into Council's business.

11. There were a further 13 actions in progress but where further funding is required for full implementation; and 4 actions where implementation has been delayed due to COVID-19 related impacts).

12. The remaining 13 actions were not due to start in this period.

13. A brief progress report on implementation of the Climate Emergency Plan, including the status of headline actions, is provided at Attachment A.

Highlights of actions being implemented to date

14. Many key actions in the plan are well underway and the following provides progress highlights since the adoption of the plan. Further detail on implementation of all headline actions is in Attachment A.

    (a) Zero carbon standards for new developments: Work towards a planning scheme amendment to introduce zero carbon standards for new residential and commercial developments is well under way. A zero-carbon standards factsheet is being developed jointly with the *Council Alliance for a Sustainable Built Environment* (CASBE), and in alignment with the City of Melbourne's current amendment. A partnership has been established with the City of Moreland for a joint planning scheme amendment, with other councils looking to join. Examples of zero carbon developments have been published on the Council website and engagement with the planning and development sector continues;

    (b) 'Take Climate Action' community engagement: A new initiative in 2020 that delivered 18 educational events, engaged 1,029 people to reduce emissions and push for urgent change. The events ranged from skills to effectively advocate for change, behaviour change sessions on reducing individual and household carbon emissions, and a focus on a renewables-led economic recovery. In addition, a new Community Skills for Climate Action training program is being scheduled;

    (c) '100% Renewable Yarra' community engagement: This initiative includes a refreshed Yarra Solar Program in partnership with Yarra Energy Foundation (YEF), online events and resources to assist residents and businesses to switch to 100% renewable electricity, install solar, create an all-electric home and use less energy. Work is under way with the City of Melbourne and *Northern Alliance for Greenhouse Action* (NAGA) to explore a partnership with renewable electricity retailers;

    (d) Climate Action funds in Yarra's Annual Grants: Yarra's annual Sustainability Grant stream was modified to focus on climate action, with an additional $38,000 of additional funding (total of $80,000) available for community-led projects in 2021. Throughout the year, Council continues to support community-driven initiatives through partnering, promotions and small project grants of up to $1,000;

(e) Getting Council's buildings off gas: Phasing out gas co-generation systems has begun, starting at Fitzroy Swimming Pool which has already been turned off. Investigations and design work are under way for phasing town halls and recreation centres away from gas. For small sites, the transition to all-electric operations and cessation of gas usage is under way, including replacing all gas cooktops with electric induction;

(f) Temporary cycling infrastructure trials: Trials are under way including separated bike lanes in Elizabeth St, Richmond; temporary cycling infrastructure, including a new pop-up bike lane in Park St east of Nicholson St; other modifications were also endorsed by the previous Council such as separators for bikes at some intersections and are to be progressively installed;

(g) Fleet transition to electric vehicles: The transition continues with the procurement of electric tippers for hard rubbish collections and cessation of diesel utes until practical electric vehicles enter the market. Efficient hybrid options are utilised as a transitional technology for passenger fleet where zero emissions vehicles and charging infrastructure are not practical. Further transition of the fleet to electric vehicles requires investment in a power supply upgrade;

(h) Climate resilient green spaces through stormwater harvesting and treatment: The Integrated Water Management Plan was adopted in September 2020and works are being completed to expand the Edinburgh Gardens stormwater harvesting scheme to treat and store additional water to meet most of the park's irrigation needs, saving 20 million litres of drinking water each year. In addition, the Ramsden Reserve stormwater harvesting project in Clifton Hill is enabling treatment and storage for irrigation, while reducing nutrients and excess flows to the Merri Creek; and

(i) Advocating to governments for strong climate action: Council is a founding and active member of *Climate Emergency Australia* and continues to partner with others to advocate for change. Examples include advocating to the State Government for zero carbon developments as a key post-pandemic economic recovery measure; advocating for the state government to set strong, ambitious emissions reduction targets and to support electric vehicle take-up; advocating to the Federal Government for a COVID recovery that addresses the climate crisis; and successfully advocating for the first electric bus trial to be in Yarra.

Actions requiring further funding

15. Notwithstanding the strong progress, there are several actions in the Climate Emergency Plan that require further funding to proceed to full implementation. These actions are subject to future budget cycles and Council considerations and decisions.

(a) progression of the zero carbon developments work to a planning scheme amendment requires additional budget and allocation of staff resources. The amendment would first be required to be approved by Council and then provided to the Planning Minister for consideration;

(b) preparatory work for the development of an Integrated Transport Plan (ITP) is under way, however commitment to scope, timeline and funding is required from Council before development of the plan;

(c) officers have been actively engaging with large businesses in Yarra about their energy use, renewable energy targets and determining level of interest in a group Power Purchase Agreement (PPA). There is a strong appetite, including at a regional level with other councils, but would require additional resourcing from Council;

(d) staff have been formulating a project to support low-income households to take up solar energy systems and energy retrofits, including partnerships with community housing providers. This action would require resourcing to proceed to implementation;

(e) the investigation of potential sites for the installation of some public-use electric vehicle charge points commenced, however, funding is needed to progress this project to installation if that is what Council wish to do;

(f) delivery of additional safe cycling infrastructure requires further Council funding;

(g) retrofitting Council's facilities away from using gas to being powered entirely by renewable electricity;

(h) to ensure all Council buildings' roof space is maximised with solar panels;

(i) replacement of all Council's diesel- and petrol-powered vehicles with electric vehicles, where practical. Further transition of the fleet to electric vehicles requires investment in a power supply upgrade;

(j) upgrades of residential streetlights from T5 to LED lights;

(k) upgrades of main roads streetlights to LED requires additional funding;

(l) the roll out of a municipal-wide, four-bin food and organic waste kerbside collection service (noting the glass only bin has been rolled out);

(m) the Climate Emergency Plan included an action to maximise opportunities for increased permeability, vegetation cover, improved walking and cycling infrastructure during streetscape capital works processes - these are being investigated, and

(n) additional active transport infrastructure, traffic calming and filtering solutions via local '*access and movement'* projects are being considered and would require additional budget for implementation.

Options

16. There are no options to consider with this update report.

Community and stakeholder engagement

17. There has been no specific external consultation on this progress update, however the community continues to be engaged through the implementation of the Climate Emergency Plan.

18. Consultation has occurred with the various teams responsible for implementing actions to confirm progress to date. Key teams include Waste Minimisation and Urban Agriculture, Sustainable Transport, Buildings, Assets and Engineering, Urban Design, Strategic Planning, Statutory Planning, City Works and Biodiversity.

Policy analysis

Alignment to Council Plan

19. The implementation of the Climate Emergency Plan responds to the following Council Plan commitment: *Strategy 3.3 Leads in sustainable energy policy and deliver programs to promote carbon neutral initiatives for the municipality.*

Climate emergency and sustainability implications

20. Implementation of actions in the Climate Emergency Plan have multiple sustainability benefits including urban forest, urban agriculture, biodiversity, sustainable transport, integrated water management, and waste management and resource recovery.

21. Through implementing actions in the Climate Emergency Plan, Council is reducing its own carbon emissions, assisting the community to do the same, advocating to government and fostering resilience to climate related shocks and stresses.

Community and social implications

22. The actions in the Climate Emergency Plan being implemented have considerable social benefits. These include enabling a community that is actively engaged to reduce carbon emissions, taking climate action and more resilient to climate impacts.

Economic development implications

23. While this progress update doesn't have specific economic implications, actions being progressed in the Climate Emergency Plan are contributing to the economic opportunities of reducing carbon emissions through investing in renewable energy, electric vehicles and zero carbon developments.

Human rights and gender equality implications

24. Through implementing the plan, Council is seeking to address the human rights implications of the climate crisis.

25. Climate change impacts are not likely to be felt by everyone equitably; they are likely to be disproportionally felt by vulnerable people, such as those on low incomes or with pre-existing health conditions.

Operational analysis

Financial and resource impacts

26. There are no financial implications of this progress update, however during future budget deliberations, Council may consider further funding actions from the Climate Emergency Plan.

Legal Implications

27. The progress update on implementing the Climate Emergency Plan has no legal implications.

Conclusion

28. Council has made strong progress towards implementing actions in the Climate Emergency Plan, with 75% of actions (89 out of 119 actions) either in progress, completed or on-going and embedded into Council's business.

29. The reallocation of funds due to the COVID-19 pandemic at the time of the plan's adoption, reduced the ability for some further actions to be funded in the last Council budget. Council may consider funding further actions in future budgets.

RECOMMENDATION

1. That Council notes:

   (a) the officer report providing an update on the implementation of the Council's Climate Emergency Plan;

   (b) the strong progress that has been made to date since the adoption of the Plan in mid-2020; and

   (c) that notwithstanding the strong progress, there are several actions in the Climate Emergency Plan that require further funding to proceed to full implementation and that these actions be referred to future Council budget cycles for consideration.

Attachments

1⇩ Attachment A Progress report - Implementation of Climate Emergency Plan - March 2021

Attachment 1 - Attachment A Progress report - Implementation of Climate Emergency Plan - March 2021

Attachment A: Progress Report: Implementation of Climate Emergency Plan

Summary

- Solid progress has been made in the first nine months since the Climate Emergency Plan was adopted in June 2020, with 75% (89 out of 119 actions) either completed, in progress or on-going and embedded into Council's business.
- There were a further 13 actions where progress has been made but further funding is required for full implementation; and 4 actions where implementation has been delayed due to COVID-19 related impacts.
- The remaining 13 actions were not due to start in this period.

Report period:	June – February 2021
20 headline actions (details and status provided over page)	
	2 actions **completed** and no further action required
	8 actions **in progress** (and implementation is **on-going**)
	7 actions **in progress** (but require **funding** for full implementation)
	3 actions **delayed** due to COVID-19
All actions in Climate Emergency Plan (119 actions, including sub-points)	
	5 actions **completed** and no further action required
	54 actions **in progress** (and implementation is **on-going**)
	9 actions **in progress** (project is **discrete** not on-going)
	21 actions are **on-going** (embedded in core business, including advocacy)
	13 actions **in progress** (but require **funding** for full implementation)
	4 actions **delayed** due to COVID-19
	13 actions **not due to start**

Attachment 1 - Attachment A Progress report - Implementation of Climate Emergency Plan - March 2021

Implementation of headline actions in the Climate Emergency Plan

Summary status report: June – February 2021

CEP Action No.	Action summary	Action description (from page 8 in the CEP)	Status	Comment on status
1.1	Community climate programs	Deliver a new climate program to enable the community to act on the climate emergency	In progress (implementation is ongoing)	The new Take Climate Action initiative is under way, including 18 educational events and online resources engaging 1,029 people to date to reduce emissions and push for urgent change. Promoting '100% Renewable Yarra', including a Yarra Solar Program in partnership with Yarra Energy Foundation (YEF); online events and resources to assist residents and businesses to switch to 100% renewable electricity, install solar, create an all-electric home and use less energy. Partnered with other councils to deliver a cross-council webinar series, providing additional learning opportunities for residents and businesses to reduce their carbon emissions. Participant recruitment is under way for a new Community Skills for Climate Action training program to be delivered in 2021.
1.2	Energy efficient home upgrades	Upgrade the homes of vulnerable people to be more energy efficient and climate resilient	Delayed due to COVID-19	Proposal developed to assist older people to upgrade their homes through draft proofing, insulation and efficient lighting. On hold in 2020 due to the pandemic, but will be carried out in 2021.

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CEP Action No.	Action summary	Action description (from page 8 in the CEP)	Status	Comment on status
1.3	Climate action grants	Commit substantial grant funds to stimulate community-driven climate action	In progress (implementation is ongoing)	Yarra's annual Sustainability Grant stream was modified to focus on Climate Action, with $38,000 of additional funding (total of $80,000 in 2021). Through the annual grants this year, 13 community climate action projects were funded, which are estimated to collectively engage more than 20,000 people. Council also supported community-led initiatives through in-kind promotions and small project grants.
1.4	Nature in the Neighbourhood program	Deliver a new 'Nature in the Neighbourhood' initiative to reconnect people with our natural environment	Delayed due to COVID-19	COVID-19 has prevented planned community based activities to date during 2020/21. It is envisaged this project will commence in the remainder of 2020/21 through 'labour only' project planning.
2.2	Community buying renewable energy	Support small businesses and residents to buy renewable energy through retail partnerships / independently reviewing retail options	In progress (implementation is ongoing)	Initial feasibility work has been carried out with the City of Melbourne and Northern Alliance for Greenhouse Action to explore a partnership with renewable electricity retailers.
2.3	Power Purchase Agreements for large businesses	Assist large energy users to switch to renewable energy via Power Purchase Agreements (PPA)	In progress (requires funding for full implementation)	Council has been actively engaging with large businesses in Yarra about their energy use, renewable energy targets and determining level of interest in a group Power Purchase Agreement (PPA). There is a strong appetite, including at a regional level with other councils, however this would require some additional resourcing from Council.

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CEP Action No.	Action summary	Action description (from page 8 in the CEP)	Status	Comment on status
2.6	Get Council buildings off gas	Transition Council's small sites away from using gas within two years and larger, complex facilities before 2030.	In progress (requires funding for full implementation)	For large sites, the phasing out of gas for co-generation systems at our Leisure Centres has begun, with the Fitzroy Leisure Centre system now turned off. Detailed investigations and engineering design work is in progress for Richmond Town Hall and Fitzroy Town Hall. For small sites, the transition to all-electric operations and cessation of gas usage is under way, including replacing all gas cooktops with electric induction. Works to be funded via annual capital works budgets.
2.8 (point 1)	Zero carbon framework (guidance)	Develop a zero carbon developments framework and work with developers to achieve and promote leading practice	In progress (implementation is ongoing)	A zero carbon development fact sheet is being developed jointly with the Council Alliance for a Sustainable Built Environment (CASBE). The fact sheet will provide definitions and guidance, and is expected to be published in early 2021. Examples of zero carbon developments have been published on Council's website and engagement with the planning and development sectors continues.

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CEP Action No.	Action summary	Action description (from page 8 in the CEP)	Status	Comment on status
2.8 (point 2)	Zero carbon standards for new developments (YPS amendment)	Introduce zero carbon standards for new commercial and residential developments, working with local and state government partners to amend the planning scheme	In progress (requires funding for full implementation)	Research and strategic justification work is well under way, drawing from best practice in other jurisdictions. Zero carbon standards are being drafted with CASBE member councils and aligned with City of Melbourne's current amendment. Progression of the zero carbon developments work to a planning scheme amendment requires additional budget and allocation of staff resources. The amendment would be approved by Council and then provided to the Planning Minister for consideration. A partnership has been established with the City of Moreland for a joint planning scheme amendment, with other councils looking to join.
2.8 (point 4)	Heritage guidance for solar and waive fees	Seek to waive planning application fees for solar installations and improve guidance to help facilitate installs in heritage areas	Completed	Planning application fees have been waived for applicants proposing to install solar panels on properties in a heritage overlay. Web-based guidance on installing solar in heritage areas is published on the website and has been promoted to the community.
3.1	Tree planting	Accelerate street tree planting guided by Priority Planting Plans, informed by areas most affected by urban heat and social vulnerability	In progress (implementation is ongoing)	Priority Planting Plans have been completed. Street tree planting is based on priority areas identified in these plans and within budget constraints. Annual infill planting also directs planting to priority streets, where possible.

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CEP Action No.	Action summary	Action description (from page 8 in the CEP)	Status	Comment on status
3.2 (point 1)	Climate resilient streets	Develop options to implement trials or permanent works to enhance streetscapes through increasing tree plantings and permeable surfaces to mitigate heat, wind exposure and flood risk. A first example is Gleadell Street Richmond.	In progress (Requires funding for full implementation)	Design work has been carried out, however a proposed upgrade of Gleadell Street, Richmond is currently not funded and is on hold. A proposed streetscape enhancement at King William/Condell/Young Streets, near Fitzroy Town Hall would increase tree plantings and permeable surfaces to mitigate heat, wind exposure and flood risk and also provide community and play spaces. Current feasibility studies are underway to inform the concept design. (Project was generated from the 'Brunswick Street Streetscape Masterplan' adopted by Council in 2020).
3.2 (point 3)	Additional green spaces	Create additional pocket parks in high density areas through reclaiming road space	In progress (implementation is ongoing)	Additional open space I s being created in Collingwood through an extension of Cambridge Street Reserve and a new park in Otter Street. Design documentation is being prepared for new open space in Reid Street, Fitzroy North; Stephenson Reserve and Gwynne Street, Cremorne. The development of a shared space and public park is being explored along King William Reserve, Fitzroy as an outcome of the Brunswick Street Masterplan. New parks are being created in the Amcor and the Gasworks sites, as part of developer land contributions.

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3.5	Stormwater harvesting at Edinburgh Gardens	Expand stormwater harvesting at Edinburgh Gardens to reduce reliance on drinking water for irrigation and improve water quality	Completed	Works have been completed to expand the Edinburgh Gardens stormwater harvesting scheme to treat and store additional water to meet most of the park's irrigation needs, saving 20 million litres of drinking water each year. In addition, the Ramsden Reserve stormwater harvesting project in Clifton Hill is in the design phase and will enable treatment and storage for irrigation, while reducing nutrients and excess flows to the Merri Creek.
4.2	Trial bikes lanes	Use an 'iterative trial' approach to roll out sustainable transport projects quickly to inform permanent upgrades	In progress (implementation is ongoing)	The following trials are under way: - Separated bike lanes in Elizabeth St, Richmond - Temporary cycling infrastructure, including new pop up bike lane in Park St, Fitzroy North - Heidelberg Road to Collingwood Cycling Corridor. Other trials are being considered by the state government.
4.4	Electric vehicle charging	Support the installation of public-use electric vehicle charge points	In progress (Requires funding for full implementation)	In early 2020 officers were in the process of investigating possible sites for electric vehicle chargers, however the funding for this project was reallocated to the COVID-19 community relief budget. Funding is needed to progress this project to installation if that is what Council wish to do. Officers have also engaged with electric vehicle charging suppliers to encourage the installation of public chargers at local businesses' car parks, such as shopping centres and supermarkets.
4.1	Integrated Transport Plan	Develop an Integrated Transport Plan (ITP) to facilitate the uptake of sustainable modes of transport and the long-term reduction of private car use.	In progress (Requires funding for full implementation)	Preparatory work for the development of an Integrated Transport Plan (ITP) is under way, however commitment to scope, timeline and funding is required from Council before development of the plan.

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CEP Action No.	Action summary	Action description (from page 8 in the CEP)	Status	Comment on status
4.5	Electric vehicle fleet	Replace all Council's diesel and petrol powered vehicles with electric vehicles, where practical options are available	In progress (Requires funding for full implementation)	Heavy vehicles: One electric vehicle tipper is in use for hard rubbish collections; a further three tippers are due to be delivered around March 2021 and a further two tippers will be ordered in the 21/22 financial year. Lighter vehicles: Ceased purchase of diesel utes until practical electric vehicles or more sustainable alternatives enter the market. Further transition of the fleet to electric vehicles requires investment in a power supply upgrade.
5.1	Single use plastics	Phase out single use plastics across Council's operations and further engage the community to reduce plastics	Delayed due to COVID-19	Due to COVID-19 further roll out of the Proudly Plastic Free program has been delayed and the priority has been implementing the new three-bin kerbside service.
5.2	Four-bin kerbside waste service	Roll out a municipal-wide, four-bin food and organic waste kerbside collection service in 2020/21	In progress (Requires funding for full implementation)	Due to the budget implications of COVID-19, the four-bin collection service will be rolled out in two stages. A three-bin system with a glass only bin is currently being rolled out across the municipality. This change in the kerbside collection service is aimed at fixing the current issues with recycling. The first collection commenced on 23 November. Significant additional budget would be required to the roll out of the fourth food and green bin, but could proceed in in 2021.
5.3	Domestic recycling solutions	Facilitate the development of local recycling solutions and markets for recyclables, working with industry and council partners	In progress (implementation is ongoing)	Feasibility work with other councils and state government to explore opportunities for Council-run glass processing facilities and Food Organics and Gardens Organics (FOGO) is to be completed this financial year.

8.6 Motions for ALGA National General Assembly and MAV State Council

Reference	D21/21705
Author	Rhys Thomas - Senior Governance Advisor
Authoriser	Group Manager Chief Executive's Office

Purpose

1. To provide an opportunity for Council to consider submitting motions to:
   (a) the Australian Local Government Association (ALGA) National General Assembly to be held in Canberra on 20-23 June 2021; and
   (b) the Municipal Association of Victoria (MAV) State Council to be held in Melbourne on 21 May 2021.

Critical analysis

History and background

2. The ALGA National General Assembly and MAV State Council are an opportunity to further Council's policy positions at a national and state level, particularly in relation to advocacy matters. Once submitted, the motions are taken to the relevant forums, and debated by the members. If adopted, they become the formal position of the ALGA and MAV respectively.

Discussion

ALGA National General Assembly

3. Council has an opportunity to submit motions for consideration by the ALGA National General Assembly. To be eligible for inclusion in the National General Assembly Business Papers, and subsequent debate on the floor, motions must meet the following criteria:
   (a) Be relevant to the work of Local Government nationally
   (b) Not be focussed on a specific location or region – unless the project has national implications;
   (c) Be consistent with the themes of the National General Assembly;
   (d) Complement or build on the policy objectives of your state and territory local government association;
   (e) Be submitted by a council which is a financial member of their state or territory local government association;
   (f) Propose a clear action and outcome i.e. call on the Australian Government to do something; and
   (g) Not be advanced on behalf of external third parties that may seek to use the NGA to apply pressure to Board members, or to gain national political exposure for positions that are not directly relevant to the work of, or in the national interests of, local government.
4. Motions must be submitted to the ALGA Secretariat by 26 March 2021.

MAV State Council

5. Council has the opportunity to submit motions for consideration by the MAV State Council. To be eligible for inclusion and presentation to the State Council, motions must:
   (a) be of state-wide significance to local government; and

(b) not be identical or substantially similar to a motion previously considered.

6. Motions must be submitted to the MAV in April 2021.

Options

7. Council has the option of determining whether or not to submit a motion (or motions) to either the National General Assembly or State Council in 2021.

Community and stakeholder engagement

8. There has been no external consultation in the preparation of this report.

9. Invitations have been extended to all Councillors to consider preparation of motions for consideration by Council for submission to the National General Assembly and/or State Council.

Policy analysis

Alignment to Council Plan

10. Any submitted proposed motion should be consistent with Council's established policy position on the relevant subject, including the Council Plan.

Climate emergency and sustainability implications

11. There are no sustainability implications associated with this report.

Community and social implications

12. There are no community or social implications associated with this report.

Economic development implications

13. There are no economic implications associated with this report.

Human rights and gender equality implications

14. There are no human rights or gender equality implications associated with this report.

Operational analysis

Financial and resource impacts

15. As the National General Assembly is interstate, the attendance of Councillors requires approval by Council and will be the subject of a future report. There are no financial implications of submitting motions to the National General Assembly.

16. As the State Council is held in Victoria, no approval from Council is required for attendance. There are no financial implications of submitting motions to the State Council.

Legal Implications

17. There are no legal issues associated with this report.

Conclusion

18. This report provides Councillors an opportunity for Council endorsement of motions for submission to the Australian Local Government Association (ALGA) National General Assembly to be held on 14-17 June 2020 and the Municipal Association of Victoria (MAV) State Council to be held on 15 May 2020.

RECOMMENDATION

1. That Council endorse the following motions for submission to the Australian Local Government Association (ALGA) National General Assembly to be held on 20-23 June 2021, as tabled:
   (a) _____
   (b) _____
2. That Council endorse the following motions for submission to the Municipal Association of Victoria (MAV) State Council to be held in on 21 May 2021, as tabled:
   (a) _____
   (b) _____

Attachments

There are no attachments for this report.