Attachments

Ordinary Council Meeting

Monday 16 March 2020

9.1.1 16 Spring Street Box Hill (Lots 1 PS 810596 V) Construction of a 29 storey mixed use building with five basement levels, comprising of 299 dwellings together with the use of the land for the purposes of Education Centre (Nurse training facility), Offices, Shops, Food and Drink premises, Accommodation, reduction to the car parking requirement and removal of protected trees (SLO9)

9.1.2 199 Canterbury Road, Blackburn (LOT 1 LP 114506) Development of the land for five (5) double-storey dwellings, including associated SLO2 tree removal and buildings and works within 4 metres of SLO2 trees, and alteration of access to a Road Zone Category 1.

9.1.3 Amendment C219 to the Whitehorse Planning Scheme Municipal Wide Significant Landscape Overlay
Consideration of Planning Panel report

9.1.5 Draft Box Hill Integrated Transport Strategy

9.1.9 Investment and Economic Development Strategy Extension 2020-2022

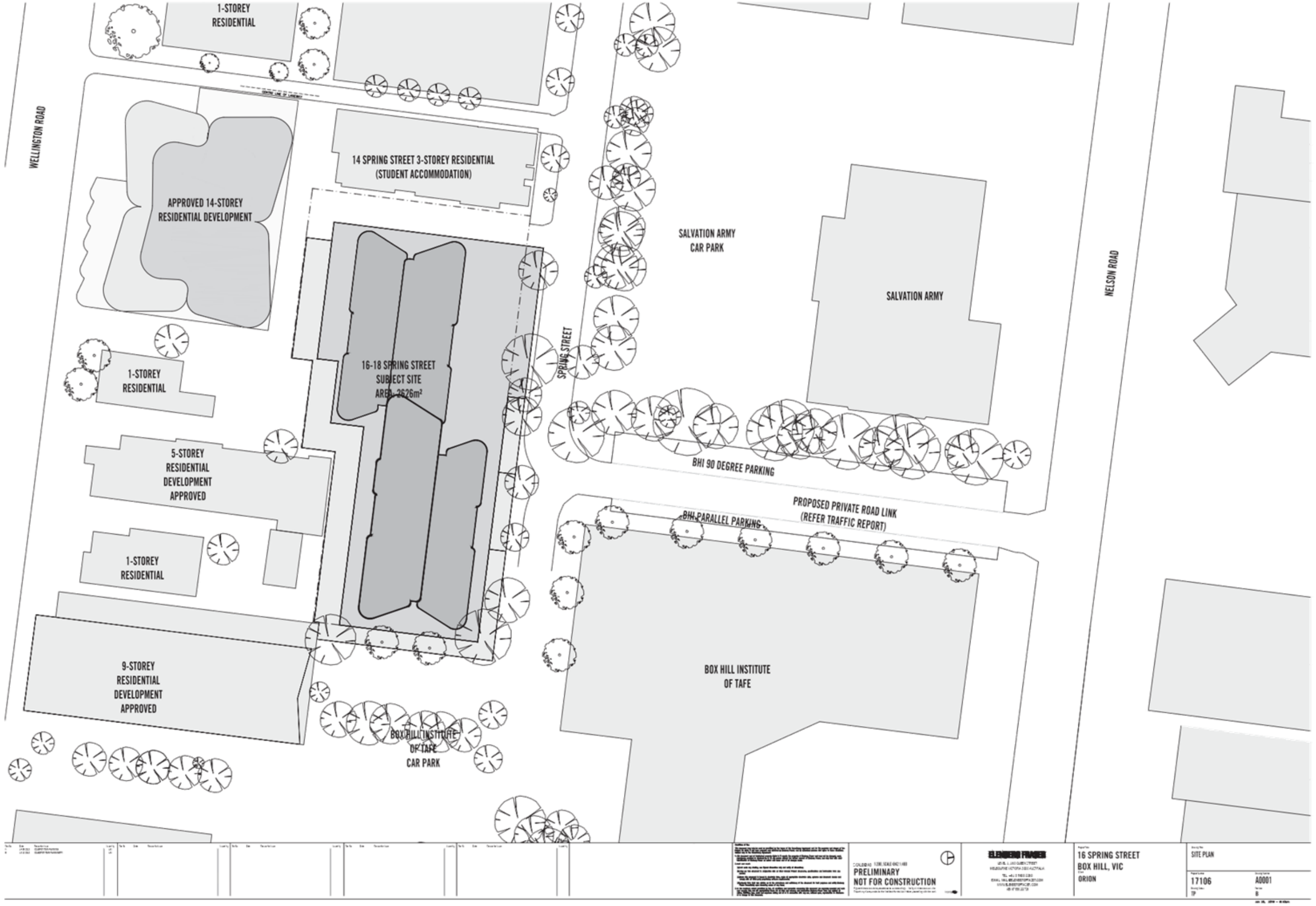
9.1.1 16 Spring Street Box Hill (Lots 1 PS 810596 V) Construction of a 29 storey mixed use building with five basement levels, comprising of 299 dwellings together with the use of the land for the purposes of Education Centre (Nurse training facility), Offices, Shops, Food and Drink premises, Accommodation, reduction to the car parking requirement and removal of protected trees (SLO9)

Attachment 1 Decision Plans

Attachment 2 Landscape Plan

9.1.1 – ATTACHMENT 1. Decision Plans

9.1.1 – ATTACHMENT 1. Decision Plans



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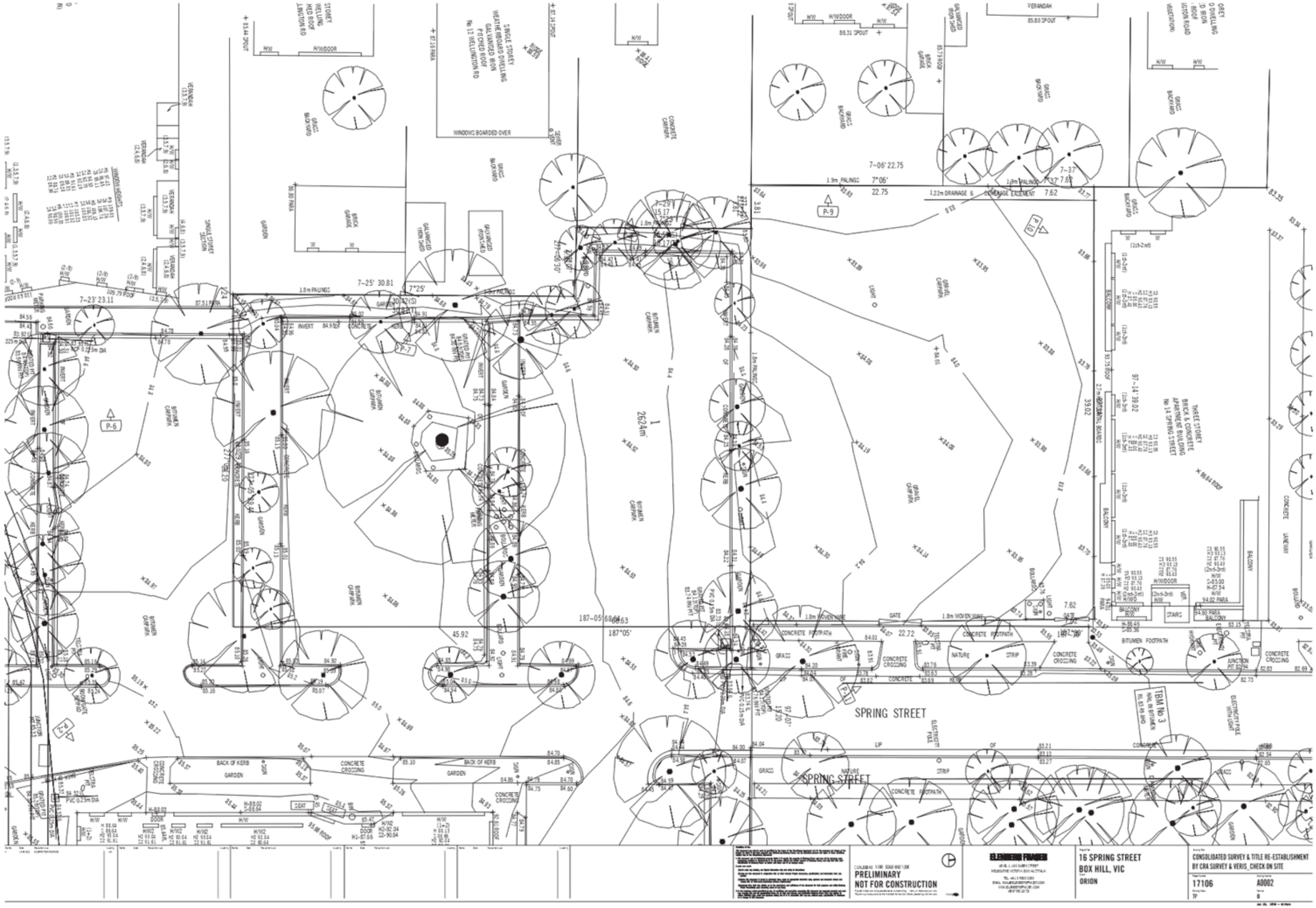

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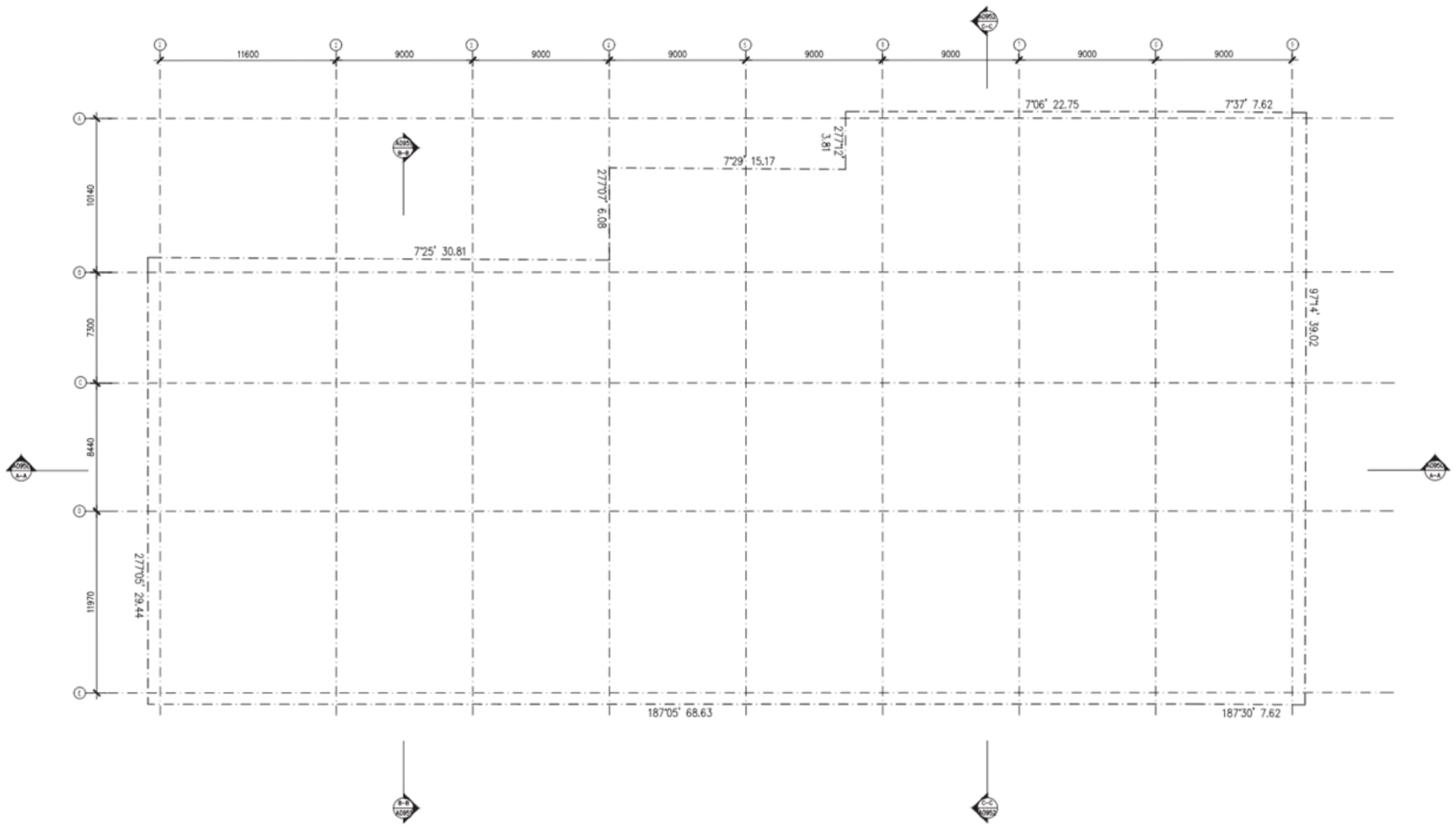
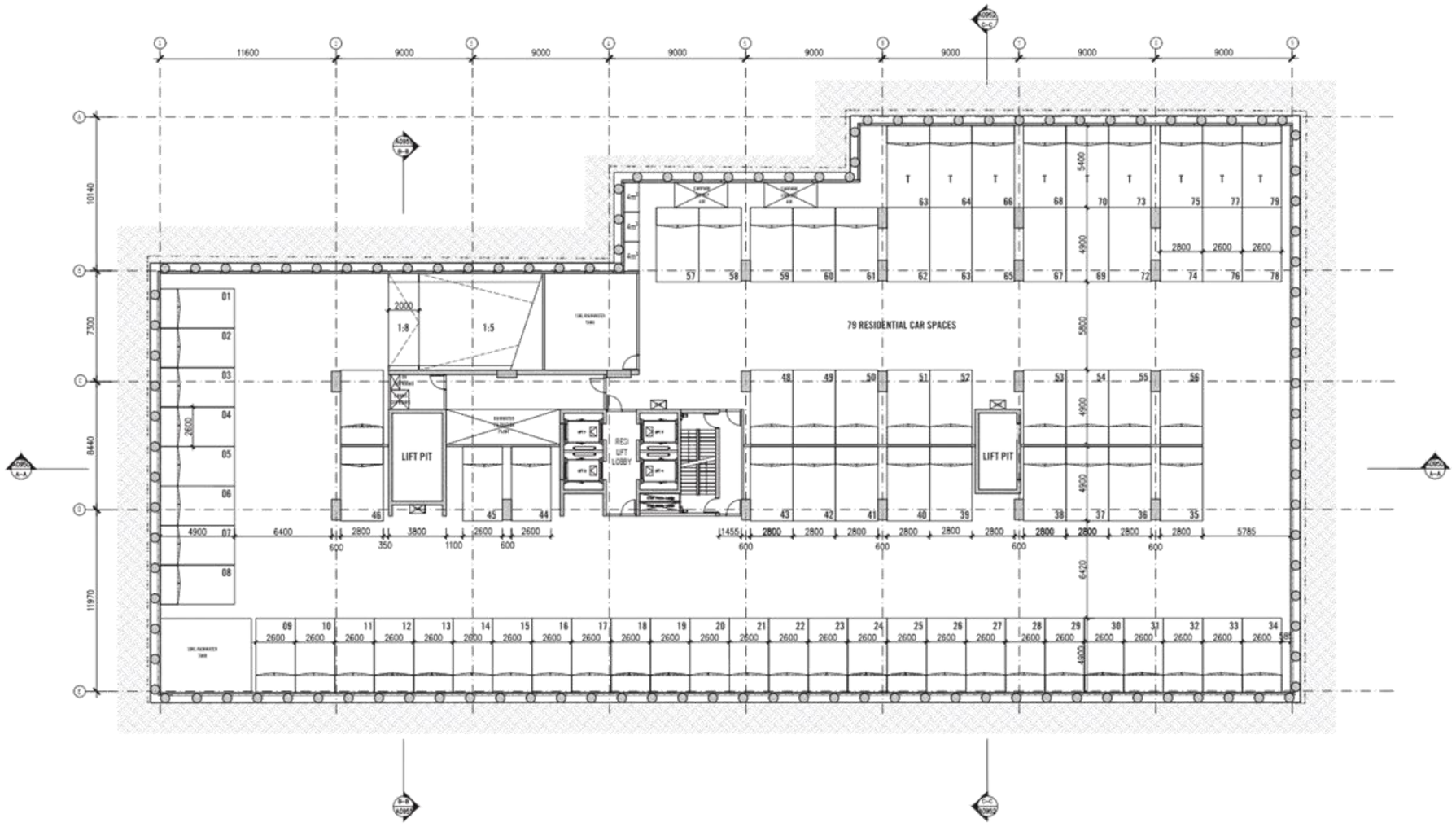


PRELIMINARY
NOT FOR CONSTRUCTION

16 SPRING STREET
BOX HILL, VIC
ORION

TITLE BOUNDARY
17106
A0003
TP
B

9.1.1 – ATTACHMENT 1. Decision Plans



PRELIMINARY
NOT FOR CONSTRUCTION

ELEMENTS FRASER

16 SPRING STREET
BOX HILL, VIC
ORION

GENERAL ARRANGEMENT PLAN
BASEMENT B5 FLOOR PLAN

17106
A0090
TP
B

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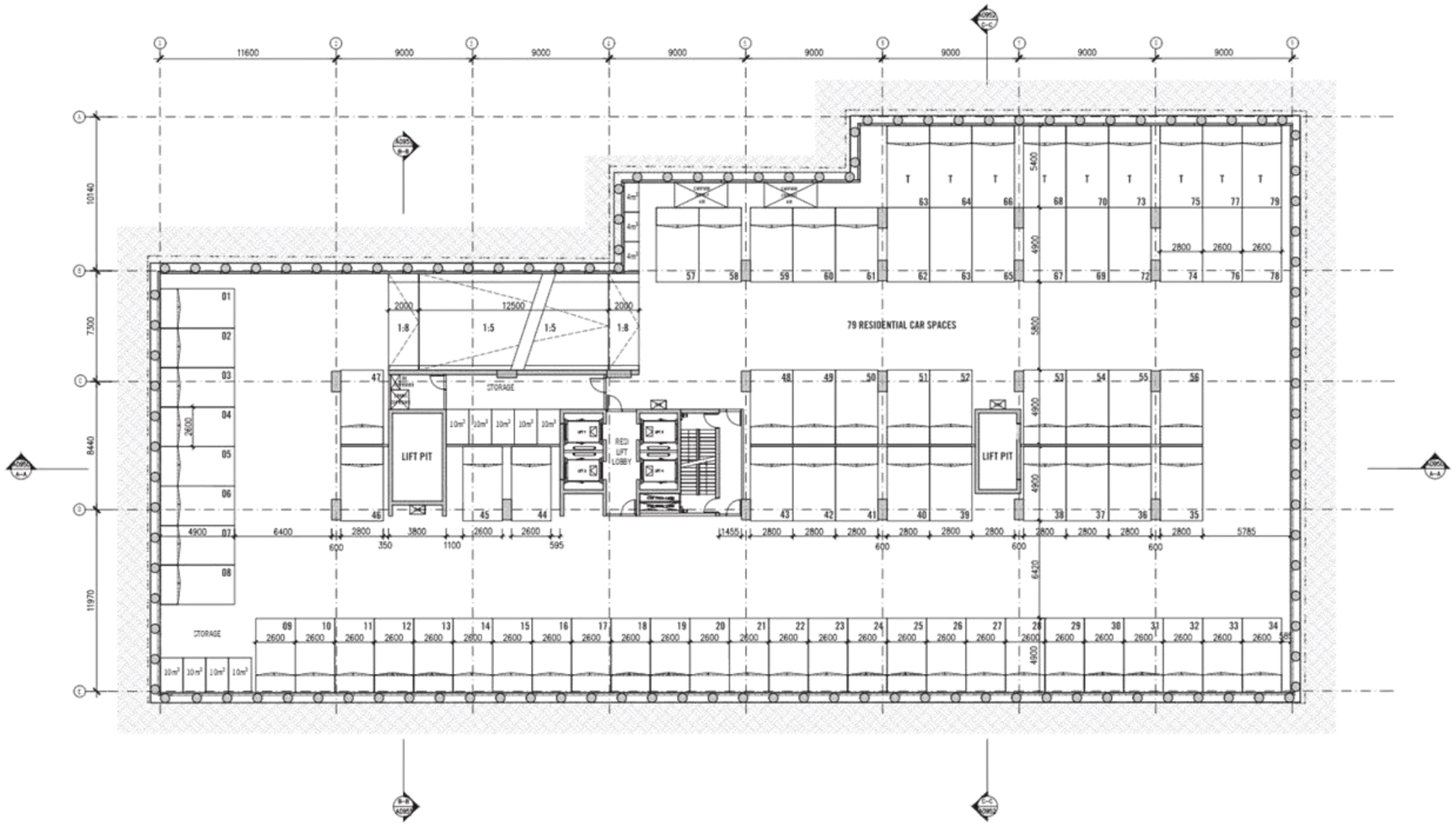


PRELIMINARY
NOT FOR CONSTRUCTION

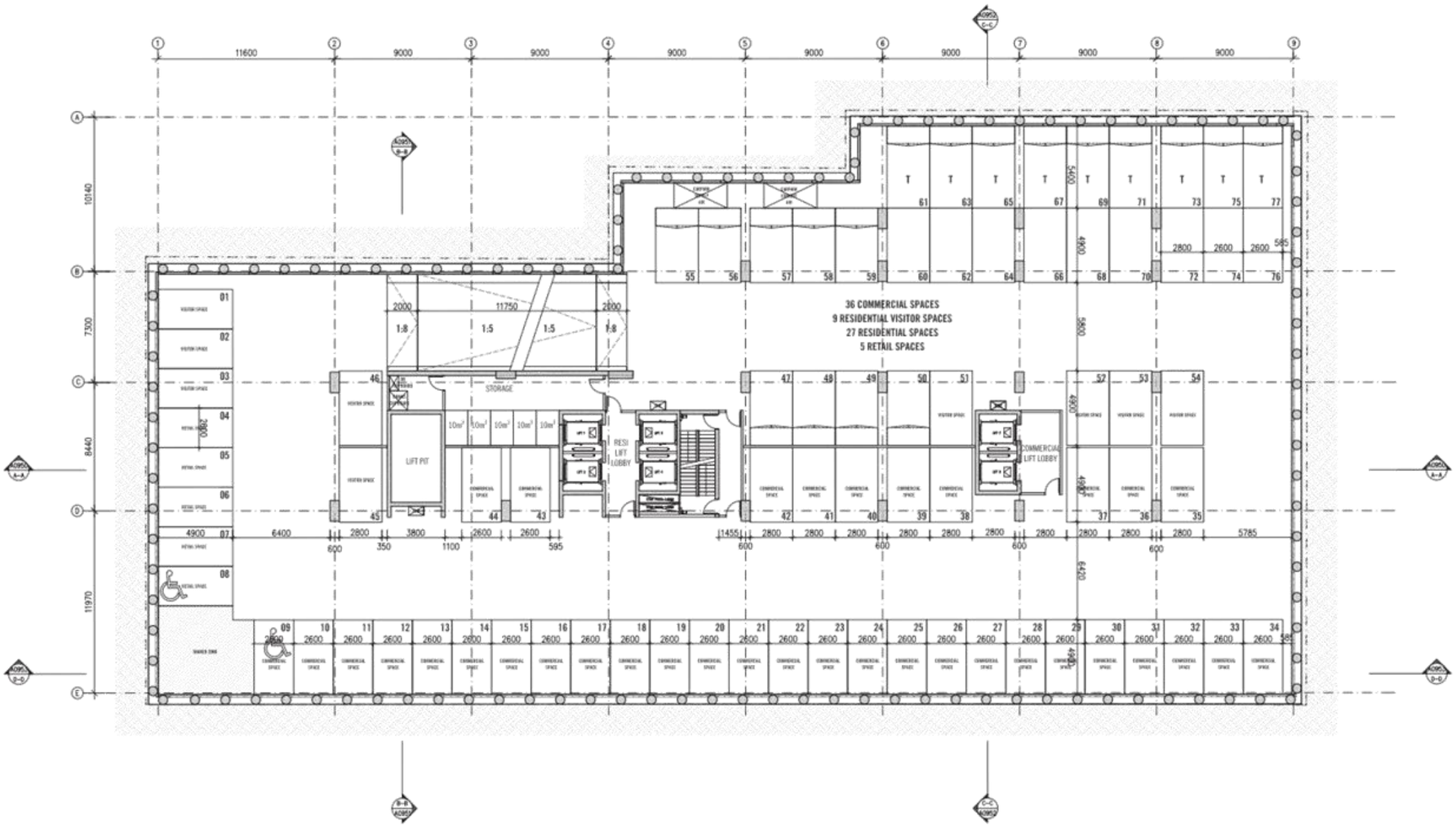
ELEMENTS FRASER

16 SPRING STREET
BOX HILL, VIC
ORION

GENERAL ARRANGEMENT PLAN
BASEMENT B3-B4 FLOOR PLAN

17106
A0091
TP
B

9.1.1 – ATTACHMENT 1. Decision Plans



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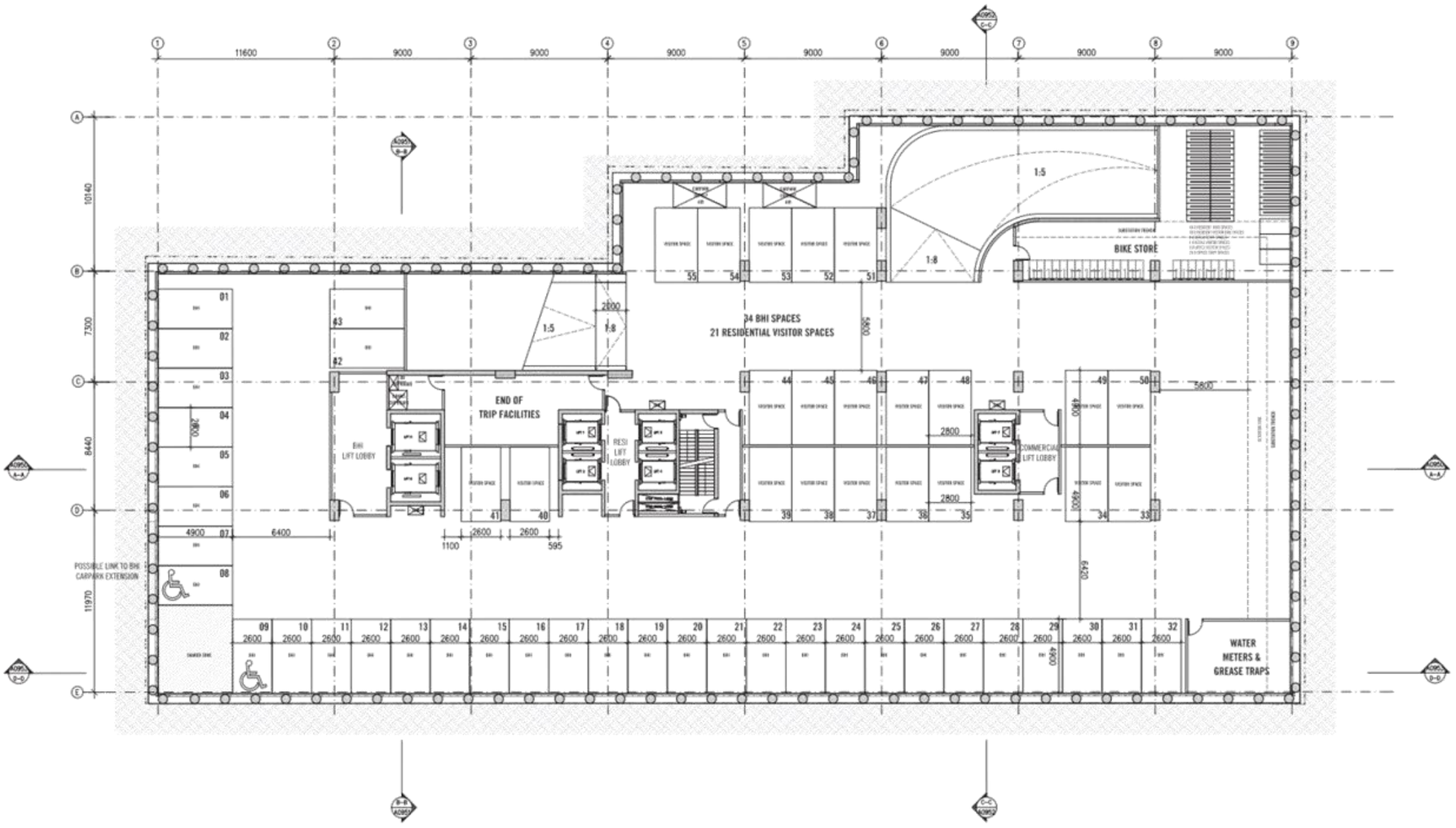

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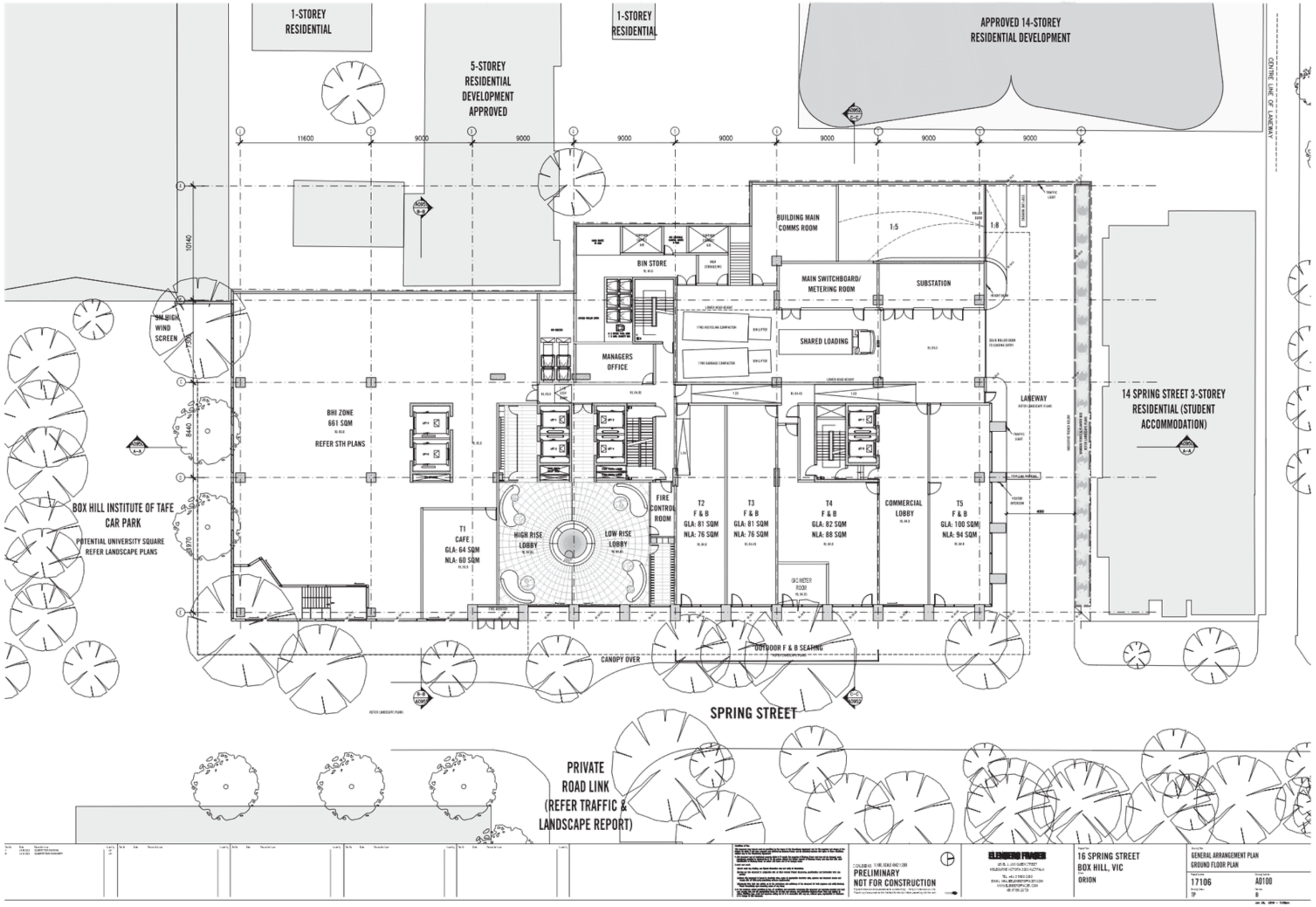

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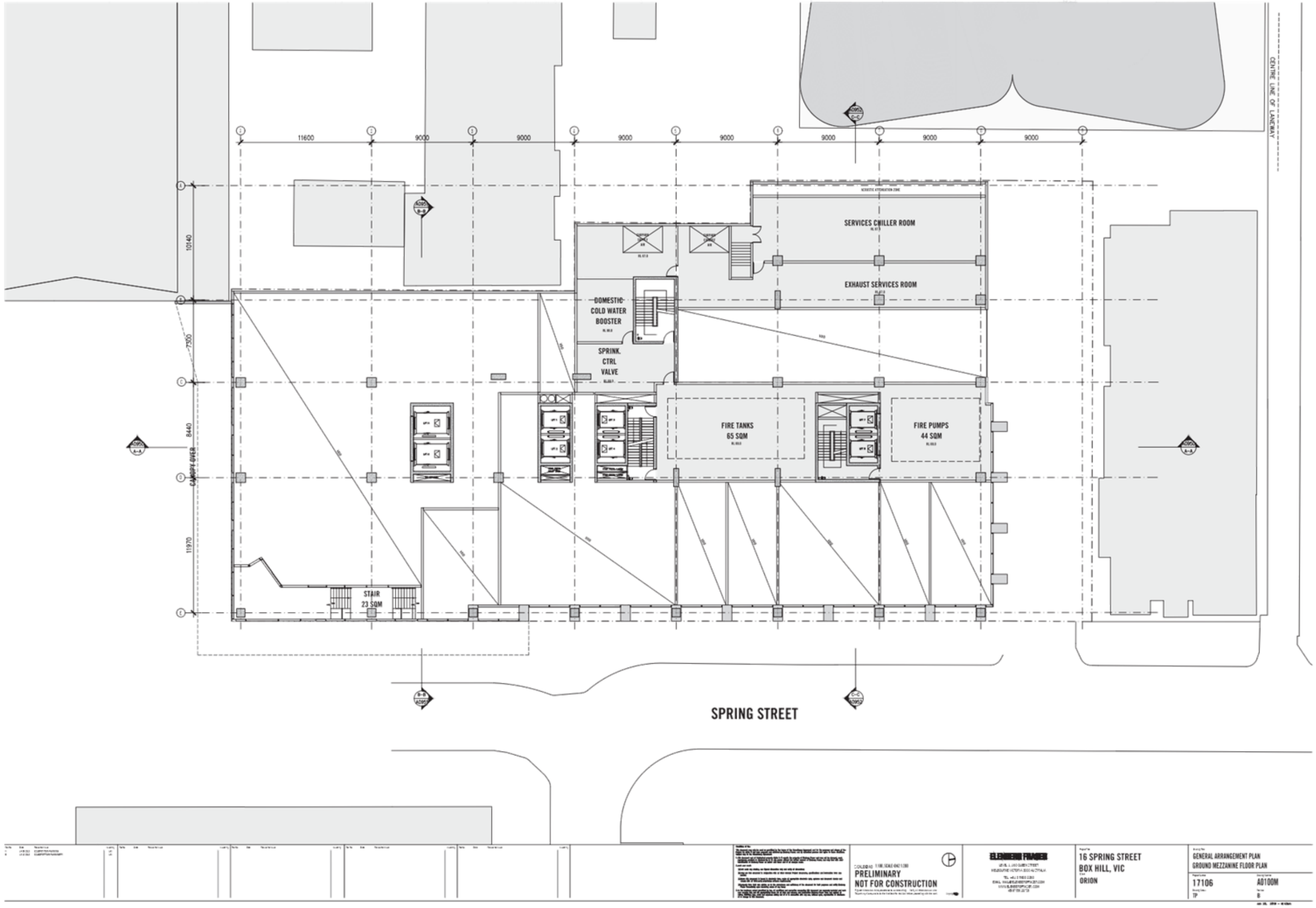

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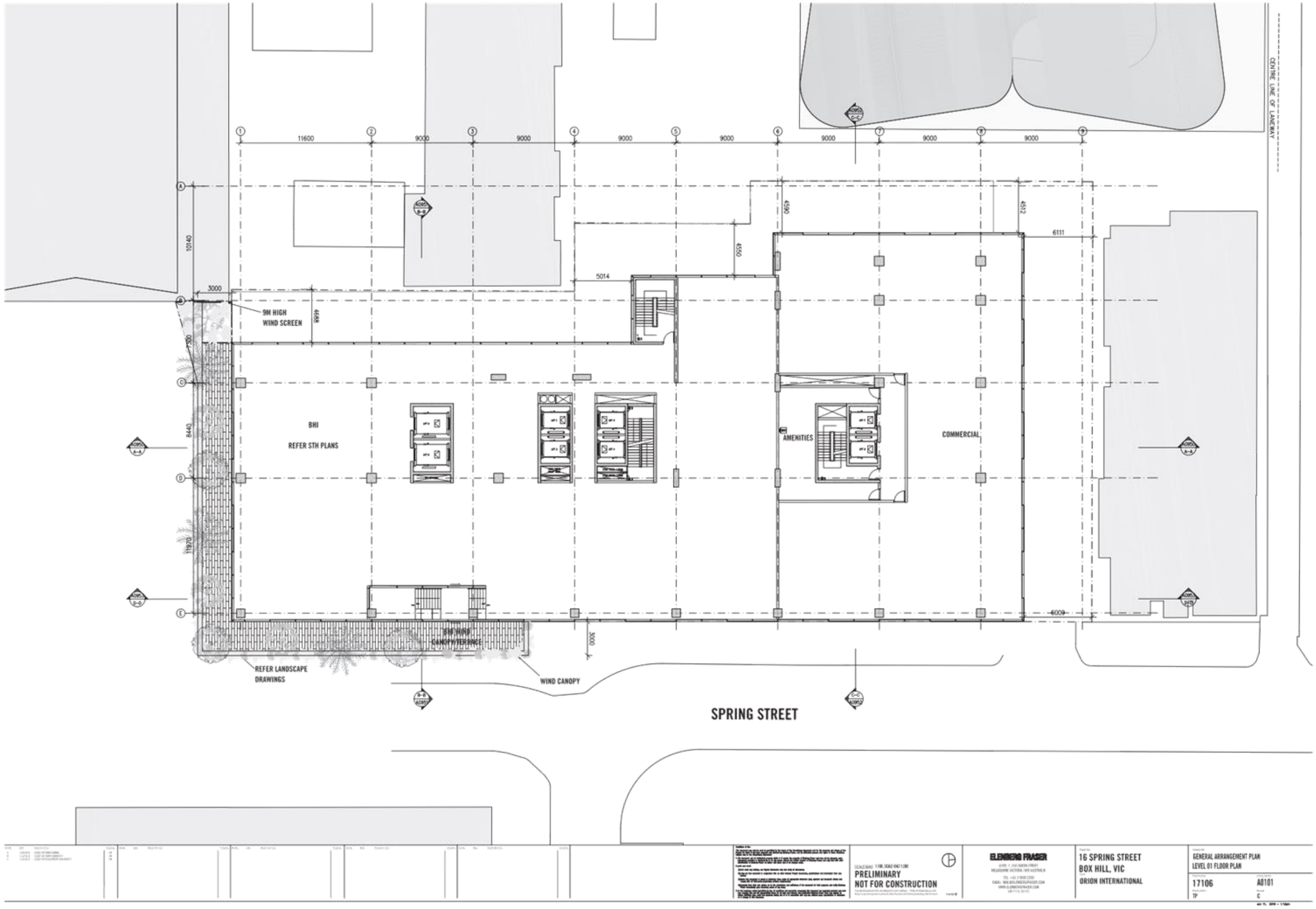

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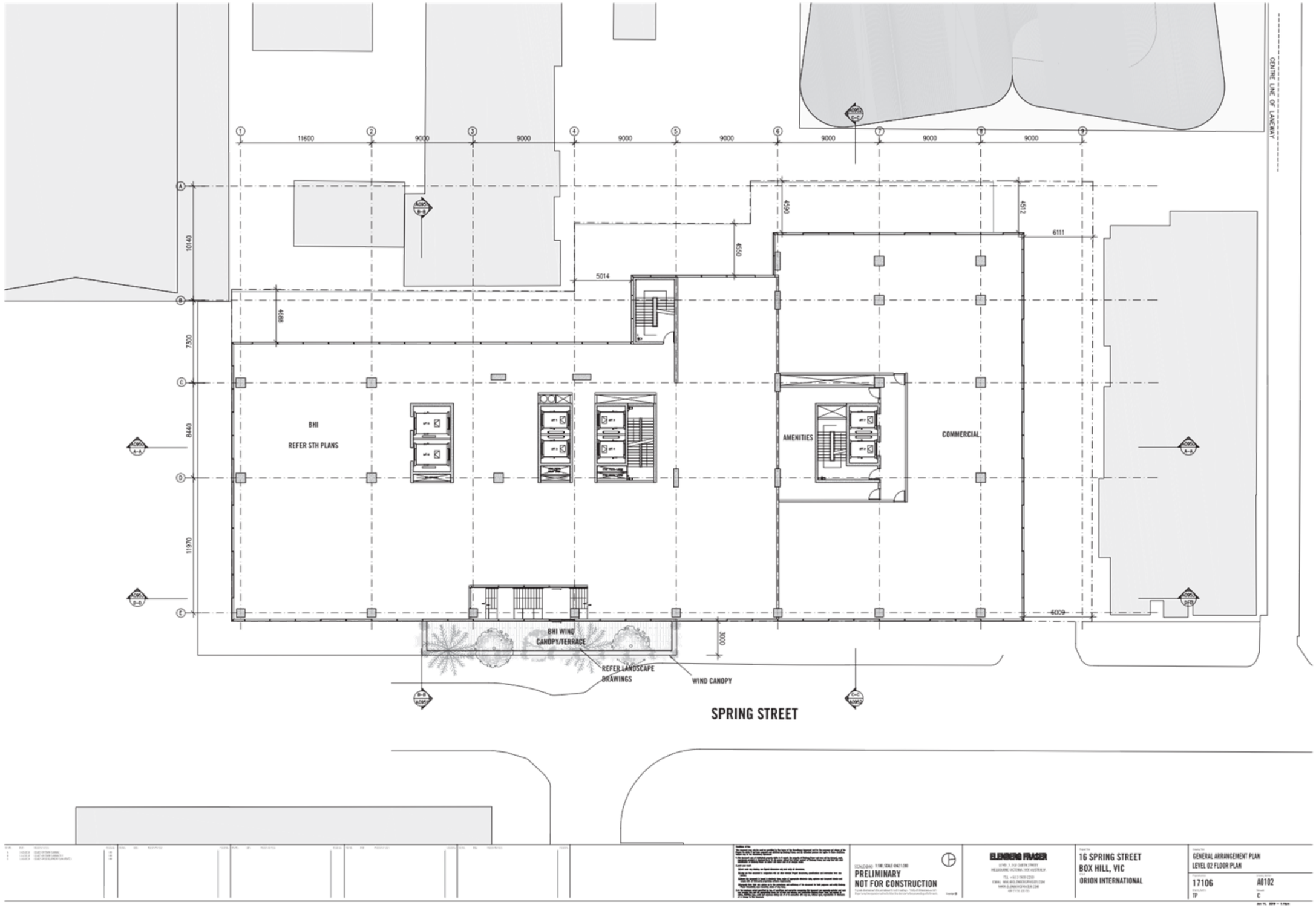

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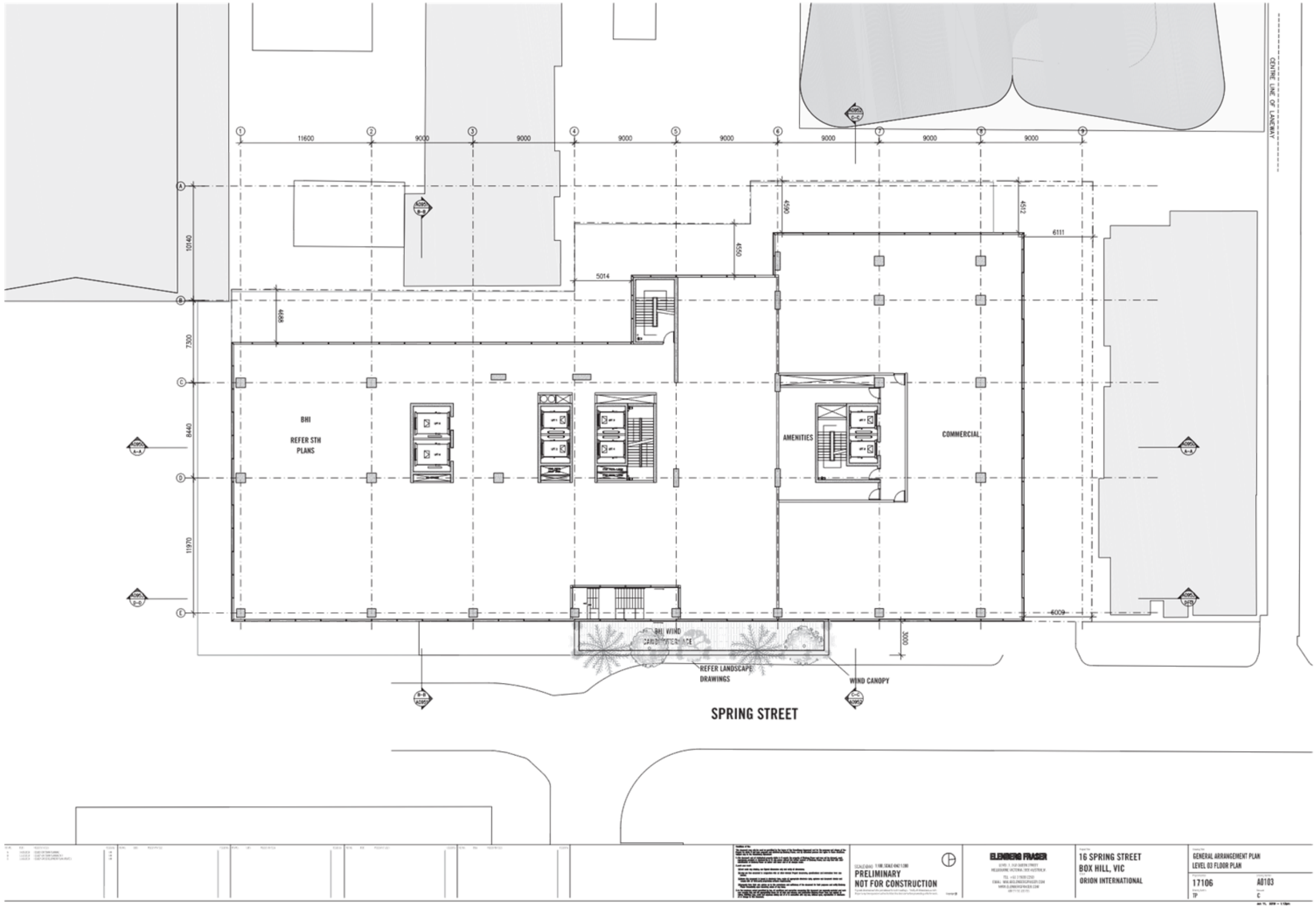

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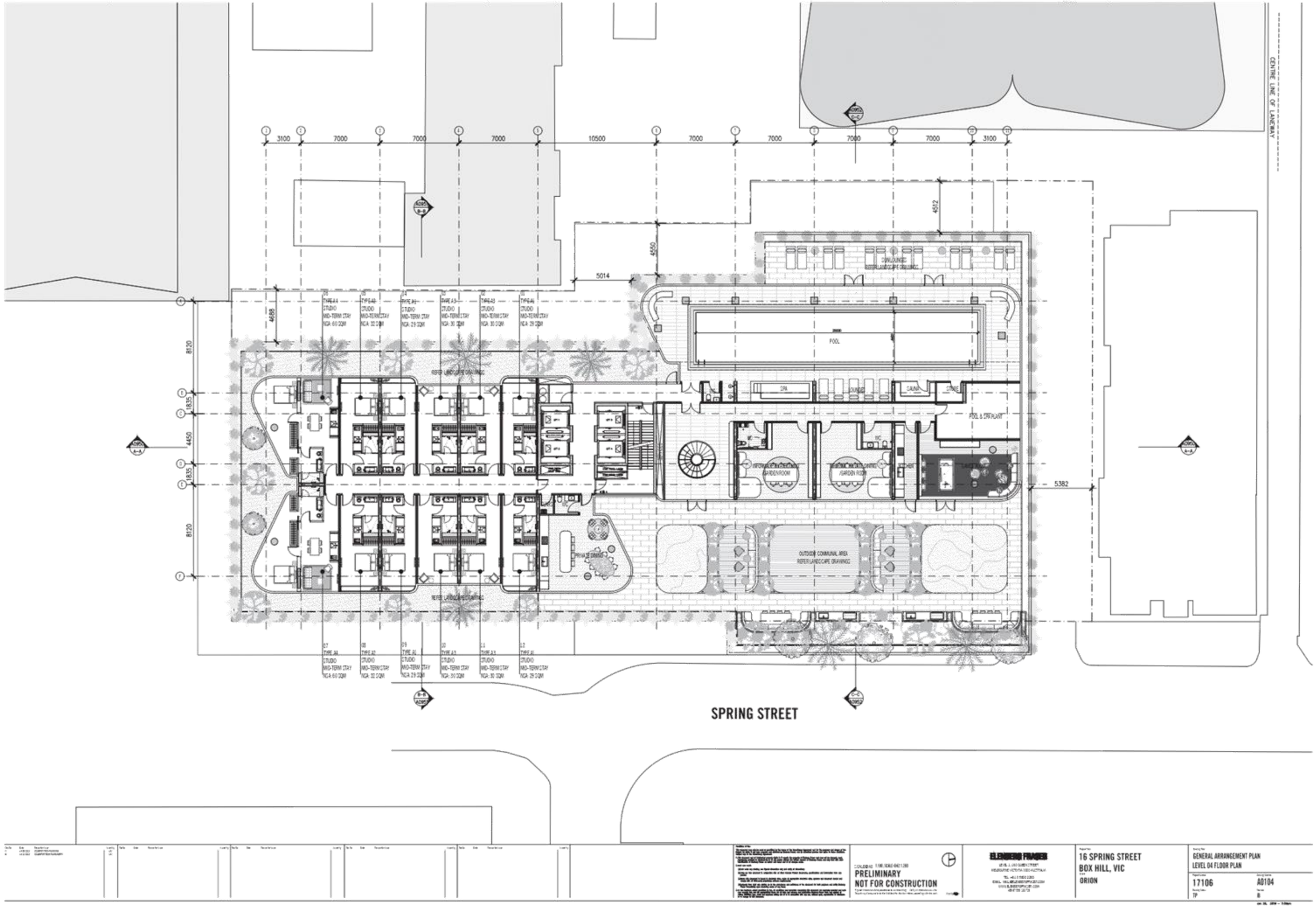

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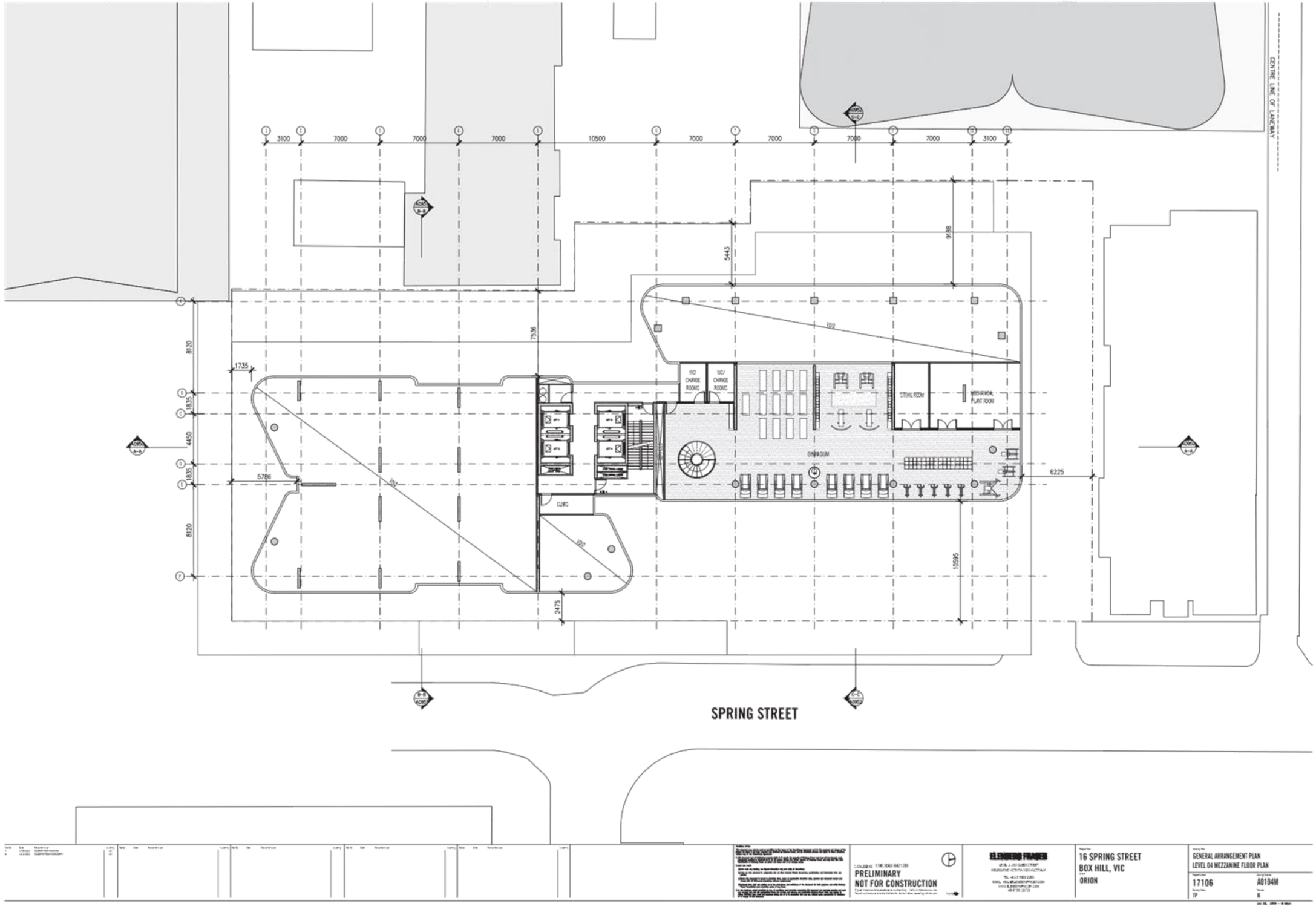

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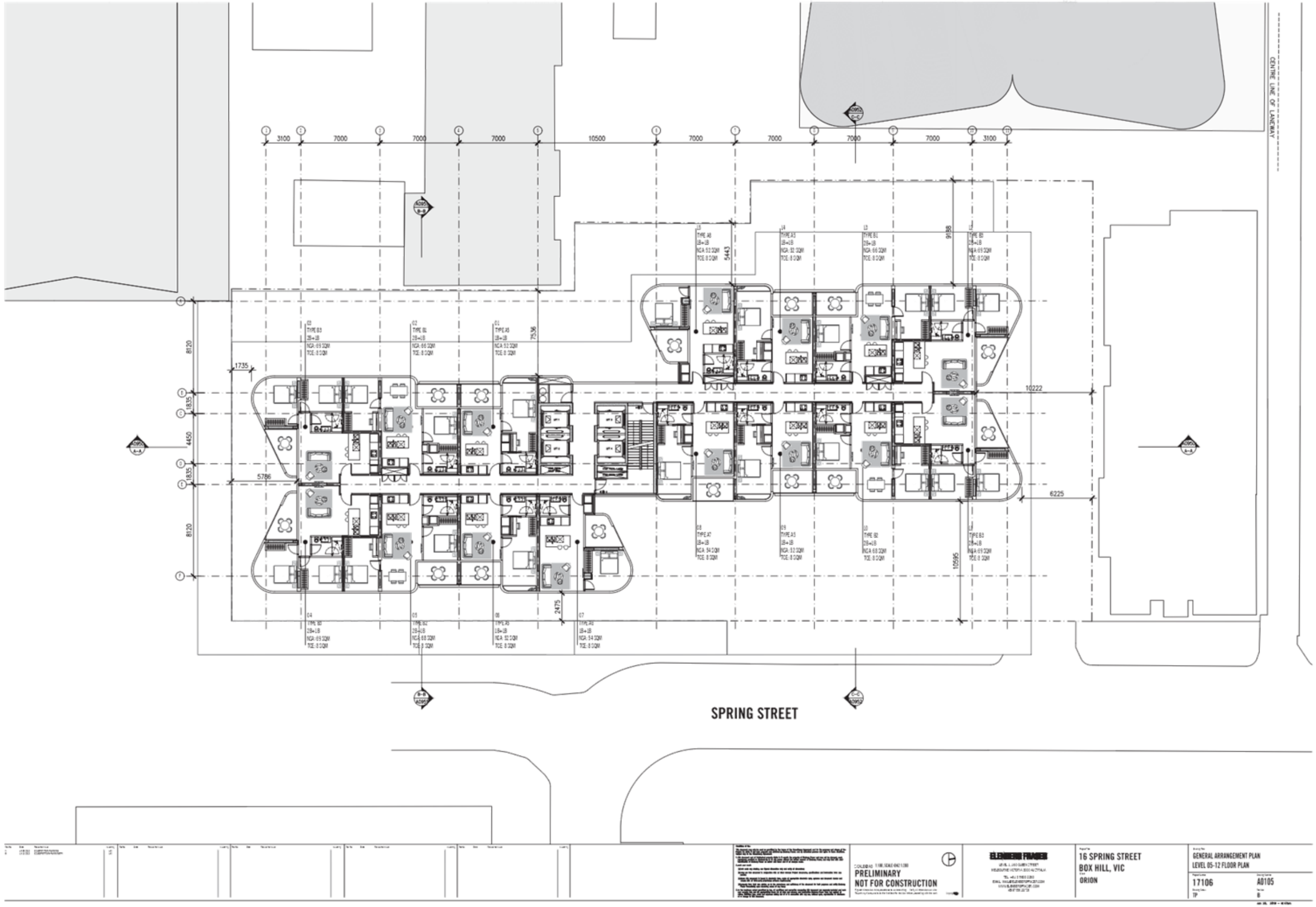

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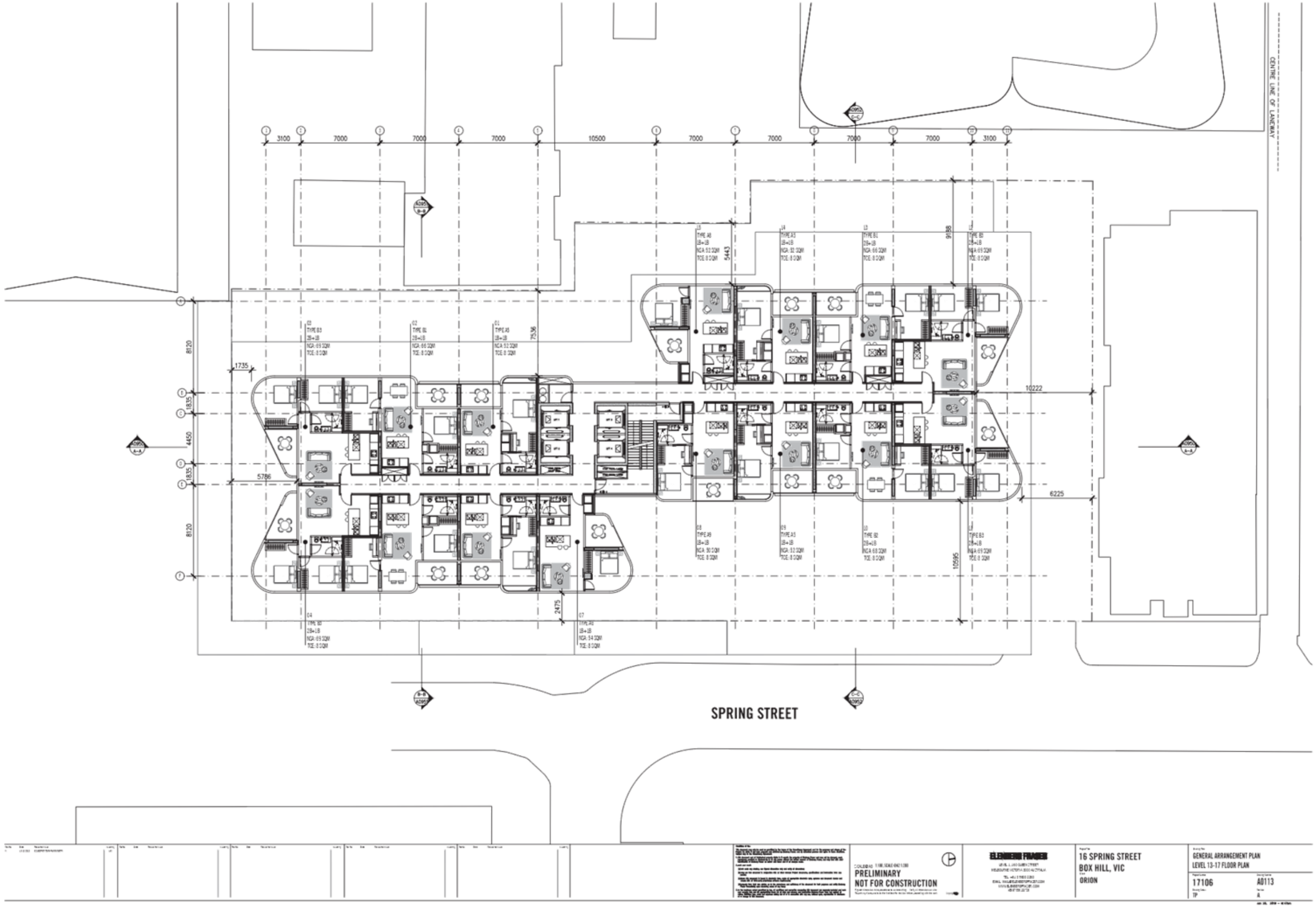

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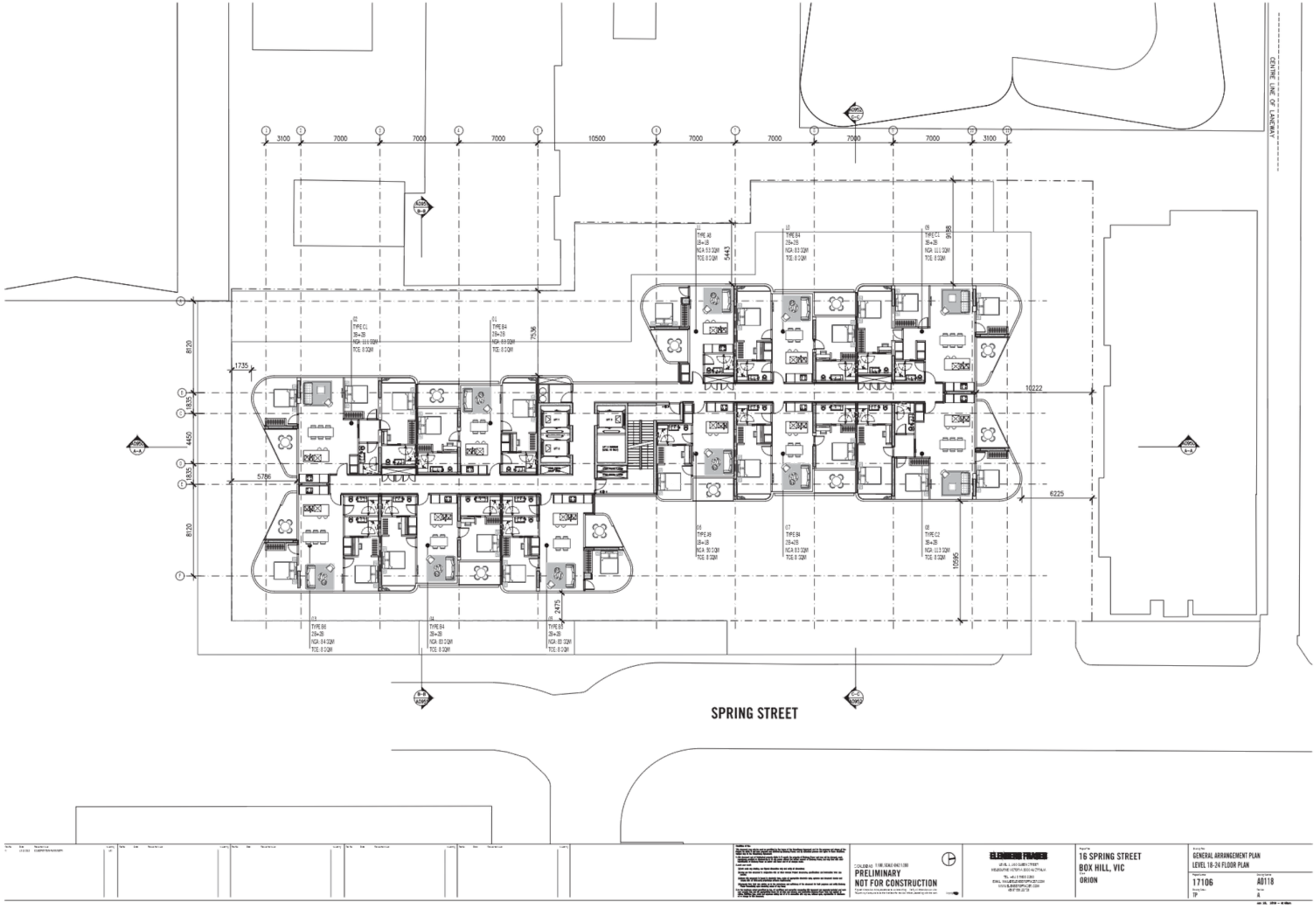

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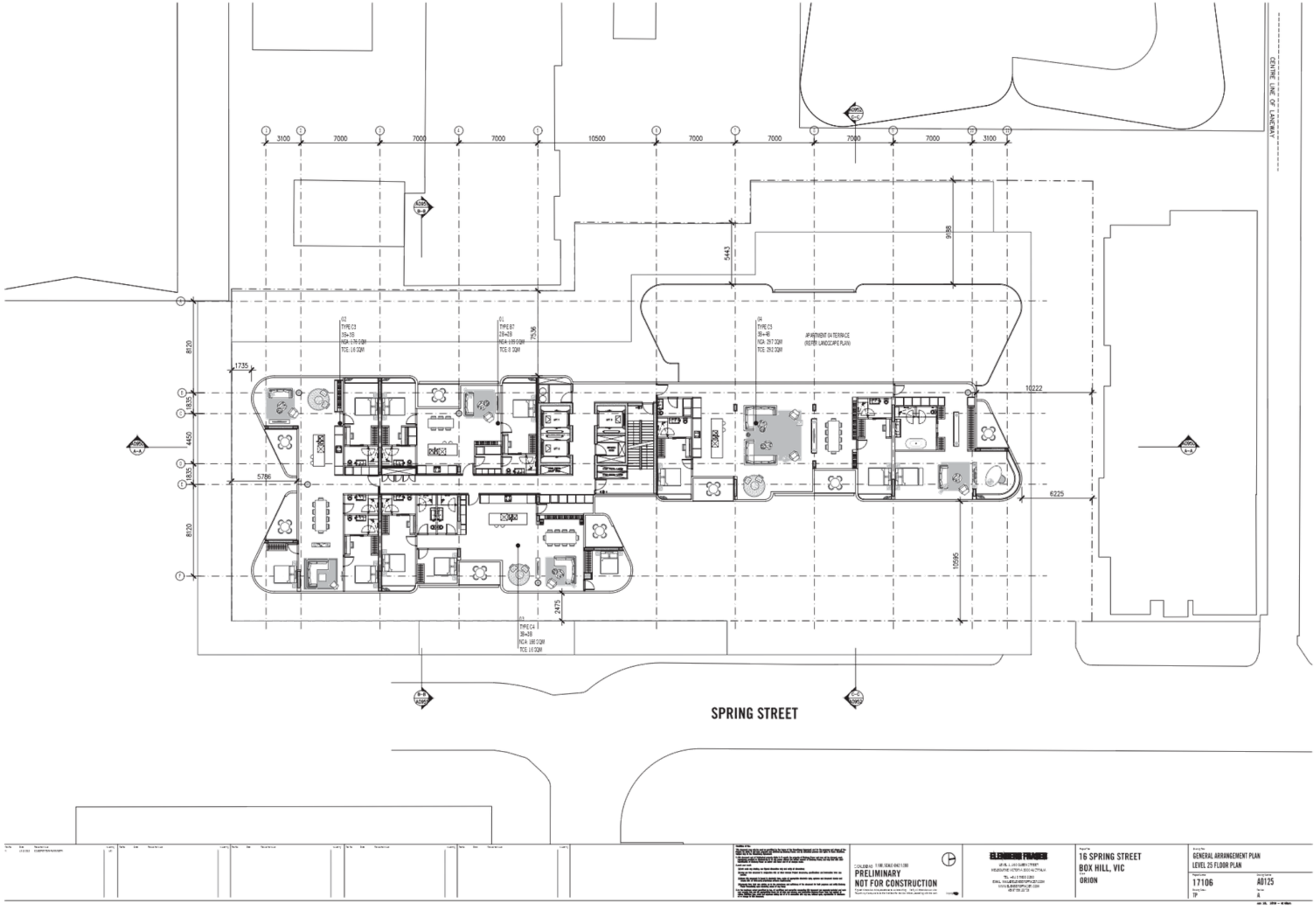

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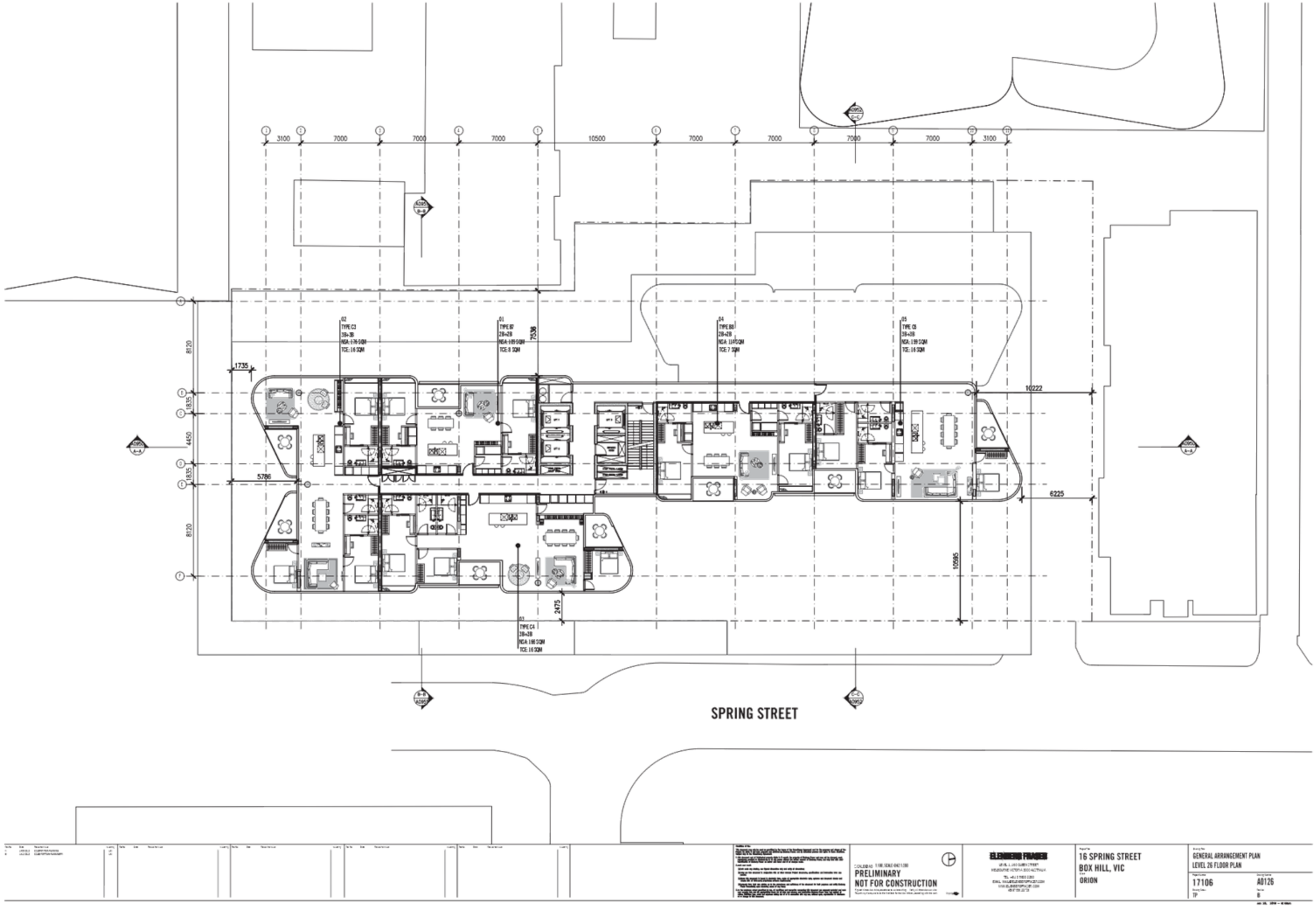

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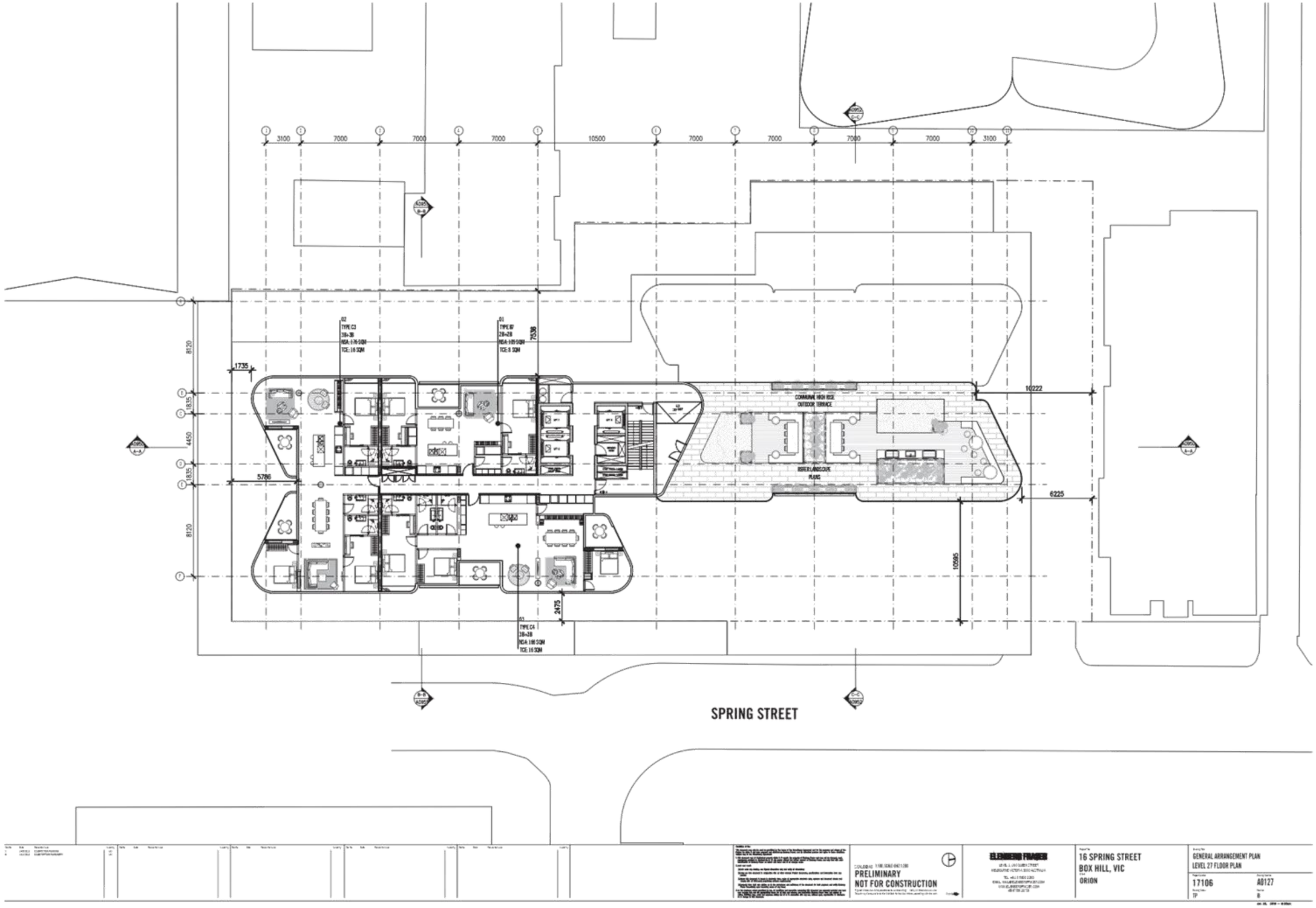

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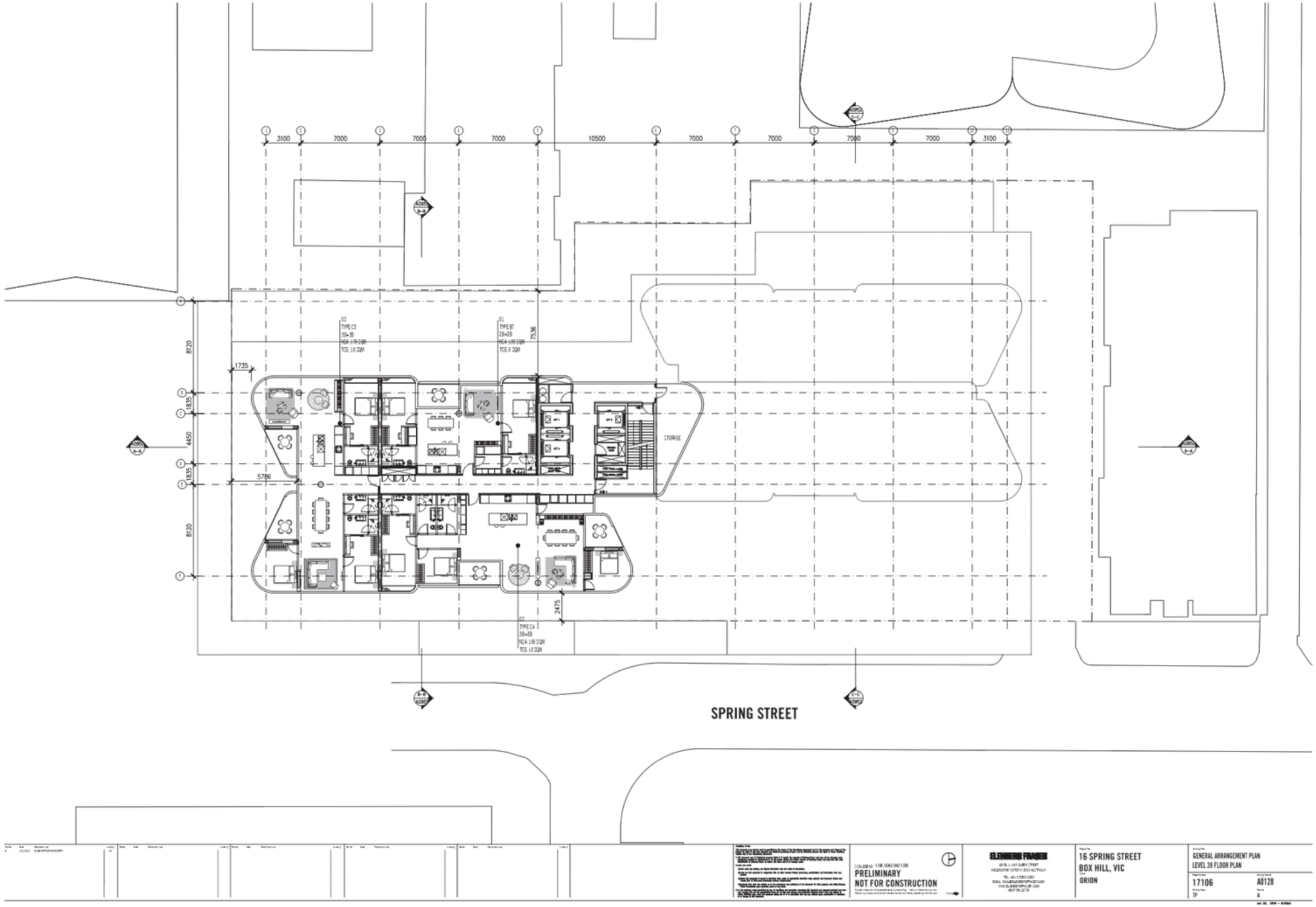

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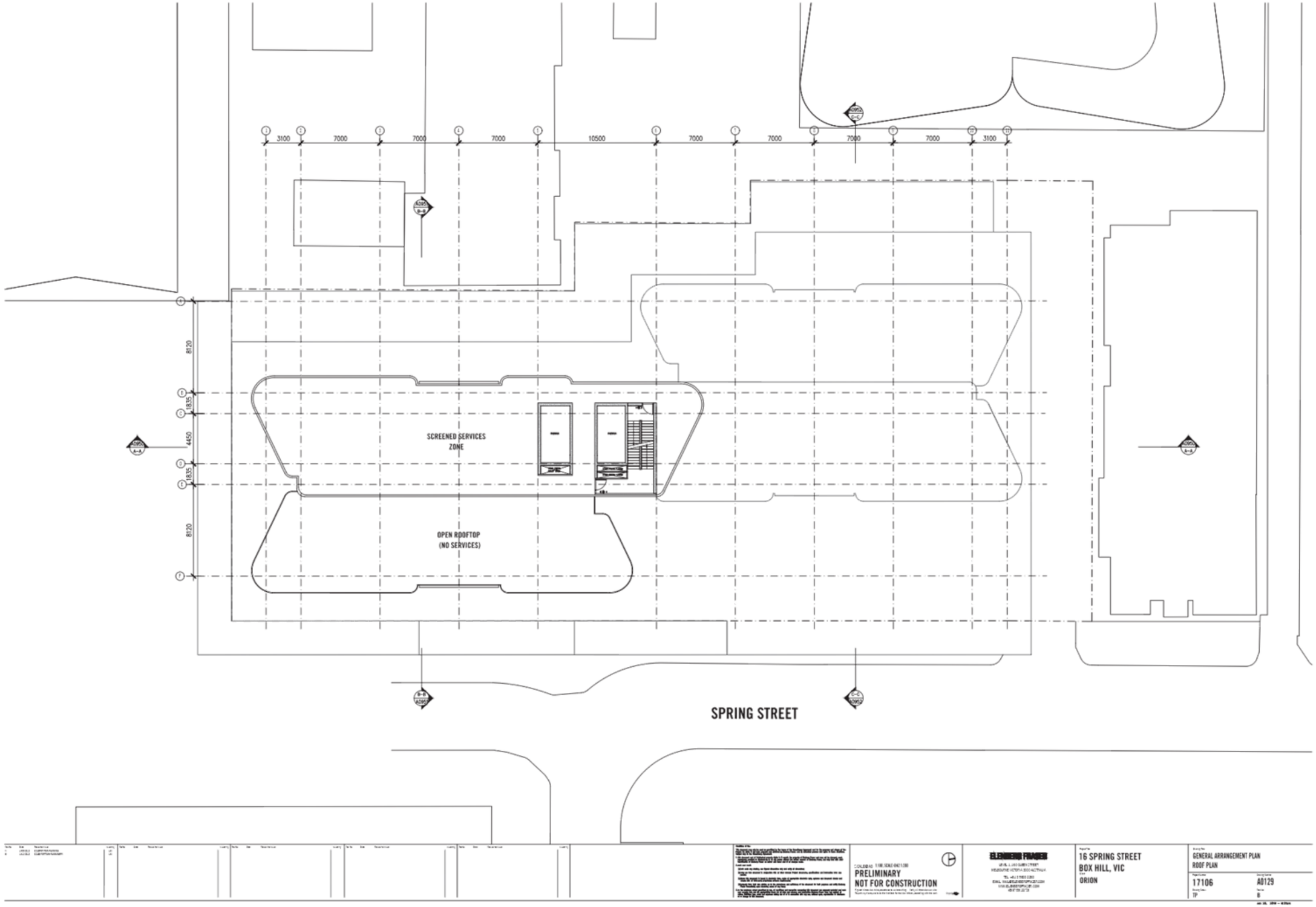

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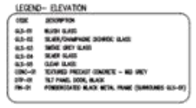
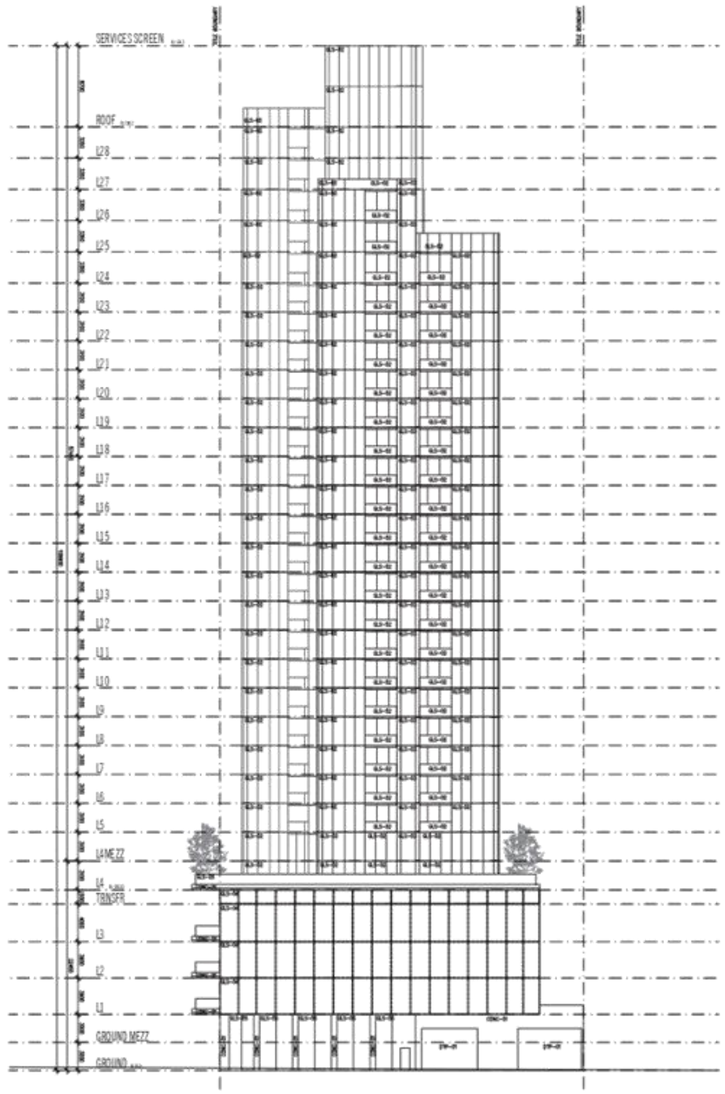




PRELIMINARY
NOT FOR CONSTRUCTION

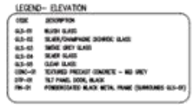
ELEVARO FRASER

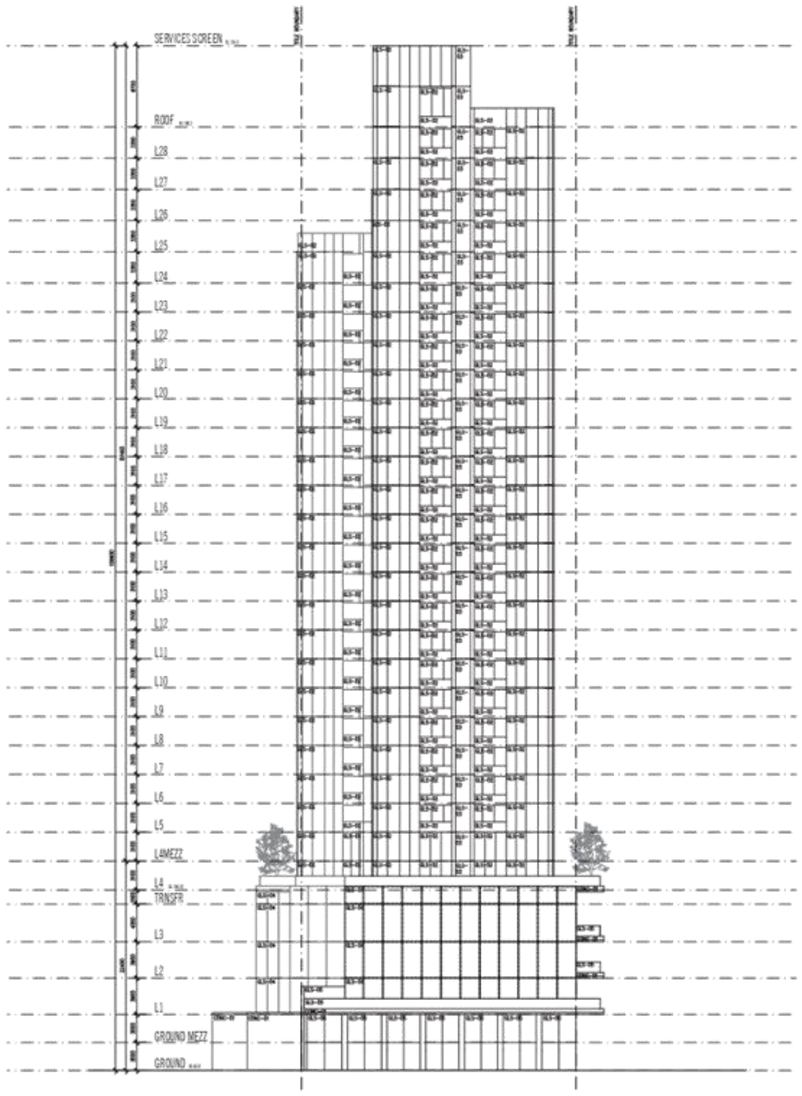
16 SPRING STREET
BOX HILL, VIC
ORION

NORTH ELEVATION

17106
A0900

9.1.1 – ATTACHMENT 1. Decision Plans





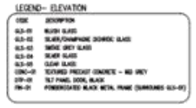
PRELIMINARY
NOT FOR CONSTRUCTION

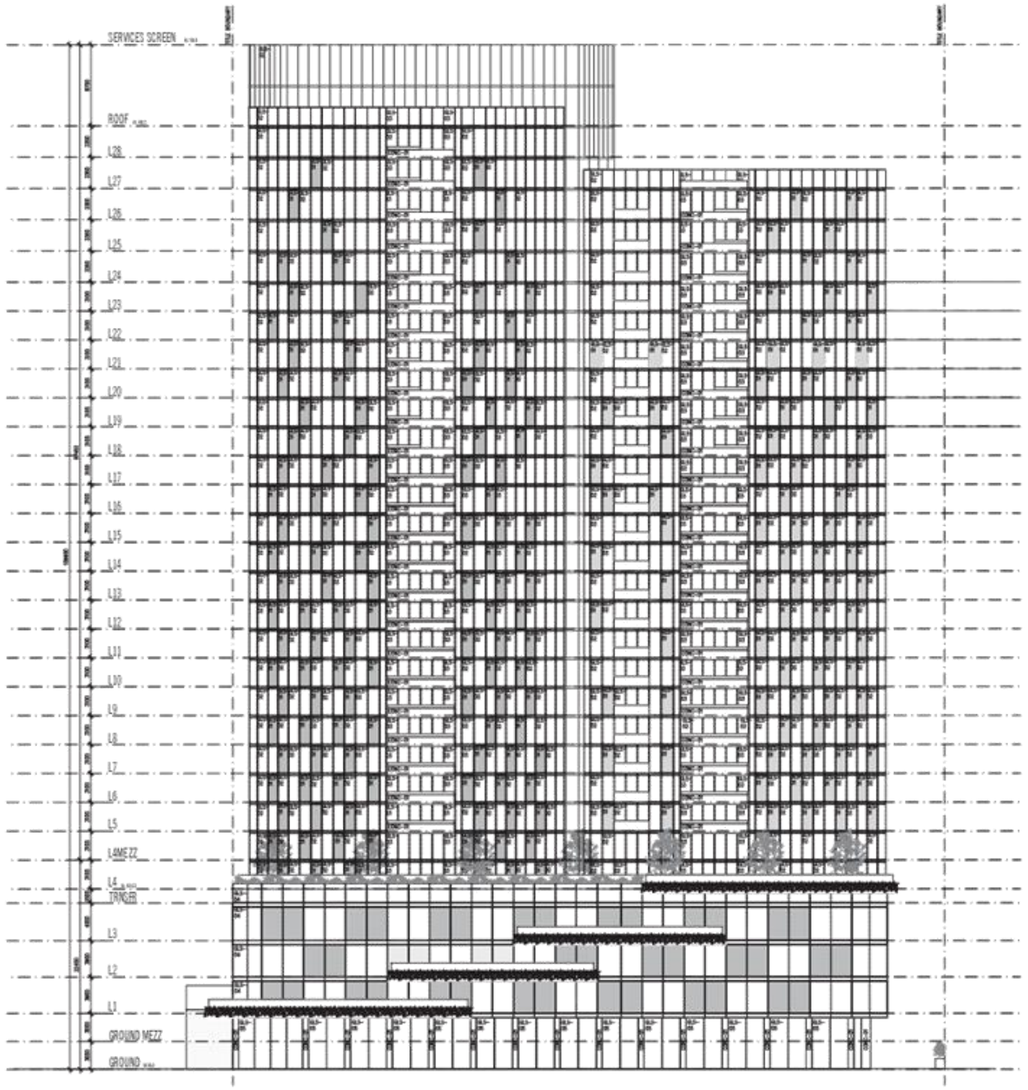
ELEMENTS FRASER

16 SPRING STREET
BOX HILL, VIC
ORION

SOUTH ELEVATION
17106
TP
A0901
B

9.1.1 – ATTACHMENT 1. Decision Plans





PRELIMINARY
NOT FOR CONSTRUCTION

ELEVARO FRASER

16 SPRING STREET
BOX HILL, VIC
ORION

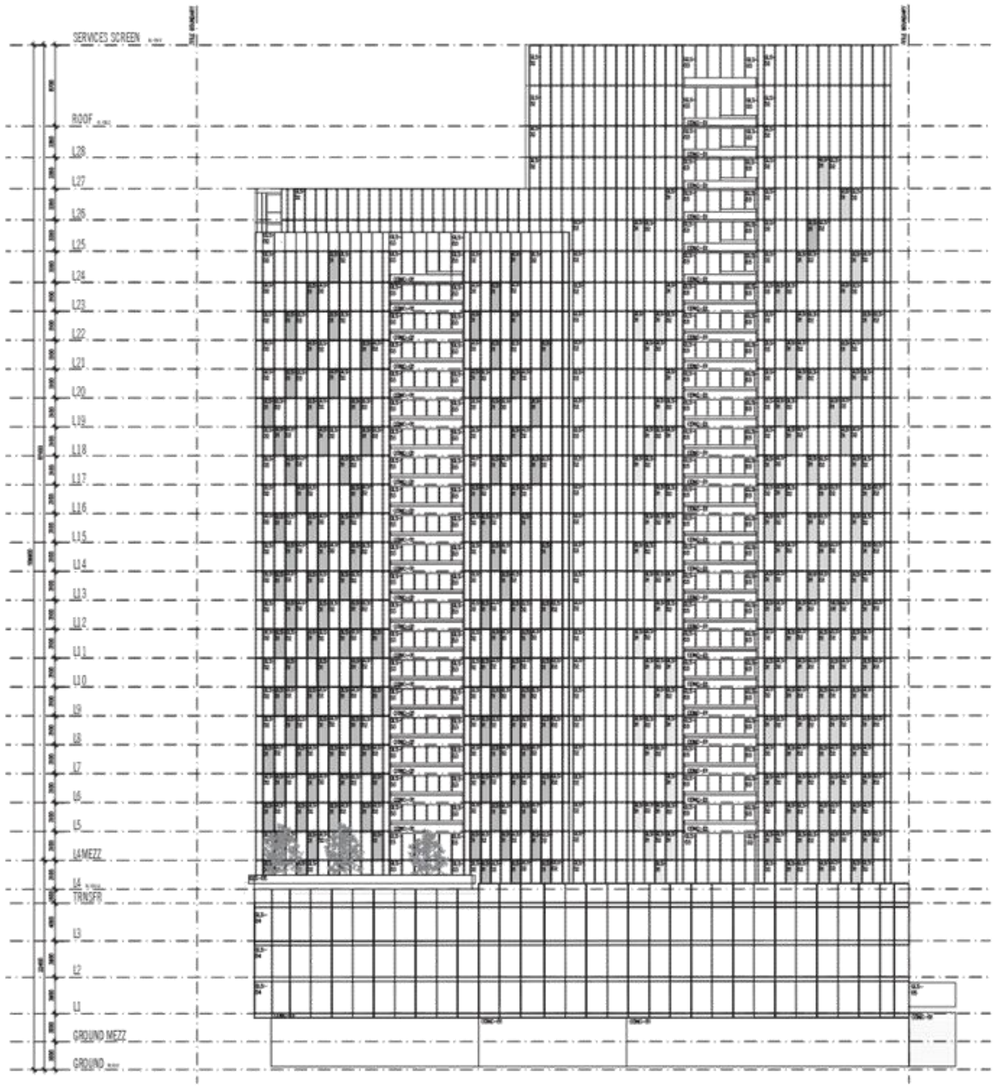
EAST ELEVATION

17106
A0902

9.1.1 – ATTACHMENT 1. Decision Plans

LEGEND– ELEVATION

CODE	DESCRIPTION
GLS-01	
GLS-02	
GLS-03	
GLS-04	
GLS-05	
CONC-01	
STP-01	
PM-01	



PRELIMINARY
NOT FOR CONSTRUCTION

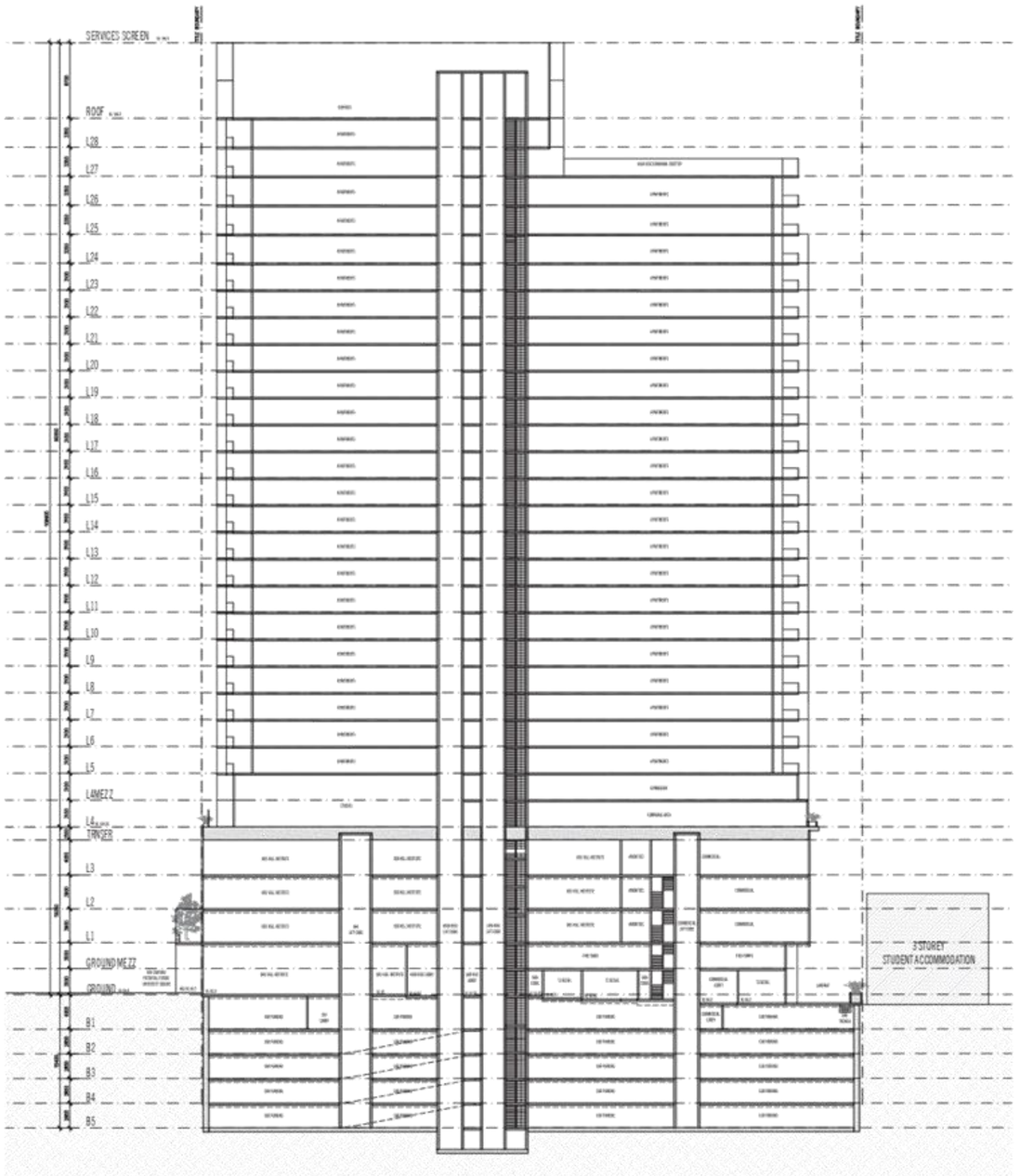
ELEVARCH FISHER

16 SPRING STREET
BOX HILL, VIC
ORION

WEST ELEVATION

17106
A0903

9.1.1 – ATTACHMENT 1. Decision Plans



PRELIMINARY
NOT FOR CONSTRUCTION

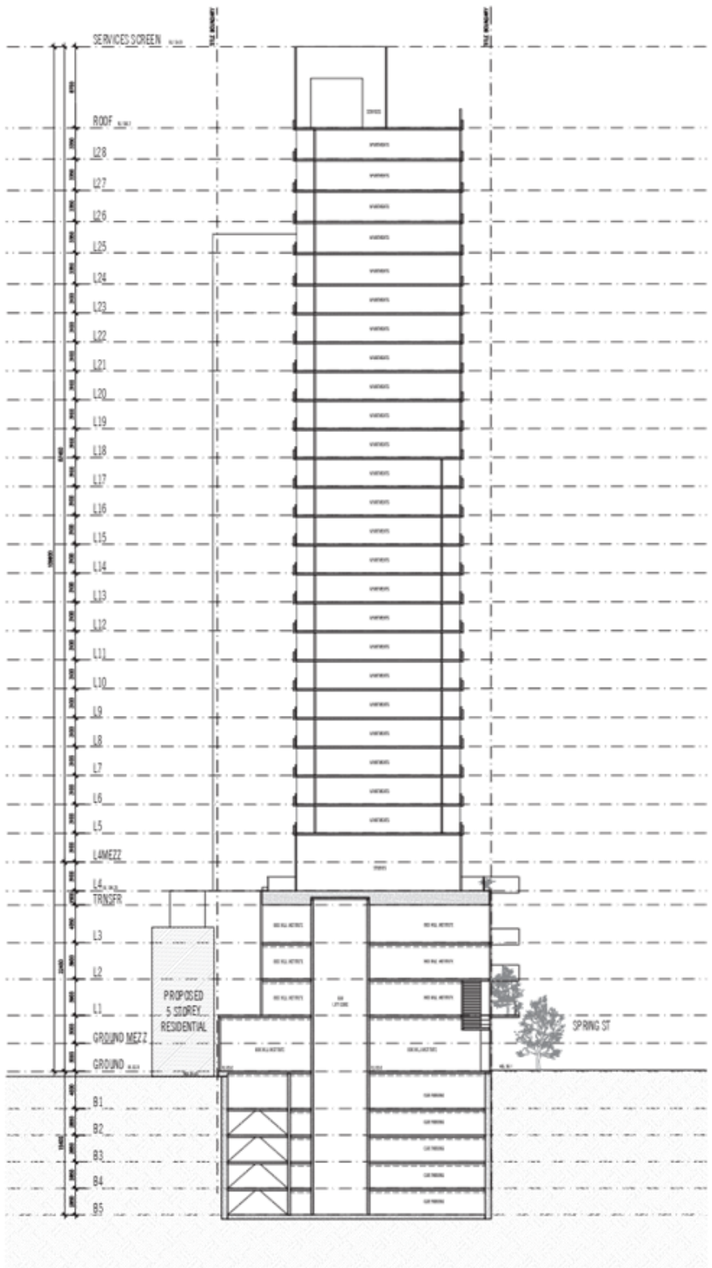
16 SPRING STREET
BOX HILL, VIC
ORION

SECTION AA

17106
TP

A0950
R

9.1.1 – ATTACHMENT 1. Decision Plans



PRELIMINARY
NOT FOR CONSTRUCTION

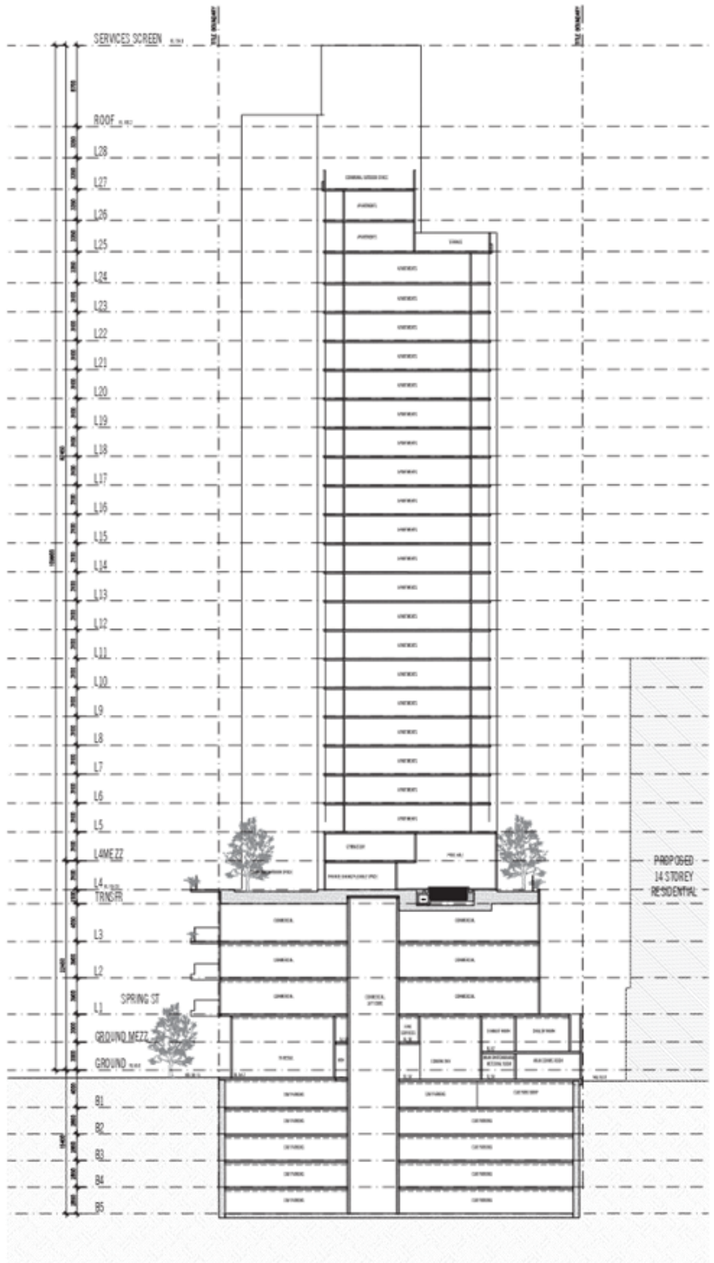
16 SPRING STREET
BOX HILL, VIC
ORION

SECTION BB

17106
TP

A0951
B

9.1.1 – ATTACHMENT 1. Decision Plans



PRELIMINARY
NOT FOR CONSTRUCTION

16 SPRING STREET
BOX HILL, VIC
ORION

SECTION CC
17106
A0952

9.1.1 – ATTACHMENT 1. Decision Plans

17106 16 Spring Street, Box Hill

DATE 14/09/2019
STAGE TP
REV C

Note and Disclaimer:
1. This schematic has been prepared without planning advice and is only meeting with the request of the architect, and is a draft may not comply with building or other statutory regulations. It may be useful to assist the development that may be achieved with full consultation and discussion with relevant authorities, however is not only given that the plans prepared is the responsibility of the architect or other relevant parties. Refer Zoning Report, this information is a possible solution only, subject to council approval.
2. This schematic shall not be used for any purpose other than its intended purpose only. The information herein is the sole property of the architect and is not to be used in whole or in part of the architect's express written permission.
3. The typical residential floor areas are based on the gross building area measured to the centre of the external walls and do not include any balconies or allowance for internal voids, lifts, stairs.
4. Changes to the layouts and associated figures will have a direct impact on the development of the project hence we advise not to rely on the information only to satisfy themselves in all aspects.
5. Apartment areas have been measured to the internal face of walls and do not include any balconies or external walls, lifts, stairs, risers, or ducts.

DEVELOPMENT SUMMARY

DEVELOPMENT SUMMARY 16 SPRING STREET, BOX HILL

No.	LEVELS	APARTMENTS/ FLOOR	APARTMENTS/ TOTAL	GFA BHI /FLOOR	TERRACE/ CANOPY BHI /FLOOR	TOTAL BHI GBA	GLA RETAIL /FLOOR	GFA OFFICE/FLOOR	GFA RESIDENTIAL /FLOOR	GFA SERVICES/BOH /FLOOR	TOTAL GFA	NLA RETAIL /FLOOR	NLA OFFICE/FLOOR	NSA RESIDENTIAL /FLOOR	TOTAL NLA/NSA	EFFICIENCY /FLOOR	TERRACE AREA	TERRACE AREA / TOTAL	GFA CARPARK /FLOOR	TOTAL GFA CARPARK	TOTAL BIKES	BHI CAR SPACES /FLOOR	RESIDENTIAL VISITOR CAR SPACES /FLOOR	OFFICE CAR SPACES/ FLOOR	RETAIL CAR SPACES/ FLOOR	RESIDENTIAL CAR SPACES /FLOOR	TOTAL CARS SPACES	STUDIO	1 BED	2 BED + 1 BATH	2 BED + 2 BATH	3 BED
3	B5-B3																		2575	7725						79	237					
1	B2																		2575	2575			9	36	5	27	77					
1	B1																		2575	2575	120	34	21				55					
1	L00			661		661	412	122	272	677	1483	386			386				64	64												
	L00MEZZ			23		23				696	696																					
1	L1			1196	162	1358			754	67	821		607		607																	
1	L2			1204	68	1272			754	67	821		607		607																	
1	L3			1204	68	1272			754	67	821		607		607																	
1	L4	12	12							1256	1256			417	417													12				
	L4MEZZ									418	418																					
8	L5-L12	15	120							1089	8712			908	7264	83%	120	960											7	8		
5	L13-L17	15	75							1089	5445			904	4520	83%	120	600											7	8		
7	L18-L24	11	77							1132	7854			936	6552	83%	88	616											2			
1	L25	4	4							678	678			749	749	88%	332	332													1	3
1	L26	5	5							678	678			724	724	82%	64	64													2	3
1	L27	3	3							998	998			452	452	76%	40	40													1	2
1	L28	3	3							609	609			452	452	74%	40	40													1	2
29																																
	TOTALS		299	4288	298	4586	412	2584	27536	1375	31289	386	1821	21190	23397			2652		12939	120	34	30	36	5	264	369	12	105	104	47	31
																												4%	35%	35%	16%	10%

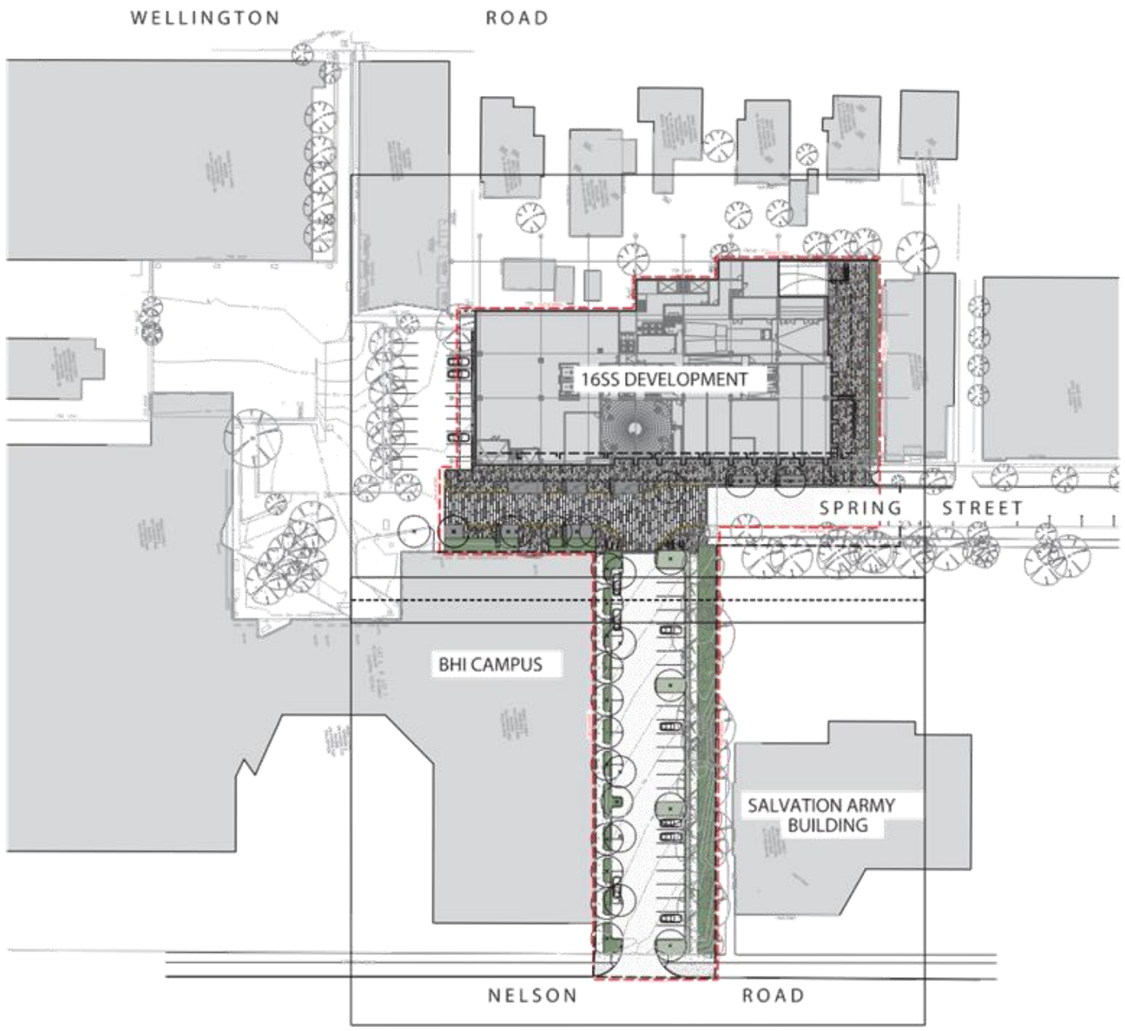
9.1.1 – ATTACHMENT 2. Landscape Plan

16 SPRING STREET

LANDSCAPE ARCHITECTURAL DRAWING PACKAGE

TOWN PLANNING APPLICATION

Drawing Number	Drawing Title	Revision
0318-0529-30 WD-000	COVER SHEET & DRAWING INDEX	A
0318-0529-30 WD-001	MASTER LEGEND	A
0318-0529-30 WD-100	TREE PROTECTION PLAN	A
0318-0529-30 WD-101	TREE PROTECTION PLAN	A
0318-0529-30 WD-200	SURFACE FINISHES PLAN - GROUND LEVEL	A
0318-0529-30 WD-201	SURFACE FINISHES PLAN - GROUND LEVEL	A
0318-0529-30 WD-202	SURFACE FINISHES PLAN - LEVEL ONE	A
0318-0529-30 WD-203	SURFACE FINISHES PLAN - LEVEL TWO	A
0318-0529-30 WD-204	SURFACE FINISHES PLAN - LEVEL THREE	A
0318-0529-30 WD-205	SURFACE FINISHES PLAN - LEVEL FOUR	A
0318-0529-30 WD-206	SURFACE FINISHES PLAN - LEVEL TWENTY FIVE	A
0318-0529-30 WD-207	SURFACE FINISHES PLAN - LEVEL TWENTY SEVEN	A
0318-0529-30 WD-300	GRADING PLAN - GROUND LEVEL	A
0318-0529-30 WD-301	GRADING PLAN - GROUND LEVEL	A
0318-0529-30 WD-400	SOIL VOLUME PLAN - LEVEL ONE	A
0318-0529-30 WD-401	SOIL VOLUME PLAN - LEVEL TWO	A
0318-0529-30 WD-402	SOIL VOLUME PLAN - LEVEL THREE	A
0318-0529-30 WD-403	SOIL VOLUME PLAN - LEVEL FOUR	A
0318-0529-30 WD-404	SOIL VOLUME PLAN - LEVEL TWENTY FIVE	A
0318-0529-30 WD-405	SOIL VOLUME PLAN - LEVEL TWENTY SEVEN	A
0318-0529-30 WD-600	LANDSCAPE SECTIONS	A
0318-0529-30 WD-601	LANDSCAPE SECTIONS	A
0318-0529-30 WD-610	MATERIAL PALETTE	A
0318-0529-30 WD-611	PLANTING PALETTE	A



GENERAL NOTES

1. DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS HAVE PREFERENCE OVER SCALED DIMENSIONS.
2. ANY DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE SUPERINTENDENT.
3. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE DETAILS, SPECIFICATIONS AND ENGINEERING DOCUMENTS.
4. LOCATE AND PROTECT ALL UNDERGROUND SERVICES PRIOR TO ANY EXCAVATION. MAKE GOOD ALL DAMAGE TO EXISTING WORKS CAUSED BY THE ACTIVITY OF THESE WORKS.
5. THESE DRAWINGS ARE TO BE PRINTED IN COLOUR

CITY OF WHITEHORSE
Date: 29/1/2019
RECEIVED

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRN	CHKD
A	TOWN PLANNING SUBMISSION	14.12.2018	BH	NP

Tract
Landscape Architects
Urban Designers
Town Planners

Melbourne: Level 8, 6 Riverside Quay, Southbank VIC 3006
Geelong: 4/60 Yarra Street, Geelong VIC 3220
P: 03 9429 6133
www.tract.net.au

PROJECT
16 SPRING STREET
BOX HILL INSTITUTE

CLIENT
ORION INTERNATIONAL Pty. Ltd.

DRAWING TITLE
COVER SHEET & DRAWING INDEX

DRAWING NUMBER	REVISION
0318-0529-30 WD-000	A

DRAWN	CHECKED	APPROVED	DATE
BH	NP	AW	12.12.2018

SCALE 1:500 @ A1
0 5 10 20m

9.1.1 – ATTACHMENT 2. Landscape Plan

TREE RETENTION PLAN LEGEND

- EXTENT OF WORK
- EXISTING TREE TO BE REMOVED. REFER TO ARBORIST REPORT
- EXISTING TREE TO BE REMOVED. REFER TO ARBORIST REPORT
- STRUCTURAL ROOT ZONE. REFER TO ARBORISTS REPORT.
- TREE PROTECTION ZONE. REFER TO ARBORISTS REPORT.

URBAN REALM HARDSCAPE LEGEND

- EXTENT OF WORK
- EXISTING TREE TO BE RETAINED. REFER TO ARBORIST REPORT
- PROPOSED TREES REFER TO PLANT SCHEDULE
- BLUESTONE PAVING - PEDESTRIAN 100 x 300mm ON CONCRETE SLAB
- BLUESTONE PAVING - VEHICLE 300 x 1000mm ON CONCRETE SLAB
- 150mm WIDE FLUSH HDG STEEL EDGE. POWDERCOATED BRONZE COLOUR
- 450mm HIGH RAISED TIMBER PLATFORMS AROUND STREET TREES.
- 600mm HIGH x 800mm WIDE HONED CONCRETE WALLS WITH 60° FACE TO ONE END.
- NEW CONCRETE KERB AND CHANNEL
- NEW BITUMEN ROAD TO ENGINEERS DETAIL/COUNCIL SPECIFICATION.
- GARDEN BEDS - IRRIGATED. REFER TO PLANT SCHEDULE.
- WSUD GARDEN BEDS - UNIRRIGATED. REFER TO PLANT SCHEDULE.
- MAKE GOOD EXISTING TURFING.

PRIVATE REALM HARDSCAPE LEGEND

- EXTENT OF WORK
- PROPOSED SMALL TREES REFER TO PLANT SCHEDULE
- 200mm WIDE KD HARDWOOD TIMBER DECKING ON PEDESTALS
- STONE PAVING ON PEDESTALS. DRAINAGE LAYER BELOW.
- 150mm WIDE FLUSH HDG STEEL EDGE. POWDERCOATED BRONZE COLOUR
- KD HARDWOOD TIMBER & STEEL PERGOLA STRUCTURES WITH CLIMBING PLANT SPECIES. REFER TO PLANT SCHEDULE
- GAS FIRE PLACE TO BE PLUMBED INTO BUILDING
- LOOSE FURNITURE. SUPPLIER: COSH LIVING
- LOOSE SUN LOUNGERS. SUPPLIER: COSH LIVING
- OUTDOOR BBQ AND KITCHEN FACILITIES.
- OUTDOOR JOINERY - BANQUETTE SEATS.
- INSITU RAISED CONCRETE GARDEN BEDS WITH IRRIGATION & DRAINAGE.
- GARDEN BEDS - IRRIGATED. REFER TO PLANT SCHEDULE.
- ARTIFICIAL TURF ON CONCRETE SLAB.

GRADING AND DRAINAGE LEGEND

- EXTENT OF WORK
- EXISTING TREE TO BE RETAINED. REFER TO ARBORIST REPORT
- PROPOSED BUILDING FLOOR LEVEL
  TOP OF WALL/PLATFORM
  FINISHED SURFACE LEVEL
  EXISTING LEVEL
- DIRECTION OF FALL AND GRADE.
- AGG. DRAINAGE LINE AND TO BE CONNECTED TO THE NEAREST STORMWATER PIT
- 300mm WIDE GRATED DRAIN. STAINLESS STEEL CLASS D HEELSAFE LID.
- NEW 150MM DIA. SEWER GRADE PVC STORMWATER OUTLET PIPE.

GENERAL NOTES

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5. THESE DRAWINGS ARE TO BE PRINTED IN COLOUR

CITY OF WHITEHORSE
Date: 29/1/2019
RECEIVED

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRN	CHKD
A	TOWN PLANNING SUBMISSION	14.12.2018	BH	NP

Tract
Landscape Architects
Urban Designers
Town Planners

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PROJECT
16 SPRING STREET
BOX HILL INSTITUTE

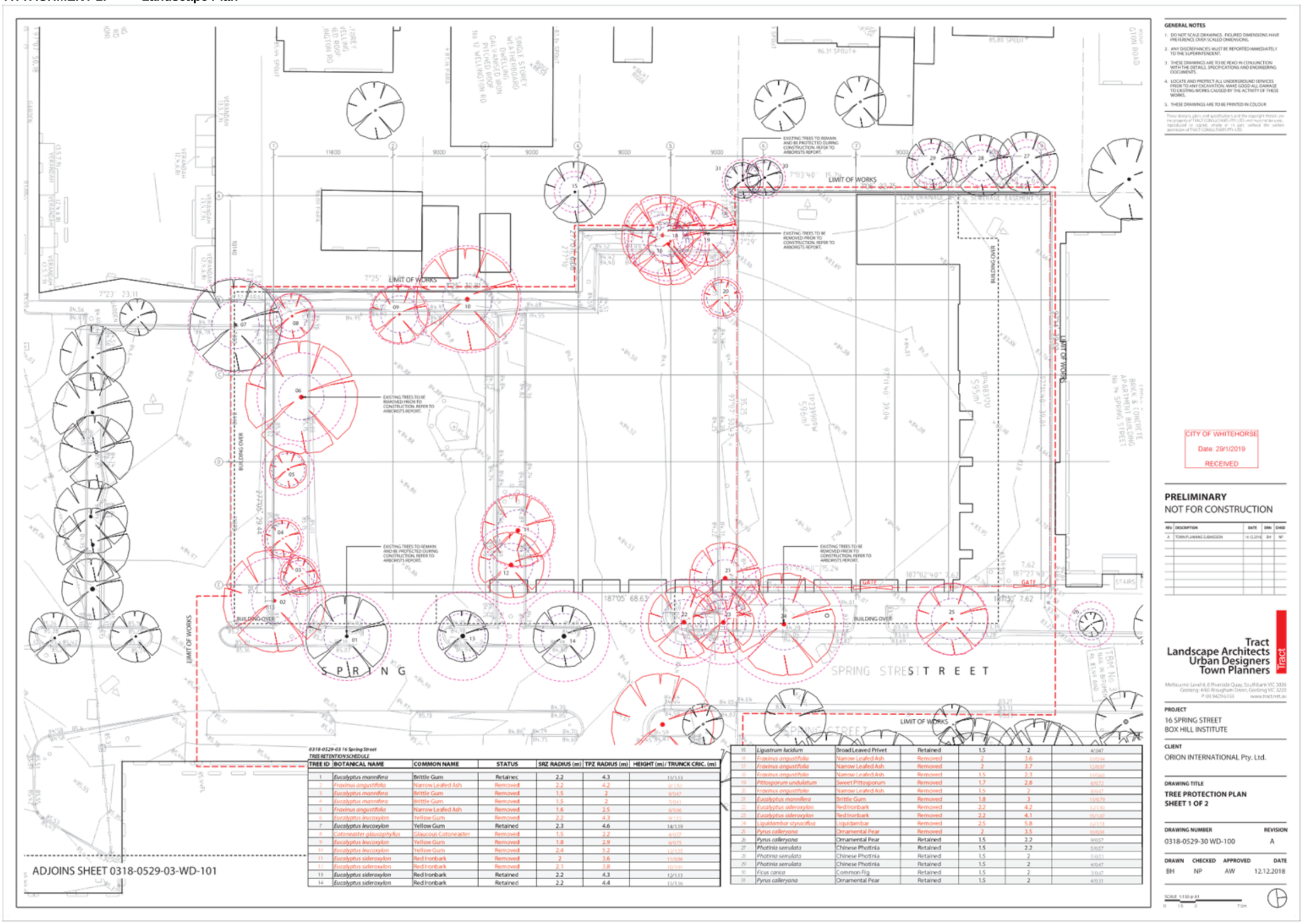
CLIENT
ORION INTERNATIONAL Pty. Ltd.

DRAWING TITLE
MASTER LEGEND

DRAWING NUMBER	REVISION
0318-0529-30 WD-001	A

DRAWN	CHECKED	APPROVED	DATE
BH	NP	AW	12.12.2018

9.1.1 – ATTACHMENT 2. Landscape Plan



0318-0529-03 16 Spring Street
TREE RETENTION SCHEDULE

TREE ID	BOTANICAL NAME	COMMON NAME	STATUS	SRZ RADIUS (m)	TPZ RADIUS (m)	HEIGHT (m) / TRUNCK CRIC. (m)
1	Eucalyptus mannifera	Brittle Gum	Retainec	2.2	4.3	11/133
2	Fraxinus angustifolia	Narrow Leafed Ash	Removed	2.2	4.2	8/93
3	Eucalyptus mannifera	Brittle Gum	Removed	1.5	2	8/047
4	Eucalyptus mannifera	Brittle Gum	Removed	1.5	2	7/041
5	Fraxinus angustifolia	Narrow Leafed Ash	Removed	1.6	2.5	9/056
6	Eucalyptus leucoxylon	Yellow Gum	Removed	2.2	4.3	9/133
7	Eucalyptus leucoxylon	Yellow Gum	Retained	2.3	4.6	14/139
8	Cotoneaster glaucophyllus	Glaucous Cotoreaster	Removed	1.5	2.2	4/057
9	Eucalyptus leucoxylon	Yellow Gum	Removed	1.8	2.9	9/075
10	Eucalyptus leucoxylon	Yellow Gum	Removed	2.4	5.2	12/154
11	Eucalyptus sideroxylon	Red Ironbark	Removed	2	3.6	11/098
12	Eucalyptus sideroxylon	Red Ironbark	Removed	2.1	3.8	10/101
13	Eucalyptus sideroxylon	Red Ironbark	Retained	2.2	4.3	12/133
14	Eucalyptus sideroxylon	Red Ironbark	Retained	2.2	4.4	11/136
15	Ligustrum lucidum	Broad Leaved Privet	Retained	1.5	2	4/047
16	Fraxinus angustifolia	Narrow Leafed Ash	Removed	2	3.6	10/104
17	Fraxinus angustifolia	Narrow Leafed Ash	Removed	2	3.7	12/107
18	Fraxinus angustifolia	Narrow Leafed Ash	Removed	1.5	2.3	10/065
19	Pittosporum undulatum	Sweet Pittosporum	Removed	1.7	2.8	6/072
20	Fraxinus angustifolia	Narrow Leafed Ash	Removed	1.5	2	8/047
21	Eucalyptus mannifera	Brittle Gum	Removed	1.8	3	13/079
22	Eucalyptus sideroxylon	Red Ironbark	Removed	2.2	4.2	12/130
23	Eucalyptus sideroxylon	Red Ironbark	Removed	2.2	4.1	11/127
24	Liquidambar styraciflua	Liquidambar	Removed	2.5	5.8	12/153
25	Pyrus calleryana	Ornamental Pear	Removed	2	3.5	10/098
26	Pyrus calleryana	Ornamental Pear	Retained	1.5	2.2	9/057
27	Photinia serrulata	Chinese Photinia	Retained	1.5	2.2	5/057
28	Photinia serrulata	Chinese Photinia	Retained	1.5	2	5/053
29	Photinia serrulata	Chinese Photinia	Retained	1.5	2	4/047
30	Ficus carica	Common Fig	Retained	1.5	2	3/047
31	Pyrus calleryana	Ornamental Pear	Retained	1.5	2	4/031

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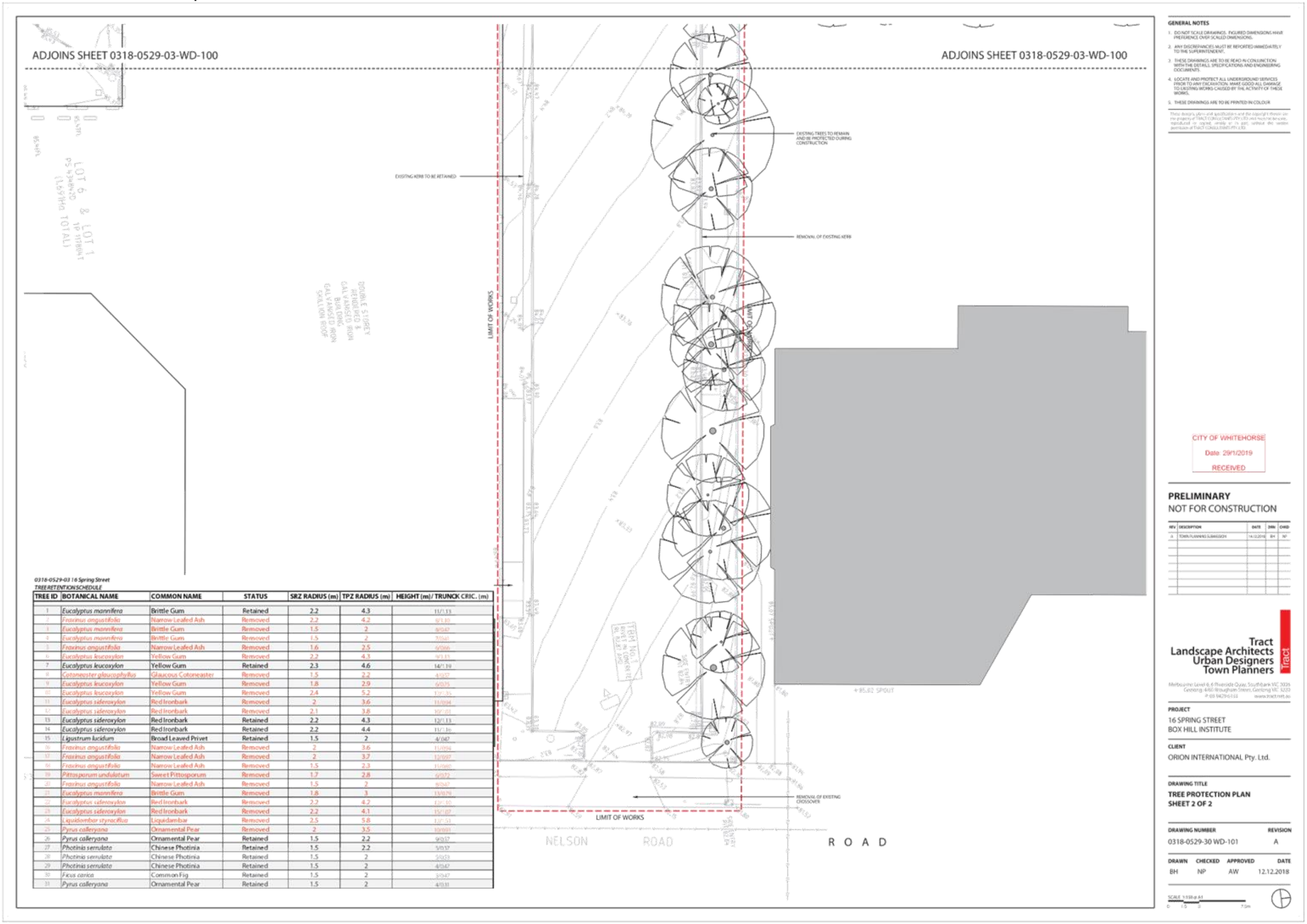

0318-0529-03 16 Spring Street
TREE RETENTION SCHEDULE

TREE ID	BOTANICAL NAME	COMMON NAME	STATUS	SRZ RADIUS (m)	TPZ RADIUS (m)	HEIGHT (m) / TRUNCK CIRC. (m)
1	*Eucalyptus mannifera*	Brittle Gum	Retained	2.2	4.3	11/1.13
2	*Fraxinus angustifolia*	Narrow Leafed Ash	Removed	2.2	4.2	8/1.10
3	*Eucalyptus mannifera*	Brittle Gum	Removed	1.5	2	8/047
4	*Eucalyptus mannifera*	Brittle Gum	Removed	1.5	2	7/047
5	*Fraxinus angustifolia*	Narrow Leafed Ash	Removed	1.6	2.5	6/066
6	*Eucalyptus leucoxylon*	Yellow Gum	Removed	2.2	4.3	9/1.15
7	*Eucalyptus leucoxylon*	Yellow Gum	Retained	2.3	4.6	14/1.19
8	*Cotoneaster glaucophyllus*	Glaucous Cotoneaster	Removed	1.5	2.2	4/057
9	*Eucalyptus leucoxylon*	Yellow Gum	Removed	1.8	2.9	6/075
10	*Eucalyptus leucoxylon*	Yellow Gum	Removed	2.4	5.2	13/1.35
11	*Eucalyptus sideroxylon*	Red Ironbark	Removed	2	3.6	11/094
12	*Eucalyptus sideroxylon*	Red Ironbark	Removed	2.1	3.8	10/1.01
13	*Eucalyptus sideroxylon*	Red Ironbark	Retained	2.2	4.3	12/1.13
14	*Eucalyptus sideroxylon*	Red Ironbark	Retained	2.2	4.4	11/1.16
15	*Ligustrum lucidum*	Broad Leaved Privet	Retained	1.5	2	4/047
16	*Fraxinus angustifolia*	Narrow Leafed Ash	Removed	2	3.6	11/094
17	*Fraxinus angustifolia*	Narrow Leafed Ash	Removed	2	3.7	12/097
18	*Fraxinus angustifolia*	Narrow Leafed Ash	Removed	1.5	2.3	11/060
19	*Pittosporum undulatum*	Sweet Pittosporum	Removed	1.7	2.8	6/072
20	*Fraxinus angustifolia*	Narrow Leafed Ash	Removed	1.5	2	8/047
21	*Eucalyptus mannifera*	Brittle Gum	Removed	1.8	3	13/078
22	*Eucalyptus sideroxylon*	Red Ironbark	Removed	2.2	4.2	12/1.10
23	*Eucalyptus sideroxylon*	Red Ironbark	Removed	2.2	4.1	15/1.07
24	*Liquidambar styraciflua*	Liquidambar	Removed	2.5	5.8	14/1.51
25	*Pyrus calleryana*	Ornamental Pear	Removed	2	3.5	10/091
26	*Pyrus calleryana*	Ornamental Pear	Retained	1.5	2.2	9/057
27	*Photinia serrulata*	Chinese Photinia	Retained	1.5	2.2	5/037
28	*Photinia serrulata*	Chinese Photinia	Retained	1.5	2	5/053
29	*Photinia serrulata*	Chinese Photinia	Retained	1.5	2	4/047
30	*Ficus carica*	Common Fig	Retained	1.5	2	3/047
31	*Pyrus calleryana*	Ornamental Pear	Retained	1.5	2	4/031

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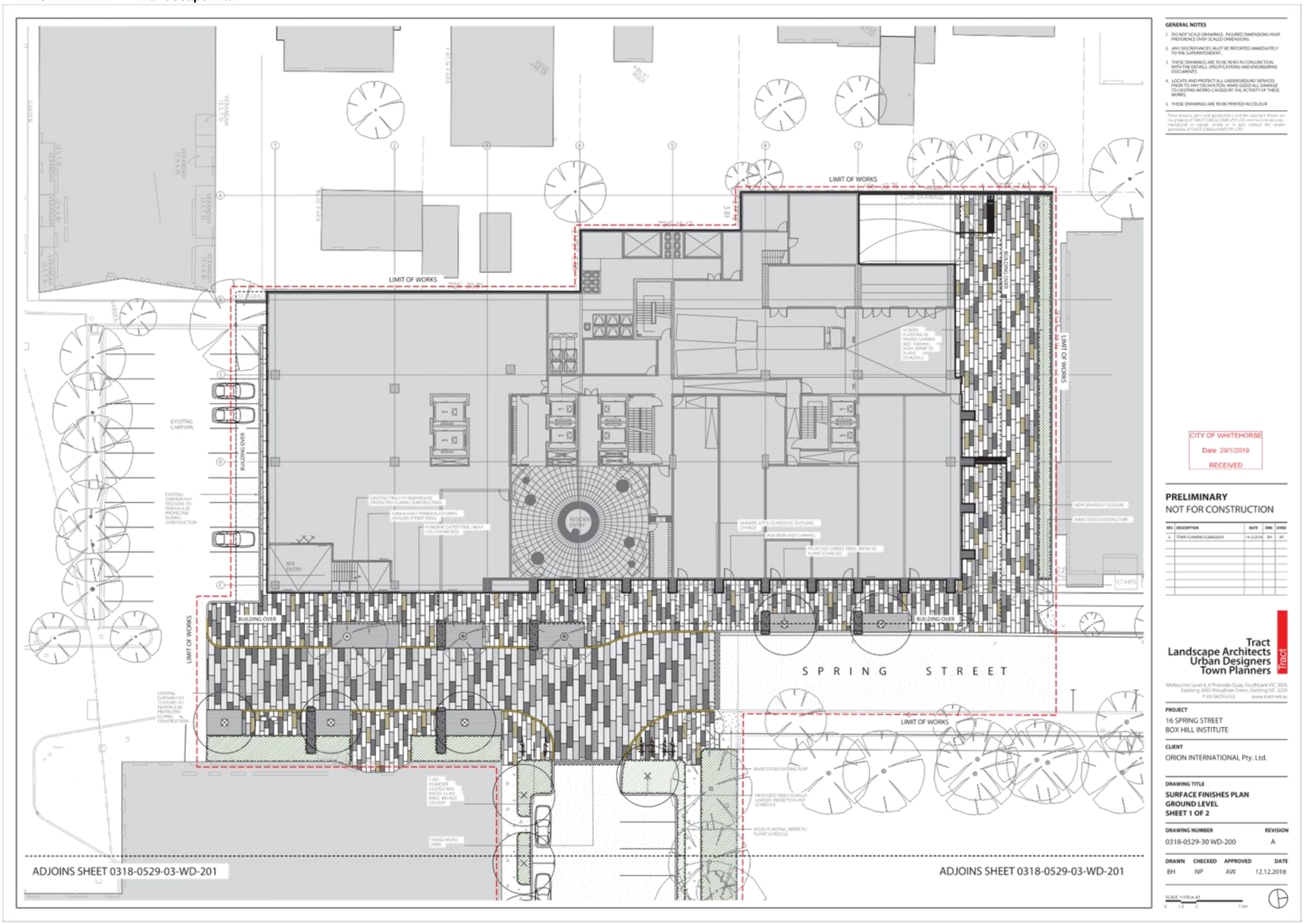

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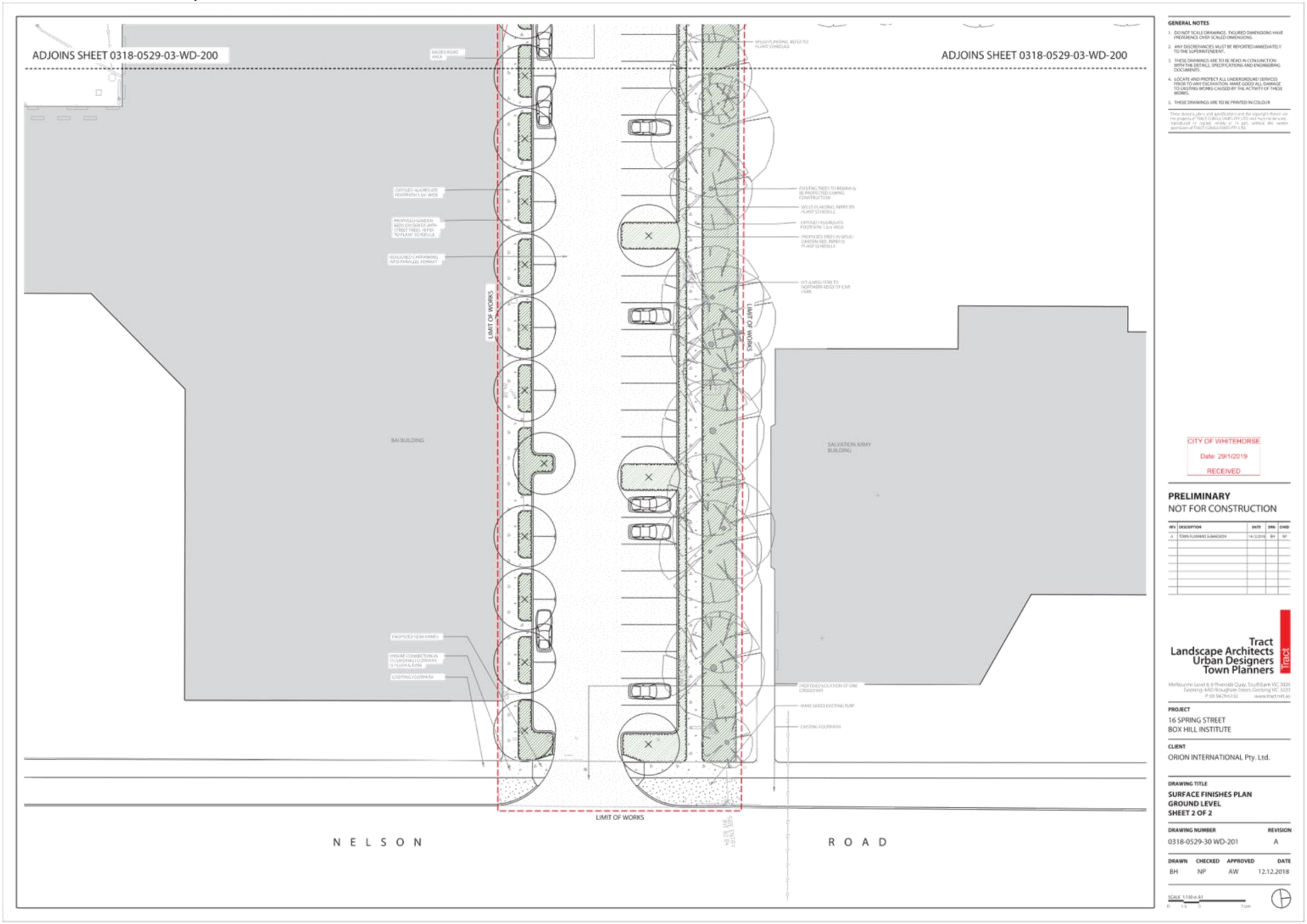

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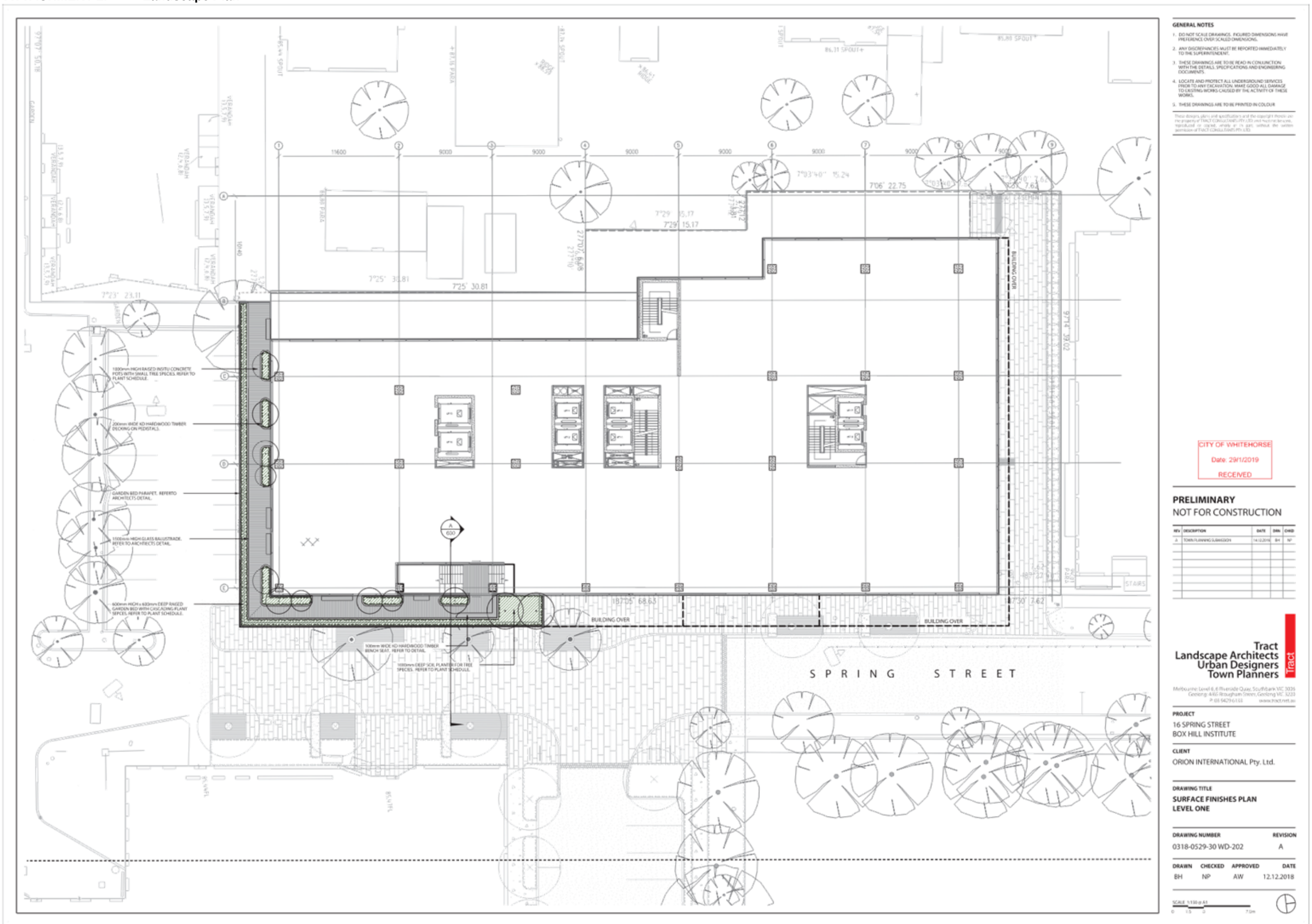

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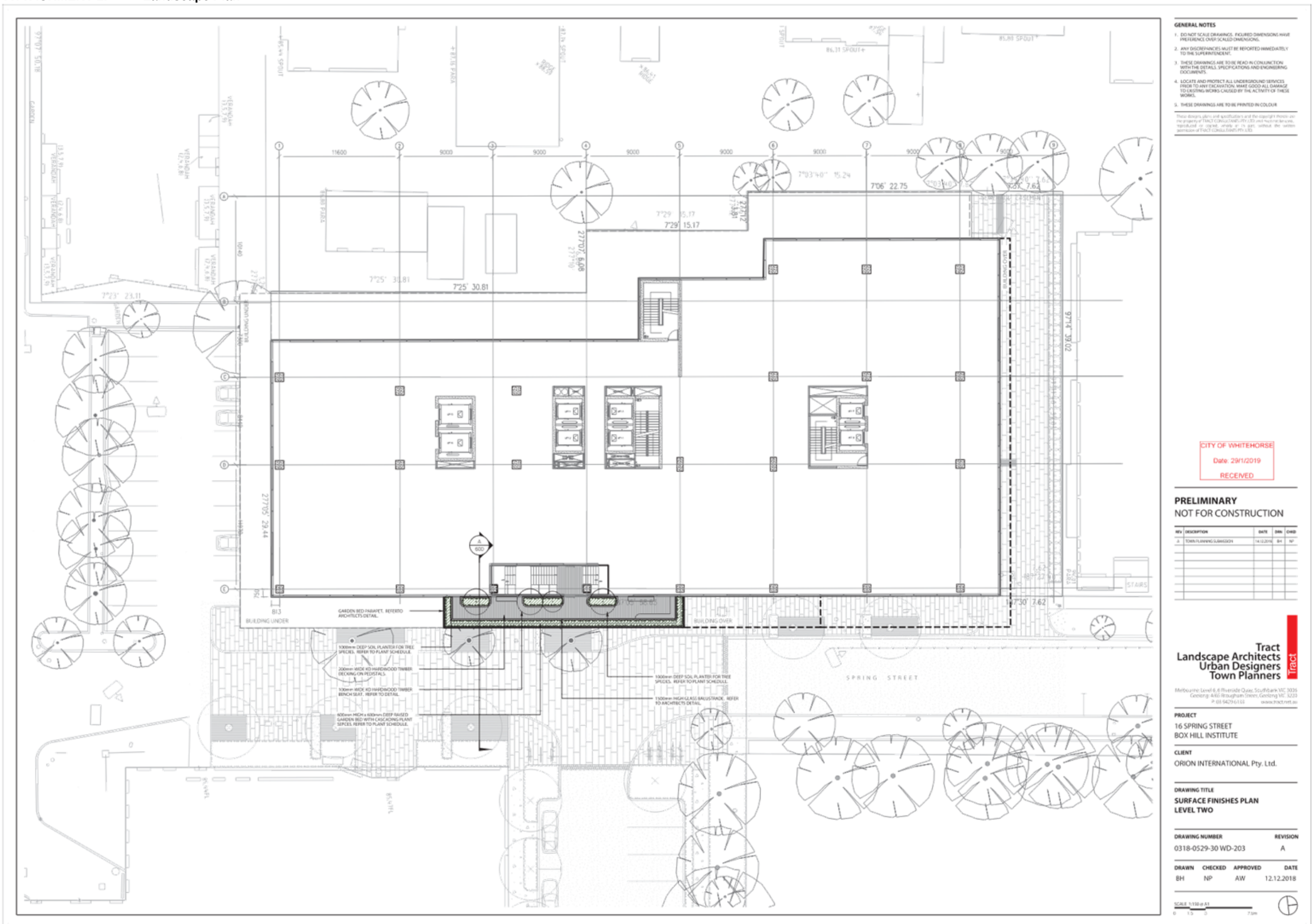

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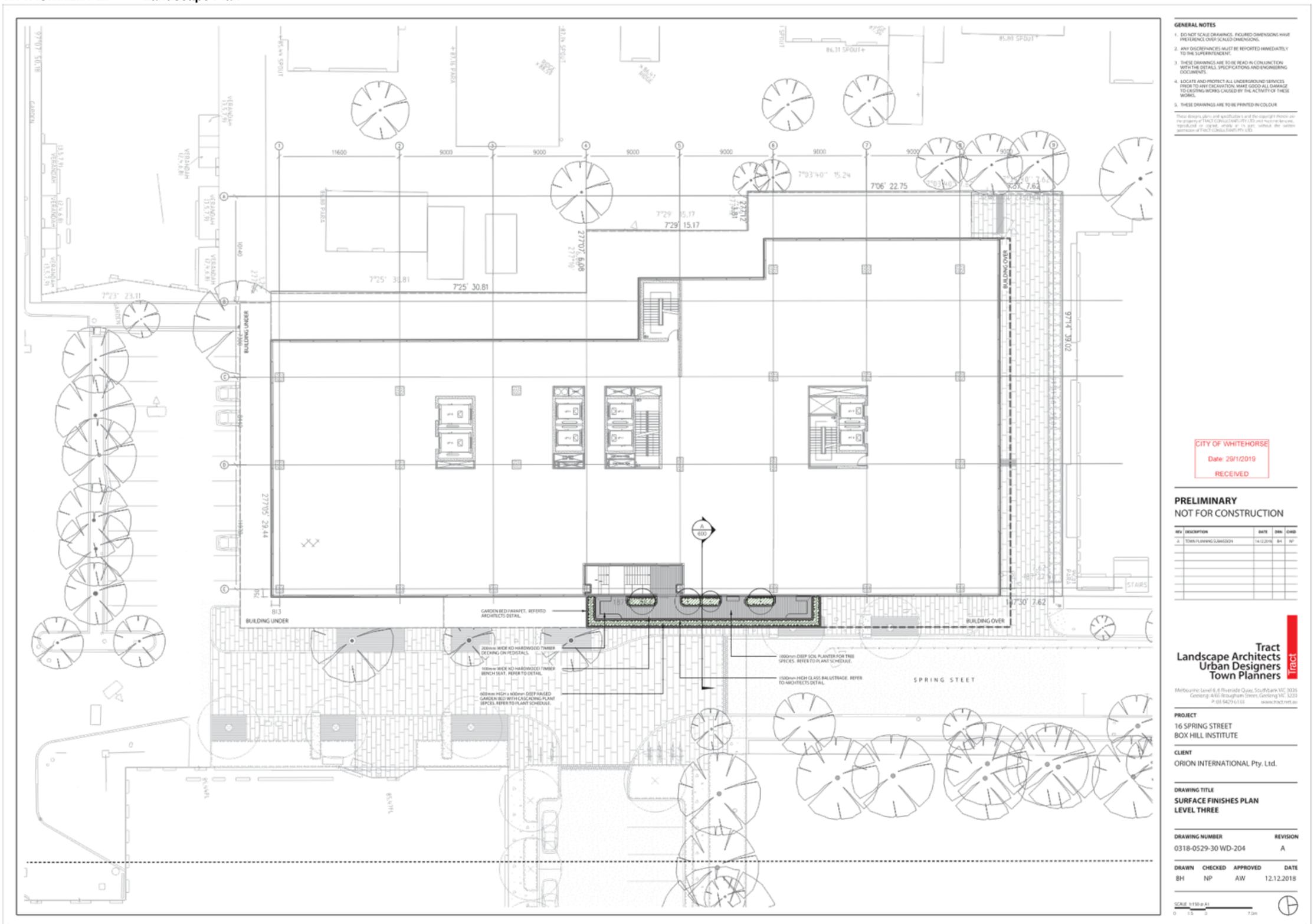

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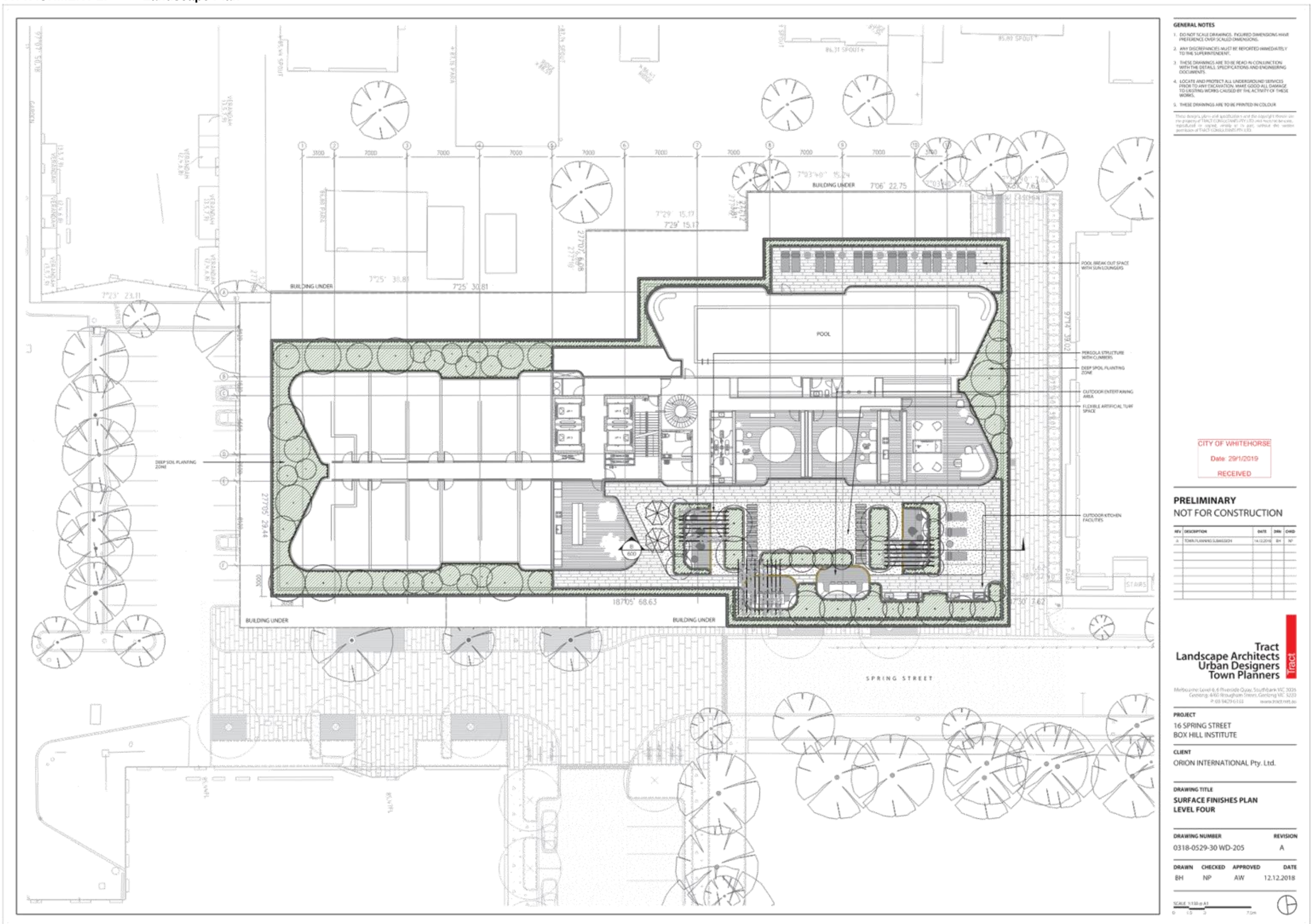

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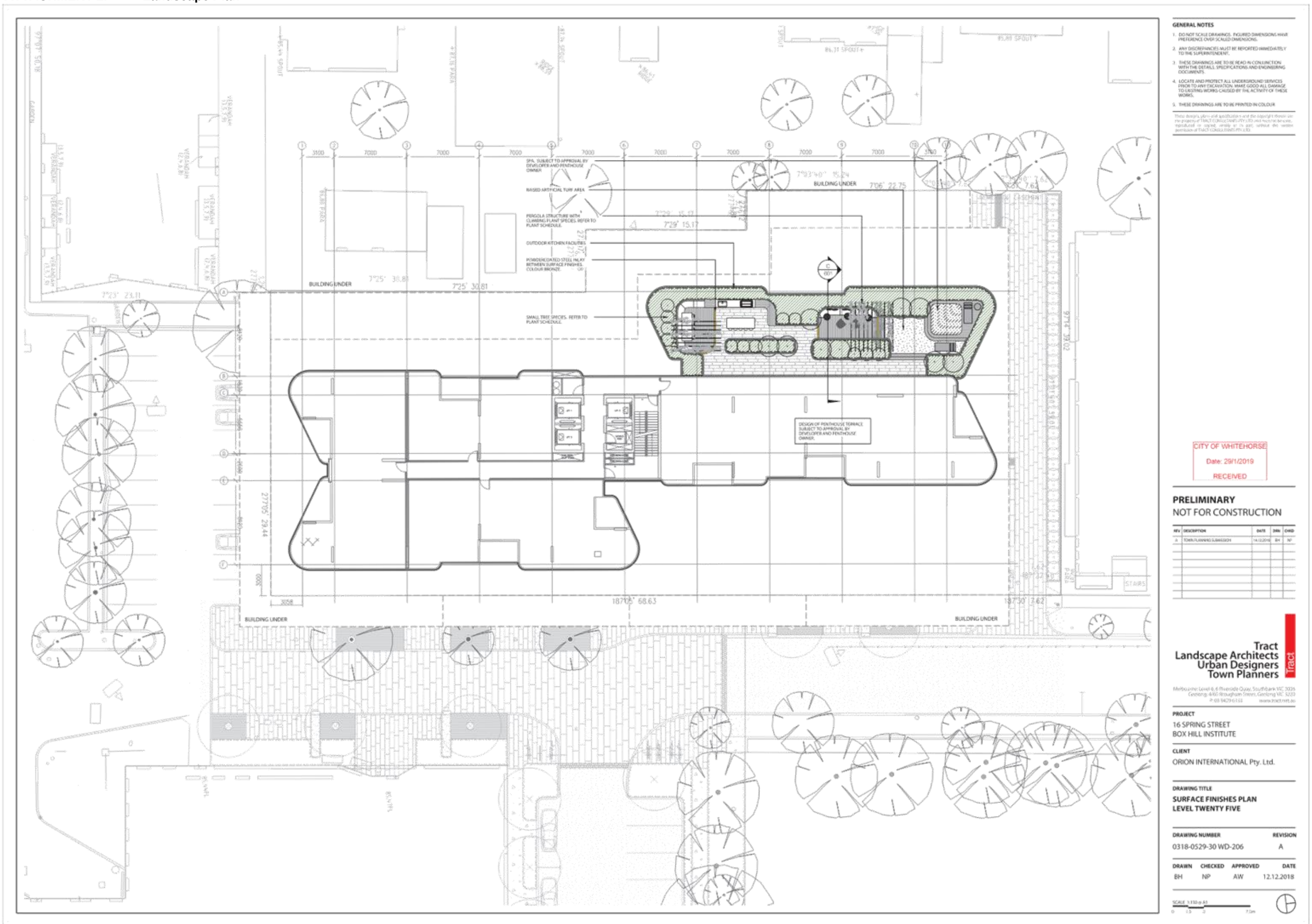

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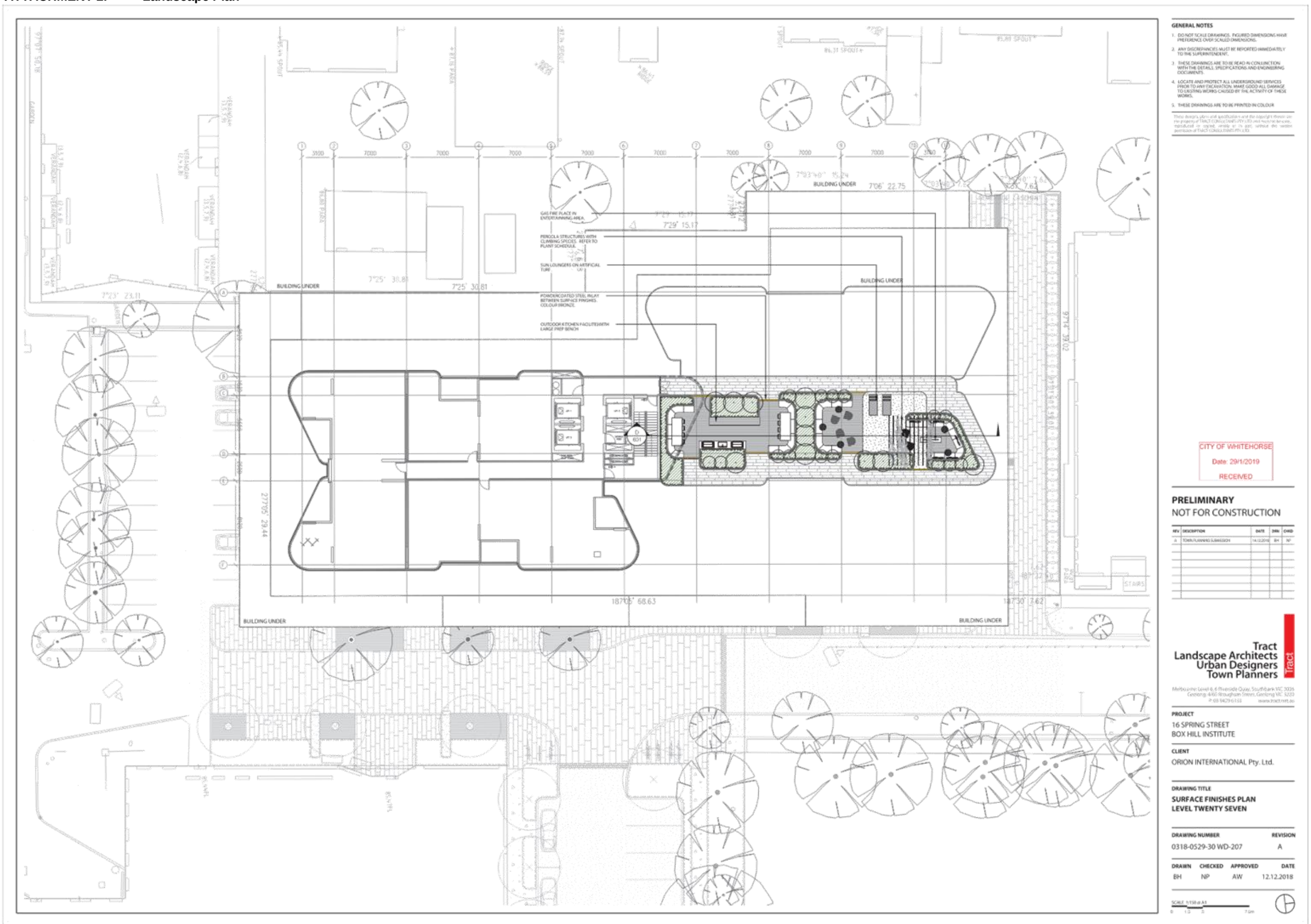

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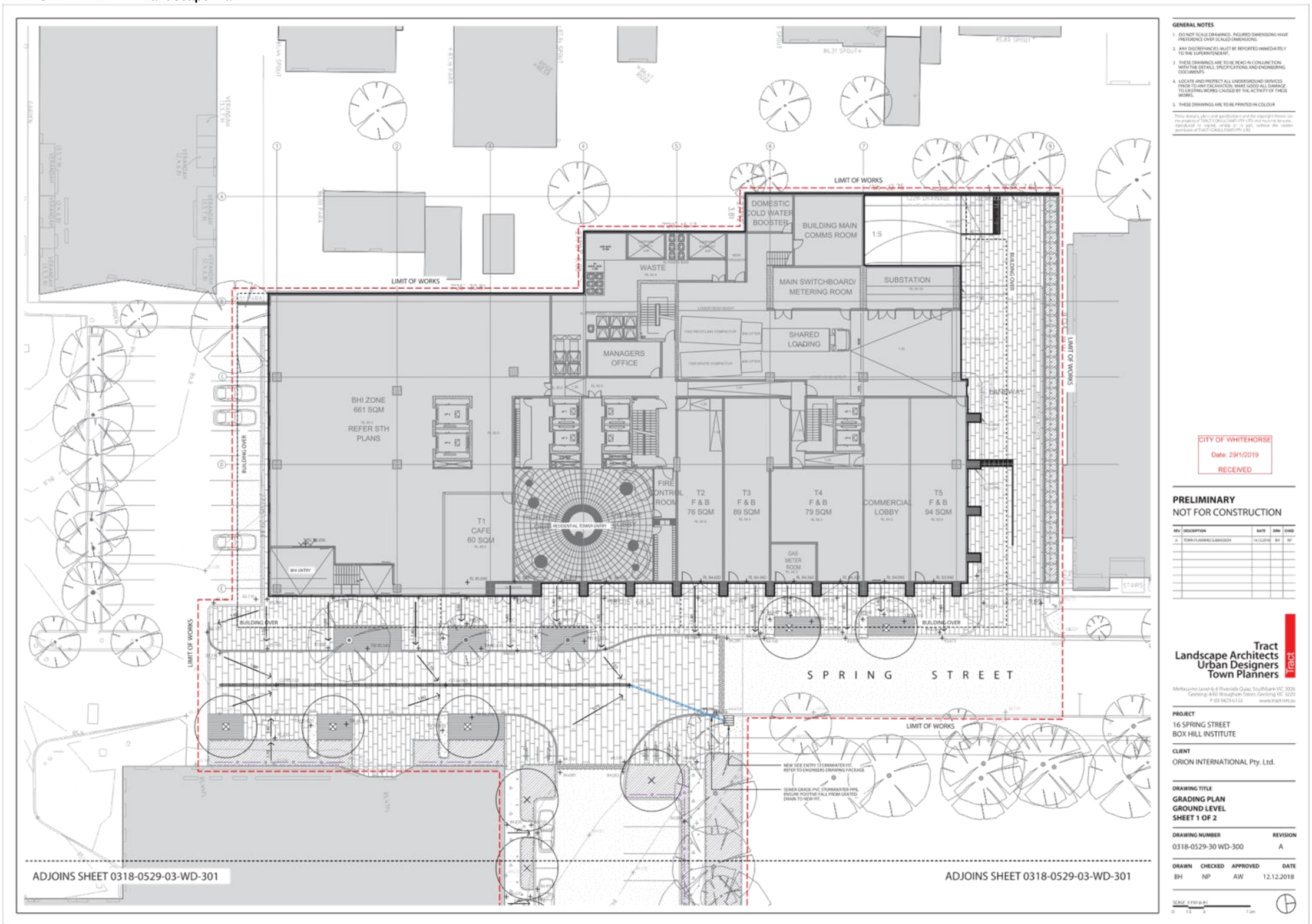

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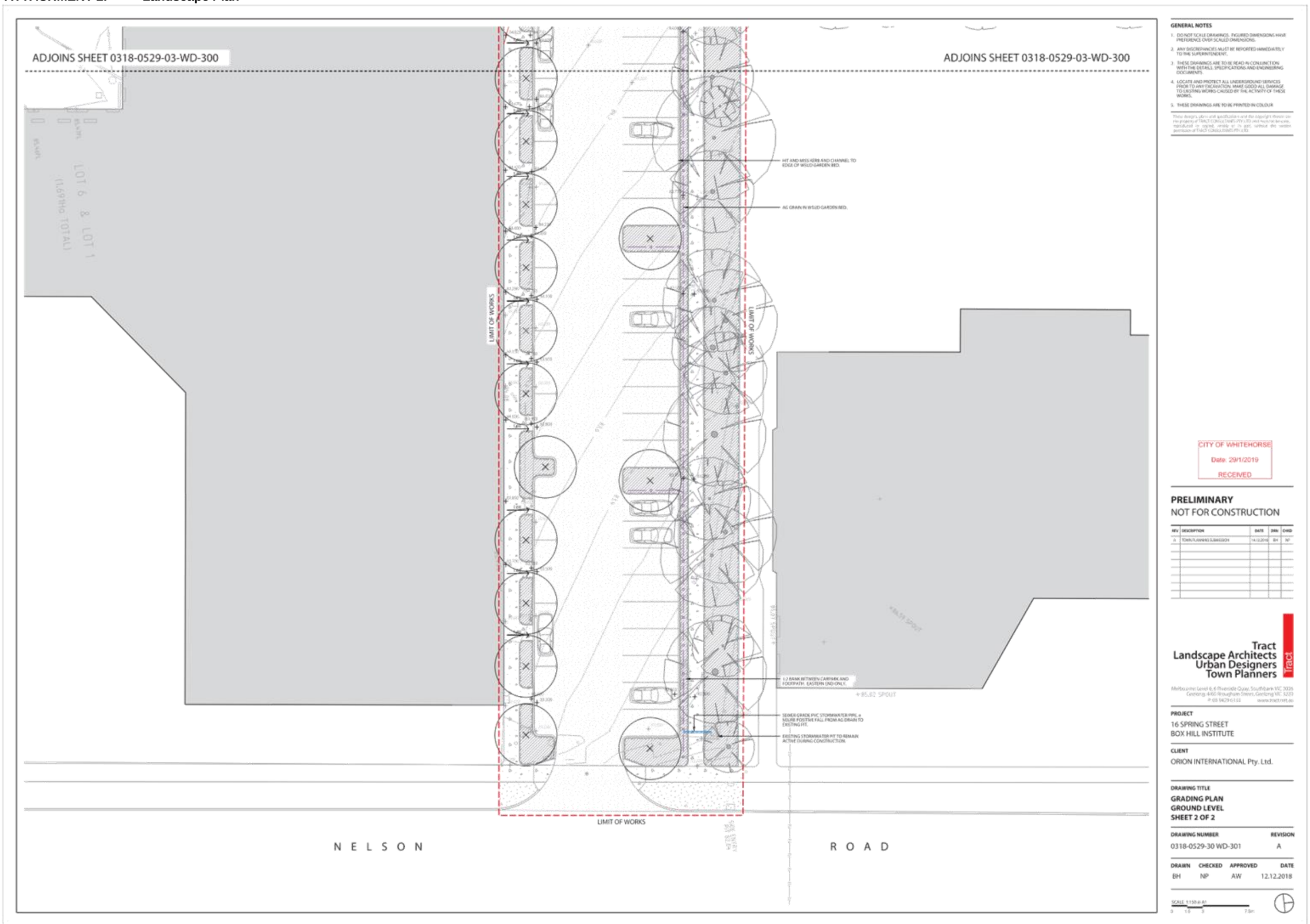

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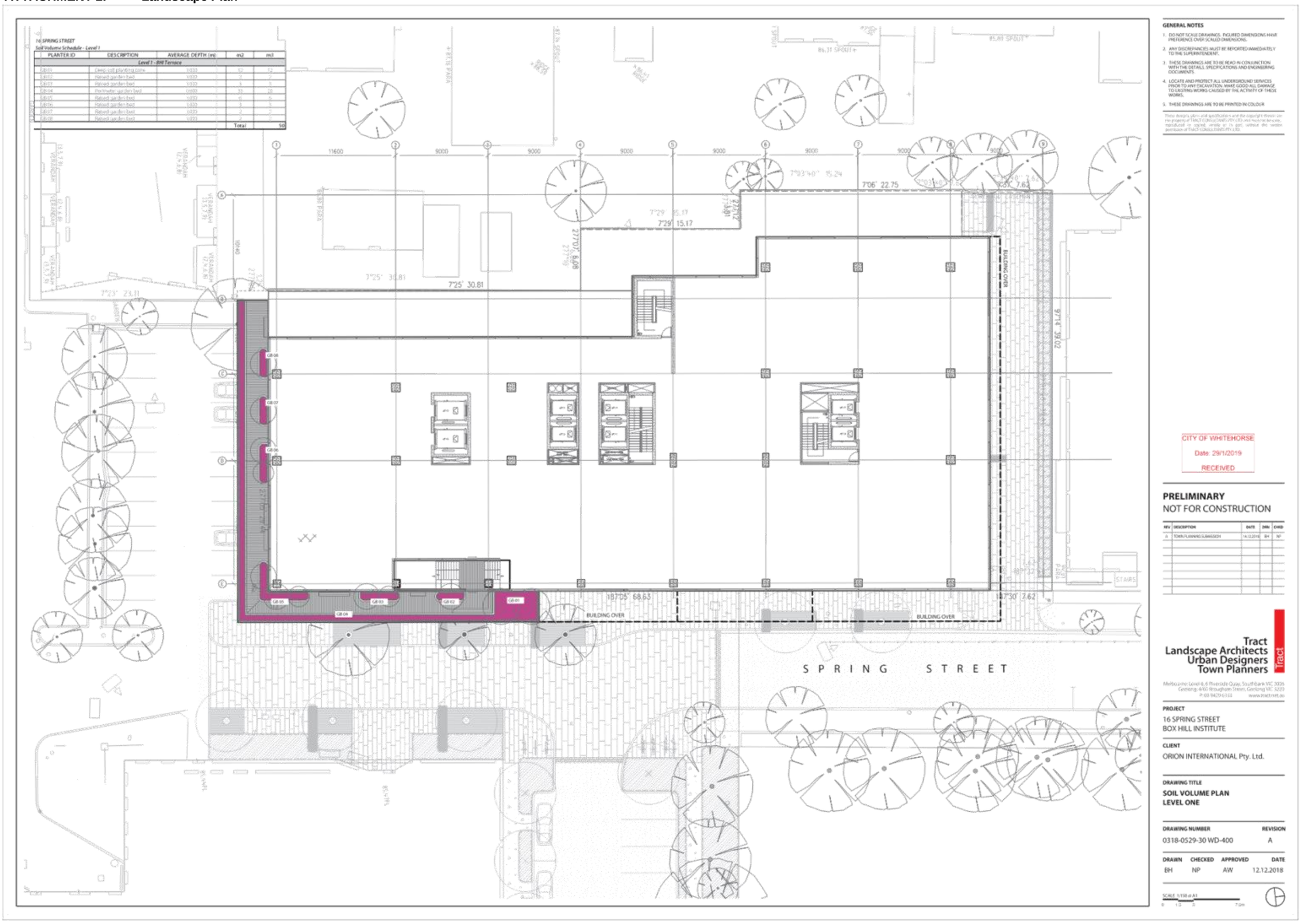

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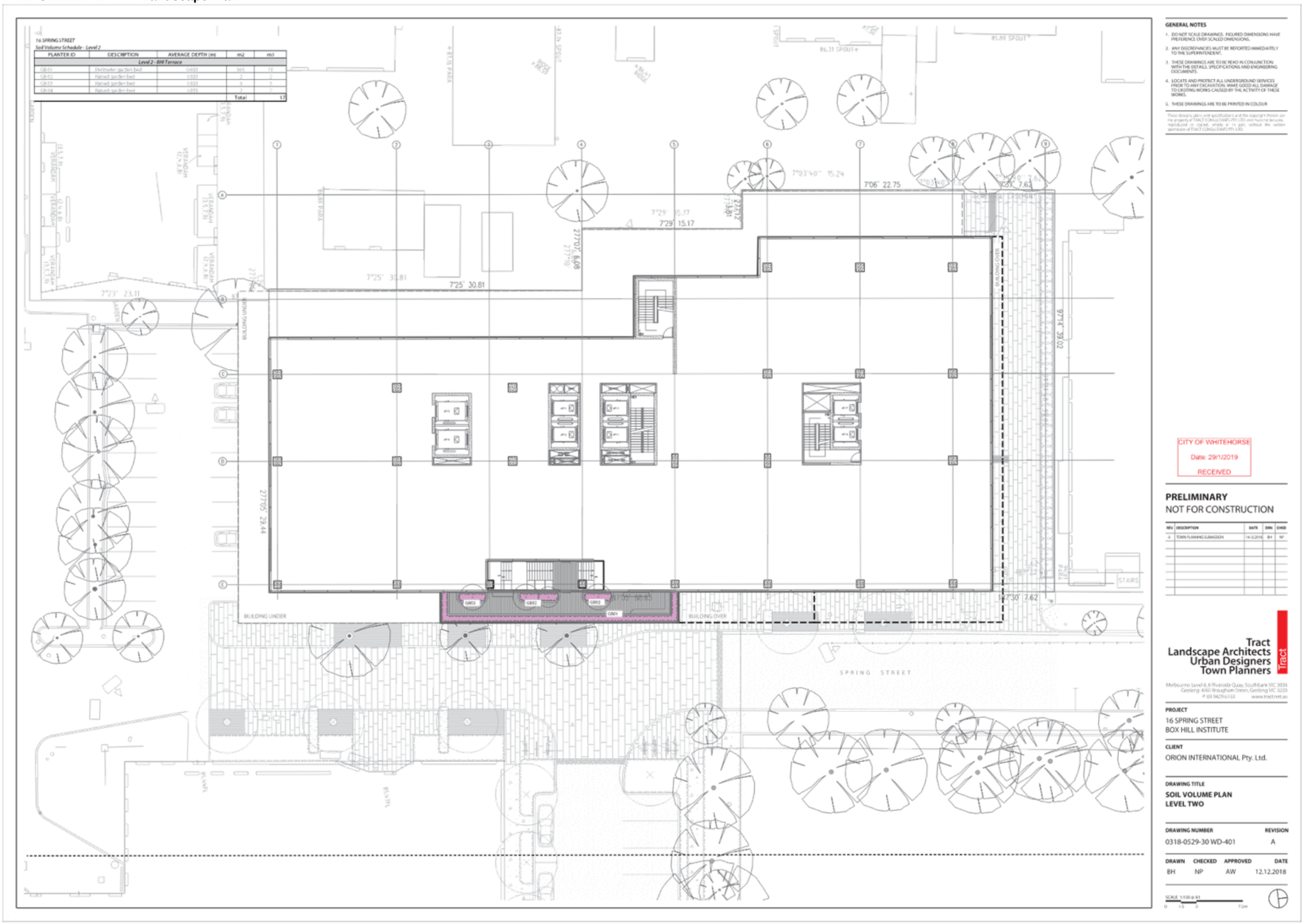

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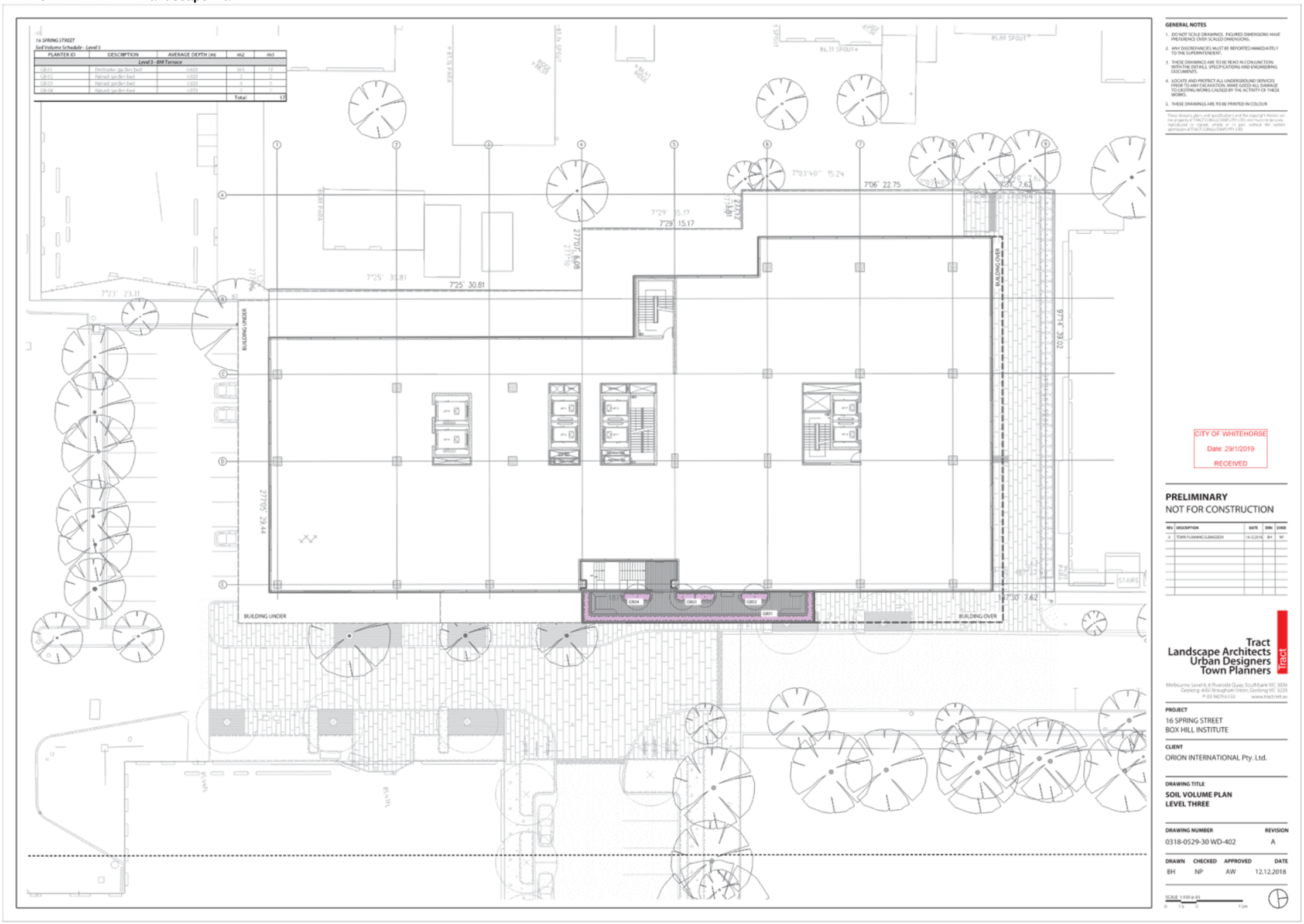

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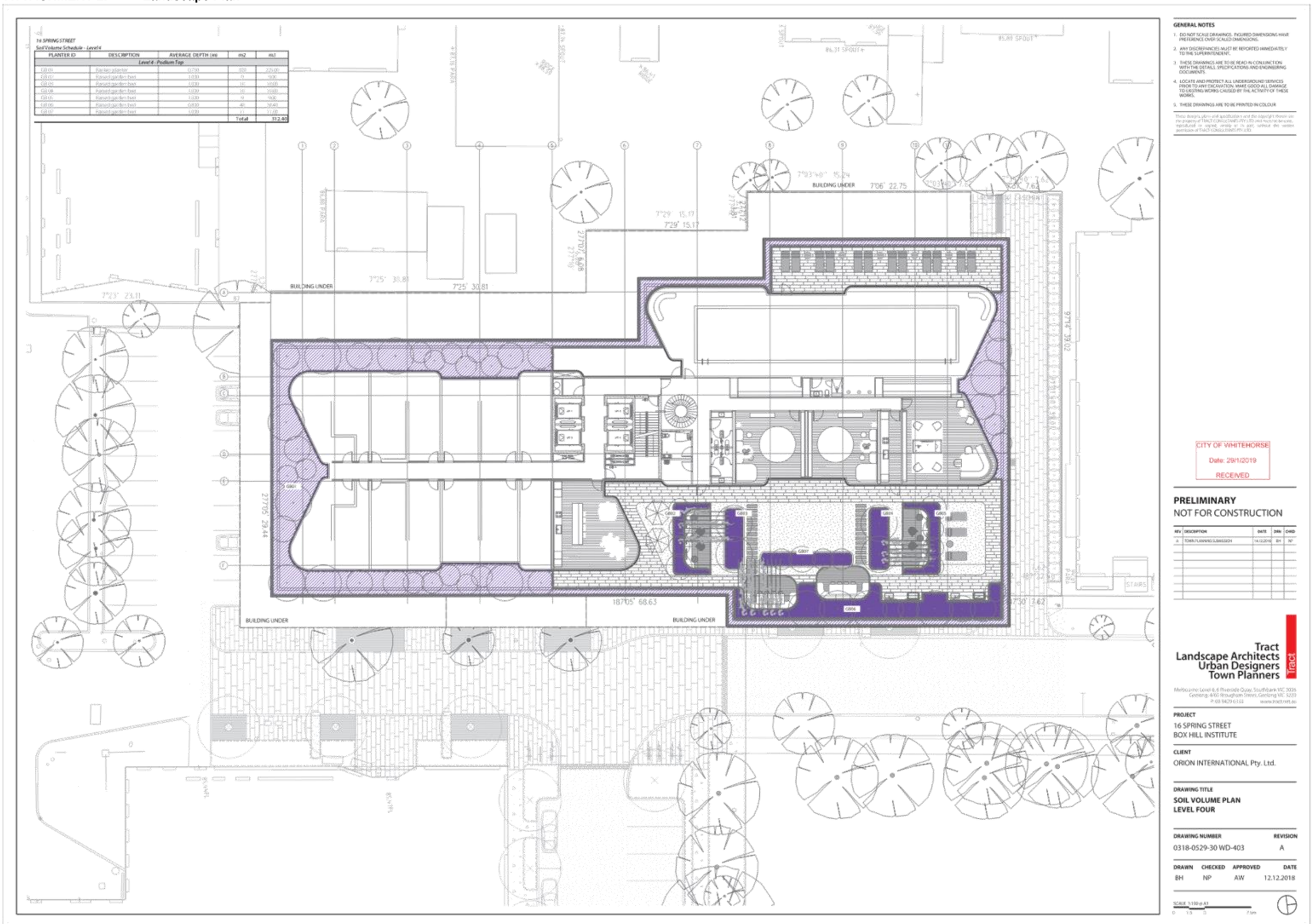

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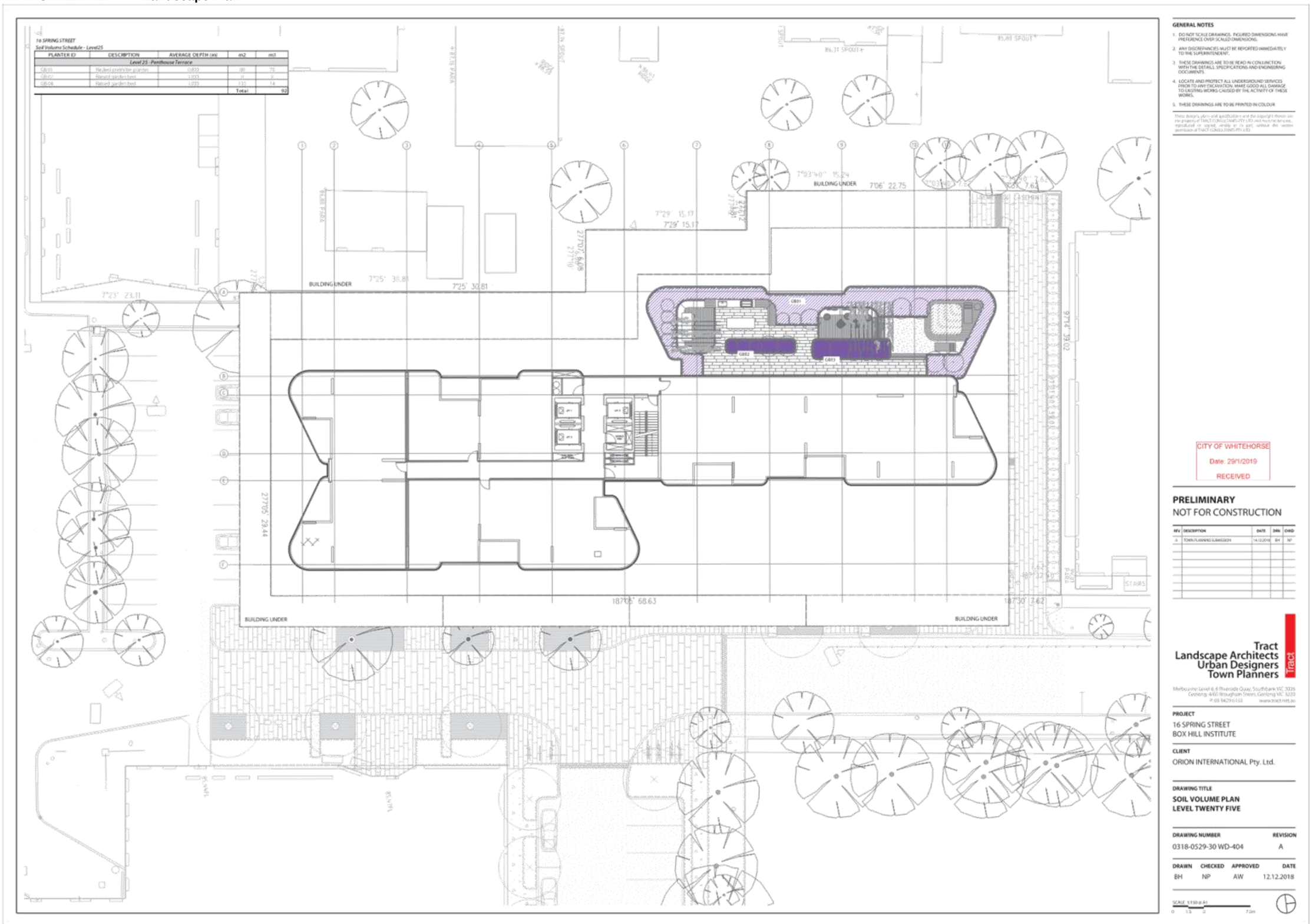

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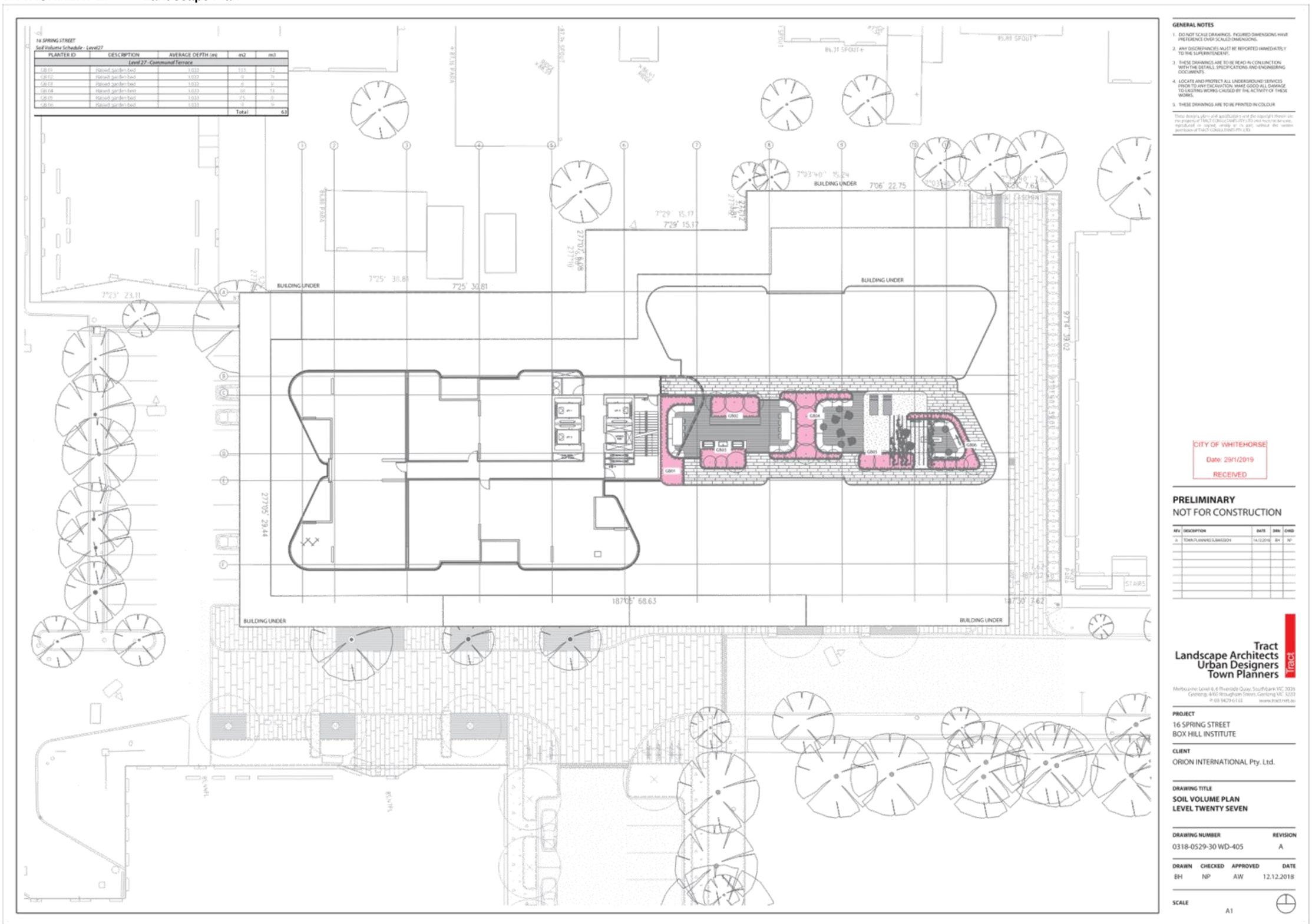

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PROJECT
16 SPRING STREET
BOX HILL INSTITUTE

CLIENT
ORION INTERNATIONAL Pty. Ltd.

DRAWING TITLE
SOIL VOLUME PLAN
LEVEL TWENTY SEVEN

DRAWING NUMBER	REVISION
0318-0529-30 WD-405	A

DRAWN	CHECKED	APPROVED	DATE
BH	NP	AW	12.12.2018

SCALE A1

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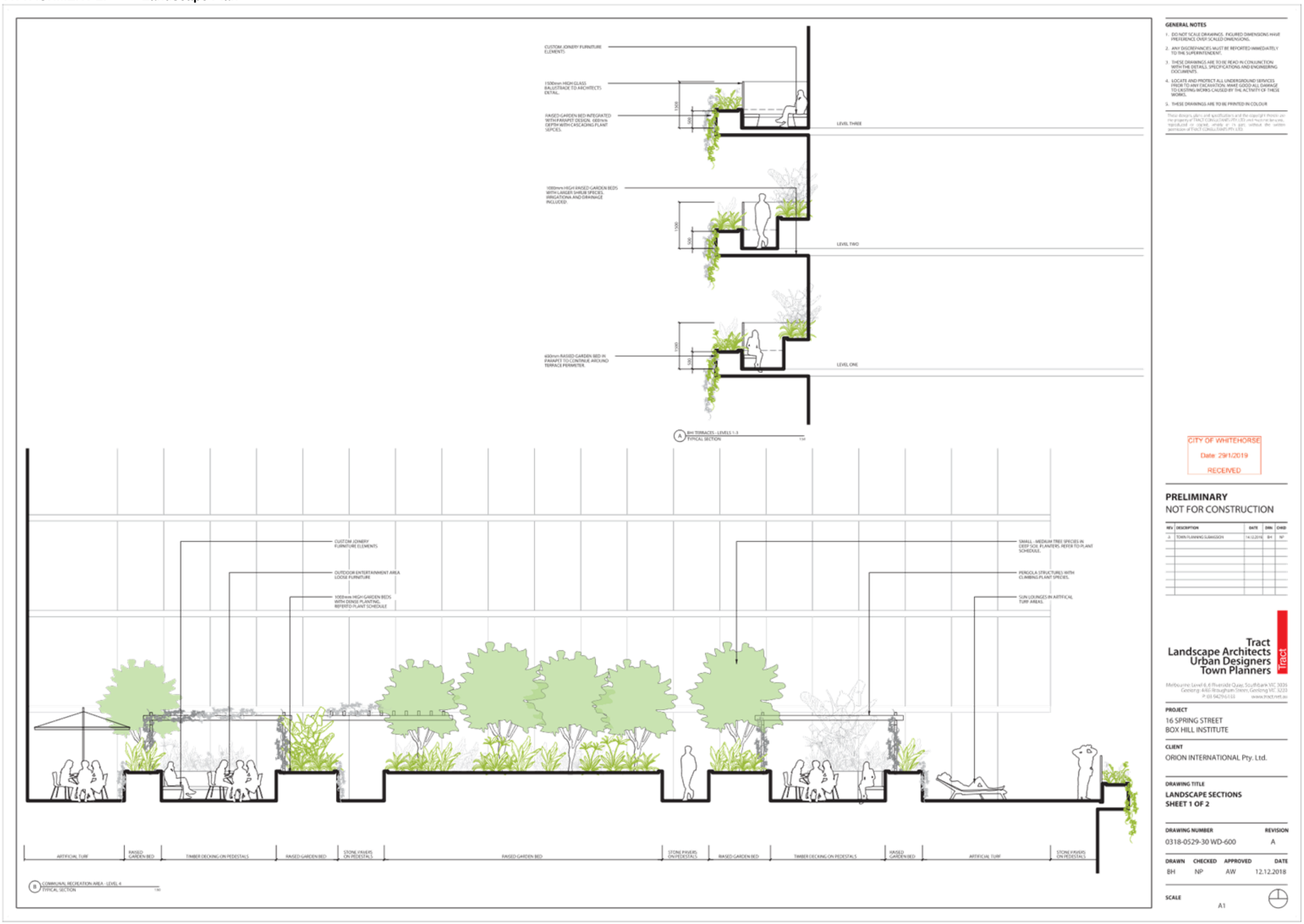

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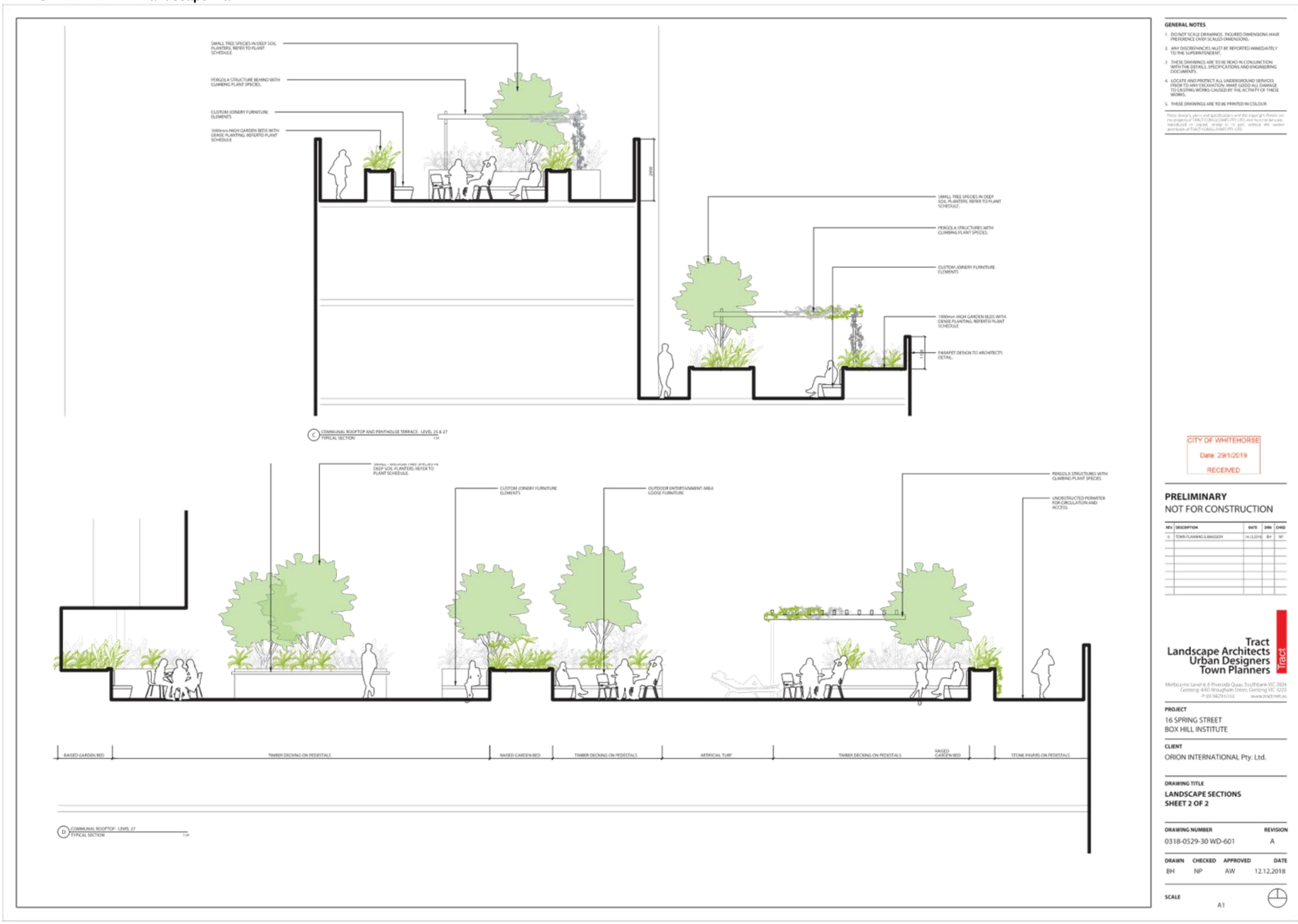


9.1.1 – ATTACHMENT 2. Landscape Plan

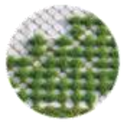
Public Realm | Materials

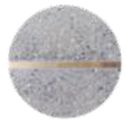
The material palette for the public realm aims to complement materials outlined in the City of Whitehorse Urban Design Guidelines for the surrounding precinct whilst forming links to the proposed built form. Alternating light and dark exposed coloured concrete builds on the architectural materiality on the ground plane while paving patterns mirror vaulted ceilings within the built form.

Steel inlays will form visual separations between pedestrian and shared zones while large timber platforms and honed concrete walls will form physical barriers between the two zones. Broom finished grey concrete will be used for footpaths next to the proposed Spring Street extension.


Exposed Aggregate Concrete or textural change in concrete finish


Exposed Aggregate Concrete or textural change in concrete finish


Site Specific Permeable Paving Pattern


Steel inlay


Timber platforms


Honed white concrete seating walls


Broom finished concrete


Planting

Public Realm | Furniture

Furniture elements within the public realm will contribute to building a sense of community for the BH precinct. The use of public art in the Spring Street extension area will relate to the proposed built form and contribute to the place making of the precinct. The built form will also be reflected in the design of other elements such as bike hoops and the specification of loose cafe style furniture by F &B operators. Lighting will complement the steel inlay by creating a degree of separation between pedestrian and shared zones after hours.


Sculptural bike hoops


Loose cafe style tables & chairs


Short stem in ground lighting

Level One - Four | Materials

Materiality of the podium levels will consist of a combination of stone pavers and timber decking that complement the architectural palette while enabling seamless integration between the designs of the interior and exterior spaces. Paving within the upper level terraces will be on pedestals with drainage between the pavers and the structural slab. Concrete walls with timber joinery/furniture elements will provide opportunities for residents and BH employees areas of respite away from the office or home.

Mass planting of a simple and sculptural planting palette will soften the angular design of the hardscape materials.


Concrete Precast Pavers or textural change in concrete finish


Concrete Precast Pavers or textural change in concrete finish


Timber Decking


Long Pile Artificial Turf


Podium Planting

Level One - Four | Furniture

The top level of the podium provides opportunity for residents of the development an area to entertain bigger groups of friends and family away from their apartments. Many of the furniture elements within this space have been selected to enhance this experience. Large feasting tables seating 12 - 15 people will be located under uniquely design timber shade structures allowing use of the space at all times of the day. Outdoor kitchens that include a sink, BBQs and fridges have are also located on level four. Banquette seats and other loose furniture will allow the users to relax while socialising with friends in a flexible environment.


Loose Outdoor Furniture - Couches


Loose Outdoor Furniture - Daybeds


Loose Outdoor Furniture - Bean Bags


Loose Outdoor Furniture - Dining setting

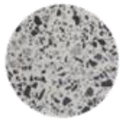

Pendant Lighting


Timber shade structures


Honed white concrete walls with timber seating inserts

Level Twenty Five & Twenty Seven | Materials

The material palette for private and communal terraces on the upper levels has been selected to form connections with the architectural materiality. The introduction of timber seating inserts breaks up concrete walls and stone paving providing a degree of warmth to outdoor entertainment areas. Mass planting of Australian native species will juxtapose the hard lineal furniture design.


Concrete Precast Pavers or textural change in concrete finish


Concrete Precast Pavers or textural change in concrete finish


Timber Decking


Long Pile Artificial Turf


Podium Planting

Level Twenty Five & Twenty Seven | Furniture

Furniture within the private terraces has been selected to exude elegance and provide a point of difference for the penthouse apartments. Banquette seats with centralised gas fires provide opportunities for apartment owners to entertain family and friends. Outdoor kitchens with BBQs, fridges and sinks will be located within the upper level terraces and a roof top bar has been accommodated in the outdoor entertaining area on the Level 29 rooftop terrace.


Banquette seats


Gas fire place


Off form concrete dining table


Outdoor kitchens


Loose Outdoor furniture - Dining setting


Timber shade structures


Pendant Lighting


Honed white concrete walls with timber seating inserts

GENERAL NOTES

1. DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS HAVE PREFERENCE OVER SCALED DIMENSIONS.
2. ANY DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE SUPERINTENDENT.
3. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE DETAILS, SPECIFICATIONS AND ENGINEERING DOCUMENTS.
4. LOCATE AND PROTECT ALL UNDERGROUND SERVICES PRIOR TO ANY EXCAVATION. MAKE GOOD ALL DAMAGE TO EXISTING WORKS CAUSED BY THE ACTIVITY OF THESE WORKS.
5. THESE DRAWINGS ARE TO BE PRINTED IN COLOUR

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRN	CHKD
A	TOWN PLANNING SUBMISSION	14.12.2018	BH	NP

Tract
Landscape Architects
Urban Designers
Town Planners

Melbourne: Level 6, 6 Riverside Quay, Southbank VIC 3006
Geelong: 4/60 Broughton Street, Geelong VIC 3220
P: 03 9429 6133 www.tract.net.au

PROJECT
16 SPRING STREET
BOX HILL INSTITUTE

CLIENT
ORION INTERNATIONAL Pty. Ltd.

DRAWING TITLE
MATERIAL PALETTE

DRAWING NUMBER	REVISION
0318-0529-30 WD-610	A

DRAWN	CHECKED	APPROVED	DATE
BH	NP	AW	12.12.2018

9.1.1 – ATTACHMENT 2. Landscape Plan

Public Realm | Plant Species

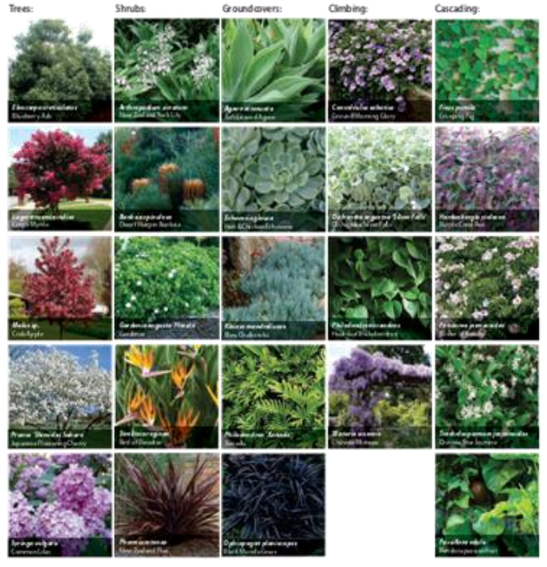
	Botanical Name	Common Name
Trees	Eucalyptus videroxylon	Red Ironbark
	Lagerstroemia indica	Crepe Myrtle
	Magnolia grandiflora	Bull Bay
	Prunus 'Shimidsu Sakura'	Japanese Flowering Cherry
	Quercus palustris	Pin Oak
	Tristaniopsis laurina	Water Gum
Shrubs:	Leucophyta brownii	Cushion Bush
	Liriope muscari 'Royal Purple'	Royal Purple Lily-turf
	Lomandra 'Tanika'	Fine-Leaf Lomandra
	Strelitzia reginae	Bird of Paradise
	Westringia fruticosa 'Blue Gem'	Native Rosemary
Groundcovers:	Cotyledon orbiculata	Silver Waves
	Dianella revoluta	Black Anther Flax Lily
	Juniperus sabina 'Tamariscifolia'	Juniper
	Juniperus horizontalis	Savin Juniper
	Ophiopogon planiscapus	Black Mondo Grass
WSUD:	Carex appressa	Tall Sedge
	Carpobrotus rossii	Native Pig Face
	Convolvulus sabatius	Ground Morning Glory
	Hardenbergia violacea	Purple Coral Pea
	Kleinia mandraliscae	Blue Chalksticks
	Umbrium pentstil	Perennial Statice
	Lomandra longifolia	Creeping Bootbalia
	Phormium tenax	New Zealand Flax

Level One - Four | Plant Species

	Botanical Name	Common Name
Trees	Elaeocarpus reticulatus	Blueberry Ash
	Lagerstroemia indica	Crepe Myrtle
	Malus sp	Crab Apple
	Prunus 'Shimidsu Sakura'	Japanese Flowering Cherry
	Syringa vulgaris	Common Lilac
	Syzygium sp	Lilly Pilly
Shrubs:	Arthropodium cirratum	New Zealand Rock Lily
	Olivia miniata	Clivia
	Correa 'Ruby Red'	Correa
	Gardenia augusta 'Florida'	Gardenia
	Strelitzia reginae	Bird of Paradise
Groundcovers:	Agave attenuata	Soft Leaved Agave
	Echeveria glauca	Hen & Chicken Echeveria
	Kleinia mandraliscae	Blue Chalksticks
	Ophiopogon planiscapus	Black Mondo Grass
	Phormium tenax	New Zealand Flax
Cascading:	Casuarina glauca 'Cousin It'	Cousin It
	Convolvulus sabatius	Ground Morning Glory
	Dichondra argentea 'Silver Falls'	Dichondra Silver Falls
	Wisteria sinensis	Chinese Wisteria
Climbing:	Ficus pumila	Creeping Fig
	Hardenbergia violacea	Purple Coral Pea
	Pandorea jasminoides	Bower of Beauty
	Parthenocissus tricuspidata	Boston Ivy
	Trachelospermum jasminoides	Chinese Star Jasmine

Level Twenty Five & Twenty Seven | Plant Species

	Botanical Name	Common Name
Trees	Elaeocarpus reticulatus	Blueberry Ash
	Lagerstroemia indica	Crepe Myrtle
	Magnolia grandiflora	Bull Bay
	Malus sp	Crab Apple
	Prunus 'Shimidsu Sakura'	Japanese Flowering Cherry
	Syringa vulgaris	Common Lilac
	Syzygium sp	Lilly Pilly
Shrubs:	Arthropodium cirratum	New Zealand Rock Lily
	Banksia spinulosa	Dwarf Hairpin Banksia
	Gardenia augusta 'Florida'	Gardenia
	Strelitzia reginae	Bird of Paradise
	Phormium tenax	New Zealand Flax
Groundcovers:	Agave attenuata	Soft Leaved Agave
	Echeveria glauca	Hen & Chicken Echeveria
	Kleinia mandraliscae	Blue Chalksticks
	Philodendron 'Xanadu'	Xanadu
	Ophiopogon planiscapus	Black Mondo Grass
Cascading:	Convolvulus sabatius	Ground Morning Glory
	Dichondra argentea 'Silver Falls'	Dichondra Silver Falls
	Philodendron scandens	Heartleaf Philodendron
	Wisteria sinensis	Chinese Wisteria
Climbing:	Ficus pumila	Creeping Fig
	Hardenbergia violacea	Purple Coral Pea
	Pandorea jasminoides	Bower of Beauty
	Trachelospermum jasminoides	Chinese star Jasmine
	Passiflora edulis	Pandora passionfruit



GENERAL NOTES

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REV	DESCRIPTION	DATE	DRN	CHKD
A	TOWN PLANNING SUBMISSION	14.12.2018	BH	NP

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PROJECT
16 SPRING STREET
BOX HILL INSTITUTE

CLIENT
ORION INTERNATIONAL Pty. Ltd.

DRAWING TITLE
PLANTING PALETTE

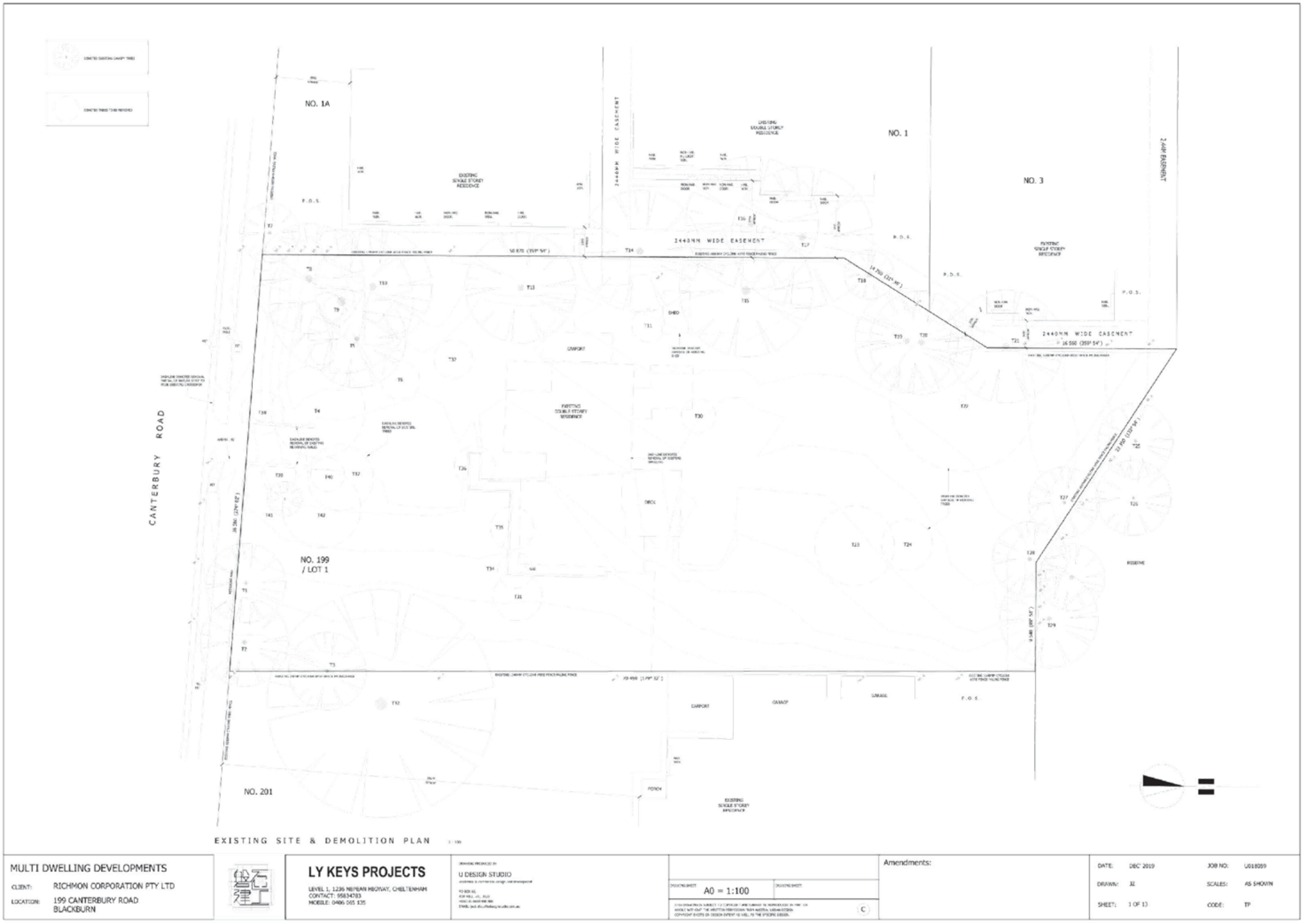
DRAWING NUMBER	REVISION
0318-0529-30 WD-611	A

DRAWN	CHECKED	APPROVED	DATE
BH	NP	AW	12.12.2018

9.1.2 199 Canterbury Road, Blackburn (LOT 1 LP 114506) Development of the land for five (5) double-storey dwellings, including associated SLO2 tree removal and buildings and works within 4 metres of SLO2 trees, and alteration of access to a Road Zone Category 1.

Attachment 1 WH/2019/2 Plans

9.1.2 – ATTACHMENT 1. WH/2019/2 Plans



9.1.2 – ATTACHMENT 1. WH/2019/2 Plans

9.1.2 – ATTACHMENT 1. WH/2019/2 Plans

SITE ANALYSIS:

BUILDING MATERIALS, FINISHES & COLOURS

MATERIAL	FINISH	COLOUR

CANTERBURY ROAD

DWEL. 1
RUMPUS
ENS
WIR
M / BED
BATH
BED 4
BED 2
BED 3

DWEL. 2
RUMPUS
ENS
M / BED
WIR
BED 2
BATH
BED 3
BED 4

DWEL. 5
BED 3
BED 2
BED 4
STORAGE
BATH
M / BED
ENS
WIR

DWEL. 4
BATH
BED 3
BED 4
ROOF
BED 2
M / BED
WIR
ENS

DWEL. 3
WIR
BED 3
BED 4
BED 2
BATH
WIR
ENS
M / BED
STORAGE

PROPOSED SITE & FIRST FLOOR PLAN

MULTI DWELLING DEVELOPMENTS
CLIENT: RICHMON CORPORATION PTY LTD
LOCATION: 199 CANTERBURY ROAD
BLACKBURN

LY KEYS PROJECTS
LEVEL 1, 1236 NEPEAN HIGHWAY, CHELTENHAM
CONTACT: 95834783
MOBILE: 0406 565 135

U DESIGN STUDIO

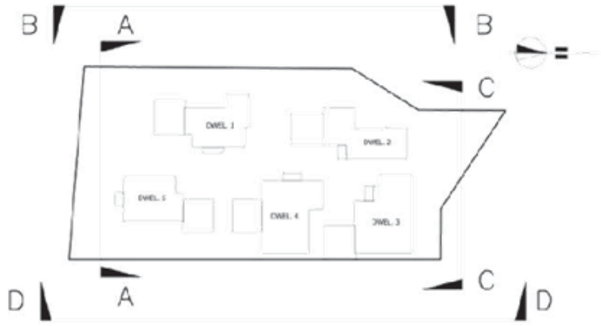
A0 = 1:100

C

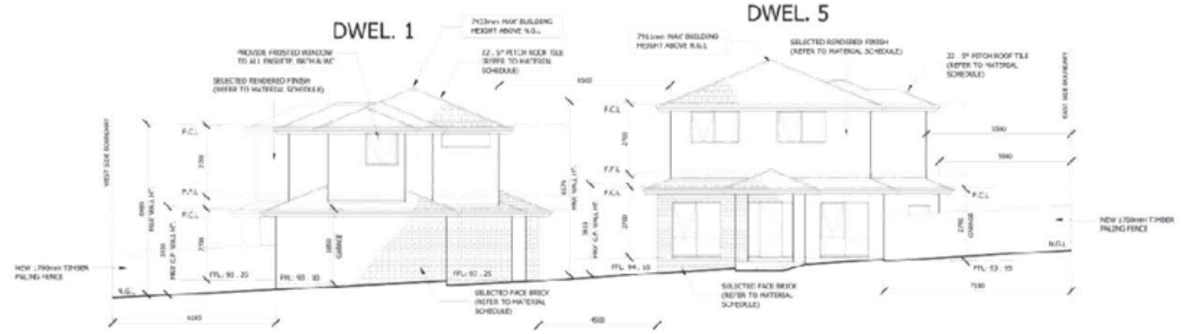
Amendments:

DATE: DEC' 2019
DRAWN: JZ
SHEET: 3 OF 13
JOB NO: U018059
SCALES: AS SHOWN
CODE: TP

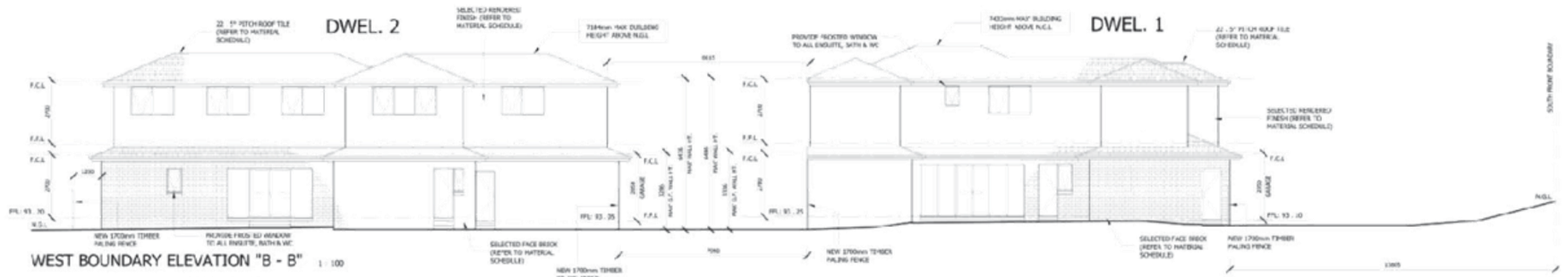
9.1.2 – ATTACHMENT 1. WH/2019/2 Plans



ELEVATION LOCATION PLAN 1 : 100
(NOT TO SCALE)



SOUTH BOUNDARY ELEVATION "A - A" 1 : 100



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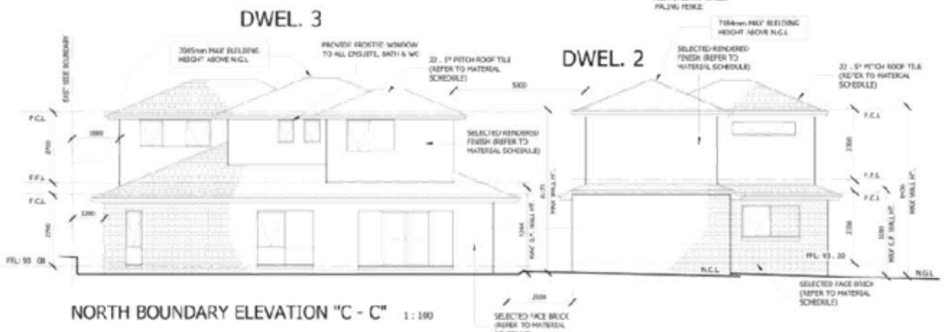

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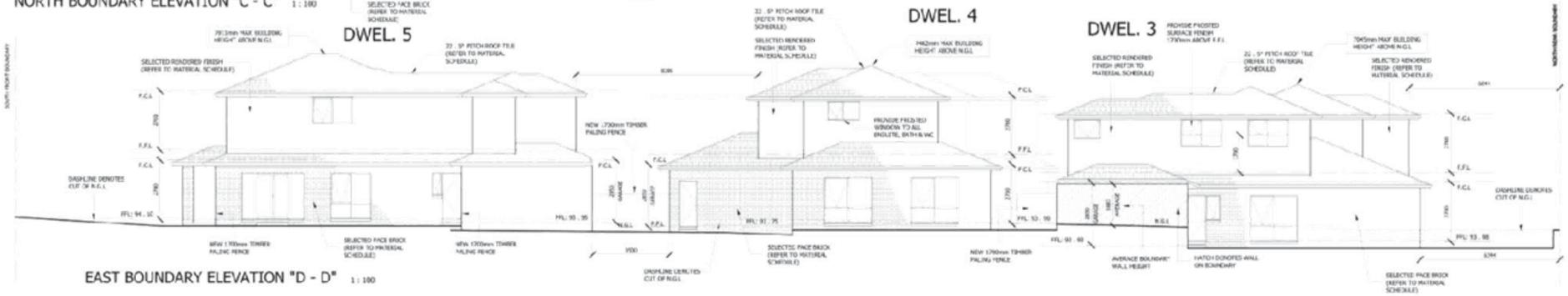


EAST BOUNDARY ELEVATION "D - D" 1 : 100

MULTI DWELLING DEVELOPMENTS
CLIENT: RICHMON CORPORATION PTY LTD
LOCATION: 199 CANTERBURY ROAD BLACKBURN

LY KEYS PROJECTS
JEVEL 1, 1230 NEPEAN HIGHWAY, CHELTENHAM
CONTACT: 0583 4783
MOBILE: 0406 065 135

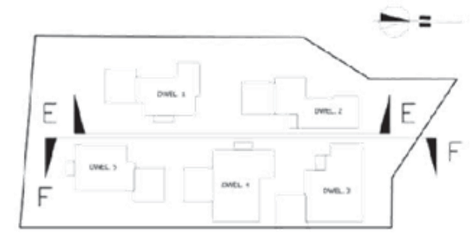
U DESIGN STUDIO

ELEVATION
A1 = 1:100 | A3 = 1:200

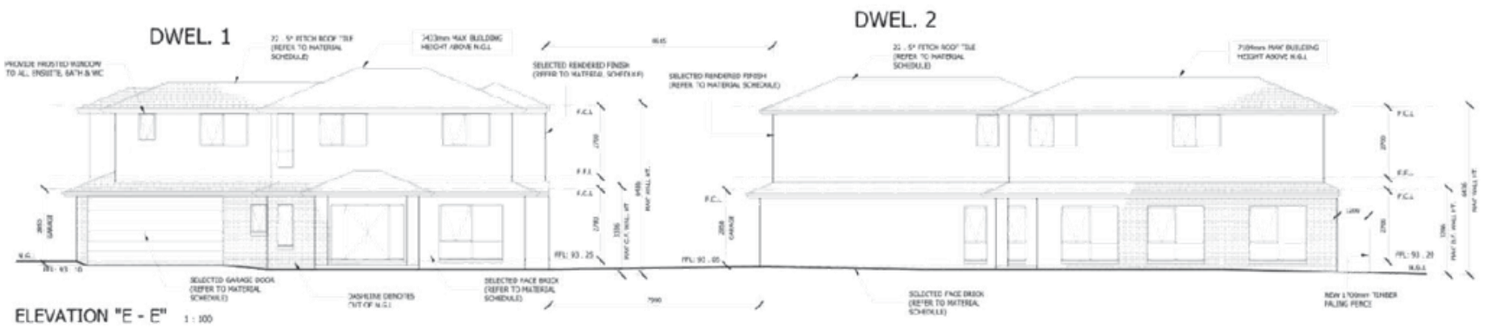
Amendments:

DATE: DEC 2019 | JOB NO: U018055
DRAWN: JZ | SCALES: AS SHOWN
SHEET: 4 OF 13 | CCDC: TP

9.1.2 – ATTACHMENT 1. WH/2019/2 Plans



ELEVATION LOCATION PLAN 1 : 100
(NOT TO SCALE)



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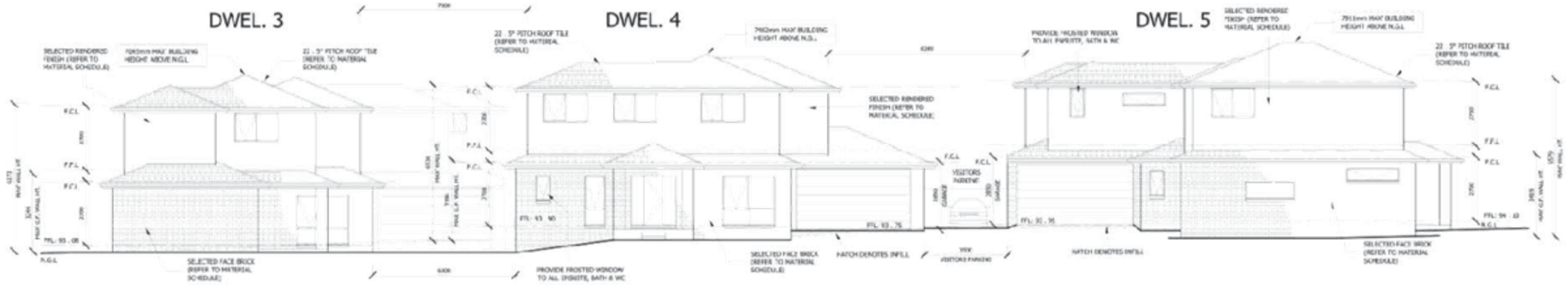

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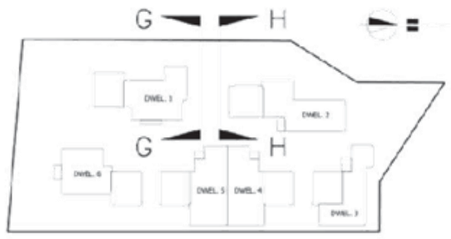
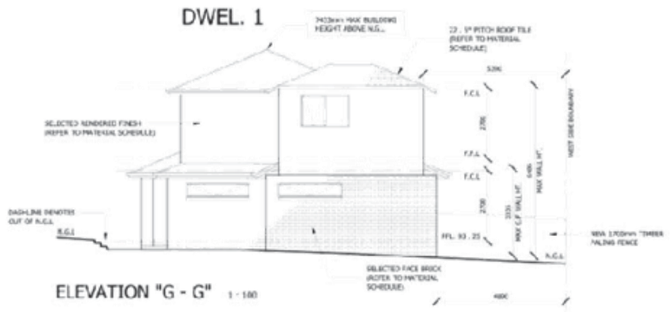


ELEVATION LOCATION PLAN 1 : 100
(NOT TO SCALE)



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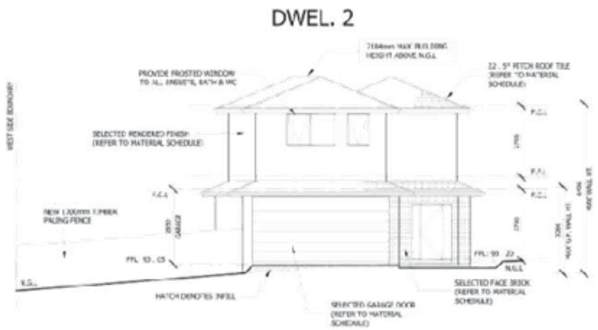
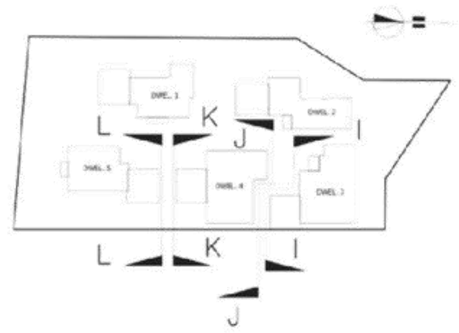


ELEVATION "H - H" 1 : 100

MULTI DWELLING DEVELOPMENTS CLIENT: RICHMON CORPORATION PTY LTD LOCATION: 199 CANTERBURY ROAD BLACKBURN	LY KEYS PROJECTS JEVEL 1, 1230 NEPEAN HIGWAY, CHELTENHAM CONTACT: 55830783 MOBILE: 0406 065 135	U DESIGN STUDIO	ELEVATION A1 = 1:100 A3 = 1:200
Amendments:	DATE: DEC 2019 JOB NO: U018055 DRAWN: JZ SCALES: AS SHOWN SHEET: 5 OF 13 CODE: TP		

9.1.2 – ATTACHMENT 1. WH/2019/2 Plans



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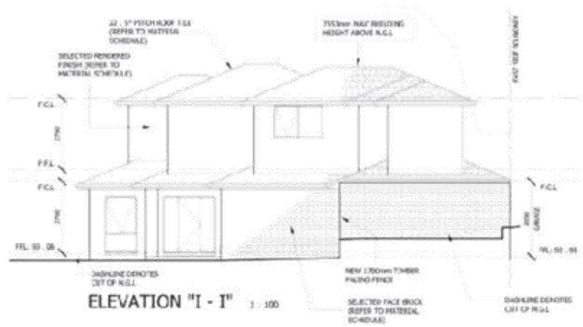
(NOT TO SCALE)

DWEL. 3



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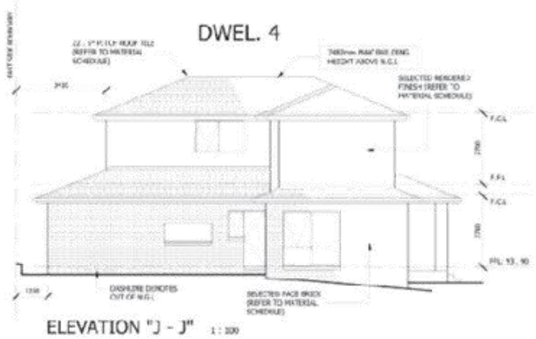
DWEL. 4



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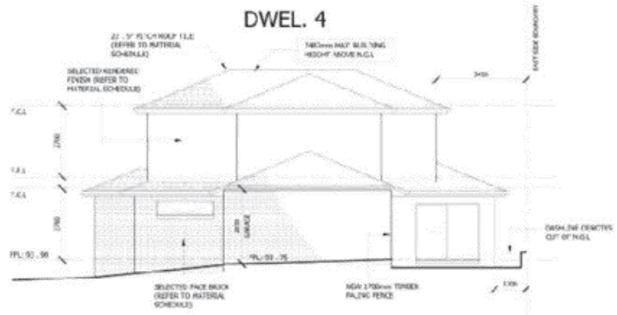
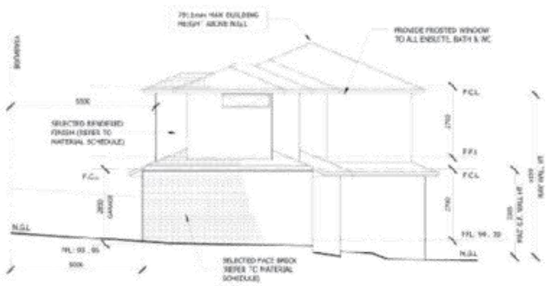
DWEL. 4



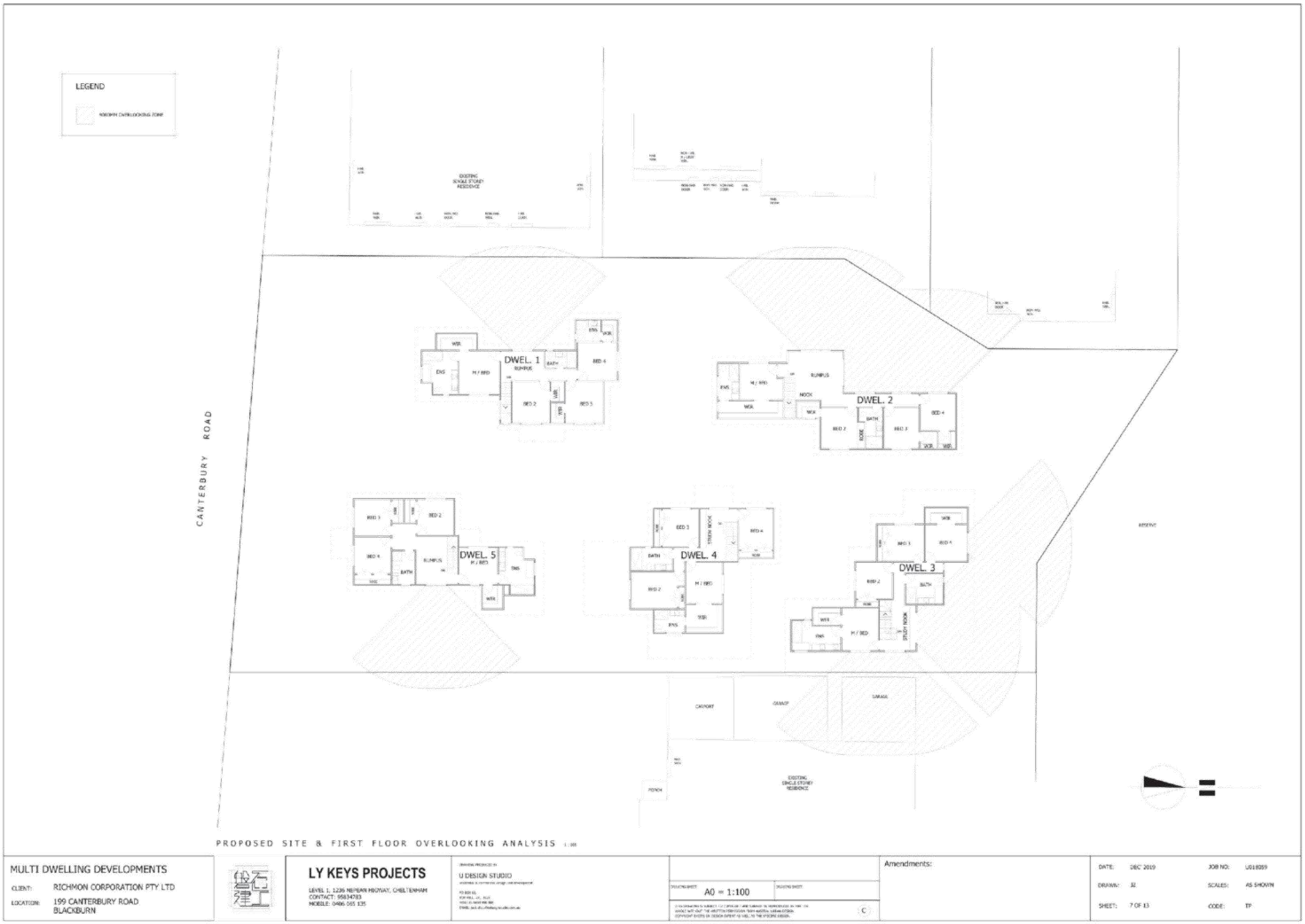
DWEL. 5



ELEVATION "L - L" 1 : 100

MULTI DWELLING DEVELOPMENTS CLIENT: RICHMON CORPORATION PTY LTD LOCATION: 199 CANTERBURY ROAD BLACKBURN	LY KEYS PROJECTS LEVEL 1, 123C NEPEAN HIGHWAY, CHELTENHAM CONTACT: 9583 4783 MOBILE: 0466 865 135	U DESIGN STUDIO	ELEVATION A1 = 1:100 A3 = 1:200 C	Amendments:	DATE: DEC 2019 JOB NO: U018055 DRAWN: JZ SCALES: AS SHOWN SHEET: 6 OF 13 CODE: TP

9.1.2 – ATTACHMENT 1. WH/2019/2 Plans



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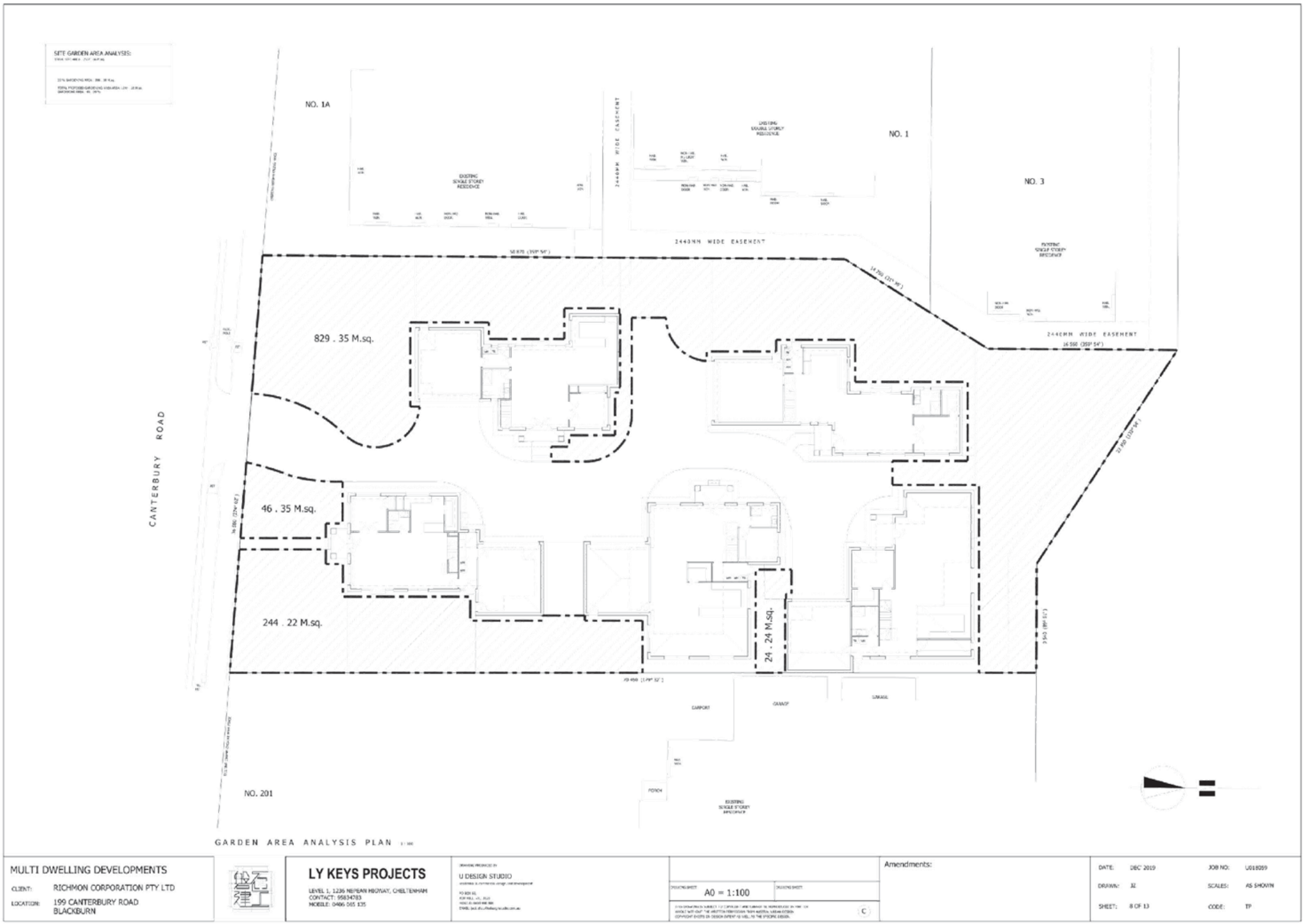

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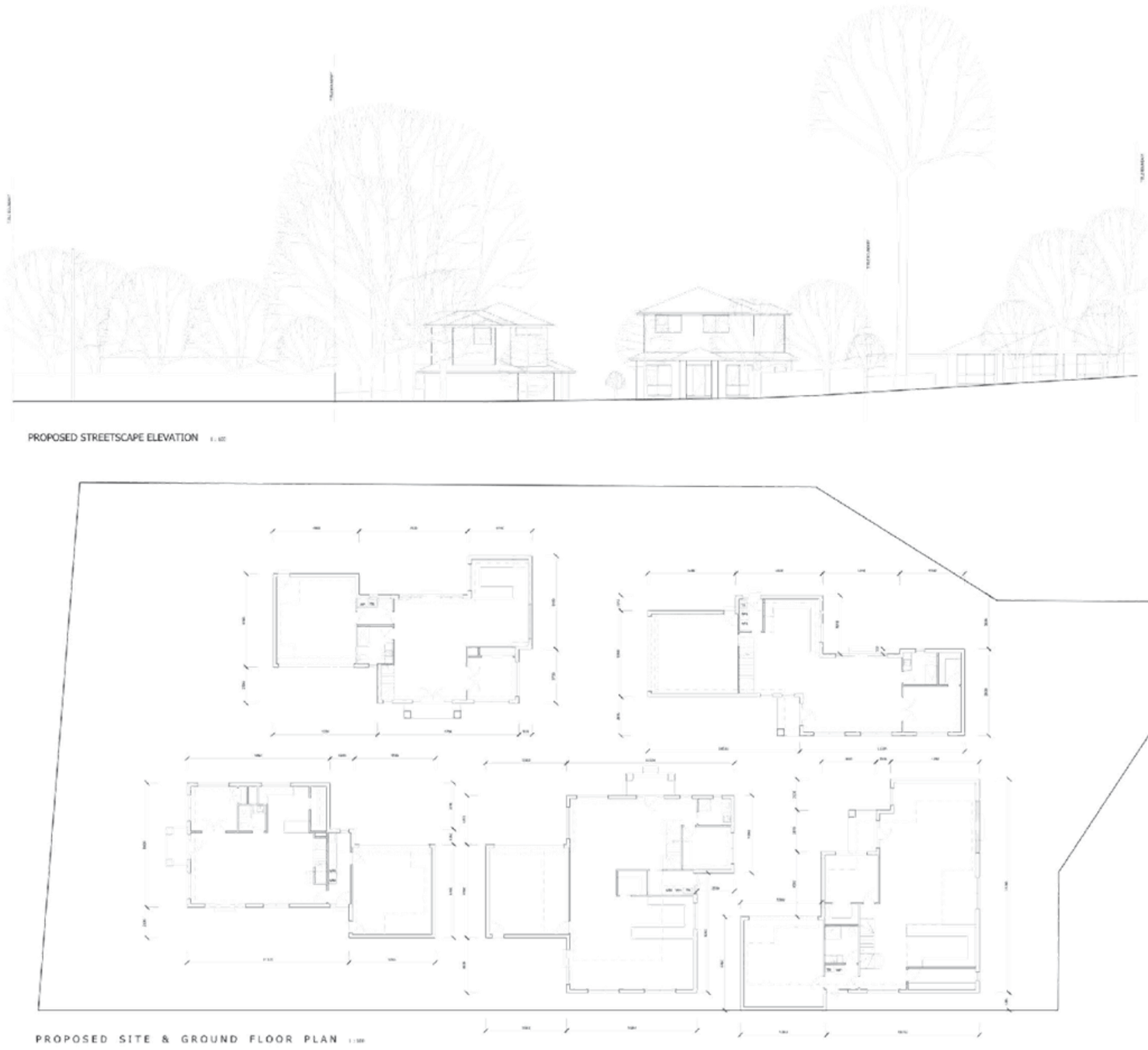

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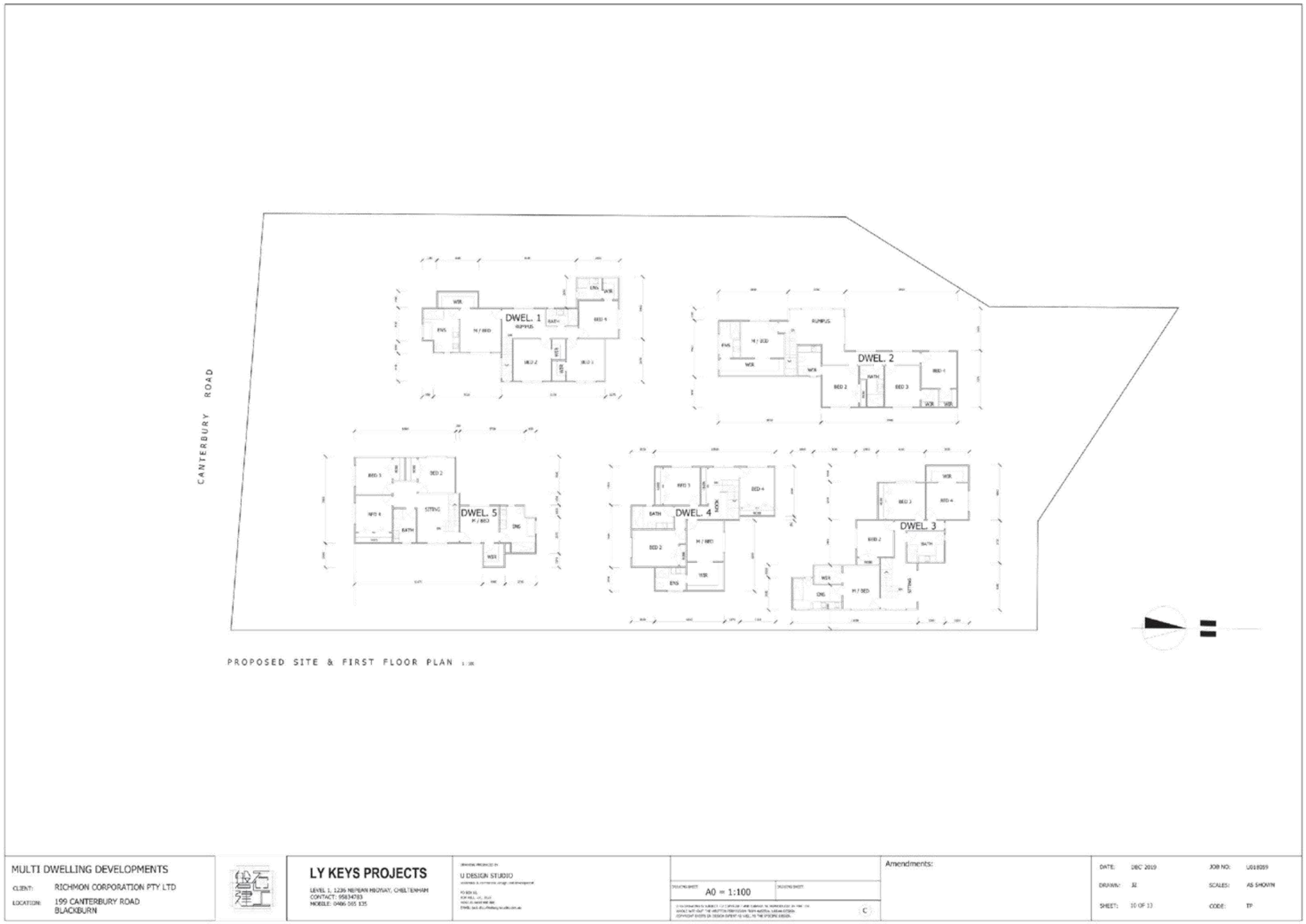

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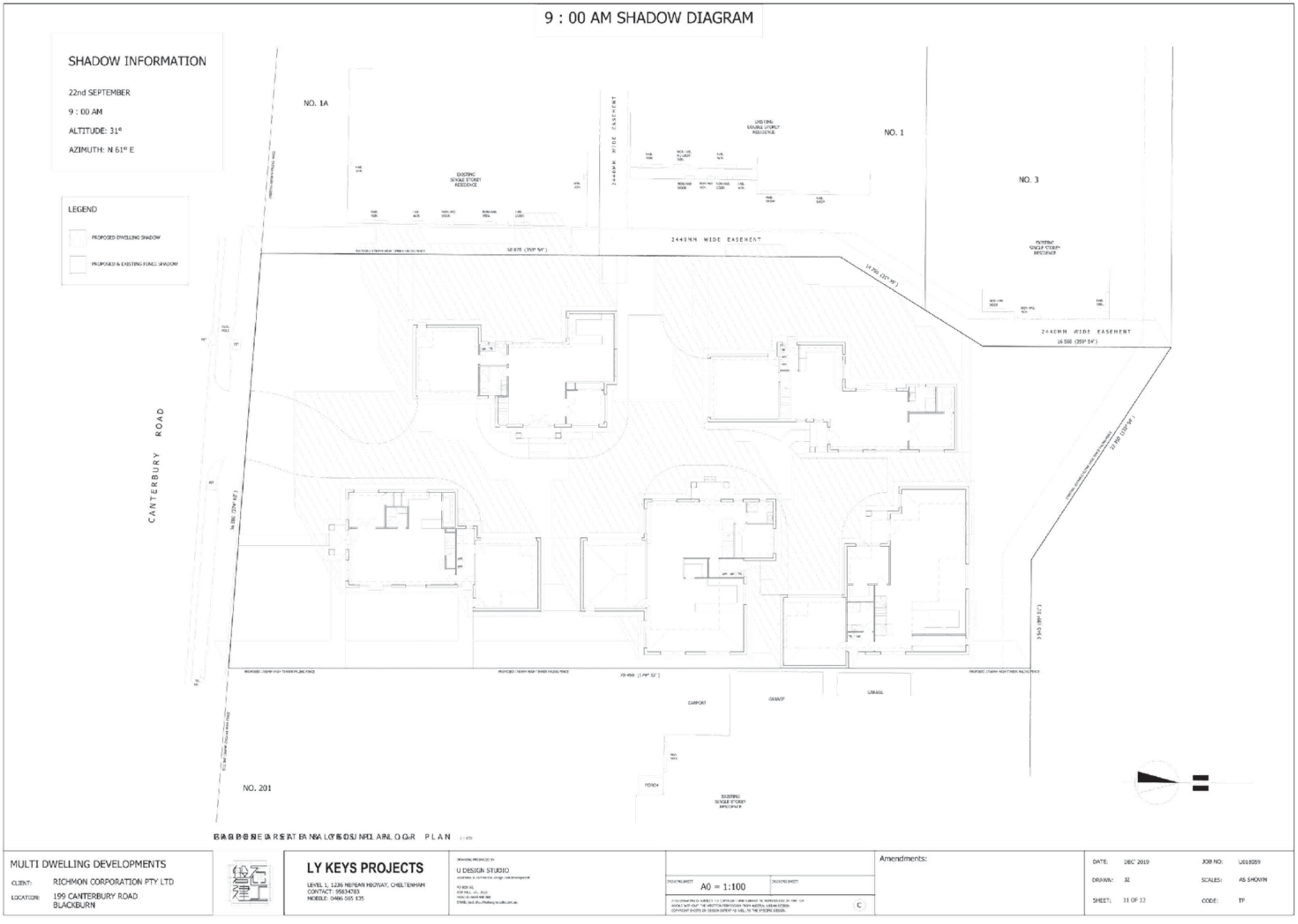

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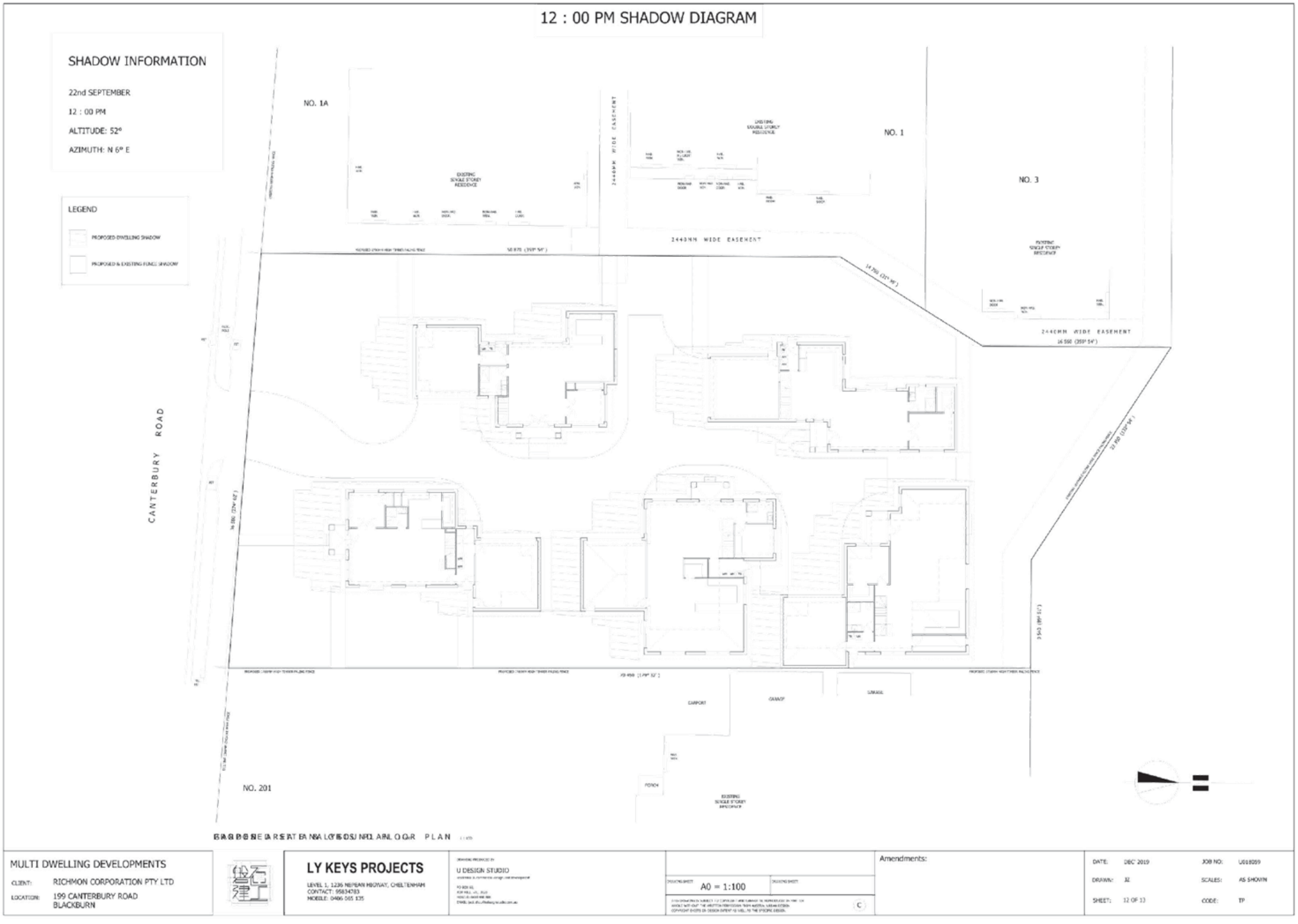

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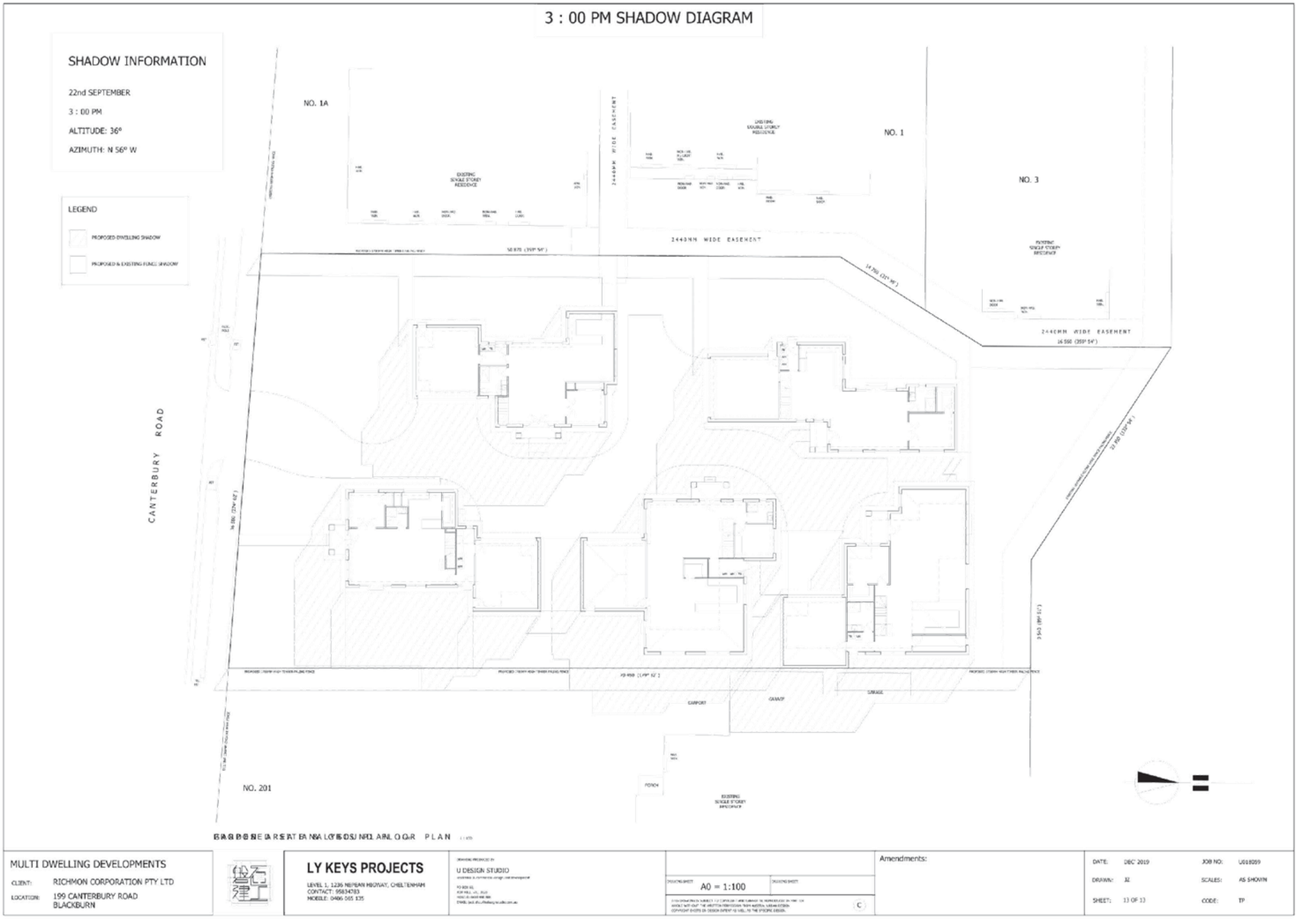

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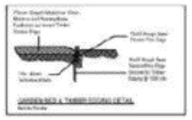
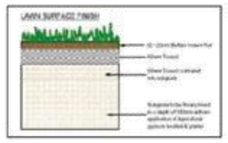




PLANTING SCHEDULE

	ID	Qty	Common Name	Botanical Name	Height x Width @ Maturity (m)	Pot Size @ Install (cm)
Trees						
	Al	2	Lightwood	Acacia implexa	8.0 x 6.0	30
	DFL	2	Dwarf Flowering Gum	Corymbia ficifolia 'Lollypops'	7.0 x 4.0	30
	Ebo	2	Red Box	Eucalyptus polyanthemos	15 x 8.0	30
	Er	2	Narrow-leaved Peppermint	Eucalyptus radiata	15 x 8.0	30
Shrubs & Groundcovers						
	As	32	Gold Dust Wattle	Acacia subrigens	2.0 x 1.5	20
	ALL'	7	Dwarf Boxer Wattle 'Limelight'	Acacia cognata 'Limelight'	1.2 x 1.2	20
	B'BC'	23	Birthday Candles	Banksia 'Birthday Candles'	0.3 x 0.8	14
	Bo'M'	18	Boronia	Boronia heterophylla 'Moonglow'	1.0 x 1.5	14
	C'S'	23	Slim	Callistemon 'Slim'	3.0 x 1.0	20
	C'DD'	36	Dusky Bells	Correa 'Dusky Bells'	0.2 x 1.0	tubestock
	Cr	26	Common Correa	Correa reflexa	1.5 x 0.9	14
	Go	21	Hop Goodenia	Geodonia ovata	1.0 x 1.0	14
	My'Y	43	Weeping Bloodbalk	Myoporum 'Yareena'	0.1 x 1.0	tubestock
	Or	31	Twiggy Daisy Bush	Olearia ramulosa	0.7 x 0.7	14
	S'BR'	45	Lilly Pilly	Syzygium 'Big Red'	3.0 x 1.5	20
	W'WG'	36	Wyralstine Gem	Westringia 'Wyralstine Gem'	1.2 x 1.0	14
Grasses						
	Di	84	Pale Flax Lily	Dianella longifolia	0.6 x 0.6	tubestock
	Dra	22	Tasman Flax Lily	Dianella tasmanica	1.0 x 1.0	tubestock
	LVW'	68	Lime Wave	Lomandra 'Lime Wave'	0.6 x 0.6	tubestock
	LTC'	64	Little Con	Lomandra 'Little Con'	0.2 x 0.3	tubestock

LANDSCAPE CONSTRUCTION SPECIFICATIONS

SUBGRADE PREPARATION

Site preparation is to be carried out under suitable conditions and in accordance with standard horticultural practice. The use of machinery and tools that may damage soil structure is not acceptable. Garden bed and lawn sub-grade is to be cultivated to a depth of 150mm and shaped to achieve drainage falls prior to adding topsoil. If gypsum is required, this is to be distributed and cultivated into the sub-grade as per the manufacturer's instructions.
Weeds are to be removed prior to sub-grade preparation, top-soiling and planting.

SOIL PREPARATION

Imported topsoil is to be supplied by an approved supplier to a depth of approximately 150-200mm (or as required) for garden beds. Do not spread in muddy conditions. The topsoil is to be a light to medium friable loam (coarse or being compressed into a ball by hand when moist yet can be broken apart immediately after). It's PH will be 6.0 - 7.0 and free from perennial weeds and building rubble. The finished top level after settlement should be 75mm below the edging level, to allow for mulch. Imported topsoil for lawn areas to be supplied to a depth of approximately 100mm (or as required).

TIMBER EDGING

Timber edging is to be installed to separate all lawn, planting areas and blade/capping/ pebble areas. The treated pine timber (or similar) is to be 75mm x 20mm in size, secured with 900mm long stakes at 1200mm spacings.

PLANTS AND PLANTING

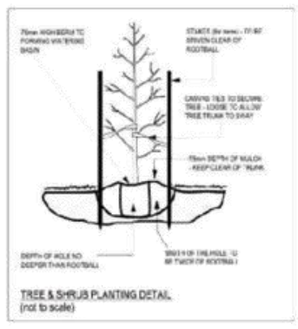
Trees and plants supplied are to be healthy and free from insects, diseases and weeds. Inspect sizes and vessel in the plant schedule over the minimum sizes to be supplied and installed.
When each planting area is prepared, if soil is dry, fill with water and allow to drain away completely. Plant trees are to be loosed outwards if roots are matted in pot. Place plant in centre of hole and ensure that the top of the rootball is flush with the surrounding soil surface and the trees is vertical. Soil is to be backfilled firmly into the hole and thoroughly watered in.
Trees are to be staked with two hardwood stakes driven firmly into the ground but not through the rootball. Trees are to be secured to the stakes with strong but flexible ties that are tight enough to support the trees in windy conditions but loose enough to stimulate good tree growth and development. Ties less than 600mm from the trees or rooted tree growth for at least the first three years of tree growth.
A slow release fertiliser e.g. Osmocote or similar) is to be applied to all garden beds as specified by the manufacturer and worked away from the plant's stem and then watered - immediately. A layer of aged organic mulch to a minimum depth of 75mm is to be applied to all planting areas after planting is completed.

IRRIGATION

An in-ground drip irrigation system is to be installed to water all planting areas.

DRAINAGE

Surface and sub-surface drainage is to be specified by a certified consulting engineer.



TREE & SHRUB PLANTING DETAIL
(not to scale)

D	12/19	Rev 3
C	10/19	Rev 2
B	06/19	Rev 1
A	03/19	Design 1

NO.	DATE	NOTE

THE BUILDER IS RESPONSIBLE FOR THE SETTING OUT OF THE WORKS, THE CHECKING OF ALL DIMENSIONS AND LEVELS ON SITE, AND THE REPORTING OF ANY DISCREPANCIES TO THE PROPERTION PRIOR TO COMMENCEMENT OF WORK. DO NOT SCALE FROM DRAWINGS.

Client
Richmon Corp. Pty. Ltd.

Address
199 Canterbury Road
Blackburn

Project
Multi Dwelling Development

Drawing
Landscape Plan

Zenith Concepts
Landscape Design
17 Abbott Street, Sandringham
PO Box 9067
P 03 9598 2129
M 0417 399 637
E landscapes@zenithconcepts.com

Scale
1:200

Date
December 2019

Rev.
D

Dwg No.
Sheet 1 of 1 (A1)

9.1.3 Amendment C219 to the Whitehorse Planning Scheme Municipal Wide Significant Landscape Overlay Consideration of Planning Panel report

Attachment 1 Amendment C219: Panel Report

Attachment 2 Amendment C219: Clauses for adoption w/ tracked changes

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Planning and Environment Act 1987

Panel Report

Whitehorse Planning Scheme Amendment C219
Municipal Wide Tree Study

23 January 2020

VICTORIA State Government | Planning Panels Victoria

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Planning and Environment Act 1987

Panel Report pursuant to section 25 of the Act

Whitehorse Planning Scheme Amendment C219

Municipal Wide Tree Study

23 January 2020

Michael Ballock, Chair

Chris Harty, Member

VICTORIA State Government | Planning Panels Victoria

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Glossary and abbreviations

Act	*Planning and Environment Act 1987*
Additional Analysis Report	Municipal Wide Tree Study Part 2: Additional Analysis in Garden Suburban and Bushland Suburban Character Precincts, March 2019
Council	Whitehorse City Council
DELWP	Department of Environment, Land, Water and Planning
Discussion Paper	Municipal Wide Tree Study Discussion Paper, March 2016
Forest Strategy	City of Whitehorse Urban Forest Strategy 2018
GRZ	General Residential Zone
Housing Strategy	Whitehorse Housing Strategy 2014 (Whitehorse Housing and Neighbourhood Character Review)
MPS	Municipal Planning Strategy
MSS	Municipal Strategic Statement
NRZ	Neighbourhood Residential Zone
Options Report	Municipal Tree Study Final Options and Recommendations Report June 2016
Planning Scheme	Whitehorse Planning Scheme
PPF	Planning Policy Framework

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PPN07	*Planning Practice Note 7 Vegetation Protection in Urban Areas*
RGZ	Residential Growth Zone
SLO1	Significant Landscape Overlay Schedule 1
SLO2	Significant Landscape Overlay Schedule 2
SLO9	Significant Landscape Overlay Schedule 9
Study	Municipal Wide Tree Study
VCAT	Victorian Civil and Administrative Tribunal
VPO1	Vegetation Protection Overlay Schedule 1
VPO2	Vegetation Protection Overlay Schedule 2
VPO3	Vegetation Protection Overlay Schedule 3
VPO4	Vegetation Protection Overlay Schedule 4
VPP	Victoria Planning Provisions

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Overview

Amendment summary	
The Amendment	Whitehorse Planning Scheme Amendment C219
Common name	Municipal Wide Tree Study
Brief description	The Amendment applies Schedule 9 to the Significant Landscape Overlay on a permanent basis to all residential land in the municipality that is not currently included in a permanent Significant Landscape Overlay, including those areas covered by the Vegetation Protection Overlay Schedules 1 and 3
Subject land	Generally residential land within the General Residential Zone, Neighbourhood Residential Zone and the Residential Growth Zone, as shown in Figure 1
Planning Authority	Whitehorse City Council
Authorisation	16 June 2019 subject to conditions
Exhibition	18 July to 19 August 2019
Submissions	Number of Submissions: 308 Opposed: 157

Panel process	
The Panel	Michael Ballock (Chair), Chris Harty
Directions Hearing	Box Hill Town Hall, 23 October 2019
Panel Hearing	Nunawading Civic Centre, 2, 4, 5 and 6 December 2019
Site inspections	Unaccompanied, 2 and 5 December 2019
Appearances	Refer to Appendix B
Citation	Whitehorse PSA C219 [2019] PPV
Date of this Report	23 January 2020

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Executive summary

Whitehorse Planning Scheme Amendment C219 (the Amendment) seeks to apply the Significant Landscape Overlay Schedule 9 (SLO9) on a permanent basis to all residential land in the municipality that is not currently included in a permanent Significant Landscape Overlay (SLO), including those areas covered by the Vegetation Protection Overlay Schedules 1 (VPO1) and 3 (VPO3). The Amendment would replace the interim SLO9 that was applied by Amendment C191. The Amendment also deletes Vegetation Protection Overlay Schedules 2 (VPO2) and 4 (VPO4) and makes associated changes to local policy.

Key issues raised in submissions included:

- safety hazard
- costs associated with planning permit applications
- imposition on private property rights
- impact on development
- intent of the control.

The role of trees and vegetation contributing to a cooler and greener Melbourne is detailed in the planning scheme in both state and local policy. One of the defining characteristics of the eastern suburbs of Melbourne, which includes the City of Whitehorse, is that they are *"leafy and green."* The Amendment focuses on canopy trees and their role in contributing to neighbourhood character. The issue for Council was then whether there was a *"particular characteristic about this part of Melbourne that is special or different and which warrants protection and particular attention by the scheme."*

In response, Council has commissioned a number of reports to better understand the roles of trees as part of the neighbourhood character of the General Residential, Neighbourhood Residential and Residential Growth Zones in the municipality. These reports include:

- Municipal Wide Tree Study Discussion Paper, March 2016
- Municipal Tree Study Final Options and Recommendations Report June 2016
- Municipal Wide Tree Study Part 2: Additional Analysis in Garden Suburban and Bushland Suburban Character Precincts, March 2019
- City of Whitehorse Urban Forest Strategy 2018
- Whitehorse Housing and Neighbourhood Character Review, 2014.

Collectively, the first three reports make up the Municipal Wide Tree Study which forms the strategic basis for the Amendment.

The SLO9 has generated a significant range of submissions ranging from the blanket application of the control going too far, to the control having too many exemptions from the need for a permit to not having enough flexibility regarding permit requirements.

The permanent application of SLO9 over the balance of the residential areas of Whitehorse creates, in the Panel's view, a different context. The effect of this much wider application of the SLO9 means that greater attention should be given to matters of tree safety, the costs associated with making an application and the imposition on property owners. The Panel accepts that the provisions of the proposed permanent SLO9 is reflective of a more nuanced

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approach to addressing a range of issues that arise from applying a blanket control over the residential areas of Whitehorse.

The Panel concludes that:

- the Amendment is well founded and strategically justified and should proceed subject to addressing the more specific issues discussed in this report
- the Municipal Wide Tree Study is an appropriate basis for the permanent introduction of the SLO9
- the introduction of the SLO9 on a permanent basis will not have an adverse impact on housing delivery
- the SLO9 is an appropriate tool for tree protection in the Bush Suburban and Garden Suburban character areas
- tree safety is appropriately addressed under the Amendment
- the permit exemption provisions applying to dead, dying and dangerous trees in the SLO9 are appropriate
- an additional decision guideline be included which deals with the provision of replacement trees where trees are removed or destroyed
- Council should consider the provision of pre-application advice from a qualified arborist about the health of trees
- the imposition on private property rights with the Amendment are acceptable given the broader community benefits that derive from the controls to protect the retention and replacement of canopy trees and their contribution to canopy tree cover and neighbourhood character
- the cost burden from the permit process is reasonable and can be further mitigated with support from Council for individual applications for single tree removals
- Council should consider waiving the permit fee for VicSmart tree removal applications and engaging an arborist to provide an assessment and report on these applications
- it is appropriate for the controls of the SLO9 to differ from those of the SLOs 1 to 8
- the SLO9 provides an acceptable level of control over canopy tree loss in support of its role and contribution to neighbourhood character and reduction of loss from 'moonscaping' practices
- the SLO9 exemptions relating to public land are acceptable
- It is not necessary to expand the application of the SLO9 over public and Crown land areas given the Urban Forest Strategy includes policy and provisions to reasonably manage trees and vegetation on public land that Council owns and manages
- it is acceptable for a property to be covered by the SLO9 and VPO3
- the list of environmental weeds included in SLO9 is appropriate
- the Panel considers the changes proposed to Clauses 21.05, 21.06, 22.03 and 22.04 reasonable and support the introduction of the SLO9 into the planning scheme.
- the post exhibition changes to the SLO9 are appropriate
- the landscape character objectives should be reviewed to better encapsulate the landscape character that is sought to be protected under the SLO9
- the exemption provisions around tree height and width should be redrafted to be made clearer.

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Recommendations

Based on the reasons set out in this Report, the Panel recommends that Whitehorse Planning Scheme Amendment C219 be adopted as exhibited subject to the following:

1. **Amend Schedule 9 to the Significant Landscape Overlay in the form of the Panel preferred version in Appendix D.**

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1 Introduction

1.1 The Amendment

(i) Amendment description

The purpose of the Amendment is to apply the Significant Landscape Overlay Schedule 9 (SLO9) on a permanent basis to all residential land in the municipality that is not currently included in a permanent SLO, including those areas covered by the Vegetation Protection Overlay Schedule 1 (VPO1) and Schedule 3 (VPO3). This Amendment replaces the interim SLO9 that was applied by Amendment C191. The Amendment also deletes Schedule 2 (VPO2) and Schedule 4 (VPO4) to the VPO.

Specifically, the Amendment proposes to:

- amend the planning scheme maps by applying the SLO Schedule 9 on a permanent basis and delete the VPO2 and VPO4
- amend Clause 21.05 (Environment) to:
  - strengthen references to the importance of tree preservation and retention to the neighbourhood character of Whitehorse in the policy basis and objectives
  - clarify the lot size in areas affected by the SLO as well as the application of the tall tree ratio.
- amend Clause 22.04 (Tree Conservation) to:
  - strengthen references to canopy trees and neighbourhood character in the policy basis and objectives
  - strengthen references in the policy basis about tree retention to ensure that trees are retained if they are also significant to neighbourhood character
  - strengthen references to replanting to ensure that new trees are appropriate for the location, soil type and neighbourhood character
  - refine the provisions relating to buildings and works near existing trees to provide for a minimum setback of 3 metres in SLO9 rather than the 4 metres that applies to SLOs 1-8
  - refine the provisions relating to tree regeneration to provide for a minimum area of 35 square metres in SLO9 rather than the 50 square metres that applies to SLOs 1-8
  - clarify that when a planning permit is triggered, an arborist report is required to justify the removal of all trees, irrespective of the health of the tree.
- amend SLO9 to:
  - apply the schedule on a permanent basis by deleting the expiry date of the control
  - strengthen the landscape character objective to include reference to replacement trees
  - introduce new exemptions providing for the removal, destruction or lopping of a tree without a permit for:
    - trees located less than 3 metres from the wall of a dependent person's unit or dwelling
    - trees located less than 3 metres from an in-ground swimming pool
    - specified environmental weeds
    - trees affecting public utilities including powerlines, services within easements and the like
    - street trees in line with Council's Street Tree Policy

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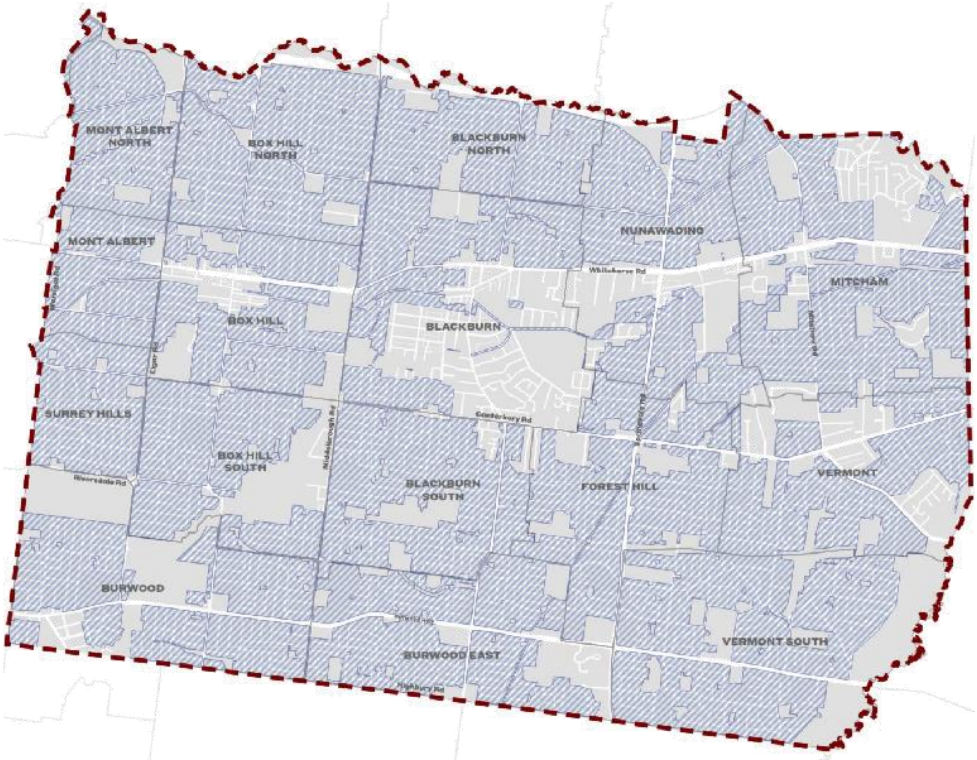
  - trees required to be removed, destroyed or lopped in order to construct or carry out buildings or works approved by a Building Permit issued prior to 8 February 2018
  - trees that may require separate approval to remove, destroy or lop as part of an existing permit condition, a plan endorsed under a planning permit or an agreement under section 173 of the *Planning and Environment Act 1987*.
- lists the following reference documents in Clause 21.05, Clause 21.06, Clause 22.03 and Clause 22.04:
  - Municipal Wide Tree Study Discussion Paper (the Discussion Paper), March 2016
  - Municipal Wide Tree Study Options and Recommendations Report (the Options Report), June 2016
  - Municipal Wide Tree Study Part 2: Additional Analysis in Garden Suburban and Bush Suburban Character Precincts, March 2019 (the Additional Analysis Report).
- includes reference to the following documents in the decision guidelines under SLO9:
  - Whitehorse Neighbourhood Character Study, April 2014
  - Municipal Wide Tree Study Options and Recommendations Report, June 2016 (the Options Report)
  - Municipal Wide Tree Study Part 2: Additional Analysis in Garden Suburban and Bush Suburban Character Precincts, March 2019 (the Additional Analysis Report).
- includes an additional decision guideline in SLO9 to require Council to consider, as appropriate, the cumulative contribution the tree makes with other vegetation in the landscape and the impact of incremental loss
- deletes VPO2 and Schedule 4 to Clause 42.02 from properties where they currently apply.

(ii) The subject land

The Amendment applies to all land in the municipality included in the Neighbourhood Residential Zone (NRZ), General Residential Zone (GRZ), Residential Growth Zone (RGZ) and Low Density Residential Zone that is not covered by an SLO or VPO. This includes properties in Mont Albert, Mont Albert North, Blackburn, Blackburn North, Blackburn South, Nunawading, Mitcham, Surrey Hills, Box Hill, Box Hill North, Box Hill South, Vermont, Vermont South, Forest Hill, Burwood and Burwood East as shown in Figure 1.

Figure 1: Location of the SLO9



1.2 Background

In December 2015, Council engaged planning consultants to undertake the *Municipal Wide Tree Study* (the Study). The consultants prepared a discussion paper which included commentary on the benefits of tree cover, the existing policy context, the current controls in the Planning Scheme, the existing tree coverage in Whitehorse and the decisions at the Victorian Civil and Administrative Tribunal (VCAT) regarding applications in areas with tree controls.

The consultants then prepared a draft Options Report which outlined the tools available to Council to protect tree canopy and the advantages and disadvantages of the tools, including the local planning policy framework, VPO, SLO, residential zone variations, local laws, native vegetation provision, agreements under section 173 of the *Planning & Environment Act 1987* (the Act) and education programs.

Community engagement took place in response to the Options Report in April and May 2016. At its meeting on 18 July 2016, Council adopted the Options Report and resolved to seek authorisation from the Minister for Planning to prepare and exhibit an amendment to the Planning Scheme to extend the SLO to all residential zoned land in the municipality of Whitehorse.

In May 2017, Council requested Ministerial approval to cover all residential zoned land in the municipality, which was not already affected by an existing SLO, by SLO9 on an interim basis (Amendment C191). At the same Council also sought approval to prepare and exhibit an

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amendment to the Planning Scheme to apply the same controls on a permanent basis (Amendment C196).

On 28 December 2017, the Minister for Planning advised Council that he had approved the interim controls (Amendment C191) with changes including increasing the single trunk circumference requirement from 0.5 metres to 1.0 metre.

Amendment C191, as exhibited, provided for the following exemptions:

- a tree less than 5 metres in height and having a single trunk circumference of 1.0 metre or less at a height of one metre above ground level
- the pruning of a tree for regeneration or ornamental shaping
- a tree which is dead or dying or has become dangerous to the satisfaction of the responsible authority
- a tree outside the Minimum Street Setback in the RGZ.

The Minister did not authorise Amendment C196 and advised Council to undertake further strategic work on the landscape character of the municipality to justify the application of the controls on a permanent basis.

In August 2018, Council engaged planning consultants to undertake the further strategic work as directed by the Minister. The further work involved additional analysis about the application of the controls in the Bush Suburban and Garden Suburban neighbourhood character precincts.

This further work concluded that the following additional planning permit exemptions, beyond those included in the interim controls, were appropriate:

- a tree that is less than 3 metres from the wall of an existing house
- a tree that is located less than 3 metres from an in-ground swimming pool
- a tree species that is listed an environmental weed in the proposed controls
- a tree on public land, or in a road reserve removed by, or for, Council.
- the removal, destruction, or lopping of a tree to ensure the safe and efficient function of a utility installation such as powerlines
- a tree that is to be removed as part of buildings or works approved in a Building Permit issued prior to 8 February 2018
- a tree that may require separate approval to remove, destroy or lop as part of an existing planning permit.

The further work also recommended improving local planning policy within the Planning Policy Framework, including the Municipal Strategic Statement (MSS).

On 18 December 2018, the Minister extended the lapse date for the interim SLO9 by 6 months until 30 June 2019 (Amendment C214) to allow the further strategic work to be completed. Council adopted the Additional Analysis Report on 18 March 2019 and resolved to seek authorisation for an amendment.

On 16 June 2019 the Minister's delegate authorised the preparation of Amendment C219 subject to the following conditions:

- There is limited information available about the number of canopy trees likely to require a planning permit for removal. This information would be helpful to understand the number of residential lots likely to be impacted by the requirement for a planning permit under the proposed overlay and in turn the impact on housing growth capacity in residential zones.
- The proposed SLO coverage is extensive. The council provide evidence to demonstrate the high significance of vegetation character in the two character areas.

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The final proposed extent of the SLO in the proposed amendment should be clearly justified during the amendment process.

- The need for a planning permit for any buildings and works within 4 metres of protected tree is likely to place an unreasonable burden on landowners and proponents, particularly those attempting to carry out relatively minor works. The council should reconsider this requirement, and clearly justify any revised requirement of this nature during the amendment process.

On 28 June 2019, the lapse date for the interim SLO9 was extended by Amendment C223 by a further year to allow the completion of Amendment C219.

1.3 Summary of issues raised in submissions

(i) Planning Authority

The key issues for Council were:

- further information about the number of trees likely to require a permit for removal
- the impact on housing growth of the SLO9
- the significance of the vegetation to be protected
- the requirement for a 4 metre setback from buildings and works
- the exemption of Council properties from the SO9.

(ii) Relevant agencies

The key issue for the Yarra Trams was:

- The inclusion of tramways as one of the functions for which a permit is not required for the removal, destruction or lopping of a tree.

The key issue for the VicRoads (now referred to as Transport for Victoria) was:

- The exemption from a permit to remove destroy or lop a tree in a road reserve should also apply to the 'relevant road authority.'

These issues have been resolved by Council's post exhibition changes to amend the exemptions under SLO9.

(iii) Individual submitters or groups of submitters

The key issues by submitters were:

- safety hazards
- costs associated with planning permit applications
- imposition on private property rights
- impact on development
- intent of the control
- the controls should be the same as the SLO1 and SLO2.

These submissions are still outstanding.

1.4 The Panel's approach

The Panel has considered all written submissions made in response to the exhibition of the Amendment, observations from site visits and submissions, evidence and other material presented to it during the Hearing. It has reviewed a large volume of material and has had to be selective in referring to the more relevant or determinative material in the Report. All

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submissions and materials have been considered by the Panel in reaching its conclusions, regardless of whether they are specifically mentioned in the Report.

This Report deals with the issues under the following headings:

- Planning context
- Strategic justification
- The Municipal Wide Tree Study
- Individual issues
- Form and content of the Amendment.

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2 Planning context

2.1 Planning policy framework

Council submitted that the Amendment is supported by various clauses in the Planning Policy Framework (PPF), which the Panel has summarised below.

Victorian planning objectives

The Amendment will assist in implementing State policy objectives set out in section 4 of the Act by enhancing the liveability and neighbourhood character of the existing urban environment in Whitehorse and promote the sustainable use and development of land. The Amendment will provide a net community benefit by retaining and replanting canopy trees that will provide benefits for present and future generations.

Clause 15.01-5S (Neighbourhood Character)

The Amendment supports Clause 15.01 by:

- recognising, supporting and protecting neighbourhood character, cultural identity and sense of place
- ensuring development contributes to existing or preferred neighbourhood character
- ensuring development responds to its context by emphasising the underlying natural landscape character and significant vegetation.

Clause 15.02-1S (Energy and resource efficiency)

The Amendment supports Clause 15.02 by:

- encouraging land use and development that is energy and resource efficient, supports a cooler environment and minimises greenhouse gas emissions
- encouraging retention of existing vegetation and planting of new vegetation as part of development and subdivision proposals.

Clause 21 (the Municipal Strategic Statement)

The Amendment supports the MSS by:

- facilitating environmental protection and improvements to assets including water, flora, fauna and biodiversity (21.05 Environment)
- identifying vegetation as integral to the neighbourhood character in Whitehorse (21.06 Housing).

Clause 22 (local planning policies)

The Amendment supports local planning policies by:

- including policies that aim to retain and protect existing trees and require the provision of sufficient space for the regeneration and growth of new trees (22.04 Tree Conservation)
- minimising loss of trees and vegetation in new development (22.03 Residential development).

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2.2 Other relevant planning strategies and policies

(i) Plan Melbourne

Plan Melbourne 2017-2050 sets out strategic directions to guide Melbourne's development to 2050, to ensure it becomes more sustainable, productive and liveable as its population approaches 8 million. It is accompanied by a separate implementation plan that is regularly updated and refreshed every five years.

Plan Melbourne is structured around seven Outcomes, which set out the aims of the plan. The Outcomes are supported by Directions and Policies, which outline how the Outcomes will be achieved. Outcomes that are particularly relevant to the Amendment are set out in Table 1.

Table 1: Relevant parts of Plan Melbourne

Outcome	Directions	Policies
6	6.4	Make Melbourne cooler and greener
6	6.4.1	Support a cooler Melbourne by greening urban areas, buildings, transport corridors and open spaces to create an urban forest

2.3 Planning scheme provisions

(i) Overlays

The land is subject to the SLO. The purposes of the Overlay are:

> To identify significant landscapes
>
> To conserve and enhance the character of significant landscapes.

The statement of nature and key elements of landscape of the exhibited SLO9 are:

> The leafy garden and bushy character of Melbourne's eastern suburbs can be viewed from many high points throughout Melbourne and is a significant component of the subregion. The treed character of areas such as Whitehorse provides an important 'green' link between Melbourne and the Yarra Valley.
>
> The *Municipal Wide Tree Study* (June 2016 and March 2019) identifies that trees are significant to the landscape character of the City of Whitehorse. The tree cover in Whitehorse simultaneously delivers multiple benefits to the community, including defining neighbourhood character, providing visual amenity, reducing the urban heat island effect in more urbanised areas, improving air quality and energy efficiency, providing habitat for fauna and increasing the wellbeing of people and liveability of neighbourhoods.
>
> The **Garden Suburban Neighbourhood Character Area** generally has formalised streetscapes comprising grassed nature strips, concrete footpaths, kerbs and channels and buildings are generally visible along streets behind low front fences and open garden settings.
>
> Gardens are typically established with canopy trees, lawn areas, garden beds and shrubs and there are typically well defined property boundaries and consistent building siting.
>
> The majority of the municipality is included in the Garden Suburban Neighbourhood Character Area.
>
> The **Bush Suburban Neighbourhood Character Area** generally has a mix of formal and informal streetscapes with wide nature strips and streets are dominated by vegetation with buildings partially hidden behind tall trees and established planting.

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Gardens are less formal, consisting of many canopy trees and property boundary definition can be non-existent or fenced. Buildings appear detached along the street and generally comprise pitched rooftops, with simple forms and articulated facades.

The Bush Suburban Neighbourhood Area includes parts of Blackburn, Box Hill South, Vermont South, Mitcham, Nunawading and Mont Albert North as shown in the Neighbourhood Character Precincts Map contained in the *Neighbourhood Character Study 2014*.

2.4 Ministerial Directions and Practice Notes

Ministerial Directions

Section 12(2) (a) of the Act, requires a Planning Authority to have regard to the Minister's directions. Council submitted that the Amendment is consistent with the *Ministerial Direction on the Form and Content of Planning Schemes* under Section 7 of the Act.

The Amendment is consistent with the Ministerial Direction No 9 – *Metropolitan Strategy*:

- Direction 6.4 of Plan Melbourne 2017-2050 is to "*Make Melbourne cooler and greener*." This direction outlines the benefits of urban greening and notes that Melbourne needs to maintain its urban forest of trees and vegetation on properties.
- Additionally, Policy 6.4.1 is to "*Support a cooler Melbourne by greening urban areas, buildings, transport corridors and open spaces to create an urban forest*." This policy notes that "*residential development provisions must be updated to mitigate against the loss of tree canopy cover and permeable surfaces as a result of urban intensification*."

The Explanatory Report discusses how the Amendment meets the relevant requirements of Ministerial Direction 11 - *Strategic Assessment of Amendments* and *Planning Practice Note 46: Strategic Assessment Guidelines*, August 2018 (PPN46). That discussion is not repeated here.

Planning Practice Notes

The Amendment has been prepared in accordance with *Practice Note No 46 – Strategic Assessment Guidelines for preparing and evaluating planning scheme amendments* and is consistent with the form and structure of the Victorian Planning Provisions.

The Municipal Wide Tree Study, March 2016, undertook an analysis of the overlays for vegetation protection consistent with that envisaged by Planning Practice Note 7 *Vegetation Protection In Urban Areas, August 1999* (PPN07). The Practice Note states that the SLO is appropriate when vegetation is primarily of aesthetic or visual importance in the broader landscape and should be used where vegetation is identified as an important contributor to the character of an area.

3 Strategic justification

3.1 Submissions

Council submitted that the role of trees and vegetation is detailed in the Planning Scheme in both State and local policy. In addition to the matters addressed in Chapter 2 of this report, Council referred to a number of strategic works it has undertaken which, it argued, supports the Amendment. These strategic works and a description provided by Council are:

Municipal Wide Tree Study Discussion Paper, March 2016

The Municipal Wide Tree Study Discussion Paper (Discussion Paper) included background analysis undertaken as part of the Municipal Wide Tree Study. The Discussion Paper gathered information about the importance of trees to the image and character of the area, urban cooling, fauna habitat, social wellbeing, health and economic benefits. The Discussion Paper also analysed the number of existing tools used to manage trees in Whitehorse, including residential zones, overlays and local policy.

Municipal Wide Tree Study Options and Recommendations Report, June 2016

The Options Report detailed the statutory and non-statutory mechanisms that could be used to protect trees, including zoning, overlays, tree education programs and provision of free trees. This Report ultimately recommended extending the SLO across the residential land in the municipality, not already covered by the SLO.

City of Whitehorse Urban Forest Strategy 2018

The Urban Forest Strategy sets a municipal wide minimum target of 30 per cent canopy cover by 2030. Currently canopy cover is estimated at between 22 per cent and 25 per cent. Council controlled land accounts for 10 per cent of the municipality and, consequently, the strategy concludes that additional tree cover will need to be achieved on private land. The strategy recognises that to achieve this level of canopy cover Council will need to facilitate the planting of new canopy cover across both public and private land in addition to protecting existing trees.

Whitehorse Housing and Neighbourhood Character Review, 2014

The final *Whitehorse Housing Strategy 2014 (Whitehorse Housing and Neighbourhood Character Review)* (Housing Strategy) noted that *"trees and variations in the vegetation types and densities are an integral aspect of the urban character of Whitehorse"* and that *"the municipality is dominated by an upper tree canopy which covers a majority of the city."*

Council submitted that the Housing Strategy demonstrated that there is sufficient housing capacity in particular areas of Whitehorse to justify more stringent controls to protect Whitehorse's valued neighbourhoods. Council added that this work was used as the strategic justification for applying the State Government's new residential zones.

Council Plan 2017-2021

Strategic Direction 2 of the Council Plan 2017-2021 is to "*Maintain and Enhance our built environment to ensure a liveable and sustainable city*." Actions to support this include activities which protect neighbourhood character.

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Municipal Wide Tree Study Part 2: Additional Analysis in Garden Suburban and Bush Suburban Character Precincts, March 2019

The Additional Analysis Report reviewed existing characteristics and preferred character statements from the Whitehorse Neighbourhood Character Study in addition to undertaking a field assessment of selected precincts.

The analysis concluded that tree retention alone will not achieve the 30 per cent target of the Urban Forest Strategy and that greater emphasis needs to be placed on residential development achieving canopy cover through the establishment of new canopy trees.

Living Melbourne

Council informed the Panel that *Living Melbourne* is a new urban forest strategy for metropolitan Melbourne which has been prepared by Resilient Melbourne in partnership with The Nature Conservancy.

Council submitted that Living Melbourne sets out key actions to increase canopy cover across Metropolitan Melbourne and has been endorsed by the Department of Environment, Land, Water and Planning (DELWP) and many other government agencies including Whitehorse.

Council concluded:

> Through the work of this Amendment, and the Municipal Wide Tree Study (the Study) Council sought to better understand the true nature, extent and spread of that vegetation, in order to understand whether existing measures in place (including the confined use of the SLO/VPO and planning policy provisions) were appropriate or whether some further protective measures were warranted and appropriate.

3.2 Discussion

The Amendment is supported by a considerable body of work and analysis. The role that vegetation and trees in particular play in achieving environmental outcomes as well as defining the character of an area is well established in Plan Melbourne, the PPF and local policy. From this perspective the protection of mature trees in a metropolitan context has considerable strategic support.

In addition, Council has completed a number of studies to establish the justification for tree control as well as a mechanism to achieve this outcome which provides substantial strategic justification.

For this reason, as well as those set out in the following chapter, the Panel concludes that the Amendment is supported by, and implements, the relevant sections of the PPF, and is consistent with the relevant Ministerial Directions and Practice Notes.

3.3 Conclusion

The Panel concludes:

> The Amendment is well founded and strategically justified and should proceed subject to addressing the more specific issues discussed in the following chapters.

4 The Municipal Wide Tree Study

4.1 The issues

The issues are whether:

- the Study is an appropriate basis for the introduction of the SLO9
- the tree removal controls will have an adverse impact on housing delivery
- whether the controls proposed in the SLO9 are appropriate.

4.2 Relevant policies, strategies and studies

The Study is made up of the following documents:

- the Discussion Paper
- the Options Report
- the Additional Analysis Report.

4.3 Evidence and submissions

4.3.1 The Study

Council submitted that one of the defining characteristics of the eastern suburbs of Melbourne, which includes the City of Whitehorse, is that they are *"leafy and green."* The issue for Council was then whether there was a *"particular characteristic about this part of Melbourne that is special or different and which warrants protection and particular attention by the scheme."*

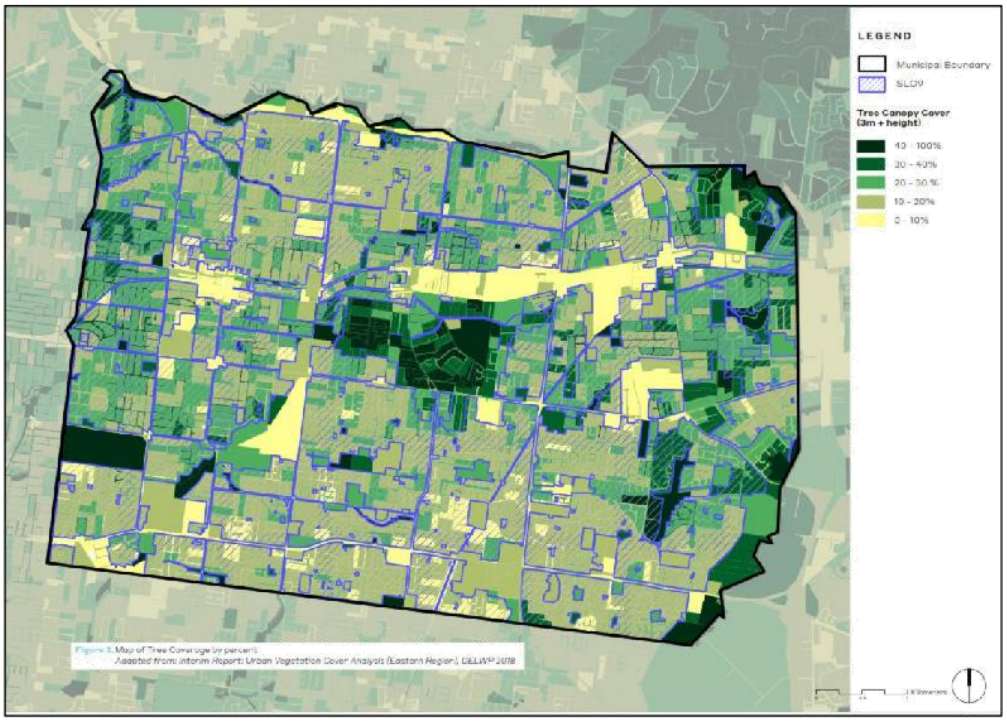
Council argued that state policy and the municipal profile recognise the significance of canopy trees as a key determinant of the character of the residential areas in Melbourne in general and Whitehorse in particular. In addition, the planning scheme has eight existing SLO schedules and the SLO1 and SLO2, that cover part of Blackburn, date back to vegetation controls established in the mid-1980s.

Council submitted that the basis for proposing the SLO9 was the Study which concluded that protective measures were warranted and the SLO9 was the most appropriate means of achieving that protection.

The Study used a computer program to benchmark Whitehorse with other municipalities and assess current land form and canopy cover. Council informed the Panel that this analysis produced an average tree canopy cover of 26.6 per cent for the municipality while the Bush Suburban and Garden Suburban Areas, to which the SLO9 is applied, showed cover of almost 30 per cent and 24 per cent respectively. However, the percentage tree canopy cover varied considerably across the municipality, as shown in.Figure 2. The Options Report concluded:

> The analysis of tree cover over the City indicates that the municipality has a high level of tree cover when compared with most metropolitan areas, and even within the middle ring suburban municipalities. However, the analysis confirms anecdotal reports that tree cover is decreasing over the City, while building site coverage and other hard surfaces are increasing
>
> Areas with tree protection controls have a significantly higher proportion of ground covered by trees, as do areas identified as 'Bush Environment' and 'Bush Suburban' in the neighbourhood character study.

Figure 2: Whitehorse percentage tree cover



Source: Additional Analysis Report

Council advised the Panel that both the Options Report and the Additional Analysis Report reviewed a number of alternative approaches for tree control. The Additional Analysis report concluded:

> Among the various tools implemented in Whitehorse, the SLO provides the only mechanism that relates neighbourhood character to vegetation management, which assists in considering the impact beyond just the trees and property boundaries. The SLO also contains the ability to trigger a permit for buildings and carrying out works, which provides greater integration and focuses on developing to a site's individual conditions.

Mr Reid gave evidence that the Housing Study *"formed the basis of the current suite of residential zones in Whitehorse, identified that canopy tree coverage is fundamental to neighbourhood character across the municipality."* He stated that the Discussion Paper identified tree cover as essential to the established character of Whitehorse and there was scope to implement vegetation protection controls over a broader area. He added that the Discussion Paper identified the clearing of all vegetation on a lot, commonly referred to as '*moonscaping,*' as a significant threat in areas without controls.

He stated that the Options Report included a gap analysis which identified the lack of a definition of a canopy tree. He added other gaps identified included:

- replacement trees – the Planning Scheme lacks replacement requirements
- landscape plans – incorporating tree protection.
- buildings and works controls – permit triggers for buildings and works in close proximity to protected trees.

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- monitoring – monitoring processes are not in place to ensure compliance with landscaping plans
- weed species – existing canopy trees that are regarded as environmental weeds do contribute to overall canopy cover, urban cooling and landscape values.

Mr Reid informed the Panel that the most significant recommendation of the Options Report was to introduce the SLO9 over all residential areas not covered by a SLO and included:

- improving the local planning policy
- strengthening the Council Plan
- strengthening the landscape plan review process
- extending education programs and include welcome packs
- enforcing section 173 agreements on new subdivisions to require canopy tree planting on all sites
- ongoing advocacy for an increase in fines for illegal tree removal
- providing incentives for canopy tree species at Council or community nurseries.

His evidence was that:

> The Additional Analysis reinforced the importance of canopy cover to character and liveability. It found that canopy trees are vitally important for the role they play aesthetically, by reducing the urban heat island effect, providing habitat and offering community wellbeing and health benefits. It found that the gradual loss of canopy coverage throughout the city will diminish its character, liveability and ecological sustainability.

He added that the Additional Analysis Report also considered the impact of the SLO9 on housing growth.

4.3.2 Housing

Council submitted that coverage of the SLO9 matched those residential areas identified as having a Bush Suburban or Garden Suburban character, as shown in Figure 3 and Source: **Additional Analysis Report**

Figure 4 below. In addition, the introduction of permanent tree controls would not have an *"unreasonable impact on the municipality's ability to accommodate its projected population and dwelling growth in the residential zones."*

Council submitted that the SLO9 controls applies largely in the GRZ and RGZ. Mr Reid gave evidence the SLO9 was unlikely to have any impact on dwelling yield in the RGZ due to tree removal exemptions outside the front setback areas coupled with the purpose of the zone, which is intended to accommodate growth. He added that the two out of the three RGZ schedules require new development to provide at least one canopy tree that has the potential to reach 8 metres. From his analysis, Mr Reid concluded that smaller lots in the RGZ are less likely to contain canopy trees than those in the GRZ or in turn the NRZ.

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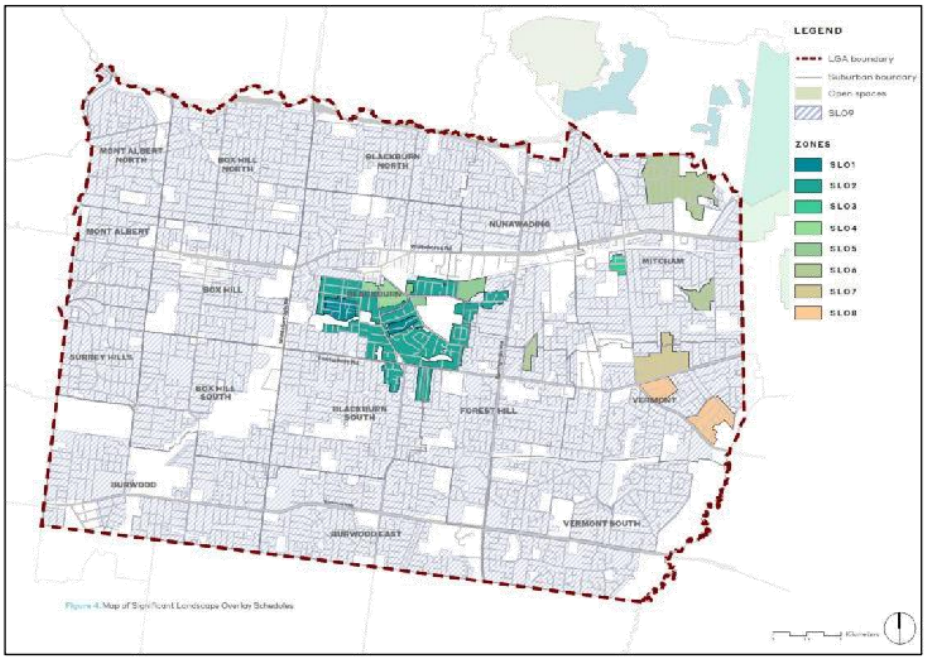
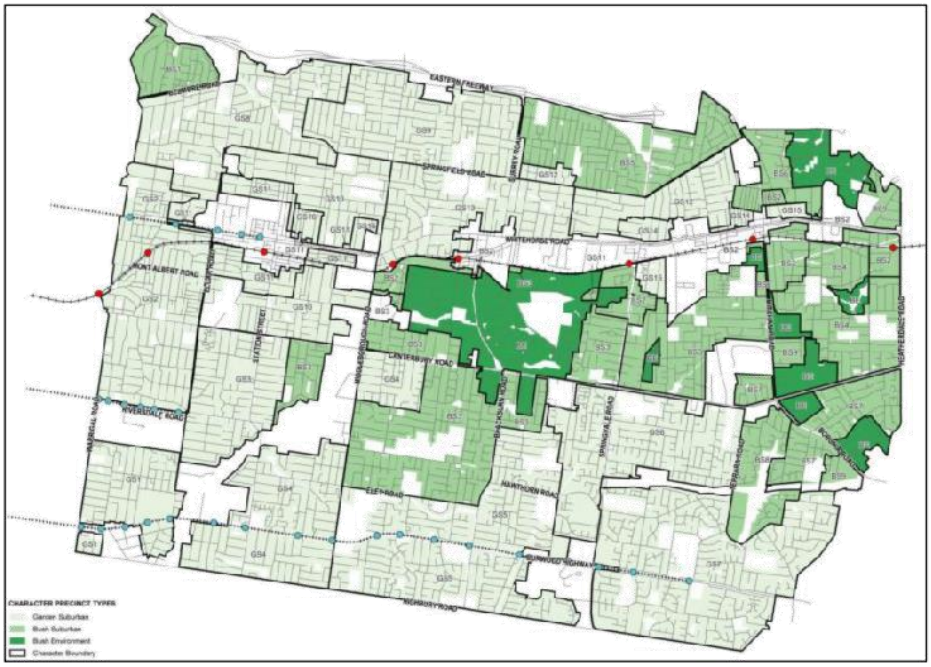
Figure 3: Whitehorse areas covered by SLOs 1 to 9



Source: Additional Analysis Report

Figure 4: Whitehorse Neighbourhood Character Areas



Source: Clause 22.03 of the Planning Scheme

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Council reminded the Panel that the Minister for Planning raised the following issue in the letter of authorisation:

> There is limited information available about the number of canopy trees likely to require a planning permit for removal. This information would be helpful to understand the number of residential lots likely to be impacted by the requirement for a planning permit under the proposed overlay and in turn the impact on housing growth capacity in residential zones.

Mr Reid's evidence summarised the key findings of the Additional Analysis Report with respect to impacts on housing growth as follows:

- the Housing & Character Review concluded that the total residential capacity within the municipality was substantially in excess of projected growth requirements to 2031
- SLO9 does not apply to commercial areas or Neighbourhood Activity Centres, which represented around 25% of available development capacity
- SLO9 is unlikely to have any impact on dwelling yield in the RGZ due to tree removal exemptions outside the front setback areas coupled with the purpose of the zone, which is intended to accommodate growth – the RGZ represented almost 29% of capacity
- SLO9 is likely to have negligible impact on dwelling yield in the NRZ given the conservative development assumptions applied to the zone and the fact that SLO1-8 applies to the most heavily vegetated areas of the municipality – the NRZ represented just under 20% of capacity at the time of review, however, subsequent changes to the zone have increased the development potential in these areas
- SLO9 is likely to have some impact on dwelling yield within the GRZ, noting that the zone schedules require additional open space and tree planting in any case – these areas represented approximately 26% of available capacity.

He stated that the Additional Analysis Report concluded:

- It is highly improbable that the provisions of SLO9 would constrain housing growth to such a magnitude that Whitehorse would not have capacity to house forecast population growth.

Mr Reid's evidence was that the Housing Strategy had underestimated the level of development in Box Hill where the additional dwelling capacity provided in high rise buildings has mitigated the likelihood of the SLO9 adversely impacting on housing growth in Whitehorse.

Mr Reid advised the Panel that further research was undertaken to assess how many properties contain trees that would trigger a permit under the SLO9. His evidence was that the key findings of this analysis were:

- Canopy trees are ubiquitous and widely spread across the residential landscape of Whitehorse, reinforcing the conclusion of the Neighbourhood Character Study that they make an integral contribution to neighbourhood character in all character precincts.
- Canopy tree coverage appears to have played a role in defining the character areas, with the limited change areas (zoned NRZ) containing the highest proportion of lots with canopy trees, followed by the natural change areas (zoned GRZ) and then the substantial change areas (zoned RGZ).
- In all zones, it is the larger lots that are more likely to contain canopy trees than smaller lots. It was apparent during the analysis that many multi-dwelling developments do not preserve sufficient space for the establishment of canopy trees.
- Due to the prevalence of canopy trees on larger sites compared to smaller sites, the greatest threat to overall canopy cover is more likely to be the redevelopment of these sites rather than the removal of individual trees for other reasons.

- The prevalence of canopy trees on larger lots suggests that the majority of future multi-dwelling development applications will need to consider issues related to tree removal, provision or protection. It is worth noting that these proposals will require a planning permit notwithstanding the existence of SLO9.

Council advised the Panel that since the introduction of the interim SLO9 in December 2017, 975 planning permit applications have been triggered under the interim SLO9. Council provided a sample of 186 of these applications (Table 2), made up of at least 10 applications from each suburb.

Table 2: Council application outcomes

Type of decision	Number
Delegate permit issued	83
VCAT directed permit	1
Condition 1 plans approved	97
Council refusal	4
Secondary consent approved	1

Council observed that in all but four of these applications, approval had been given to remove, destroy or lop a tree. Council argued that this outcome supported its view that the introduction of the SLO9 on a permanent basis would not significantly impact housing growth.

4.3.3 SLO9

Council submitted that the Options Report concluded that the SLO controls should be applied to the remaining residential areas and including VPO areas. Council argued that this was the *"preferred option by the residents who participated in the consultation, the majority of which supported the imposition of additional planning controls to protect tree canopy."*

Council added that the Additional Analysis report, in response to the Minister's direction focused more on the strategic justification for the controls. The Additional Analysis Report reviewed a number of vegetation protection tools used by a number of municipalities as well as reference to PPN07. Council submitted that the Additional Analysis report concluded:

> Among the various tools implemented in Whitehorse, the SLO provides the only mechanism that relates neighbourhood character to vegetation management, which assists in considering the impact beyond just the trees and property boundaries. The SLO also contains the ability to trigger a permit for buildings and carrying out works, which provides greater integration and focuses on developing to a site's individual conditions.

Mr Reid's evidence was that the SLO was the most appropriate tool to achieve the Council's goals of vegetation protection and enhancement. He added that the SLO required a permit for buildings and works and subdivision where this development would impact on an existing tree.

Mr Reid stated that the Additional analysis Report concluded:

> The review of VPP tools available for vegetation protection and the examination of additional strategic documents prepared by Council (including the Urban Forest Strategy) concluded that the SLO is still the most effective tool available to achieve canopy tree protection. This is due to the ability of the SLO to holistically consider vegetation and the built form through triggers for buildings and works applications, and its inherent connection to neighbourhood character.

The introduction of SLO9 was found to have resulted in a substantial increase in the number of applications to remove, destroy or lop trees within the municipality. It was determined that a higher threshold and additional exemptions were appropriate in SLO9 relative to other SLOs in Whitehorse due to the expansive area to which SLO9 applies. This approach, it concluded, would still support vegetation management controls in a strategic manner by applying more stringent controls in priority areas and having a lighter touch in areas where multi-dwelling development priorities must be balanced.

4.4 Discussion

The role of vegetation in defining the character of neighbourhoods is well established in Plan Melbourne, in the Whitehorse Planning Scheme and in each of the three neighbourhood character types identified in the Housing Strategy. In addition, other work including Living Melbourne (Document 4-6), the *Interim Report: Urban Vegetation Cover Analysis Eastern Region, 2018* prepared by RMIT University et al. (Document 4-7) and the *Urban Vegetation, Urban Heat Islands and Heat Vulnerability Assessment in Melbourne, 2018* study prepared by RMIT University et al.[1] identify additional values including habitat and the mitigating effects of vegetation on urban heat islands.

The need to protect and enhance trees is a theme that is well developed throughout the Study. The Discussion Paper identified that tree cover was an essential element of the character of Whitehorse as well as the eastern region of Melbourne and tree protection is given a priority in the PPF.

The gap analysis in the Options Report identified the lack of formal tree protection outside of the existing VPOs and SLOs as a significant shortcoming and the rationale behind the Study. The gap analysis also identified a lack of guidance for development particularly in relation to:

- the preservation of sufficient soil volume to allow trees of a requisite size to flourish
- the preservation of sufficient soil volume to sustain existing trees, and
- the protection of existing trees through the development process.

Another consistent theme in both documents was that while the municipality has a high level of tree cover, it is decreasing. The Panel accepts these findings, particularly as similar results are identified in the Living Melbourne and RMIT Study reports.

The Additional Analysis Report provides more detail on the strategic context, the use of the SLO9 and the impact on Housing growth. In the Panel's view the work presented in the three documents that make up the Study is substantial and comprehensive and an appropriate basis for the introduction of broader tree protection in the municipality.

The Panel appreciates that there may be an inherent tension between tree protection and increased housing density. Nevertheless, in the Panel's view, one of the fundamental roles of planning is to balance competing interests with a view to achieving the objectives of planning in Victoria.

The Panel acknowledges that it is likely that the tree protection and the buildings and works controls will have an impact on some residential development. The issue is whether that impact is reasonable in the balance between increased housing density and tree protection. In the Panel's view it is reasonable. The SLO9 introduces a requirement for a permit and criteria to guide decision-making. The SLO9 does not prohibit tree removal and the Panel is

[1] Sun C, Hurley J, Amati M, Arundel J, Saunders A, Boruff B, Caccetta P (2019) *Urban Vegetation, Urban Heat Islands and Heat Vulnerability Assessment in Melbourne, 2018*. Clean Air and Urban Landscapes Hub, Melbourne, Australia.

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mindful of the information provided by Council which shows that few applications result in a refusal.

The Panel accepts that the Additional Analysis Report provides an appropriate response to the housing issue identified in the letter of authorisation and that the municipality has sufficient capacity to accommodate its residential growth targets as well as protecting its *"leafy and green"* character.

On the basis that the protection of trees requires not only controls over the removal, destruction or lopping of a tree but also of buildings and works in the vicinity of the tree, the Panel accepts that the SLO is the most appropriate tool. The Panel notes that there are eight SLOs in place within the municipality all of which have similar provisions. The provisions of SLO9 are different and this matter is addressed in Chapter 5.3 and the detail of the SLO9 is discussed in Chapter 2 of this report.

4.5 Conclusions

The Panel concludes:

- the Municipal Wide Tree Study is an appropriate basis for the permanent introduction of the SLO9
- the introduction of the SLO9 on a permanent basis will not have an adverse impact on housing delivery
- the SLO9 is an appropriate tool for tree protection in the Bush Suburban and Garden Suburban character areas.

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5 Individual issues

5.1 Safety hazard and dead, dying and dangerous trees

(i) The issues

The issues are:

- whether the imposition of the SLO9 will exacerbate safety hazards from retaining canopy trees in residential settings
- whether the permit exemption provisions applying to dead, dying and dangerous trees in the SLO9 are appropriate.

(ii) Evidence and submissions

The submission from Mr Piddington highlighted concern with safety from large canopy trees close to buildings and the risk from trees like natives that may shed limbs in both windy and calm conditions, or even suffer more catastrophic loss such as whole tree failure. He believes landowners best look after their trees and do not need Council overseeing their management.

The submission from Mr Borg went further and he referred to Eucalyptus trees as '*widow makers*' stating that:

> Eucalyptus trees can be a danger to humans in populated areas.
>
> Eucalypts have a habit of dropping heavy branches earning them the nickname of Widow Maker. These gum trees preserve their health during periods of drought or inadequate water supply by allowing some branches to dry out and break off – a sort of self pruning.

Ms Taylor considered "*residential blocks are not suited to large gum trees*". She also expressed concern over conflicts between Council and residents regarding tree health, condition and approval for removal of trees that may be unsafe. She considers advice on tree safety should be only from qualified arborists and not Council officers who are not qualified in that discipline.

Submitters like Ms Taylor and Mr Borg query who should be responsible for managing a large canopy tree for its health and safety, where Council imposes a permit requirement for any maintenance that might be required on the tree including lopping or removal.

The submission from Ms and Mr Krall identified an issue with liability for tree safety where overhanging trees from an adjoining property creates safety risks and who should be responsible for management of that risk, particularly when adjoining landowners are reluctant to take appropriate action. Their submission highlighted the danger from planting inappropriate tree species in inappropriate locations with respect to dwellings.

Mr Weiss on behalf of the Bellbird Residents Advocacy Group submitted that in his experience over the past 20 years, trees dropping limbs is rare. He described three occasions over this period where he has experienced dropping limbs and where action was promptly undertaken to manage the trees including some removal. The dead or dying exemption from the need for a permit contained in the current SLOs are helpful in managing these trees. He considered that although this exemption can be abused, it is essential that Council officers are appropriately trained and have the strength and support to resist inappropriate use of the exemption provisions. He believes "*simple commonsense precautions can minimise risk*."

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Mr Berry on behalf of the Blackburn and District Tree Preservation Society Inc., Mr White from the Combined Residents of Whitehorse Action Group Inc. and Ms Ruth Ault opposed the dead, dying or dangerous exemption because it had been abused in the past by rendering unwanted trees dead, dying or dangerous. They argued that dead trees are *"important providers of habitat."*

Ms Brown submitted that dead, dying, diseased and unhealthy trees should be removed and urged the Panel to consider how the replacement of new and replacement canopy trees can be achieved.

Ms Taylor and Ms Wicking outlined their experience where their arborist and the Council arborist had differing opinions about the health of trees.

Mr Borg and Mr and Ms Krall submitted that owners should be able to remove dangerous trees without Council approval.

Council submitted that trees on private land are the responsibility of the relevant landowner and that the SLO9 will not negate such obligations. The arboricultural evidence of Mr Brown was that:

> When considering the number of private trees across Melbourne for example, it is unusual when compared to most planning related tree and site assessments to deal with trees that have dropped limbs or even whole tree failure. While it is certainly acknowledged branch failures do occur as do whole tree failures, however, based on my experience both are quite rare, particularly the latter. When the issue of tree safety is raised, in my experience it is usually done on the assumption that something may happen rather than something that has happened.

Regarding the ability to manage tree safety, Mr Brown stated:

> If a private landowner believes a tree is dangerous, they can have it assessed by an arborist. If that arborist has assessed the tree as dangerous, the landowner can apply to Council to have the tree removed.
>
> If assessed by a Council planning arborist as dangerous, there is provision under the scheme (SLO9) for a tree that has 'become dangerous' to be exempt from requiring a permit for its removal. Therefore, C219 does not restrict the removal of dangerous trees in anyway. This in my experience is very similar to the way other vegetation controls are applied across Melbourne. For example, if a tree is dangerous in Banyule or Maroondah an exemption can be given so that a permit is not required for its removal.

Regarding more localised issues such as leaf litter and debris, Mr Brown stated that:

> In relation to the dropping of leaves and debris, there are gutter guarding systems available that work quite well in reducing leaves and debris in gutters and on roofs. It must be noted that this is a common problem across Melbourne, and not having trees overhanging a property will not eliminate leaves and debris being carried by the wind and accumulating on a roof or in the gutter. In addition, the cleaning of gutters is generally seen as a standard maintenance for any home owner.

Mr Brown's evidence was that tree root damage to pipework will in most instances be associated with pipes that have pre-existing leaks or cracks or are broken that allow tree roots access as they follow water gradients and tend to grow along lines of least resistance. Tree roots should have no adverse impact on intact pipework.

Council submitted that the Amendment would not prevent the removal, destruction or lopping of dead or dying trees as well as those that are potentially dangerous. Council added that, when supported by evidence from an arborist, the management or removal of dead, dying or dangerous trees will *"have a positive benefit for individuals as well as the wider community."*

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Mr Brown's evidence was:

> The approval of C219 will not prevent the removal or management of dead, dying or dangerous trees. In addition, it will not stop property owners from maintaining their dwelling or managing their land as they currently do. It, however, has the potential to improve the landscape character, reduce the visual impact of development and improve the overall environments of the areas it currently covers.

Council's submission also presented a number of VCAT decisions and Panel reports that considered the concept of a dangerous tree. Both the Monash C115 (Monash C115 (PSA) [2013] PPV 101) and Banyule C80 (Banyule C80 (PSA) [2013] PPV 13) Panel reports considered the exemption relating to emergency works in the head clause of the VPO and questioned the need for a qualifying exemption in the schedule.

(iii) Discussion

The Panel recognises the concerns over safety with the location of canopy trees in urban settings such as the residential areas of Whitehorse.

Applying SLO9 to retain canopy trees and creating permit requirements over the balance of residentially zone land in Whitehorse has raised concerns over the ability of landowners to efficiently address safety hazards through management of canopy trees. This reflects the tension between valuing the important contribution canopy trees make towards the character and aesthetics of the residential areas of Whitehorse and being able to manage trees with regards to safety.

In response, the Amendment proposes the SLO9 provides the following exemption from the need for a permit to remove, destroy or lop a tree:

> A tree which is dead or dying or has become dangerous to the satisfaction of the responsible authority

The Panel recognises that planning controls should reflect safety hazards from large trees. This has already been recognised in Whitehorse over decades with the SLOs 1 to 8. These provisions include an exemption for removing, without a permit, dead or dying trees subject to the satisfaction of Council. It is also noted that these SLOs do not include a reference to trees that have become dangerous.

The Panel notes that, to some extent, the head clause of the SLO deals with this matter in Clause 42.03-3 - *Table of exemptions* under emergency works which contains the following:

Table 3: Whitehorse Planning Scheme Clause 43.03-3

The requirement to obtain a permit does not apply to:	
Emergency works	Vegetation that is to be removed, destroyed or lopped: Emergency works in an emergency by, or on behalf of, a public authority or municipal council to create an emergency access or to enable emergency works; Or where it presents an immediate risk of personal injury or damage to property. Only that part of the vegetation that presents the immediate risk may be removed, destroyed or lopped under this exemption

Regarding the safety exemption, the permanent application of SLO9 over the balance of the residential areas of Whitehorse creates, in the Panel's view, a different context. The effect of this much wider application of the SLO9 means that greater attention should be given to matters of tree safety. The Panel considers the inclusion of the exemption for dead and dying

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trees and its expansion to include dangerous trees is reflective of a more nuanced approach to addressing tree safety hazards.

As mentioned in Mr Reid's evidence and in Council's submission, the changes proposed in SLO9 under the Amendment includes an increased flexibility, compared to the other SLOs that reflects its much broader application.

In many respects, the Panel considers the issue of the dead, dying or dangerous tree has been addressed by past Panels. Notably, the Panel acknowledges the report into Whitehorse C46 Part 2 in March 2004 where, in relation to this exemption the Panel commented that:

> In some locations, there is a need to protect dead trees because of their habitat value as nesting sites for certain bird species. However, habitat protection has not been established as a major issue in Blackburn. The overlay in question is one that protects landscape character, not environmental significance. Blackburn is a suburban area and the trees, which contribute to its landscape character, must coexist with houses and other development. Therefore issues of safety associated with dead trees probably have a higher priority than in non-urban areas where the incidence of people and buildings, which might suffer potential damage, is much lower.
>
> The Panel therefore agrees with submittors that it is unreasonable to limit the permit exemption provisions relating to dead and dangerous trees to trees that present an immediate risk. The delays associated with obtaining a planning permit can be critical in the case of a potentially dangerous tree and can be the cause of unnecessary risk, stress and inconvenience to property owners. While the Panel acknowledges that there may be occasional cases where healthy trees are removed with the excuse that the tree was dangerous or dying, in practice this is likely to be a rare occurrence. Furthermore, this negative impact is likely to be more than offset by greater acceptance of the controls by affected property owners.

The C46 Part 2 Panel recommended the exemption, with the inclusion of reference to dangerous trees be included in the SLOs around Blackburn.

The Panel considers it is appropriate that reference to dangerous trees be included in the SLO9. In the Panel's view a tree that is "*becoming dangerous*" is different from emergency works. Broadening the exemption is appropriate, given its broader application whereby a greater reliance is made on a more targeted approach towards retaining and replacing canopy trees in Whitehorse's residential neighbourhoods. The combination of exemptions available under the SLO head provision and in Schedule 9 to the SLO provides a reasonable approach to managing tree safety.

The Panel recognises that the dead, dying and dangerous exemption can be abused and that some owners or applicants might undertake measures to accelerate the senescence of canopy trees and thus circumvent Council assessment through a permit application process. Exempting dead trees can also fail to recognise their habitat value. As noted earlier by the C46 Part 2 Panel, the focus of the SLO is on landscape character rather than on environmental significance or habitat value. The SLO9 is appropriate in that it relates to canopy trees in an urban setting with a focus on their contribution to neighbourhood character. The exemption also includes reference to Council's satisfaction which provides a check to ensure that the tree is actually dead, dying or becoming dangerous.

From this perspective the Panel accepts Council's submission that the exemption provisions that relate to dead, dying or dangerous trees are appropriate.

The Panel agrees with Council that landowners are responsible for looking after their trees including their health and condition with respect to safety. Watering, appropriate pruning

and regular inspections are all important as part of these responsibilities. The Amendment and the SLO9 do not negate these responsibilities.

Similarly, the Panel accepts the evidence of Mr Brown with respect to leaf litter and debris and damage to infrastructure. These are all routine maintenance issues that are commonplace in residential areas where trees exist.

The Panel agrees with Ms Brown that the decision guidelines should give more weight to the second of the proposed landscape character objectives to be achieved. This may require a further decision guideline that considers the provision of replacement trees where a tree is removed or destroyed.

The Panel accepts the dilemma faced by applicants who engage an arborist whose assessment is ultimately different from the Council's expert. Issues around disagreement with Council revert to the permit process. Any further dispute can ultimately be dealt with by VCAT, but Council should be looking for a more efficient and less expensive solution particularly when dealing with applications that are not part of a redevelopment. One option may be for Council's arborist to provide an initial assessment of the tree prior to the applicant seeking the advice of an arborist.

(iv) Conclusions

The Panel concludes:

- tree safety is appropriately addressed under the Amendment
- the permit exemption provisions applying to dead, dying and dangerous trees in the SLO9 are appropriate
- an additional decision guideline be included which deals with the provision of replacement trees where trees are removed or destroyed.
- Council should consider the provision of pre-application advice from a qualified arborist about the health of trees.

5.2 Imposition on private property rights and cost burden

(i) The issues

The issues are:

- whether the SLO9 imposes excessive restrictions over private property rights and freedoms regarding maintenance of private gardens
- impacts on existing use rights
- whether the Amendment imposes excessive and burdensome costs associated with the permit process for tree management.

(ii) Evidence and submissions

Council submitted that the SLO9 has been applied to residential areas and supports the role canopy trees have in contributing to neighbourhood character of the Bush Suburban and Garden Suburban Neighbourhood Character Precincts. Council argued that the imposition of tree controls is generally supported by the community.

Council added that trees support the character that makes many of Whitehorse's suburbs attractive places to live and argued that these trees should be protected to ensure the landscape values are not compromised by development.

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The requirement of the SLO9 requiring an application for a planning permit to remove, destroy or lop canopy trees was viewed to be an imposition on private property rights by several submitters. This concern was expressed by Mr Mackiewicz as a restriction of what he considered were existing use rights over the residential use of his land and the ancillary use of his garden and trees as part of that residential use.

Mr Mackiewicz considered the Amendment an imposition on private property rights through the SLO9 requiring permits for tree removal and not providing for individual choice in removing single trees for preference reasons, such as for amenity or aesthetic purposes or garden management.

In contrast, Mr Young submitted that those who object to controls on tree protection on the grounds of interference with their property rights are *"selfish."* He argued that all residents live in a community and not in isolation and stated:

> Our actions or inaction may have a profound impact on the amenity and liveability of our neighbours and the broader community. Residents have never been allowed to do as they please on their properties in order to prevent public nuisance or danger.

Mr Brown, in his evidence, accepted that there are landowners who have planted a tree and desire to control how and when that tree is managed, including its removal. He agreed that some residents may see the requirement of a permit as an unnecessary imposition on their ability to manage their own garden.

Mr Chow considered the requirement to apply for a planning permit to remove, destroy or lop trees is an imposition in terms of cost and time. He described his experience of seeking approval to remove trees which had a total cost over $1000 and five months later was still unresolved.

Mr Weksler submitted that the costs for applying for a planning permit for tree removal imposed unnecessary expenses on residents with permit application fees and the costs for arborist reports. He added these costs created "*a disheartening process*," that is adversarial and requires money to be spent on specialist advice for what he considered to be a trivial matter.

Ms Wicking submitted that the permit application process is a significant additional burden on tree management on private land. She argued that it is a complex and time-consuming process requiring the expertise of arborists and the preparation of plans showing the location of trees, all of which are beyond the means of landowners.

Mr Piddington reiterated that the permit process creates uncertainty for residents, which adds to the cost of the process.

Mr Gardner expressed concern that the presence of large canopy trees with extensive canopy coverage over his property created a disincentive for anyone to purchase the property. This was reflected first through the Amendment penalising those properties that have canopy trees with regulations. Secondly, by creating an uneven playing field for prospective purchasers who may wish to redevelop a property with canopy trees compared to other sites containing no canopy trees that offer a less restrictive redevelopment option.

(iii) Discussion

The Panel acknowledges that having to apply for a planning permit under the SLO9 for tree removal places a restriction on individual property owners. However, the Panel also

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acknowledges that there are benefits from applying this form of control in limiting the unfettered removal of trees.

The SLO9 relates to the protection of landscape values as they relate to neighbourhood character. While the SLOs 1 to 8 are more targeted in their coverage of small areas, the SLO9 has been applied in a blanket manner over a substantial area. As a consequence, the SLO9 has been drafted to include a range of exemptions that reduces the administrative burden on individual landowners where they may seek to remove individual trees as part of maintenance and routine garden management. The Panel considers this is an acceptable approach while retaining some control over the loss of the larger trees that contribute to canopy coverage.

The concerns over existing use rights are not relevant with respect to the Amendment. The SLO9 is an overlay under the Victoria Planning Provisions which does not affect land use and hence existing use rights. The SLO9 introduces a permit trigger and management obligations to ensure large canopy trees are retained, replaced and managed.

Regarding the burden of costs with the permit process, the Panel notes that the provisions of SLO9 are directed at tree removal associated with development and is Council's attempt to reduce the ease and extent of 'moonscaping,' which has concerned so many residents in the community.

The Panel notes the commentary of the Panel in C46 Part 2 that:

> … A permit application fee is $90, the advertising fee is $66 and the application is to be accompanied by an arborist's report that further adds to the cost of the application. The Panel is aware that some Councils (e.g. the Shire of Nillumbik) waive the permit fee for tree removal, and do not require advertising of the application. Furthermore, the application is assessed by an arborist employed by Council, rather than requiring the applicant to provide that assessment. This approach is adopted as an attempt to encourage property owners to apply for a planning permit to remove trees (where this is required).
>
> Apart from tree removal associated with a new development, tree removal forms part of the normal process of managing a garden. Trees are living things that mature and eventually enter senescence and die. Trees may also grow too large for the space that was provided for them, or they may be damaged or become diseased. Or the wrong decision may have been made about the species to be used in a particular location. Tree removal and replacement planting is part of the normal process of gardening and the management of properties, and is often an ongoing process. In this respect tree removal differs from development proposals which relate to a specific, one-off event.
>
> The Panel accepts that in an area with special landscape qualities (such as Blackburn) there is a need to control the process of tree removal to ensure that the landscape values are protected. However, imposition of costs associated with the permit requirement does place a heavy financial burden on property owners. Because it is the community that benefits from the tree protection controls, the Panel believes that it is not unreasonable for the community to shoulder the whole of the cost of administration of the controls. The Panel therefore recommends that the Council give consideration to waiving the permit fee for tree removal applications and to employing an arborist to report on tree removal applications.

The above commentary demonstrates that issues around costs and changing circumstances and conditions with trees have been around for almost 20 years and is supported by the Panel. Mr Brown's evidence was that the cost of an arborist report for a single tree is around $500 to $600 with additional trees charged at around $25-$100 per tree. The Panel also notes that where individual tree removals are concerned, the VicSmart permit process allows for single tree removal to be processed in a much quicker and simplified process. Council submitted that it has not reached a formal position on whether to assist the simpler permit application

process. However, the Panel notes that given the community benefit from applying the controls under the Amendment, an option may be for an applicant not needing to provide an arborist report and that Council's arborist undertake assessment for the VicSmart fee.

The Panel supports such an approach for individual tree removal applications under the VicSmart process.

(iv) Conclusions

The Panel concludes:

- the imposition on private property rights with the Amendment are acceptable given the broader community benefits that derive from the controls to protect the retention and replacement of canopy trees and their contribution to canopy tree cover and neighbourhood character
- the cost burden from the permit process is reasonable and can be further mitigated with support from Council for individual applications for single tree removals
- Council should consider waiving the permit fee for VicSmart tree removal applications and engaging an arborist to provide an assessment and report on these applications.

5.3 Consistency with Significant Landscape Overlay Schedules 1 to 8

(i) The issue

The issue is:

- whether the controls in the SLO9 should be the same as those in the SLOs 1 to 8.

(ii) Evidence and submissions

A number of submitters including the Blackburn and District Tree Preservation Society, the Blackburn Village Residents Group, the Combined Residents of Whitehorse Action Group, the Yarran Dheran Advisory Committee and Ms Ault wanted the controls in the SLO9 to match those of the SLOs 1 to 8.

Ms Ault submitted that the controls in the SLOs 1 to 8 had worked well and resulted in reasonable tree protection. She argued that it would be consistent to have the same controls applied across all SLOs. Blackburn and District Tree Preservation Society expressed concern that the unique provisions of the SLO9 will:

> … dilute the overlay's effectiveness and render if of little value in retaining, let alone enhancing, the natural character of SLO9 areas within Whitehorse.

Council submitted that the various studies that make up the Study proposed that a 5 metre height was the most suitable criterion for a canopy tree. Council added that the Options Report concluded that:

> Based on this benchmarking exercise, it can be seen that canopy trees are usually protected from 5 or 6m in height and for any species, whether it be indigenous or exotic. Based on this, it would be reasonable to suggest that a canopy tree in Whitehorse can be determined as a tree with a 0.5 metre circumference at 1.0 metre above the ground (being the most common measurement used in the existing Whitehorse controls and elsewhere) and/or a minimum height of 5-6 metres.

Council added that the Additional Analysis report observed:

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> that Canopy trees with a height of at least 5 metres will, in most cases, provide a visible canopy above the roofline of a single storey house and the ground level of most buildings with two or more storeys.';

and

> … at the time the original SL09 had been submitted for introduction it included a 0.5 metre trunk circumference provision in order to align it with Whitehorse's pre-existing SLOs. This threshold was changed by DELWP upon introduction of the interim SL09.

Council submitted that the 4 metre buildings and works setback from a protected tree was appropriate because trees within tree protection zones are generally large trees which warrant protection. Council concluded:

> There is no doubt that large trees make a significant contribution to neighbourhood character. It follows that without this 4 metre "trigger" point, there is a very real risk that larger trees could potentially be damaged by buildings and works, particularly if situated near adjoining properties undergoing development.

Mr Reid's evidence was that since the introduction of the interim SLO9 in February 2019 almost 1000 permit applications have been triggered for vegetation removal or buildings and works. He added:

> The additional exemptions proposed by Amendment C219 are generous and will have the effect of reducing the number of properties affected and applications required. This in turn will reduce the administrative burden on Council and relieve many landowners from the need to apply for a permit to remove exempt trees.

Mr Reid stated that the difference in setbacks from buildings and works already existed in local policy at Clause 22.04 which nominated a 4 metre setback in SLOs 1 to 8 and a 3 metre setback for everywhere else. With respect to planting areas he stated:

> A requirement for a 50 square metres minimum area for a newly planted tree is problematic in areas expected to experience dwelling growth because of the significant amount of land it would exclude from development. It also exceeds the private open space standards that apply in most of Whitehorse's residential zone schedules, which require an area of 35 square metres.

Mr Reid gave evidence that given the extent of SLO9 compared to the other SLO areas, more generous permit thresholds and exemptions were appropriate to ensure an appropriate balance is obtained between vegetation protection and other planning objectives.

(iii) Discussion

There are several differences in the permit requirements between the SLOs 1 to 8 and SLO9. In addition, there are some differences in the permit requirements across the SLOs 1 to 8, most of which relate to the construction of a building. The Blackburn Village Residents Group provided a very useful table (Document 13) which detailed the controls across each of the SLOs 1 to 9.

The main differences highlighted to the Panel were the permit requirement for removal of trees with a circumference of 0.5 metres in SLOs 1 to 8 and 1.0 metres in SLO9. The minimum area for planting in SLOs 1 to 8 was 50 square metres and 35 square metres in SLO9.

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Table 4 below shows a comparison of these and a sample of other controls.

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Table 4: Comparison of some controls in SLOs 1 to 9

Type of decision	SLOs 1 to 8	SLO9
Tree removal	0.5 metre circumference	1.0 metre circumference
Front setback	9 metres in SLOs 1-3, 5 and 8	Clause 54 and 55
Side setback	1.2 metres in SLOs 1-3, 5 and 8	Clause 54 and 55
Building and works setback	4 metres	3 metres
Minimum planting area	50 square metres	35 square metres

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Table 4 also shows that there is not a consistency of the controls across the SLOs 1 to 8. From this perspective, the Panel accepts the evidence of Mr Reid that the SLO9 applies generally across the GRZ, NRZ and RGZ areas of Whitehorse where some redevelopment is expected to occur and which is different from the predominantly NRZ areas covered by the SLOs 1 to 8. Under these circumstances different controls are appropriate.

In the Panel's view, the SLO9 enables Council to require modifications to the design, layout or location of buildings in order to protect existing canopy trees or allow replanting to grow while enabling development to occur. As a consequence, there are sound reasons why some of the SLO9 controls should differ from SLOs 1 to 8.

(iv) Conclusions

The Panel concludes:

- it is appropriate for the controls of the SLO9 to differ from those of the SLOs 1 to 8.

5.4 Intent of the controls

(i) The issues

The issues are:

- perverse outcomes with tree protection, retention and enhancement
- Inadequate effect on canopy tree protection and canopy tree cover retention and enhancement
- mis-directed approach towards canopy tree protection, retention and enhancement.

(ii) Evidence and submissions

The Panel recognises an overarching concern best summed by the submission from Mr Young regarding the:

> …gradual loss by stealth of gardens and canopy trees in our once green and leafy suburb. Existing tree removal and planning controls have proven ineffective to the extent that is appears every second home and established garden is being 'moonscaped' and replaced by over development with multiple units and fence to fence 'McMansions' leaving insufficient space for a landscaped garden let alone canopy trees.

Mr Young submitted that:

> Placing blanket controls over the entire municipality concerning tree removal is essential because it requires all so-called ''developers'' to justify tree removal rather than Council simply approving development after 'moonscaping' has occurred.
>
> If tree removal (not subject to the various exemptions) requires a permit from Council then developers and residents will automatically have breached applicable legislation by removing trees prior to making an application for a building or demolition permit.

Mr Berry submitted that the extent of exemptions in SLO9 compared to what are provided in the SLOs 1 to 8 will dilute the effectiveness of SLO9 in protecting canopy trees and render it of little value in retaining let alone enhancing the natural character of the SLO9 areas within Whitehorse. He considered there are many areas where large canopy trees may still not be protected under the SLO9 because of the combination of exemptions relating to either trunk circumference or tree siting within 3 metres of existing dwellings.

He argued that it will not stem the effects from the more than 2 per cent loss of canopy tree cover experienced in Whitehorse between 2014 and 2018. He added that under the SLO9 tree

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removal exemptions do not make provision for replacement planting and there is no offset requirement for canopy tree removal under the exemptions.

Mr Howell and Mr Weksler submitted that the real issue and driver of the perceived problem recognised above by Mr Young is the current policy for closer settlement or high-density development. They argued that it is this policy that the Amendment fails to address and is the significant cause for tree loss in Whitehorse and other middle ring eastern municipalities of Melbourne. They added that the Amendment is creating unnecessary restrictions on most residents who, in the opinion of Mr Weksler, *"have done nothing wrong."*

The Blackburn and District Tree Preservation Society and the Combined Residents of Whitehorse Action Group consider the Amendment should include the following changes to the SLO9 or Clause 22.04 – *Tree Conservation* policy to overcome limitations:

- Tree trunk circumference should be reduced from 1 to 0.5 metres like the SLOs 1 to 8. This avoids confusion between the SLO schedules
- Permits should be required to remove a canopy tree located less than 3 metres from an existing dwelling or in-ground swimming pool. Many existing trees are located close to houses and in-ground swimming pools without interfering with their structural integrity
- Increasing the area for planting a canopy tree replanting from 35 to 50 square metres. This is like that applied under the SLOs 1 to 8 and would allow sufficient space and soil volume for canopy trees to survive, thrive and reach maturity with a natural canopy spread
- Ensure that where canopy trees identified as environmental weeds are exempted from requiring a permit and when removed, they are appropriately replaced by non-weed species that will offset canopy tree cover.

In contrast, Mr Piddington considered the Amendment should be changed to increase flexibility for landowners, as distinct from developers who may seek to 'moonscape' their properties by:

- increasing setbacks from all permanent structures such as dwellings and outbuildings from 3 to 5 metres
- allowing removal of branches overhanging the roofline of all permanent structures
- increasing the 'canopy tree' height measurement from 5 to 7 metres
- Council offering incentives to ratepayers to support more canopy trees.

Ms Brown expressed concern that the SLO9 is not clear enough in supporting the objective for canopy tree replanting. She submitted the SLO9 decision guidelines need to be reviewed to better provide for the planting of new and replacement canopy trees and what a decision maker needs to consider when retention of canopy trees cannot be achieved.

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Ms Ault considered that:

- there needs to be greater account taken for the time a replacement tree takes to grow and mature and play a role in tree canopy cover
- care needs to be taken with removing environmental weed trees particularly where they occur in clumps or groups so that any bulk removal does not leave a significant impact on canopy cover loss.

Submitters like Mr Mackiewicz, Mr Weksler and Mr Borg considered that the Amendment will result in residents removing trees before they reach the 5 metres height trigger for a permit and replant smaller trees to avoid the complications of the permit application process.

Council submitted that one of the issues driving the Amendment was the effect of 'moonscaping' of residential lots. Mr Reid described the practice of 'moonscaping' as "*clearing of a property of all vegetation prior to redevelopment. This may coincide with the demolition of buildings, although not always*." His evidence was that the practice accentuates community and Council concerns when it occurs prior to a planning permit being approved for redevelopment with the perception that it is done to avoid the need for assessment of removal of large trees and to maximise development potential.

Mr Reid's evidence was that:

> Moonscaping can be regarded as an attempt to circumvent the contribution of trees to neighbourhood character. This is particularly relevant in character areas where canopy trees play an important role in defining character, as is the case throughout Whitehorse.
>
> In the absence of vegetation protection controls, there is no legal impediment to moonscaping.

He added that the permanent application of SLO9 across the balance of Whitehorse's residential areas has the potential to discourage 'moonscaping' by:

- identifying vegetation protection as an important planning priority
- strengthening enforcement action where vegetation is removed without approval
- requiring assessment of the significance, health and safety of a tree and weighing these considerations against other planning criteria
- establishing a nexus between vegetation protection and built form, requiring a more considered design response
- supporting the replacement of trees permitted for removal with replanting.

Mr Reid was in no doubt that making SLO9 permanent would provide a strong discouragement to the speculative 'moonscaping' of residential lots and enabling vegetation to be properly considered in a development context.

Regarding perverse outcomes with tree management, Council's response was that the intent of the controls is to protect current, as well as future trees that contribute to the landscape and neighbourhood character.

Mr Brown's evidence was that:

> I believe it is unlikely landowners in any great number would not plant trees as a result of the permanent control. It is my experience that even landowners that perhaps do not like trees as much as some others on their properties, will still generally plant trees. However, they will likely be more species and location specific. In addition, a landowner cutting down trees before they reach 5 metres in height is unlikely. There is some effort needed in even the removal of a 4 – 5 metre tree.

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> For example, it may not be able to be removed in one piece (cut from the bottom), therefore ladders may be required, which is dangerous, so a landowner may need to engage an arborist.
>
> A 4 – 5 metre tree will generally be a lot bigger once it is on the ground than what the lay person expects. There is a lot of effort required to cut it up and fit it in a green bin and the right tools are required to do so. In my experience once a landowner has done it, they usually will not do it again, because of the level of work involved in removing even a small tree. Further, people in my experience are reluctant to remove trees that they have paid for and planted themselves.

(iii) Discussion

The Amendment has the intent of reducing the extent of canopy tree loss across Whitehorse and contributing towards enhancement of canopy cover. The permanent introduction of the SLO9 aims to protect, retain and enhance canopy tree cover over residential areas that currently (apart from some areas affected by the VPO) do not have tree protection controls.

Despite these goals, many submitters to the Amendment do not believe the SLO9 goes far enough, others believe it goes too far, while others again consider the Amendment misses the real driver of tree loss in Whitehorse.

The SLO9 is a statutory planning control that will trigger permits for the removal, destruction or lopping of canopy trees that are not exempt. The purpose of the control is to protect, retain and replace canopy tree removed where permits are required and to act as a policy direction for landowners to keep and manage their trees in the long-term.

The Panel accepts Council's position with regards to 'moonscaping' and considers the SLO9 will assist in reducing the extent of the practice. The SLO9 will not eliminate the practice entirely because of the exemptions in the Schedule, but will, in the Panel's view, contribute to a diminution of the ease of removal of large canopy trees and provide for a more holistic assessment of large trees for their role in canopy cover in Whitehorse.

The Amendment is not seeking to address broader policy issues such as housing intensity and increased density of development or closer settlement. These are higher level policies that an overlay control like the SLO cannot address. Issues around closer settlement patterns should be addressed elsewhere and not within the ambit of the Panel's considerations.

The Panel accepts Council's position and agrees with the evidence of Mr Brown that the controls will not discourage landowners from planting trees *"to the extent that it compromises the overall canopy of the municipality or impacts the integrity of the control."*

Regarding the effect of exemptions and the perception that the SLO9 will not sufficiently protect canopy trees, the Panel notes that Mr Berry's concerns over potential loss of canopy trees failed to consider tree heights above 5 metres in addition to trunk circumference.

As discussed in 5.3 above, the suggested changes to the SLO9 provisions sought by Mr Berry and Mr Piddington are not supported by the Panel. The Panel considers that Council has struck the right balance between permit requirements and exemptions given the broad blanket application of the SLO9.

Regarding Ms Brown's concerns with respect to the adequacy of replacement planting and offsetting to account for the loss of canopy trees, there are two components of this issue. One relates to appropriate replanting as part of tree removal approved in the permit application process and the other is loss of canopy trees under the operation of exemptions.

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The Panel notes that the basis of Ms Brown's submission was in relation to her experiences with a permit application and VCAT process associated with a residential development proposal and proposed landscaping, or rather, lack of proposed offsetting of tree loss. The Panel recognises that her experiences are based on the current interim version of SLO9 and notes, under the Amendment, it has been amended to improve direction regarding replacement planting for tree loss. These changes include:

- modifying the second objective to provide for the planting of new and replacement canopy trees
- modifying the decision guidelines to include reference to the cumulative contribution trees make with other vegetation to the landscape and the incremental loss of trees.

There are other changes to policy under the Amendment which also contribute to supporting the replacement of trees including Clause 22.04 relating to *Tree Conservation* that improve offsetting permitted tree loss including space for canopy tree plantings. Regarding tree replacement, the policy shifts the area requirement from 50 to 35 square metres. The Panel heard evidence from Mr Brown that this will allow more trees to be planted in available space and including allowing more than one canopy tree of variable height to be planted to provide for density and variety of canopy coverage.

The Panel considers these changes and shift in emphasis will support not only tree retention but enable realistic replacement of canopy trees to occur as part of the residential redevelopment process.

The Panel notes the policy under Clause 22.04 does provide strategic support for tree loss to be replaced as part of normal garden management on private property. The Panel considers this goes some way to helping Council achieve the canopy cover goals of the Urban Forest Strategy.

(iv) Conclusions

The Panel concludes:

- the SLO9 provides an acceptable level of control over canopy tree loss in support of its role and contribution to neighbourhood character and reduction of loss from 'moonscaping' practices.

5.5 Application of the Significant Landscape Overlay Schedule 9 to public land

(i) The issue

The issue is whether the application of the SLO9 is inconsistent in not affecting both private and public land areas.

(ii) Relevant policies, strategies and studies

The SLO9, as exhibited, includes the following exemptions from requiring a permit:

> A tree on public land or in a road reserve removed by or on behalf of Whitehorse City Council.
>
> The removal, destruction, or lopping of a tree to the minimum extent necessary:
>
> - to maintain the safe and efficient function of a Utility Installation to the satisfaction of the responsible authority or the utility service provider; or

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- by or on behalf of a utility service provider to maintain or construct a Utility Installation in accordance with the written agreement of the Secretary to the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the *Conservation, Forests and Lands Act 1987*.

(iii) Submissions

The submission from Mr Pianta questioned why the application of the SLO9 does not include public land areas. He considered the SLO9 should be applied over both private and public land areas including road reserves and public park areas. In relation to the exemption of the SLO9 for public land areas and road reserves, he stated:

> My reason for opposing and objecting to this exemption is that significant vegetation within the municipality of the Whitehorse City Council is sited on public land (Council reserves or other government public land) or within a road reserve and apart from the exemptions in the header of the SLO should be subject to the same planning controls as private freehold land. Many road reserves and public land (reserves) provide tree vegetation for wildlife and wildlife habitat movements. Every person and/or body should be subject to the same planning controls so that there is clear transparency and a consistent policy applied to consider any application for planning permit to remove, destroy or lop vegetation. Why should the Whitehorse City Council or other owners of public land be exempt from the planning controls, particularly so if these parcels of land have significant tree vegetation or canopy cover on the land? The planning controls should not be "do as I say and not as I do."

Mr Pianta submitted that public land areas and road reserves would already most likely require permits under the provisions of Clause 52.17 relating to native vegetation for tree removal. Including all canopy trees irrespective of species would not be that much more onerous to impose a permit requirement. He argued a more strategic approach is needed for canopy tree management on public land areas that is clear in terms of transparency and guidance over canopy tree management and without allowing Council or any other public authority to act without any checks or balances.

Ms Wicking questioned the need for different approaches to tree protection and retention management between trees on private and public land. For example she referred to the contradiction evident between a suggestion in Mr Brown's evidence for porous pavement treatments for trees within 3 metres of a driveway and what she considers to be a lesser separation that is often the case with trees in nature strips and the kerb and channel and bitumen surface treatments of local roads.

Council and Mr Berry advised that the Urban Forest Strategy provides guidance on tree management in the Whitehorse urban environment for public land tenure under Council's management. The objective of the Strategy is to increase the Whitehorse tree canopy cover from the current 20 per cent to at least 30 per cent by 2030.

Council submitted the Urban Forest Strategy outlines the way in which Council will continue to sustainably manage, enhance and increase trees and vegetation in its streetscapes, parks and gardens, with species that enhance neighbourhood character, support biodiversity and are adaptable to a changing climate. The Urban Forest Strategy includes an Urban Forest Policy which seeks to provide clarity and direction to the ongoing management of trees in Whitehorse. The policy relates to trees on public land, owned and managed by Council including street trees and park trees but does not incorporate trees on private land or trees managed by other agencies. The Urban Forest Strategy also contains a Tree Management Plan that also provides policy guidance for trees in parks and reserves. Both the policy and

management plan relate to removal, pruning, planting and protection of trees on Council managed public land areas.

(iv) Discussion

The SLO9 is proposed to be applied over land that is privately owned and zoned for residential purposes within Whitehorse where the SLO is not currently in place. It is not proposed to be applied to land zoned for commercial, industrial or mixed use purposes and does not cover public or Crown land areas including parks and reserves that are zoned Public Conservation and Resource Zone, Public Park and Recreation Zone or Public Use Zone. It does cover roads within the residential areas of the municipality.

As a result, the SLO9, as exhibited, includes the following exemptions from requiring a permit:

> A tree on public land or in a road reserve removed by or on behalf of Whitehorse City Council.
>
> The removal, destruction, or lopping of a tree to the minimum extent necessary:
>
> - to maintain the safe and efficient function of a Utility Installation to the satisfaction of the responsible authority or the utility service provider; or
> - by or on behalf of a utility service provider to maintain or construct a Utility Installation in accordance with the written agreement of the Secretary to the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the *Conservation, Forests and Lands Act 1987*.

The Panel is aware of debate that has occurred with the application of SLOs over different land tenures. For example, amendments that have applied the SLO over coastal areas of the State have been subject to Panel reports[2] discussing whether the overlay should be applied over coastal Crown land in order to more comprehensively protect significant coastal landscapes and not merely focus application over private land areas.

Although these Panel reports supported the application of the SLO over both public and private land tenure, the view of the State Government was not supportive of such an approach, primarily on the basis that public land management agencies have their own processes and procedures for determining vegetation management that has regard to impacts from activity on environmental and scenic landscape values.

While noting the discussion and outcomes of these past Panel reports and amendments relating to the SLO to the respective planning schemes of other municipalities, the Panel acknowledges that the Amendment and SLO9 in this instance relates to the role of canopy trees and cover with respect to neighbourhood character in Whitehorse. It is a quite different context where it is the role of canopy trees in creating a landscape appearance and aesthetic in an urban context associated with the Bush Suburban and Garden Suburban neighbourhood character precincts derived from Council's past strategic work on Housing and Neighbourhood Character.

The aim of the SLO9 is retention of established mature trees and provision for planting of new and replacement of canopy trees. On this basis, the Panel is comfortable with the application of the SLO9 on residentially zone private land areas.

In addition, the Panel is aware of Council's attempts with the SLO9 to limit the effect of unnecessarily triggering permit applications and hence views the omission of applying the

[2] Refer to East Gippsland C68, South Gippsland C45 and Bass Coast C98 Panel Reports.

overlay from public land areas and including the exemptions as proposed, a reasonable approach to limiting this impact.

Finally, the Panel accepts that Council has in place an Urban Forest Strategy that contains both an Urban Forest Policy and Tree Management Plan that provides a degree of guidance over how Council manages trees on public land that is under its control and management. The Urban Forest Strategy can provide surety that Council will work towards achieving its aim for a 30 per cent canopy tree cover by 2030 in conjunction with application of the SLO9 to protect, retain and enhance canopy tree cover across its residential areas.

Regarding the effect of Clause 52.17 and native vegetation regulations with respect to permit applications triggered for native vegetation on public land areas and road reserves, the Panel considers the emphasis between the native vegetation regulations and the SLO9 are quite different. Clause 52.17 relates to the benefit of native vegetation for biodiversity values, while SLO9, in an urban context, is focused on canopy trees and their contribution to neighbourhood character and landscape aesthetics. The respective controls serve different purposes and Clause 52.17 contains a range of exemptions that facilitate management of native vegetation to the minimum extent necessary over both land tenures.

Regarding the perceived contradiction with Mr Brown's evidence on street trees and their juxtaposition with road surfaces, the Panel observes that Mr Brown's evidence in this regard was with respect to suggestions to further amend the provisions of the Amendment including the proposed SLO9. These suggestions were not supported by Council and the Panel has not further considered them as they risk transforming the Amendment and does not comment further on them.

(v) Conclusions

The Panel concludes:

- the SLO9 exemptions relating to public land are acceptable
- It is not necessary to expand the application of the SLO9 over public and Crown land areas given the Urban Forest Strategy includes policy and provisions to reasonably manage trees and vegetation on public land that Council owns and manages.

5.6 Other issues

(i) Submissions

Mr Pianta advised the Panel that his property was affected by an existing VPO3 and proposed SLO9. He questioned the need to have two controls over his land and not a single overlay control relating to tree management.

Mr Hutchinson submitted that the Camphor Laurel (*Cinnamomum camphora)* be added to the list of environmental weeds. Mr Hutchinson added that *Cinnamomum camphora* was listed in the *Advisory list of environmental weeds in Victoria* by DELWP. A number of other submitters made comments about the species listed in the SLO9.

In response to a question from the Panel, Council submitted that it did not support the use of a list of environmental weeds or document which can be changed from time to time by Council outside of the planning scheme amendment process such as that produced by Mr Hutchinson. Council submitted that it did not support the addition of *Cinnamomum camphora* to the list of environmental weeds in SLO9.

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Ms Ault submitted that while environmental weeds may not be desirable, many mature trees contribute to the canopy cover of Whitehorse and if a larger list of environmental weeds is used then significant areas of the existing canopy cover could be removed.

(ii) Discussion

The Panel acknowledges that the SLO9 and VPO3 are similar controls and have a common element in the requirement of a permit to remove, destroy or lop a tree. However, the controls also have different objectives with the VPO more focused on the protection of trees which have been identified as significant in the *Significant Tree study, City of Whitehorse 2006*.

In the Panel' view, it is acceptable to have two overlays with similar controls over a property particularly because each overlay is intended to achieve a different outcome. The Panel notes that the Amendment proposes the removal of the VPO2 and VPO4 because these controls essentially implement elements of the Neighbourhood Character Study and SLO9 is intended to achieve a similar outcome.

The Panel agrees with Ms Ault's submission that an extensive list of exempt environmental weed species may have an adverse impact on the canopy cover in Whitehorse. In addition, the requirement of a permit provides Council with the ability to require a replacement planting of a more suitable species. For this reason, the Panel accepts Council's submission that the list proposed in SLO9 is appropriate.

(iii) Conclusions

The Panel concludes:

- it is acceptable for a property to be covered by the SLO9 and VPO3
- the list of environmental weeds included in SLO9 is appropriate.

6 Form and content of the Amendment

6.1 Changes to the Municipal Strategic Statement

(i) Discussion

The Amendment, as exhibited, proposes a number of changes to Clauses 21.05, 21.06, 22.03 and 22.04. Post exhibition, Council proposed further changes to Clauses 21.05 and 22.04 which were mainly corrections and clarifications.

No submissions were made on the changes to Clauses 21.05, 21.06, 22.03 and 22.04. The Amendment proposes to add the three documents of the Study as policy references to all four clauses.

Additional text is proposed in Clause 21.05 - *Environment* which refers to the Study and the importance of trees in strengthening neighbourhood character, landscape and amenity, reducing the urban heat island effect, providing habitat for wildlife, improving air quality and the local climate and their positive effects on community health and wellbeing. Other changes include simplifications of the references to locations.

The changes to Clause 22.05 - *Tree Conservation* include:

- additional objectives dealing with improving canopy tree coverage
- adding tree protection to tree retention policy
- greater emphasis on tree replanting
- in Performance standards:
  - consequential edits to the buildings and works near existing tree provisions
  - edits to the site area for a new tree.

(ii) Conclusions

The Panel considers the changes proposed to Clauses 21.05, 21.06, 22.03 and 22.04 reasonable and support the introduction of the SLO9 into the Planning Scheme.

6.2 Significant Landscape Overlay Schedule 9

(i) Discussion

The SLO9 generated significant commentary, much of which has been described earlier in this report ranging from the blanket application of the control going too far, to the control having too many exemptions from the need for a permit to not having enough flexibility regarding permit requirements.

Council argued that the SLO9 relates to canopy trees and their relationship to neighbourhood character of those suburbs in Whitehorse not already covered by the existing SLOs 1 to 8. Council submitted that Whitehorse is experiencing rapid growth and residential development, which results in the loss of canopy trees and comes at the cost of landscape character. Council recognises that vegetation cover is significant, and that Whitehorse has a different landscape character compared to other areas of Metropolitan Melbourne that it believes should be nurtured, encouraged and not allowed to be eroded over time.

Council's approach in the Amendment is to build on the other SLOs and support the retention and enhancement that large canopy trees make to its suburbs. The SLO is a useful planning tool allowing Council to be involved with tree removal and opportunities to influence tree

survival and replanting for optimal growth. Exemptions have been included in the proposed SLO9, which Council submit are pragmatic and will keep the controls realistic allowing careful thought about managing trees.

The Panel accepts the overarching thrust of SLO9 to provide outcomes that improve amenity and neighbourhood character while dealing with a hotter future with climate change.

The Panel notes that Council have suggested changes to the SLO9 as a result of its consideration of submissions received to the Amendment. These changes include:

> Yarra Trams and the Department of Transport made submissions to include an additional exemption to allow the removal of trees to maintain the function of the on road public transport network, including tramways. This is supported. Therefore it is proposed to include the following exemption:
>
> > *"The removal, destruction or lopping of a tree to the minimum extent necessary to maintain the safe and efficient function of the existing on road public transport network (including tramways) to the satisfaction of the Department of Transport."*
>
> There are some minor typographical errors in the exhibited amendment documents. The botanical names in the Environmental Weed list should be consistently italicised which will be updated prior to the panel hearing. Additionally, the word "including" is proposed to be replaced as this does not provide a definitive list of species to the exclusion of all others. It is proposed to amend the introduction to the exemption so that it is expressed as:
>
> > *"A tree that is listed as an Environment Weed species listed below:"*
>
> Amendment C219 proposes to exempt the need for a planning permit to remove, destroy or lop a tree within 3 metres from an in-ground swimming pool. The exemption does not explicitly state that it applies to existing in-ground swimming pools, which was the intention of the exemption. It is proposed to add the word "existing" to the exemption relating to in-ground swimming pools, so that the exemption is expressed as:
>
> > *"A tree that is located less than 3 metres from an existing in-ground swimming pool when measured at ground level from the outside of the trunk."*

The Panel considers these changes logical and beneficial in terms of ensuring the exemptions operate efficiently and accordingly support amending the exhibited SLO9 to include Council's suggested changes.

Two other matters that the Panel has with the SLO9 require consideration; one relates to the landscape objectives Schedule 9 of the SLO seeks to achieve and the other relates to the drafting of the exemption relating to tree height and trunk width.

Landscape objectives

The SLO includes the following purposes:

> To implement the Municipal Planning Strategy and the PPF.
>
> To identify significant landscapes.
>
> To conserve and enhance the character of significant landscapes.

Clause 42.03-1 relating to *Landscape character and objectives* requires a schedule to contain:

- A statement of the nature and key elements of the landscape.
- The landscape character objectives to be achieved.

The proposed SLO9 provides a statement of the nature and key elements of landscape. This has been included earlier in section 2.3(i). The emphasis of the landscape statement is the treed character of Whitehorse and how it provides a 'green' link between Melbourne and the Yarra Valley. Trees are significant to the landscape character of Whitehorse and SLO9 relates

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to neighbourhood character of the Garden Suburban and Bush Suburban Neighbourhood Character Areas identified in the Housing Strategy.

The SLO9 includes the following landscape character objectives which focus on retention of established and mature trees and planting of new and replacement canopy trees:

> To encourage the retention of established and mature trees.
>
> To provide for the planting of new and replacement canopy trees.

The Panel questioned whether the scope of the objectives is somewhat narrow and whether there is a disjunct with identifying what is more broadly important with respect to landscape character in the Garden Suburban and Bush Suburban Neighbourhood Character Areas. In response, Mr Reid considered the SLO9 was sufficient in focusing on trees due to the link with canopy cover, landscape value and hence neighbourhood character. He considered that, together with the policy framework, landscape value would be appropriately addressed.

The Panel accepts that the combination of policy such as that relating to tree conservation and neighbourhood character and the SLO9 may go some way to balancing canopy trees with residential development. However, it feels there should be additional objectives that encapsulate the landscape character that is sought to be protected under the SLO9.

The Panel suggests that additional objective(s) should be considered by Council that relate to landscape character such as looking to ensure that development is compatible with the landscape character of the area and retaining and enhancing the canopy tree cover of the Garden and Bush Suburban Neighbourhood Character Areas.

Tree exemption

The SLO9 includes the current exemption relating to trees:

> A permit is required to remove, destroy or lop a tree.
>
> This does not apply to:
>
> - A tree less than 5 metres in height and having a single trunk circumference of less than 1.0 metre at a height of 1.0 metre above ground level; or …

The Panel questioned whether Council had considered the wording of the above exemption and any consideration to its re-drafting to improve clarity.

Ms Marshall drew the Panels' attention to a decision of the Tribunal in *Ausgood Development Pty Ltd v Whitehorse CC* [2018] VCAT 690, where then Deputy President Gibson responded to a question of law regarding interpretation of the exemption and made the following findings on the wording of the exemption:

> In my view, the question of law has been awkwardly framed because it focuses on whether a tree having certain criteria needs a permit for removal when that is not the way in which the control in SLO9 is framed. For the reasons given, I find that a permit is required to remove, destroy or lop all trees unless one of the exemptions applies. The specific exemption under consideration here would require a tree to have both a height of less than 5 metres and a single trunk circumference of 1.0 metre or less at a height of 1 metre above ground level. Unless both criteria are met, a permit is required.
>
> Nevertheless, having regard to the way in which the question of law set out above has been framed, I am of the opinion that the question of law should be decided as follows:
>
> - Yes, a tree having either a height of 5 metres or more or a circumference of more than 1.0m requires a permit under SLO9 of the Whitehorse Planning Scheme.

Ms Marshall advised that Council was satisfied with the proposed wording of the exemption and relies upon the Tribunal decision with respect to how the exemption should be read.

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The Panel notes Council's position and outcome of the Tribunal's decision. However, the Panel considers the wording of the exemption can be amended to improve its clarity in line with the Tribunal decision and Council's intent with what the exemption seeks.

The SLO9 seeks to require permits for large trees that influence landscape and neighbourhood character. The strategic work Council has undertaken identifies that once trees get to around 5 to 6 metres in height or have a trunk circumference of 1 metre, they are sizeable specimens that will be above the height of a single storey dwelling and have a canopy of a size that will be noticeable in the neighbourhood and streetscape landscape. Hence, they should require a permit to be removed. This is fundamentally, the basis of the Amendment.

The Additional Analysis Report considered the exemption and formed the view that a permit for the removal, destruction or lopping of a tree should not be required for:

- A tree less than 5 metres in height; and/or
- A single trunk circumference of 1.0 metres or less at a height of one metre above ground level.

The Report considered that given the characteristics of dominant tree species throughout the interim SLO9 area, it concluded that the 5 metres height and 1 metre circumference triggers both ensure that the control targets trees that are large enough to have an impact on neighbourhood character.

Similarly, the evidence of Mr Reid considered that a permit should only be required for trees that are both at least 5 metres in height and 1 metre in girth.

In considering the above, the Panel believes there is merit in revisiting the drafting of the tree exemption noting that the Neighbourhood Character Overlay under Clause 43.05-2 includes the following exemption from a permit requirement:

> To a tree that is less than 5 metres in height or has a trunk circumference of less than 0.5 metre measured 1 metre above ground level.

Alternate drafting could follow the above example, or could be redrafted to read:

> A permit is required to remove, destroy or lop a tree.
>
> This does not apply to:
>
> - A tree that has both:
> - a height of less than 5 metres; and
> - a single trunk circumference of less than 1.0 metre at a height of 1.0 metre above ground level.

Post exhibition changes to the SLO9

Council proposed some changes to the exhibited version of the SLO9. These changes were in response to the submission by Yarra Trams and VicRoads as well as some minor corrections. The Panel accepts these changes.

(ii) Conclusions

The Panel concludes:

- the post exhibition changes to the SLO9 are appropriate
- the landscape character objectives should be reviewed to better encapsulate the landscape character that is sought to be protected under the SLO9
- the exemption provisions around tree height and width should be redrafted to be made clearer.

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(iii) Recommendation

The Panel recommends:

Amend Schedule 9 to the Significant Landscape Overlay in the form of the Panel preferred version in Appendix D.

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Appendix A Submitters to the Amendment

No.	Submitter	No.	Submitter
1	Garry Zhou	155	Melissa Halim
2	Kyle and Elizabeth Matheson	156	Bronwyn Lekos
3	Paul Tierney	157	Bee Yeo
4	Lee Jifrang	158	Xi Shan Chen
5	Ian Hore-Lacey	159	June Anton
6	Joe Savoria	160	Bradley James Crawford
7	Elaine Hopper	161	Judi Lawton
8	Glenyce Hanson	162	Chee Cheong Low (David)
9	Zhiqiang Luo	163	Peter McDonald
10	Diana Ni	164	Angelique Valcanis
11	Denise Farrugia	165	Ashan Dassanayake
12	David Diaz	166	Les and Barbara Browne
13	Mark Rogers	167	Julie and David Power
14	Zhiwei Zhang	168	Michael Ryan
15	Zhongyang Wang	169	Neil Kirby
16	Kon Kyranakis	170	Rex Hermon
17	Yan Lu	171	Ian Lawrie
18	Tony *(Surname not provided)*	172	Ian George
19	Wing Ching Wang	173	John Smith
20	Andrew Cross	174	William Chow
21	Hao Liu	175	Anne V Makhijani
22	Sally Tanner	176	Helen Harris OAM
23	Alex Kuo	177	Michael Hassett
24	Steffi Kyranakis	178	Roland James Thompson
25	Fiona Knight	179	Patricia Welsh
26	Steve Bainbridge	180	S Y Liu
27	Michael Portelli	181	Kenneth McMurtrie
28	Chris Nicholls	182	Rajiv and Madhu Kapoor
29	Peter Ervin	183	Robert Eades
30	Yuelin Luo	184	Hedrie Rooney
31	Xin Xu	185	Martin Murphy
32	Michelle Wai Yan Yip	186	Terry Dalgleish

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No.	Submitter	No.	Submitter
33	Shi Ming Qiu	187	Trina Seow
34	Ya Hong Qiu	188	Alexander Judd
35	Dan Li Lin	189	Julie Snodgrass
36	Yee Mun Ling	190	Michael Weksler
37	Lisa & Anthony Wilcox	191	Terry McKay
38	Fangkai Gao	192	Xiaowei Yuan
39	Sarah Wai Yin Sun	193	Kwok Chun Lam
40	Grace Briggs-Yuan	194	Zhou Wei
41	Zhanqiu Shu	195	Joanne Wilson
42	Wanwen Pan	196	Jane Taylor
43	Kim Daire	197	Sarah Thomas
44	Catherine Stahel	198	Daphne Arthur
45	Anna Sanchez	199	Eve Pakarinen
46	Daryl Contessotto	200	Stephen Kelly
47	Joseph Borg	201	Stephen Frank
48	Andrew Lerk	202	Anthony Coomes
49	Amy and Damien Calvert	203	Kaiwu Li
50	L Chen and H Cai	204	J *(Surname not provided)*
51	Glen Nicholls	205	David Harmer
52	Sau-King Wong	206	Alex Gelber
53	Laurie Taylor	207	Lyndall Steer
54	Sue Holberton	208	Janet Yeo
55	Susan Wang	209	Sally and Andrew O'Hoy
56	Aman Kapuria	210	Rosalind M Bekhuis
57	Richa Sharma	211	Greg Newham
58	Stanley Li	212	Pranil Chandra
59	Brendan Lacey	213	Janice Poon, Ben Cull, Kate Cull, Yence Arliantro, Jenny Mann, Peter Winnell
60	Jennifer Downes	214	Margaret Lesley Eckdeld
61	Man Lan David Wo	215	Michael Scott
62	Shu Wang	216	Robert Andrew Weiss
63	Tessa Setiadi	217	Letitia Gordon
64	Yarran Dheran Advisory Committee	218	Alison Kirk
65	Liam Morrish	219	Marilyn Gurry
66	James Paul & Joanne Marjory Flanagan	220	Shannon Nixon

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No.	Submitter	No.	Submitter
67	Xiaoli Wang	221	Rebecca Muir
68	Dian Li Wang	222	Anisa Yuk Kwan Cheung
69	Peter Gavriel	223	Andrew Stagg
70	Paul Deepak Norman	224	Anthony Gerald Pickup
71	Kalam Goodman	225	Dean Lam
72	Raghu Krishnaswamy	226	Neil E Moseley
73	Emad Atia	227	Ho Ngun Yee LAM
74	Bridgette Jones	228	Steve Day
75	Peter Nikolas May	229	Andrew Baker
76	Weijia Tao	230	Anne C. Tan
77	Peter Gogoll	231	Anne Grant
78	Anthony Galanakis	232	Andrew Syme
79	Linda Chen	233	Diana Yallop
80	Zh Echo	234	Fiona McKinnon
81	Anonymous	235	Robin Baker
82	Valerie Donlon	236	Betty Lynch
83	George Mackiewicz	237	Craig Lighton
84	Robert Musilli	238	Dasha and Jane Kopecek
85	Jayshilkumar M Kanani	239	David Wilkinson
86	Rachel Burrows	240	Dianne Tribe
87	R.M Smith	241	Bert Alesich
88	Joan Morgan	242	Teena D'Agostino-Burns
89	Jie Yu	243	Guo Jun WU
90	Jon Lyn	244	Bellbird Residents' Advocacy Group
91	Paul Hansen	245	Xiaolu Liu
92	Luciano Di Leonardo	246	Catherine Dale and Chris Hazelewood
93	Robert Cummings	247	Peter Thomson
94	Daniel Burkett	248	Robert and Maryanne Krall
95	Anonymous	249	Aidan King
96	Albert Collie	250	Katherine Lam
97	Elizabeth Alcorn	251	Anthea Swann
98	Kate Kennedy	252	Stephen Cronin
99	Deborah Downie	253	Cynthia Wong
100	Ian Hopkins	254	Lynette Hogan

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No.	Submitter	No.	Submitter
101	John Gardner	255	Ruth Ault and Mike Gage
102	Damian Elliott	256	Annette and Rod Eyssens
103	A Mosse	257	Gayle and Andrew Gower
104	David Cameron	258	Graeme Stone
105	Tania Thornton	259	Nicole Brown
106	Richard Lawrence	260	Tony Robinson
107	Mrs Margaret Sharpin	261	Susan Hopkins
108	Irene Rasztotszky	262	John McMahon
109	Bernie Muldowney	263	Rosemary Lawrence
110	Huizhen Huang	264	Elizabeth Meredith
111	Angelina Zhang	265	Ben Cooke
112	Diana *(Surname not provided)*	266	Brendan Dawson
113	Steve Pemberton	267	Peter and Maria McKeown
114	Mingzhi Lei	268	Philip Lajta and Xue Huang
115	Randall Nott	269	Patrick Abrahams
116	Rachel Wicking	270	Neil Whitmore
117	Damian Coad	271	Stephanie Rodwell
118	Euan Drumm	272	Sin Che
119	Wanxin Liang	273	Sajid Khalfe
120	Michael Barrett	274	Peter Dempsey
121	Diana Doidge	275	Susan Dempsey
122	John Young	276	Helen Kane
123	Sandra Gleeson	277	Lorraine and John Hinkins
124	Sharon Clarke	278	Doris Turnnidge
125	Withdrawn	279	Kristy Rebecca
126	Zhao Fang	280	Belinda McDonald
127	Troy Rendle	281	Nianhua Cheng
128	YJ Davey	282	Damien Mate and Lara Verplak
129	Byoung Sik Kim	283	Blackburn & District Tree Preservation Society
130	Hans and Doris Schmidt	284	Combined Residents of Whitehorse Action Group Inc
131	Shane Pianta	285	Warren and Anne Hutchinson
132	Libby *(Surname not provided)*	286	George Narikuzhy
133	Helen Dent	287	Robbie McKenzie

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No.	Submitter	No.	Submitter
134	Radiance Chen	288	Regis Aged Care Pty Ltd
135	Coralie Millet	289	Caroline Graham
136	Kerryn Jory	290	James Coutts
137	Murray Taylor	291	Jennifer and Brian Williams
138	Lisa Miall	292	Jenny Stone
139	Si Yi Chen and Zhao Xiaopeng	293	Nitin Joglekar
140	Ben Cooke	294	Anthony Piddington
141	Malcolm Mathias	295	Alex Pascual
142	Don and Rosemary Graham	296	George Fankhauser
143	MLJ Law	297	Patrick O'Keefe and Nadine Taubenheim
144	Phan Tran	298	Hans and Doris Schmidt
145	Deborah Prior	299	Nini Peng
146	M P Fellowes	300	E Haddrick
147	Paul Jaffer	301	S. R Howell
148	Valerie Turnbull	302	Pennie Kendall
149	Lindsay Glen	303	David Inglis
150	Blackburn Village Residents Group	304	Vera Velickovic
151	Clare Ors	305	William Orange
152	Anne Wicking	306	Heather Oldfield
153	Michael Gardner and Maree Cairns	307	Monika Zuscak
154	Ramesh Yarramsetty	308	Mina Jafari

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Appendix B Parties to the Panel Hearing

Submitter	Represented by
Whitehorse City Council	Maria Marshall of Maddock assisted by Thy Nguyen of Maddocks, called the following expert evidence: - Planning from James Reid of Ethos Urban - Arboriculture from Shannon Brown of Greenscape Tree Consulting
Regis Aged Care Pty Ltd	Maddison Sztefek of Urbis
Blackburn & District Tree Preservation Society	David Berry
Yarran Dheran Advisory Committee	Gay Gallagher
Dasha Kopecek	
Combined Residents of Whitehorse Action Group Inc	Geoff White
Nicole Brown	
William Chow	
George Mackiewicz	
Joseph Borg	
Liam Morrish	
Michael Weksler	
Clare Ors	Anne Wicking
Anne Wicking	
Stephen Kelly	
Jane Taylor	
John Young	
Shane Pianta	
Warren Hutchinson	
Michael Gardner	
Bellbird Residents' Advocacy Group	Robert Weiss
Blackburn Village Residents Group	David Morrison
Anthony Piddington	
Les Browne	
S.R. Howell	
Maryanne and Robert Krall	
Ruth Ault	

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Appendix C Document list

No.	Date	Description	Provided by
1	2/12/19	Council Part A submission	Ms Marshall
2	2/12/19	James Reid planning expert witness statement	Mr Reid
3	2/12/19	Shannon Brown arboriculture expert witness statement	Mr Brown
4	2/12/19	Council hearing folder	Ms Marshall
5	2/12/19	James Reid PowerPoint presentation	Mr Reid
6	2/12/19	Ausgood Development Pty Ltd v Whitehorse CC [2018] VCAT 690 (Deputy President Gibson decision of question of law of interpretation of SLO9 exemption)	Ms Marshall
7	2/12/19	Dasha Kopecek PowerPoint presentation	Ms Kopecek
8	2/12/19	Dasha Kopecek photos	Ms Kopecek
9	4/12/19	Council Part B submission	Ms Marshall
10	4/12/19	Regis Aged Care submission	Ms Sztefek
11	4/12/19	Blackburn & District Tree Preservation Society Inc. PowerPoint presentation	Mr Berry
12	4/12/19	Blackburn & District Tree Preservation Society Inc. submission	Mr Berry
13	4/12/19	Bellbird Residents Advocacy Group submission	Mr Weiss
14	5/12/19	Blackburn Village Residents Group Inc. submission	Mr Morrison
15	5/12/19	Nicole Brown submission	Ms Brown
16	5/12/19	Brown v Whitehorse CC [2018] VCAT 1133	Ms Brown
17	5/12/19	Council delegate report on 13 Deep Creek Road, Mitcham	Ms Brown
18	5/12/19	Combined Residents of Whitehorse Action Group Inc. (CROWAG) submission	Mr White
19	5/12/19	George Mackiewicz submission	Mr Mackiewicz
20	5/12/19	William Chow submission	Mr Chow
21	5/12/19	Jane Taylor submission	Ms Taylor
22	5/12/19	Michael Weksler submission	Mr Weksler
23	5/12/19	Joseph Borg PowerPoint presentation	Mr Borg
24	5/12/19	Clare Ors submission	Ms Wicking
25	5/12/19	Anne Wicking submission	Ms Wicking
26	5/12/19	S. R. Howell PowerPoint presentation	Mr Howell
27	5/12/19	Maryanne & Robert Krall submission	Mr & Mrs Krall
28	6/12/19	John Young submission	Mr Young
29	6/12/19	Shane Pianta submission	Mr Pianta

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No.	Date	Description	Provided by
30	6/12/19	Ruth Ault PowerPoint presentation	Ms Ault
31	6/12/19	Book Indigenous Gardening in Whitehorse	Ms Ault
32	6/12/19	Book Fighting for the trees – The storey of the Tree Society	Ms Ault
33	6/12/19	Blackburn Bushland Corridor report by Anthony Kjar	Ms Ault
34	6/12/19	Les Browne PowerPoint presentation	Mr Browne
35	6/12/19	Anthony Piddington submission	Mr Piddington
36	6/12/19	Council right of reply submission	Ms Marshall
37	6/12/19	Council summary of VCAT decisions	Ms Marshall
38	6/12/19	Submission on behalf of Warren Hutchinson	Mr Hutchinson

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Appendix D Panel preferred version of the Significant Landscape Overlay Schedule 9

21/12/2018
Proposed C219

SCHEDULE 9 TO CLAUSE 42.03 SIGNIFICANT LANDSCAPE OVERLAY

Shown on the planning scheme map as **SLO9**.

NEIGHBOURHOOD CHARACTER AREAS

1.0 Statement of nature and key elements of landscape

08/02/2018
Proposed C219

The leafy garden and bushy character of Melbourne's eastern suburbs can be viewed from many high points throughout Melbourne and is a significant component of the subregion. The treed character of areas such as Whitehorse provides an important 'green' link between Melbourne and the Yarra Valley.

The *Municipal Wide Tree Study* (June 2016 and March 2019) identifies that trees are significant to the landscape character of the City of Whitehorse. The tree cover in Whitehorse simultaneously delivers multiple benefits to the community, including defining neighbourhood character, providing visual amenity, reducing the urban heat island effect in more urbanised areas, improving air quality and energy efficiency, providing habitat for fauna and increasing the wellbeing of people and liveability of neighbourhoods.

The **Garden Suburban Neighbourhood Character Area** generally has formalised streetscapes comprising grassed nature strips, concrete footpaths, kerbs and channels and buildings are generally visible along streets behind low front fences and open garden settings.

Gardens are typically established with canopy trees, lawn areas, garden beds and shrubs and there are typically well defined property boundaries and consistent building siting.

The majority of the municipality is included in the Garden Suburban Neighbourhood Character Area.

The **Bush Suburban Neighbourhood Character Area** generally has a mix of formal and informal streetscapes with wide nature strips and streets are dominated by vegetation with buildings partially hidden behind tall trees and established planting.

Gardens are less formal, consisting of many canopy trees and property boundary definition can be non-existent or fenced. Buildings appear detached along the street and generally comprise pitched rooftops, with simple forms and articulated facades.

The Bush Suburban Neighbourhood Area includes parts of Blackburn, Box Hill South, Vermont South, Mitcham, Nunawading and Mont Albert North as shown in the Neighbourhood Character Precincts Map contained in the *Neighbourhood Character Study 2014*.

2.0 Landscape character objectives to be achieved

08/02/2018
Proposed C219

To retain and enhance the canopy tree cover of the Garden and Bush Suburban Neighbourhood Character Areas.

To encourage the retention of established and mature trees.

To provide for the planting of new and replacement canopy trees.

To ensure that development is compatible with the landscape character of the area.

3.0 Permit requirement

08/02/2018
Proposed C219

Buildings and works

A permit is required to construct or carry out works for a front fence that is within 4 metres of any vegetation that requires a permit to remove, destroy or lop under the provisions of this schedule. This does not apply to a front fence that is undertaken to the same details, specifications and materials as the front fence being replaced, to the satisfaction of the responsible authority.

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A permit is not required to construct a building or construct or carry out works provided the buildings or works are set back at least 4 metres from any tree protected under the provisions of this schedule when measured at ground level from the outside of the trunk.

Vegetation removal

A permit is required to remove, destroy or lop a tree.

This does not apply to:

- ~~A tree less than 5 metres in height and having a single trunk circumference of less than 1.0 metre at a height of 1.0 metre above ground level; or~~
- A tree that has both:
  - a height less than 5 metres; and
  - a single trunk circumference of less than 1.0 metre at a height of 1.0 metre above ground level.
- A tree that is less than 3 metres from the wall of an existing Dwelling or an existing Dependent Person's Unit when measured at ground level from the outside of the trunk. For the avoidance of doubt, this exemption does not apply to a tree that is less than 3 metres from an existing outbuilding.
- A tree that is located less than 3 metres from an existing in-ground swimming pool when measured at ground level from the outside of the trunk.
- A tree ~~species~~ that is ~~listed as~~ an Environmental Weed ~~including~~ species listed below:
  - Box Elder (*Acer negundo*)
  - Cape Wattle (*Paraserianthes lophantha*)
  - Cherry Plum (*Prunus cerasifera*)
  - Cootamundra Wattle (*Acacia baileyana*)
  - Cotoneaster (*Cotoneaster spp.)*
  - Desert Ash (*Faxinus angustifolia*)
  - Hawthorn (*Crategus monoyna*)
  - Mirror Bush (*Coprosma angustifolia*)
  - Privet (*Ligustrum spp*.)
  - Radiata or Monterey Pine *(Pinus radiata)*
  - Sallow Wattle (*Acacia longifolia*)
  - Sweet Pittosporum (*Pittosporum undulatum*)
  - Willow (*Salix spp*.)
- The pruning of a tree for regeneration or ornamental shaping.
- A tree which is dead or dying or has become dangerous to the satisfaction of the responsible authority.
- A tree outside the minimum street setback requirement in the Residential Growth Zone.
- A tree on public land or in a road reserve removed by or on behalf of Whitehorse City Council.
- The removal, destruction, or lopping of a tree to the minimum extent necessary:
  - to maintain the safe and efficient function of a Utility Installation to the satisfaction of the responsible authority or the utility service provider; or
  - by or on behalf of a utility service provider to maintain or construct a Utility Installation in accordance with the written agreement of the Secretary to the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the *Conservation, Forests and Lands Act* 1987; or
  - to maintain the safe and efficient function of the existing on road public transport network (including tramways) to the satisfaction of the Department of Transport.
- A tree required to be removed, destroyed or lopped in order to construct or carry out buildings or works approved by a Building Permit issued prior to 8 February 2018.

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- A tree that may require separate approval to remove, destroy or lop as part of an existing permit condition, a plan endorsed under a planning permit or an agreement under section 173 of the *Planning and Environment Act 1987*.

Note: *For the purpose of this schedule, pruning is defined as removing branches (or occasionally roots) from a tree using approved practices, to achieve a specified objective such as for regeneration or ornamental shaping.*

For the purpose of this schedule, lopping has its ordinary meaning and includes the practice of cutting branches or stems between branch unions or internodes.

4.0 Application requirements

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Applicants must provide a report from a suitably qualified arborist to:

- Justify the removal of trees.
- Outline the measures to be taken, particularly during the construction phase, to ensure the long-term preservation of trees on, or adjoining, the development site.

5.0 Decision guidelines

08/02/2018
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The following decision guidelines apply to an application for a permit under Clause 42.03, in addition to those specified in Clause 42.03-5 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- The contribution of the tree to neighbourhood character and the landscape.
- The need to retain trees that are significant due to their species age, health and/or growth characteristics.
- Where the tree is located, its relationship to existing vegetation and its role in providing habitat and corridors for fauna and their contribution to local ecological systems.
- The cumulative contribution the tree makes with other vegetation to the landscape and the impact of the incremental loss of trees.
- Where the location of new and existing footings and impervious areas are in relation to the root zone of established trees.
- The compatibility of any buildings and works with existing vegetation proposed to be retained.
- The effect of any proposed lopping on the significance, health or appearance of the tree.
- Whether there is a valid reason for removing the tree and whether alternative options to removal have been fully explored.
- If retention cannot be achieved, or a tree is considered appropriate for removal, consider whether:
  - a replacement tree has been provided; and
  - the site provides adequate space for offset planting of trees that can grow to a mature height similar to the mature height of the tree to be removed.
- If it is not appropriate to select an indigenous or native tree species, the selected species should be drought tolerant.
- Whether the planting location of a replacement tree(s) will enable the future growth of the canopy and root system of the tree to maturity.
- Whether the replacement tree species and planting locations conflict with existing or proposed overhead wires, buildings, easements and existing trees.
- Whether the proposal is consistent with the *Whitehorse Neighbourhood Character Study (April 2014)*, the *Municipal Wide Tree Study Options and Recommendations Report (June 2016)* and the *Municipal Wide Tree Study Part 2: Additional Analysis in Garden Suburban and Bush Suburban Character Precincts (March 2019)*.

9.1.3 – ATTACHMENT 2. Amendment C219: Clauses for adoption w/ tracked changes

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ENVIRONMENT

Proposed C219
21.05-1
19/11/2015
C130
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Overview

There are issues of natural environment, visual environment and the built environment which are important to the City of Whitehorse. Several areas in the City have special natural, environmental or historic significance while many open space reserves provide habitats for a diverse range of flora and fauna, as well as a range of both active and passive recreation activities. These areas are not merely places for recreation, but conservation. There is an urgency to put appropriate controls into place to protect natural features, buildings and areas of historical significance to avoid further loss of the City's environmental assets.

Tree preservation and regeneration is vitally important within the City. It strengthens neighbourhood character, strengthens the landscape and amenity, reduces the urban heat island effect, provides habitat for wildlife, improves air quality and the local climate and has positive effects on community health and wellbeing.

Trees are integral to the neighbourhood character of Whitehorse and they have been identified as an important contributor to the Bush Environment, Bush Suburban and Garden Suburban character areas. The Municipal Wide Tree Study identified that *"trees are the most significant determinant of the character of various areas within the City of Whitehorse, with upper tree canopy covering a significant proportion of the city"* (Municipal Wide Tree Study Discussion Paper, March 2016).

Council is concerned that the removal of canopy trees and vegetation will erode the neighbourhood character of Whitehorse. Of particular concern is the clearing of all trees from sites prior to development. Council's interim Urban Forest Strategy published in 2018, outlines the vision, policies and actions relating to Whitehorse's tree population and has set a target for canopy cover of at least 30% by 2030.

The *Whitehorse Sustainability Strategy* is a key document for informing and supporting Council's ~~strategic~~ strategic objectives and commitment to the principles of sustainability. The Strategy includes a list of priority areas for action which are aimed at the City achieving ecological sustainability which is a fundamental principle to be implemented by the land use planning system. Ecological Sustainable Development is "using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased" (National Strategy for Ecological Sustainable Development 1992[NSESD]).

Council has ~~prepared~~ an Environmentally Sustainable Development policy in order to achieve best practice design, construction and operation for new development. This will accelerate Whitehorse's commitment to an ~~enviroenmentally~~ environmentally sustainable city.

The City contains many major thoroughfares of metropolitan significance. The visual amenity of these routes is critical in determining the overall sense of identity and character of the City. The City's 'Gateways' require special treatment in recognition of their impact on first impressions and the image that they project of the City. Main thoroughfares and gateways are prime locations for advertising signs. If not appropriately managed, the proliferation of signage can drastically reduce the visual amenity of an area. Council will facilitate adequate identification of businesses but seeks to minimise visual clutter. Many of the City's industrial areas were developed when planning controls were either non-existent or well below today's standards. Many of these areas are of poor amenity and their streetscapes are dominated by the built form, with little or no landscaping. Council wants to ensure that the streetscape is improved by way of street tree planting and landscaping among other things. It is also essential that all new development provide for appropriate landscaping and high quality design to reinforce the regeneration process.

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Council wishes to foster the provision and use of information technology throughout the community. The infrastructure required to provide access to such facilities can have a substantial impact on the streetscape and visual amenity of the City if not sensitively managed. In particular, cabling can seriously affect street trees that can, in turn, have a profound impact on the character of an area. Council has a strong preference for the location of communication cables underground, particularly along major thoroughfares such as Springvale Road, Canterbury Road, Middleborough Road and Whitehorse Road. Greater emphasis on urban design and streetscape appearance has also created an increased awareness and interest in underground power lines.

*Council's **Environment Strategy** is based on the principle that the environmentally sensitive assets of the City will be protected and enhanced.*

21.05-2 Key issues

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- Ecological sustainability.
- Protection of areas of special significance.
- Promotion of vegetation protection and regeneration.
- Promotion of design excellence.
- Heritage protection.
- Visual amenity.
- Underground cabling.
- Streetscape planting.
- Industrial areas.
- Stormwater management.
- Promotion of environmental issues including air, global warming, sustainable transport management and water quality.
- Waste management and litter reduction.
- Climate change.
- Promotion of water and energy conservation.
- Promotion of environmentally sustainable development.

21.05-3 Objectives

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- To protect and enhance areas with special natural, environmental, cultural or historic significance for the future enjoyment of the community.
- To facilitate environmental protection and improvements to known assets including water, flora, fauna and biodiversity assets.
- To develop main thoroughfares as attractive boulevards with improved advertising signage, landscaping and building design.
- To protect and enhance air and water quality.
- To reduce automobile dependency and encourage sustainable transport use.
- To reduce energy and water consumption.
- To protect and enhance the tree canopy cover in residential areas of the municipality.

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- To protect and enhance the preferred neighbourhood character and the liveability of residential areas within the municipality.
- To achieve best practice in addressing the principles of environmentally sustainable development.

21.05-4 Strategies

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Strategies to achieve these objectives include:

- Providing controls to protect and enhance areas of environmental significance.
- Ensuring that tree removal within significant areas requires permission.
- Ensuring that the replanting of tall trees and indigenous vegetation is appropriate to the type of vegetation in the area and enhances and retains biodiversity.
- Encouraging appropriate development that responds to environmental characteristics and infrastructure constraints.
- Ensuring that development along part of Terrara Road remains low density in order to respond to the environmental constraints that exist in this area.
- Identifying those buildings, structures and features of historical significance within the municipality.
- Ensuring development is of a high quality design that is compatible with the character and appearance of the area.
- Providing adequate open space and landscaping for new development.
- Requiring the planting of upper canopy trees and other vegetation that enhances the character of the area.
- Ensure that where applicable, the contribution of land towards any public open space requirements can assist in the protection of sites of environmental value identified as having high conservation significance.
- Encouraging underground cabling and the co-location of siting facilities for service and communication infrastructure, including satellite dishes to minimise visual and amenity impacts.
- Reducing the visual impact of on-site car parking from the street by locating parking areas to the side or rear of buildings and the provision of appropriate landscape buffers to soften hard surfaced areas.
- Ensuring advertising signs are well designed and compatible with the area and the building.
- Implementing ecological sustainability principles and Council's Sustainability Strategy.
- Encouraging development in those areas with adequate infrastructure and excellent public transport links.
- Encouraging water and energy efficient practices through Council's Energy and Water Action Plans.
- Encouraging waste minimisation and litter management through the implementation of Council's Waste Management Plan.
- Promote the use of sustainable transport through the implementation of Council's Integrated Transport Strategy.
- Managing development along the City's waterways to ensure there is no detrimental impact on water quality.

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- Encouraging appropriate construction methods to minimise impact on vegetation, stormwater, litter and neighbourhood amenity.
- Implementing Urban Design and Landscape Guidelines for the Tally Ho Activity Centre.
- Implementing best practice in environmentally sustainable development.

21.05-5 **~~Implementaton~~Implementation**

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These strategies will be implemented by:

Zones and overlays

- Applying a Significant Landscape Overlay to Bush Environment character precincts. ~~the areas surrounding Blackburn Lake Sanctuary and Blackburn/Gardiners Creeks, including large nominated sites.~~
- ~~Applying a Significant Landscape Overlay to areas around Glenburnie Road, Yarran Dheran, Collina Dell, Somers Trail and the Menin Road area.~~
- ~~Applying a Significant Landscape Overlay to areas in Vermont.~~
- Applying a Significant Landscape Overlay to all remaining residential areas in the municipality.
- Applying a Neighbourhood Character Overlay to areas adjoining Blackburn Shopping Centre.
- Applying a Neighbourhood Character Overlay to an area around Box Hill.
- Applying a Vegetation Protection Overlay to identified significant vegetation.
- Applying an Environmental Significance Overlay to land at 131-173 Central Road, Nunawading.
- Applying an Environmental Significance Overlay to the land at 15 Virgillia Street, Blackburn North.
- Applying a Heritage Overlay to the buildings and structures listed on the Victorian Heritage Register and identified in City of Whitehorse heritage reviews.
- Applying an Urban Floodway Zone where appropriate to ensure that development and use along the City's waterways is of a nature that does not negatively impact on water quality.
- Applying a Special Building Overlay to areas identified by Melbourne Water as being subject to inundation during a one in one hundred year flood to ensure that development along overland flow paths does not adversely affect the movement of floodwater and water quality.
- Applying a Design and Development Overlay to parts of the Tally Ho Activity Centre.

Policy and the exercise of discretion

- Using Clause 22.03 (Residential Development Policy) and Clause 22.04 (Tree Conservation) to supplement ResCode for the assessment of all residential applications.
- Ensuring that lot sizes in the area affected by the Significant Landscape Overlay in Bush Environment character precincts are generally in accordance with the prevailing minimum lot size of 650 square metres.
- Ensuring that all tree removal, tree replanting and development complies with the Tree Conservation Policy at Clause 22.04.

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- Apply the tall tree ratio in the Significant Landscape Overlay to all applications in the ~~Blackburn, Walker Estate, Glenburnie Road, Somers Trail, Collina Dell, Yarran Dheran, Menin Road and Vermont areas.~~ Bush Environment character precincts.
- Strongly encouraging the planting of indigenous species where appropriate.
- Using Clause 22.15 to ensure suitable land for public open space is provided by new developments in areas where a land contribution is preferred.
- Ensuring that all applications for signage comply with the Visual Amenity Policy at Clause 22.02.
- Requiring professional landscape plans (including the planting of upper canopy trees) for all new developments.
- Using Clause 22.01 Heritage Buildings and Precincts and Clause 43.01 Heritage Overlay for the assessment of applications in heritage areas.
- Ensuring that all applications for industrial uses comply with the State Environment Protection Policy for Air.
- Requiring the submission of a waste management plan for all multi-dwelling developments.
- Ensuring that development complies with requirements of the *Tally Ho Activity Centre Urban Design and Landscape Guidelines* March 2013.
- Ensuring that specified developments meet the requirements of the Environmentally Sustainable Development Policy at Clause 22.10.

21.05-6 Further strategic work

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- Develop an Environmentally Sustainable Development policy.
- Review further areas for inclusion in ~~Significant Landscape Overlays and~~ Neighbourhood Character Overlays.

21.05-7 Reference documents

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Guidelines for Areas of Special Significance

Blackburn Lake Surrounds Study, 2002

Walker Estate Special Character Area Urban Character Study, May 1999

Whitehorse Economic Development Strategy 2014-2019

Whitehorse Neighbourhood Character Study 2014

KLM City of Whitehorse, Neighbourhood Character Study Review of areas 14 and 16 February 2004

Whitehorse Sustainability Strategy 2008-2013, April 2008

Whitehorse Integrated Transport Strategy, May 2011

Whitehorse Energy Action Plan 2009-2014

Whitehorse Water Action Plan 2008-2013

Review of Neighbourhood Character Implementation Recommendations, Part 2 Review Areas, July 2004

131 Central Road, Nunawading: Vegetation Assessment by Stephen Mueck, Biosis (November 2007)

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Flora, fauna and habitat hectare assessment of 15 Virgillia Street Blackburn North Victoria, Biosis Research, April 2008

Collina Dell SLO Review, October 2007

Whitehorse Open Space Strategy, Thompson Berrill Landscape Design Pty Ltd, in association with Environment & Land Management Pty Ltd, November 2007

Review of Three Precincts in Character Areas 16 & 18, May 2008

Tally Ho Major Activity Centre Urban Design Framework, 2007

Tally Ho Activity Centre Urban Design and Landscape Guidelines, 2013

Municipal Wide Tree Study Discussion Paper, March 2016

Municipal Wide Tree Study Options and Recommendations Report, June 2016

Municipal Wide Tree Study Part 2: Additional Analysis in Garden Suburban and Bush Suburban Character Precincts, March 2019

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21.06 HOUSING

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21.06-1 Overview

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C177

The City of Whitehorse is a middle ring municipality providing housing for a wide range of household types, ages and cultural groups. In general, the population is slightly older than the metropolitan average, indicating an ageing population, however the majority of households are families with or without children. The types of residential development in the City vary between medium rise apartment buildings around Box Hill metropolitan activity centre, small unit developments in areas with good access to public transport and amenities, and standard detached dwellings in the majority of the residential areas.

The City of Whitehorse is under increased pressure to accommodate more people who are attracted to the area due to its strategic location, high amenity residential areas and quality services and facilities. The community is concerned about maintaining the high quality residential environment and ensuring that areas of environmental, heritage or special character are protected as the City's population grows. The municipality's leafy character is particularly valued, strengthened by the presence of quality canopy trees and other native and exotic vegetation. Trees and vegetation are considered one of the most significant determinants of neighbourhood character in the municipality, and therefore tree preservation and regeneration is of vital importance if the character of residential areas is to be maintained and enhanced.

Change and growth in urban areas with good public transport access can occur while contributing to the City's valued neighbourhood character. Areas such as the Box Hill metropolitan activity centre are able to accommodate increased housing growth in an urban setting while providing high levels of amenity for residents.

The Council's *Housing Strategy 2014* identifies areas of substantial, natural and limited growth. These categories of housing change are aligned with the neighbourhood character statements prepared for each area as part of the *Neighbourhood Character Study 2014* and the planning controls applying to the land. These statements and controls aim to direct housing growth across the municipality in a way which reflects the community's neighbourhood character aspirations, while balancing the future housing needs of Whitehorse. They are described as follows:

- Substantial Change areas provide for housing growth with increased densities, including inside designated structure plan boundaries and opportunity areas, in accordance with the relevant plans as well as around most train stations, adjoining tram routes and around larger activity centres.
- Natural Change areas allow for modest housing growth and a variety of housing types provided they achieve the preferred future neighbourhood character as identified in Clause 22.03 – Residential Development.
- Limited Change areas enable specific characteristics of the neighbourhood, environment or landscape to be protected through greater control over new housing development. These areas represent the lowest degree of intended residential growth in Whitehorse.

In addition, there are a number of identified "strategic redevelopment sites" in the City, plus opportunities within the Box Hill Metropolitan Activity Centre and in other Activity Centres for residential growth.

The *Neighbourhood Character Study 2014* further defines the preferred future character of precincts within the City. Council agrees with the concern within the community that poorly designed residential development is eroding the character and quality of some residential areas. Based on the *Neighbourhood Character Study 2014*, residential areas have been identified as being within precincts of the following neighbourhood character types:

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- Garden Suburban Area.
- Bush Suburban Area.
- Bush Environment.

Council will use the three categories of change and the identified character types to supplement 'ResCode' to encourage high quality development design that is responsive to the site constraints and opportunities whilst making a positive contribution to neighbourhood character.

The City also needs to respond to issues of housing affordability and promote environmentally sustainable development. Sustainable and well-designed housing can improve affordability over the long term, and contribute to the preferred neighbourhood character of residential areas. Non-residential uses in residential areas continue to require monitoring and control to ensure that amenity issues are managed.

21.06-2 Vision

14/10/2014
C160

The vision for housing in the City is "*To ensure that housing in the City of Whitehorse meets residents' needs in terms of location, diversity, sustainability, accessibility, affordability and good design*." There are a number of key challenges facing the City of Whitehorse in relation to housing. These are:

- Accommodating an additional 12,997 dwellings to house the projected population growth in the City to 2036.
- Ensuring established residential areas continue to play an important role in providing additional housing.
- Ensuring activity centres can accommodate additional housing growth and are the focus of increased housing and employment densities, public transport and service provision. Each activity centre in Whitehorse has a different level of capacity and is equipped in different ways to support increased housing density.
- Preserving areas of valued character and vegetation or landscape significance.
- Better utilising transport corridors including train and tram routes for medium and higher density housing.
- The pressure of higher property prices on housing affordability and the type of dwellings constructed due to Whitehorse's attractive leafy character, dominance of detached dwellings and locational attributes.
- A higher demand for private rental housing, a proportion of which will need to be affordable to low income tenants.
- A higher proportion of lone person households may require smaller housing types including town houses, units and apartments. However in some instances, these housing types are more costly to buy or rent than older housing stock, and can contribute to housing affordability problems.
- The provision of specific assistance to access appropriate accommodation for new and first generation migrant populations in suitable locations.
- The need to provide more accommodation for students, and accommodation which better meets their needs in terms of quality and affordability in areas near Deakin University Burwood Campus and Box Hill Institute of TAFE.
- The need to develop or implement Structure Plans with objectives to improve housing affordability and special needs housing opportunities in activity centres.

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Key Housing Principles

- Develop housing in Whitehorse that shapes the City's urban structure to support environmental and social sustainability, resilience and the health and well being of residents.
- Encourage housing that supports preferred neighbourhood character objectives and urban design aspirations for the City.
- Promote housing growth and diversity in locations within walking distance of public transport and local services such as shops, parks and education.
- Limit residential growth in areas of valued landscape or built form character, and/or with infrastructure limitations.
- Support the housing directions of existing and future adopted Structure Plans and Urban Design Frameworks for activity centres.
- Provide a mix of housing that meets the life stage and cultural needs of residents.
- Ensure housing in substantial change areas is designed to achieve and enhance sense of place and identity, and facilitate neighbourhood participation.
- Support environmentally sustainable building, design and innovation in new housing development.
- Advocate for increases in affordable and social housing stock.

21.06-3 Housing Location

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Key Issues

- Encouraging appropriate residential development within the municipality's established network of activity centres.
- Providing appropriate housing growth in locations with potential amenity considerations (eg. sensitive interfaces, rail corridors, tram lines, main roads).
- Ensuring timely provision of infrastructure and public realm improvements to support the growth of the municipality.
- Encouraging housing in locations with good access to public transport and services, which can minimise demand on the road network and better target the delivery of community and physical infrastructure and services.

Objectives

Limited Change Areas

- Conserve and enhance those elements which contribute to the valued environmental, heritage and neighbourhood character of the place.
- Ensure new development protects and reinforces the environmental, heritage values and / or preferred future neighbourhood character of the area.
- Ensure new development mainly takes the form of renovations to existing houses, replacement of single dwellings with new dwellings and some limited medium density development.

Natural Change Areas

- Support increased housing choice by allowing for a diversity of dwelling types, sizes and tenures.
- Ensure new development contributes to the preferred neighbourhood character of the precinct.

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- Encourage new development applications to include landscape guidelines that show how the enhancement or retention of existing vegetation where possible will be achieved, at the outset of the design process.

Substantial Change Areas

- Support increased residential densities.
- Support increased housing choice by allowing for a diversity of dwelling types, sizes and tenures to suit a range of household types.
- Facilitate achieving a new, preferred character for these areas over time through quality developments.
- Support the master planning of larger sites to facilitate the development of diverse, high amenity precincts which have an identifiable sense of place.
- Encourage the provision of shop-top dwellings and low scale apartment developments in activity centres, particularly within key Neighbourhood Activity Centres and on sites abutting the Principal Public Transport Network and main roads.
- Provide space for planting, communal spaces and rooftop gardens to improve the amenity and liveability of dwellings.

Strategies

- Council will assess new applications for dwellings and subdivisions against the relevant objectives, strategies and preferred character statements as specified in Clause 22.03 – Residential Development and in the *Whitehorse Neighbourhood Character Study 2014.*

Implementation

- Specify built form and landscape expectations for the three categories of change and the identified neighbourhood character precincts within Clause 22.03 – Residential Development.
- Zone residential areas identified for Limited Change to Neighbourhood Residential Zone.
- Zone residential areas identified for Natural Change to General Residential Zone.
- Zone residential areas identified for Substantial Change to General Residential or Residential Growth Zone as appropriate.
- Apply a Significant Landscape Overlay or Neighbourhood Character Overlay to areas of significant neighbourhood character or landscape.
- Apply the Heritage Overlay to buildings, structures and natural features of historical significance.
- Apply a Development Plan Overlay or Design and Development Overlay to guide the design and built form of new development as appropriate.

21.06-4 Housing Diversity

14/10/2014
C160

Key Issues

- Meeting the continuing high demand for private rental accommodation, which puts pressure on housing affordability.
- Providing high quality and accessible housing to meet the needs of the students that will continue to be attracted to Deakin University Burwood Campus and Box Hill Institute of TAFE and will require housing with high quality accessibility and services.

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- Improving access to the housing market for the City's large proportion of first and second generation residents from non English speaking backgrounds, many of whom currently experience barriers inhibiting their entry to the market.
- Encouraging a broader range of housing types to meet the differing needs of the future population through the lifecycle.

Objectives

- Diversify the variety of housing types in the City of Whitehorse.
- Provide housing that meets the specialised requirements of particular residents.
- Monitor housing development trends and engage with relevant stakeholders.

Strategies

- Promote activity centres with high accessibility that offer a range of services and provide a high level of amenity to residents as key locations for housing diversity.
- Support the renovation and redevelopment of single houses in Limited Change Areas as a means of providing accommodation for larger household types and choice for other households.
- Encourage appropriate student housing close to the university campuses in a form that respects the existing or preferred character of the area.

21.06-5 Housing Affordability

14/10/2014
C160

Key Issues

- Meeting an increasing demand for more affordable housing across the municipality.
- Ensuring student housing is consistent with the location and design requirements of Council Policy.

Objectives

- To increase the supply and distribution of affordable housing in the City of Whitehorse.
- To reduce housing stress in the City of Whitehorse.

Strategies

- Continue to identify opportunities for affordable housing in designated structure plans including specific location, localised need and design, and incentives for developers.

21.06-6 Housing Design

14/10/2014
C160

Key Issues

- Ensuring new developments do not result in a loss of the existing vegetation coverage and tree canopy.
- Encouraging appropriate development within the municipality's established areas.
- Maintaining the preferred neighbourhood character of Limited Change Areas.
- Providing adequate space for substantial vegetation in Limited and Natural Change Areas.
- Strengthening and improving the preferred neighbourhood character in Natural Change Areas.

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- Creating a valued and identifiable sense of place in Substantial Change Areas and providing an appropriate design response in locations with potential to support additional housing.
- Ensuring new developments adjoining or close to environmentally significant and sensitive areas are carefully and respectfully designed.
- Ensuring that physical and community infrastructure is adequate and maintained at a standard to meet the future demand.
- Encouraging private sector provision of housing that improves the environmental performance of the municipality and minimises ongoing running costs for the residents.
- Encouraging continued improvement in housing design for better functionality, universal access and adaptability to improve access for people with mobility or other physical limitations and to lessen future costs in modifications to meet the current or future occupants' needs.

Objectives

- To enhance the design quality and character of residential development.
- To build resilience in the City's housing stock to the impacts of climate change.
- To improve the environmental performance of new and existing housing.
- To protect environmentally sensitive areas from inappropriate development.
- To encourage the provision of well designed, adaptable and accessible housing.

Strategies

- Amend the Municipal Strategic Statement to provide policy support for improving the design quality of residential development in the municipality.
- Implement the Neighbourhood Character Precinct Brochures with Preferred Character Statements and Design Guidelines to provide guidance and support for future residential development and assessments.
- Investigate two identified precincts for potential additional controls:
  - Precinct Garden Suburban 16 (GS16), which requires detailed survey and analysis to determine its suitability for Neighbourhood Character or Heritage Overlay controls; and
  - Precinct Bush Suburban 9 (BS9), which includes several areas that may be suitable for further Significant Landscape Overlay controls.
- Investigate other precincts for potential additional controls, utilising the Neighbourhood Character Overlay, Heritage Overlay and Significant Landscape Overlay, as appropriate.
- Prepare and adopt design guidelines for identified opportunity sites to ensure their redevelopment positively contributes to their surrounding context, provides high quality and innovative building design and facilitates high levels of residential amenity for new and adjoining residents.
- Encourage and promote examples of housing design that enable future adaptation or modify existing dwellings to meet changing needs with minimal current or future expense.
- Promote the use of the *Liveable Housing Design Guidelines* to new home owners and developers.

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21.06-7 Non-Residential Uses

14/10/2014
C160

Key Issues

- Ensuring non-residential uses are designed in a way that integrates these uses and their built form into their residential environments and that there is no detriment to the community or the surrounding residential amenity.
- Ensuring that residential activity in non-residential areas is mindful of a lower expectation of amenity protection than in a residential area.

Objectives

- To ensure buildings for non-residential uses are designed to integrate with and respect the surrounding neighbourhood character.
- To ensure that non-residential uses do not cause detriment to the community or the amenity of the surrounding residential area.
- To ensure residential developments in areas where non-residential activity is encouraged are designed to ameliorate the potential impact of non-residential activity in the vicinity.

Strategies

- Implement policy to direct non-residential uses to appropriate locations, and provide parameters for their operation.
- Apply the Neighbourhood Character Precinct Brochures with Preferred Character Statements and Design Guidelines to provide guidance for future non-residential development in residential areas and assessments.

21.06-8 Policy and the exercise of discretion

14/10/2014
C160

It is policy to:

- Ensure that all development applications comply with the Residential Development Policy at Clause 22.03.
- Ensure that all development applications are assessed in accordance with the Residential Development Policy at Clause 22.03.
- Ensure that all non residential use and development applications within a residential zone comply with the Non-Residential Uses in Residential Areas Policy at Clause 22.05.
- Require that landscape buffers between commercial parking areas and abutting residential properties be of suitable size and dimensions to provide for a range of screening vegetation and upper canopy trees.
- Ensure that all new applications for gaming machines or gaming venues comply with the Gaming Policy at Clause 22.18.
- Use local planning policy to manage student accommodation in accordance with the Student Accommodation Policy at Clause 22.14.

21.06-9 Reference documents

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Proposed C219

Box Hill Transit City Activity Centre Structure Plan June 2007

Burwood Heights Activity Centre Structure Plan, June 2006

Burwood Village Neighbourhood Activity Framework Plan, May 2008

9.1.3 – ATTACHMENT 2. Amendment C219: Clauses for adoption w/ tracked changes

City of Whitehorse Landscape Guidelines, 2012

City of Whitehorse Responsible Gambling Policy, 2011

Flora, fauna and habitat hectare assessment of 15 Virgillia Street Blackburn North Victoria, Biosis Research, April 2008

Guidelines for Areas of Special Significance and Beauty

KLM, Neighbourhood Character Study Review Of Areas 14 and 16, February 2004

Liveable Housing Design Guidelines

MegaMile (west) and Blackburn Activity Centres Urban Design Framework, July 2010 Nunawading/MegaMile Major Activity Centre and Mitcham Neighbourhood Activity Centre Structure Plan, April 2008

Review of Neighbourhood Character Implementation Recommendations, Part 2 Review Areas, July 2004

Review of Three Precincts in Character Areas 16 & 18, May 2008

Tally Ho Major Activity Centre Urban Design Framework, 2007

Tally Ho Activity Centre Urban Design and Landscape Guidelines, 2013

Walker Estate Special Character Area Urban Character Study, May 1999

Whitehorse Housing Strategy, 2014

Whitehorse Neighbourhood Character Study, 2014

Whitehorse Neighbourhood Activity Centre Urban Design Guidelines, 2014

131 Central Road, Nunawading: Vegetation Assessment by Stephen Mueck, Biosis (November 2007)

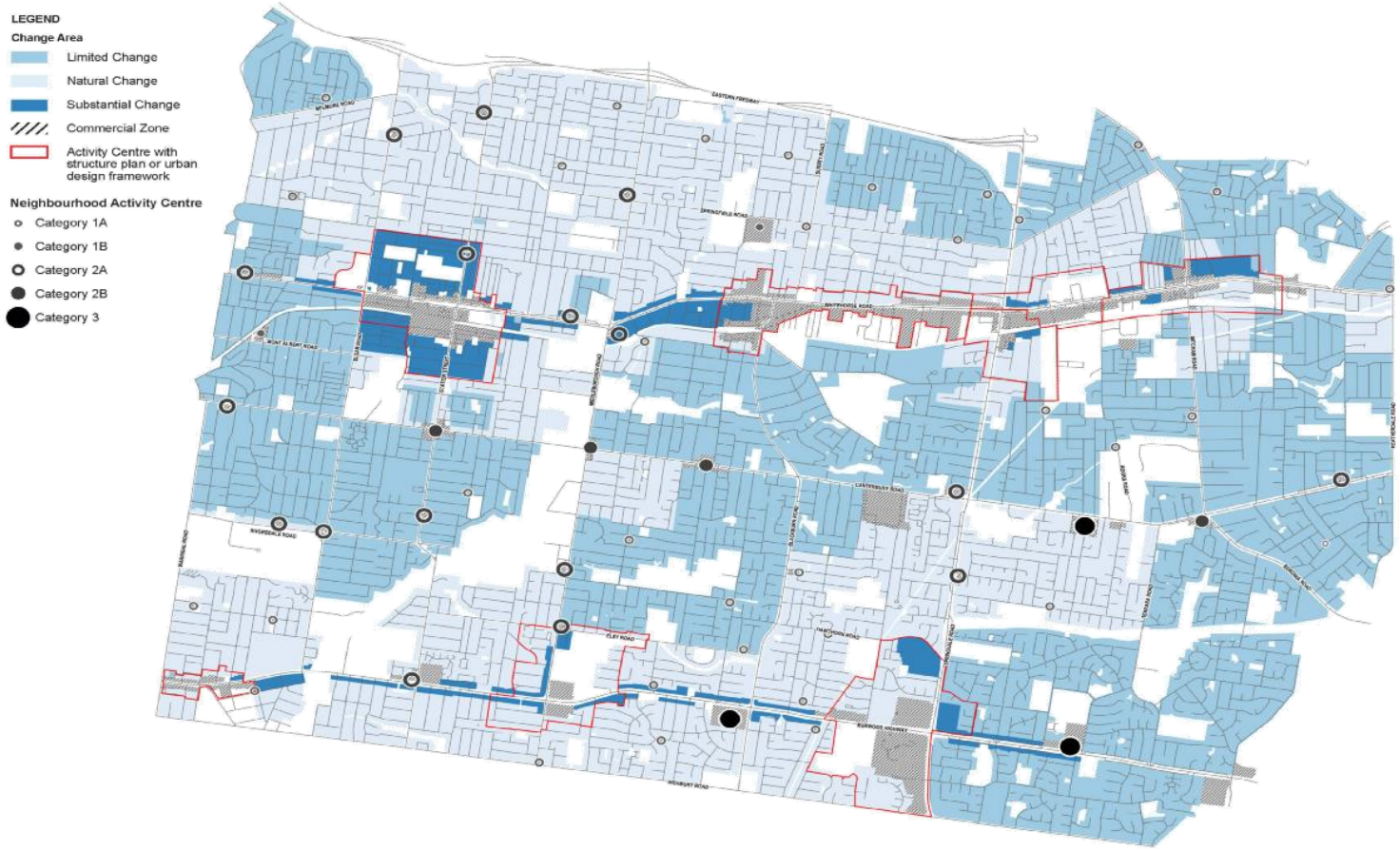
Municipal Wide Tree Study Discussion Paper, March 2016

Municipal Wide Tree Study Options and Recommendations Report, June 2016

Municipal Wide Tree Study Part 2: Additional Analysis in Garden Suburban and Bush Suburban Character Precincts, March 2019

9.1.3 – ATTACHMENT 2. Amendment C219: Clauses for adoption w/ tracked changes

HOUSING FRAMEWORK PLAN



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22.03 RESIDENTIAL DEVELOPMENT

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C160

Proposed C219

This policy applies to all applications for development within the Neighbourhood Residential, General Residential, Residential Growth, Mixed Use and Priority Development Zones. Development of land in these zones will need to demonstrate consistency with the attached Neighbourhood Character Precincts map (Map 1).

This policy will be used to supplement the neighbourhood character and residential policy requirements of Clauses 54, 55 and 56.

22.03-1 Policy basis

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The importance of residential development within the City of Whitehorse is set out in the Municipal Strategic Statement (MSS).

This policy:

- Builds on the MSS objectives in Clause 21.06 – Housing relating to maintaining and enhancing the character of the City's residential areas.
- Ensures that residential development within the City of Whitehorse is consistent with the three categories of housing change and the housing objectives of Clause 21.06 – Housing.
- Specifies the preferred built form, landscape and neighbourhood character sought by Council and the community for each of the Character Precincts within the City of Whitehorse.
- Builds on the MSS objectives in Clause 21.05 – Environment relating to ensuring that development is of high quality and compatible with the character and appearance of the area and providing adequate open space and landscaping for new development.

22.03-2 Objectives

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- To ensure that residential development within the City of Whitehorse is consistent with the built form envisaged for the three categories of housing change, those being limited, natural and substantial change.
- To ensure development contributes to the preferred neighbourhood character where specified.
- To provide certainty to the community about the areas targeted for and protected from increased development.
- To ensure that new development minimises the loss of trees and vegetation.
- To ensure that new development does not detract from the natural environment and ecological systems.
- To ensure that new development provides adequate vegetation and gardens consistent with the preferred neighbourhood character.
- To recognise the potential for change as a result of new social and economic conditions, changing housing preferences and State and local planning policies.
- To accommodate the population increases in the municipality in the areas identified as being able to sustain higher density based on environmental and infrastructure considerations.
- To recognise that areas of substantial and natural change will make a significant contribution to increases in housing stock.
- To facilitate development in areas of substantial change.

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- To limit dwelling densities in the limited change areas identified as having either character, heritage, environmental or infrastructure constraints.

22.03-3 Policy

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It is policy that:

Council will assess new applications for dwellings and subdivisions against the relevant objectives and strategies for the three categories of housing change, as identified in Clause 21.06 – Housing and detailed below in Clause 22.03-4.

Council will ensure that the Preferred Character Statements specified in Clause 22.03-5 and relevant precinct guidelines within the *Whitehorse Neighbourhood Character Study 2014* will be applied to all applications for dwellings and subdivisions in the specified Character Area, Institutional or other large strategic development sites.

22.03-4 Categories of Housing Change

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Strategies for Limited Change Areas

- Ensure residential development is of a scale, form and character that is consistent with the surrounding area, and will predominantly comprise:
  - Detached dwellings
  - Semi-detached dwellings
- Provide some diversity of dwelling sizes and tenures, including affordable housing, where feasible.
- Ensure the scale and appearance of new housing respects the appearance of surrounding development and the environmental, heritage and neighbourhood character values of the area.
- Encourage the retention of older dwellings in areas where these buildings dominate, and limit new development to two dwellings per lot.

Strategies for Natural Change Areas

- Encourage low and medium density housing in the following forms:
  - Detached houses.
  - Semi-detached dwellings, townhouses, row or terrace houses.
  - Units or townhouses.
- Support new medium density developments in Natural Change Areas that:
  - contribute to the preferred neighbourhood character for the location.
  - provide a sensitive and appropriate interface with adjoining streetscapes, buildings and residential areas.
- Provide a range of dwelling types, sizes and tenures, including affordable housing, in larger developments.
- Locate medium density housing, in the form of townhouses or units, close to transport, activity centres and community infrastructure.
- Ensure that the siting and design of new dwellings is respectful of surrounding development.

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- Ensure buildings interfacing sensitive areas and uses in natural change areas are of a scale and massing appropriate to the character and scale of their context.
- Consider the retention of older dwellings in areas where these buildings dominate.

Strategies for Substantial Change Areas

- Encourage the following forms of housing in Substantial Change areas:
  - Townhouses.
  - Units.
  - Flats and apartments.
- Shop-top dwellings and low scale apartment developments in activity centres:
  - Are encouraged at locations within key Neighbourhood Activity Centres identified in Schedule 4 to the Design and Development Overlay and in designated areas abutting the Principal Public Transport Network and main roads.
  - Should provide a sensitive and appropriate interface to adjoining streetscapes, buildings and residential areas.
- Locate new development in the form of flats and apartments in Substantial Change Areas only.
- Provide a range of dwelling types, sizes and tenures, including affordable housing, in larger developments.
- Ensure buildings interfacing sensitive areas and uses have a scale and massing appropriate to the character and scale of their context.
- Create a new, higher density urban character in areas located away from sensitive interfaces.
- Prioritise works to improve the appearance, function and safety of the public realm in locations subject to the greatest increase in residential density.
- In new street layout, add to and extend the pattern of surrounding streets, and provide convenient, safe and frequent pedestrian connections into surrounding areas.
- Ensure streets and other spaces are designed and managed as public spaces with unconstrained access, with high quality and durable finishes.
- Ensure new development provides space for planting, communal spaces and rooftop gardens to improve the amenity and liveability of dwellings.
- Ensure adequate infrastructure is in place to support substantial change areas.

22.03-5 Preferred Character Statements

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Bush Environment

The streetscapes will be dominated by vegetation with subservient buildings frequently hidden from view behind vegetation and tall trees. The buildings will nestle into the topography of the landscape and be surrounded by bush-like native and indigenous gardens, including large indigenous trees in the private and public domains.

Buildings and hard surfaces will occupy a very low proportion of the site. They will be sited to reflect the prevailing front, rear and side setbacks. The larger rear setbacks will accommodate substantial vegetation including large canopy trees. The bushy environs are complemented by street trees and a lack of front fencing. Properties abutting and close to

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creeks and lake environs will contain more indigenous trees and shrubs that act in part as wildlife corridors.

This precinct is identified for the lowest scale of intended residential growth in Whitehorse (Limited Change area) and the preservation of its significant landscape character and environmental integrity is the highest priority.

Bush Suburban 1

Dwellings will be dominated by the vegetated surrounds and sit within the landscape. While often visible from the street, buildings will not dominate the streetscape or penetrate the predominant tree canopy height and will fit within the contours of the site. The established pattern of front and side setbacks will be maintained, allowing sufficient space for retention, planting and growth of trees. All redeveloped properties within the area will contribute to the bushy landscape character of the public realm, incorporating large native / indigenous canopy trees and vegetation. The vegetated character of the streetscape will be complemented by the absence of front fencing, or low open style front fences, allowing views into private gardens.

Bush Suburban 2

The area will retain its classic bush suburban characteristics of low scale, pitched-roof dwellings set in spacious garden settings. The defined pattern of regular front setbacks and side setbacks from at least one side boundary will be maintained, allowing sufficient space for planting and growth of new vegetation. New buildings and additions will appear regular from the street and will be set back at upper levels to allow views between dwellings.

Low or open style front fences will provide a sense of openness along the streetscape, and allow views into front gardens. The landscape character of the area will be enhanced through the planting and growth of new vegetation, including large shrubs and tall canopy trees.

Areas with good access to train stations will accommodate more dwellings with slightly more compact siting than the remaining residential areas, but with space for large trees and gardens.

Bush Suburban 3

The low scale, pitched roof dwellings will sit within established garden settings that contain substantial vegetation including native and exotic canopy trees. The dominance of remnant indigenous eucalypts is retained and enhanced.

Properties abutting or situated close to Gardiners Creek, the Blackburn Creeklands and Wurrundjeri Walk, or with interface to Bush Environment areas will contain substantial vegetation, and development will be sited so that the overall visibility of buildings is minimised when viewed from the open space corridors.

New buildings will occasionally be built to one side boundary, however the rhythm of dwelling spacing appears regular from the street. In areas where timber predominates, new buildings utilise complementary materials. The impression of the streetscape will be of informality and openness due to a frequent lack of front fencing or low, unobtrusive fences, and the landscaped setting.

The landscape character of the area will be enhanced through the planting and growth of new vegetation, including large shrubs and tall canopy trees.

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Bush Suburban 4

The dwellings will sit within established bushy garden settings, comprising large canopy trees and extensive native planting. The buildings are often partially hidden by vegetation and, while evident in the streetscape vista, do not dominate the streetscape. Large native and some exotic trees on public and private land provide a backdrop of vegetation, visible between and behind dwellings. Front fences are either not provided or are low, contributing to an informal and vegetation fringed streetscape. Properties abutting and close to the parklands (Heatherdale Reserve, Simpson Park and Melbourne Water pipe reserve) will contain more trees that complement the park landscape and contribute to the overall tree canopy.

Areas around Mitcham station and the MegaMile Activity Centre will accommodate more dwellings with slightly more compact siting than the remaining residential areas, but with space for large trees and gardens.

Bush Suburban 5

Modest, low scale dwellings sit within well-established garden settings, including substantial native shrubs and tall canopy trees. Generous sized front and side setbacks will be maintained, allowing sufficient space for the continued planting and growth of new vegetation. The spaciousness of the area will be further complemented by the absence of front fencing, or low open style front fences, allowing views into front gardens. Properties abutting and close to parklands and the Koonung Creek Trail will reflect and contribute to the landscape character of the creek corridor, incorporating large canopy trees and native vegetation. Street trees further contribute to the vegetation dominated character of the area.

Bush Suburban 6

The mixed, low scale dwelling styles will be set within established, largely exotic garden settings. Generous front, side and rear setbacks will provide space for large trees and shrubs that dominate the streetscape and provide a backdrop to most properties. While occasionally visible from the street, new buildings will sit well below the tree canopy height and will be set back at upper levels. The large street trees will continue to provide an important contribution to the vegetation dominated streetscapes.

Bush Suburban 7

The modest dwellings will sit within established bushy garden settings that contain substantial vegetation, including large trees. Buildings will continue to be partially hidden behind vegetation, and adhere to the regular setback patterns of the street. The streetscape will retain an informal character due to the lack of front fencing and dominant landscape surroundings. The tall, native eucalypts in streets and private gardens will continue to provide a significant contribution to the tree canopy across the precinct. Properties abutting and close to the Dandenong Creek parklands will contain more trees that complement the creek-side landscape.

Bush Suburban 8

The low scale dwellings will sit within spacious and informally landscaped grounds that contain substantial vegetation including large trees. Dwellings will be partially visible from the road and be set back large distances from all boundaries. In Terrara Road, gardens may incorporate large grassy expanses. Materials and finishes will be subdued, blending with the surrounding environment. The Bellbird Dell Reserve forms the core of the area and vegetation will appear to flow from the Reserve through the streetscapes, which is further enhanced by a lack of front fences and wide, grassy nature strips.

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Bush Suburban 9

The bushy landscape character afforded by substantial native shrubs and tall canopy trees will remain a key characteristic of the area. Modest dwellings will continue to be partially hidden behind vegetation, and adhere to the regular setback patterns of the street. Buildings will be absorbed into the vegetation-dominated landscape and reflect the topography by being designed to step down the site and follow the contours.

The streetscape will retain an informal character due to the lack of front fencing and dominant landscape surroundings. The tall, native eucalypts in streets and private gardens will continue to provide a significant contribution to the tree canopy across the precinct. Properties abutting and close to the Dandenong Creek corridor will contribute to the bushy landscape character of the public realm, incorporating large canopy trees and native vegetation.

The openness of the streetscape will be enhanced by the absence of front fencing, or low open style front fences, allowing views into private gardens.

The areas within this Precinct will be investigated for possible inclusion in the Bush Environment character type.

Garden Suburban 1

The simple, moderately scaled dwellings, including many from the Interwar era, will sit within low-set, spacious gardens and are clearly visible from the street through open frontages. The formal character of the area will be enhanced by garden settings with tall trees, lawns, garden beds and shrubs. A sense of spaciousness will be established and enhanced with consistent front and side setbacks, and low or open style front fences.

Buildings will be occasionally built to the side boundary, but appear to have side setbacks with space for planting. Buildings close to Gardiner's Creek will be sited so that the overall visibility of the development is minimised when viewed from the creek corridor, which will enhance the natural, bushy settings. Vegetation from private gardens will enhance the existing landscape character of the creek corridor, incorporating large native / indigenous canopy trees.

Areas within the Structure Plan areas of Burwood Village and nearby (Substantial Change) will undergo change to accommodate new medium density dwellings with more compact siting, while retaining space for landscaping including trees.

Areas with good access to trams will accommodate more dwellings with slightly more compact siting than the remaining residential areas, but with space for large trees and gardens.

Garden Suburban 2

The combination of heritage and quality older style dwellings and well designed contemporary buildings set within large gardens will continue to form the key characteristics of this area. New dwellings will be sited in generous gardens to reflect the spacious qualities and the dominance of planting in the streetscape. Buildings or extensions will respect neighbouring properties from earlier periods, in scale and siting.

The vegetated character of the area will be maintained by retaining consistent front setbacks that allow for trees and shrubs. Buildings will be set back from side boundaries to provide a visual separation reflecting the typical rhythm of the streetscapes. Low or open style front fences will allow private gardens to contribute to the leafy character of the area.

Areas with good access to trams and train stations will accommodate more dwellings with slightly more compact siting than the remaining residential areas, but with the continued incorporation of trees and gardens, and high quality, responsive design.

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Garden Suburban 3

The area will retain its classic garden dominated characteristics with low scale dwellings set in generous garden settings. Wide front and side setbacks from at least one side boundary allow views between dwellings, and low or open style front fences will continue to contribute to the spacious character of the area. The landscape settings will be enhanced through the planting and growth of new vegetation, including large shrubs and tall canopy trees.

Properties abutting or situated close to Gardiner's Creek will contain substantial vegetation, and development will be sited so that the overall visibility of buildings is minimised when viewed from the creek corridor.

Areas with good access to trams and Wattle Park shopping centre will accommodate more dwellings, including well designed medium density housing, with slightly more compact siting than the remaining residential areas, but with space for large trees and gardens.

Garden Suburban 4

The area will retain its classic garden suburban characteristics of modest, pitched roof dwellings in formal garden settings. The defined pattern of regular front setbacks and side setbacks from both side boundaries will be maintained, allowing sufficient space for planting and growth of new vegetation. Low or open style front fences will provide a sense of openness along the streetscape, and allow views into front gardens.

Properties abutting or situated close to Gardiner's Creek will contain substantial vegetation, and development will be sited so that the overall visibility of buildings is minimised when viewed from the creek corridor.

In areas along the tram corridor on Burwood Highway (Substantial Change) infill development including medium density housing and apartment developments will be common, however new buildings and additions will be set back at upper levels to minimise dominance in the streetscape and impact on nearby standard residential areas.

Areas with good access to trams and shops will accommodate more dwellings, including well designed medium density housing, with slightly more compact siting than the remaining residential areas, but with space for large trees and gardens.

Garden Suburban 5

The modest, pitched roof dwellings will sit within well-established garden settings and will not dominate the streetscape due to consistent siting patterns and substantial planting of canopy trees. The rhythm of dwelling separation will appear regular from the street, even with buildings occasionally built to one side boundary. The streets will have a spacious and leafy feel, which is complemented by tall trees in the public and private realm, visible front lawn areas due to the frequent lack of or low front fencing and grass nature strips.

In areas adjacent to the tram corridor along Burwood Highway (Substantial Change) and the areas designated Substantial Change within the Burwood Heights adopted structure plan and within the Tally Ho Major Activity Centre adopted urban design framework, infill development including medium density housing and apartment developments will be common. New buildings and additions however, will be set back at upper levels to minimise dominance in the streetscape and impact on nearby standard residential areas.

Areas with good access to trams and shops will accommodate more dwellings, including well designed medium density housing, with slightly more compact siting than the remaining residential areas, but with space for large trees and gardens.

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Garden Suburban 6

The modest, pitched roof dwellings will sit within well-established garden settings and will not dominate the streetscape due to consistent siting patterns and substantial planting. The rhythm of dwelling separation will appear regular from the street, even with buildings occasionally built to one side boundary. The streets will have a spacious and leafy feel, which is complemented by tall trees in the public and private realm, visible front lawn areas due to the frequent lack of or low front fencing and grass nature strips.

Garden Suburban 7

The contemporary dwellings will sit within larger lots, comprising spacious, established gardens containing substantial vegetation and trees. Buildings will be set back from side boundaries sufficient to provide vegetation and while occasionally built to one side boundary, appear to have side setbacks when viewed from the street. The streetscape will retain an informal character due to nonexistent or low and unobtrusive front fencing and well-landscaped settings.

Buildings close to Dandenong Creek environs will be sited so that the overall visibility of the development is minimised when viewed from the creek corridor, which will enhance the natural, bushy settings. Vegetation from private gardens will enhance the existing landscape character of the creek corridor, incorporating large native / indigenous canopy trees.

Areas within close proximity to trams along Burwood Highway will accommodate more dwellings with slightly more compact siting than the remaining residential areas, but with space for large trees and gardens.

Sites fronting the Burwood Highway tram route, or indicated as significant change areas within current adopted structure plans or urban design frameworks (Substantial Change areas) will undergo change to accommodate new medium density dwellings with more compact siting, while retaining space for landscaping including trees.

Garden Suburban 8

A variety of well articulated dwelling styles will sit within open garden settings incorporating a mixture of native and exotic vegetation and large trees. The established pattern of front and side setbacks will be maintained, allowing sufficient space for planting and growth of new vegetation. Infill development will be common, however new buildings and additions will be setback at upper levels to minimise dominance in the streetscape.

Properties abutting and close to the Koonung Creek, Bushy Creek and Gawler Chain parklands will contribute to the bushy landscape character of the public realm, incorporating large native / indigenous canopy trees and native / indigenous vegetation. The openness and informality of the streetscape will be further enhanced by low open style front fences that allow for views into front gardens.

Garden Suburban 9

The area will retain its classic garden suburban characteristics of low set, pitched roof dwellings set in spacious garden settings, with a backdrop of large native and exotic trees. The established pattern of regular front and side setbacks from both side boundaries will be maintained, allowing sufficient space for planting and growth of new vegetation.

Infill development including unit developments will be common, however new buildings and additions will be set back at upper levels to minimise dominance in the streetscape. Low or open style front fences will provide a sense of openness along the streetscape, and allow views into front gardens and lawn areas.

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Buildings close to Koonung Creek and Bushy Creek parklands will be sited so that the overall visibility of the development is minimised when viewed from these areas, which will enhance their natural, bushy settings. Vegetation from private gardens will enhance the existing landscape character of the creek corridor or parklands, incorporating large native / indigenous canopy trees.

Garden Suburban 10

A variety of well articulated dwelling styles will sit within open garden settings incorporating a mixture of native and exotic vegetation and large trees. Infill development will be common, however new buildings and additions will be set back at upper levels to minimise dominance in the streetscape. The consistent front set backs and spacing between dwellings will be retained, with buildings set back or appearing to be setback from both side boundaries. Low or open style front fences will provide a sense of openness along the streetscape, and allow views into front gardens.

The Limited Change areas / sites are subject to additional controls under the Heritage and Neighbourhood Character Overlays.

Garden Suburban 11

A variety of well articulated dwelling styles will sit within compact garden settings. Infill development will be common, however new buildings and additions will be setback at upper levels to minimise dominance in the streetscape. The consistent front setbacks and spacing between dwellings will be retained, with buildings setback or appearing to be setback from at least one side boundary. Low or open style front fences will provide a sense of openness along the streetscape, and allow views into front gardens.

Garden Suburban 12

The area will retain its classic garden suburban characteristics of low set, pitched roof dwellings set in spacious garden settings, with a backdrop of large native and exotic trees. The established pattern of regular front and side set backs from both side boundaries will be maintained, allowing sufficient space for planting and growth of new vegetation. Low or open style front fences will provide a sense of openness along the streetscape, and allow views into front gardens and lawn areas.

Garden Suburban 13

The area will retain its classic garden suburban characteristics of low set, pitched roof dwellings set in spacious garden settings, with a backdrop of large native and exotic trees. The established pattern of regular front and side setbacks from both side boundaries will be maintained, allowing sufficient space for planting and growth of new vegetation.

Infill development including unit developments will be common, however new buildings and additions will be set back at upper levels to minimise dominance in the streetscape. Low or open style front fences will provide a sense of openness along the streetscape, and allow views into front gardens and lawn areas.

Buildings close to Cootamundra Walk will be sited so that the overall visibility of the development is minimised when viewed from the open space, which will enhance the natural, bushy settings. Vegetation from private gardens will enhance the existing landscape character of the corridor, incorporating large native / indigenous canopy trees.

Areas within the Blackburn / Megamile West Urban Design Framework and nearby (Substantial Change) will undergo change to accommodate new medium density dwellings with more compact siting, while retaining space for landscaping including trees.

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Areas with good access to the train stations at Laburnum and Blackburn (Substantial Change) will accommodate more dwellings with slightly more compact siting than the remaining residential areas, but with space for large trees and gardens.

Some of this precinct is contained within the Blackburn Neighbourhood Activity Centre, and the Nunawading/Megamile Major Activity Centre.

Garden Suburban 14

The area will retain its classic garden suburban characteristics of dwellings in garden settings, located along tree-lined streets.

As contemporary infill development, including medium density and low scale apartments buildings, becomes more common, new buildings and additions will be set back at upper levels to minimise dominance in the streetscape and maintain the existing rhythm of front and side setbacks from one side boundary. They will also allow sufficient space for the planting and growth of new vegetation, including trees. Low or open style front fences will contribute to a sense of openness along the streetscape, allowing for views into private gardens.

Areas in proximity to train stations will accommodate more dwellings with slightly more compact siting than the remaining residential areas, but with space for large trees and gardens.

This precinct is partly contained within the Nunawading Megamile Major Activity Centre, and the Mitcham Neighbourhood Activity Centre.

Garden Suburban 15

The dwellings will be set within established, exotic and native garden settings. The continued use of low open front fencing, will maintain a sense of lightness in the streetscapes.

New buildings and additions will provide innovative or contemporary design responses to the traditional low scale dwelling forms. Buildings will not dominate the streetscape, with trees and vegetation that appears to wrap around dwellings creating a green leafy garden setting. The large street trees will continue to provide an important contribution to the vegetation dominated streetscapes.

This precinct is within the boundaries of the Mitcham Neighbourhood Activity Centre and the Nunawading / Megamile Major Activity Centre, and is identified as a Substantial Change area.

Garden Suburban 16

The combination of heritage, older style dwellings and well designed contemporary buildings set within gardens will continue to form the key characteristics of this area. New dwellings will be sited to reflect the spacious qualities and the dominance of gardens in the streetscape. Dwelling design will respond to the characteristics of the older dwellings including heavily articulated forms, 1-2 storey scale, pitched roofs and front and side setbacks that allow for planting, without replicating earlier styles. Low or open style front fences will allow private gardens to contribute to the leafy character of the area.

This area will undergo further investigation to determine whether additional Neighbourhood Character or Heritage Overlay controls are warranted.

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22.03-6 Nominated large sites

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A number of large sites have also been identified including 1 Lake Road, Blackburn, 131-173 Central Road, Nunawading, 57-67 Central Road, Blackburn and 15 Virgillia Street, Blackburn North. Other large sites may be identified in the future.

Desired future character

The properties at 1 Lake Road, Blackburn, 131-173 Central Road, Nunawading and 57-67 Central Road, Blackburn are located within the Blackburn Lake environs. Each site is presently used for institutional purposes including aged care accommodation and education facilities. While these uses must be supported for their contribution to the community, these sites also have the possibility to make a significant contribution to the future residential housing stock.

Each site makes a contribution to the special character of the Blackburn Lake Surrounds because of its location and landscape qualities. The landscape significance of the Blackburn Lake Surrounds is attributed to the quality of the environment, which includes vegetation notable for its height, density, maturity and high proportion of indigenous trees, which it is sought to retain and enhance.

The property at 15 Virgillia Street Blackburn North is a remaining large residential site with botanical significance and plays an important role in contributing to the biodiversity of the Blackburn North area.

The preferred future character is to provide for the development of these sites for residential and institutional purposes through a site layout and built form which is subservient to the landscape character. In considering any permit application for development, including subdivision, consideration should be given to the Statement of nature and key elements of the landscape and the objectives of the Significant Landscape Overlay – Schedule 5 that applies to these sites and the Statement of Environmental Significance and environmental objectives of the Environmental Significance Overlay – Schedule 1 for the property at 131-173 Central Road, Nunawading and Schedule 2 for the property at 15 Virgillia Street Blackburn North.

22.03-7 Subdivision

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In considering the merits of a subdivision application, the following key principles should also be also considered:

- Buildings should be sited on the lot to protect substantial trees and vegetation to be retained.
- Encourage development, which responds to the preferred neighbourhood character as detailed in this policy.
- Encourage a diversity of lot sizes and types having regard to the subdivision layout of the neighbourhood.
- Ensure that off-street vehicle parking provision and design complies with relevant standards.
- Encourage energy efficient outcomes within subdivisions.
- Ensure that the landscape design and retention of vegetation of a future subdivision achieves the design objectives and design responses as detailed in this policy.
- The need for an Agreement under Section 173 of the *Planning and Environment Act 1987* relating to the future development of the land.

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22.03-8 Application requirements

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Applicants for two or more dwellings on a lot or subdivision of a lot must provide a report explaining how the proposal satisfies Clause 55.02-2 or Clause 56.02-2 including a justification based on the growth area category within which the site is located.

22.03-9 Policy references

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Whitehorse Housing Strategy 2014

Whitehorse Neighbourhood Character Study 2014

Whitehorse Neighbourhood Activity Centre Urban Design Guidelines 2014

Municipal Wide Tree Study Discussion Paper, March 2016

Municipal Wide Tree Study Options and Recommendations Report, June 2016

Municipal Wide Tree Study Part 2: Additional Analysis in Garden Suburban and Bush Suburban Character Precincts, March 2019

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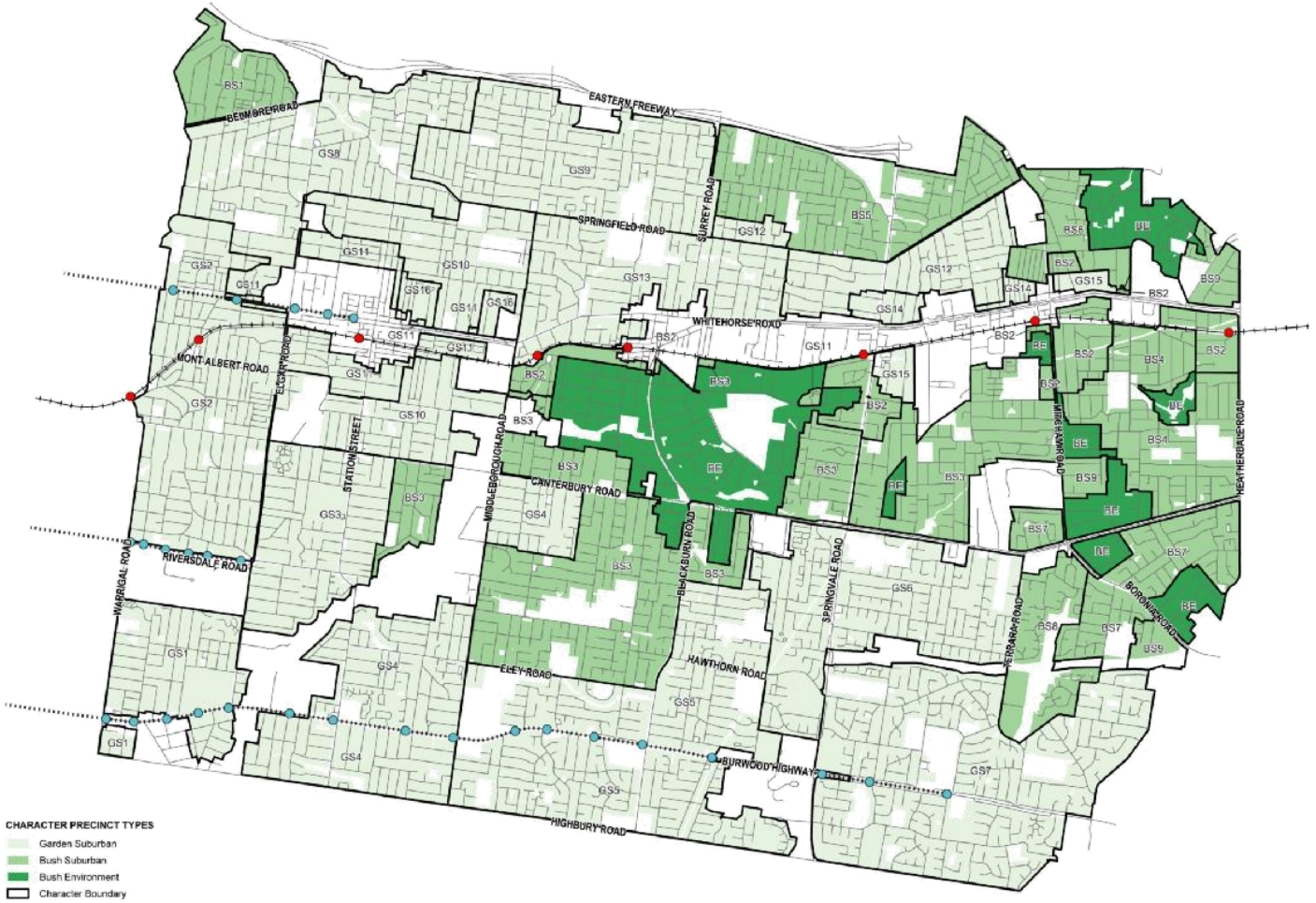
MAP 1: NEIGHBOURHOOD CHARACTER PRECINCTS



9.1.3 – ATTACHMENT 2. Amendment C219: Clauses for adoption w/ tracked changes

22.04 TREE CONSERVATION

14/10/2014
C160

Proposed C219

This policy applies to all land.

22.04-1 Policy basis

14/10/2014
C160

Proposed C219

The importance of tree conservation in the City of Whitehorse is set out in the Municipal Strategic Statement.

Clause 21.05 *Environment* identifies trees as being an integral aspect of the neighbourhood character and landscape of Whitehorse, particularly many of its residential areas.

Clause 21.06 *Housing* outlines how vegetation has been identified as being the most significant determinant of neighbourhood character. Trees in particular play a crucial role in this regard.

The retention of existing trees and the provision of sufficient space for regeneration and replanting are therefore key strategies to preserve and enhance the amenity of the City.

22.04-2 Objectives

17/08/2006
C50(Part 1)

Proposed C219

- To improve the tree canopy cover in residential areas across the municipality.
- To protect and strengthen the preferred neighbourhood character of residential areas within the municipality.
- To recognise the positive contribution of tree canopy to development and built form outcomes.
- To assist in the management of the City's tree canopy by ensuring that new development minimises the loss of significant trees.
- To ensure that new development does not detract from the natural environment and ecological systems.
- To identify techniques to assist in the successful co-existence of trees and new buildings or works.
- To promote the regeneration of ~~tall~~ trees through the provision of adequate open space and landscaping areas in new development.

22.04-3 Policy

30/09/2010
C83

Proposed C219

It is policy that:

Tree retention

- All trees that are sound in health, reasonable in structure, of an appropriate species, and are in a location that can be reasonably designed around be retained.
- All trees that are significant for aesthetic, neighbourhood character, ecological, cultural or historic reasons, so that they are important beyond the immediate surrounds of the site, be retained.
- Trees that have been identified by Council or a suitably qualified arborist as being dangerous, or identified by Council as an environmental weed, be removed.
- All trees that are to be retained on a development site be protected with appropriate measures, particularly during the construction phase.

9.1.3 – ATTACHMENT 2. Amendment C219: Clauses for adoption w/ tracked changes

- ~~Applicants provide a report from a suitably qualified arborist to:~~
  - ~~Justify the removal of healthy trees.~~
  - ~~Outline the measures to be taken, particularly during the construction phase, to ensure the long-term preservation of trees on the development site.~~

Buildings and works near existing trees

- Appropriate minimum separation distances between any tree to be retained and proposed buildings and works be provided and maintained to ensure that an adequate proportion of the root system is protected from disturbance, and that adequate oxygen and nutrients are available for the tree to survive in the long term.

Note: Greater than usual separation distances may be required depending on the size and species of tree, and the nature and extent of the building or works proposed, and in the areas included in a Significant Landscape Overlay or Vegetation Protection Overlay due to the importance of retaining trees in this area and the predominance of very tall, native trees which are more sensitive to disturbance.

Techniques for successful tree retention

- Site responsive designs for buildings, hard surfacing and other such works be encouraged to minimise potential damage to trees and their root systems, particularly where separation distances are at a minimum and the size and species of a tree requires additional steps to be taken to ensure its long-term health.

Tree ~~regeneration~~replanting

- New upper canopy trees be planted and significant trees that are unable to be retained be replaced to ensure that the treed canopy of the City is maintained in the long term.
- New trees have sufficient space and separation from buildings and impervious ~~surfaces~~ areas to successfully obtain their optimum height, ~~and~~ avoid any damage to property in the future and to minimise competition from other tree canopies.
- ~~New trees be situated in an open area that is free of buildings and impervious surfaces, and of other tree canopies, to minimise competition and facilitate normal growth.~~
- The species of new trees be considered, to determine if they are appropriate for the location, soil type and neighbourhood character.
- Juvenile trees be used for replanting, as opposed to advanced species, as they are better able to adapt to their surroundings and develop a strong, healthy root system.

22.04-4 Performance standards

14/10/2014
C160

Proposed C219

The following performance standards are considered to satisfy the policy objectives and statements outlined above:

Tree retention

Trees be retained except if:

- The tree is in a location which in the opinion of the responsible authority makes it impractical to be retained.
- The structure of the tree is unsound due to any of the following:
  - Major limbs either dead or dying.

9.1.3 – ATTACHMENT 2. Amendment C219: Clauses for adoption w/ tracked changes

- Major fungal or insect damage.
- Rot.
- Termite attack.
- Major forks low in the trunk.
- Any other reason to the satisfaction of the responsible authority.

- The tree has not been identified as being significant for aesthetic, neighbourhood character, ecological, cultural or historic reasons.
- The species of the tree is unsuitable for the site due to any of the following:
  - It is, or will be, too big for the area where it is located.
  - It is a species known to drop limbs or block drains.
  - It is an environmental weed.
  - It is inappropriately located near power lines or other ~~overhead~~ services.
  - Any other reason to the satisfaction of the responsible authority.

Buildings and works near existing trees

- ~~Except in the~~For areas not included ~~in a~~within the Significant Landscape Overlay – Schedules 1-8 or a Vegetation Protection Overlay, a minimum separation distance of 3 metres between the tree trunk and any building or works.
- In the areas included in the ~~a~~ Significant Landscape Overlay – Schedules 1-8 or a Vegetation Protection Overlay, a minimum separation distance of 4 metres between the tree trunk and any building or works.

Note: The separation distances specified above are minimum standards which may need to be increased depending on the size and species of tree, and the nature and extent of the building or works proposed.

Techniques for successful tree retention

- Application of the following techniques as part of a site responsive design, if relevant:
  - Sensitive footing systems (pier and beam or waffle slabs as opposed to the usual strip footings or slabs).
  - If a hard surface needs to be within 3 metres of the tree trunk, a surface which will allow the penetration of water, such as crushed rock.
  - If a driveway needs to be within 3 metres of the tree trunk, a driveway constructed on top of natural ground level so that no excavation occurs, and the introduction of filling is avoided.
  - Investigation of the installation of air and drainage vents if a significant proportion of the tree's roots may be affected by the introduction of hard surfacing.
  - Locating services such as drainage and cabling outside of the tree's root zone or a minimum of 3 metres from the tree trunk. If this cannot be achieved, services are to be thrust bored under the root system.
  - Avoidance of stripping topsoil from around the tree as most of a tree's absorbing roots are located in this area.
  - The erection of tree barriers a minimum of 3 metres from the tree trunk to avoid damage to the tree and minimise soil compaction and disturbance during construction.

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Tree ~~regeneration~~replanting

The site for a new tree should be:

- Separated by a minimum distance of 3 metres from a building.
- ~~Except in~~For land not within a ~~the~~ bush environment ~~areas~~ character precinct ~~and~~and included in a Significant Landscape Overlay, situated in a minimum area of 35 m^2 of open ground with a minimum dimension of 5 metres that is free of buildings and impervious surfaces and of other tree canopies, to minimise competition and facilitate normal growth.
- For land within a ~~In the~~ bush environment ~~areas a~~character precinct and included in a Significant Landscape Overlay, situated in a minimum area of 50 m^2 of open ground with a minimum dimension of 5 metres that is free of buildings and impervious surfaces and of other tree canopies, to minimise competition and facilitate normal growth.
- Is not within land encumbered by an easement.
- Juvenile trees should be used for replanting.

22.04-5 Application requirements

17/08/2006
~~C50 (Part 1)~~

Proposed C219

Applicants for all proposals must provide a report from a suitably qualified arborist to:

- Assess the health of the trees and justify the removal of ~~healthy~~ trees.
- Outline the measures to be taken, particularly during the construction phase, to ensure the long-term preservation of trees on, or adjoining, the development site.

22.04-6 Policy references

14/10/2014
C160

Proposed C219

City of Whitehorse- Statements of Tree Significance-2005

City of Whitehorse Streetscape Policy & Strategy, January 2002

KLM City of Whitehorse, Neighbourhood Character Study Review of areas 14 and 16, February 2004

Neighbourhood Character Study, 2014

Significant Tree Study, City of Whitehorse (Tree Dimensions, September 2006)

Review of Three Precincts in Character Areas 16 & 18, May 2008

Walker Estate Special Character Area, Urban Character Area, May 1999

Municipal Wide Tree Study Discussion Paper, March 2016

Municipal Wide Tree Study Options and Recommendations Report, June 2016

Municipal Wide Tree Study Part 2: Additional Analysis in Garden Suburban and Bush Suburban Character Precincts, March 2019

9.1.3 – ATTACHMENT 2. Amendment C219: Clauses for adoption w/ tracked changes

21/12/2018
Proposed C219

SCHEDULE 9 TO CLAUSE 42.03 SIGNIFICANT LANDSCAPE OVERLAY

Shown on the planning scheme map as **SLO9**.

NEIGHBOURHOOD CHARACTER AREAS

1.0 Statement of nature and key elements of landscape

08/02/2018
Proposed C219

The leafy garden and bushy character of Melbourne's eastern suburbs can be viewed from many high points throughout Melbourne and is a significant component of the subregion. The treed character of areas such as Whitehorse provides an important 'green' link between Melbourne and the Yarra Valley.

The *Municipal Wide Tree Study* (June 2016 and March 2019) identifies that trees are significant to the landscape character of the City of Whitehorse. The tree cover in Whitehorse simultaneously delivers multiple benefits to the community, including defining neighbourhood character, providing visual amenity, reducing the urban heat island effect in more urbanised areas, improving air quality and energy efficiency, providing habitat for fauna, and increasing the wellbeing of people and liveability of neighbourhoods.

The **Garden Suburban Neighbourhood Character Area** generally has formalised streetscapes comprising grassed nature strips, concrete footpaths, kerbs and channels, and buildings are generally visible along streets behind low front fences and open garden settings.

Gardens are typically established with canopy trees, lawn areas, garden beds and shrubs and there are typically well defined property boundaries and consistent building siting.

The majority of the municipality is included in the Garden Suburban Neighbourhood Character Area.

The **Bush Suburban Neighbourhood Character Area** generally has a mix of formal and informal streetscapes with wide nature strips and streets are dominated by vegetation with buildings partially hidden behind tall trees and established planting.

Gardens are less formal, consisting of many canopy trees and property boundary definition can be non-existent or fenced. Buildings appear detached along the street and generally comprise pitched rooftops, with simple forms and articulated facades.

The Bush Suburban Neighbourhood Area includes parts of Blackburn, Box Hill South, Vermont South, Mitcham, Nunawading and Mont Albert North as shown in the Neighbourhood Character Precincts Map contained in the *Neighbourhood Character Study 2014*.

2.0 Landscape character objectives to be achieved

08/02/2018
Proposed C219

To retain and enhance the canopy tree cover of the Garden and Bush Suburban Neighbourhood Character Areas.

To encourage the retention of established and mature trees.

To provide for the planting of new and replacement canopy trees.

To ensure that development is compatible with the landscape character of the area.

3.0 Permit requirement

08/02/2018
Proposed C219

Buildings and works

A permit is required to construct or carry out works for a front fence that is within 4 metres of any vegetation that requires a permit to remove, destroy or lop under the provisions of this schedule. This does not apply to a front fence that is undertaken to the same details, specifications and materials as the front fence being replaced, to the satisfaction of the responsible authority.

9.1.3 – ATTACHMENT 2. Amendment C219: Clauses for adoption w/ tracked changes

A permit is not required to construct a building or construct or carry out works provided the buildings or works are set back at least 4 metres from any tree protected under the provisions of this schedule when measured at ground level from the outside of the trunk.

Vegetation removal

A permit is required to remove, destroy or lop a tree.

This does not apply to:

- ~~A tree less than 5 metres in height and having a single trunk circumference of less than 1.0 metre at a height of 1.0 metre above ground level; or~~
- A tree that has both:
  - a height less than 5 metres; and
  - a single trunk circumference of less than 1.0 metre at a height of 1.0 metre above ground level.
- A tree that is less than 3 metres from the wall of an existing Dwelling or an existing Dependent Person's Unit when measured at ground level from the outside of the trunk. For the avoidance of doubt, this exemption does not apply to a tree that is less than 3 metres from an existing outbuilding.
- A tree that is located less than 3 metres from an existing inground swimming pool when measured at ground level from the outside of the trunk.
- A tree ~~species~~ that is ~~listed as~~ an Environmental Weed ~~including~~ species listed below:
  - Box Elder *(Acer negundo)*
  - Cape Wattle *(Paraserianthes lophantha)*
  - Cherry Plum *(Prunus cerasifera)*
  - Cootamundra Wattle *(Acacia baileyana)*
  - Cotoneaster *(Cotoneaster spp.)*
  - Desert Ash *(Faxinus angustifolia)*
  - Hawthorn *(Crategus monoyna)*
  - Mirror Bush *(Coprosma angustifolia)*
  - Privet *(Ligustrum spp.)*
  - Radiata or Monterey Pine *(Pinus radiata)*
  - Sallow Wattle *(Acacia longifolia)*
  - Sweet Pittosporum *(Pittosporum undulatum)*
  - Willow *(Salix spp.)*
- The pruning of a tree for regeneration or ornamental shaping.
- A tree which is dead or dying or has become dangerous to the satisfaction of the responsible authority.
- A tree outside the minimum street setback requirement in the Residential Growth Zone.
- A tree on public land or in a road reserve removed by or on behalf of Whitehorse City Council.
- The removal, destruction, or lopping of a tree to the minimum extent necessary:
  - to maintain the safe and efficient function of a Utility Installation to the satisfaction of the responsible authority or the utility service provider; or
  - by or on behalf of a utility service provider to maintain or construct a Utility Installation in accordance with the written agreement of the Secretary to the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the *Conservation, Forests and Lands Act 1987*.

9.1.3 – ATTACHMENT 2. Amendment C219: Clauses for adoption w/ tracked changes

- to maintain the safe and efficient function of the existing on road public transport network (including tramways) to the satisfaction of the Department of Transport.
- A tree required to be removed, destroyed or lopped in order to construct or carry out buildings or works approved by a Building Permit issued prior to 8 February 2018.
- A tree that may require separate approval to remove, destroy or lop as part of an existing permit condition, a plan endorsed under a planning permit or an agreement under section 173 of the *Planning and Environment Act 1987*.

Note: *For the purpose of this schedule, pruning is defined as removing branches (or occasionally roots) from a tree using approved practices, to achieve a specified objective such as for regeneration or ornamental shaping.*

For the purpose of this schedule, lopping has its ordinary meaning and includes the practice of cutting branches or stems between branch unions or internodes.

4.0 Application requirements

21/12/2018

Proposed C219

Applicants must provide a report from a suitably qualified arborist to:

- Justify the removal of trees.
- Outline the measures to be taken, particularly during the construction phase, to ensure the long-term preservation of trees on, or adjoining, the development site.

5.0 Decision guidelines

08/02/2018

Proposed C219

The following decision guidelines apply to an application for a permit under Clause 42.03, in addition to those specified in Clause 42.03-5 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- The contribution of the tree to neighbourhood character and the landscape.
- The need to retain trees that are significant due to their species age, health and/or growth characteristics.
- Where the tree is located, its relationship to existing vegetation and its role in providing habitat and corridors for fauna and their contribution to local ecological systems.
- The cumulative contribution the tree makes with other vegetation to the landscape and the impact of the incremental loss of trees.
- Where the location of new and existing footings and impervious areas are in relation to the root zone of established trees.
- The compatibility of any buildings and works with existing vegetation proposed to be retained.
- The effect of any proposed lopping on the significance, health or appearance of the tree.
- Whether there is a valid reason for removing the tree and whether alternative options to removal have been fully explored.
- If retention cannot be achieved, or a tree is considered appropriate for removal, consider whether:
  - a replacement tree has been provided; and
  - the site provides adequate space for offset planting of trees that can grow to a mature height similar to the mature height of the tree to be removed.
- If it is not appropriate to select an indigenous or native tree species, the selected species should be drought tolerant.
- Whether the planting location of a replacement tree(s) will enable the future growth of the canopy and root system of the tree to maturity.

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- Whether the replacement tree species and planting locations conflict with existing or proposed overhead wires, buildings, easements and existing trees.
- Whether the proposal is consistent with the *Whitehorse Neighbourhood Character Study (April 2014)*, the *Municipal Wide Tree Study Options and Recommendations Report (June 2016)* and the *Municipal Wide Tree Study Part 2: Additional Analysis in Garden Suburban and Bush Suburban Character Precincts (March 2019).*

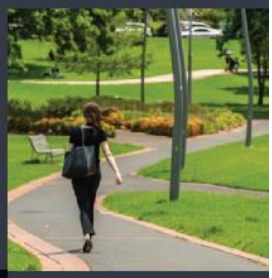
9.1.5 Draft Box Hill Integrated Transport Strategy

Attachment 1 Final Draft Box Hill ITS Public

9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

CITY OF WHITEHORSE

Box Hill MAC Integrated Transport Strategy – Draft



9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

D R A F T

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Executive summary

Background

The Box Hill Metropolitan Activity Centre (MAC) is the largest activity centre in the City of Whitehorse and has experienced substantial development, growth and change over the last decade. Recent approvals of high-rise mixed-use developments are expected to continue the trend of rapid population and commercial growth. In particular, annual average population growth within the MAC is forecast to be double that of metropolitan Melbourne over the next 20 years, leading to a population density in 2040 that will be comparable to that of Melbourne CBD today.

Current and future challenges associated with population growth and other urban constraints generates a need and opportunity to reconsider and change how people move to/from and within the MAC, as well as how people spend their leisure time within the precinct. Whitehorse City Council, along with various State Government agencies and authorities, are tasked with the responsibility to ensure that community transport infrastructure keeps pace with and supports the projected activity within the MAC.

This Integrated Transport Strategy (ITS) establishes a holistic approach toward developing pragmatic solutions to transport challenges within the MAC. It establishes a program of transport infrastructure and policy upgrades aimed at delivering an efficient and sustainable transport future that aligns with Council and State Government's objectives.

Vision and aspirations

Development of this ITS has entailed the articulation of a transport vision for Box Hill which corresponds with the overall liveability goals for the community, focusing on environmental and economic sustainability, equity and safety to guide the future development of local transport. The Vision (right) recognises that conventional means of addressing suburban transport – with its overwhelming reliance on private vehicles and parking – will not be capable of absorbing the expected rise in travel demand in the coming decades.

In other words, the underlying focus on sustainable and more efficient transport modes is not only an environmental responsibility but is also necessary to maintain basic levels of mobility for residents, workers and visitors in light of rapid growth.

Box Hill MAC transport vision

An integrated, safe and accessible transport system, providing a range of sustainable and efficient ways for people and goods to move around, allowing and promoting Box Hill to thrive as the pre-eminent urban centre for Melbourne's east.

Action plan

The central element of this ITS is the Action Plan, which identifies 21 initiatives with 61 specific actions intended to achieve the desired outcomes as articulated through development of the Vision. These are organised into the following main categories of action, reflective of the evolution of the Box Hill MAC into a sustainable, easily accessed sub-centre with an eye toward a future that draws upon a wealth of travel options and technological advancements:

- Walking and cycling infrastructure
- Public transport
- Traffic and parking management
- Travel behaviour
- Technology and emerging trends.

Each action has been assigned a specific type of Council response, noting that some require multiple responses, for example, some actions require both planning and delivery. From the 61 actions, 22 actions have been identified as delivery, five as policy, 30 as advocacy and 31 as planning.

An integral component of the action plan is also the timeframe in which they should be implemented. Of the 61 actions, 20 should be implemented in the immediate term (0-3 years), with three carrying over to the short term. Another 24 should be implemented in the short term (4-6 years), 12 over the medium term (7-10 years) and five are noted as long-term actions (10+ years).

Priority actions

Each of the actions has been evaluated according to a range of criteria to determine which are best positioned to deliver the greatest possible benefit to the community, and which represent the necessary early steps that enable the realisation of complementary initiatives into the future. The actions identified as the most critical to be implemented in the short-term include:

- Conduct a review of the existing streetscape elements
- Upgrade footpaths to meet Disability Discrimination Act (DDA) requirements, where possible
- Conduct accessibility audit of the public transport interchange
- Construct new pedestrian (zebra) / raised flat top (wombat) crossings
- Improve crossings at all existing signalised intersections and crossings
- Construct raised threshold intersection treatments
- Construct bicycle boulevards / low stress cycling streets
- Improve public end-of-trip facility provision
- Make interim improvements to the bus interchange
- Modify traffic signal timings to prioritise active and public transport modes
- Undertake area-wide speed limit reductions
- Investigate sites for improved traffic calming
- Manage use of train station commuter car park
- Review on-street parking in the MAC
- Provide electric vehicle charging points
- Review development parking rates in planning scheme
- Review loading zones
- Introduce car share
- Review car share parking requirements
- Manage food delivery bikes

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Background

The Box Hill Metropolitan Activity Centre (MAC) is the largest activity centre in the City of Whitehorse. Over the last decade, the Box Hill MAC has experienced substantial growth and development. This has included the opening of the Australian Tax Office (ATO) building, the redevelopment of the Box Hill Hospital and Box Hill Institute, and significant private investment in developments such as The Chen Hotel and Sky One. Multiple high-rise mixed-use developments have also been approved within the precinct, and further development is expected in coming years.

Whitehorse City Council has undertaken numerous investigations and developed various strategies to ensure that community transport infrastructure keeps pace with and supports expected residential population and commercial activity growth within the MAC.

This Integrated Transport Strategy (ITS) considers all these investigations and strategies and establishes a holistic approach to deal with existing transport related issues and develop pragmatic solutions to capitalise on transport opportunities within the MAC. It identifies a program of initiatives that both address short-term concerns and establish an achievable and sustainable transport future.

The ITS supports the various plans and strategies developed by Council and State Government, and has considered the integration of all transport modes, including access, parking and safety.

Purpose

The purpose of this ITS is to:

- Evaluate transport investment opportunities for all modes against a consistent set of parameters
- Provide a clear narrative that guides staged implementation of a prioritised set of transport planning initiatives for Council, by outlining key roles and responsibilities and a timeframe for action
- Articulate the need and benefits of transport network changes to be delivered in partnership with other stakeholders, including State Government.

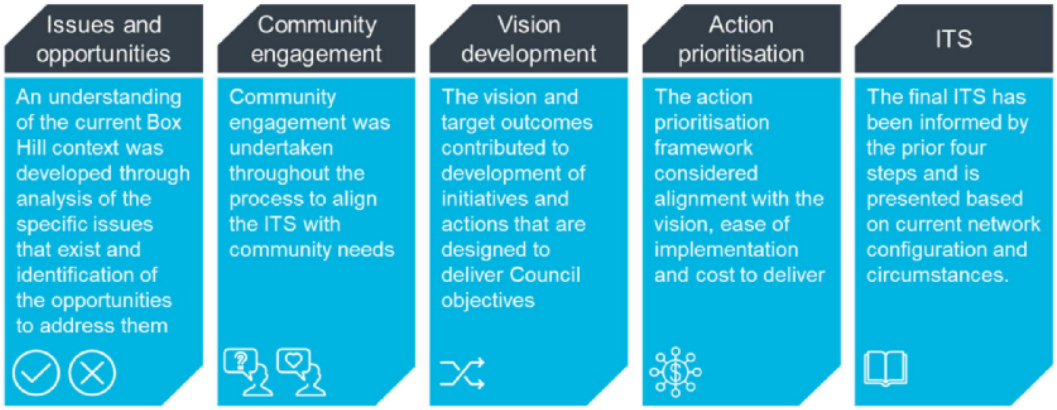
Process

This ITS was developed through a collaborative process, which included engagement with:

- The City of Whitehorse community
- Whitehorse City Councillors and officers
- State Government representatives from key agencies.

A stakeholder reference group (SRG) was established to facilitate open discussion that sought to provide guidance on the key initiatives and actions that should be considered as part of the ITS.

Figure 1 Stages of ITS development



Study area

The ITS target area is the Box Hill MAC. Covering an area of approximately 1.3 km^2, the MAC extends from Severn Street in the north to Albion Road in the south, and from the Box Hill Institute in the west to Watts and William Streets in the east.

The effects and benefits of many of the transport initiatives identified within the ITS extend beyond the MAC's borders, including the surrounding residential areas and wider transport connections.

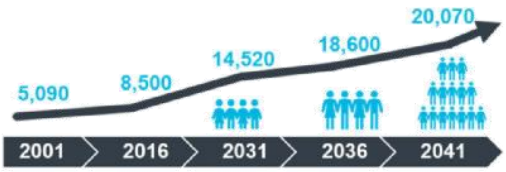
Figure 2 ITS study area

Box Hill snapshot

Box Hill's population is growing rapidly, with a forecast estimated growth rate of 3.5 percent per annum between 2016 and 2041, compared to just 1.7 percent growth per annum forecast for metropolitan Melbourne over the same period.

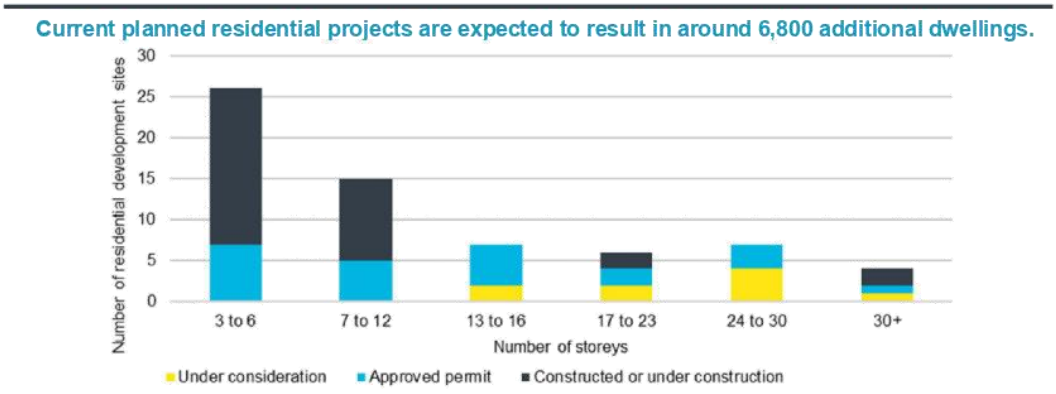
This growth will significantly increase the density of Box Hill, from just over 7,000 people per square kilometre currently, to around 15,500 people per square kilometre in 2041.

Figure 4 Box Hill population trend line



Data source: Box Hill Narrative Report, SGS Economics and Planning, March 2018 and 2019 MGS Structure Plan

Figure 3 Planned residential projects



Data source: 2019 MGS Structure Plan

Figure 5 Journey to work comparison

Data source: ABS Census Data

Journey to work data for Box Hill and the City of Melbourne highlights that Box Hill has a comparatively higher proportion of workers who commute by rail and bus. However, there is also significantly higher private vehicle dependency and substantially less active transport.

Figure 6 Summary statistics for five key Box Hill issues

Public Transport	• Over 11,000 people use Box Hill Train Station every weekday • Box Hill Train Station is the fifth busiest train station in Melbourne outside the CBD • Box Hill bus interchange is the fourth busiest in Melbourne
Streets & Public Spaces	• Around half of the cars in Box Hill are through traffic, adding to congestion • Whitehorse Road adjacent to Market Street is around 54 metres wide, with around half of the space allocated to traffic and parking lanes
Walking & Cycling	• Over 7,600 commuters walk to Box Hill Train Station each weekday • A survey of bike riders within Box Hill counted just one female cyclist, compared to over 100 male cyclists
Road Safety	• There have been 127 crashes in the last five years (a rate of one crash every two weeks) within the Box Hill MAC area • Of the 127 crashes, 38 were pedestrian crashes and five involved cyclists
Car Parking	• There are around 9,000 public car parking spaces in Box Hill • 59 percent of all parking in Box Hill is available for long-term parking • Future planned development may add an additional 7,300 private car spaces

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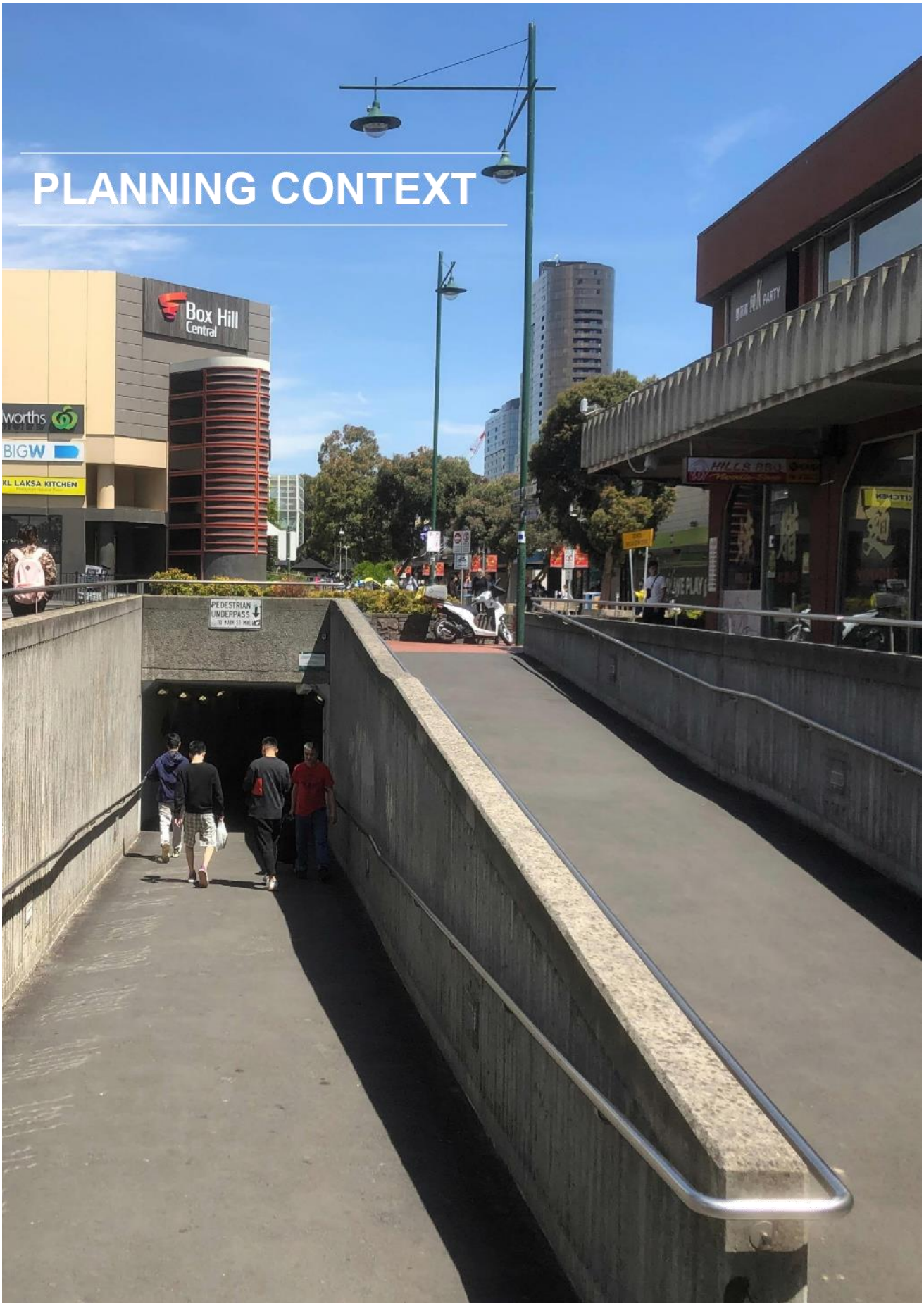


Legislative, policy and strategic alignment

Federal

The Department of Infrastructure, Transport, Cities and Regional Development is the relevant Commonwealth Department concerned with national transport objectives. The Department provides strategic policy advice to shape the framework that underpins the integration of road, rail, maritime and aviation in Australia. The Department aims to ensure safe, efficient and sustainable domestic and international transport systems which are vital to Australia's continuing prosperity.

In addition to broader strategic alignment the Federal Government also plays a role by contributing funding to transport projects. As an example, significant funding from the Federal Government is being invested in the North East Link road project, with $1.75 billion made available for this project in 2017. Therefore, key to receiving such funding for the Box Hill ITS lies in ensuring that strategic objectives in Box Hill align with those of the Federal Government.

State

There are numerous Victorian Government plans, strategies and frameworks in place that guide transport investment by local governments. The key ones relevant to the Box Hill MAC include the following:

Transport Integration Act 2010 – The Act is Victoria's principal transport legislation and covers the entire transport portfolio for the Victorian Government. The Act provides a mandate for government departments to share common goals of an efficient, integrated transport network.

Plan Melbourne (2017-2050) – Plan Melbourne identifies that Metropolitan Activity Centres (MACs) such as Box Hill should provide a diverse range of land uses that are well served by good transport connections. 20-Minute Neighbourhoods – the principle about 'living locally', giving people the ability to meet most of their daily needs within a 20-minute walk from home, with safe cycling and local transport options – are also supported by this plan.

Victorian cycling strategy – This strategy sets out how increased bicycle use can be achieved by investing in safer, stress-free connected transport networks that prioritise Strategic Cycling Corridors (SCCs).

Movement and Place Framework – Aligning with Plan Melbourne, the Department of Transport's Movement and Place Framework takes a different approach to network planning, recognising that roads and streets serve not only a transport function but can also serve as destinations in their own right. Finding the right balance is critical in the approach to integrated transport planning.

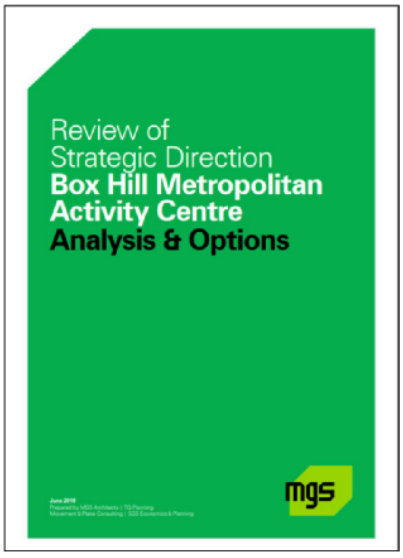
Local

A diverse range of prior documents has informed the development of the Box Hill MAC ITS, including:

- Whitehorse Council Plan 2017-2021
- Whitehorse Council Vision 2013-2023
- Whitehorse Integrated Transport Strategy 2011
- Whitehorse community Road Safety Strategy 2013
- Whitehorse Cycling Strategy 2016
- Whitehorse Health and Wellbeing Plan 2017-2020
- Box Hill Car Park Strategy Implementation Box Hill Activity Centre 2018
- Box Hill Open Space Strategy Review 2019
- Box Hill Urban Realm Treatment Guidelines 2019
- Box Hill Narrative 2018

In addition, previous Box Hill studies that have contributed to the development of this ITS include:

- Review of Strategic Direction: Box Hill Metropolitan Activity Centre Analysis & Options, 2019
- Box Hill ITS Background Study, 2019



Interface with other projects

In addition to the guiding plans, strategies and documents, there are a number of current or planned projects being undertaken by State Government that will impact on Box Hill, including the following:

- **North-East Link (NEL) –** NEL is an 11-kilometre proposed managed motorway between the Eastern Freeway in Bulleen and the M80 in Watsonia. It is currently in the planning stages with construction expected to start in 2020 and finish by 2027. NEL is expected to result in increased north-south traffic demand through Box Hill, connecting to the freeway, while easing pressure from regional traffic on east-west roads.
- **Suburban Rail Loop (SRL) –** SRL is a proposed new rail network forming a circle around Melbourne's suburbs and connecting every major rail line. The project is forecast to take around 200,000 vehicle trips off major roads by 2051. Box Hill has been identified as a potential new interchange station within the first stage of the project, with construction to commence by the end of 2022, and the first stage operational around the early 2030s. At the time of developing this strategy, SRL is in the early stages of its planning, and key information such as the station location has not yet been identified. However, while there are still many unknowns, the project is expected to greatly increase population, employment, patronage and general activity within Box Hill.
- **Level Crossings Removal Project (LXRP) – Mont Albert / Surrey Hills –** The Victorian Government is committed to removing 75 level crossings across Melbourne by 2025. The level crossings at Mont Albert Road in Mont Albert and Union Road in Surrey Hills Station will be two of eight crossings removed along the Belgrave and Lilydale lines, with both currently in planning stage. The removal of these level crossings will include the construction of new Mont Albert and Surrey Hills stations, which could impact on passenger demand and access at Box Hill Station. When complete, there will be no more level crossings between Box Hill and the CBD.

Roles and responsibilities

Successful delivery of this ITS is dependent on the following groups:

Councillors are responsible for listening to the community and communicating key issues and desires back to Council. They also play a key role in advocating to the community about the benefits of policies and actions contained within this ITS, particularly how individual actions are part of an overall plan to deliver a more connected, sustainable and resilient transport network.

Council teams and departments. Council is the closest level of government to the community, and as such have multiple responsibilities, including:

- Driving planning and investigation works, which require communication and engagement with community members
- Initiating and delivering projects and programs that are within their remit and jurisdiction
- Applying appropriate legislation and regulations to deliver a safe and equitable transport system that empowers community members to consider or change their behaviour as it relates to transport
- Advocating to Victorian Government departments and agencies to plan for or deliver projects and programs that are within the Victorian Government's jurisdiction.

The **Victorian Government** is responsible for arterial roads and the public transport network. This means that Council cannot independently plan for or deliver works that impact arterial roads, nor can it adjust public transport routes or increase service frequencies. Victorian Government departments and agencies and associated private enterprises that will be relied upon to contribute to delivering the outcomes of this ITS include:

- The Department of Transport (DoT) incorporating Public Transport Victoria (PTV) and VicRoads
- Metro Trains Melbourne, Yarra Trams, VicTrack and local bus operators
- Suburban Rail Loop Authority (SRLA).

Together, **Council** and the **Victorian Government** are required to plan and deliver projects and programs that consider the objectives and decision-making principles of the Transport Integration Act.

Finally, the **community** plays an integral role in supporting Council's vision for the Box Hill MAC transport network. The vision and associated initiatives identified within this document are intended to reflect the feedback of the community in an effort to deliver a more equitable, sustainable, safe, efficient and reliable transport network. The community's role is not only in endorsing this strategy, but also in actively planning and choosing more sustainable transport modes in line with the strategy.

Community feedback

The purpose of community engagement was to encourage participants to consider the trade-offs associated with project opportunities. Online engagement was undertaken via Whitehorse City Council's OurSay Platform, while face-to-face engagement included two pop ups within Market Street Pedestrian Mall.

Engagement materials were translated into core languages and multilingual translators were available at the street stands.

248 members of the community provided their input, the results of which are summarised at right and detailed in **Appendix B.**

Improved safety – 74 percent support a decrease in the speed limit to 40 kilometres per hour where there is a mix of pedestrians and cyclists.

Public transport – 93 percent support increasing public transport use in and around the centre, including dedicated bus lanes along major roads and bus priority at traffic lights.

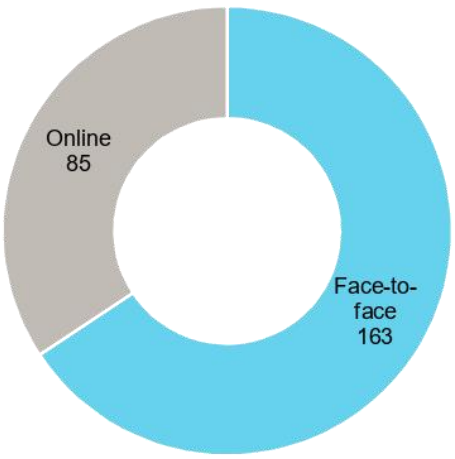
Walking – 89 percent support prioritised walking infrastructure (e.g. new pedestrian zebra crossings and more green signal time to cross roads) even if there are minor car delays.

Transit oriented design – 66 percent support giving new buildings near the transport interchange the opportunity to reduce their parking requirements by providing alternatives such as car share and bike parking.

Car parking – 75 percent support increasing footpath widths and public space to allow for more outdoor dining, seating, planting and places to meet others, even if it means removing some on street car parking.

Mode share – The majority of respondents access the Box Hill MAC via non-vehicle modes, with only 44 percent using private vehicles, while 34 percent walk, 29 percent use the train, 23 percent cycle, 23 percent use the bus, 8 percent use the tram, and 2 percent take a taxi or rideshare.

Figure 7 Community feedback participation



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National and global challenges

Cities across Australia and the world are rapidly evolving, driven by numerous factors including population growth, technology change, and broad ranging social, economic and environmental considerations. Multicentric cities have arisen to help channel these growth forces into areas best served by transport infrastructure, a model that can best help describe Box Hill's emergence as a major activity centre. The following challenges are considered as generally consistent background factors to consider in the further development of the infrastructure of cities and regions.

A **background study** of the Box Hill MAC is included within **Appendix A,** discussing the demographic and statistical factors that form the baseline for development of this ITS.

Population growth – Box Hill MAC's population density in 20 years' time is forecast to be comparable to that of Melbourne CBD today. Current approved residential developments are expected to deliver an additional 6,800 dwellings and 7,300 car parking spaces to the ITS' target area. Increased density directly impacts travel demand and is considered both a challenge and opportunity within this ITS.

Road congestion – Road congestion is a growing issue throughout greater Melbourne, as well as most other growing cities across the world. While the conventional transport planning approach has been to relieve congestion through widening of roads, spatial constraints have led many recent transport planning efforts to focus on reducing car dependence through prioritisation of public and active transport.

Urban heat island (UHI) effect – An UHI is an urban area that is noticeably warmer than its surrounding parklands or rural areas due to the insulating and heating properties of materials used to construct buildings and transport infrastructure. The greening of urban areas and transport corridors, including maintaining and protecting green spaces and trees, can help alleviate the UHI effect also while enhancing the natural environment and amenity of the public realm and improving air quality.

Obesity, health and wellbeing – Studies have found that high levels of car ownership have contributed to poor health outcomes in comparison with less car dependent communities. The provision of enhanced active transport infrastructure as envisioned in this ITS can help support a shift in travel behaviour toward increased participation in walking and cycling, contributing to improved health levels.

Universal access – Universal access seeks to ensure that all people, regardless of age or disability, have safe and efficient access to all areas within the public realm, including public transport modes, and is one of the key planning drivers of the initiatives proposed in this ITS.

Socio-economic equity – Car dependent design and high car ownership, operation and parking costs can lead to social and economic exclusion, particularly when combined with inadequate public and active transport infrastructure. Improving access via more freely accessible modes of transport could provide more equitable access to social and employment opportunities within the MAC.

Economic activity – Improved transport connectivity and an enhanced public realm can contribute to the realisation of attractive places that people may wish to visit for leisure, shopping and dining. Furthermore, fulfilling the concept of 20-minute neighbourhoods can create the demand for a diverse range of economic opportunities.

Safety and security – Unresolved conflicts between travel modes can contribute to crashes that can cause injuries and extensive network delays. Personal security along walking corridors and at public transport stations/stops is also an important element of an effective integrated transport network.

Local issues and opportunities

The transport network in Box Hill represents a complex interconnected system of both static and moving infrastructure. The location where these assets converge is one of the most active and congested sub-centres in metropolitan Melbourne. Pedestrians, cyclists, cars, trucks, trams and buses all compete for space on the already congested street network.

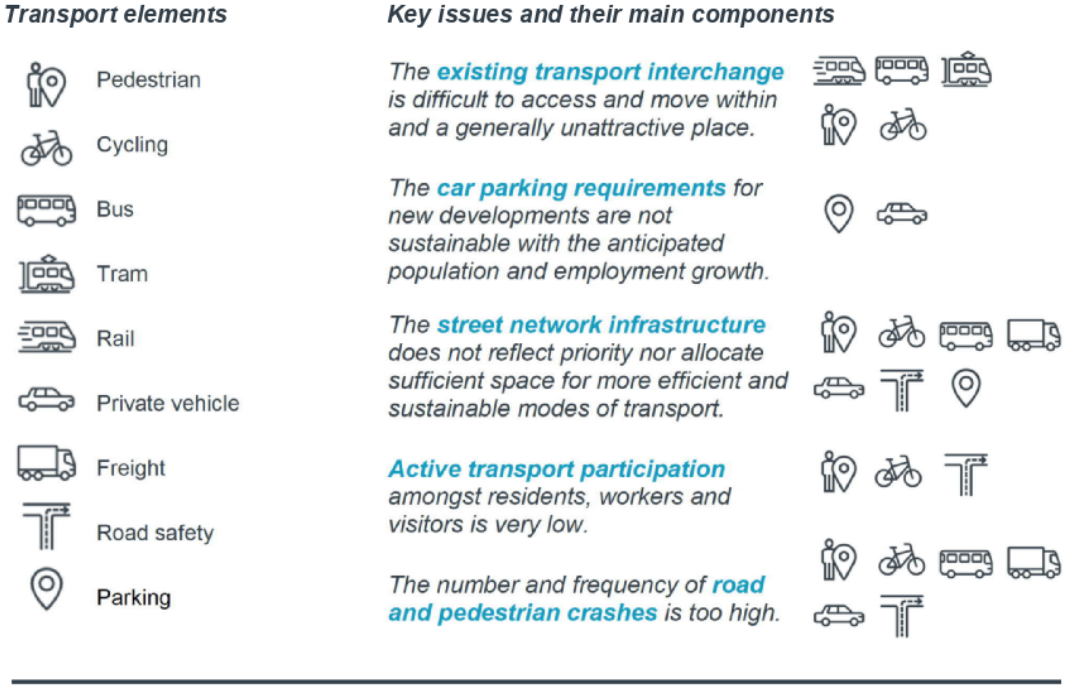
Extensive background analysis and community and stakeholder consultation have distilled **five key transport issues** relating to the MAC. It is important to note that these are not specific to any one mode of transport, but rather relate to various themes and the interactions of multiple modes in the congested Box Hill context.

It is the resolution of these issues that offer the greatest opportunity for an improved transport experience in Box Hill. These five main issues also encapsulate many of the key outcomes expressed in the transport vision presented in the following section.

The five key issues each address a combination of the main transport considerations listed below.

A detailed **Issues and Opportunities Report** for Box Hill MAC is included as **Appendix A,** discussing each of the key issues listed below and offering case studies and illustrations of how similar issues have been addressed in other communities.

Figure 8 Key issues in Box Hill



Vision and aspirations

To help guide the development of specific actions for the ITS, it is necessary to articulate a vision to which the strategy will aspire.

The vision has been derived based on the *Review of Strategic Direction: Box Hill Metropolitan Activity Centre Analysis & Options, 2019* – particularly as it relates to transport and movement. It has been adjusted accordingly to account for the community and stakeholder feedback gathered as part of developing this ITS.

The overarching transport vision statement is supported by 12 desired outcomes arranged according to three critical themes.

A number of indicators will be used to measure success of this ITS against the outcomes, as outlined later in the Implementation Plan.

Box Hill MAC transport vision

An integrated, safe and accessible transport system, providing a range of sustainable and efficient ways for people and goods to move around, allowing and promoting Box Hill to thrive as the pre-eminent urban centre for Melbourne's east.

Theme 1

A transport network that supports a safe, healthy, inclusive community

Outcome 1
Accessible and integrated walking, cycling and public transport network

Outcome 2
Safe and secure transport network accessible to all

Outcome 3
Increased walking, cycling and public transport participation

Outcome 4
Improved physical and mental well being

Theme 2

A transport network that supports a sustainable and liveable community

Outcome 5
Allocation of street space to more efficient and sustainable modes of transport

Outcome 6
Efficient and reliable public transport

Outcome 7
A greener, cleaner environment

Outcome 8
Minimal non-essential private vehicle trips

Theme 3

A transport network that supports a vibrant local economy

Outcome 9
An efficient and reliable transport network encouraging travel to, not just through

Outcome 10
Efficient and adaptable purposing of land assets

Outcome 11
A welcoming, safe and vibrant activity centre

Outcome 12
Efficient functioning of local freight corridors

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Action plan approach

The action plan has been structured to meet the targeted outcomes, themes and vision that were developed as part of this ITS.

Twenty-one initiatives have been developed, each of which are supported by one or more actions.

For the purpose of this ITS, initiatives have been allocated into one of five categories, noting that some of the initiatives could be considered to deliver outcomes associated with multiple categories. The five categories are described below.

Walking and cycling infrastructure

Initiatives within this category are integral to development of a sustainable transport network that supports local communities. Eight initiatives and 19 actions have been grouped into this category.

Public transport

Public transport will become increasingly important as residential and commercial activity within the Box Hill MAC continues to grow. Improved public transport could provide opportunities for residents and workers to change their travel behaviour and rely less on private vehicles. This would alleviate road network congestion and improve urban amenity. Three initiatives and nine actions have been grouped into this category.

Traffic and parking management

The road network is the core transport asset type within the Box Hill MAC, with private vehicles representing the dominating mode share. Seven initiatives and 27 actions have been grouped into this category.

Travel behaviour

Travel behaviour of residents and visitors impacts upon all transport modes and types, and as such the initiatives which target travel behaviour warrant their own separate category. Changing travel behaviour has capacity to deliver significant changes to the efficiency and effectiveness of the transport network, without the significant cost associated with new or adapted infrastructure. One initiative and four actions have been grouped into this category.

Technology and emerging trends

Technology and emerging trends have significant potential to influence how a large proportion of the population travel, as well as how Council and other levels of government can collect data that will inform future transport network planning. Two initiatives and five actions have been grouped into this category.

Council response to actions

A specific Council response has been assigned to all actions within the plan. Council's response reflects the asset type and/or work required and action complexity. There are four possible Council actions, as shown below. Note that some actions require multiple responses, for example, some actions require both planning and delivery. The icons shown below have been referenced throughout the action plan to specify Council response.

Figure 9 Types of Council action

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Summary of initiatives

A summary of the proposed initiatives and their contributions to the key desired outcomes is shown below.

INITIATIVE		OUTCOME											
		1	2	3	4	5	6	7	8	9	10	11	12
WALKING AND CYCLING INFRASTRUCTURE													
1	Upgrade primary walking routes	✓	✓	✓	✓	✓		✓	✓	✓		✓	
2	Improve accessibility and DDA-compliance	✓	✓	✓	✓							✓	
3	Provide additional and improved road crossings	✓	✓	✓	✓				✓			✓	
4	Formalise and upgrade primary cycling corridors	✓	✓	✓	✓	✓			✓			✓	
5	Provide new walking/cycling bridge over the railway line	✓	✓	✓	✓	✓			✓			✓	
6	Create attractive laneways	✓		✓	✓	✓				✓		✓	
7	Improve bicycle end of trip facility provision	✓		✓					✓	✓		✓	
8	Increase wayfinding	✓		✓	✓				✓	✓		✓	
PUBLIC TRANSPORT													
9	Upgrade Box Hill transport interchange	✓	✓	✓			✓	✓	✓	✓		✓	
10	Improve train and bus services	✓		✓			✓		✓	✓			
11	Extend the tram line	✓		✓		✓	✓		✓				
TRAFFIC AND PARKING MANAGEMENT													
12	Modify the road network to reduce through traffic on Whitehorse Road and Station Street	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓
13	Reduce vehicle speeds		✓	✓				✓		✓		✓	
14	Manage parking supply and demand			✓				✓	✓		✓	✓	
15	Repurpose space allocated to vehicles and enhance public space	✓		✓	✓	✓		✓	✓	✓	✓	✓	
16	Improve parking wayfinding							✓	✓	✓			
17	Review development parking requirements			✓					✓				
18	Review loading zones												✓
TRAVEL BEHAVIOUR													
19	Implement behaviour change programs			✓	✓			✓	✓	✓			
TECHNOLOGY AND EMERGING TRENDS													
20	Implement car share schemes			✓				✓	✓		✓		
21	Support emerging and niche transport types		✓						✓			✓	

THEME 1 – SAFE, HEALTHY AND INCLUSIVE

Outcome 1 Accessible and integrated walking, cycling and public transport network

Outcome 2 Safe and secure transport network accessible to all

Outcome 3 Increased walking, cycling and public transport participation

Outcome 4 Improved physical and mental well being

THEME 2 – SUSTAINABLE AND LIVEABLE

Outcome 5 Allocation of street space to more efficient and sustainable modes of transport

Outcome 6 Efficient and reliable public transport

Outcome 7 A greener, cleaner environment

Outcome 8 Minimal non-essential private vehicle trips

THEME 3 – VIBRANT LOCAL ECONOMY

Outcome 9 An efficient and reliable transport network encouraging travel to, not just through

Outcome 10 Efficient and adaptable purposing of land assets

Outcome 11 A welcoming, safe and vibrant activity centre

Outcome 12 Efficient functioning of local freight corridors

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Walking and cycling infrastructure

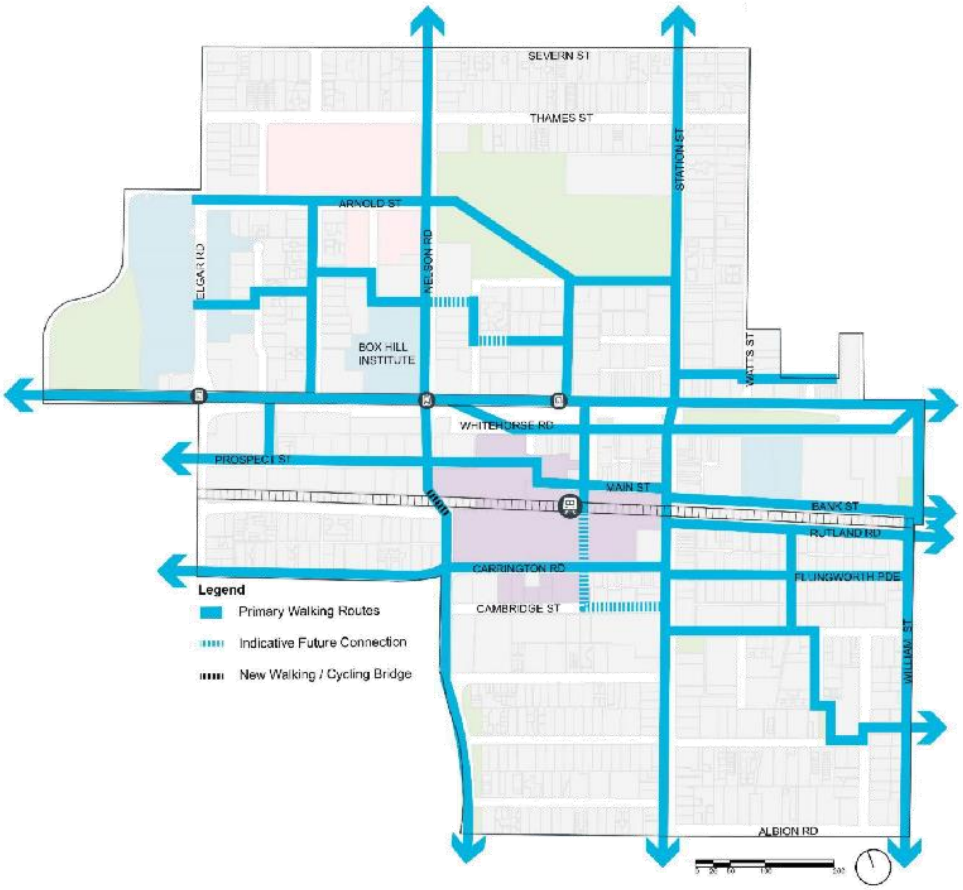
1. Upgrade primary walking routes

A walkable environment contributes to a vibrant and sustainable urban realm, and supports economic activity through facilitation of increased interaction between people and businesses..

Key transport benefits of walkable streets include alleviation of congestion and enhanced transport network safety. Benefits for the community also include improved health and wellbeing outcomes, and greater social opportunities.

Most key destinations within the Box Hill MAC are within a 15-minute walk of the train station, bus interchange and tram terminus. There is a key opportunity to promote public transport as the key mode of transport to and from the MAC, and walking as the primary transport mode within the MAC. Creating wider and connected footpaths for comfortable and safe movement of people, as well as improved urban amenity through provision of public seating and enhanced urban greening, will be key to realising this opportunity.

Figure 10 Primary walking corridors



Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
1	● Accessible and integrated walking, cycling and public transport network	5	● Allocation of street space to more efficient and sustainable modes of transport	9	● An efficient and reliable transport network encouraging travel to, not just through
2	● Safe and secure transport network accessible to all	6	○ Efficient and reliable public transport	10	○ Efficient and adaptable purposing of land assets
3	● Increased walking, cycling and public transport participation	7	● A greener, cleaner environment	11	● A welcoming, safe and vibrant activity centre
4	● Improved physical and mental well being	8	● Minimal non-essential private vehicle trips	12	○ Efficient functioning of local freight corridors

While Box Hill's primary walking routes are largely adequate for the current population, rapid residential and commercial growth will see increased demand that puts pressure on the capacity of existing assets, particularly around peak periods when there are heavy pedestrian traffic flows in multiple directions. Furthermore, as Box Hill's role as a MAC is increasingly realised, more people are expected to visit the area for leisure activities, including at night time. This will amplify the importance of wide and connected footpaths. Public places, including local streets, public squares and parks, will become ever more important to the long-term liveability and attractiveness of the Box Hill MAC. It is integral that these places are well connected via the primary walking network.

Action 1.1 – Widen footpaths

Review all primary walking routes and develop a works package to widen and upgrade footpaths to a minimum width of 2.0 m or wider where required to accommodate peak pedestrian volumes, prioritising high foot traffic areas within the centre. This may involve the reconfiguration of some road cross-sections and reallocation of road space to pedestrian paths, such as Whitehorse Road and Station Street (see actions 12.4 and 12.5).

Action 1.2 – Improve pedestrian environment in the Box Hill Mall

Plan and implement improvements to the pedestrian environment in Main Street and Market Street within Box Hill Mall. This should include:

- Improvements in line with the Box Hill Urban Realm Treatment Guidelines
- Reduction of streetscape elements to improve the movement of pedestrians through the mall
- Creating spaces for people to meet and dwell.

Implementation could be linked to other redevelopment opportunities (Vicinity Centres' redevelopment of Box Hill Central or the Suburban Rail Loop Project).

Action 1.3 – Conduct a review of the existing streetscape elements

Review all primary walking routes and develop a staged works package aimed at improving the public realm. The work should respond to the following:

- Consistency with the Box Hill Urban Realm Treatment Guidelines (BHURT)
- The changing role and function of the public realm in relation to increased densities and diversity of function
- Creating human-centric public space that increases liveability
- Creating enhanced pedestrian environments that encourage safe, enjoyable and efficient movement
- Opportunities to contribute to filling gaps in the urban tree canopy in line with the Urban Forest Strategy
- Suitable amenity and locations for street furniture, lighting, tree planting, street art and other streetscape elements that interact with people in the space
- Suitable streetscape functionality and amenity for day and night time use where people can meet, gather, dine, pause and rest.

The works should prioritise high foot traffic areas (including Main Street and Market Street) and key walking links including along Bruce Street from Whitehorse Road to Box Hill Gardens (linking to Box Hill Hospital).

Figure 11 Existing pedestrian environment in Box Hill Mall (Main Street)

2. Improve accessibility & DDA compliance

The Victorian Department of Health and Human Services reports that people with a disability form nearly 20 percent of the Victorian population, and that around one in three of these have a profound or severe disability.

The Disability Discrimination Act (DDA) makes it against the law for public places to be inaccessible to people with a disability.

Within the context of transport, public places include public footpaths and walkways and public transport. It also includes ensuring access to public facilities, such as educational institutions, parks, pedestrian malls, libraries and hospitals.

Living with a disability can have wide-ranging implications on liveability and accessibility.

Disability access is inconsistently provided across the Box Hill MAC. For example, within the Box Hill Train Station, lift access is not available for all platforms, with only escalators and long ramps provided for access to platform 4. For the bus interchange , the lift is not conveniently located and is only available for use during the opening hours of the Box Hill Central shopping centre food court – after hours, assistance from station staff must be sought.

Action 2.1 – Upgrade footpaths to meet DDA requirements, where possible

Ensure that footpaths are improved to meet compliance with the Disability Discrimination Act (DDA) when:

- Streetscapes are modified by developers or utilities
- Paths are maintained, upgraded or re-constructed by Council (including as part of Action 1.1)
- Issues identified by the community are investigated and improved where possible.

Action 2.2 – Conduct accessibility audit of the public transport interchange

Work with the Victorian Government to conduct an audit of the public transport interchange in terms of its accordance with the DDA, and deliver a works package to make it DDA compliant. This includes the train station, bus interchange and tram terminus, and the connections between them. It is noted that State Legislation requires that all public transport must be accessible by 31 December 2022.

Figure 12 Gradients at the underpass are not DDA compliant

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
1 ●	Accessible and integrated walking, cycling and public transport network	5 ○	Allocation of street space to more efficient and sustainable modes of transport	9 ○	An efficient and reliable transport network encouraging travel to, not just through
2 ●	Safe and secure transport network accessible to all	6 ○	Efficient and reliable public transport	10 ○	Efficient and adaptable purposing of land assets
3 ●	Increased walking, cycling and public transport participation	7 ○	A greener, cleaner environment	11 ●	A welcoming, safe and vibrant activity centre
4 ●	Improved physical and mental well being	8 ○	Minimal non-essential private vehicle trips	12 ○	Efficient functioning of local freight corridors

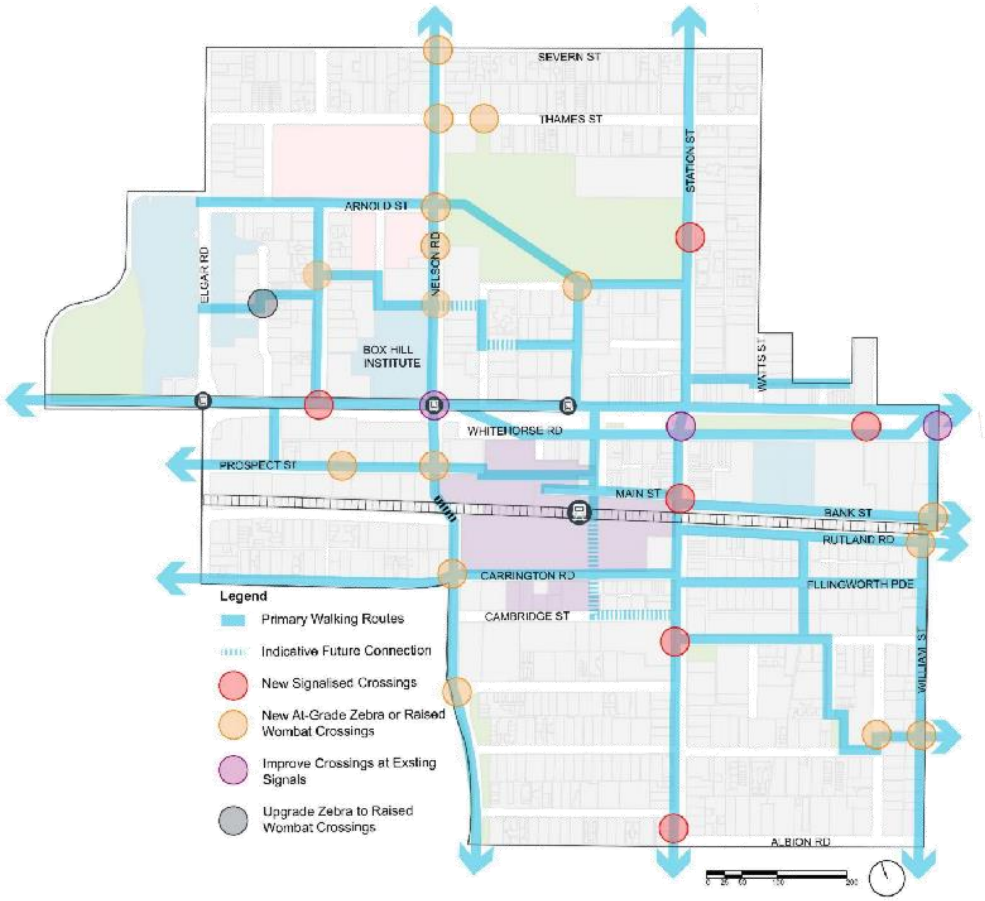
3. Provide additional and improved road crossings

In the last five years, there have been 127 reported road crashes in the Box Hill MAC, of which five involved cyclists and 38 involved pedestrians. This equates to a rate of over one crash involving a pedestrian or cyclist every six weeks.

With the forecast increase in the numbers of people walking and cycling around the Box Hill MAC, it is imperative that more frequent and safer road crossing opportunities are provided.

Vulnerable road users (children and elderly) are over-represented in serious injury crashes. Box Hill is designated as a health and education precinct in Plan Melbourne, with two major hospitals and other health facilities located within the activity centre, translating into a high number of vulnerable road users in the area. Furthermore, it is forecast that the number of vulnerable road users will more than double by 2041. Safer streets will therefore become a more prevalent and critical priority as Box Hill grows.

Figure 13 Opportunities for improved road crossings



Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
1 ●	Accessible and integrated walking, cycling and public transport network	5 ○	Allocation of street space to more efficient and sustainable modes of transport	9 ○	An efficient and reliable transport network encouraging travel to, not just through
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4 ●	Improved physical and mental well being	8 ●	Minimal non-essential private vehicle trips	12 ○	Efficient functioning of local freight corridors

Additional crossings should be prioritised at locations with high foot traffic as well as near the hospital where vulnerable road users are more prevalent. Nelson Road is identified as a primary walking and cycling north-south route, connecting to the hospital, which should provide additional crossings. Station Street has also been identified as a comparably high-risk road for pedestrian crossings, with eight pedestrian crashes recorded in the last five years. Although a pedestrian underpass is provided across Station Street between Main Street and Bank Street, a significant number of people still cross informally at street level. A new at-grade signalised crossing provided here with appropriate surface treatment will not only help to reduce jaywalking but can also help to act as an entry gateway to the pedestrian mall on Main Street (see action 3.2).

Action 3.1 – Construct new pedestrian (zebra) / raised flat top (wombat) crossings

Construct new formalised pedestrian crossings in the form of zebra or raised flat top (wombat) crossings as appropriate at the crossing locations shown in Figure 12 and at other designated locations within walking distance to the station. If zebra or wombat crossings are not suitable, consider other treatments such as pedestrian refuges, kerb outstands or the installation of pram ramps. This may require the removal of some on-street car parking bays at some locations.

Action 3.2 – Construct new signalised crossings

Work with the Victorian Government to provide new signalised crossings at key locations:

- At the Station Street / Main Street intersection crossing Station Street for the entire width of Main Street, to improve connectivity and provide an entry gateway to the Box Hill Mall. Investigate repurposing the underpass for other uses, or whether it should continue to be in use.
- Across Station Street north of Irving Avenue, connecting to Box Hill Gardens
- Across Whitehorse Road near Wellington Road
- Across Whitehorse Road near the Box Hill Town Hall and Box Hill library.

Figure 16 Example of a wombat crossing in Docklands

Figure 14 Pedestrians crossing the intersection of Bruce Street and Irving Avenue informally

Figure 15 Zebra crossing on Nelson Road connecting to the hospital

WALKING AND CYCLING INFRASTRUCTURE

Action 3.3 – Improve crossings at all existing signalised intersections and crossings

Work with the Victorian Government to reconfigure or upgrade all existing signalised intersections to improve the crossings, including physical infrastructure upgrades (such as kerb extensions) and/or modifying signals to prioritise pedestrian/cyclist crossing movements. In particular, this could include providing protected pedestrian crossing movements (i.e. pedestrian scramble phases, or red turning arrows for vehicles during pedestrian green phases) and other complementary measures such as bike lanterns on primary cycling routes, and 'Watch for Pedestrian" LED signs. Priority should be given to key signalised crossings including:

- Whitehorse Road / Station Street intersection – as an interim solution prior to the major road upgrades (see action 12.4 and 12.5)
- Whitehorse Road pedestrian crossing at the tram terminus / Market Street
- Station Street / Carrington Road intersection

Action 3.4 – Construct raised threshold intersection treatments

Deliver raised threshold treatments at all unsignalised intersections of local roads along Station Street and Whitehorse Road.

Action 3.5 – Install signalised crossing countdown timers

Work with the Victorian Government to install countdown timers for pedestrians at all signalised intersections and crossings.

Action 3.6 – Investigate opportunities to install illuminated DDA ground tactile markings linked to traffic signals

The Victorian Government are trialling illuminated ground surface tactile markings linked to traffic signals to reduce the risks associated with pedestrians distracted by their mobile phones. The trial has been taking place on Swanston Street/Little Collins Street in the CBD.

Figure 18 Example of raised threshold intersection treatment – City of Boroondara

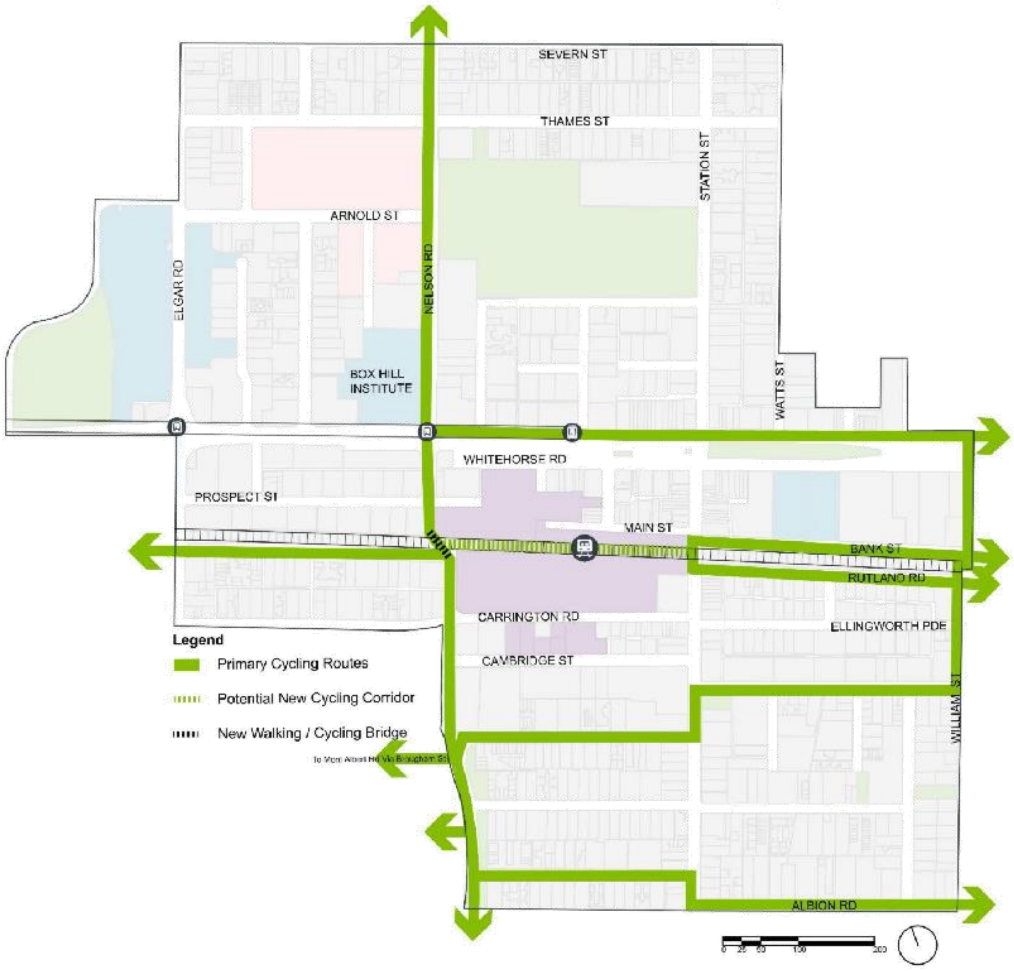
Figure 17 Example of signalised countdown timer

4. Formalise and upgrade primary cycling corridors

There is significant untapped potential in cycling as a transport mode to alleviate traffic congestion in the Box Hill MAC. It is also a zero-carbon transport option which can bring broader health and social benefits to the community.

Cycling is a highly time-efficient option for short trips within the MAC, as well as for medium to long range trips when combined with public transport. All internal trips within the Box Hill MAC are accessible within a short cycle of six minutes or less.

Figure 19 Key cycling corridors



Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
1	Accessible and integrated walking, cycling and public transport network	5	Allocation of street space to more efficient and sustainable modes of transport	9	An efficient and reliable transport network encouraging travel to, not just through
2	Safe and secure transport network accessible to all	6	Efficient and reliable public transport	10	Efficient and adaptable purposing of land assets
3	Increased walking, cycling and public transport participation	7	A greener, cleaner environment	11	A welcoming, safe and vibrant activity centre
4	Improved physical and mental well being	8	Minimal non-essential private vehicle trips	12	Efficient functioning of local freight corridors

A good cycling network includes a combination of strategic corridors allowing cyclists to ride at high speeds for longer distance trips, as well as local routes connecting to key local destinations. Within Box Hill, this should include cycling routes to the MAC as well as through it to neighbouring areas.

The safety of cyclists – actual and perceived – is paramount to encouraging and maintaining cycling as an attractive transport mode for all users. Therefore, one of the key components to achieving a mode shift to cycling is through providing a 'low-stress' cycling environment, comprising a network of direct and well-connected routes with safe cycling facilities.

Action 4.1 – Construct physically separated paths

Construct physically separated paths on primary cycling corridors:

- An extension of the shared use path along Bank Street from its current terminus, westward 50 m to Station Street, to link to the new Station Street / Main Street signalised crossing (see action 3.2)
- Along Whitehorse Road between Nelson Road and Box Hill Town Hall (as part of the reconfiguration of Whitehorse Road (see action 12.4)
- An off-road path or protected on-road lanes along Nelson Road (a SCC route), connecting to the walking/cycling bridge over the railway line.

Figure 20 Example of shared path including continuity across driveways in Bentley, WA

Figure 21 Example of protected on-road bike lanes in the City of Yarra

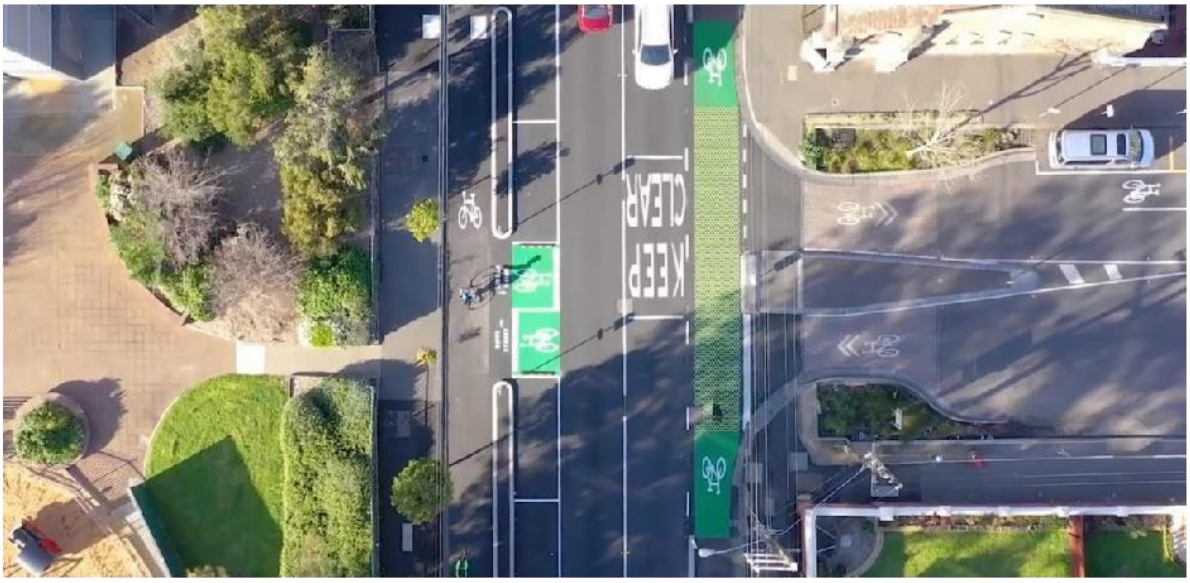


Image source: Yarra City Council

Action 4.2 – Construct bicycle boulevards / low stress cycling streets

Plan and construct bicycle boulevards / low stress cycling streets that provide an alternative route bypassing Box Hill Central. The types of treatments may include sharrows, advisory bike lanes, coloured pavement treatments, wayfinding and other calming treatments that reduce vehicular traffic volumes and cycling stress. The exact routes should be determined during the planning stage. Possible routes to be investigated to and through Box Hill include the following:

- **East-west routes.** Oxford Street and James Street between Surrey Drive and Station Street, as well as Albion Road and Harrow Street between Station Street and William Street
- **North-south routes.** William Street and Linsley Street utilising the railway level crossing, as well as the Thurston Street and Surrey Drive corridor connecting to the new walking/cycling bridge over the railway line at Hopetoun Parade (see action 5.1). This corridor is identified as a Strategic Cycling Corridor (SCC) and follows an identified Easy Ride Route, North-South 2, which provides a connection to Deakin University to the south.

Action 4.3 – Implement Strategic Cycling Corridors in Box Hill

Advocate for the Victorian Government to fund and implement the remaining SCC in Box Hill, including the Hawthorn to Box Hill SCC, which is currently in the planning stage. As part of this, investigate the feasibility of converting the unused fourth rail track corridor (platform 1) into a cycling corridor through the Box Hill Central area.

Figure 22 Example of a bicycle boulevard in Leederville, WA

Figure 23 Example of traffic calming treatment along a bicycle boulevard in Leederville, WA

Figure 24 Example of sharrows

5. Provide new walking/cycling bridge over the railway line

There are limited north-south connectivity options to cross the railway line which acts as a major barrier that runs across the Box Hill MAC.

There are limited opportunities to cross the railway line, with only two north-south roads (Elgar Road and Station Street) crossing over the railway line within the MAC study area (1.2 km east-west span). An additional level crossing (for pedestrians and cyclists only) is located near Linsley Street, on the eastern boundary of the study area, 400 metres east of Station Street. While the limited north-south connectivity affects all modes, pedestrians and cyclists are most impacted due to the effort required to divert to indirect routes.

This initiative is to pursue a new bridge across the railway line to generate network wide benefits for pedestrians and cyclists, however it is an advocacy action that requires working closely with multiple stakeholders and delivery partners.

Action 5.1 – Provide new walking/cycling bridge over the railway line

Work with the Victorian Government and Vicinity Centres to provide a pedestrian and cyclist connection across the railway line between Prospect Street and Hopetoun Parade, aligning with the Nelson Road and Thurston Street corridor.

Figure 25 Location for proposed new walking/cycle bridge across the railway line aligning with the Nelson Road and Thurston Street corridor

Figure 26 Example walking/cycling bridge in the City of Melbourne

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
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3 ●	Increased walking, cycling and public transport participation	7 ○	A greener, cleaner environment	11 ●	A welcoming, safe and vibrant activity centre
4 ●	Improved physical and mental well being	8 ●	Minimal non-essential private vehicle trips	12 ○	Efficient functioning of local freight corridors

6. Create attractive laneways

Laneways have the potential to boost diversity of the urban realm, alleviate footpath congestion, improve permeability and enhance economic and social opportunities.

Box Hill's laneways are currently primarily used for rear shop access, loading, and shop owner and staff car parking. There is an opportunity to convert these laneways into vibrant spaces for people to meet, relax and enjoy, including through improved hospitality offerings that celebrate Box Hill's unique identity and public art installations.

Figure 27 Example of an attractive, activated laneway (Centre Place) in the City of Melbourne

Figure 28 Example of an inactive laneway (Birds Lane) in Box Hill

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
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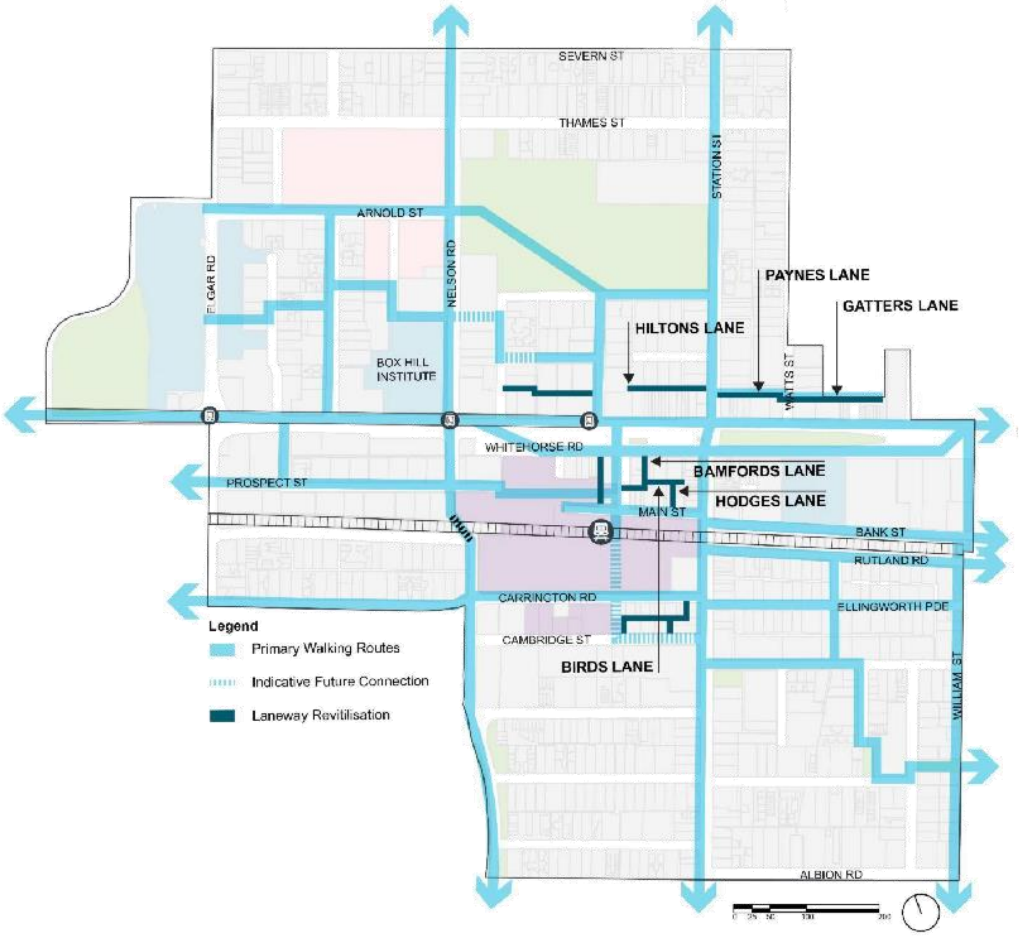
WALKING AND CYCLING INFRASTRUCTURE

Action 6.1 –Revitalise laneways

Investigate opportunities to create new or revitalise existing laneways into active, pedestrian environments that are destinations in their own right. This should include minimising vehicle access and a focus on creating laneways as pedestrian priority spaces, where suitable. This includes:

- **Named laneways:** Gatters Lane, Paynes Lane, Hiltons Lane, Bamfords Lane, Birds Lane, Hodges Lane
- **Unnamed laneways:** Between Bruce Street and Shipley Street just north of Whitehorse Road; between Whitehorse Road and Main Street just west of Market Street; and between Carrington Road and Cambridge Street.

Figure 29 Laneway enhancement opportunities



7. Improve bicycle end-of-trip facility provision

End-of-trip facilities are dedicated places that support people using active transport modes. Typically, they include secure bicycle lock up areas and change rooms where people can shower, change clothes, and store their belongings securely.

End of trip facilities are a critical aspect to encouraging and supporting the cycling mode share for trips within and to/from the MAC, especially for those who work within the MAC and live within the cycling catchment (typically less than around 10 kilometres).

High quality, abundant, secure and well-located end-of-trip facilities within the MAC could assist in reducing emissions of CO_2 and other pollutants associated with motorised vehicle travel. They also reduce the need for car parking and, through encouraging and enabling active transport, can have a positive impact on economic productivity through improved worker health and wellbeing.

Figure 30 Public art identifying end of trip facility

Figure 31 Example of 'bike repair station' facilities for public use

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
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WALKING AND CYCLING INFRASTRUCTURE

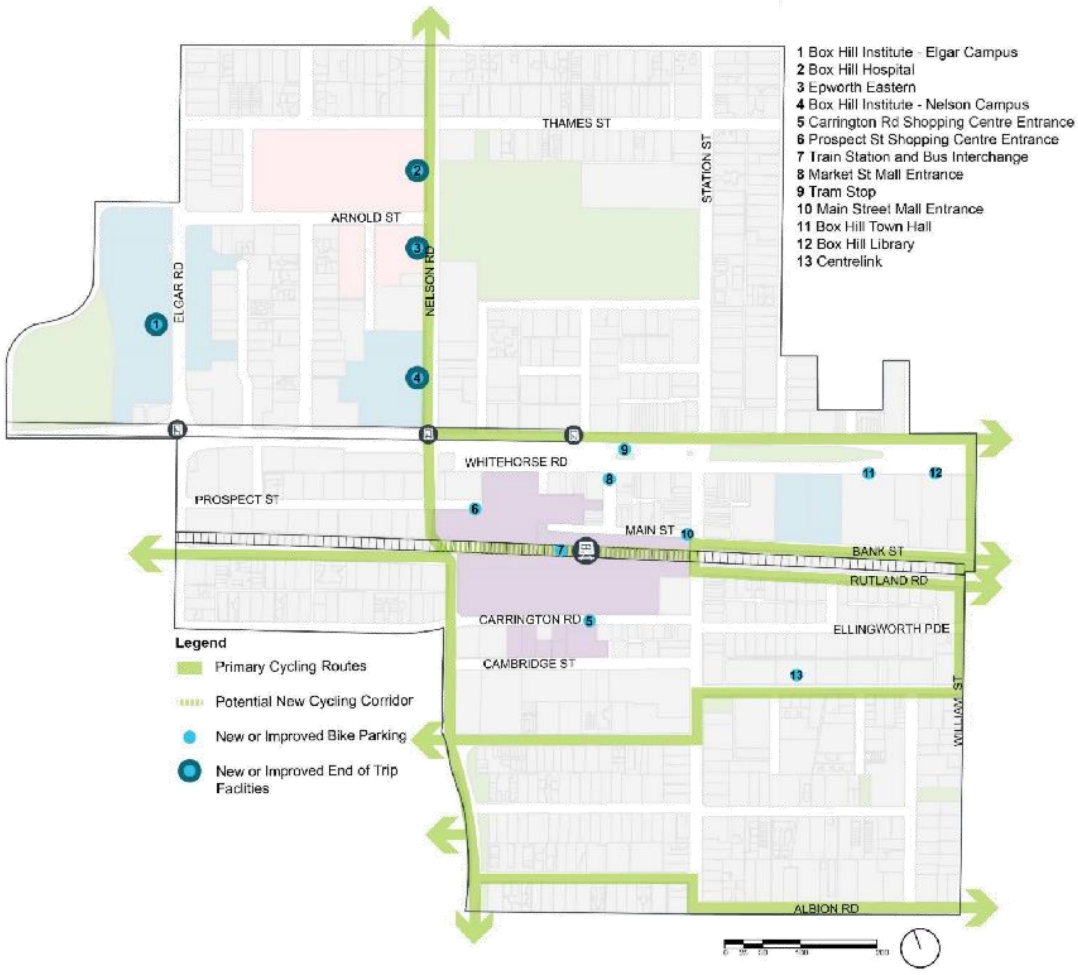
Action 7.1 – Provide end-of-trip facilities within key destinations

Advocate for improved, high quality and increased bicycle end-of-trip facilities at key destinations such as Box Hill train station (see action 9.3). This should include high quality, secure bike parking, showers, lockers and bike repair stations for staff, which could be located within an on-site 'bike hub'. Separate facilities should also be provided for visitors. Consideration should also be made to accommodate e-bikes.

Action 7.2 – Improve public end-of-trip facility provision

Provide improved and increased public bicycle end-of-trip facilities including bicycle parking and repair stations at key locations within the MAC.

Figure 32 Opportunities for cycle parking and end-of-trip facilities



8. Improve wayfinding

The Box Hill MAC is a complex urban environment, with all public transport modes (train, tram and bus), a medical precinct, education facilities, retail and hospitality destinations, and several large public parks. Wayfinding infrastructure is important to connect these places. It also directs users of various transportation modes along preferred routes, which can enhance the safety, amenity and efficiency of the entire transport network.

There is currently a lack of wayfinding infrastructure within the MAC, which can, at times, lead to a sense of uncertainty and unease about the MAC for some people, especially for visitors who are not familiar with the area.

Wayfinding within the shopping centre and between modes of transport is particularly poor and unclear. For example, no clear signage exists directing transit users between the train station, tram terminus and bus interchange. Real time information informing interchanging passengers of the arrival time of connecting public transport services is also absent.

Installation of consistent and clear wayfinding would assist visitors to move around the MAC efficiently and easily. Wayfinding infrastructure can also promote tourism, leisure and commercial attributes of the MAC and lead to extended visits.

While only one action is included within this initiative, it will require a network wide approach to plan and deliver.

Action 8.1 – Improve area-wide wayfinding

Deliver cohesive and improved multilingual wayfinding across the MAC, including but not limited to providing:

- Maps of the MAC at key locations, including clear delineation of strategic and safe active transport routes, as well as end-of-trip facilities, bike parking, bike repair areas, etc.
- Fixed signage, indicating travel distance to key locations (including between travel mode stops/stations), as well as travel time by foot and bicycle
- Interactive signage, showing real time travel information
- Pavement stickers, indicating travel distance to key locations, as well as travel time by foot and bicycle
- Online maps / apps.

Figure 33 Existing wayfinding signage near the train station

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
1	● Accessible and integrated walking, cycling and public transport network	5	○ Allocation of street space to more efficient and sustainable modes of transport	9	● An efficient and reliable transport network encouraging travel to, not just through
2	○ Safe and secure transport network accessible to all	6	○ Efficient and reliable public transport	10	○ Efficient and adaptable purposing of land assets
3	● Increased walking, cycling and public transport participation	7	○ A greener, cleaner environment	11	● A welcoming, safe and vibrant activity centre
4	● Improved physical and mental well being	8	● Minimal non-essential private vehicle trips	12	○ Efficient functioning of local freight corridors

9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

Public transport

9. Upgrade Box Hill transport interchange

Box Hill is known as a major public transport hub, serviced by trains on the Belgrave and Lilydale lines, tram route 109, and 18 bus routes. Outside of the CBD, Box Hill Station is the fifth busiest in Melbourne with over 11,000 travellers per day, while the bus interchange is the fourth busiest in Melbourne.

The Box Hill transport interchange offers a poor user experience and is difficult to access and move within. Although it is well utilised by residents, commuters and visitors, its amenity and capacity does not reflect its importance in Melbourne's public transport network, nor Box Hill's reputation as a growing activity centre. Community consultation has led to the following conclusions:

- Forty percent of the community felt that enhanced linkages between transport modes were ***essential*** to improving public transport in the MAC.
- Reasons to update the interchange include poor safety (lighting, visibility and platform space), poor pedestrian accessibility, outdated facilities and poor bus accessibility.
- Connection between the bus and train is unclear and indirect. Travellers need to walk around Box Hill Central when it is closed or walk through crowds of shoppers when it is open.
- Upgrades to the transport interchange would need to support disability access. For example, as described in initiative 2 (improve accessibility & DDA compliance), the lift to the train station is only accessible during Box Hill Central opening hours.

Action 9.1 – Make interim improvements to the bus interchange

Advocate to the Victorian Government to make improvements to the bus interchange to ensure it is fit for purpose in the short-medium term, before a major bus interchange upgrade (see action 9.4). The interim improvements should include those identified in the Box Hill Transit Interchange Ministerial Advisory Group Report (2017), including improving information displays, passenger amenity and personal safety. It should also include improving the pedestrian crossing across the bus deck to the lifts, which could include the use of contrasting colours to improve visibility, small speed humps on both sides or upgrading to a raised wombat crossing.

Action 9.2 – Provide real-time service information

Work with the Victorian Government and Vicinity Centres to deliver real-time service information throughout the station precinct, as identified as part of the Box Hill Transit Interchange Ministerial Advisory Group Report. This information should be visually displayed at alighting points for the train, bus and tram stops to inform passengers transferring between the various modes. The information should include distances and walking times between the train platforms and bus/tram stops, to allow passengers to plan their transfer effectively.

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
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9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

Action 9.3 – Deliver high quality end-of-trip station facilities

Work with the Victorian Government to deliver high quality and secure bicycle end-of-trip facilities that are integrated with Box Hill train station, as envisioned as part of the Box Hill Transit Interchange Ministerial Advisory Group Report. This facility should cater for the future growth of cycling in the area, including the future demand expected from SRL. It should also include direct and easy access from the surrounding cycling network.

Action 9.4 – Relocate and upgrade Box Hill bus interchange

Work with the Victorian Government, Suburban Rail Loop Authority and Vicinity Centres to relocate the bus interchange and reconfigure into a series of new on-street bus stops located along Whitehorse Road (either side of Market Street) and along Station Street (north of Main Street). This would generally improve access for users, with benefits including more direct bus routes, shorter and improved connections and transfers between public transport modes, reduced bus dwell times, high quality integration and more direct links with the surrounding area. The new bus stops should include weather protection (from sun, wind and rain). The upgrade should be guided by a review of the Box Hill Transit Interchange Ministerial Advisory Group Report. An investigation into an alternative bus layover (providing driver amenities) facility should also be undertaken to allow the existing bus interchange space to be repurposed.

Figure 34 Existing Box Hill bus interchange

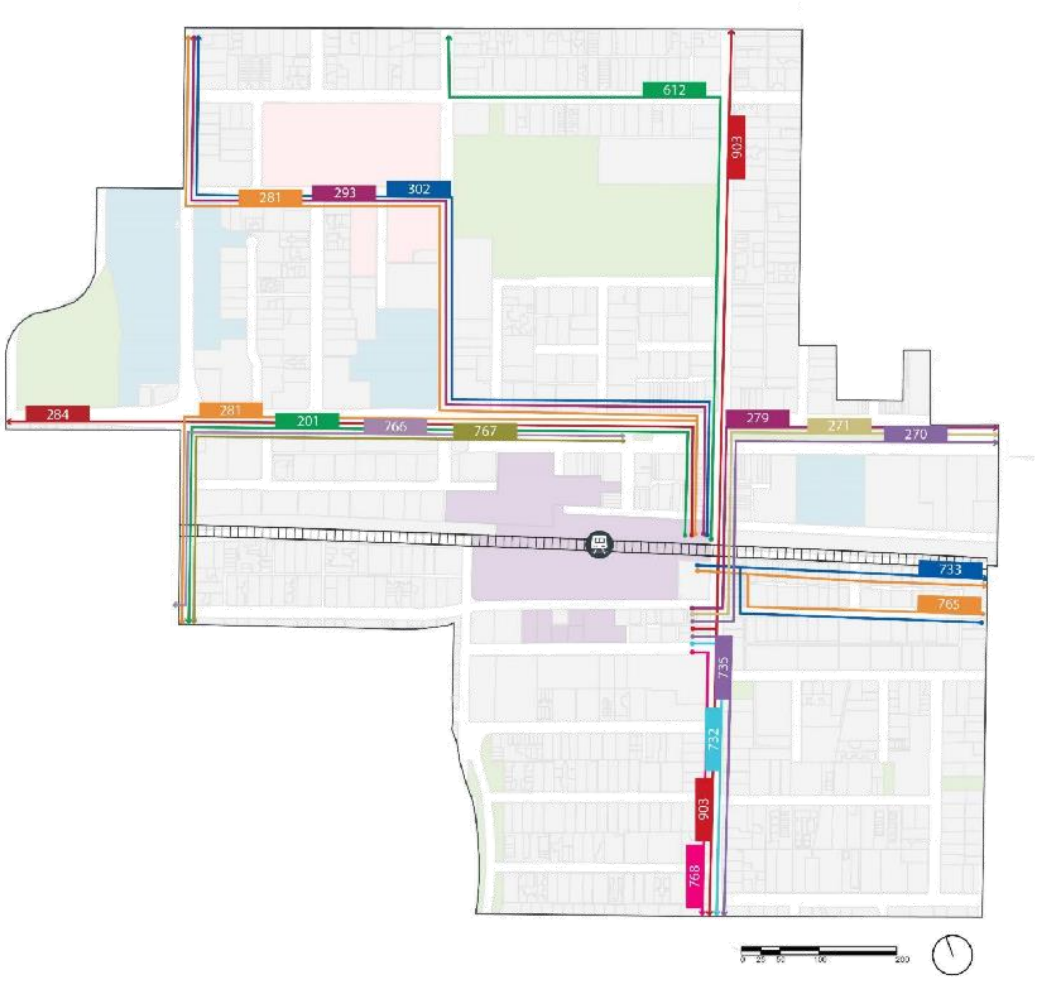
10. Improve train and bus services

A high proportion (27 percent) of residents take the train to work, and a relatively high proportion of residents take the bus to work (four percent mode share, compared to two percent mode share for the Melbourne average). However, 43 percent of residents travel to work by private vehicle, highlighting that train and bus mode share can still be substantially increased.

Box Hill station is currently one of the busiest train stations in Melbourne, and the MAC is expected to undergo substantial residential and commercial growth over the next decade. However, despite the significant growth expected, PTV's *Network Development Plan* outlines that train headways are not expected to improve until 2030. This will exacerbate crowding on Box Hill station platforms and the Belgrave and Ringwood lines.

Access to/from and within Box Hill MAC is further impeded by inefficient bus routing. There is an opportunity to reconsider bus route frequency and routing to relieve congestion in Box Hill and deliver more appropriate and convenient routes for residents, commuters and visitors.

Figure 35 Current bus routes and terminus points



PUBLIC TRANSPORT

Each of the actions to improve train and bus services to/from and within Box Hill are advocacy undertakings. They will require presenting the existing challenges to agency and stakeholder operators as well as demonstrating expected benefits associated with changes and upgrades.

Action 10.1 – Increase train capacity

Work with the Victorian Government to deliver higher train passenger capacity in the peak (more frequent and/or longer trains) to manage rail crowding, and more frequent trains in the off-peak including weekends. It is noted that the removal of the Mont Albert Road and Union Road level crossings (as part of LXRP) will help facilitate the running of additional train services in the peak.

Action 10.2 – Restructure bus routes

Work with the Victorian Government to simplify and rationalise bus routes to create a CBD-like grid of bus services that provide multiple points of interconnectivity. This would re-orient bus services with the needs of customers by increasing the number of destinations across the network. A key opportunity is to combine existing routes to create cross-centre services, rather than separate routes that terminate in the centre. This would help simplify the network, reduce dwell times, and reduce layovers within the MAC. Potential opportunities to modify bus routes include:

- Combine routes 284 and 271
- Combine routes 765 and 766
- Operate route 281 as a through route on Elgar Road
- Operate route 733 on Middleborough Road and Whitehorse Road
- Alter route 903 to operate on Elgar Road between Riversdale Road and Burwood Highway to provide a better connection to Deakin University.

Action 10.3 – Improve bus service levels

Work with the Victorian Government and local stakeholders to deliver a bus prioritisation framework to ensure that high passenger, low frequency routes are prioritised for improved service levels and longer operational hours. Some specific opportunities for improving bus routes include the following:

a. Work with DoT and tertiary education institutions to implement a high frequency express bus from La Trobe University to Deakin University via Box Hill and Doncaster. This would replicate the connection envisaged by the SRL Project and provide a substantially improved connection forty years in advance of the current SRL schedule.

b. Work with Deakin University, the City of Manningham and DoT to reduce the travel time on bus route 281 between Doncaster and Deakin University by facilitating bus priority on Elgar Road, and removing the need for the route to travel via the Box Hill Transit Interchange by providing bus stops at Elgar Road that connect to tram route 109. Other passengers in Elgar Road wishing to access the Transit Interchange would still have many other services from which to choose.

c. Work with Box Hill High School and DoT to realign Route 765 to Middleborough Road and Whitehorse Road, and join it with Route 766 to better connect people in Box Hill, Blackburn South, Mont Albert and Surrey Hills to Box Hill High School. This would also improve connections along Whitehorse Road.

d. Work with the City of Boroondara and City of Maroondah to lobby government to provide a bus route along Canterbury Road from Bayswater to Camberwell to reduce private vehicle traffic on and around Canterbury Road and Whitehorse Road.

Outcomes supported by this initiative

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11. Extend the tram line

Box Hill tram terminus is located along the median strip of Whitehorse Road, around 200 metres from the bus interchange and train station. Tram route 109 operates in Box Hill and connects through to Port Melbourne via Collins Street in Melbourne's CBD.

DoT is currently developing plans to upgrade the Box Hill tram terminus to allow for two tram platforms and longer E-Class trams. As a separate project, DoT is developing plans to install a new electrical substation near the terminus to help power the tram network. Extending the tram line as an additional project would improve accessibility to and from the east of Box Hill and would increase public transport mode share.

Action 11.1 – Extend the tram line

Work with the Victorian Government to deliver an extension of tram route 109 eastwards along Whitehorse Road to Middleborough Road to provide enhanced accessibility to schools and to community and recreation facilities.

Figure 36 Proposed tram extension

Legend

Existing Tram Route 109

Proposed Tram Extension

Outcomes supported by this initiative

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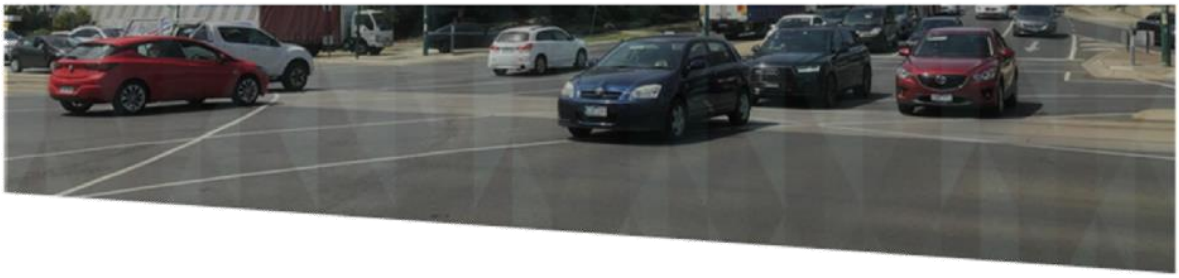
9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

Traffic and parking management



12. Modify the road network to reduce through traffic on Whitehorse Road and Station Street

Whitehorse Road and Station Street are busy arterial roads that cut through the centre of the Box Hill MAC. They cause visual and physical separation and primarily serve through traffic, while catering poorly for active and public transport users. A strategic, holistic approach to modifying the road network is required to address the needs of all transport users, and to better balance the transport and place functionalities across the MAC.

The Movement and Place Framework, developed by VicRoads (now DoT) in 2018, represents a different approach to planning for the transport network. Traditionally, transport planning has focused on the hierarchy of pedestrians first, cyclists second, public transport users third, and vehicles last. The Movement and Place framework however recognises that *"streets not only keep people and goods moving, they're also places for people to live, work and enjoy"*, and that there is a *"need to balance the needs of both transport users and place users and design a mix of transport modes that are appropriate to how the road and places are used by communities"*.

A Movement and Place workshop was held with key staff from the City of Whitehorse and DoT to apply this framework to key roads within the Box Hill MAC, identifying corridors which should be prioritised for different transport modes and place needs. The general outcomes of this were for Whitehorse Road and Station Street to have a lowered traffic functionality in favour of higher priority for active transport, public transport and open space, with traffic supported on alternative routes including Elgar Road and Middleborough Road.

Six actions are proposed to deliver a vastly different operating context for Whitehorse Road and Station Street, which will contribute to the creation of a more sustainable MAC that provides enhanced support for active and public transport users, whilst supporting vehicle flow on designated traffic corridors.

Action 12.1 – Modify intersections to reduce through traffic within the MAC

Work with the Victorian Government to modify intersections across the road network to reduce non-essential through traffic within the Box Hill MAC particularly on Whitehorse Road and Station Street. This could include road narrowing, reducing turning lanes, or potentially restricting right turn movements for general traffic (buses exempt) at key signalised intersections, including:

- Whitehorse Road / Nelson Road
- Whitehorse Road / Station Street
- Station Street / Canterbury Road

Changes should also be considered at the below intersections, focusing on reducing turning movements into and out from Whitehorse Road throughout the Box Hill MAC, without limiting the capacity of the priority north-south traffic routes:

- Whitehorse Road / Middleborough Road
- Whitehorse Road / Elgar Road

Action 12.2 – Modify traffic signal timings to prioritise active and public transport modes

Work with the Victorian Government to plan and modify traffic signal timings to align with the State's Movement and Place Framework and to give greater priority to sustainable transport. This could include shorter overall cycle times, bus priority phasing, and/or a higher allocation of green time for pedestrians.

Outcomes supported by this initiative

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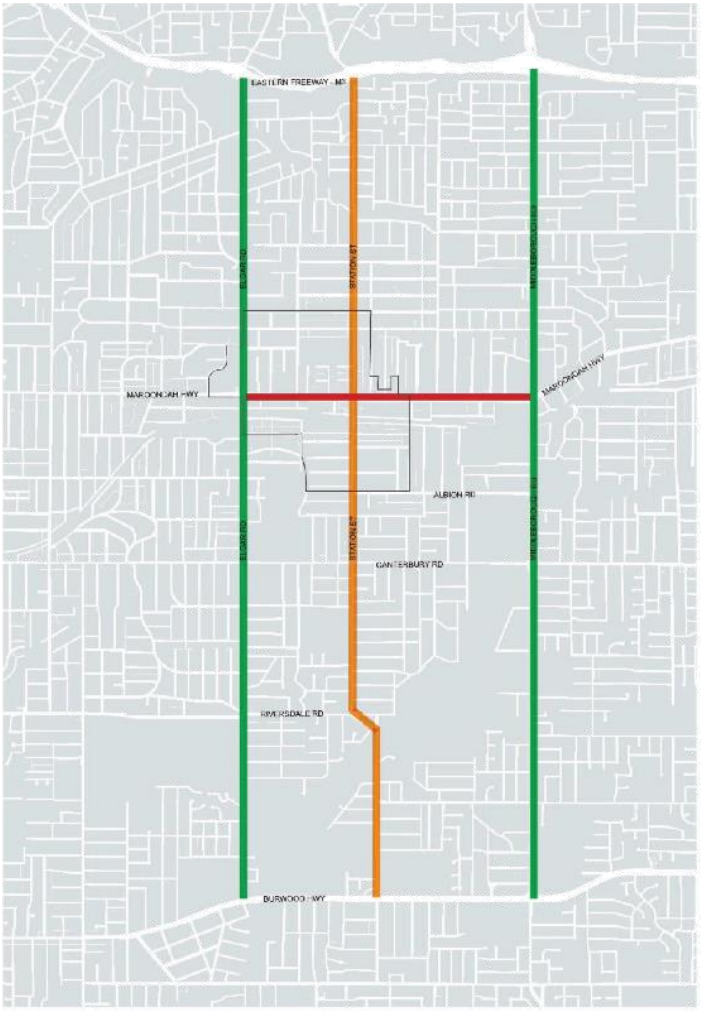
Action 12.3 – Improve traffic routes along Elgar Road and Middleborough Road

Work with the Victorian Government to provide improved traffic routes along Elgar Road and Middleborough Road from Canterbury Road to Shannon Street/Springfield Road, including a review of on-street parking and consideration of no-stopping zones (peak, daytime or full-time) including weekends.

Figure 37 Proposed systemic road changes



Legend

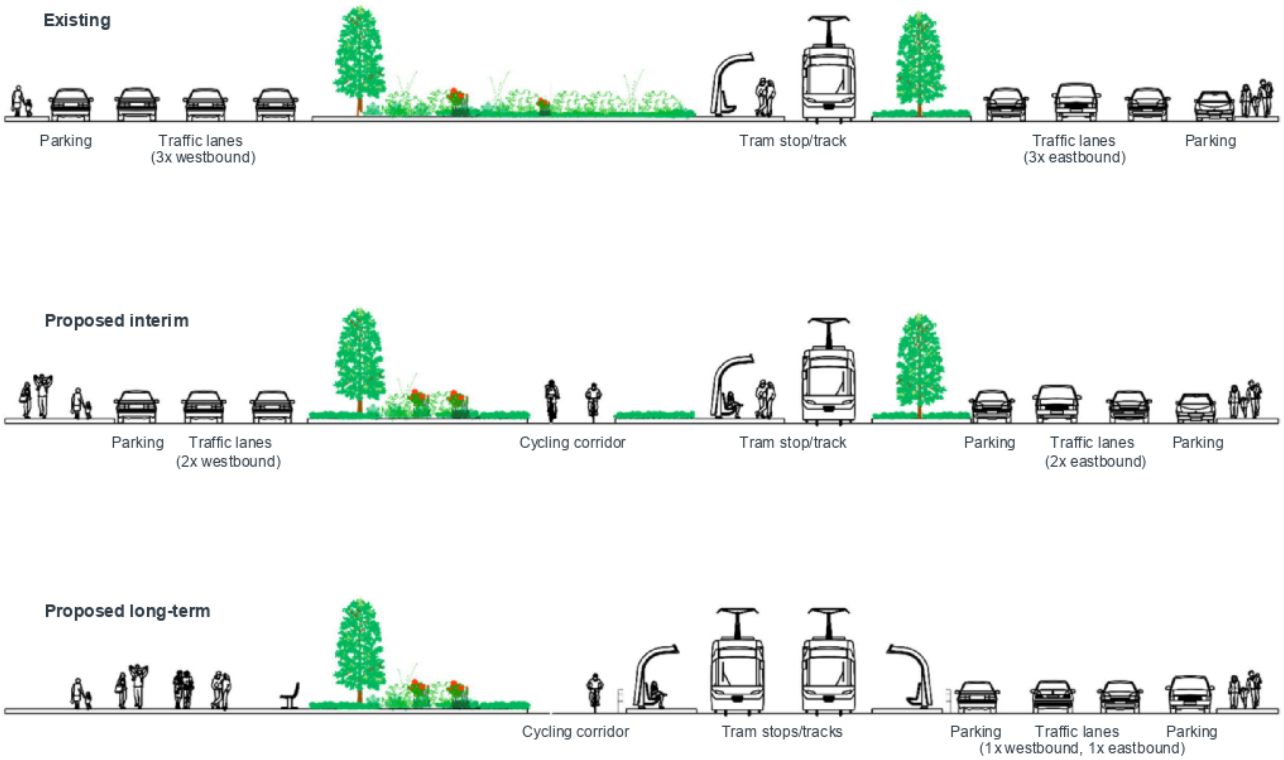
- Moderate road changes to support safe traffic flow
- Moderate road changes to discourage through traffic
- Major road changes to deter through traffic

Action 12.4 – Reconfigure Whitehorse Road

Work with the Victorian Government to reconfigure Whitehorse Road between the Box Hill Town Hall and Elgar Road. The design could include, but not be limited to, the following:

- Peak hour or permanent removal of on-street parking
- Provision of a drop-off/pick-up area
- Wider footpaths and improved urban amenity
- Bus priority infrastructure e.g. including bus lanes and signal priority, particularly for turning movements at intersections, to reduce delays and improve service reliability, as follows:
  - In the interim, restrict parking in the kerbside lanes to outside peak periods along some sections of the road, to allow these to be used as bus lanes in peak periods.
  - In the long-term scenario, if the tram line is extended (see action 11.1), investigate the feasibility of buses using tram tracks.
- Reducing the number of traffic lanes:
  - In the interim, remove one traffic lane in each direction to enable widening of footpaths.
  - In the long-term scenario, consider shifting traffic lanes to the northern side of the road reserve (eastbound carriageway) to allow the southern side (westbound carriageway) to be used for public space. There would be two lanes during the peak and one lane in each direction during off-peak times to include on-street parallel parking.
- New physically separated cycling facilities.

Figure 38 Proposed changes to the Whitehorse Road typical cross-section in the interim and long-term scenario to reduce traffic lanes, include a cycling corridor, widen footpaths and allow for a tram extension



Action 12.5 – Reconfigure Station Street

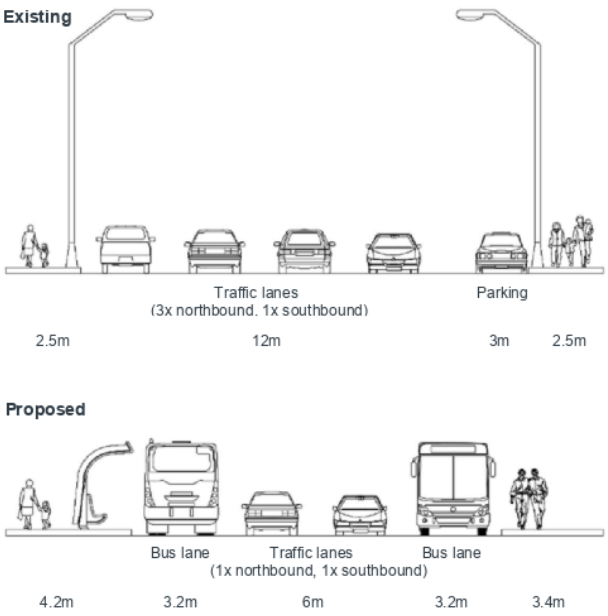
Work with the Victorian Government to reconfigure Station Street, to downgrade it from a major to a minor traffic route (through vehicles travelling north-south should be diverted out of the Box Hill MAC and encouraged to use Elgar Road or Middleborough Road instead). This is consistent with Action 4.4.4 of the Whitehorse Integrated Transport Strategy 2011. The design could include, but not be limited to, the following:

- Removal of on-street parking
- Bus priority infrastructure (e.g. bus lanes and signal priority), particularly for turning movements at intersections, to reduce delays and improve service reliability
- Narrowing of the general traffic footprint to one lane in each direction, and reallocation of the recovered space to bus priority lanes or wider footpaths.

Action 12.6 – Improve connections between Elgar Road and Box Hill Central

In conjunction with encouraging use of Elgar Road over Station Street, investigate ways to improve connections between Elgar Road and Box Hill Central. This should include investigating suitable east-west corridors for vehicles and improving access to the shopping centre car park from Elgar Road.

Figure 39 Proposed changes to the Station Street typical cross-section to reduce traffic lanes, remove on-street parking, widen footpaths and include bus lanes



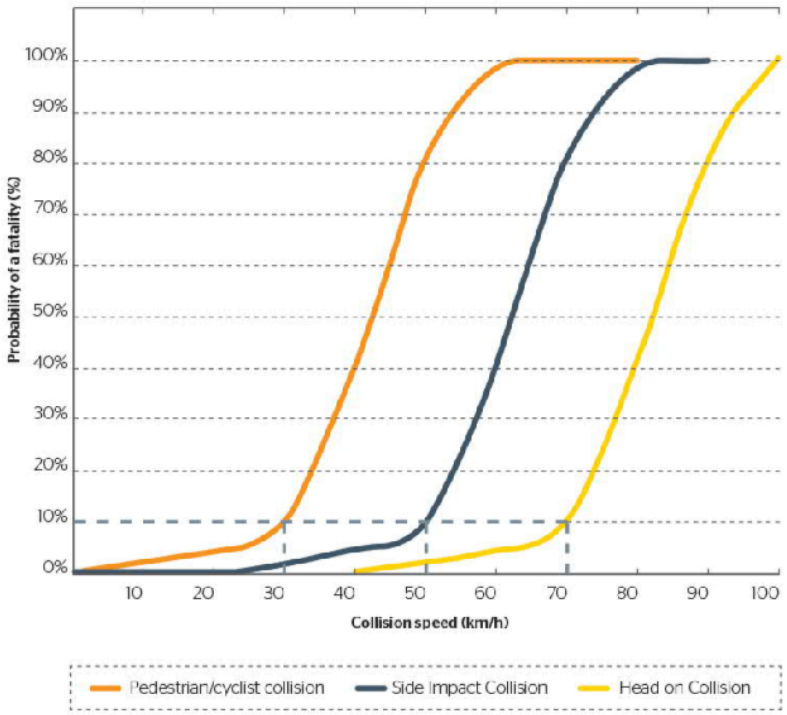
13. Reduce vehicle speeds

There are a number of key arterial roads in the Box Hill MAC where pedestrians and cyclists mix with moderate to high speed traffic, representing one of the highest risk road environments.

One of the main factors in the severity of pedestrian or cyclist collisions with vehicles is the vehicle speed.

Research has shown that the severity of injuries arising from a vehicle impact increases moderately up to 37 km/h, then increases sharply thereafter, with death almost certain at impact speeds of around 55 km/h or higher (refer to Figure 37). As a result, 30 km/h and 40 km/h are often cited as 'safe speeds' for built up areas where there is a mix of pedestrians and cyclists with vehicles, such as the Box Hill MAC.

Figure 40 Wramborg's model for fatality probability vs vehicle collision speeds



Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
1 ○	Accessible and integrated walking, cycling and public transport network	5 ○	Allocation of street space to more efficient and sustainable modes of transport	9 ●	An efficient and reliable transport network encouraging travel to, not just through
2 ●	Safe and secure transport network accessible to all	6 ○	Efficient and reliable public transport	10 ○	Efficient and adaptable purposing of land assets
3 ●	Increased walking, cycling and public transport participation	7 ●	A greener, cleaner environment	11 ●	A welcoming, safe and vibrant activity centre
4 ○	Improved physical and mental well being	8 ○	Minimal non-essential private vehicle trips	12 ○	Efficient functioning of local freight corridors

Community engagement found that most people support a focus on improving safety for all users, even if it means lowering speed limits. Area-wide speed reduction trials are already taking place elsewhere in Melbourne, with initial community polling demonstrating positive responses to the area-wide trials of 30 km/h speed limits in Fitzroy and Collingwood.

Action 13.1 – Implement 40 km/h speed limits on Whitehorse Road and Station Street

Work with the Victorian Government to deliver a full-time or part time 40 km/h posted speed limit for Whitehorse Road and Station Street for road sections travelling through the MAC. This could include road markings or LED signs to increase visibility and awareness of the reduced speeds on entering the area. Along Station Street, this would be an extension to the 40 km/h speed limit that is currently imposed between Oxford Street and Whitehorse Road on a part time basis.

Action 13.2 – Undertake area-wide speed limit reductions

Undertake area-wide speed limit reductions. Implement a full-time area-wide 40km/h speed limit for the hospital precinct. Using a staged approach, continue to implement 40 km/h area-wide speed limits for all local streets within the MAC.

Action 13.3 – Investigate further speed reductions to 30 km/h

Investigate the potential for further speed reductions to 30 km/h on certain local streets within the MAC, following the implementation and monitoring of 40 km/h speed limits.

Action 13.4 – Investigate sites for improved traffic calming

Investigate potential sites within the MAC for improved traffic calming to support speed reductions and to improve safety of road crossings. These should be focused on identified primary walking and cycling routes, particularly Nelson Road and Arnold Street adjacent to the hospital where vulnerable road users are more prevalent, as well as where bicycle boulevards / low stress cycling streets are implemented (see action 4.2).

14. Manage parking supply and demand

Parking, in particular long term parking, represents an inactive, inefficient use of space, especially within the heart of the Box Hill MAC. There is a need to improve the management and equitability of parking to ensure parking availability is prioritised for those who most need it.

There are approximately 9,000 publicly available car parking spaces provided in Box Hill MAC, including a mix of free, ticketed, time restricted and unrestricted parking, with approximately 59 percent of these car parking spaces considered long term (four or more hours).

Box Hill Station provides 500 parking spaces for public transport users within the shopping centre car park and 75 spaces along Bank Street. However, it has been observed that most of these spaces are not being used by public transport users, but instead often by workers in the area who arrive prior to the commuting peak.

Given that Box Hill is highly accessible as the centre of a major public transport hub, there is an opportunity to better manage and reduce overall parking within the MAC, whilst still ensuring there is equitable access to parking for all users. This includes prioritising parking availability for public transport users and for pick-up and drop-off functions (including for taxi/rideshare), particularly near hotels and the station, along with short-term visitor parking.

Action 14.1 – Manage use of train station commuter car park

Work with the Victorian Government to investigate and implement myki activated boom gates to ensure the commuter car park is only being used by public transport users. This interim action will also allow for the monitoring of actual demand for station parking, which will inform the amount of parking which can feasibly be eventually removed or relocated (see action 14.2).

Action 14.2 – Relocate Box Hill station commuter parking

Advocate to the Victorian Government for a reduction or removal of all day commuter parking at Box Hill train station. This could instead be relocated out of Box Hill MAC to other nearby train stations, however noting this would need to be investigated as part of network-level planning into station typologies (for access modes) and the overall station parking supply along the rail network. The amount of parking which can be removed or relocated should be based on monitoring the actual demand, which would be possible following enforcement of station parking use by public transport users only (see action 14.1). The investigation should also include benchmarking against the amount of commuter car parking provided at other Metropolitan Activity Centres and inner-city stations. It should also consider links to the Mont Albert / Surrey Hills Level Crossing Removal Project (LXRP), expected to be completed by 2025. A further study could also explore new uses for the 75 on-street commuter car spaces along Bank Street, such as passenger pick-up/drop-off bays during the peak and short term parking during the inter-peak, or potentially converting into other uses such as public space.

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
1 ○	Accessible and integrated walking, cycling and public transport network	5 ○	Allocation of street space to more efficient and sustainable modes of transport	9 ○	An efficient and reliable transport network encouraging travel to, not just through
2 ○	Safe and secure transport network accessible to all	6 ○	Efficient and reliable public transport	10 ●	Efficient and adaptable purposing of land assets
3 ●	Increased walking, cycling and public transport participation	7 ●	A greener, cleaner environment	11 ●	A welcoming, safe and vibrant activity centre
4 ○	Improved physical and mental well being	8 ●	Minimal non-essential private vehicle trips	12 ○	Efficient functioning of local freight corridors

Action 14.3 – Review on-street parking in the MAC

Determine whether on-street car parking restrictions are appropriate within the MAC. This could include a review of disabled parking, loading zones, drop-off/pick-up zones, and timed/paid parking, and their enforcement and effectiveness. This review and enforcement should also extend to local residential streets to ensure parking demand for the activity centre does not overflow and impact on the amenity of adjacent local residential streets.

Action 14.4 – Relocate off-street parking to outer areas within the MAC

Investigate relocating a portion of the current off-street parking within the heart of Box Hill MAC to outer areas within the MAC. Possible locations for these could include near Box Hill Hospital (providing a logical gateway from the north) and near Box Hill Town Hall (providing for people entering from the east). Development opportunities within Council owned sites should consider the provision of public off-street car parking within the development (i.e. Box Hill Bowls site on the corner of Elgar Road and Whitehorse Road).

Action 14.5 – Relocate on-street long term parking and convert to short term zones

Convert on-street long term parking at key locations, such as near hotels and near the existing train station (including the 75 station commuter parking spaces on Bank Street), into short term drop-off/pick-up zones, taxi/rideshare zones, and carshare parking bays. This should also include some larger spaces to accommodate larger vehicles such as tourist buses or the airport transfer shuttle buses (SkyBus). Investigate the capacity of potential off-street parking areas to accommodate relocated on-street parking to ensure no net loss of long-term parking within the MAC.

Action 14.6 – Manage motorcycle/scooter parking

Enforce motorcycle parking laws and apply footpath parking bans where the footpath is not wide enough. Where bans are applied, on-street motorcycle parking should be provided nearby, such as by converting some car parking bays to motorcycle/scooter parking. This should be focused on primary walking routes, particularly Whitehorse Road, Station Street, Bank Street, Rutland Road and Carrington Road.

Action 14.7 – Provide electric vehicle charging points

Support the provision of electric vehicle charging points, through the following:

a. Working with private car park owners, undertake an investigation into providing electric vehicle charging points within off-street electric vehicle parks at key locations (such as Box Hill Hospital, Box Hill Institute and Vicinity Centres).

b. Working with developers to provide electric vehicle charging infrastructure into their car parking facilities. At a minimum, encourage developers to provide the electrical wiring and circuits so that retrofitting costs are minimised in the future.

c. Consider a planning permit condition for large developments to require electric vehicle charging points via a Parking Management Plan.

Figure 41 Example electric vehicle charging in Harrow Street car park

15. Repurpose space allocated to vehicles and enhance public space

Like laneways, attractive and active public spaces have the potential to draw people, boost diversity of the urban realm, and add to the vibrancy of the Box Hill MAC.

In line with making more efficient use of parking spaces within the heart of the Box Hill MAC, there is opportunity to repurpose idle, underutilised spaces into active public spaces to improve the public amenity and bring vibrancy to the centre.

Public space is limited in Box Hill, and community consultation has found that there is support and desire for more and improved public spaces and amenity. However, it is acknowledged that like most busy centres, there are various competing demands for the limited space available within the Box Hill MAC to allocate to transport infrastructure and public spaces. As such, part-time or temporary repurposing of roads, parking and other spaces can be implemented to test and gauge community acceptance of potential changes.

Action 15.1 – Create parklets

Convert on-street parking spaces to other uses such as parklets, either on a temporary or permanent basis, which could include public seating, extended alfresco areas and/or bicycle parking. These should begin as temporary trials in areas such as along the south side of Carrington Road outside restaurants or along the east side of Station Street, moving towards the eventual removal of on-street parking as part of the reconfiguration of Station Street (see action 12.5).

Figure 42 Example parklet in the City of Darebin

Image source: Victoria Walks

Figure 43 Example parklet in the City of Yarra

Image source: Victoria Walks

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
1 ●	Accessible and integrated walking, cycling and public transport network	5 ●	Allocation of street space to more efficient and sustainable modes of transport	9 ●	An efficient and reliable transport network encouraging travel to, not just through
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Action 15.2 – Convert off-street vehicle spaces to community uses for temporary periods

Temporarily convert off-street vehicle spaces, such as the Ellingworth Parade off-street car park, to public spaces for community uses, which could occur as part of events (such as Chinese New Year celebrations). These uses could include family-friendly spaces which promote a playful interactive environment, such as an outdoor giant chess set or pop up play centre.

Action 15.3 – Relocate Carrington Road taxi/rideshare facility

Work in partnership with the Victorian Government and Commercial Passenger Vehicles Victoria (formerly the Taxi Services Commission) to investigate alternative locations for a taxi/rideshare pick-up/drop-off facility to enable a removal or reduction of the existing Carrington Road taxi zone, which will help to provide greater public space and reduce traffic along Carrington Road.

Action 15.4 – Investigate temporary closures of Carrington Road to vehicles

Investigate temporary closures of a section of Carrington Road (between the vehicle accesses to the Box Hill "South" Shopping Centre) to vehicles at certain times of the day to activate the space and enable night events. This would require investigation and implementation of an event traffic management plan to ensure two-way access is allowed for on both sides of the road closure.

Action 15.5 – Investigate decking over the railway line to create new public space

Work with the Victorian Government to investigate the feasibility of decking over the railway line east of Station Street to convert into public space.

Figure 44 Example of repurposing road to open space: 2019/20 Altona Beach Precinct Trial by Hobsons Bay City Council

16. Improve parking wayfinding

Parking wayfinding helps to take circulating cars off the road, enable more efficient use of parking supply, and reduce overall congestion on the road network.

Research has shown that 30 percent of congestion is caused by people looking for parking spaces, with an average cruise time of eight minutes. Lack of wayfinding to determine the location of free car spaces leads to difficulty in navigating the road network and circulating within multi-level car parks. This is particularly true for those unfamiliar with an area (e.g. tourists or other non-regular visitors) who may not know of available parking areas.

Parking wayfinding is most effective when a strategic area-wide approach is taken. This ensures consistent signage and allows real-time information on parking availabilities to inform the messaging.

Area-wide parking wayfinding will also become more significant when implemented in conjunction with proposed conversion and relocation of off-street car parks and on-street parking types (see actions 14.4 and 14.5).

Action 16.1 – Provide area-wide parking wayfinding

Review existing parking directional signage around the MAC and deliver improved parking wayfinding signage, directing motorists to the alternative car park locations such as the Watts Street and Harrow Street off-street car parks. This can help to reduce the level of circulating traffic searching for parking within the Box Hill Central area.

Action 16.2 – Develop a parking wayfinding app

Investigate opportunities for an app to provide real-time information on current and predicted available parking spaces within the various car parks in the MAC, to enable drivers to make informed choices on which car park to go to. This could include promoting the existing "Pay Stay" app and investigating opportunities for developing this further to also include real time information all off-street car parks. This digital wayfinding would support the parking directional signage provided around the MAC (see action 16.1).

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
1 ○	Accessible and integrated walking, cycling and public transport network	5 ○	Allocation of street space to more efficient and sustainable modes of transport	9 ●	An efficient and reliable transport network encouraging travel to, not just through
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3 ○	Increased walking, cycling and public transport participation	7 ●	A greener, cleaner environment	11 ○	A welcoming, safe and vibrant activity centre
4 ○	Improved physical and mental well being	8 ●	Minimal non-essential private vehicle trips	12 ○	Efficient functioning of local freight corridors

17. Review development parking requirements

If no changes are made to current development parking requirements, the planned 6,800 new dwellings will result in an additional 7,300 car parking spaces within the Box Hill MAC.

As cities across the world begin to prioritise city living that does not require using a car for every trip, many local governments are moving away from blanket policies of providing abundant parking. Many are adjusting planning rules and parking prices to discourage driving when other options are available, and in some cases even prohibiting new parking spaces from being built in congested or sensitive locations.

There is precedence of other activity centres in Melbourne that have imposed maximum statutory parking rates on developments, including Footscray, which like Box Hill, is designated as a Metropolitan Activity Centre.

Applying similar changes to the planning scheme will enable Box Hill to slow the growth of the number of private vehicles and congestion within the MAC.

Action 17.1 – Review development parking rates in planning scheme

Review parking rates and investigate replacing parking rate minimums with maximums for new developments, as part of a planning scheme amendment to alter the existing car parking overlay. In the long term, this could also allow for the decoupling of the sale of parking spaces from apartments. This would include a review of parking management policy and how parking restrictions are applied and enforced in local streets (see action 14.3). Reduced car ownership could also be offset by the introduction of car share schemes (see action 20.1).

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
1 ○	Accessible and integrated walking, cycling and public transport network	5 ○	Allocation of street space to more efficient and sustainable modes of transport	9 ○	An efficient and reliable transport network encouraging travel to, not just through
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18. Review loading zones

Servicing and deliveries are an essential component to activity centres. Ensuring these movements are accommodated and supported is key to maintaining the economic livelihood of the Box Hill MAC.

With the proposed road network modifications and reduced capacity of some roads to improve the safety and urban amenity within the Box Hill MAC, there is potential for this to adversely impact on servicing and delivery movements. Therefore, as part of managing traffic and parking within the MAC, there is an opportunity to also review and improve the efficiency of loading zones.

Action 18.1 – Review loading zones

Review the number and location of existing loading zones to determine if they could be consolidated into one or more 'freight-friendly' areas, with the aim of improving the efficiency of loading movements whilst maintaining the amenity and function of the Box Hill MAC for other users. Work with local businesses to review time limits on loading bays to restrict deliveries to early morning or overnight periods.

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
1 ○	Accessible and integrated walking, cycling and public transport network	5 ○	Allocation of street space to more efficient and sustainable modes of transport	9 ○	An efficient and reliable transport network encouraging travel to, not just through
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Travel behaviour

19. Implement behaviour change programs

Provision of high-quality infrastructure and services is a key component to enabling mode shift to sustainable transport. It is also beneficial to support infrastructure improvement efforts through soft measures such as travel behaviour change programs.

Behaviour change programs are implemented to encourage and support people in using alternative transport modes. This can encompass a variety of forms including community and promotional events, travel plans or, in some cases, financial reward or incentives. These programs help to educate, increase awareness, and provide the information, resources and community support required to encourage people to change their behaviour.

Timing the implementation of these programs is also key to achieving the most benefit, e.g. promotions during community events where people are more likely to show interest and get involved. In addition, community consultation found that many people felt that improvements to alternative modes were needed before they could consider reducing their car use. As such, behaviour change programs should be timed to occur in accordance with the construction and completion of infrastructure upgrades.

Action 19.1 – Run active transport community events

Organise and run community events such as 'car-free days' to help re-emphasise active transport priority over traffic. This could include closing off-street car parks and/or sections of roads to cars for a period of time – as occurs with the closure of the westbound lanes of Whitehorse Road for Lunar New Year festivities – and hosting complementary 'pop-up' activities or events promoting sustainable transport use.

Action 19.2 – Run travel behaviour change program

Lead and run a travel behaviour change campaign and education program in Box Hill, or possibly Council-wide, promoting the health and environmental benefits of using active and public transport.

Action 19.3 – Support active transport promotional events

Encourage and support the community and local organisations to partake in third party walking and cycling promotional events e.g. ride to work/school days, walkathon, and 'Steptember'.

Action 19.4 – Develop workplace and school travel plans

Work with large businesses, key stakeholders and schools to develop green travel plans for their staff and students, as well as other community programs to encourage residents across the MAC to increase walking and cycling participation.

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
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Technology and emerging trends

20. Implement car share schemes

With the densification and reduced parking availability proposed within the next 15-20 years, it will be important to start planning now for the future implementation of car share in Box Hill.

A number of car share schemes currently operate across Melbourne. Car share offers users a flexible and often lower cost alternative to car ownership, particularly for those who do not use a car on an everyday basis. Instead of each person privately owning a car, car share users pay a membership fee which contributes to the shared ownership and maintenance of a communal car. This provides users with convenient occasional access to a car when public or active transport may not be an efficient option.

With the level of intensification set to occur in Box Hill, and particularly with the added convenience of being highly accessible by public transport, there is significant opportunity to introduce car share schemes to complement and assist with reducing the level of private car ownership.

Action 20.1 – Introduce car share

Review and investigate car share schemes and work with operators (such as GoGet and Flexicar) to introduce public car share schemes within Box Hill. This may also require reallocating some public car spaces for car share spaces.

Action 20.2 – Review car share parking requirements

Consider a planning permit condition for large developments to provide dedicated on-site car share parking spaces.

Figure 46 Example of Flexicar car share in Docklands

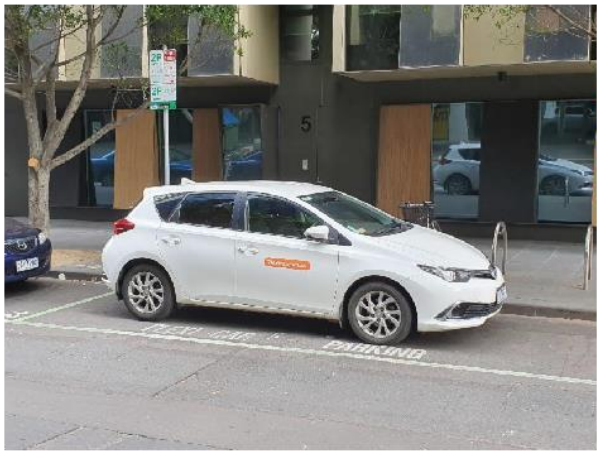

Figure 45 Example of GoGet car share in Docklands

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
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21. Support emerging and niche transport types

There is an opportunity to capitalise on the growing trend of alternative transport modes to reduce the number of cars on the road.

There is a growing trend in the use of alternative transport modes throughout the world, including a range of micro-mobility options for specific purposes such as food delivery services.

Micro-mobility modes refer to a range of generally very light transport modes, such as e-scooters (although these are currently generally not permitted to be used on footpaths in Victoria, due to safety risks posed by the high speeds they can reach), e-bikes, rollerblades, skateboards and hoverboards. These are becoming increasingly popular transport options, both for commercial and personal mobility purposes. They are a compact transport option where commuters typically travel short trips (less than 3 km), which makes it particularly suitable for undertaking 'last mile' trip movements potentially very applicable throughout the Box Hill MAC where buildings, open space and roads are all competing for land. Micro-mobility modes provide an alternative to walking or cycling – electric modes in particular, offer an 'easier' option which may be attractive to those who are discouraged from walking or cycling due to the level of physical effort required.

Another prominent and growing trend, particularly in Box Hill, is bicycles and e-bikes being used by food delivery operators. Whilst preferable to car-based delivery, the high volume and haphazard parking of these bicycles are becoming a major issue in Box Hill that requires careful management.

In addition to these, it is noted that there are many unknowns regarding the future possibilities and trends in technology, and how this may further change the way in which people and goods move around. For example, cargo bikes, delivery drones and aerial rideshare (e.g. Uber Air) are slowly emerging transport types. It is important to recognise that these emerging and future modes all have different advantages, serve different purposes, and require different interventions – in comparison with the usual transport modes. However, each has a role to play in the overall transport task – both for personal and commercial purposes. As such, these modes should be supported and managed appropriately, now and in anticipation of emerging and future trends.

Action 21.1 – Manage micro-mobility modes

Plan and manage for the different needs of micro-mobility options for personal transport trips (e.g. e-scooters, e-bikes, skateboards, hoverboards) and develop policy to manage their movements, including a stance on where these transport types are encouraged and discouraged (e.g. on or off-road) and where they can be safely secured.

Action 21.2 – Manage food delivery bikes

Investigate ways to safely accommodate the movements and parking of high volume, short stay food delivery bikes within restaurant areas.

Outcomes supported by this initiative

THEME 1 – SAFE, HEALTHY AND INCLUSIVE		THEME 2 – SUSTAINABLE AND LIVEABLE		THEME 3 – VIBRANT LOCAL ECONOMY	
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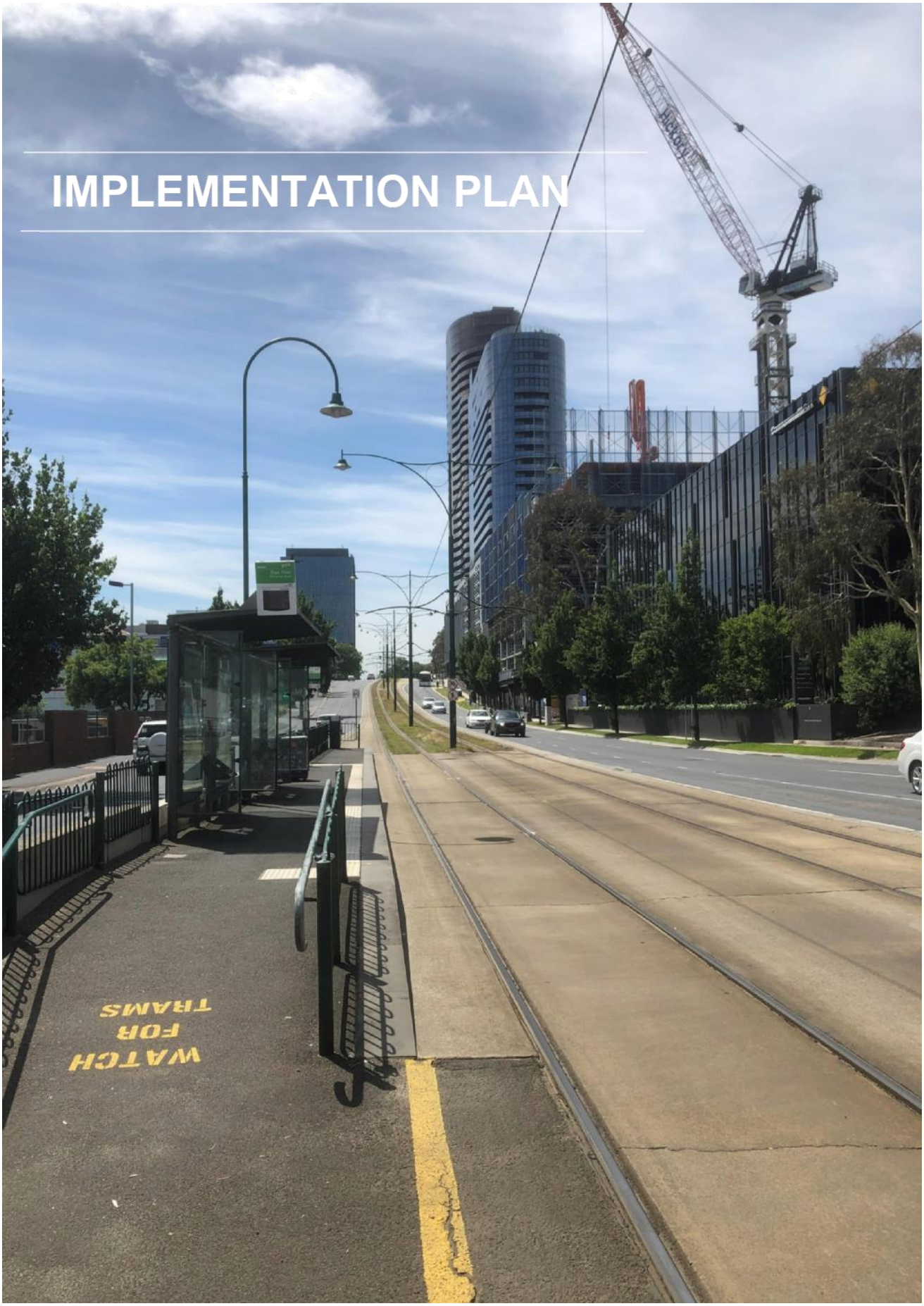

Prioritisation

The recommendations presented in this ITS are aimed at moving the Box Hill MAC toward a future where ongoing increases in population and commercial activity can be absorbed with minimal impact on liveability, or in fact enhance the liveability of Box Hill. The ITS seeks to achieve this by increasing the viability of sustainable travel modes for all types of local and longer distance trips. While the proposed initiatives are intended to work together toward this common goal, a number of the proposed actions can be classified as high priority and for immediate action due to one or more of the following:

- They address significant existing **safety** issues, many of which are at risk of being further exacerbated as more people come to Box Hill to live, work and visit.
- They address priority **equity** issues, and work to enable access to various forms of transport for a wider range of the population (in terms of physical ability or socio-economic status).
- They are key **enablers** for other projects; early implementation is critical to ensure that subsequent investments are viable and effective.
- They are important **trend-setters** or 'quick wins' that could have an immediate effect on travel choices, establishing a receptive base for further changes. These will generally include projects that are fully under the control of Council for implementation, as these can typically be more readily deployed than those that require more complex coordination or consultation.
- They require **lead-in time** either as a result of policy reviews or further investigations and thus should begin in the immediate term in order to be implemented within the short-medium timeframe of the ITS.

Based on this reasoning, a number of key actions have been identified for early implementation in the immediate term (within the next three years), listed on the following page as priority actions. Also noted is their significance in the context of the full realisation of this strategy.

The remaining actions have been categorised into short, medium or long term projects on the following pages. This has been determined based on the consideration of a number of factors, including level of expected benefits and outcomes achieved, the estimated magnitude of cost, level of planning required, and/or complexity to implement. Further details on the prioritisation framework are provided in **Appendix C**.

Priority actions

Action 1.3 – Conduct a review of the existing streetscape elements

Early review of the walking routes will allow the works package to be developed and improvements to the public realm delivered within the short-medium term.

Action 2.1 – Upgrade footpaths to meet DDA requirements, where possible
Action 2.2 – Conduct accessibility audit of the public transport interchange

A key objective of this ITS is to ensure that all aspects of the transport network are safe and accessible for all, and these actions are critical first steps toward achieving this vision.

Action 3.1 – Construct new pedestrian (zebra) / raised flat top (wombat) crossings
Action 3.3 – Improve crossings at all existing signalised intersections and crossings
Action 3.4 – Construct raised threshold intersection treatments

Prioritising pedestrian crossings at key locations is a not only critical to reducing crash rates, but also a key step to establishing a shift in mindset to increased active transport participation.

Action 4.2 – Construct bicycle boulevards / low stress cycling streets

The widening of the cycling population through designation of low-stress routes can help build a support base for more progressive measures. In the immediate term, one of the routes could be identified to be undertaken as a pilot or demonstration project.

Action 7.2 – Improve public end-of-trip facility provision

High quality end-of-trip facilities can have an immediate impact on travel choices, establishing a shift in the mindset to increased active transport participation.

Action 9.1 – Make interim improvements to the bus interchange

Longer term transition of the bus interchange to another form or location is a key recommendation of this ITS, however there is also a critical need to address short term safety and accessibility issues.

Action 12.2 – Modify traffic signal timings to prioritise active and public transport modes

Working with the Victorian Government to adjust signal timings to favour pedestrian and bus/tram movements is a low cost means of shifting road prioritisation toward active and public transport.

Action 13.2 – Undertake area-wide speed limit reductions
Action 13.4 – Investigate sites for improved traffic calming

Low speed environments are key to enhancing the perception of safety for people on foot or bike.

Action 14.1 – Manage use of train station commuter car park

There is a misperception that Box Hill Station is heavily reliant on commuter parking. Eliminating misuse of this asset by non-commuters could help justify shifting the remaining parking demand to more appropriate stations.

Action 14.3 – Review on-street parking in the MAC

Reviewing the need for and management of on-street parking could open up opportunities for road space reallocation to walking and cycling.

Action 14.7 – Provide electric vehicle charging points

An outcome of the ITS is moving towards a greener and cleaner environment, and catering for electric vehicles signifies the change towards the support of more sustainable options.

Action 17.1 – Review development parking rates in planning scheme

The continuation of current parking requirements for new developments is unsustainable given the limited capacity of Box Hill's streets to absorb further traffic.

Action 18.1 – Review loading zones

Early planning and consideration for services and deliveries is key to ensuring the economic livelihood of Box Hill is not adversely impacted by other traffic and management changes.

Action 20.1 – Introduce car share
Action 20.2 – Review car share parking requirements

Car share schemes are complementary to the review of development parking rates to reduce reliance on private vehicle ownership and requires early planning and coordination to ensure its effectiveness.

Action 21.2 – Manage food delivery bikes

Managing the high volumes of food delivery bikes is critical to mitigating the existing and growing safety issues they present.

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Implementation timeframe

Immediate term (0-3 years)	Short term (4-6 years)	Medium term (7-10 years)	Long term (10 or more years)
Action 3.1 – Construct new pedestrian (zebra) / raised flat top (wombat) crossings Action 3.4 – Construct raised threshold intersection treatments Action 4.2 – Construct bicycle boulevards / low stress cycling streets		Action 1.2 – Improve pedestrian environment in the Box Hill mall Action 3.5 – Install signalised crossing countdown timers Action 3.6 – Investigate opportunities to install illuminated DDA ground tactile markings linked to traffic signals Action 5.1 – Provide new walking/cycling bridge over railway line Action 9.3 – Deliver high quality end-of-trip station facilities Action 10.2 – Restructure bus routes Action 10.3 – Improve bus service levels Action 12.1 – Modify intersections to reduce through traffic within the MAC Action 12.4 – Reconfigure Whitehorse Road Action 12.5 – Reconfigure Station Street Action 12.6 – Improve connections between Elgar Road and Box Hill Central Action 13.3 – Investigate further speed reductions to 30km/h	Action 9.4 – Relocate and upgrade Box Hill bus interchange Action 10.1 – Increase train capacity Action 11.1 – Extend the tram line Action 14.4 – Relocate off-street parking to outer areas within the MAC Action 15.5 – Investigate decking over the railway line to create new public space
Action 1.3 – Conduct a review of the existing streetscape elements Action 2.1 – Upgrade footpaths to meet DDA requirements, where possible Action 2.2 – Conduct accessibility audit of the public transport interchange Action 3.3 – Improve crossings at all existing signalised intersections and crossings Action 7.2 – Improve public end-of-trip facility provision Action 9.1 – Make interim improvements to the bus interchange Action 12.2 – Modify traffic signal timings to prioritise active and public transport modes Action 13.2 – Undertake area-wide speed limit reductions Action 13.4 – Investigate sites for improved traffic calming Action 14.1 – Manage use of train station commuter car park Action 14.3 – Review on-street parking in the MAC Action 14.7 – Provide electric vehicle charging points Action 17.1 – Review development parking rates in planning scheme Action 18.1 – Review loading zones Action 20.1 – Introduce car share Action 20.2 – Review car share parking requirements Action 21.2 – Manage food delivery bikes	Action 1.1 – Widen footpaths Action 3.2 – Construct new signalised crossings Action 4.1 – Construct physically separated paths Action 4.3 – Implement Strategic Cycling Corridors in Box Hill Action 6.1 – Revitalise laneways Action 7.1 – Provide end-of-trip facilities within key destinations Action 8.1 – Improve area-wide wayfinding Action 9.2 – Provide real-time service information Action 12.3 – Improve traffic routes along Elgar Road and Middleborough Road Action 13.1 – Implement 40km/h speed limits on Whitehorse Road and Station Street Action 14.2 – Relocate Box Hill Station commuter parking Action 14.5 – Relocate on-street long term parking and convert to short term zones Action 14.6 – Manage motorcycle/scooter parking Action 15.1 – Create parklets Action 15.2 – Convert off-street vehicle spaces to community uses for temporary periods Action 15.3 – Relocate Carrington Road taxi/rideshare facility Action 15.4 – Investigate temporary closures of Carrington Road to vehicles Action 16.1 – Provide area-wide parking wayfinding Action 16.2 – Develop a parking wayfinding app Action 19.1 – Run active transport community events Action 19.2 – Run travel behaviour change program Action 19.3 – Support active transport promotional events Action 19.4 – Develop workplace and school travel plans Action 21.1 – Manage micro-mobility modes		

Managing disruptions

Some of the infrastructure delivery actions identified in this strategy may result in significant disruptions to the transport network during construction. Management will be required to minimise the impact where possible.

Major projects and disruptions can also provide the opportunity to trial changes in the transport network and, as a result, support changes in travel behaviour. When appropriately managed and accommodated, these behaviour changes during temporary disruptions have the potential to influence long term habits.

Council will take the following steps to proactively manage and minimise impacts as much as possible.

Prioritise pedestrian safety around construction sites

Council will work collaboratively with government agencies and developers to ensure that pedestrian safety is prioritised, and that pedestrians are not overly impacted by the construction activities, by restricting footpath closures for construction or loading/unloading activities at construction sites.

Proactively manage disruptions to the transport networks

Council will work with the Victorian Government, SRLA, Vicinity Centres and other developers to minimise the disruptions to the transport networks by major projects and developments. This could include traffic management, improvement and promotion of alternative transport options, prioritising public transport alternatives, and travel behaviour change programs with larger employers and the community. This could also include coordinating the timing of construction works appropriately alongside other projects to minimise overall disruptions where possible.

Strategic Planning to maximise the public benefit of major projects

Council will undertake investigations/studies to maximise the benefits and improvements that could be achieved in conjunction with major projects, such as the Suburban Rail Loop.

Funding

Council has a capital works budget which will be allocated to implementing the delivery actions. However, it is acknowledged that this budget is limited, and that many actions within this strategy include non-capital works, including policy, advocacy and planning items, all of which require resources, including staff, to implement. Additional funding outside of Council's budget will be required if the benefits of this strategy are to be fully realised.

Given the broad range of benefits that can be achieved from the action plan, there is significant opportunity to explore and seek alternative funding sources. For instance, a development contribution scheme would allow Council to seek funding contributions from the private sector for certain infrastructure or other projects that will directly support the developer's objectives, in addition to providing benefits for the wider community.

Council will therefore investigate opportunities to develop an appropriate development contribution scheme to support future infrastructure works within the MAC, focusing on projects with wide ranging benefits.

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Measuring success

It is important to be able to track progress to measure the success of the ITS against the vision, themes and outcomes outlined earlier in this strategy. Council will develop a framework based on setting targets, improving data collection, and monitoring and evaluating results against the strategy outcomes.

Success indicators

Success and progress of the ITS actions will be tracked using success indicators which align to the 12 outcomes outlined earlier in this strategy. The exact indicators and methods of measuring will be developed following endorsement of the ITS, however some potential examples of success indicators to be considered are outlined below.

Outcome	Key Success Indicators
Outcome 1 *Accessible and integrated walking, cycling and public transport network*	• Increased % of walking network that is DDA-compliant • Reduced average wait time at signals
Outcome 2 *Safe and secure transport network accessible to all*	• Reduced crash rates • Reduced vehicle speeds
Outcome 3 *Increased walking, cycling and public transport participation*	• Increased walking, cycling and public transport mode shares • Increased participation at cycling education events • Increased % of female cyclists
Outcome 4 *Improved physical and mental well being*	• Increased community satisfaction (surveys)
Outcome 5 *Allocation of street space to more efficient and sustainable modes of transport*	• Reduced walk time (including signal delays) • Increased area of infrastructure for sustainable modes
Outcome 6 *Efficient and reliable public transport*	• Reduced bus/tram delays • Increased train punctuality
Outcome 7 A *greener, cleaner environment*	• Improved air quality
Outcome 8 *Minimal non-essential private vehicle trips*	• Reduced car mode shares for short trips • Reduced car mode share to work • Reduced long term car parking utilisation • Reduced traffic volumes on key roads
Outcome 9 *An efficient and reliable transport network encouraging travel to, not just through*	• Increased all day visitation
Outcome 10 *Efficient and adaptable purposing of land assets*	• Reduced proportion of land used for car parks • Increased % car share spaces • Increased % DDA spaces
Outcome 11 *A welcoming, safe and vibrant activity centre*	• Increased % active street frontages • Increase night visitation
Outcome 12 *Efficient functioning of local freight corridors*	• Reduced delivery delays • Reduced loading delays due to unavailability • Increased vehicle turnover in loading zones

Setting targets

Setting targets is critical to evaluating how well an action is achieving its objective and in determining whether additional or further actions may be required.

Specific targets for each success indicator will be determined following data collection to establish the base case. However, as an example and trend setter, it is appropriate to set a target for one of the main success indicators that underpins many of the key initiatives proposed in this ITS: mode share.

The mode share to work by private vehicle (driver or passenger) for residents of Box Hill, as determined in the 2016 Census, was **43 percent**.

Through implementation of the initiatives and actions set out in this document, a reduction in private vehicle mode share is targeted. It is proposed to set the 2031 target for private vehicle mode share to **25 percent**, with an interim 2026 target of **35 percent**.

Data collection

An integral component to measuring success is collection and analysis of high quality transport data, to inform Council actions and help monitor outcomes.

Improving this process will first include establishing a framework to collect and use transport data, including with regards to safety (crash statistics), volumes (counts), mode shares, travel times and delays. This could also include more qualitative data sources such as household surveys to gauge level of community satisfaction.

Data will be collected before and after the implementation of various actions to provide a suitable base for measuring progress.

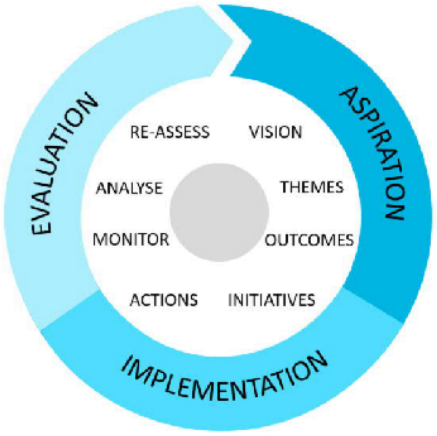
Monitoring and evaluation

Monitoring and evaluation is crucial to the process of measuring success. The results of the data collection and analysis will be regularly evaluated against set targets and outcomes:

- Minor evaluation (at least every 3 months): Qualitative progress on actions
- Major evaluation (every 2 years): Quantitative analysis on success indicators and progress on actions.

The development of a dashboard or portal could allow for the monitoring and evaluation of data and indicators to be undertaken consistently and efficiently.

Progress reports will be prepared for all evaluations. At that time, it would also be appropriate to review the action plan and set targets, to refine and update as required to address any deficiencies which may become apparent through the monitoring and evaluation process.



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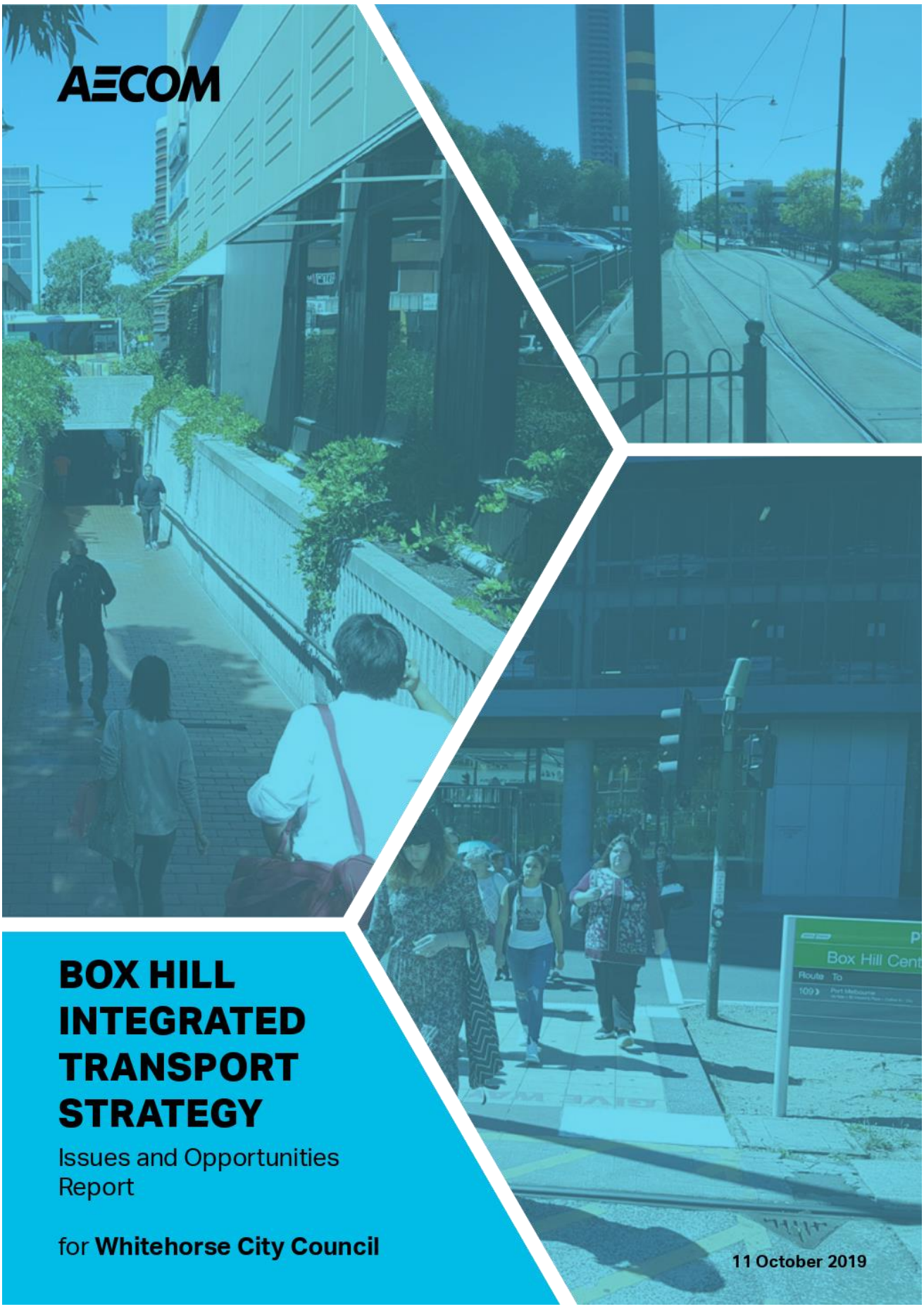

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Issues and Opportunities Report

Integrated Transport Strategy for Box Hill

Client: Whitehorse City Council

ABN: 39 549 568 822

Prepared by

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1.0 Introduction

1.1 Background

The Box Hill Metropolitan Activity Centre (MAC) is the largest activity centre in the City of Whitehorse. Over the last decade, the Box Hill MAC has experienced substantial growth and development. This has included the opening of the new Australian Tax Office (ATO) building, the substantial redevelopment of the Box Hill Hospital and Box Hill Institute facilities, and significant private investment in developments such as The Chen Hotel and Sky One. Multiple high-rise mixed-use developments have also been approved within the precinct, and further development is expected in the coming years.

AECOM has been engaged by Whitehorse City Council (WCC) to develop an Integrated Transport Strategy (ITS) for Box Hill. The ITS aims to form a program of transport upgrades that both addresses near-term concerns and establishes an achievable and sustainable transport future. The ITS will support the various plans and strategies developed by Council and State Government, and will consider the integration of all transport modes, access and parking.

The ITS is intended to guide the future direction and development of transport in Box Hill, and to ensure that existing and new infrastructure can accommodate the expected levels of growth. Key objectives of the ITS are to:

- establish the need and basis for a holistic approach to transport for Box Hill
- identify improvements to the walking, cycling and public transport networks in Box Hill
- identify means of efficiently managing car traffic in Box Hill
- set transport priorities for Box Hill for the next ten years
- identify potential Council-led infrastructure improvements
- identify infrastructure improvements that will require coordination with other stakeholders, government agencies and developers
- establish advocacy positions for infrastructure initiatives controlled by the State and/or Federal Governments.

The outcome of this process will be an aspirational blueprint for the future development of transport in Box Hill. It will account for not only the growing need for sustainable circulation in a constrained context, but also how the transport network can be best integrated with its evolving surroundings and emerging technologies.

This study follows up the previous Box Hill ITS Background Study (Appendix A), which establishes the nature of the existing and future contexts from which the main issues and opportunities have been extracted.

1.2 Location and regional context

Box Hill MAC is located approximately 14 kilometres east of Melbourne CBD and is the largest activity centre in the City of Whitehorse. As shown in Figure 1, the study area is bound by Severn Street to the north, William and Watts Streets to the east, Albion Road to the south, and Kingsley Gardens to the west.

The MAC has been identified as a key centre for metropolitan development in successive metropolitan strategies, providing retail, education, civic, medical, community service, entertainment and recreational opportunities for the regional population, as well as serving as a hub for the local community.

It should be noted that whilst the study area has been defined as above, factors and movements from outside this boundary are likely to have an influence on Box Hill transport. These will be considered accordingly as part of the ITS.

Figure 1 Study area

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1.3 Purpose of this report

This document outlines the main issues facing the transport system in Box Hill MAC as the community grows and establishes the range of opportunities that may be available to help address them. It is intended to inform discussion on the desired outcome of investment in the transport system.

Together with the vision, this report will be used as a basis for cross-checking the effectiveness of the proposed actions developed as part of the ITS. The issues raised in this report are preliminary in nature and may be supplemented or refined as further engagement with the community takes place throughout this process.

1.4 Report structure

This report is organised into the following sections:

- **Section 1: Introduction**
- **Section 2: Issues and opportunities** – Identification of the key issues and opportunities for the transport network in Box Hill MAC
- **Section 3: Stakeholder engagement and community insights** – A summary of the key outcomes and actions from stakeholder workshops, and the main community insights on issues and opportunities to date.
- **Section 4: Conclusion and next steps** – Key report findings and the way forward

2.0 Issues and opportunities

The transport network in Box Hill represents a complex interconnected system of both static and moving infrastructure. The location where these assets converge is one of the most active and congested sub-centres in metropolitan Melbourne, as pedestrians, cyclists, cars, trucks, trams and buses all vie for space on the street network, in many cases to connect with the rail and tram spines that serve the precinct.

The following section provides a summary of the transport issues and opportunities facing the Box Hill MAC over the next 10 years, as informed both by existing conditions and by future growth in travel demand resulting from expected development projects.

This transport issues and opportunities report follows a detailed background study outlining the existing situation and growth forecasts for various modes of transport available within the Box Hill MAC. The findings from the background study and from recent stakeholder and community engagement in relation to issues and opportunities have been summarised in Table 1. The background study to the Box Hill ITS is included as Appendix A and should be read in conjunction with this report.

Table 1 Transport issues overview by mode

Mode/Themes	Issues
Pedestrian	• There is a lack of consistent wayfinding within the MAC. • Overall walkability is hindered by long intersection cycle times and narrow paths. • While pedestrian mode share to the train station is high, pedestrian mode share to work for Box Hill residents is relatively low. • Disability accessibility is limited, restrictive and inefficient.
Cycling	• There is limited on-road bicycle infrastructure on key east-west and north-south corridors. • There is insufficient off-road cycling infrastructure to enable a continuous, 'low-stress' cycling network. • The journey to work cycling mode share in Box Hill is very low (less than one percent).
Bus	• Poor bus service frequencies outside of peak hours limit the attractiveness of off-peak travel. • The bus interchange is outdated and degraded, impacting on its attractiveness and useability. • Buses are delayed in road network congestion, impacting on journey times and service reliabilities.
Tram	• There is a lack of clear pedestrian access between the tram terminus and the train station (located almost 200 metres apart).
Rail	• Rail crowding is expected with projected population growth within the corridor.
Private vehicles	• There is a high car dependency for journey to work trips within the study area as well as for other purpose trips. • A mode shift away from private vehicle travel is required as road capacity is already constrained.
Freight	• Whitehorse Road goes through the heart of the busy activity centre but also acts as a freight route, carrying large vehicles and regional traffic.

Mode/Themes	Issues
Road safety	• Whitehorse Road / Station Street and Whitehorse Road / Elgar Road intersections both recorded six or more crashes within the past five years. • 38 of the 127 (30%) casualty crashes in the preceding five years were pedestrian related, which included one fatality on Whitehorse Road and 12 serious injury crashes. • Limited safe crossing opportunities leads to risky behaviour and impacts on pedestrian safety, particularly on Station Street and Whitehorse Road. • Six bicycle crashes have been recorded in the last five years within the MAC. • A lack of physically separated cycling infrastructure, combined with high vehicle volumes and speeds, impacts on cyclist safety on roads.
Parking	• The lack of a "cap" on parking provision within new developments is encouraging private vehicle ownership and reliance and contributing to the road network congestion in the activity centre. • A large supply of long-term car parking is contributing to the general tendency for driving to and within the activity centre.

Whilst Table 1 provides a synopsis of the challenges facing each component of the Box Hill transport system, it is the combination and conflict between multiple elements – each competing for priority on the finite space available to them – that warrant the most attention. These have been further informed by the stakeholder and community feedback gathered through the early stages of this process.

These key conflicts, outlined in Table 1, can be summarised into the five key issues as illustrated below.

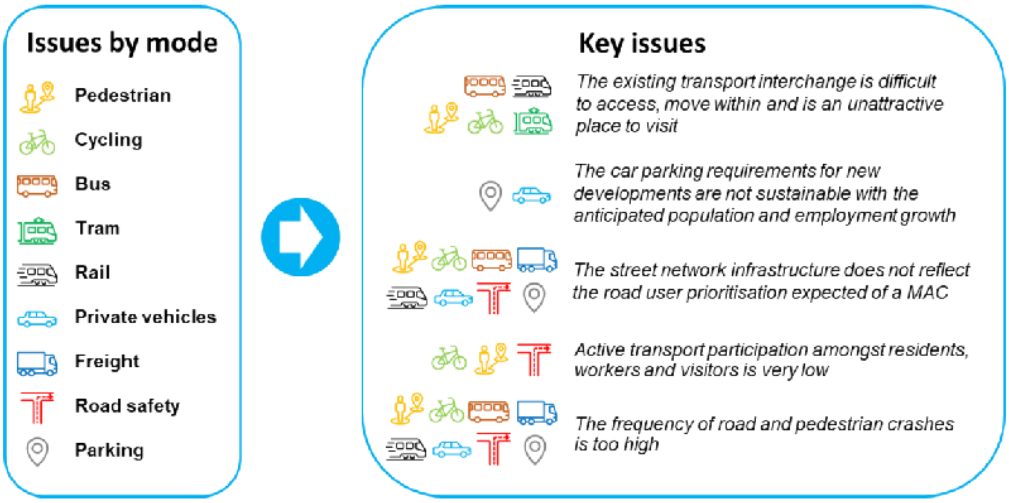


Figure 2 Key transport issues within Box Hill MAC

The five key issues, sub-issues and relevant opportunities are discussed in greater detail in subsequent sections. It is the resolution of these issues that offer the most opportunity for improved transport outcomes in Box Hill.

2.1 Transport interchange

Issue: **The existing transport interchange is difficult to access, move within, and is an unattractive place to visit.**

Implication: Access, movement and amenity issues limits its potential to maximise on social and economic outcomes for the local community.

Background: The Box Hill transport interchange is located at the heart of the MAC providing access to bus, rail, tram and taxi services and is well utilised by residents, workers and visitors of Box Hill. With increased development intensity and Box Hill's position as a second CBD, it is imperative to ensure the transport interchange operates in an efficient manner with adequate capacity to cater for future growth in population and employment.

Box Hill is ranked as the ninth busiest train station in Melbourne with over 11,000 commuters (the fifth busiest excluding the City Loop) and is the region's fourth busiest bus interchange. These statistics highlight the significance of the transport interchange and its role in contributing to the local economy.

Challenges and opportunities associated with the interchange have been broken down into three main components, as follows.

1. Navigating and transferring between modes within the interchange is confusing and inefficient.

Box Hill shopping centre is accessible via multiple entry points from Whitehorse Road, Station Street, Carrington Road and Nelson Road. Box Hill train station is located beneath Box Hill Central shopping centre, while the bus interchange is on its upper floor. Access to both transport facilities are via elevators, lifts and ramps provided within the shopping centre. The pedestrian route to transfer between these two public transport modes is long, indirect and difficult to identify through the retail area.

An escalator is provided from the shopping centre for passenger access to and from the bus interchange. A lift is also provided for disability access, however is only available during the opening hours of the shopping centre which restricts accessibility outside these hours. Signage in the shopping centre and wayfinding between the interchange and other modes of transport is unclear amongst the clutter of background activity.

Additionally, personal safety in the bus interchange is compromised by an outdated design with poor sight lines and a lack of passive surveillance.

"Connection between the bus and train is terrible, you need to walk around the shopping centre (when closed) and are exposed to the elements, or you need to walk through crowds of shoppers when the shopping centre is open."

"The interchange could be better connected into Box Hill with other reasons to use and visit the area, including restaurants and cafes and civic uses like a library."

Anonymous community comments

Market Street / Main Street – facing south towards Box Hill Central entrance

There is no indication at the entrance to the shopping centre (from where public transport users transferring from trams would enter) that the bus and train stations are accessed through this portal.

Figure 3 Box Hill Central entrance

2. The bus interchange is an unattractive place to make connections.

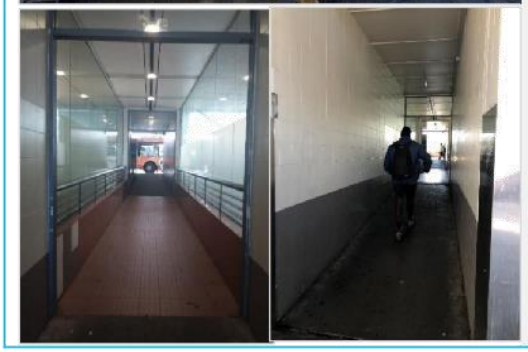
The transport interchange is dated in appearance relative to other competing centres. The effective width for waiting passengers is narrow, making it difficult for patrons navigating to their bus bays to pass through queues of people boarding a bus. Despite its prime location and high usage, there is a significant opportunity to improve access and facilities at the interchange.

"The interchange is dated and depressing. It is no longer fit for purpose, or the volume of users. There is not enough seating, no toilets and the lift is hidden and prone to breaking down."

Anonymous community comment

Bus station – internal, west side

The bus station appears old, outdated and uninviting.



Bus station – internal

Connecting walkways and routes within the bus station are narrow and closed-in.

Figure 4 Existing bus interchange

3. What are the public transport opportunities for the interchange?

Following the announcement of the Suburban Rail Loop (SRL) project, the Box Hill transport interchange is well-positioned to undergo a major upgrade within the next decade before the first stage of SRL is open for service. As such, the following opportunities should be considered to ensure Box Hill is prepared to accommodate future expansion and growth:

- Evaluation of the long-term design options for the bus interchange, either above the railway station or (alternatively) along the surrounding main roads and local streets.
- Bus priority infrastructure such as bus lanes and signal priority to reduce bus service delays
- Improved bus frequencies during the inter-peak, off-peak and weekends to reduce dependence on private vehicles for short local trips, and to encourage walking, cycling and public transport use among local residents and those who work in Box Hill
- Potential of a development/infrastructure contribution scheme to support future infrastructure works within the MAC
- Additional train services along the Belgrave/Lilydale train corridor to manage rail crowding
- Extension to the existing tram line to serve a larger catchment to the east of Box Hill MAC.

Box Hill is not alone in facing these types of challenges. Whilst the solutions to be developed for Box Hill will be specific to the local community and context, general precedents from elsewhere can often point the way forward in terms of what may be possible (and help to visualise the outcome).

The two case studies identified below show modern, attractive bus interchange options that highlight the possibilities for Box Hill MAC. The Christchurch case study shows what can be achieved in an off-street facility, while the Frankston case study demonstrates an on-street example.

Case study 1: Bus interchange as catalyst to revitalising the city, Christchurch

Following the 2011 Christchurch earthquake, a Recovery Plan to rebuild the city was developed in coordination with a strategy to re-envision Christchurch as 'An Accessible City'. A new bus interchange was one of the anchor projects in this coordinated approach, focusing on an integrated transport and land use solution that 'put people first'. The result was a flexible, multi-tiered interchange hub that enables access to buses, intercity coaches, taxis and a central cycle parking area. The new interchange also transformed the overall public transport experience with its airport-style lounge and high level of amenity.

Case study 2: Frankston Station Precinct and Young Street bus interchange, Frankston

Rather than having buses turn off the road into a separate off-street bus facility, the Frankston Station bus interchange utilises a series of bus stops located on-street, directly adjacent to the train station entrance. This allows both an easy and direct bus-train transfer for passengers, whilst also avoiding long delays associated with entry, circulation and exit movements in a contained interchange.

Further to this, works are currently being undertaken on Young Street to create a safer pedestrian environment, and to support improved bus connections within the precinct.

Figure 5 Transport opportunities for a more welcoming and prosperous activity centre

2.2 Street network

Issue: **The street network does not reflect the road use prioritisation needed to support a MAC.**

Implication: The allocation of road space is inefficient and a key factor in the congestion on the road network, with resulting adverse economic, environmental and social impacts to the community.

Background: Box Hill has been designated by the State Government in *Plan Melbourne* as a Metropolitan Activity Centre (MAC). A MAC is intended to provide a diverse range of jobs, activities and housing for catchments that are well served by public transport. They are major hubs of service delivery including government, health, justice and education services, and provide retail and commercial opportunities. Challenges and opportunities associated with the street network have been broken down into three main components, as follows.

1. The allocation of road space does not align with road user priorities.

To achieve the goals of a MAC, it is important that Box Hill has high amenity public spaces to support a range of land uses, and a transport network which encourages and prioritises active and public transport modes as preferred choices over private vehicles. Box Hill's transport network already has some of these attributes, with Main Street and Market Street functioning as pedestrian-only malls. However, aside from these two streets, the road network in general does not include sufficient features to support the prioritisation of walking, cycling and public transport and reflect Box Hill as a key destination.

Figure 6 shows the current Department of Transport Movement and Place classifications for the three declared roads within Box Hill MAC. Classifying transport links in this manner considers both their movement and place functions, as well as their roles within the road hierarchy based on broader network connectivity and desired traffic distribution outcomes. Key insights into Whitehorse Road, Station Street and Elgar Road include:

Whitehorse Road

- Three lanes for general traffic each direction, which is not typical for its GT3 and F3 classifications
- No bus priority infrastructure (bus lanes and signal priority), which does not align with a B2 classification which generally warrants these features
- Not classified as a C1 or C2 cycling route despite being part of the Principal Bicycle Network
- Place and amenity qualities which presently do not reflect its high value P2 classification.

Station Street

- No bus priority infrastructure (bus lanes and signal priority), which does not align with its B1 classification
- Not classified as a C1 or C2 cycling route despite being part of the Principal Bicycle Network
- Place and amenity qualities which presently do not reflect its W2 and P2 classifications.

Elgar Road

- Generally aligns with its traffic movement and place classifications relative to Whitehorse Road and Station Street
- Improved walking infrastructure (additional crossings, crossing priority) needed to align with its W2 classification
- No cycling facilities provided despite a portion of it between Mont Albert Road and Brougham Street classified as a C1 cycling route.

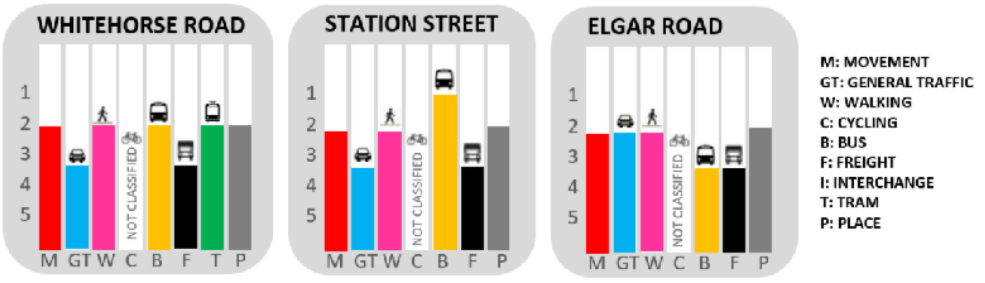


Figure 6 Current Movement and Place classifications for Whitehorse Road (east of Elgar Road), Station Street (south of Whitehorse Road) and Elgar Road (south of Whitehorse Road)

2. The cross-sections of some roads encourage private vehicles to travel through Box Hill.

Key streets within the centre, namely Whitehorse Road and Station Street, exhibit an allocation of road space that is highly skewed towards vehicle movement over sustainable transport modes and public space. Whitehorse Road and Station Street are the major east-west and north-south roads respectively in the study area.

As shown in Figure 7, Whitehorse Road has three traffic lanes in each direction plus parking, which expands to four approach lanes at the Station Street intersection. Whitehorse Road also includes a wide central median.

Station Street is an undivided road with two traffic lanes in each direction, on-street parking, and localised widening at intersections. Footpaths along shopfronts are narrow (less than 3m wide in some sections) which lead to difficulty coping with high pedestrian movements.

There are no cycling facilities or bus priority infrastructure provided on either main road, despite being major routes within the activity centre.

This prioritisation of private vehicle mobility over other modes within the centre contributes to local congestion, and also impedes on local accessibility to and within the centre, as well as the place function of the centre itself. In addition to this, the road cross-sections encourage through traffic, with posted speeds of 60 km/h on Whitehorse Road and a large amount of road space allocated to through traffic lanes. The dominance of through vehicles is further indicated by an estimation that approximately half the cars on roads in Box Hill are through traffic[1]. This not only results in road congestion but also impacts on the functionality of the activity centre while making no contribution to the local economy.

> *"Station Street is not working for anyone. Close it off to cars and create a cycle and pedestrian friendly street."*
>
> *Anonymous community comment*

[1] Review of Strategic Direction Box Hill Metropolitan Activity Centre Analysis & Options (MGS, 2019)

Source: Nearmap © 2019

Figure 7 Whitehorse Road and Station Street Intersection

3. What are the opportunities for streets and public spaces in Box Hill?

The following opportunities should be considered on key parts of the transport network to improve walking, cycling and public transport, to better reflect the road user prioritisation, walkability and amenity expected of a MAC:

- Reallocation of the road space along Whitehorse Road and Station Street to other uses, such as dedicated bus lanes and wider pedestrian paths to support a shift toward more sustainable transport modes while also supporting the place function of the activity centre. This will require modifications to the turning lane designations between major arterial roads.
- Speed limit reductions along Whitehorse Road and further reductions along Station Street north of Whitehorse Road to discourage vehicle traffic travelling through the centre, and to improve road safety
- Provision of signal priority at intersections for buses and pedestrians to improve efficiency of sustainable transport modes
- In line with the Movement and Place classifications, encourage through traffic around the centre of Box Hill and discourage through traffic on Whitehorse Road and Station Street through the centre of Box Hill
- Relocation of the off-road car parking within the central median of Whitehorse Road for improved placemaking and possible open space.

Whilst the solutions to be developed for Box Hill will be specific to the local community and context, general examples from elsewhere can often point the way forward in terms of what may be possible. The two case studies identified below show what can be achieved by creating bus lanes and additional community spaces such as outdoor dining – an important component of what the community values, as outlined within Section 3.

> *"Change some of the smaller carparking spaces into public space, spaces for events or green spaces."*
>
> *Anonymous community comment*

9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

Case study 1: Reallocating road space on St Georges Terrace, Perth

In 2011, the City of Perth undertook significant changes to St Georges Terrace, a major east-west traffic route, as part of an initiative to transform the CBD into a more pedestrian-friendly environment. Six traffic lanes were reduced to two, and the space was reallocated to provide bus lanes, wider footpaths and a wider central median (see image below). The speed limit was reduced to 40 km/h and an additional signalised pedestrian crossing was introduced. Benefits of the project include improvements to bus services, the walking environment and public realm.

Case study 2: Mountain Highway level crossing removal, Bayswater

As part of Victoria's Level Crossing Removal Program, Mountain Highway was reduced from three lanes to two lanes per direction to provide additional space for new bike lanes, wider footpaths, shorter crossings, outdoor dining, urban design enhancements, and improved connections to the shops and amenities of the station precinct.

Figure 8 Case studies of street and public space opportunities

2.3 Active transport

Issue: **Active transport participation amongst residents, workers and visitors is poor.**

Implication: Poor active transport mode share is contributing to poor public health and increased carbon emissions.

Background: A good active transport network supported by end of trip facilities at key attractors such as the transport interchange, Box Hill shopping centre, and the health and education precincts are needed to further encourage walking and cycling as attractive modes of access. Currently over 7,600 commuters are walking to Box Hill train station each weekday, with thousands more visiting the shopping centre. High volume walking routes have been observed to include Carrington Road, Main Street, Market Street, Station Street and Whitehorse Road, despite several of these corridors not having a favourable walking infrastructure.

Challenges and opportunities associated with active transport have been broken down into four main components, as follows.

1. Walking and cycling are generally not the easiest or most appealing options.

Approximately 52 percent of people who both live and work within Box Hill drive to work despite the relatively short travel distance (a maximum of approximately three kilometres within Box Hill's boundaries). Note that this represents around 1,200 vehicles and excludes those who commute to Box Hill from other parts of metropolitan Melbourne. For those that both live and work within Box Hill, if the proportion commuting to work via car was reduced from 52 to 30 percent, approximately 260 private vehicle trips would be removed from the road network, many of these during peak travel periods.

This high journey to work car more share in Box Hill contrasts with the fact that over 7,600 commuters walk to Box Hill train station each weekday, potentially reflecting the perceptions of parking availability and road congestion at the station versus at nearby employment destinations, many of which provide their own parking supply.

The existing walking infrastructure does not provide an amenable pedestrian environment for those with mobility difficulties, particularly within the transport interchange. Footpaths on several roads appear to be poorly maintained, and the lack of crossings at key desire lines particularly across Station Street and Whitehorse Road can make walking in Box Hill MAC challenging (see Figure 9).

> *"Long wait times for pedestrian crossings are a deterrent for many to walk around the area. It becomes easier to drive."*
>
> *Anonymous community comment*

Pedestrian desire line across Station Street from Bank Street to Main Street mall

Although a pedestrian underpass is provided at this location, many pedestrians still choose to walk across Station Street at ground level.

Station Street

Limited footpath width

Inadequate space for outdoor dining and other placemaking features

Long waiting times at traffic signals

Figure 9 Walking issues in Box Hill MAC

2. North-south connectivity options within the MAC are limited

The rail reserve is a major east-west barrier that runs across the Box Hill MAC. There are limited opportunities to cross the railway line, with only two north-south roads over the railway line within the 1.2 km east-west span of the MAC study area (at Elgar Road and Station Street) and an additional level crossing (for pedestrians and cyclists only) near Linsley Street, on the eastern boundary of the study area, 400 metres east of Station Street . While the limited north-south connectivity affects all modes, pedestrians and cyclists are most impacted due to the longer time it takes them to divert to indirect routes. For example, the north-south route along Nelson Road and Thurston Street-Surrey Drive, which is designated as a strategic cycling corridor by the Department of Transport, has no direct connection across the railway line – requiring a detour of approximately 800 metres via Elgar Road or Station Street.

Whitehorse Road also presents as a major crossing barrier for pedestrian and cyclist north-south connectivity – given its width and high volumes of high-speed traffic – as seen in Figure 10.

"Missing link in the bike path is needed to encourage bike riders and ensure rider safety. Bike riders are pushed onto the road in Box Hill and it is dangerous for drivers and riders."

Anonymous community comment

Whitehorse Road

Few safe connections across the road

Figure 10 Whitehorse Road, one of the major barriers for north-south connectivity

3. Box Hill MAC lacks a connected 'low-stress' cycling network.

Cycling participation is low in Box Hill MAC despite that it consists of several key attractors including the transport interchange, shopping centre, and the educational and health precincts. Lack of segregated cycling infrastructure on busy arterial roads and bicycle priority at intersections contribute to poor participation in cycling amongst local residents. This is reflected in the journey to work cycling mode share of less than one percent.

Figure 11 shows the limited extent of the Box Hill cycling network, identifying existing dedicated cycling routes (green) and proposed routes (red) that are yet to be built. This highlights that cyclists presently must ride amongst traffic for most trips.

While the network indicatively shows a proposed strategic cycling corridor along the Main Street pedestrian mall, this would need to be evaluated against safety risks to pedestrians as well as impacts to pedestrian comfort and amenity. While the cycling route along the railway line creates a great opportunity for those travelling to and from Box Hill MAC, its value to the community could be supplemented by the addition of safe and secure cycle parking on both ends of the mall, as well as improved wayfinding into and through the precinct.

Whitehorse Road and Station Street have posted speed limits of 60 km/h. The exception is Station Street between Whitehorse Road and Harrow Street, which is 40 km/h between 8am and 7pm. The 60 km/h speed limit encourages swift movement of general traffic and deters apprehensive cyclists. The most recent Super Tuesday cyclist counts obtained at several key intersections within Box Hill showed over 100 male cyclists and only one female cyclist, indicating that the conditions are perceived to be unsafe.

Figure 11 Box Hill cycling facilities

9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

4. What are the opportunities to improve active transport participation?

The following opportunities should be considered to improve active transport mode share:

- Participation in the development of the Hawthorn to Box Hill strategic cycling corridor feasibility study (scheduled to commence within the next six months)
- Coordination with the Suburban Rail Loop project to advocate for improved access by foot and bike including a new connection across the rail line to link Thurston Street and Nelson Road
- Cycling upgrade of Albion Street and Brougham Street to build on their existing traffic calming treatments
- Implement the Easy Ride Routes to create an interconnected low stress cycling network. Easy Ride Route 'North South 2' follows the Nelson Road and Thurston Street corridor.
- Additional bicycle parking and end of trip facilities at key locations within the MAC
- Improved wayfinding through provision of continuous and obvious cycling routes supplemented by signs and pavement markings
- Reduced waiting times for pedestrians and cyclists at major intersections
- New at-grade crossings along Station Street at Main Street and between Albion Road and Howard Street
- Accommodation of electric bicycles through appropriately sized facilities and suitable parking areas
- Exploration of opportunities to safely accommodate food delivery services by bike and e-bike.

The two case studies identified below show what can be achieved by implementing behaviour change initiatives and improved signal priority at intersections.

> *"More bike parking is needed within the train station (Parkiteer); more bike parking is needed across the area like at tram stops."*
>
> *Anonymous community comment*

Case study 1: Your Move travel behaviour initiative, Perth

Your Move is a free program that provides information, materials and support to encourage individuals, workplaces and schools to find more active ways to travel. As part of the initiative local councils have implemented wayfinding programs that guide pedestrians and cyclists through local areas, showing directions and journey times to key destinations such as train stations. Other initiatives implemented under the program include installing bike repair stations, holding events for participants, and in some cases, providing financial incentives.

Case study 2: Napier Street 'advisory' bike lanes, Fitzroy

Although already a key cycling route, Yarra City Council has recently adjusted the line markings on Napier Street to reflect the design for a *'fietsstraat'*, also known as a cycle street or bicycle boulevard. This line marking treatment prioritises cyclists, with a single central vehicle lane for two-way traffic and wide 'advisory' bike lanes on each side. Motor vehicles are required to give way to cyclists in the bike lanes when passing other vehicles in the opposite direction. This project has complemented the 'Thanks for 30' speed limit trials in the Fitzroy area.

Figure 12 Case studies of walking and cycling opportunities

2.4 Road safety

Issue: **The frequency of road crashes is too high.**

Evidence: There have been 127 road crashes in the last five years (a rate of one crash every two weeks) within the Box Hill MAC area.

Background: Box Hill's standing as a metropolitan activity centre dictates that it attracts high volumes of people – in vehicles, on foot and on bikes – within one place at the same time. Busy streets inevitably lead to congestion and delays, which in turn can lead to risky driving behaviour and dangerous pedestrian and cycle crossing movements. When busy streets are combined with high traffic speeds, this can result in serious injury, particularly to pedestrians.

Challenges and opportunities associated with road safety have been broken down into five main components, as follows.

1. Station Street is unsafe, particularly for pedestrians.

One of main road safety issues observed in the Box Hill MAC is along Station Street south of Whitehorse Road. Although a pedestrian underpass is provided across Station Street between Main Street and Bank Street, a significant number of people still cross at ground level. This could be due to several reasons, such as the indirect route for those walking from or to Station Street north or south (as shown within Figure 13), lack of awareness of the underpass (not clearly signed or identifiable), and concerns about personal safety and security (perceived or actual). People who cross Station Street at group level do so without the benefit of controlled crossings, pedestrian refuges or other safety measures. Most people cross the road when there is a gap in traffic owing to adjacent signals. Due to these issues, there were eight crashes recorded on Station Street involving pedestrians in the last five years, as identified in Figure 14.

"The pedestrian underpass needs to be improved, it is not well lit and it feels unpleasant. There are often people drinking or arguing in this area."

"Street lighting across Box Hill needs some work to encourage people to walk to the tram, bus or train station or to walk home. The area feels unsafe."

"Pedestrians and cyclists need better separation in shared areas. It is unclear when you are in a shared area and when you have the right of way."

Anonymous community comments

Crossing Station Street at Main Street

Indirect walking routes via the underpass lead to many people crossing at ground level.

Figure 13 Safety issues with pedestrians crossing Station Street at-grade

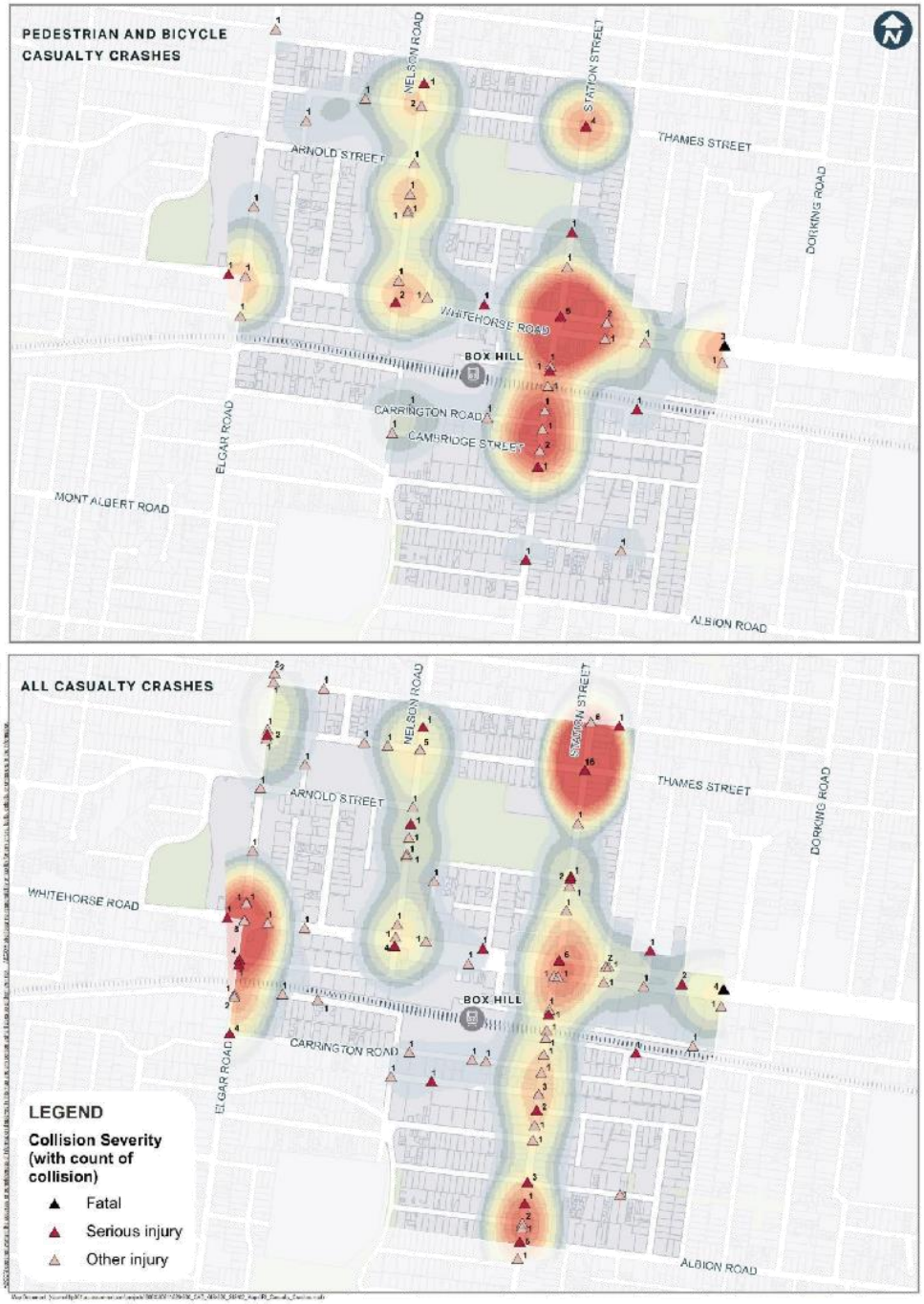


Figure 14 Crashes within the 5-year period to December 2018

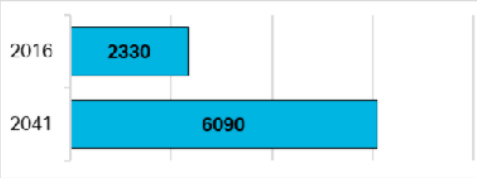
2. There is a lack of physically separated cycling infrastructure.

As discussed previously, cycling infrastructure in the Box Hill MAC is limited, impacting on cyclist safety and the cycling participation rate within the area. The poor quality and safety of cycling infrastructure is reflected in the gender split in cycling numbers, as the overwhelmingly high proportion of males may suggest that the cycling infrastructure is not considered safe by a wide cross section of the community.

Without a dedicated safe cycling network within Box Hill MAC, cyclists are required to either share the road with general traffic or share narrow footpaths with pedestrians, which is illegal with the exception of those who are under 12 years of age, those who are riding with someone under 12, or those who have a disability. These cycling environments result in conflict with road and/or footpath users and impede the efficiency of all modes.

3. There is a high proportion of vulnerable road users in the forecast population.

As highlighted in Figure 15, by 2041 the proportion of vulnerable road users (populations belonging to the 0-17 and 65+ age groups) is forecast to increase more than a factor of two. With increased development and population growth, the level of pedestrian activity within the MAC will significantly increase. Without intervention, the number of road crashes involving vulnerable pedestrians can be expected to increase.



Growth in the number of vulnerable road users less than 18 and greater than 65 years of age.

Figure 15 Change in age profile between 2016 and 2041

4. A large proportion of vehicle crashes occurs at intersections.

The Department of Infrastructure and Regional Development's Black Spot Program notes that a minimum of three casualty crashes over the preceding five years meets the eligibility criteria for designation as a safety deficient location. There were more than three crashes recorded at the following intersections within Box Hill MAC:

- Thames Street and Station Street – 16 crashes
- Whitehorse Road and Elgar Road – 8 crashes
- Whitehorse Road and Station Street – 6 crashes
- Severn Street and Station Street – 6 crashes
- Albion Street and Station Street – 5 crashes
- Thames Street and Nelson Road – 5 crashes
- Elgar Road and Prospect Street – 4 crashes
- Elgar Road and Carrington Road – 4 crashes
- Whitehorse Road and Dorking Street – 4 crashes (included one fatality)
- Whitehorse Road and Nelson Road – 4 crashes
- Cambridge Street and Station Street – 3 crashes

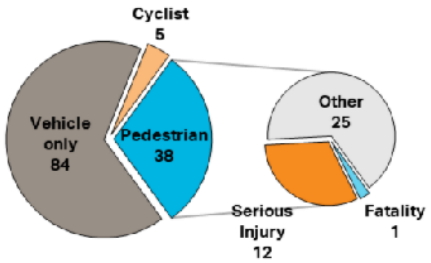


Figure 16 Reported crashes within Box Hill MAC from 2013 to 2018

- Howard Street and Station Street – 3 crashes.

It is understood that there are no plans by the Department of Transport or Council to address this crash history.

5. Higher than necessary vehicle speeds contribute to crash frequency and severity.

The relationship between vehicle speed and road traffic accidents is well established. In particular, arterial roads where pedestrians and cyclists mix with moderate to high speed traffic represent one of the highest risk traffic environments in metropolitan areas. This is exhibited by the pedestrian and bicycle causality crash locations shown in Figure 14 above.

Research has shown that the severity of pedestrian injuries arising from a vehicle impact increases moderately from 0 to around 37 km/h, then increases sharply thereafter, with death almost certain at impact speeds of around 55 km/h or higher. This relationship is shown in Figure 17. A similar relationship has also been shown for crashes that involve cars only, however at higher speeds due to the protective features of modern vehicles.

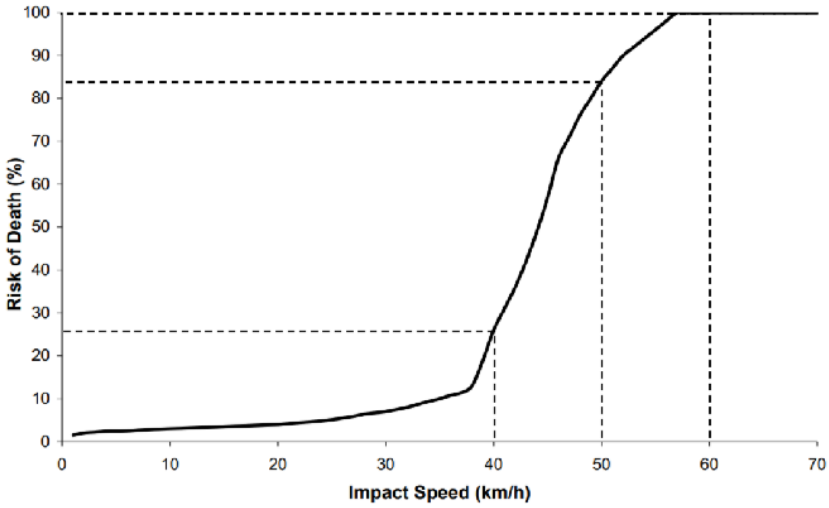


Figure 17 Relationship between vehicle impact speed and risk of pedestrian death

Source: Curtin – Monash Accident Research Centre

6. What are the opportunities to improve road safety in Box Hill MAC?

The following opportunities should be considered to improve road safety:

- Apply for funding through the Department of Infrastructure and Regional Development's Black Spot Program for improvements to intersections and mid-block locations that meet the criteria.
- Investigate the feasibility of new pedestrian crossing opportunities.
- Investigate signal time changes to reduce pedestrian waiting times.
- Introduce time-based speed limits along key streets such as Whitehorse Road, Station Street north of Whitehorse Road and area wide 40 km/h speed zones for key areas, such as the medical precinct.
- Undertake pilot schemes to trial new measures such as a 40 km/h or 30 km/h speed limit in local streets (see Case Study 1 below).
- Upgrade key streets such as Station Street and Whitehorse Road to improve road safety and transport efficiency (see Case Study 2 below).

The two case studies identified below shows what can be achieved by implementing trials to test potentially widespread initiatives and upgrading streets with road safety as a key priority.

Case study 1: 'Thanks for 30' – 30km/h area-wide speed limits trials, Fitzroy and Collingwood

The City of Yarra is currently conducting the first trial of a 30 km/h area-wide speed limit in the northern areas of Fitzroy and Collingwood, with the trial period having commenced a year ago. This initiative is based on international research which shows that 30 km/h is the safe speed for built up areas where there is a mix of pedestrians and cyclists with vehicles. The risk of pedestrian death rises exponentially with collision speeds beyond 30 km/h.

It is estimated that pedestrian fatality rates increase from below 10 percent at 30 km/h to approximately 25 percent at 40 km/h, then to more than 80 percent at 50 km/h.

Case study 2: Dandenong Central Area Pedestrian Safety Improvements, Dandenong

The Dandenong Central Activity Centre is a busy hub of business, retail, medical and educational activity. To improve pedestrian safety, improvements are being made within the activity centre, including:

- Implementation of lower speed limits in busy pedestrian areas, including introducing 40 km/h speed limits on both sides of Princes Highway, which includes Dandenong Plaza and Dandenong Market, Dandenong Hospital, and Dandenong High School
- Installation of raised pedestrian crossings at key intersections, increasing visibility of pedestrian crossings and providing better access for pedestrians
- Installation of raised platforms at intersections to slow down approaching vehicles.

Figure 18 Case studies of road safety opportunities

2.6 Car parking

Issue: **Current car parking requirements for new developments are not sustainable with the anticipated population and employment growth.**

Implication: If the current trend of high car parking supply and limited demand management continues, the future road network will not have the capacity to accommodate the number of vehicle trips generated.

Background: As cities across the world begin to prioritise city living that does not require using a car for every trip, many local governments are moving away from blanket policies of providing abundant parking. Many are adjusting planning rules and parking prices to discourage driving when other options are available, and in some cases even prohibiting new parking spaces from being built in congested or sensitive locations.

Challenges and opportunities associated with car parking have been broken down into five main components, as follows.

1. Car parking supply requirements within new developments is contributing to road network congestion and increased cost of apartments.

With over 6,800 additional dwellings planned in the foreseeable future, Box Hill will be required to accommodate ongoing investment and growth in the commercial sector and must manage access to the centre to support this growth. This could be achieved by making use of existing public transport infrastructure and managing car parking efficiently to reserve parking for those who most need it.

Table 2 outlines the current minimum and maximum statutory parking rates for Box Hill relative to other activity centres. Based on the recommendations of the Box Hill Central Activities Area Car Parking Strategy developed in 2014, a reduction in the minimum residential and office parking rates was approved in December 2015. While this reduction was needed at the time, the more aggressive step of implementing a maximum cap on parking (as has Footscray and Melbourne CBD) was not taken. As a result, developers are permitted to provide greater levels of parking than is required, potentially encouraging greater share of private vehicle access. At the time of writing this report, Moreland City Council were consulting on proposed changes to implement maximum parking rates on key activity centres, as noted in the table below.

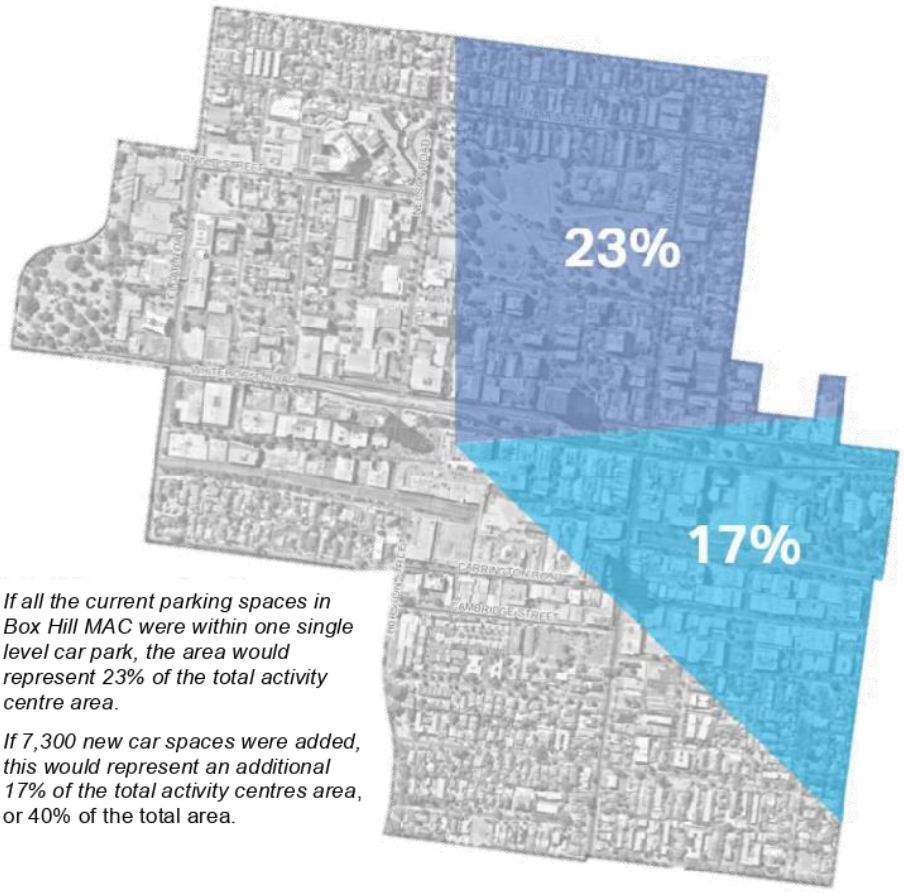
Table 2 Minimum and maximum statutory parking rates for Box Hill relative to other activity centres

	Spaces per 1-bedroom dwelling		Spaces per 2-bedroom dwelling		Spaces per 3-bedroom dwelling or more		Office (spaces per 100 sqm.)	
	Min	Max	Min	Max	Min	Max	Min	Max
Box Hill	0.5	-	0.75	-	1.0	-	2.0	-
Melbourne CBD	0.0	1.0	0.0	1.0	0.0	1.0	0.0	0.5
Footscray	0.5	1.0	0.8	1.0	1.0	1.5	1.5	2.0
South Yarra / Prahran	1.0	-	1.0	-	2.0	-	3.0	3.5
Brunswick (current)	1.0	-	1.0	-	2.0	-	3	3.5
Brunswick (proposed)	-	1.0	-	1.0	-	2.0	3	3.5
Geelong	1.0	-	1.0	-	2.0	-	3	3.5
Chatswood (NSW)	1.0	-	1.0	-	1.0	-	1.0	-

2. The supply of convenient long-term parking encourages private vehicle use.

There are approximately 9,000 publicly available car parking spaces provided in Box Hill MAC including free, ticketed, time restricted and unrestricted parking, with approximately 59 percent of these car parking spaces considered long term (four or more hours). Concerns have been raised across various car parking studies regarding the provision of car parking without appropriate limits on length-of-stay, especially along streets in the transport and retail precinct, and throughout the hospital and western TAFE precincts.

With an additional 7,300 car parking spaces proposed as part of the currently planned high-rise residential development projects, there is an urgent need to address this issue to regulate the number of private vehicles travelling into Box Hill and worsening traffic congestion and public amenity. For example, in line with a recent planning scheme amendment associated with the Principal Public Transport Network (PPTN), minimum parking rates could in some areas be reduced to zero where a dwelling is located within 400 metres of a significant public transport facility. This could be supplemented with the introduction of car share schemes. Car share schemes have been shown to reduce car ownership in areas with good access to public transport by providing convenient occasional access to a car when public transport may not be an efficient option.



If all the current parking spaces in Box Hill MAC were within one single level car park, the area would represent 23% of the total activity centre area.

If 7,300 new car spaces were added, this would represent an additional 17% of the total activity centres area, or 40% of the total area.

Figure 19 Equivalent car parking area within Box Hill MAC assuming all spaces were on a single level

3. Commuter parking supply at Box Hill station is often used for purposes other than accessing public transport, reducing parking for train riders.

Box Hill Station provides approximately 500 long term car parking spaces in the southern shopping centre car park, and a further 75 car parking spaces on Bank Street. These has been observed to be fully occupied before 8.00 am and are occupied by many people not using public transport, such as people working in the area. As these car parks accommodate multiple uses including staff and retail car parking for patrons, there is a need to better manage access and egress points to ensure non-commuters are not allowed to use long term commuter car park spaces.

A utilisation and compliance audit conducted by PTV in 2014 suggests that benefits of the commuter car park are being realised by non-public transport commuters.

"To reduce congestion caused by commuters we should create park and ride carparks in Blackburn and Surrey Hills. People living in Box Hill don't need a commuter carpark."

Anonymous community comments

4. Poor wayfinding for parking spaces is contributing to road congestion within the MAC.

Research shows that 30 percent[2] of congestion is caused by people looking for parking spaces, with an average cruise time of eight minutes.

Lack of wayfinding to determine the location of free car spaces leads to difficulty in navigating the road network and circulating within multi-level car parks.

"Install parking sensors to let drivers know where parking is available, to stop drivers circling in a carpark and in the centre."

"There is too much parking in Box Hill central area. More carparks equal more congestion. Most people who live in central area don't need cars."

Anonymous community comments

5. What are the opportunities to improve parking efficiency?

The following opportunities may improve parking efficiency and reduce road congestion within the MAC:

- Replacement of minimum with maximum statutory parking rates for new developments in Box Hill
- Improved wayfinding and parking technology to direct drivers to empty car parking spaces within the MAC
- Support and advocate for car share schemes to reduce private vehicle ownership
- Support for travel behaviour change initiatives to encourage the use of sustainable transport modes for large businesses within Box Hill MAC
- Relocation of on-street parking to off street (where practical) for more efficient use of kerbside parking areas
- Facilitation and promotion of innovative ride share technologies to reduce the need for individual long term car parking spaces.

[2] The High Cost of Free Parking, Donald Shoup

While it is acknowledged that some level of car parking is essential – particularly for mobility impaired travellers and visitors to some locations where alternatives are not readily available or practical – the minimisation or strategic relocation of non-essential car parking can help support the overall goals of Box Hill as a vibrant activity/community centre.

The two case studies identified below show what can be achieved by changing parking rates and relocating commuter parking to stations with less activity.

Case study 1: Replacing minimum parking rates with maximum parking rates, Melbourne CBD and Moreland City Council

The City of Melbourne has set maximum parking rates for new developments (shown in green and yellow in the below image) within Melbourne CBD. They have also removed any minimum parking requirements for new development, making parking provision optional for developer consideration.

Moreland City Council has likewise begun the process of making changes to parking requirements for new development, including removing minimum parking requirements in the Brunswick, Coburg and Glenroy activity centres. This is intended to help slow the growth of cars and traffic congestion in these areas.

Case study 2: Relocation of commuter parking from Footscray to West Footscray stations

As part of the Regional Rail Link project, commuter parking was relocated from Footscray station to West Footscray station with the intention of increasing development opportunities in central Footscray. This also included improvements to Footscray station's forecourt and public space areas (shown in the photo below). Station patronage has subsequently increased despite the reduction in commuter car parking.

This case study may suggest an opportunity to investigate the potential benefits of moving non-essential commuter parking from Box Hill to other locations outside the constrained activity centre.

Figure 20 Parking case studies

3.0 Stakeholder engagement and community insights

3.1 Stakeholder engagement

An issues and opportunities workshop was held with key stakeholders over two sessions on Thursday 5 September 2019, to allow the AECOM team to gain further understanding of the issues and opportunities pertaining to a number of topics. Attendees from the workshops included representatives from local organisations and interest groups, as well as the Department of Transport.

The workshops included interactive sessions where participants were split into groups to discuss and record their ideas on the issues and opportunities on post-it notes organised into a number of key topics.

Figure 21 Example notes from issues and opportunities workshop

A detailed summary of the key points and main outcomes from the workshops are provided in the minutes in Appendix B.

3.2 Community insights

Community insights were also gathered through engagement activities undertaken by Place Score and Conversation Caravan to gather input on what aspects of Box Hill are most highly valued by residents, businesses and visitors. This included:

- On-site face-to-face surveys, with data collected between Tuesday 20 and Tuesday 27 August 2019 via two means:
  - ***Care Factor Survey***, where respondents were asked about which 'place attributes' were most important to them in their ideal town centre
  - ***Street Place Experience (PX) Assessments*** Respondents were asked how 'place attributes' impacted their personal enjoyment at the following six locations:
    - Nelson Road between Whitehorse Road and Epworth Eastern
    - Prospect Street between Box Hill Central carpark entrance and 30 Prospect Street
    - Market Street between Whitehorse Road and Main Street
    - Carrington Road between 65 Carrington Road and Station Street
    - Whitehorse Road (north side) between Station Street and Bruce Street
    - Station Street between Whitehorse Road and Carrington Road
- Online engagement through WCC's ***OurSay*** platform, where respondents were asked about issues they experienced accessing Box Hill using various modes.

Detailed findings from the community engagement are provided in the Community Insights Report included as Appendix C, with a brief summary provided in the following sections.

Public transport (including transport interchange)

The feedback gathered from the community has emphasised the following priorities in relation to public transport (including the transport interchange):

1. **Invest** in increasing public transport options as alternatives to private vehicle use.
2. Encourage **change of travel behaviour** from use of private vehicles to public transport.
3. Improve **pedestrian connections** between destinations and transport modes to create a seamless experience.
4. Provide **information** to aid **wayfinding** and support public transport use.
5. Envision the interchange as a **hub of the community**.

In addition, *'walking, cycling and public transport options'* was ranked number 14 out of 50 attributes for what the overall Box Hill community most cares about.

The key issues and opportunities relating to public transport (including the transport interchange), as identified by the community, are as follows:

- **Issue 1:** Dissatisfaction with the connection between the bus station and train station
- **Issue 2:** The interchange does not reflect Box Hill identity or culture
- **Opportunity 1:** Investment in public transport options
- **Opportunity 2:** Potential to change travel behaviour
- **Opportunity 3:** Improved connections between destinations and transport modes
- **Opportunity 4:** Increase information to support public transport use
- **Opportunity 5:** The interchange as a hub connecting the community

Streets and public spaces

With respect to streets and public spaces, the feedback gathered to date has emphasised the following priorities (out of 50 attributes) shown in Figure 22.

Figure 22 Values and priorities in relation to streets and public spaces

Walking and cycling

With respect to walking and cycling, the feedback gathered to date has emphasised the following priorities:

1. Improve and encourage walking by **investing in walking infrastructure** and enforcing regulations for enhancing the physical environment.
2. **Improve pedestrian connectivity** between destinations and different forms of transport to create a seamless experience.
3. **Improve bike infrastructure** at the interchange and bike connectivity within and beyond Box Hill.

Further to this, **'ease of walking around'**, including crossing the street and moving between destinations, is considered the second most important attribute (out of 50) for those living and working in Box Hill, as shown in Figure 23.

The key issues and opportunities relating to walking and cycling, as identified by the community are as follows:

Issue 1: Difficulty in walking around

Issue 2: Challenges for cyclists

Issue 3: Impact of delivery vehicles on pedestrians and cyclists

Opportunity 1: Improving and encouraging walking

Opportunity 2: Improving bike connectivity and infrastructure

Figure 23 Values and priorities in relation to walking and cycling

Road safety

The feedback gathered from the community has emphasised the following values and priorities in relation to road safety:

- Make Box Hill a safe place to move around on foot or by bike.
- Make Box Hill feel safe for all users to spend time in – day and night.

In addition, physical safety (paths, cars, lighting etc.) was one of the worst performing attributes cited by the community along Prospect Street and Whitehorse Road.

Furthermore, out of 50 care factor attributes, the surveyed members of the Box Hill community have ranked **physical safety #16** and **sense of safety #13**.

The key issues and opportunities relating to road safety, as identified by the community are as follows:

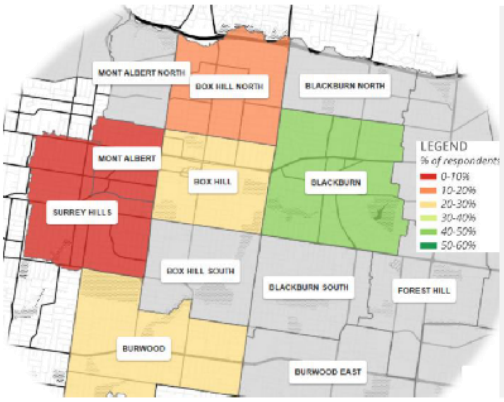
- **Issue 1:** It can be dangerous to walk around
- **Issue 2:** People do not feel safe
- **Opportunity 1:** Make it a safe place to move around on foot or by bike
- **Opportunity 2:** Make it feel safe to spend time in – day and night

Car parking

The feedback gathered from the community is summarised in Figure 24, showing how much residents of Box Hill and surrounding suburbs value car access and parking, from green (high) to red (low).

The key findings include:

- *'Car accessibility and parking'* is only the **40th** most important place attribute out of 50 total attributes. There is a public perception that car parking is a critical issue for the community in Box Hill, however this finding confirms that this is not the case.
- Only **23 percent** of respondents who drove to Box Hill selected *'car accessibility and parking'* as being most important to them.



The key issues and opportunities relating to car parking, as identified by the community are as follows:

Issue 1: Conflicted community – for and against parking

Opportunity 1: Shift investment to active and public transport, and other 'place' improvements

Opportunity 2: Creating a park-and-ride precinct

Figure 24 Care Factor percentages for 'car accessibility and parking' by suburb

4.0 Conclusion and next steps

This report provides a snapshot of the current issues and opportunities present in Box Hill and an indication of how these may develop in the future if nothing is done to address them. With the level of population and employment growth forecast in the next 20 years, a key challenge facing Box Hill is ensuring its transport infrastructure can keep pace with this growth.

The following points highlight the key ideas and themes being considered in the next stages of this study:

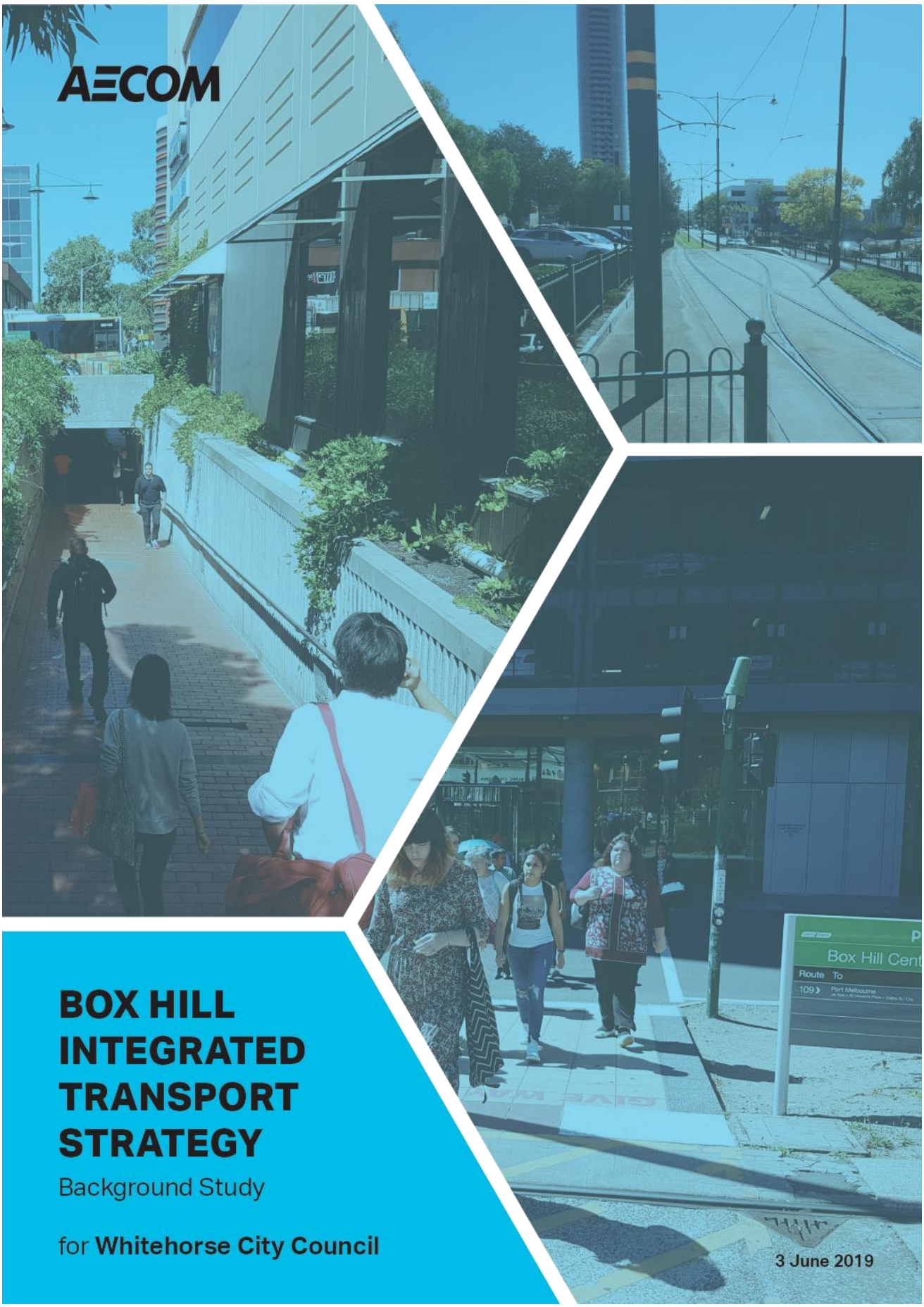
- **Car Parking:** Convenient access to over 4,500 long term parking spaces could be a key attributor for low participation in active and sustainable modes of transport by those who live and work in Box Hill. Parking provision for new developments should also be reviewed to manage car use for future residents.
- **Safety:** Increased physical and personal safety could help to encourage people to get out of their cars, and increase walking, cycling and public transport use. These sustainable modes will assist with enabling Box Hill to accommodate more trips in a rapidly growing activity centre.
- **Improvements for Walking and Cycling:** Increased participation in walking and cycling could eventually lead to reduction in road congestion and associated costs caused by delays. Optimally this could also help buses to become more reliable (depending on the level of success).
- **Improvements for Public Transport:** A generally upgraded public transport interchange and facilities, along with improved connectivity, information and wayfinding, could help to improve the overall look and visual character of Box Hill (an attribute highly valued by the community) and encourage a change of travel behaviour.
- **Better use of streets and public space:** Public space is limited in Box Hill. Road space, in some areas, could be used more productively to provide an improved sense of safety and ease of walking around (the second highest valued attribute by the community).

Further feedback is being sought from the community on possible strategies to address the issues and opportunities highlighted in this report. This feedback will be used to inform the direction and level of intervention for the actions being developed for the ITS.

Appendix A

Box Hill MAC ITS Background Study

9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public



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Box Hill: Integrated Transport Strategy

Background Study

Client: City of Whitehorse

ABN: 0000

Prepared by

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AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 AS/NZS4801 and OHSAS18001.

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Revision – 03-Jun-2019
Prepared for – City of Whitehorse – ABN: 0000

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Quality Information

Document	Box Hill: Integrated Transport Strategy Background Study
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Date	03-Jun-2019
Prepared by	Dhano Arjuna
Reviewed by	Callan Jones

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	26-Mar-2019	Draft report for comment	Frank Jaskiewicz Associate Director	
B	03-Jun-2019	Final report	Frank Jaskiewicz Associate Director	

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1.0 Introduction

1.1 Background

AECOM has been engaged by Whitehorse City Council to undertake a background study to assist in the development of the Integrated Transport Strategy for the Box Hill Metropolitan Activity Centre (MAC) in 2019/20.

Over the last decade, the Box Hill MAC has experienced substantial growth and development. In particular, there has been the opening of the new Australian Tax Office (ATO) building, the substantial redevelopment of the Box Hill Hospital and Box Hill Institute facilities, and significant private investment in developments such as The Chen Hotel and Sky One. Multiple high-rise mixed-use developments have also been approved within the precinct, and further development is expected in the coming years.

This background study forms the first stage of the development of an Integrated Transport Strategy for Box Hill. The study assembles essential contextual information on government objectives, existing strategies, plans and programs, and the available evidence on the nature and scale of the problems and opportunities facing those living and working within Box Hill MAC.

As there is a considerable volume of material and analysis within this report, this guide uses summary sections to simplify the interpretation of data and raises key questions on which City of Whitehorse would welcome readers' views.

1.2 Report purpose and structure

The purpose of this background study is to:

- provide an evidential foundation and starting point for the upcoming Box Hill Integrated Transport Strategy (ITS); and
- identify any data gaps that requires additional data collection.

The report is structured as follows:

- Section 1: Introduction (this Section)
- Section 2: Strategic and Policy Context
- Section 3: Box Hill Profile and Characteristics
- Section 4: Transport Network
- Section 5: Conclusions
- Section 6: Next Steps.

1.3 Study area

Box Hill MAC is the largest activity centre in the City of Whitehorse and is located approximately 15 kilometres east of Melbourne CBD. It provides retail, education, civic, medical, community service, entertainment and recreational opportunities for the regional population, as well as serving as a hub for the local community. The MAC has been identified as a key centre for metropolitan development in successive metropolitan strategies, most recently in *Plan Melbourne*.

Figure 1 shows the study area for the Box Hill MAC. The study area is bound by Albion Road to the south, William Street and Watts Street to the east, Severn Street to the north, and Kingsley Gardens to the west.

It should be noted that whilst the study area has been defined, factors and movements from outside the area are likely to have an influence and will therefore need to be considered where appropriate.

Figure 1 Study area

2.0 Strategic context

Transport planning is rarely, if ever, a fully local matter. Transport networks are connected across cities and between regions, with flows being shaped over time by changing patterns of settlement, commuting and visitation. As such an integrated transport strategy needs to recognise the broader planning and development context — that is, where does it fit within larger state and federal planning priorities.

State and Local Government are responsible for delivering transport legislation, policy and strategic solutions to Box Hill and the wider Whitehorse municipality. The Federal Government plays a central role in guiding strategy and channelling funding to the lower level Governments for transport projects, while State Government has a mandate to coordinate priorities and set the agenda on transport issues.

At the Local Government level, it is essential the Box Hill Integrated Transport Strategy aligns with both State and Federal transport objectives to obtain support and funding for recommended projects. The Strategy requires a contextual understanding of transport developments within Box Hill that aligns with broader State and Federal initiatives.

Section 2.0 of this report details the strategic context of the Box Hill Integrated Transport Strategy. It focuses on State Government transport legislation, broad state-wide planning documents, and strategies related to the core transport infrastructure of Box Hill, primarily road transport, public transport, cycling and walking. The Local Government context is also examined, highlighting delivery and planning objectives of Council. Finally, the Federal Government context is discussed with an emphasis on national level strategic principles and funding of potential projects. The implications of government planning frameworks and approaches for developing the Box Hill Integrated Transport Strategy are drawn out at the end of this section.

2.1 State Government

2.1.1 Victorian Cycling Strategy 2018-2028

The Victorian Cycling Strategy 2018-2028 was developed by the Victoria Government. The Strategy aims to increase the volume, frequency and diversity of Victorian commuters using cycling as a mode of travel to work and education. The Strategy lays out how this can be achieved by investing in a safer, stress-free, connected transport network that prioritises strategic cycling corridors. Objectives to improve the ease of cycling transport must consider women, children and senior Victorians to improve inclusivity of cycling infrastructure. The strategy outlines that central to the Strategy goals is the need to plan for emerging technologies that markets cycling to a wide audience.

2.1.2 Plan Melbourne 2017-2050

Plan Melbourne is a long-term planning document that lays out a blueprint for the accommodation of Melbourne's future growth in population and employment. It is underpinned by nine principles for Melbourne's future and culminates in 90 policy recommendations to be rolled out in the coming decades.

Plan Melbourne identifies Box Hill as a place of state significance in investment and growth for its role as a Metropolitan Activity Centre (MAC). MACs provide a diverse range of jobs, activities and housing for catchments that are well served by public transport. They are major hubs of service delivery including government, health, justice and education services, and provide retail and commercial opportunities.

The Plan highlights that local street design plays a large role in enabling people to make more sustainable travel choices for local trips. It aligns with ***VicRoads' Movement and Place Approach*** which considers how streets should perform their movement and place function.

Within Plan Melbourne, 20-minute neighbourhoods are supported by further policy directions. This includes locating schools and other facilities near existing public transport and providing safe walking and cycling routes and drop-off zones.

The Plan sets out several policies to support improved provision of transport infrastructure for various types of localised trips. These include:

- Policy 3.1.6 Support cycling for commuting to work and education, particularly through developing strategic cycling corridors.
- Policy 3.3.2 Creating a network of cycling links for local trips to support cycling in local streets. It is suggested that doing so will encourage under-represented groups such as women, families and school-age children to consider cycling.
- Policy 4.1.2 Improve local travel options and integrate place-making practices into road-space management.
- Policy 3.3.1 Priority should be given to pedestrian movements in neighbourhoods, and the needs of pedestrians should be a priority in all urban environments.

The Plan also advocates for creating pedestrian-friendly neighbourhoods where pedestrian routes are high-quality, safe, direct and pleasant.

2.1.3 Towards Zero 2016-2020 Road Safety Strategy

The Towards Zero 2016-2020 Road Safety Strategy is a significant plan developed by Victoria's road safety partners VicRoads, TAC, Victoria Police and the Victorian Government that aims to reduce road related deaths by 20 percent and seeks a 15 percent reduction in road accident related serious injuries from 2016 levels by 2020.

Central to these goals is the encouragement of investment in safe road infrastructure and engagement with local communities.

2.1.4 Infrastructure Victoria's 30-Year Strategy 2016

Infrastructure Victoria is an independent advisory body that informs the State Government on infrastructure priorities across Victoria. The 30-Year Strategy, published in 2016, makes several recommendations pertaining to road, public transport, walking and cycling. The recommendations are designed to address a list of broader identified needs. The following needs are applicable to the transport network of Box Hill:

- **Need 1:** Address infrastructure demands in areas of high population growth
- **Need 4:** Enable physical activity and participation
- **Need 6:** Improve accessibility for people with mobility challenges
- **Need 10:** Meet growing demand to access economic activity in central Melbourne
- **Need 11:** Improve access to middle and outer Metropolitan major employment centres
- **Need 19:** Improve resilience of critical infrastructure.

2.1.5 VicRoads Sustainability and Climate Change Strategy 2015-2020

The Sustainability and Climate Change Strategy 2015-2020 is an overarching document guiding transport development through a series of initiatives aimed at improving sustainability of Victoria's road network and consideration of climate change impacts from road-based travel and infrastructure. These include:

- review of the VicRoads Traffic Noise Reduction Policy
- development of a network air quality model
- review of stormwater management practices
- review of biodiversity management practices
- benchmarking the carbon footprint of our roads
- development of tools to support triple bottom line assessments and meet our obligations under the Transport Integration Act 2010
- development of tools that assist VicRoads to engage with the community to ensure solutions reflect community health, wellbeing and environmental values.

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The strategy also includes assessment of the climate change risks to transport infrastructure and communities.

2.1.6 PTV's Network Development Plan - Metropolitan Rail 2012

The Network Development Plan – Metropolitan Rail 2012 was developed by Public Transport Victoria. The Plan aims to expand the capacity of Melbourne's rail network over the next 20 years and beyond. The key strategic objectives of the plan are to:

- expand the capacity of the existing network to meet the growing needs of the city
- redesign train services to maximise opportunities for seamless coordination with buses and trains
- extend the network to serve new growth areas.

The Plan identifies that the Eastern suburbs of Melbourne are expected to experience significant population growth and details several transport solutions to the region surrounding Box Hill.

2.1.7 Transport Integration Act 2010

The Transport Integration Act is Victoria's principal transport legislation and covers the entire transport portfolio for the Victorian Government. The Act sets out a series of objectives that inform a vision of an integrated and sustainable transport system that is inclusive, prosperous and environmentally responsible. The Transport Integration Act provides a mandate for government and non-government stakeholders to share common goals of an efficient, integrated transport network.

The six legislated objectives are:

- social and economic inclusion
- economic prosperity
- environmental sustainability
- integration of transport and land use
- efficiency, coordination and reliability
- safety, health and wellbeing.

2.1.8 Pedestrian Access Strategy – A strategy to increase walking for transport in Victoria 2010

The Pedestrian Access Strategy established the Victorian Government's vision for pedestrian-friendly transport systems throughout Victoria. Five strategic directions are established to guide transport planning decisions, including the following:

- encourage people to walk by changing attitudes and behaviours
- collaborate to improve provision of walking
- create pedestrian friendly built environments, streets and public spaces
- increase the safety of walking
- continue integration of walking with public transport.

2.1.9 VicRoads SmartRoads Network Operating Plan

The SmartRoads Network Operating Plan outlines an approach to managing competing interests for limited road space by giving priority use of the road to different transport modes at particular times of the day depending on travel demand and adjacent land use and activity.

Goals of the plan include:

- facilitate good pedestrian access into and within activity centres in periods of high demand.
- prioritise trams and buses on key public transport routes that link activity centres during morning and afternoon peak periods.

- encourage cars to use alternative routes around activity centres to reduce the level of 'through' traffic.
- encourage bicycles by developing and promoting the bicycle network.
- prioritise trucks on important transport routes that link freight hubs and at times that reduce conflict with other transport modes.

2.2 Local Government

2.2.1 Review Vision of Box Hill Metropolitan Activity Centre 2019

Council has appointed consultants to lead a review of the vision and existing strategic direction for Box Hill, as well as updating the existing Structure Plan where appropriate. The review will provide future guidance for the Box Hill Metropolitan Activity Centre considering the scale and pace of development and change that Box Hill has experienced since the Structure Plan was initially prepared. This review is expected to be completed in 2019.

2.2.2 The Eastern Metropolitan Partnership 2018

The Eastern Metropolitan Partnership is an advisory group established by the Victorian Government. The Partnership provides a platform for local governments that share regional interests to align priorities and allow communities to engage with Local Governments and the State Government. The Partnership provides advice to Governments on community priorities and infrastructure requirements.

The Partnership's advice to the Victorian Government for 2018 included:

- **Regional Connectivity** – Making it easier get around the region, especially through improving bus services and opportunities for active transport
- **Integrated Health and Social Services** - Improving access to the full range of health and social services for the region's most vulnerable people
- **Social Inclusion** - Creating a region where all people, regardless of age, gender, cultural background, or physical ability feel connected and able to participate in community life, with an initial focus on addressing gender equity and unconscious bias in community sport
- **Affordable and Social Housing** - Increasing the supply of affordable and social housing in the region to meet a shortfall of 11,400 dwellings over the next 2 decades
- **Jobs for Youth** - Improving the transition for the region's young people from secondary school to meaningful training or employment.

2.2.3 Box Hill Car Parking Strategy Implementation 2018

This study reviewed the progress of 15 of the 38 recommendations of the 2014 Car Parking Strategy relating to the management of on and off-street car parking in Box Hill. This study identified that all 15 of the 38 recommendations had been completed.

As part of this study, Council completed another survey of car parking in Box Hill and provided updated statistics on parking usage. For the 2014 Strategy, a car parking survey was completed in 2012. The following comparison was made between 2012 and 2018 car parking surveys:

- comparing with the 2012 surveys, overall parking occupancy for the study area has marginally increased from 64% in 2012 compared with 66% in 2018
- the on-street parking occupancy for the study area has increased from 50% in 2012 to 53% in 2018
- the off-street parking occupancy for the study area has increased from 71% in 2012 to 78% in 2018.

2.2.4 Whitehorse Planning Scheme Review 2018

The Whitehorse Planning Scheme guides decisions about land use and development within the City of Whitehorse. A review of the plan is mandated within the *Planning and Environment Act 1987* and was

undertaken in 2018. The review incorporates an assessment of the performance of the Planning Scheme against set measures within the Planning Scheme itself.

The Review provides a list of 44 recommendations. A number of these relate to planning initiatives within the municipality. The Review particularly highlights the need to align Council planning objectives with Plan Melbourne, Box Hill's importance as a MAC, and advocacy to improve the Box Hill transport interchange.

2.2.5 Box Hill Transit Interchange Ministerial Advisory Group Report 2017

The Box Hill Transit Interchange Ministerial Advisory Group assessed transport needs of Box Hill relating to the transit interchange such as train, tram and bus transfers, commuter car parking, the surrounding road network, and the relationship with Box Hill Central.

The results of the investigations relating to transport development were as follows:

- Box Hill is experiencing development pressure as a mini CBD. This is driven by both private investment and government investment in health and transport;
- the bus interchange is well located, but has poor amenity due to issues with cleanliness, weather protection, safety and disability access;
- the bus interchange has capacity for growth as it is operating at 65 percent of its designated bus movement capacity;
- bus operations are impacted by urban growth pressures impacting bus reliability due to congestion;
- the railway station needs accessibility improvements; and
- Box Hill's governance does not reflect its status as it does not have roundtable operations management, governance or planning coordination.

The report then led to the formation of the Box Hill Transport Interchange Steering Committee.

2.2.6 Box Hill Metropolitan Activity Centre 2016

The City of Whitehorse established the Box Hill Metropolitan Activity Centre 2016 policy was developed as part of the Whitehorse Planning Scheme. The policy outlined an implementation imperative of a sustainable, safe and accessible Box Hill. The policy identifies eight activity precincts and seven built precincts within Box Hill along with a public space framework and access framework for all developments pertaining to Box Hill's public realm. The policy includes a series of objectives regarding placemaking strategies in Box Hill, including infrastructure that supports walking as the primary means of access in central Box Hill and an increase in public transport use.

2.2.7 Box Hill Central Activities Area Car Parking Strategy 2014

The City of Whitehorse developed this strategy to effectively manage existing and future car parking conditions providing for worker, shopper and visitor needs to support sustainable and economic growth. The strategy identified 38 recommendations, that look to better manage the existing car parking, changes to car parking rates for commercial and residential developments, and options to reduce car parking demand through travel behaviour change.

This led to Amendment C158, Parking Overlay for reduced parking rates for residential and office land uses in the Box Hill Activity Centre, which came into effect in December 2015.

2.2.8 Box Hill Access and Mobility Plan 2011

Commissioned by the Department of Transport, the Box Hill Access and Mobility Plan identifies risks and barriers to the provision of safe and effective movement of people to and within the Box Hill Central Activities Area (CAA). This required the identification of existing issues and opportunities for access and mobility in Box Hill. Both population and employment were expected to double in the CAA over the coming 20 years, significantly increasing the number of trips within Box Hill.

Prioritisation of cycling, walking and public transport were found to be essential to ensuring Box Hill can meet transit demand. With support from stakeholders, seven morning peak scenarios for development of Box Hill transport planning were established and tested using the Melbourne

Integrated Transport Model (MITM). The modelling found, that without interventions, all major roads through the area would be at or near capacity during the morning peak by 2031 (assumed to be the same for the evening peak). The scenarios modelled were incorporated into the Access and Mobility Access Plan. Some of the measures for development included bus priority lanes on Station Street, additional bus services in the area and speed limit reductions throughout Box Hill.

2.2.9 Whitehorse Integrated Transport Strategy 2011

The Whitehorse Integrated Strategy 2011 was developed to incorporate road safety, active transport and sustainable transport initiatives. It creates a framework to consider different modes of transport available in Whitehorse municipality and provides direction on the facilitation of transport options and networks. The Strategy aligns Council's approach to advocate for improved transport infrastructure and guides policy and strategic objectives for the City of Whitehorse.

Included in the strategy is an Action Plan that sets out a series of actions and priorities for Council to pursue. Council performed the lead advocacy role in developing the list with support from key stakeholders.

A summary of key actions relating to Box Hill and the progress status are below:

- Action 1.1.2: Advocate for improved pedestrian facilities and access at Box Hill Central Activities District, including along Whitehorse Road and Station Street.

Since 2011 Council have ensured ongoing advocacy to improve pedestrian facilities including better pedestrian timing for the traffic signals and upgrades to a pedestrian underpass.

- Action 1.1.3: Investigate and implement as recommended, improved pedestrian facilitated and access and Box Hill Central Activities District.

Carrington Road in Box Hill has since received streetscape upgrades. There have been no other significant pedestrian upgrades.

- Action 2.2.2: Complete a feasibility study and advocate for the construction of the bicycle CAD Connector between Box Hill and Ringwood.

The feasibility study has since been finalised and the path construction is mostly complete.

- Action 3.3.1: Advocate for the urgent upgrade of the Box Hill Transport Interchange – including better connectivity between tram, train and bus services and improved passenger waiting facilities in terms of comfort and information.

Since 2011 the upgrade of the Box Hill Transit Interchange has been an ongoing advocacy position for Council. There have been no significant upgrades to the interchange since the Whitehorse Integrated Transport Strategy 2011 was published.

- Action 3.3.3: Advocate for the construction of the third railway line between Box Hill and Ringwood, with the implementation of grade separations for the level crossings.

It has since been advised that a third railway line between Box Hill and Ringwood is a longer-term priority for the State Government, approximately 30-50 years. Landholder, VicTrack, has assured Council that land is available for future development of this track.

There have been level crossing removals at Blackburn, Rooks, Mitcham and Heatherdale Roads easing congestion on the roads and reducing travel times throughout the transport network of Box Hill.

- Action 4.4.4: Lobby VicRoads to down grade the road classification of Station Street Box Hill to increase the focus on road base public transport and pedestrians.

Downgrading of Station Street road classification has not yet been achieved.

- Action 4.4.6: Continue to investigate the feasibility of introducing a car-share scheme within the Box Hill CAD in association with a private car share company and to implement when economically viable.

While there has not been a private car share scheme implemented in Box Hill, some changes in planning permit conditions indicate a scheme could be implemented for future development.

- Action 4.4.8: Investigate the adoption of reduced parking rates for new developments located in the Box Hill Central Activities District or where appropriate, in Major Activity Centres and in the vicinity of train stations, to encourage the use of more sustainable forms of transport.

Council successfully reduced parking rates for Box Hill in December 2015.

2.2.10 Whitehorse Integrated Transport Strategy Background Report 2011

The Whitehorse Integrated Transport Strategy Background Report 2011 reviewed municipal demographics of Whitehorse and built on Council's Integrated Transport Strategy 2002. The document reviewed the consequential strategies relating to Whitehorse municipal transport systems and major developments requiring a review and refresh of the ITS.

2.2.11 Box Hill Transit Activity Centre Structure Plan 2007

The Box Hill Transit Activity Centre Structure Plan builds upon studies commissioned by Council, The Box Hill Transport Interchange Study, The Box Hill Urban Design Framework and a Housing Study. Council aimed to integrate findings of all three studies into a clear framework for development of Box Hill.

The Structure Plan identifies issues and strategic opportunities in Box Hill such as socio-economic issues, clustered economic activity, cultural distinctiveness and public transport. The Plan presents a vision for Box hill to becomes one of the most significant urban centres in Melbourne's eastern suburbs. The vison was to be implemented via a planning framework that encompassed a network of public spaces, safe and attractive streetscaping, land use that addresses community needs and buildings that contributed to the quality of the public environment. A series of strategies and actions are listed in the Plan underpin Council's vision.

2.3 Federal Government

The Department of Infrastructure, Regional Development and Cities is the relevant Commonwealth Department concerned with National transport objectives. The Department provides strategic policy advice to shape the framework that underpins the integration of road, rail, maritime and aviation in Australia. The Department aims to ensure safe, efficient and sustainable domestic and international transport systems which are vital to Australia's continuing prosperity.

In addition to broader strategic alignment the Federal Government also plays a role by contributing funding to transport projects. In the neighbouring municipality of Boroondara, significant funding from the Federal Government will be invested in the North East Link road project. In 2017, $1.75 billion was made available for North East Link. Key to receiving such funding lies in ensuring that strategic objectives in Box Hill align with those of the Federal Government.

2.4 Framework implications for the Box Hill Integrated Transport Strategy

The broad range of State Government strategies highlight the importance of an integrated transport network with different modes working in synergy with sustainable infrastructure. More specifically, the objectives present a series of shared core principles, with a focus on safety, inclusivity, minimised congestion, and prioritisation of greenhouse gas emission reduction.

These core principles have implications for the Box Hill Integrated Transport Strategy. Projects to be delivered will need to align by prioritising pedestrian and cycling infrastructure that is easily accessed by women, children, disabled and elderly users. Congestion reduction measures should address the population growth of Box Hill and surrounding suburbs, such as smart and adaptable road traffic infrastructure and prioritising bus and tram routes that connect Box Hill to other activity centres.

Existing strategies from Local Government also highlight a need to support State Government planning, particularly by promoting Box Hill as a MAC. The transport interchange plays a central role in Box Hill's significant role as a mini CBD. Local Government strategies provide implementation insight by prioritising upgrades to the transport interchange and promoting ease of connectivity within inner Box Hill and between transport modes.

The Federal Government, while not designing strategic transport initiatives, is an important stakeholder in the congestion busting and integration strategies for Victoria's transport integration.

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Projects receiving Federal Government funding require comprehensive evidence-based justifications to support the Federal Government is an 'informed investor'. The prospects of securing federal funding for important transport investments will be higher if underpinned by robust, transparent and forward-leaning analysis.

With State Government at the helm of transport planning in Victoria and Local Government providing implementation objectives to promote Box Hill as a MAC, the Box Hill Integrated Transport Strategy should ideally align with a series of core overarching themes if strategic projects are to be advanced and delivered.

3.0 Box Hill profile and characteristics

The following section discusses the key demographics, profiles and characteristics of the study area, and is structured as follows:

- land use
- population
- significant development sites
- employment
- education
- age
- language
- mode share
- key origins
- key destinations.

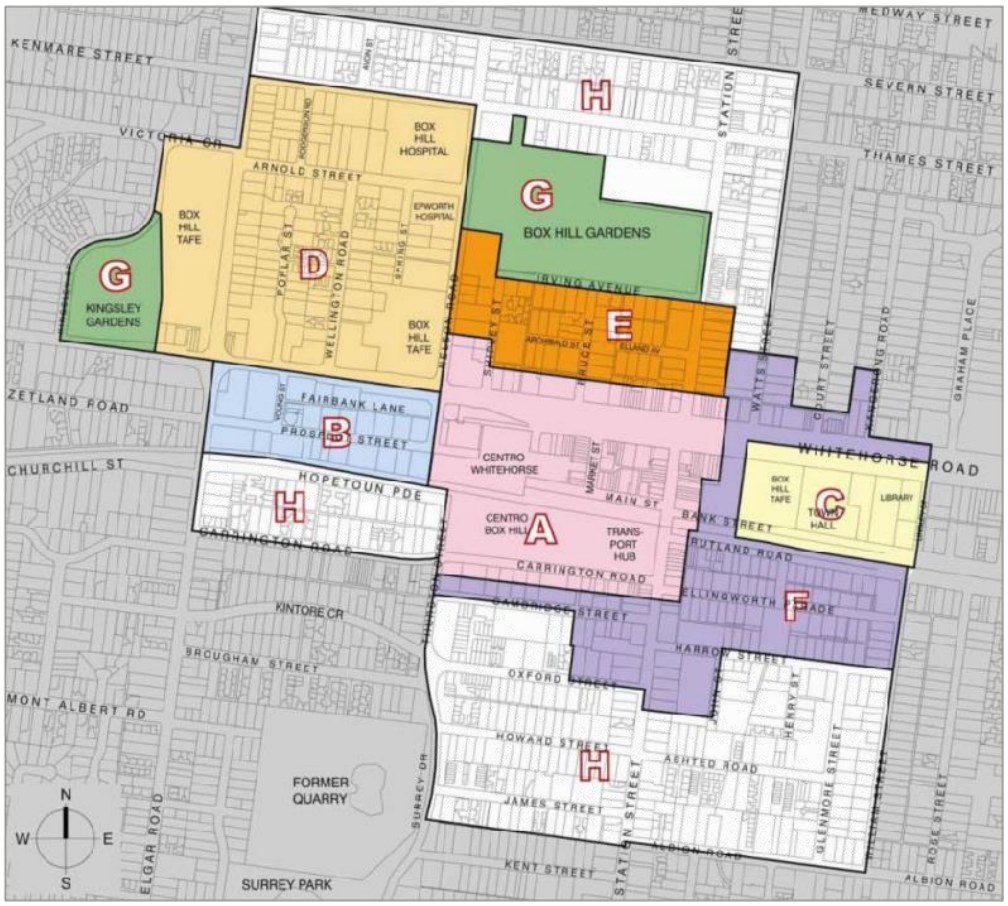
The key findings from Sections 3.0 and Section 4.0 have been highlighted in blue throughout this background study.

3.1 Land use

Box Hill MAC – Activity Precinct Plan (shown in Figure 2) highlights the different types of land uses within the metropolitan activity centre. Table 1 outlines the various land uses within the study area. Box Hill provides retail, education, office, civic, medical, community service, entertainment, dining and recreational opportunities for both local and regional populations.

Table 1 Precinct descriptor

Precinct		Description
A	Box Hill Transport and Retail Precinct	Box Hill Transport and Retail Precinct: Retail sustained throughout the area complemented by entertainment, hospitality, commercial and other uses with extended hours of activity creating a central focus for Box Hill
B	Prospect Street Precinct	Prospect Street Precinct: Consolidation as the primary office precinct in the activity centre.
C	Civic and Eastern TAFE Precinct	Consolidation of cultural, community and educational facilities in the precinct.
D	Hospital and Western TAFE Precinct	Growth and enhancement of educational and medical institutions and support for related businesses and services, plus high density residential (including student housing).
E	Box Hill Gardens Precinct	Provision for significant high to medium density residential growth with small scale offices, limited retail and community services and retail to activate ground level street frontages.
F	Southern and Eastern Precincts	Mix of office and retail uses responding to prominent Whitehorse Road and Station street frontages, mixed sue (residential) as transition to purely residential precincts.
G	Box Hill Gardens and Kingsley Gardens	Convenient access to high quality public open space and recreational opportunities within the activity centre.
H	Residential Precincts	The areas' residential role and amenity protected but medium density residential development encouraged. (most areas surrounding the study area are also residential)



Source: Whitehorse Planning Scheme

Figure 2 Land use

3.2 Population

Box Hill has experienced significant growth in population from 2001 to 2016 relative to Whitehorse LGA and Metropolitan Melbourne as shown in Table 2. Over the coming decades, the population of Box Hill MAC is projected to continue to increase at an accelerated rate. The average annual growth rate (AAGR) between 2016 and 2041 is projected be 3.5 percent, higher than the AAGR for Whitehorse LGA and Metropolitan Melbourne.

The 2036 population forecasts have been derived from the 2019 MGS Structure Plan which have investigated population forecasts from VIF and a revised forecast with a lower growth rate providing forecasted population range for 2036.

Box Hill's population is expected to double by 2036

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Table 2 Historical and projected population

Region	2001	2016	AAGR '01-16	2031	2036	2041	AAGR '16-41
Box Hill	5,090	8,500	+3.5%	14,520	16,900 to 18,600	20,070	+3.5%
Whitehorse LGA	146,170	167,990	+0.9%	193,590	–	215,050	+1.0%
Metro Melbourne	3,500,250	4,628,200	+1.9%	6,058,790	-	7,016,050	+1.7%

Source: Box Hill Narrative Report, SGS Economics and Planning, March 2018 and 2019 MGS Structure Plan

Table 3 shows the population density of Box Hill, Whitehorse LGA and Metropolitan Melbourne at key years between 2001 and 2041. In 2041, the population density for Box Hill is expected to reach 15,440 residents per square kilometre, an increase of a factor of 2.4 on 2016 levels.

Table 3 Historical and projected population density (population/square kilometre)

Region	2001	2016	AAGR '01-16	2031	2036	2041	AAGR '16-41
Box Hill	3,915	6,530	+3.5%	11,170	13,000-14,310	15,440	+3.5%
Whitehorse LGA	2,285	2,625	+0.9%	3,025	-	3,360	+1.0%
Metro Melbourne	350	465	+1.9%	610	-	700	+1.7%

Further investigation into the ABS census data shows that Melbourne CBD's population density reached 15,550 residents per square kilometre in 2016. This means the population density of Box Hill MAC in 2041 will be at a similar level to Melbourne CBD only three years ago.

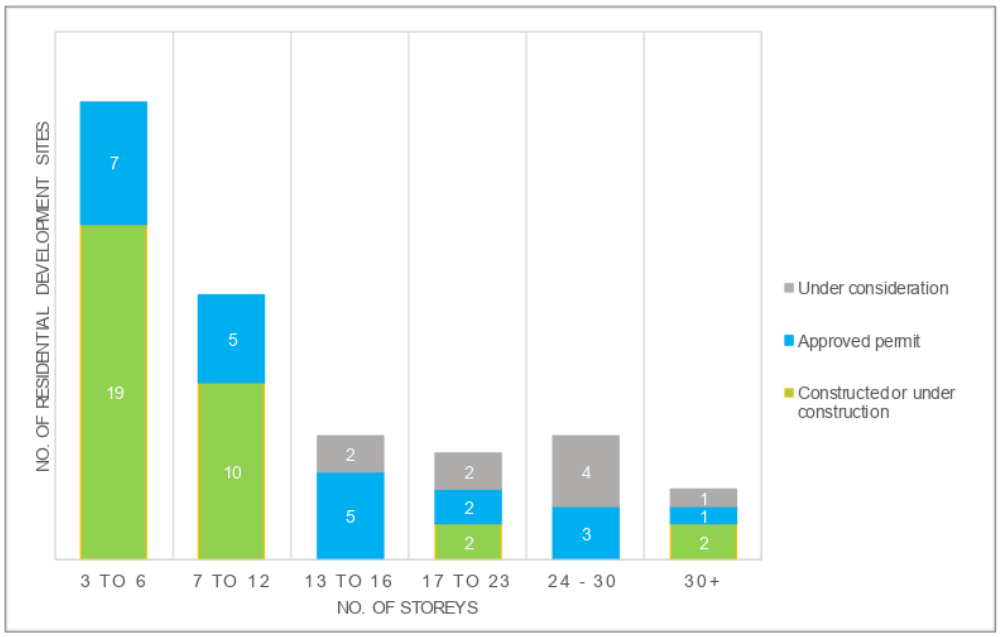
Box Hills population density in 20 years' time is forecast to be comparable to Melbourne CBD today

3.3 Significant development sites

Box Hill is currently experiencing an influx of residential development, with the majority of these projects being located within the core activity centre. Figure 3 highlights the number of development sites by height of development within the study area and the current project status.

Under the Planning Scheme, it is expected that these residential projects would result in approximately 6,800 additional dwellings with 7,300 car parking spaces and 3,100 bike parking spaces required. The average household size of Box Hill was 2.4 persons per dwelling based on 2016 census data. If this continues, the study area's population could increase by up to 16,000 residents following the completion of these projects.

An additional 6,800 dwellings, 7,300 car parking spaces and 3,100 bike parking spaces



Source: 2019 MGS Structure Plan

Figure 3 Number of development sites in Box Hill

Appendix A shows a spatial representation of all commercial and residential developments including the number of dwellings and site area within the Box Hill MAC and a detailed list of all residential developments.

3.4 Employment

Up to 11,100 new jobs by 2036

Box Hill is the largest activity centre in the City of Whitehorse with a diverse offering including retail, education, civic, medical, entertainment and commercial offices. As one of the nine MAC's designated under Plan Melbourne, Box Hill is supported by strong public and private transport networks and is anticipated to have significant growth and public investment in the future with the aim to provide a CBD type offering outside Melbourne CBD. From 2006 to 2016, Box Hill experienced significant growth in employment at 2.5 percent per year as demonstrated in Table 4. This AAGR pattern is expected to continue at a similar rate into the future.

Table 4 Historical and projected employment

Region	2006	2016	AAGR '06-16	2036	AAGR '16-36
Box Hill	14,600	18,500	2.4%	26,900 – 29,600	1.9 – 2.4%

Source: 2019 MGS Structure Plan

3.5 Education

Table 5 shows approximately 39 percent of residents living within Box Hill were undertaking some form of education with the majority of these being tertiary students. This is expected given its proximity to Box Hill Institute (750 m), Deakin University (3.5 km) and Swinburne University (7.5 km). These educational institutions are well connected to Box Hill by private and public transport networks, making Box Hill an attractive location for students to reside given its diverse offerings in housing and other amenities.

Table 5 Percentage of people attending an educational institution in 2016

Region	Percentage of people attending an educational institution
Box Hill	39.4%
Whitehorse LGA	32.4%
Metro Melbourne	41.1%

Source: 2016 Census Quickstats

Both Whitehorse LGA and Metropolitan Melbourne comprise similar proportions of preschool, primary and secondary school students as outlined in Table 6. However, the proportion of tertiary students varies significantly between Box Hill and Metropolitan Melbourne with almost twice as many tertiary students within Box Hill.

It is expected that the high percentage of tertiary students residing in Box Hill will continue as technical institutes and universities continue to expand with local and international student demand.

Table 6 Percentage of students attending various types of educational institutions in 2016

Region	Preschool	Primary	Secondary	Tertiary	Other	Not stated
Box Hill	2.8%	11.4%	13.0%	47.4%	6.4%	18.9%
Whitehorse LGA	5.5%	23.8%	20.2%	32.9%	3.5%	14.1%
Metro Melbourne	5.2%	25.1%	19.4%	26.1%	3.5%	20.5%

Source: 2016 Census Quickstats
Note – the Box Hill region defined in QuickStats is different from the MAC study area. The QuickStats study area is slightly larger especially to the south and east as shown in Appendix I .

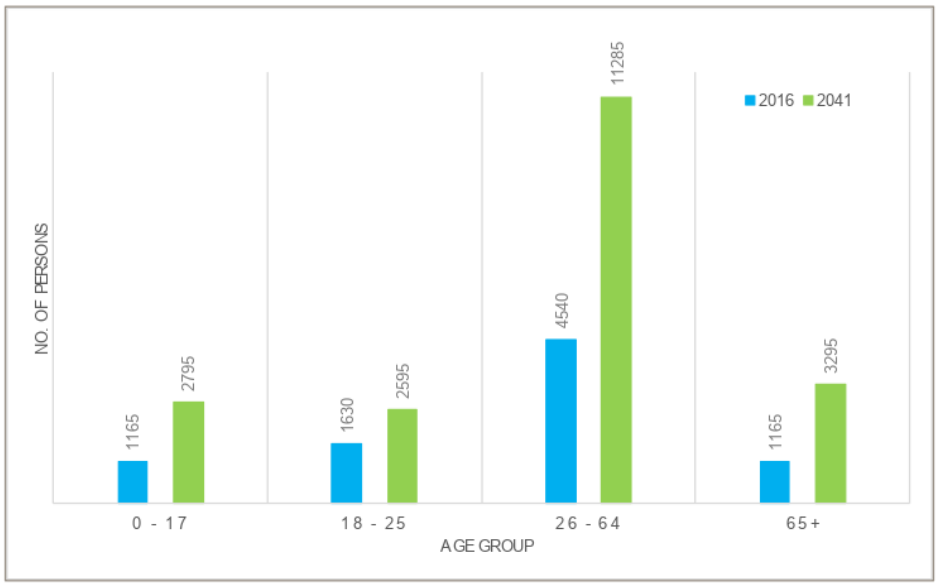
3.6 Age

The 2016 ABS census data shows that most of the Box Hill's population belong to the 'working' 26 – 64 age category and that by 2041 this is expected to increase more than by a factor of two. Similar population growth has been predicted for the minor (age 17 and below) and elderly aged population (age 65 and over) groups. Figure 5 shows the population forecast broken down by age.

Based on the information presented above, it is essential to consider VicRoads' safe system philosophy which underpins Victoria's strategic approach to road safety for the wider Box Hill MAC. Figure 4 shows the four pillars embedded within the safe system approach which includes safer speeds, safer road users, safer vehicles and safer roads.

Source: Towards Zero 2016/2020, Victoria's Road Safety Strategy 7 Action Plan

Figure 4 The four pillars of the Safe System

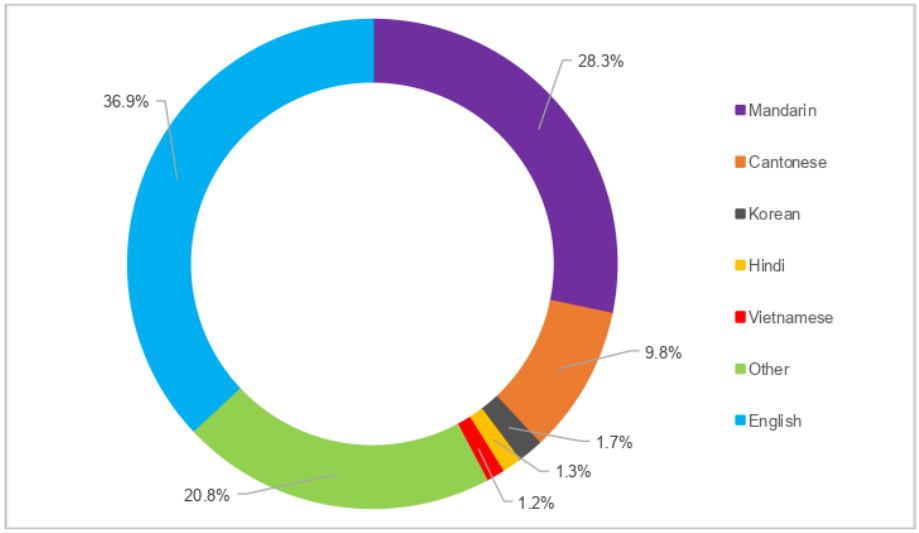


Source: Box Hill Narrative Report, SGS Economics and Planning, March 2018

Figure 5 Change in age profile between 2016 and 2041

3.7 Language

Box Hill is a culturally diverse activity centre with large proportions of residents born overseas, particularly the north-east and south-east of Asia. Figure 6 shows that more than 60 percent of the population speaks a language other than English at home, with Mandarin and Cantonese being the most common at 38 percent. This finding is relevant to potential application of wayfinding information within the study area.



Source: 2016 Census Quickstats

Figure 6 Primary languages spoken at home in Box Hill

3.8 Mode share

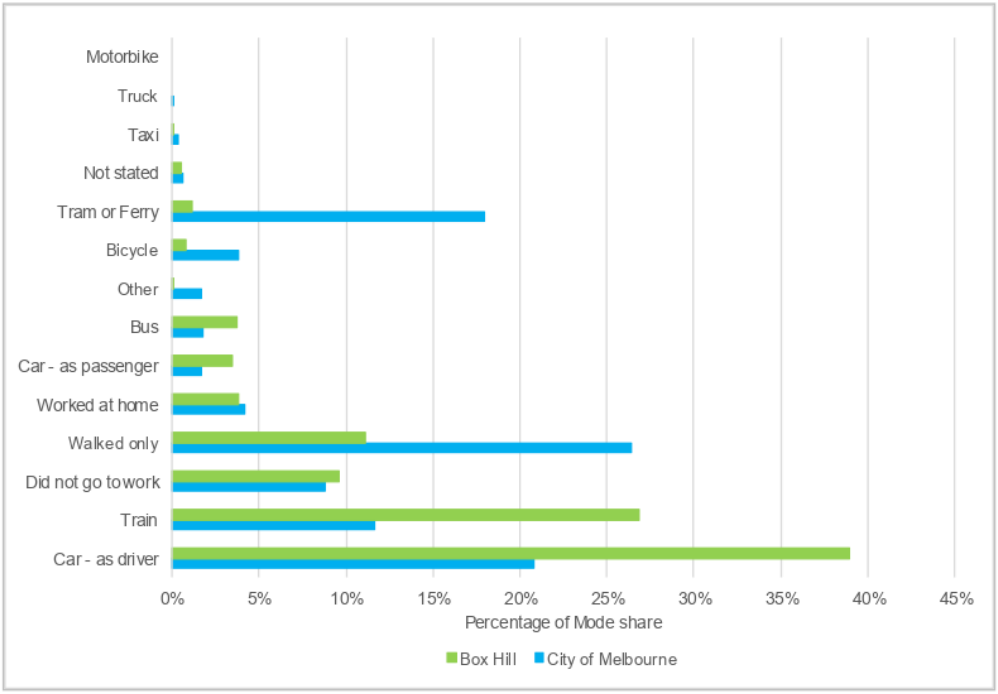
Figure 7 shows the journey to work travel modes for Box Hill relative to City of Melbourne. As Box Hill's population and employment grows into the future, mode share is likely to follow a similar trend to City of Melbourne where car mode share is lower, and a greater share of residents and employees travel by more sustainable travel modes such as by foot or bicycle.

43% of journeys to work undertaken in private vehicles, only 12% either walked or cycled to work

The mode share data findings show that:

- travel to work by private vehicle was the most preferred option (43 percent mode share) for residents of Box Hill
- a high proportion (27 percent mode share) of residents take the train to work, highlighting the relatively high number of patrons at Box Hill Station (see Section 4.4.1 Station Patronage)
- there is a relative low proportion of walk or cycle to work (12 percent combined mode share) in comparison with the City of Melbourne (30 percent combined mode share)
- a relative high proportion of residents take the bus to work (4 percent mode share) in comparison with the City of Melbourne (2 percent mode share).

A detailed mode share table is outlined within Appendix B.



Source: ABS Census Data

Figure 7 A comparison of journey to work mode share between Box Hill and the City of Melbourne in 2016

3.9 Key origins of those that work in Box Hill

Table 7 outlines the top eight origins of people who work in Box Hill in 2016 and the percentage of travellers who access Box Hill by private vehicle, public transport and active transport.

Most people who work in Box Hill live locally, yet active transport usage is low

The key findings show that:

- 52 percent of people who live and work within Box Hill still drive their private vehicle despite the furthest trip being only 2.8 kilometres. If this was reduced to 30 percent, approximately 260 private vehicles would be removed from the roads, most likely during peak hours.
- more than 60 percent of work-related trips to Box Hill were carried out in private vehicles by residents living within seven kilometres
- access by public transport is relatively low (less than 23 percent) considering Box Hill includes a train station, tram route 109, and over 10 bus services. This may be attributed to the high number of public and private car parking spaces (over 13,000) within the study area (refer to Section 4.9.2).

Table 7 Key origins of people who work in Box Hill in 2016

Origin (SA2 region)	Distance to Box Hill (approx.)	Private vehicle percentage	Public transport percentage	Active transport percentage	TOTAL
Box Hill	n/a	52.5%	7.3%	40.2%	1,137
Box Hill North	2.0 km	61.8%	11.1%	27.1%	639
Blackburn	2.5 km	79.1%	14.0%	6.9%	430
Doncaster	4.0 km	81.2%	16.1%	2.7%	329
Mitcham	6.0 km	76.0%	22.0%	2.0%	285
Ringwood East	11.0 km	77.0%	21.0%	2.0%	257
Doncaster East	5.5 km	90.4%	8.0%	1.6%	251
Balwyn	4.5 km	72.8%	22.8%	4.4%	250

Source: ABS Census Data

A spatial representation of key origins of people who work in Box Hill is provided in Appendix C.

3.10 Key destinations from Box Hill

Table 8 outlines the top eight destinations of people who travel to work from Box Hill in 2016 and the percentage of travellers who egress Box Hill by private vehicle, public transport and active transport. The information shows that:

- a high proportion (83 percent mode share) take public transport to Melbourne and Docklands
- public transport mode share to Southbank and Richmond is significantly less than Melbourne and Docklands
- only 30 percent of people travel by active or public transport to Burwood despite it only being three kilometres away
- no one cycles to Clayton and Southbank despite these suburbs being an equal or less distance from Box Hill than Melbourne, Docklands and Richmond.

Table 8 Key destinations of people who travel to work from Box Hill in 2016

Destination (SA2 region)	Distance from Box Hill (approx.)	Private vehicle percentage	Public transport percentage	Active transport percentage	TOTAL
Box Hill	n/a	52.5%	7.3%	40.2%	1,137
Melbourne	14.5 km	15.2%	83.4%	1.4%	939
Docklands	15.5 km	14.8%	83.1%	2.1%	236
Richmond	12.0 km	67.6%	29.6%	2.8%	179
Burwood	3.0 km	69.8%	14.5%	15.7%	172
Blackburn	2.5 km	84.1%	13.8%	2.1%	138
Southbank	15.0 km	45.2%	54.8%	-	135
Clayton	10.5 km	87.7%	12.3%	-	122

Source: ABS Census Data

Most workers are destined for Melbourne or locally with Box Hill

A spatial representation of key destinations of people who travel to work from Box Hill is provided in Appendix D.

4.0 Transport network

The following section discusses the transport network within Box Hill, including movement and place, pedestrians, cyclists, rail, buses, trams, private vehicles, road safety, parking and future transport infrastructure.

4.1 Movement and Place

Late last year, Whitehorse City Council participated in a Movement and Place Trial with VicRoads. During the trial, draft Strategic Focus Scores (SFS) for movement aspects were established for Box Hill as shown in Figure 8. The larger the SFS pie chart corresponds to the size of the problem and the SFS colour shows which transport mode needs to be addressed.

VicRoads draft movement & place assessment shows most of the problems in Box Hill are pedestrian related

The SFS movement results shows that:

- most of the issues that need to be addressed with the MAC are pedestrian related
- Station Street has the largest movement issues within Box Hill, primarily associated with pedestrian and cycling
- Whitehorse Road major issues are generally within the MAC and are linked to pedestrian issues at the intersections of Station Street, Nelson Road and Elgar Road
- Elgar Road has moderate traffic issues.

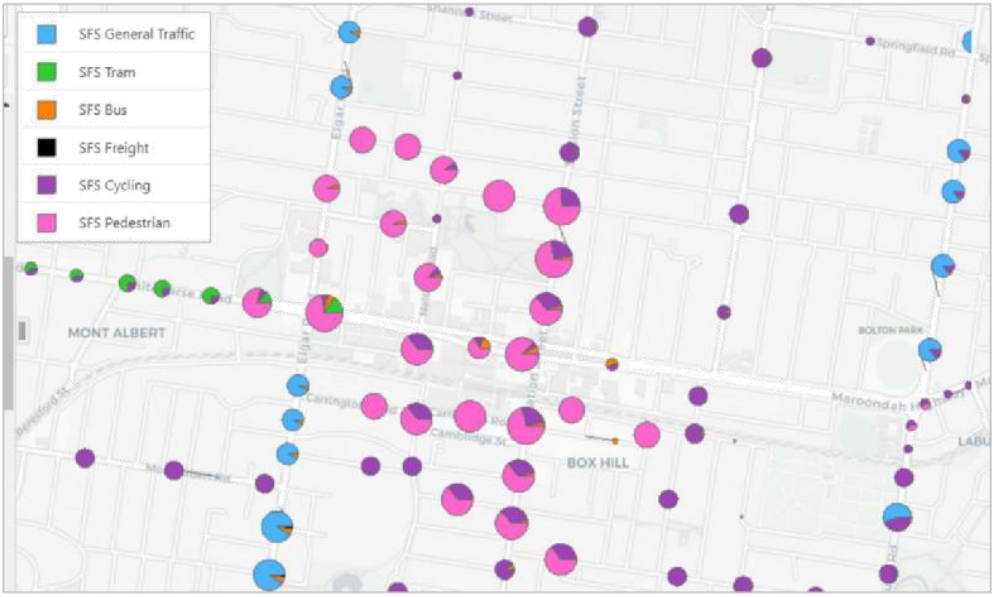
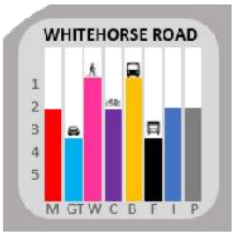


Figure 8 Draft Strategic Focus Score for movement within Box Hill

Key roads within Box Hill MAC have been classified under the Movement and Place Framework as shown in Appendix E. It should be noted this is a draft version developed by VicRoads and is subject to change. The classifications outline the levels of priority for place, interchange and movement broken down by transport mode. Whitehorse Road for example is categorised as Movement (M) 2, Place (P) 2 and Interchange (I) 2. In terms of movement, the top priorities are walking (W1) and bus (B1) movements followed by cyclists (C2). General traffic and freight movements are not top priorities for Whitehorse Road with GT3 and F3 ratings.



VicRoads top priorities for Whitehorse Road are walking and bus movements

4.2 Pedestrians

Key pedestrian generators in Box Hill include the shopping centre, transport hub, Box Hill Institute campuses, Box Hill Hospital and medical precinct, the civic precinct and the primary and secondary office precincts as shown in Figure 9. These generators are mainly located to the west, north and east of the Box Hill interchange.

Source: Whitehorse TravelSmart Map 2018

Figure 9 Existing places of interest within Box Hill

Table 9 highlights the pedestrian demand at key intersections within Box Hill MAC. This data shows high volumes of pedestrian movement are surrounding the activity centre core, including Box Hill Mall

and Nelson Road medical and education precinct experiences high levels of pedestrian movement. Levels of pedestrian movement are expected to increase due to new commercial and residential development occurring along Whitehorse Road.

Table 9 Pedestrian demands at intersections during the two hour morning peak

Intersection	North	East	South	West	Total
Whitehorse Road and Station Street	366	104	301	150	921
Nelson Road and Thames Street	32	124	70	349	575
Thurston Street and Oxford Street and Surry Drive and Brougham Street	21	132	2	51	206
Linsley Street and Bank Street	93	60	-	23	176
Elgar Road and Mont Albert Road	24	23	0	31	78

Source: Survey conducted by Matrix on 5th March 2019 7am to 9am
Note: "North" denotes pedestrian movement in east-west direction at the northern leg

For further detail on the pedestrian volumes at these intersections, refer to Appendix F.

Vicinity Centres installed people counters in late 2018 at various entry points. They have provided visitation data for Box Hill South and Box Hill North shopping centres for the first three months of 2019. The counters show that:

- approximately 18,700 people entered the northern precinct via Main Street, Market Street and Prospect Street entrances on an average day
- approximately 26,700 and 9,500 people entered the southern precinct via Main Street and Carrington Road respectively on an average day.

Thousands of pedestrians access Box Hill North and Box Hill South shopping centres every day

A list of issues and constraints in relation to pedestrian accessibility and mobility has been compiled based on a review of background literature and observations made on site. These include:

- High levels of pedestrian activity observed along Carrington Road, Main Street, Market Street, Station Street (between Ellingworth Parade and Whitehorse Road), and Whitehorse Road (between Station Street and Clisby Court)
- Moderate levels of pedestrian activity observed along Bank Street, Nelson Road (between Whitehorse Road and Thames Street), Station Street (north of Whitehorse Road), and Whitehorse Road (between Station Street and Linsley Street)
- Low levels of pedestrian activity observed along Elgar Road, Hopetoun Parade, Poplar Street, and Prospect Street
- Crossing delays on Whitehorse Road, specifically adjacent Market Street and Station Street intersections
- Challenging access to the tram stop and the open space within the central median along Whitehorse Road due to long delays at signals, high vehicle demands and safety crossing concerns
- Lack of connectivity between major pedestrian attractors in the MAC
- General lack of permeability throughout the MAC
- Difficulty of access to the bus interchange by pedestrians and disabled passengers

- Lack of consistent wayfinding within the MAC
- High frequency of pedestrians jaywalking along Station Street, in preference to using the underpass and designated signal crossings
- Clutter (excessive signage, wheelie bins etc) on footpaths, reducing effective width for pedestrians
- Tactile pavement inconsistently provided at crossings
- Obstructed visibility at the pedestrian crossing on Nelson Road, due to parked cars in the immediate vicinity of the crossing
- A lack of well-located crossings along Nelson Road and Arnold Street, as pedestrians were observed to cross away from the formal crossings that are provided
- Poor provision for pedestrians at the five-leg Nelson Road and Thames Street roundabout, given the surrounding land uses.

A spatial representation of the pedestrian movement patterns within Box Hill and daily average pedestrian counts at Box Hill hopping centre is provided in Appendix F.

Additional information relating to pedestrians is also discussed in Section 4.3.3 Interchange and Section 4.8 Road Safety.

4.3 Cyclists

The Victorian Cycling Strategy 2018-28 has a goal to increase the number, frequency and diversity of Victorians cycling for transport by:

- investing in a safer, lower-stress, better connected network
- making cycling a more inclusive experience

The Strategic Cycling Corridors are the most important routes for cycling for transport and link up important destinations include the central city, national employment and innovation clusters, major activity centres and other destinations of metropolitan or state significance.

A key action in the Strategy is to review the Strategic Cycling Corridor network in conjunction with council and other key stakeholders. This review is currently in progress, with the latest draft network being provided to council for comment in February 2019. Whitehorse City Council are currently working closely with the Department of Transport (DoT) to review these links. DoT aim to finalise the review mid-year.

Appendix G shows a map of proposed strategic cycling corridors for Maroondah, Monash and Whitehorse City Councils. These proposed routes are in draft and are subject to changes.

Figure 10 shows the proposed strategic cycling corridors within Box Hill including:

- off-road access from the south along Surrey Park
- an informal bike route from the north along Nelson Road (note – no off-road or on-road cycling treatments currently exist)
- off-road access from the east with a shared use path located north of the railway line which connects to Dorking Road
- on-road bike lanes from the west along Mont Albert Road. On the east side of Elgar Road, Mont Albert Road meets the start of the former quarry site north of Surrey Park. No pedestrian or cyclists can access this site due to the existing wire fence.

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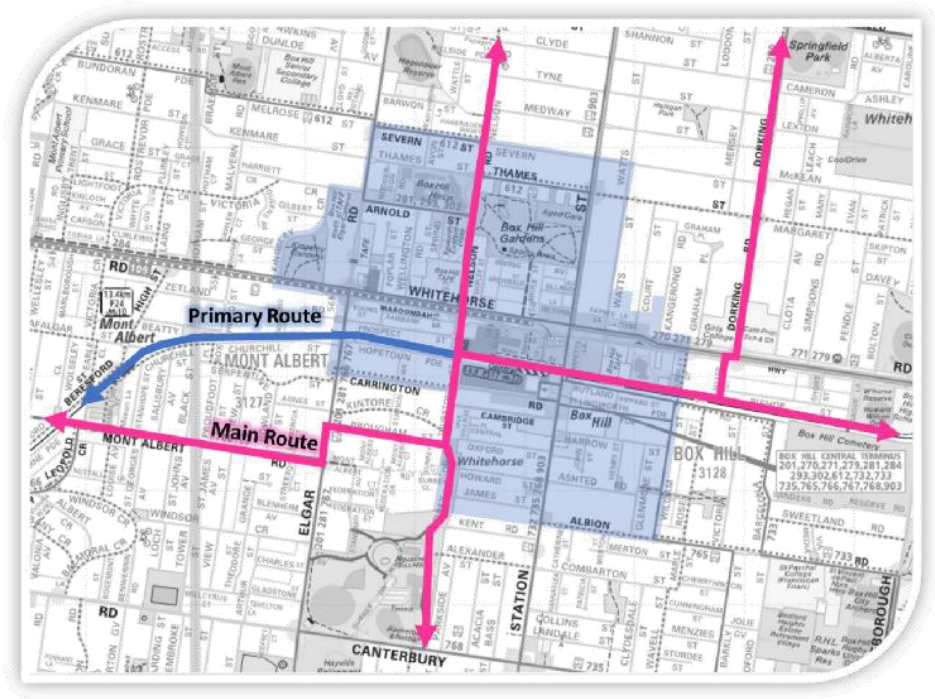
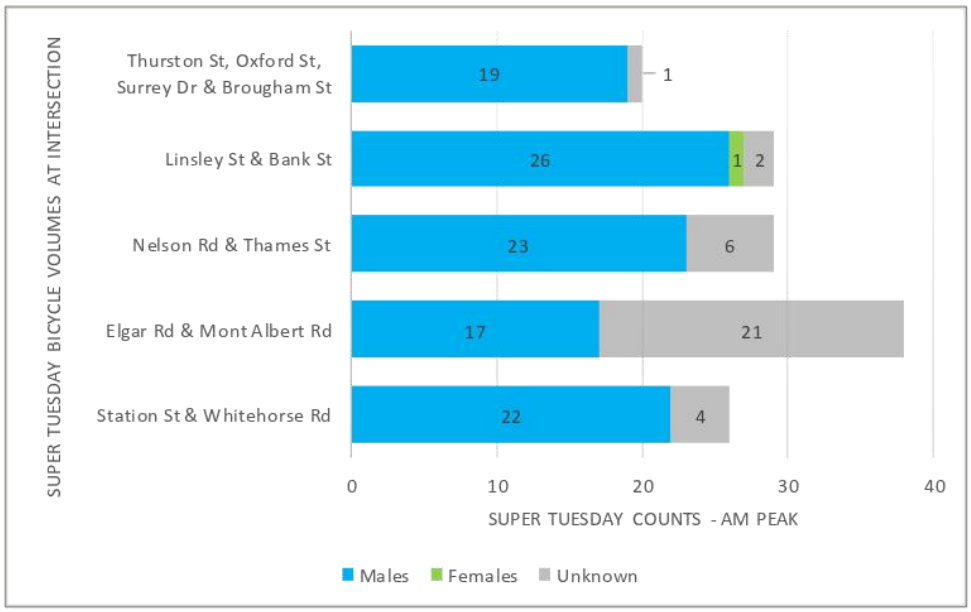


Figure 10 Strategic Cycling Corridors within Box Hill

Bicycle survey data obtained from Whitehorse City Council show that bicycle volumes are relatively low given that the Box Hill MAC consists of key attractors such as the shopping centre, public transport stops, medical and educational institutes. This is reflected in the cycling mode share of less than one percent as outlined in Figure 7.

Figure 11 outlines super Tuesday bicycle volumes by gender for the top five intersections within Box Hill MAC. Across these intersections within the study area over 100 male cyclists and only one female cyclist was recorded in the Super Tuesday survey conducted by Matrix. This could be attributed to the level of protection and stressful nature of the existing cycling network within Box Hill. To increase female participation, it is essential to provide a stress-free cycling network with greater segregation and physical separation from general traffic.

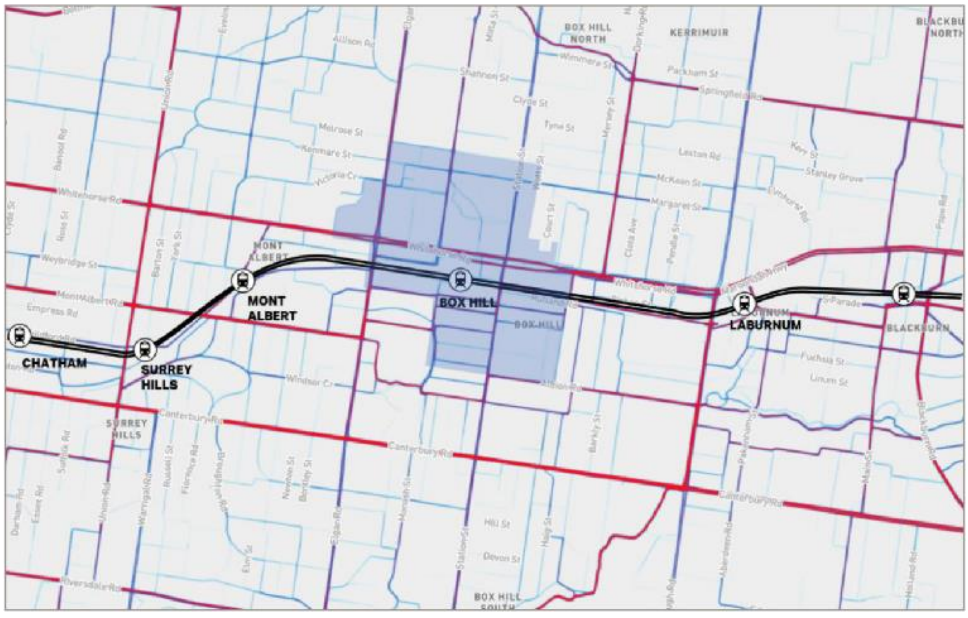
Over 100 male cyclists and only one female cyclist was recorded in the Super Tuesday Survey within Box Hill



Source: Survey conducted between 7am and 9am on the 5th of March 2019 by Matrix

Figure 11 Super Tuesday bicycle volumes

Figure 12 shows a heatmap of cyclist demand obtained from STRAVA. Based on this information, Whitehorse Road and Mont Albert Road is preferred along the east-west direction. Elgar Road and Nelson Road appear as the preferred north-south routes yet to a lesser extent relative to the difference between Whitehorse Road and Mont Albert Road.



Source: www.strava.com

Figure 12 Cyclist demand

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A list of issues and constraints in relation to cyclist movement has been compiled based on a review of background literature and observations made on site:

- cycle use in the study area is currently observed to be low due to the speed and volume of traffic on arterial roads and lack of cycling facilities;
- there is limited secure bicycle parking available within the Box Hill Pedestrian Mall;
- although bicycle signage is consistently provided, there appears to be a lack of continuous bicycle lanes or shared use paths;
- there is little or no bicycle priority at intersections or along major roads; and
- north-south routes are limited by the rail line especially along Nelson Road.
- In accordance with Whitehorse Cycling Strategy 2016, there are opportunities to provide a bicycle network throughout the MAC. Cycling paths and facilities should be provided as per Principal Bicycle Network Design Guidelines including:
  - dedicated physically separated bicycle lanes where possible;
  - smooth pavement surfaces on bike lanes;
  - advanced start lines and storage boxes at signalised intersections;
  - management of traffic signal operations to favour cyclists;
  - avoidance of angle or perpendicular parking along bike lanes;
  - off-street paths wide enough for safe shared use with pedestrians; and
  - careful design of intersections including green pavements for bike lanes, particularly where movements are complex and lane alignments are confusing.

4.4 Rail

Box Hill Station is a premium station and is serviced by the Belgrave and Lilydale metropolitan rail lines. This station consists of four platforms, with platform 4 used for outbound trains during peak hours, platforms 2 and 3 being used by all trains servicing this station, and platform 1 not being used at this point of time.

4.4.1 Station patronage

Box Hill was ranked ninth (based on weekday entries) across all stations in Melbourne's metropolitan rail network with average weekday entries surpassing several popular stations including Sunshine and Dandenong, as highlighted in Table 10. Excluding the five train stations within Melbourne CBD, only South Yarra, Footscray and Caulfield stations exceed patronage levels at Box Hill station.
Box Hill station's current patronage levels along with its significant population and employment growth reinforces the importance of Box Hill station in Melbourne's metropolitan rail network and the need to support growth and enhancement of this MAC.

Ninth busiest station across Melbourne

Table 10 Average weekday, Saturday and Sunday entries

Ranking	Station	Weekday entries	Saturday entries	Sunday entries
1	Flinders Street	92,515	53,680	41,710
2	Southern Cross	66,474	24,460	19,640
3	Melbourne Central	53,831	26,950	20,610
4	Parliament	38,888	7,930	5,910
5	Flagstaff	18,820	0	0

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Ranking	Station	Weekday entries	Saturday entries	Sunday entries
6	Footscray	18,197	7,450	4,990
7	South Yarra	15,808	7,800	5,260
8	Caulfield	14,609	6,750	4,630
9	Box Hill	12,412	6,250	4,490
10	Richmond	11,160	9,900	6,720
11	Glenferrie	10,349	3,420	2,420
12	Dandenong	7,761	4,340	3,010
13	Sunshine	7,089	2,650	1,910
14	Oakleigh	6,581	3,920	2,860
15	Camberwell	6,562	3,390	3,270
16	Huntingdale	6,183	1,950	1,260
17	Watergardens	5,852	1,790	1,250
18	Williams Landing	5,851	1,050	700
19	Ringwood	5,730	3,090	2,110
20	Essendon	5,690	2,480	1,560

Source: Weekday station entries data obtained from the Department of Transport based on 2017 – 2018 data. Saturday and Sunday entries is based on 2013/14 data.

4.4.2 Frequency and operating hours

Both the Belgrave and Lilydale lines provide high frequency services with express and local services operating for most of the weekday. Table 11 highlights the first and last train services to operate from Box Hill along their respective lines, and Table 12 outlines the service frequencies provided during weekdays and weekends. In addition, hourly night time services operate to / from Box Hill on weekends.

Table 11 Box Hill station operating hours

Railway line	Weekday
To City	5:05 am to 11:51pm
To Belgrave/Ringwood	5:28am to 12:39am

Table 12 Train service headways at Box Hill Station

	Train headways (min)				
Direction	AM Peak	Inter peak	PM peak	Saturday peak	Sunday
To City	2-6	15	2-12	10	10
To Belgrave	17-32	30	8-17	20	20
To Lilydale	8-17	30	8-15	20	20

Source: PTV website

It should be noted that train frequencies to stations west of Ringwood are higher due to many services terminating at Ringwood.

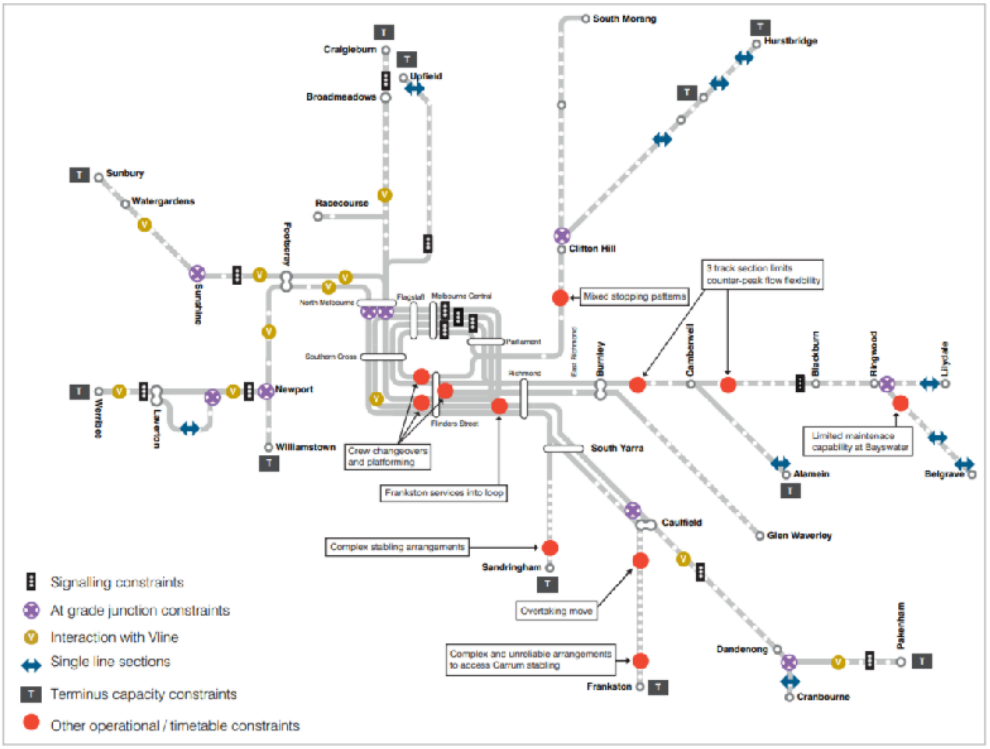
Based on *PTV Network Development Plan* published in December 2012, the future planned changes to train headways at Box Hill station have been outlined as follows:

- Peak:
  - Train headways are not planned to improve between now and 2030 (no additional services).
  - Train headways will slightly improve in 2030 and again in 2038, with three additional services planned for 2030 and a further three in 2038.

- Off-peak
  - Train headways are not planned to improve between now and 2038 (no additional services).

No plans to improve headways between now and 2030

As shown in Figure 13, the presence of a three-track section between Hawthorn and Canterbury limits counter peak flow flexibility for both the Belgrave and Lilydale lines.



Source: Network Development Plan, PTV December 2012

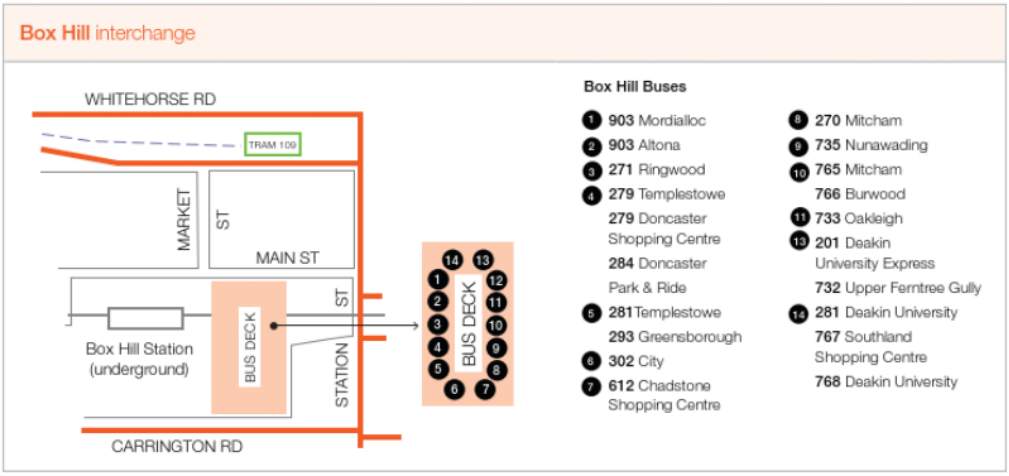
Figure 13 Key network constraints

4.4.3 Interchange

A summary of observations from the site visit conducted at the interchange on 14 February 2019 is as follows:

- effective width for waiting passengers is narrow, making it difficult for passengers to pass through a queue of people boarding a bus.
- accessibility for people with mobility difficulties is a challenge from the top deck of the bus terminus to the underground train station.
- signage from the shopping centre and wayfinding between the interchange and other modes of transport are unclear.
- the general state of the interchange raises concerns regarding safety and security, cleanliness, amenity and lighting.

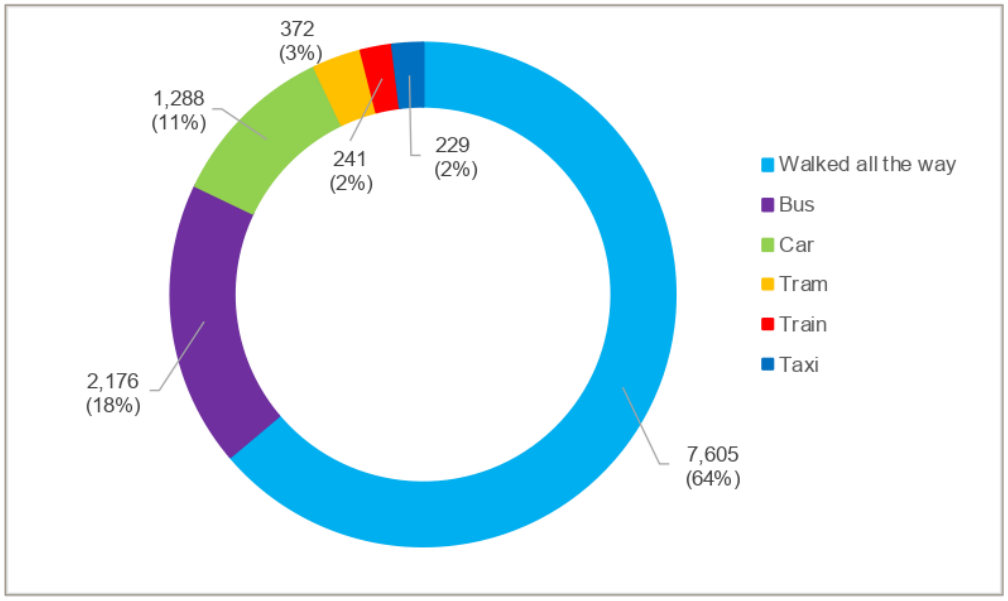
Figure 14 shows a diagrammatic layout of the train-bus-tram interchange system at Box Hill. Box Hill bus interchange is situated on the top level of Box Hill Shopping Centre. The interchange provides 14 bus bays arranged in 'saw tooth' layout with one-way circulation in the anti-clockwise direction.



Source: Whitehorse TravelSmart Map 2018

Figure 14 Box Hill Interchange

Figure 15 shows how station patrons access the station. The data shows that approximately 80 percent of station patrons arrived either by walking or by bus on weekdays. This highlights the significant level of pedestrian activity and bus to train transfers at the station. Although survey data does not indicate any passengers cycling to the station, it was observed during the site visit that the number of bicycle hoops placed beyond the ticket gates at the station were insufficient for the level of bicycle demand.



Source: DOT website

Figure 15 Weekday entry by access mode in 2015/16

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Walking to Box Hill train station

Being centrally located in a residential area, Table 13 shows that Box Hill train station was ranked 11th across all stations in Melbourne's metropolitan rail network based on the average number of commuters who had walked to their respective train stations. The 7,600+ daily walking trips to the station and other walking trips associated with other land uses, including those within the shopping centre, highlights the importance of walking infrastructure in Box Hill.

Over 7,600 commuters walk to Box Hill train station each weekday

Table 13 Average weekday entries at Box Hill Station - Walking

Ranking	Station	Weekday entries: Walking to station 2015-16
1	Flinders Street	70,926
2	Melbourne Central	46,485
3	Southern Cross	45,058
4	Parliament	32,951
5	Flagstaff	16,956
6	South Yarra	11,730
7	Footscray	11,441
8	Glenferrie	10,025
9	Caulfield	9,919
10	Richmond	7,780
11	Box Hill	7,605
12	Camberwell	5,020
13	Prahran	4,173
14	Clayton	3,806
15	Springvale	3,648

Source: Access egress mode share by station obtained from the Department of Transport based on 2015 – 2016 data

Bus to Box Hill train station

As the Box Hill train station is located within the bus interchange which is a terminus for 15 bus routes, approximately 2,100 commuters arrived at the train station by bus. Hence it was ranked fourth across all stations in Melbourne's metropolitan rail network, greater than both Dandenong and Southern Cross, as outlined in Table 14. This emphasises the importance of the bus interchange and how it allows public transport users to transfer at this location between various transport modes.

Fourth busiest bus interchange in Melbourne

Table 14 Average weekday entries at Box Hill Station - Bus

Ranking	Station	Weekday entries: Bus to Train 2015-16
1	Huntingdale	3,108
2	Dandenong	2,633
3	Southern Cross	2,404
4	Box Hill	2,176
5	Oakleigh	2,152

Source: Access egress mode share by station obtained from the Department of Transport based on 2015 – 2016 data

Tram to Box Hill train station

Table 15 shows that less than 400 commuters use the tram to get to Box Hill train station. Train stations like Flinders Street, Melbourne Central, Parliament and Southern Cross are well serviced by various tram routes with better combined peak frequencies as opposed to Tram 109. The key contributor could be the lack of clear pedestrian access between the tram stop on Whitehorse Road and the train station. It is noteworthy to mention that the following table highlights the number of Box Hill Station patrons who arrived at the station via tram and not the overall number of tram users within Box Hill MAC.

Table 15 Average weekday entries at Box Hill Station - Tram

Ranking	Station	Weekday entries: Tram to Train 2015-16
1	Flinders Street	17,114
2	Melbourne Central	5,666
3	Southern Cross	5,020
4	Parliament	4,830
5	South Yarra	1,397
6	Footscray	1,343
18	Jolimont	379
19	Essendon	375
20	Box Hill	372
21	Glenhuntly	369

Source: Access egress mode share by station obtained from the Department of Transport based on 2015 – 2016 data

Car to Box Hill train station

Approximately 11 percent of station patrons arrived by car at Box Hill train station as shown in Table 16. While 11 percent is relatively low, Table 16 highlights several other stations with lower car to train mode shares such as Camberwell and Footscray Station.

Footscray Station shows 6.6 percent mode share and only two years earlier, the mode share was over 15 percent. Due to the Regional Rail Link (RRL) project and the relocation of commuter car parking to West Footscray Station, car mode share significantly decreased despite an increase in Footscray Station patronage. This example highlights the possibilities of reduced commuter parking yet increased station activity and patronage.

approx. 11% of station patrons arrived by car at Box Hill train station

Table 16 Average weekday entries at Box Hill Station - Car

Ranking	Station	Weekday entries: Car to Train Percentage Mode Share 2015-16
17	North Melbourne	3.2%
31	Footscray	6.2%
32	Northcote	6.6%
48	Camberwell	9.5%
54	Box Hill	10.8%
111	Dandenong	20.4%
112	Sunshine	20.7%
189	Frankston	40.8%

Source: Access egress mode share by station obtained from the Department of Transport based on 2015 – 2016 data

Train to Train transfer

Box Hill train station was ranked 20th across all stations in Melbourne's metropolitan rail network for train to train transfers, as shown in Table 17. As express services along the Belgrave and Lilydale lines stop at Box Hill, fair number of commuters transfer from an express service to a stopping service or vice versa at this station.

Table 17 Average weekday entries at Box Hill Station - Train

Ranking	Station	Weekday entries: Train to Train 2015-16
1	Flinders Street	31,967
2	Richmond	14,274
3	Southern Cross	8,167
4	Parliament	4,922
5	Caulfield	4,426
6	North Melbourne	3,989
7	Melbourne Central	3,446
8	South Yarra	3,333
9	Footscray	3,267
10	Flagstaff	1,352
11	Newport	1,296
12	Camberwell	1,281
13	Ringwood	725
19	Laverton	280
20	Box Hill	241
21	Glenferrie	230

Source: Access egress mode share by station obtained from the Department of Transport based on 2015 – 2016 data

4.4.4 Rail crowding

Metropolitan train load standard surveys are conducted annually to compare passenger loads against the benchmark standards of capacity. The surveys were conducted over 12 weekdays in May 2018. Surveying times were between 6.30 am and 12.00 pm for city-bound services and 2.00 pm and 7.00 pm for outbound services. Based on this survey data, the AM peak was between 7.01 am and 9.30 am and PM peak was between 3.31 pm and 7.00 pm. The results are used to determine when and where extra services may be required to reduce crowding.

Table 18 compares the Ringwood corridor and network wide survey results for both the AM and PM peaks. The results show that both the Ringwood corridor and network wide services had capacity breaches above the benchmark. While the Ringwood corridor performed slightly better than network wide, results of 5 percent and 4 percent as shown in still shows rail capacity issues along the Ringwood corridor.

Table 18 Train load surveys results in May 2018

Railway line	Period	Number of services	Services above benchmark	Percentage of services above benchmark
Ringwood corridor	AM Peak	40	2	5%
	PM Peak	49	2	4%
Network wide	AM Peak	256	25	10%
	PM Peak	310	15	5%

Source: Metropolitan Train Load Standards Survey Report, Transport for Victoria, May 2018

Management of rail crowding levels plays an important role in encouraging sustainable public transport use among local residents and those who work within the MAC. If train services operate above the benchmark standard, it can lead to poor passenger experience and potentially loss in rail commuters.

Figure 16 shows the train load survey results for the last three years. Previous year results are similar to those in 2018.

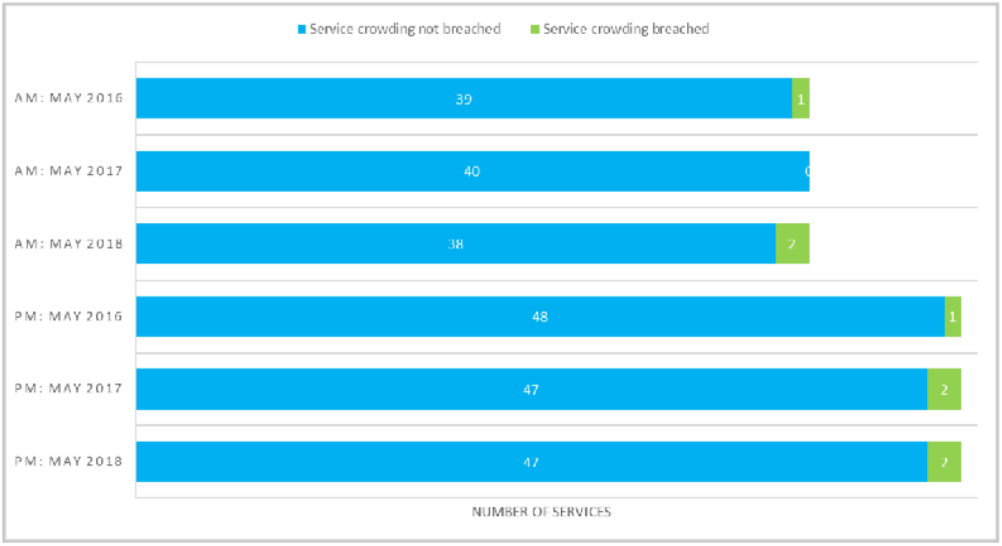


Figure 16 Historical load survey results for the Ringwood corridor

Rail crowding still occurs during peak periods. Without additional services, crowded trains will become a more common occurrence

4.5 Buses

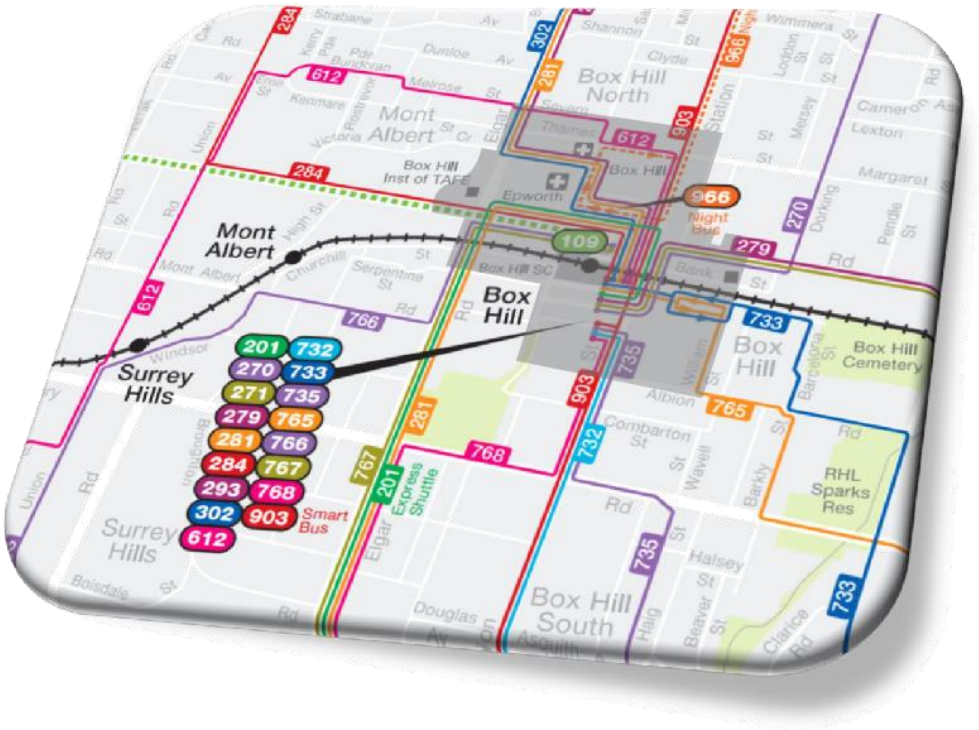
The bus interchange in Box Hill is located on the top level of Box Hill Shopping Centre. It serves as a terminus for 15 bus routes except for routes 281 and 902 (smart bus service). Bus access to the interchange is via a ramp from Station Street. Buses heading north and east leave the bus interchange via the ramp and turn left onto the Station Street. Buses heading toward the south and west leave the interchange via a ramp onto Carrington Road.

A list of issues and constraints in relation to bus delays has been compiled based on a review of background literature and observations made on site. Key turning movements where buses experience delays due to traffic congestion, predominately during peak periods, include:

- the right turn from Station Street into the access ramp, as the right turn lane is used by both buses and private vehicles
- the right turn from Carrington Road to Station Street (bus service 732, 735 and 768), as Carrington Road is used heavily by taxis, pedestrians and private vehicles.
- the right turn from Whitehorse Road into Station Street (bus service 201, 281, 284, 293, 302, 766, 767).

While the key turning movements experiencing delays have been highlighted above, other movements and services also experience delays in times of high demand due to the level of bus activity and lack of bus priority measures.

Figure 17 highlights all the bus services which traverse the study area.



Source: adapted from PTV public transport map

Figure 17 Existing bus network in Box Hill (study area shown in medium grey)

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Table 19 outlines the bus headways and patronage levels that operate from Box Hill MAC. The table has been ranked from the highest level of service to the lowest based on weekday peak frequencies. The following conclusions could be drawn based on this information:

- bus routes 732, 733 and 767 had at least 3,000 average daily riders, however these services operate every 15-20 minutes during peaks and 20-30 minutes during inter-peak periods. Bus 279 on the contrary only had 1,900 average daily riders yet operates at 15-minute headways during both peak and inter-peak periods. Despite their higher patronage numbers, bus routes 732, 733 and 767 terminate operations by 9.20 pm during weekdays and earlier during the weekends.
- bus routes 612 and 735 had at least 1,100 average daily riders, however these services operate every 25-30 minutes during peaks. Many other bus services with similar patronage levels operate at 20-minute headways during peaks.
- most services operate weekday peak hour services with headways of approximately 10-20 minutes. However, the headways drop to 30-60 minutes during weekday interpeak and weekend periods.
- only three services operate after 11 pm on weekdays, and only one on Saturday evenings. The last Sunday service is 9.25 pm.

Table 19 Bus route headways

		Monday - Friday				Saturday		Sunday	
Service	Destination	Peak Freq. (min)	Last Service	Interpeak Freq. (min)	Average daily patronage 2013 - 2014	Last service	Typical Freq. (min)	Last Service	Typical Freq. (min)
903	Altona	10	11.00 pm	15	19,310	12.30 am	15	9.25 pm	30
279	Doncaster SC	15	12.15 am	15	1,912	7.55 pm	30	9.15 pm	60
732	Upper Ferntree Gully	15	9.20 pm	20	3,728	9.00 pm	30	9.05 pm	60
733	Oakleigh	15	9.15 pm	30	3,637	9.00 pm	30	8.50 pm	60
270	Mitcham	20	11.15 pm	20	1,456	7.25 pm	30	5.55 pm	60
302	City	20	10.40 pm	30	2,405	10.40 pm	30	8.15 pm	60
271	Ringwood	20	10.30 pm	30	1,171	8.00 pm	30	No service	
201	Deakin University	20	9.55 pm	20	NA	No service		No service	
765	Mitcham	20	9.20 pm	35	1,827	9.20 pm	30	8.50 pm	60
767	Southland	20	9.00 pm	30	3,441	9.00 pm	30	9.05 pm	40
293	Greensborough	20	8.50 pm	30	1,101	6.10 pm	60	6.10 pm	120
281	Templestowe	20	6.15 pm	30	1,524	5.55 pm	60	No service	
612	Chadstone	25	7.05 pm	30	1,333	5.40 pm	60	No service	
735	Nunawading	30	9.00 pm	30	1,186	9.20 pm	60	8.55 pm	60
766	Burwood	30	7.00 pm	30	240	6.25 pm	40	No service	
284	Doncaster Park & Ride	30	6.05 pm	30	267	5.55 pm	60	No service	
768	Deakin University	50	6.50 pm	50	NA	No service		No service	
966	City (Night Bus)	No service			NA	3.50 am	30	4.50 am	30

Source: PTV website (as of 7th March 2019)

Table 20 highlights the daily bus boarding specific to Box Hill and has been ranked based on weekday patronage volumes. When compared with Table 19, key findings include:

- routes 903, 279,270, 733 and 732 are the most popular bus routes among Box Hill residents, these services operate with typical headways of approximately 10-20 minutes during weekdays;
- however, weekend bus patronage drops significantly for routes 279, 270, 733 and 732, this could be contributed to headways of approximately 30 – 60 minutes;
- route 966 which provides direct link to Melbourne CBD is heavily underutilised by Box Hill residents due to poor weekend headways. Residents are most likely to take the train or tram to the city as they operate every ten minutes during weekends; and
- routes 612, 766, 284 and 768 were the least popular bus routes amongst Box Hill residents with typical weekday and weekend headways of 30 and 60 minutes respectively.

Table 20 Bus boarding's within Box Hill

			Daily Patronage		
Service	Destination	Weekday Peak Freq. (min)	Weekday	Saturday	Sunday
903	Altona	10	2,143	1,380	1,049
279	Doncaster SC	15	889	340	219
270	Mitcham	20	853	199	131
733	Oakleigh	15	846	526	373
732	Upper Ferntree Gully	15	745	426	258
767	Southland	20	544	521	413
302	City	20	484	306	181
765	Mitcham	20	423	305	143
281	Templestowe	20	379	239	-
735	Nunawading	30	350	167	132
293	Greensborough	20	299	135	50
271	Ringwood	20	274	117	-
201	Deakin University	20	197	-	-
612	Chadstone	25	175	37	-
766	Burwood	30	165	61	2
284	Doncaster Park & Ride	30	87	57	-
768	Deakin University	50	46	-	4
966	City (Night Bus)	No service	1	1	

13 out 18 bus services in Box Hill ranked in the top 100 for patronage out of 260 in metropolitan Melbourne

Figure 18 highlights the level of service (LOS) for all bus routes near Box Hill during the AM peak period. The results show that those within walking distance of Elgar Road, Whitehorse Road and part of Station Street have a high LOS. Most bus routes have a medium LOS with three to six services operating during the AM peak period. A few disparate routes have a low LOS most notably south-west of Box Hill.

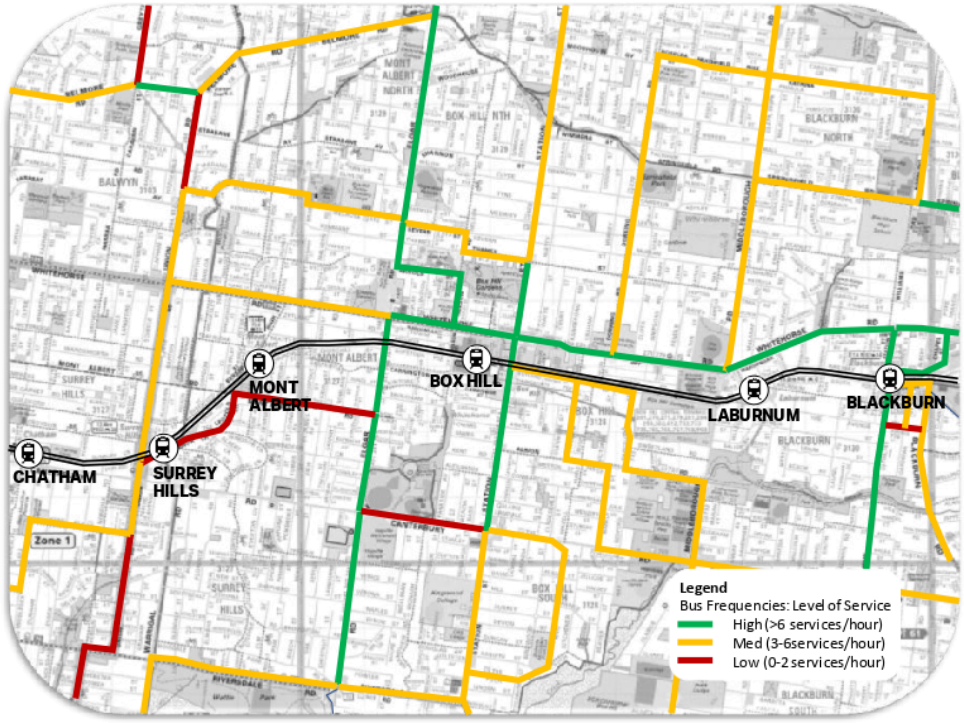

Figure 18 Level of service for bus routes in the AM peak period

Despite key roads within Box Hill having frequent bus services, the lack of bus priority infrastructure causes unreliability which in part can play a role in car dependency.

Limited bus priority infrastructure within Box Hill

Figure 19 to Figure 21 highlight the network wide average weekday, Saturday and Sunday bus patronage along with their respective route number, ranking and peak headways. Bus routes which service Box Hill have been highlighted in red while other bus routes operating in Melbourne have been highlighted in blue. Accordingly, the following observations have been made:

- 13 out of 18 Box Hill bus services were ranked in the top 100 for average weekday bus patronage;
- 10 out of 18 bus services were ranked in the top 100 for average Saturday bus patronage;
- 8 out of 18 bus services were ranked in the top 100 for average Sunday bus patronage;
- bus routes 903, 732, 733 and 767 were consistently ranked in the top 15 for average weekday, Saturday and Sunday bus patronage; and
- some high patronage Sunday services have more passengers than some weekday services yet run at only 60-minute headways.

9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

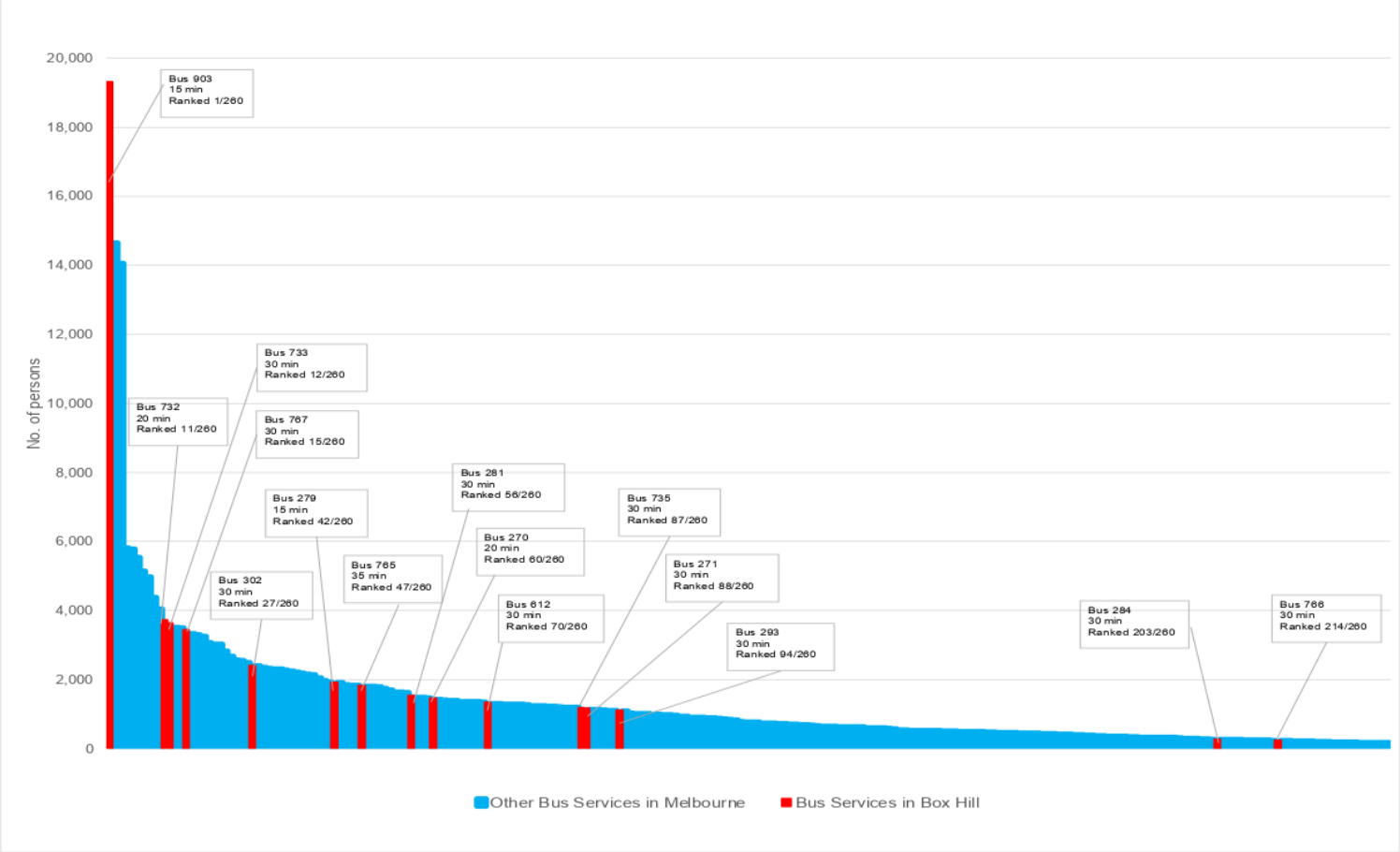

Figure 19 Average weekday bus patronage for FY 2014 / 2015 and peak headways for Box Hill bus services

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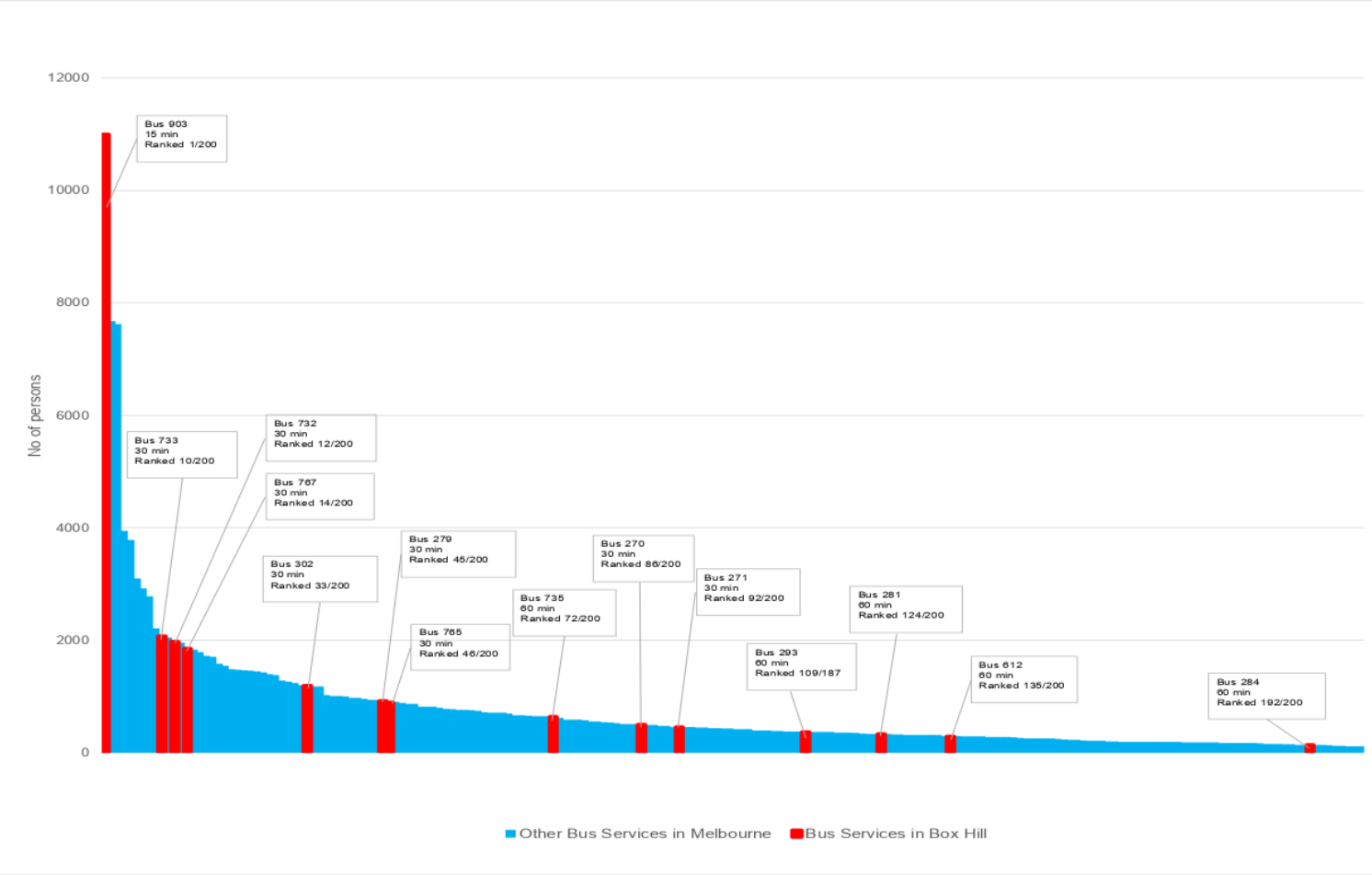

Figure 20 Average Saturday bus patronage for FY2014 / 2015 and peak headways for Box Hill bus services

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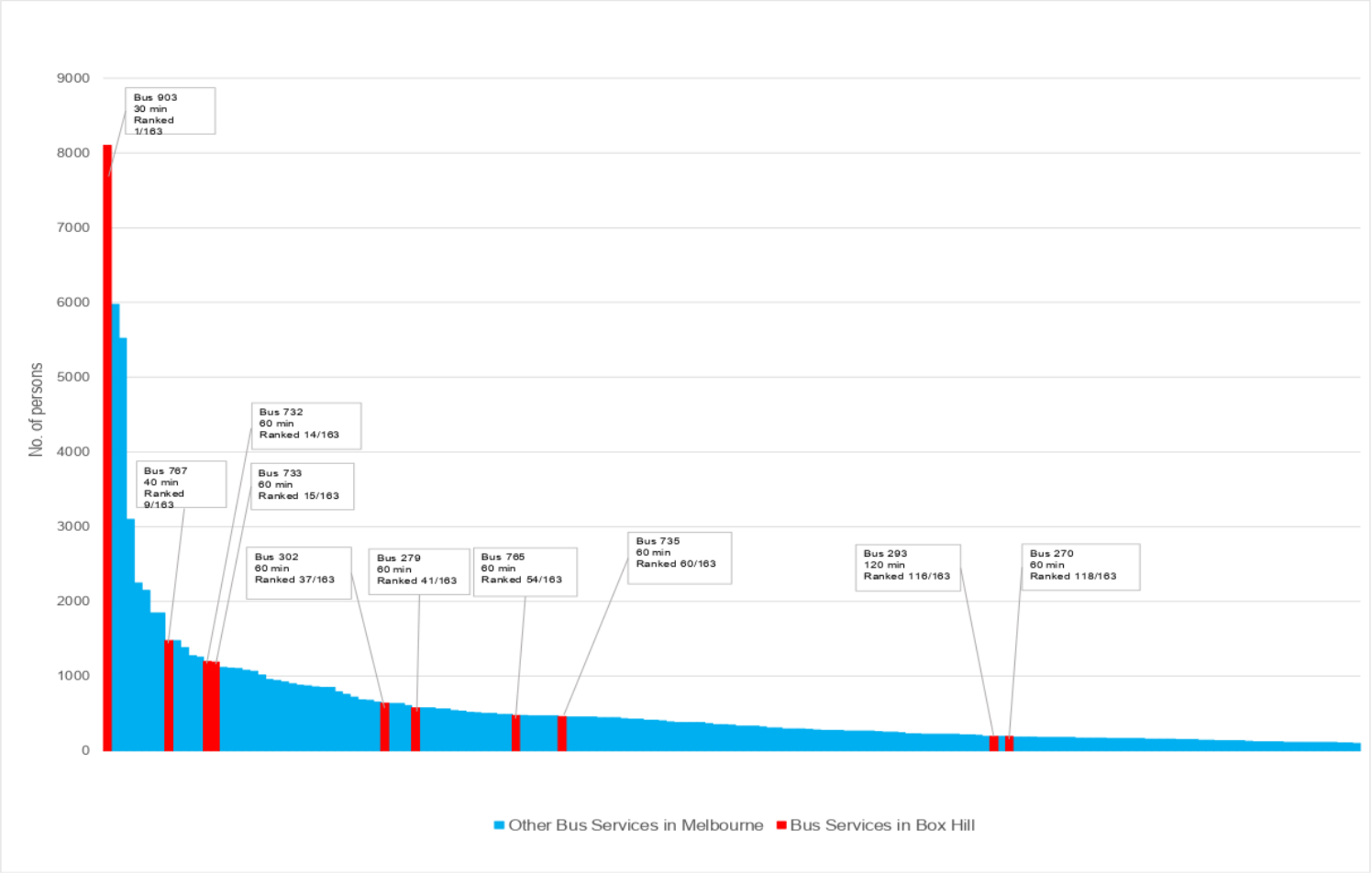

Figure 21 Average Sunday bus patronage for FY2014 / 2015 and peak headways for Box Hill bus services

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4.6 Trams

Box Hill tram terminus is located along the median strip of Whitehorse Road, approximately 200 metres from the bus interchange and train station. Tram 109 is the only tram route that operates from this terminus. Tram 109 goes all the way to Port Melbourne via Melbourne CBD as shown in Figure 22.

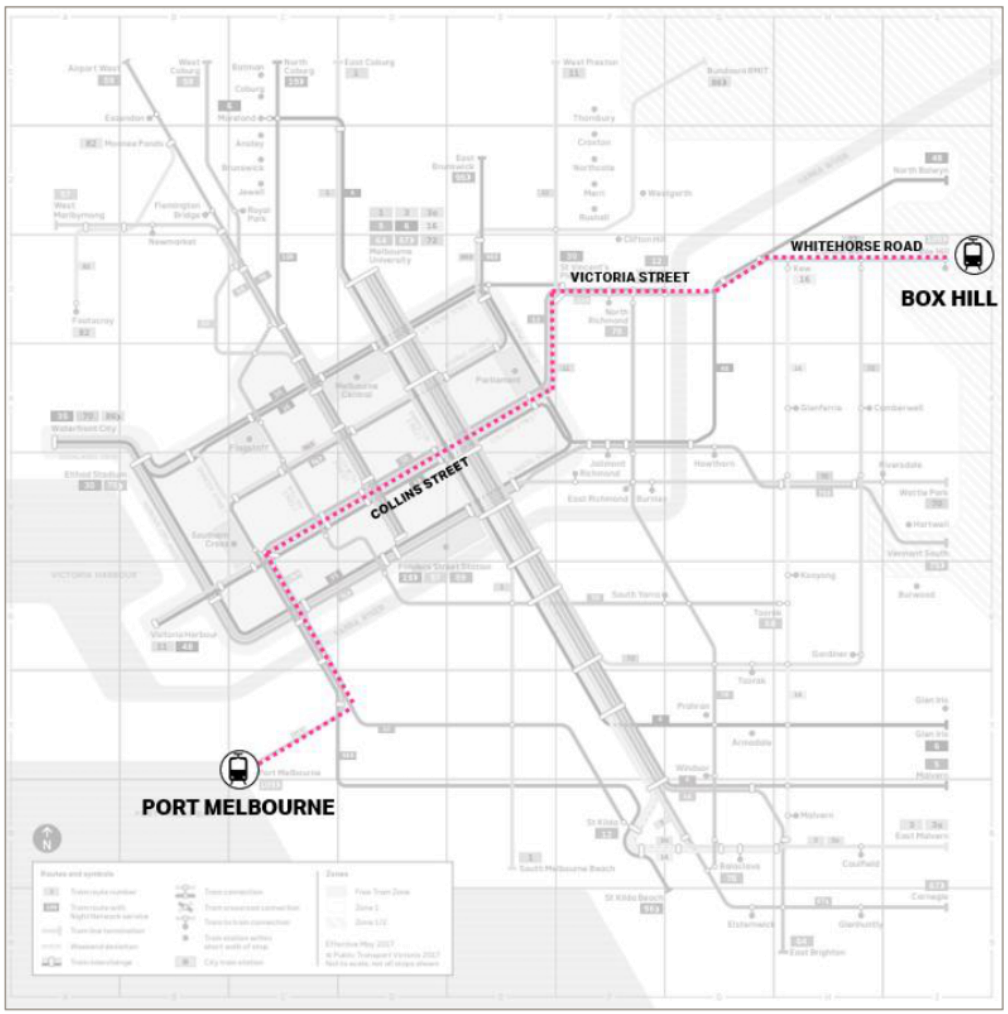


Figure 22 Tram route 109 - Box Hill to Port Melbourne

Based on information available from PTV, tram route 109 operates at relatively good service levels when compared to other tram services in Melbourne. Table 21 outlines the typical headways for this service.

Table 21 Tram service headways for route 109

		Monday - Friday			Saturday		Sunday	
Service	Destination	Peak Freq. (min)	Last Service	Typical Freq. (min)	Last service	Typical Freq. (min)	Last Service	Typical Freq. (min)
109	Port Melbourne	6	1.10 am	10	3.15 am	10	12.50 am	12

PTV are developing plans to upgrade the tram terminus in Box Hill. The proposal would allow for:

- two tram platforms (one tram can queue while another tram arrives/departs),
- longer platforms to accommodate E-Class trams
- relocating the terminus slightly west, to remove the existing tram/pedestrian conflict

As a separate project, PTV are also developing plans to install a new electrical substation near the Box Hill Tram Terminus to help power the tram network and improve reliability.

4.7 Private vehicles

4.7.1 Household car ownership

As stated in Table 22, most households in the study area own at least one car, with 39 percent of work-related journeys undertaken using private vehicles. As expected for a MAC, this percentage is low when compared with Whitehorse LGA and metropolitan Melbourne regions. The table also shows a general relationship that less car ownership equates to lower private vehicle journey to work mode share.

Table 22 Number of cars per dwelling and private vehicle journey to work mode share

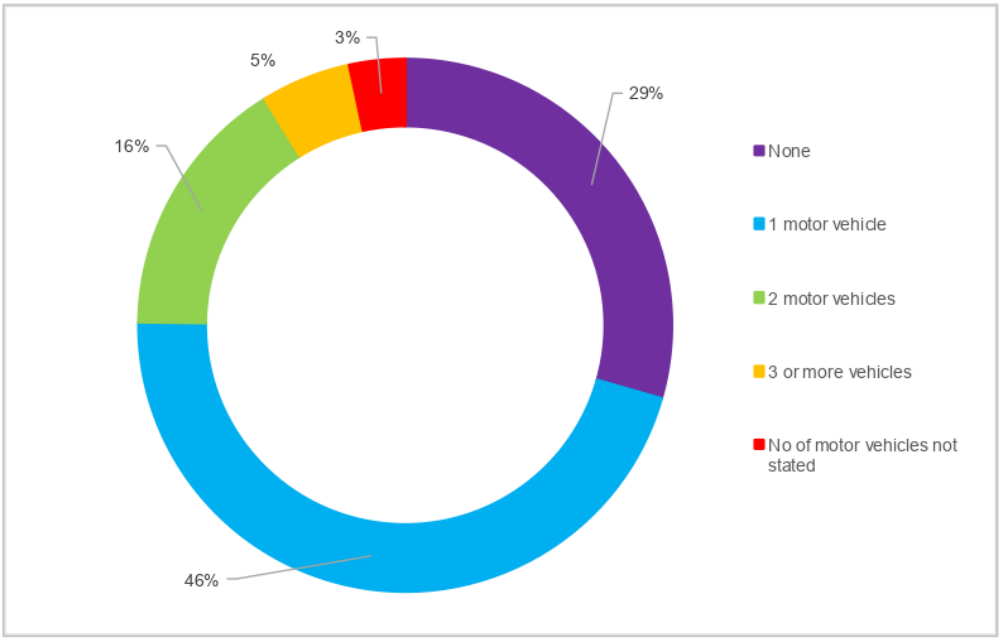
Region	Number of cars per dwelling	Private vehicle journey to work mode share
Box Hill	1.2	39%
Whitehorse LGA	1.7	69%
Metro Melbourne	1.7	60%

Source: ABS Census data

most households own at least one car, with 39 percent of work-related journeys undertaken using private vehicles

4.7.2 Motor vehicle registry

Approximately 3,400 motor vehicles were registered in Box Hill based on 2016 census data. Approximately 46 percent of Box Hill's population owned one motor vehicle, and 29 percent did not own any motor vehicle. This shows that residents do not depend heavily on motor vehicles as Box Hill is supported by a strong public transport network.



Source: ABS Census data

Figure 23 Proportion of registered motor vehicles in Box Hill

4.7.3 Traffic volumes

Table 23 highlights the traffic volumes on key north-south and east-west roads within the study area. Traffic volume data for key arterial roads were obtained from VicRoads' for the years 2007 and 2017, and traffic volume data for local / collector roads were obtained from Whitehorse City Council for the year 2017. Outputs from VITM Strategic Modelling were sourced to establish the AAGR from 2017 to 2031. These growth rates were applied to the traffic volumes observed in 2017 to establish 2031 traffic volumes along these roads.

Historical data between 2007 and 2017 shows Whitehorse Road has slightly reduced in traffic volumes. Other roads in the MAC typically show negligible growth. Forecast growth to 2031 shows a similar trend with little growth anticipated.

Typically, the north-south roads are showing a greater proportion of commercial vehicles especially on Elgar Road with up to 6.8 percent of traffic made up of commercial vehicles. This is likely to be attributed to the proximity of the Eastern Freeway, situated to the north of Box Hill MAC. Whitehorse Road has relatively low commercial vehicle usage of only 3.4 percent to 4.3 percent.

Historical data shows Whitehorse Road has slightly reduced in traffic volumes, other roads show negligible growth, forecast growth to 2031 shows a similar trend with little growth anticipated.

Table 23 Historical and projected two-way daily traffic volumes with percentage of commercial vehicles

Road	2007	2017	AAGR '07-17	2031	AAGR '17-31
North-South Roads					
Station Street, north of Whitehorse Road	20,000 (6.4%)	21,200 (4.6%)	0.60%	21,520	0.10%
Station Street, south of Whitehorse Road	22,000 (3.9%)	21,000 (4.1%)	-0.50%	22,300	0.40%
Elgar Road, north of Whitehorse Road	26000 (6.7%)	26,000 (6.8%)	0.00%	28,000	0.50%
Elgar Road, south of Whitehorse Road	28,000 (6.6%)	30,000 (6.6%)	0.70%	31,050	0.23%
Nelson Road	NA	10,000	-	12,900	1.70%
Thurston Street	NA	4,950	-	6.950	2.30%
East-West Roads					
Whitehorse Road, east of Station Street	29,000 (4.3%)	27,000 (3.5%)	-0.70%	28,000	0.23%
Whitehorse Road, between Elgar Road and Station Street	29,000 (3.4%)	29,000 (3.6%)	0.00%	29,400	0.01%
Whitehorse Road, west of Elgar Road	25,000 (2.5%)	23,000 (3.95)	-0.80%	24,310	0.40%
Carrington Road, between Thurston Road and Station Street	NA	4,600	-	4,950	0.50%
Thames Street, between Elgar Road and Station Street	NA	8,600	-	10,750	1.50%
Ellingworth Parade	NA	1,800	-	2,150	1.22%

Source: VicRoads AADT Data and Council Traffic Counts

4.7.4 Travel speed

Figure 24 highlights the average weekday 85th percentile speed of key roads within the study area where the recorded average weekday vehicle volumes were over 5,000. The data shows Whitehorse Road recording a relatively low speed of 53 km/hr to 56 km/hr, as compared with the posted speed limit of 60 km/hr. The only location where there is a demonstrated speeding issue is along Hopetoun Parade where the 85th percentile speed is 57 km/hr, seven kilometres per hour faster than the posted speed limit.

85th percentile speed along Whitehorse Road was between 53 and 56 km/hr, lower than 60 km/hr posted speed limit

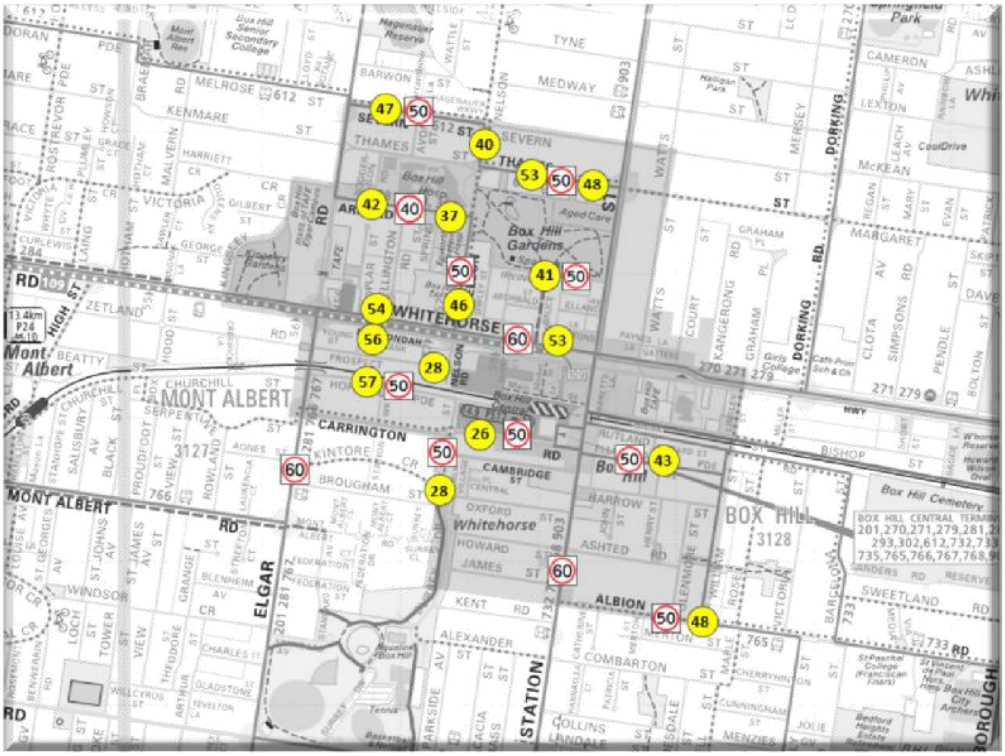


Figure 24 Average weekday 85th percentile speed and posted speed limits in Box Hill

4.8 Road safety

An analysis of reported casualty crashes for the study corridor has been undertaken for a five-year period (December 2013 to December 2018) using the VicRoads CrashStats database. The database includes all crashes occurring on roads or pathways that were reported to Victoria Police and resulted in a fatality or injury. The categories of casualty crash severity are defined as follows:

- **Fatality**: One or more persons are killed in the crash or die within 30 days from injuries sustained in the crash.
- **Serious Injury**: One or more persons are admitted to hospital as a result of injuries sustained in the crash.
- **Other Injury**: One or more persons are given medical treatment for injuries sustained in the crash.

There were 127 casualty crashes recorded in the study area in the latest five-year period. A summary of the collision type and severity is shown in Table 24 below.

Key findings include:

- the importance of implementing a safe systems approach within the study area in evident, as there were 38 crashes recorded with one fatality and 12 serious injury crashes which involved pedestrians.
- a total of five crashes involving cyclists were recorded along key cycling corridors within the study area.
- out of the 35 crashes recorded with vehicles travelling in the same direction, 24 crashes were rear end crashes, likely attributed to traffic congestion within the study area.

- out of the 22 crashes recorded with vehicles travelling in opposing directions, 20 crashes were right/through-lane crashes, suggesting the need for safer priority for right turning vehicles.

Table 24 Crash types in Box Hill

DCA code	Fatal	Serious	Other
100-109 Pedestrians	1	12	25
110-119 Adjacent directions	0	1	15
120-129 Opposing directions	0	7	15
130-139 Same direction	0	5	30
140-149 Manoeuvring	0	0	6
150-159 Overtaking	0	0	1
160-169 On path	0	0	1
170-179 Off path on straight	0	3	3
180-189 Off path on curve	0	0	0
190-199 Passengers	0	1	1
Total	1	29	97

Source: VicRoads CrashStats

Figure 25 shows the number of crashes at specific sites within the study area, and if the crash involved cyclists and pedestrians. The key finding is clearly the number of crashes that involved pedestrians. Primary locations where pedestrian crashes occurred were:

- Whitehorse Road where a pedestrian fatality occurred on the eastern edge of the study area
- Station Street most notably between Bank Street and Harrow Street
- Nelson Road and Elgar Road.

Key locations where cyclist crashes occurred were Whitehorse Road and Nelson Road. Whitehorse Road / Station Street and Whitehorse Road / Elgar Road intersections both recorded six or more crashes within the preceding five-year period. As shown in Appendix F pedestrian and cyclist activity are high along these road corridors as they provide access to several educational, health, public transport and shopping precincts. Hence, it is important to improve safety along these roads by adopting measures that follow safe systems principles.

38 pedestrian crashes including one fatality and 12 serious injuries in the last five-year period

Source: VicRoads CrashStats

Figure 25 Crashes between December 2013 and December 2018 within Box Hill

4.9 Parking

4.9.1 Statutory parking requirements

A key recommendation within the Box Hill Central Activities Area Car Parking Strategy completed in 2014 was to reduce parking rates within the central area of Box Hill. In December 2015, the Minister for Planning approved Amendment C158 which introduced an amendment to Clause 45.09 Parking Overlay into the Whitehorse Planning Scheme, applied Schedule 1 to the Parking Overlay to the Box Hill Activity Centre, and made consequential changes to Clause 21.08 Infrastructure, Clause 22.07 Box Hill Central Activities.

Table 25 shows the current statutory parking rates for the Box Hill MAC for residential and office land uses, relative to Footscray, Springvale and Melbourne CBD activity centres. The key findings from the comparison of parking rates include:

- Box Hill has no maximum parking rate unlike Footscray and Melbourne CBD, meaning developers can provide greater rates, potentially encouraging private vehicle access to Box Hill;

- Box Hill minimum parking rate is similar to Footscray and less than Springvale for both residential and office land uses;
- residential and office developments must provide some level of parking (albeit reduced) unlike Melbourne CBD where parking provision is optional with a set cap; and
- since it was recommended to have a reduction in parking rates, the State Government has committed to implement North East Link and Suburban Rail Loop. These projects are anticipated to impact travel patterns on key roads within the study area and how commuters access Box Hill. Further details on these projects are discussed in Section 4.10.

Additional 6,800 dwellings | 7,300 car spaces | more than 1 space per dwelling highlighting the importance of maximum parking rates

Table 25 Minimum and maximum statutory parking rates for Box Hill relative to Footscray, Springvale and Melbourne CBD

Land use	Unit	Activity centre parking rates							
		Box Hill		Footscray		Springvale		Melbourne CBD	
		Min	Max	Min	Max	Min	Max	Min	Max
Residential	Spaces per 1-bedroom dwelling	0.5	-	0.5	1.0	1.0	-		
	Spaces per 2-bedroom dwelling	0.75	-	0.8	1.0	1.0	-	0.0*	1.0*
	Spaces per 3-bedroom or more dwelling	1.0	-	1.0	1.5	1.5	-		
Office	Spaces per 100 sqm	2.0	-	1.5	2.0	3.0	-	0.0	0.5

Source: Schedule 1 to Clause 45.09 (Melbourne, Whitehorse, Greater Dandenong and Maribyrnong Planning Scheme)
*Note: * denotes spaces per dwelling*

4.9.2 Parking supply and demand

A summary of parking supply and demand information within the Box Hill MAC is outlined below:

- **Parking supply:** 8,872 total parking spaces of which 4,304 (48.5 percent) are on-street and 4,568 (51.5 percent) are off-street
- **Parking duration:** 2 percent less than one hour, 35 percent between one and three hours, 59 percent four or more hours, and 4 percent private, disabled and permit zone parking
- **Parking occupancy:** The peak time of parking activity (between Thursday and Saturday) was Thursday at 1 pm on 15 March 2018 when 66 percent of parking spaces within Box Hill CAA were occupied. On-street and off-street parking occupancy was 53 percent and 78 percent respectively. Parking occupancy was above 75 percent at the Box Hill Hospital, Epworth Hospital, Box Hill RSL, Box Hill Institute and above 85 percent at the Box Hill Transport and Retail Precinct.

59 percent of all parking is long term

Refer to Appendix H for further details on parking, including information for the Box Hill MAC study area.

4.10 Future transport infrastructure

4.10.1 North East Link

North East Link (NEL) is an 11-kilometre proposed managed motorway between the Eastern Freeway in Bulleen and the M80 in Watsonia. NEL is currently in the planning stages with construction expected to start in 2020 and finish by 2027.

The NEL impacts for the transport network within Box Hill are summarised below:

- Traffic increases are forecast for Elgar Road, Station Street and Middleborough Road
- Travel times (including for public transport), intersection performance, safety, noise and air quality may be impacted by the change in volume along these roads
- No changes to the prioritisation of buses along these roads are proposed. Impacts to tram services along Whitehorse Road are not predicted.
- There are forecast increases in truck volumes south of the Eastern Freeway, particularly Elgar Road and Middleborough Road.
- No projects that would add to the walking and cycling network within the City of Whitehorse are proposed as part of the NEL project.

4.10.2 Suburban Rail Loop

The Suburban Rail Loop (SRL) is a proposed new rail network forming a circle around Melbourne's suburbs and connecting every major rail line from the Frankston line to the Werribee line via Melbourne Airport. The project is forecast to take around 200,000 vehicle trips off major roads by 2051.

Box Hill has been identified as a potential new interchange station in the strategic assessment undertaken by Development Victoria, which emphasises the importance of Box Hill MAC. The strategic assessment also states that the Cheltenham to Box Hill section will be the first stage of the project with construction to commence by the end of 2022. Given this, it is unlikely the first stage will be operational until the early 2030s.

While there are many unknowns to this project, if it proceeds it is anticipated to:

- increase population and employment forecasts beyond current projections
- make Box Hill MAC an even more attractive proposition for developers
- increase pedestrian activity within Box Hill MAC
- increase station patronage, train mode share and train to train interchange
- potentially reduce vehicle demands along north-south roads such as Elgar Road and Station Street, potentially freeing up capacity for more sustainable travel modes or greater public space.

A conceptual map of the SRL is shown in Figure 26.

Population and employment forecasts are anticipated to increase beyond current projections with SRL

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Source: Strategic Assessment: Suburban Rail Loop, Development Victoria

Figure 26 Suburban Rail Loop

5.0 Conclusions

The purpose of this background study is to provide an evidential foundation and starting point for the upcoming Box Hill ITS. The report is intended to be used as a resource to inform stakeholders and decision-making during the ITS development process.

The top five key findings of this background study are outlined below.

1. ***Box Hills population density in 20 years' time is forecast to be comparable to Melbourne CBD today. With Suburban Rail Loop, this is anticipated to increase beyond current projections.***
2. ***Additional 6,800 dwellings under consideration, approved or under construction, with 7,300 additional car spaces (currently 3,400 registered motor vehicles) increasing car use and congestion within Box Hill.***
3. ***Most people who work in Box Hill live locally, yet active transport usage is low. Over 100 male cyclists and only one female cyclist was recorded in the Super Tuesday Survey within Box Hill, highlighting gender inequality in cycling infrastructure.***
4. ***Historical data shows Whitehorse Road has slightly reduced in traffic volumes, other roads show negligible growth, forecast growth to 2031 shows a similar trend with little growth anticipated.***
5. ***VicRoads draft movement & place assessment shows most of the existing problems are pedestrian related. Over 7,600 commuters walk to Box Hill train station each weekday highlighting the importance of walking infrastructure.***

Other conclusions of note include:

- **Population:** The number of people residing in Box Hill MAC is expected to double by 2036 relative to 2016 population.
- **Significant development sites:** 24 develop sites are under consideration, approved or under construction that have 13 storeys or more.
- **Employment:** Employment within Box Hill MAC is anticipated to grow up to 11,100 people by 2036. This represents 50 percent growth on 2016 levels.
- **Education:** Approximately 39 percent of residents living within Box Hill in 2016 were undertaking some form of education with the majority of these being tertiary students. This is expected given its proximity to Box Hill Institute (750 m), Deakin University (3.5 km) and Swinburne University (7.5 km).
- **Age:** Minor (<18) and elderly population (65+) will increase from 1,165 in 2016 to 6,090 by 2041. These age brackets are typically the most vulnerable when it comes to road safety. Given this, it is essential to consider VicRoads' safe system philosophy which underpins Victoria's strategic approach to road safety.
- **Mode share:** Travel to work by private vehicle was the preferred option (43 percent mode share) for residents of Box Hill, followed by train (27 percent mode share). A relative low proportion of residents walk or cycle to work (12 percent combined mode share) in comparison to the City of Melbourne (30 percent combined mode share). As Box Hill's population and employment grows into the future, mode share is likely to follow a similar trend to City of Melbourne with lower private vehicle mode share and a greater share of active and public transport.

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- **Key origins of those that work in Box Hill:** The key origin is Box Hill itself with over 1,100 people, followed by Box Hill North with over 600 people. Half the people who both live and work within Box Hill drive their private vehicles despite the furthest trip being less than three kilometres. More than 60 percent of work-related trips to Box Hill were carried out in private vehicles by workers living within seven kilometres.
- **Key destinations from Box Hill:** The key destination of people who travel to work from Box Hill is Box Hill itself with over 1,100 people, followed by Melbourne (~900) and Docklands (~200). A high proportion (83 percent mode share) takes public transport to Melbourne and Docklands. Only 30 percent of people travel by active or public transport to Burwood despite it only being three kilometres away. Data does not indicate that anyone cycles to Clayton or Southbank despite these suburbs being an equal or less distance from Box Hill than Melbourne.
- **Movement and Place:** The SFS movement results shows most of the problems that need to be addressed with the MAC are pedestrian related. Station Street is categorised as a key walking and cycling road (W1 and C1 classifications) with a lower general traffic function (GT3). Whitehorse Road is categorised as a key walking and bus road (W1 and B1). Whitehorse Road is also classified as a GT3 road.
- **Pedestrians:** Thousands of pedestrian access Box Hill North and Box Hill South shopping centres every day with high pedestrian activity along Carrington Road, Main Street, Market Street, Station Street (between Ellingworth Parade and Whitehorse Road), and Whitehorse Road (between Station Street and Clisby Court). While pedestrian mode share to the station is high, pedestrian mode share to work for Box Hill residents is relatively low as highlighted above. Regarding pedestrian safety, 38 of the 127 casualty crashes in the preceding five years were pedestrian related which included one fatality on Whitehorse Road and 12 serious injury crashes. Long delays at signals, high vehicle demand, and high traffic speeds are also a challenge regarding pedestrian access within the MAC, especially along Whitehorse Road and Station Street. VicRoads has classified pedestrian movements as the top (with buses) priority mode along Whitehorse Road.
- **Cyclists:** Bicycle volumes are relatively low given the Box Hill MAC consists of key attractors such as the shopping centre, public transport stops and stations, and medical and educational institutes. This is reflected in the journey to work cycling mode share of less than one percent. Part of the reason may be attributed to the lack of safe cycling infrastructure and busy arterial roads. Six bicycle crashes have been recorded in the last five years, primarily along Whitehorse Road and Nelson Road.
- **Rail:** Excluding the five train stations within Melbourne CBD, only South Yarra, Footscray and Caulfield stations exceed weekday patronage levels at Box Hill station within Melbourne's metropolitan rail network. Train service headways at Box Hill station are generally every few minutes during peak weekday periods and every 15 minutes during inter-peak periods for citybound services. Outbound services to Belgrave and Lilydale are less frequent with typical headways every 12 minutes during peak weekday periods. The PTV Network Development Plan states there are no plans to improve train headways between now and 2030 during peak and off-peak periods. This means the railway line will not be a 'turn up and go' metro service with trains every 10 minutes through-out the day until at least 2030. Train load surveys in May 2018 along the Ringwood corridor show two services breached the crowding benchmark in both the AM and PM peaks. If no additional services are planned before 2030, crowded trains may become a more frequent occurrence into the future. Management of rail crowding levels plays an important role in encouraging sustainable public transport options among local residents and those who work within the MAC. If train services operate above the benchmark standard, it can lead to poor passenger experience and potentially a loss in rail commuters.
- **Bus:** Approximately 2,100 commuters arrived at the train station by bus making it the fourth busiest bus interchange across all stations in Melbourne's metropolitan rail network. This emphasises the importance of the bus interchange and its key role for Box Hill commuters. Weekday bus patronage levels are relatively high with 13 out of 18 bus services in Box Hill ranked in the top 100 out of the 260 in metropolitan Melbourne. Bus routes 903, 732, 733 and 767 were consistently ranked in the top 15 for average weekday, Saturday and Sunday bus

patronage. However, other bus routes with lower patronage levels had more frequent service. Additionally, some weekend bus services carried more passengers than weekday bus services yet were more infrequent. Despite this, limited bus priority infrastructure is in operation in vicinity of Box Hill. VicRoads has classified bus movements as the top (with pedestrians) priority mode along Whitehorse Road.

- **Tram:** Box Hill tram 109 terminus is located along the median strip of Whitehorse Road, approximately 200 metres from the bus interchange and train station. Although tram 109 runs all the way to Port Melbourne via Melbourne CBD and competes with train services, most tram trips observed were for relatively short local trips. Tram 109 provides a 'turn up and go' service with six-minute headways during peak periods and typically 10-minute headways during other times.
- **Private vehicles:** Forecast growth to 2031 shows little growth is anticipated. Private vehicle speeds along Whitehorse Road with a posted speed limit of 60 km/hr are relatively low with average weekday 85th percentile speed of 53 km/hr to 56 km/hr. There were 127 casualty crashes recorded in the study area in the latest five-year period. Whitehorse Road / Station Street and Whitehorse Road / Elgar Road intersections both recorded six or more crashes within the preceding five-year period.
- **Parking:** Following a recommendation within the Box Hill Central Activities Area Car Parking Strategy, a reduction in the minimum residential and office parking rates was approved in December 2015. The new rates have no maximum parking provision, unlike Footscray and Melbourne CBD, meaning developers can provide greater levels of parking, potentially encouraging a greater share of private vehicle access to Box Hill. Over 8,800 parking spaces are provided within the Box Hill Central Activity Area of which about 4,300 are on-street and 4,500 are off-street. Peak mid-week surveys showed on-street and off-street parking occupancy was 53 percent and 78 percent respectively. This indicates that over 3,400 parking spaces are vacant during weekday peak periods. An additional 7,300 car parking spaces are planned for upcoming developments.
- **Suburban Rail Loop:** Box Hill has been identified as a potential new interchange station in the strategic assessment undertaken by Development Victoria, which emphasises the importance of Box Hill MAC. The strategic assessment also states the Cheltenham to Box Hill section will be the first stage of the project with construction to commence by the end of 2022. Given this, it is unlikely the first stage will be operational until the early 2030s. While this project is still in early planning stages, if it proceeds it is anticipated to increase population and employment forecasts beyond current projections and increase pedestrian activity within Box Hill MAC.

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6.0 Next steps

The intention is to use this foundational work as a building block to develop the Box Hill MAC Integrated Transport Strategy, so it will serve as a roadmap to achieve agreed outcomes into the future. While this background study has provided significant evidential transport and demographic findings, there are several data gaps still outstanding which requires additional investigations prior to or during early stages of the ITS development, including:

- reviewing, modifying and confirming the Movement and Place classifications with the Department of Transport (DoT). This will assist with the ITS development to ensure agreed initiatives aligns with the Movement and Place approach
- engaging the DoT and the Department of Jobs, Precincts and Regions (DJPR), specifically the Suburban Rail Loop Precincts team to:
    - share information including current and upcoming investigations within the next 12 months
    - understand their vision for Box Hill based on preliminary findings from the SRL project. This may include a high-level discussion on how they anticipate the SRL project may impact on population and employment forecasts, traffic forecasts and sustainable transport
    - discuss risks of work duplication and ways to mitigate these risks by creating a working group to include Whitehorse City Council, DoT, DJPR and potentially the Victorian Planning Authority (VPA)
- engaging the community to hear their concerns and transport needs
- development of the vision, objectives and key performance indicators. This could be developed as part of the ITS or led and developed by Council for inclusion in the tender documentation

This background study has been prepared to provide a robust and consolidated set of transport related information for use during ITS development. This is to assist with developing the transport vision, set of objectives, achievable performance measures and targets, transport strategy and the creation of initiatives that focuses on people, place and movement within Box Hill MAC.

Appendix B

Stakeholder Engagement Workshop Minutes

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Minutes of Meeting

Box Hill Metropolitan Activity Centre (MAC) Integrated Transport Strategy (ITS)

Subject	Issues and Opportunities Workshops	Page	1
Venue	Box Hill Town Hall	Time	10am and 11:30am
Participants	**Workshop 1** Olive Aumann – Carrington Health Josh Chivers – RACV Chris Trueman – WATAG John Edis – ATO Tim De Young – GTA Peter Funder – Vicinity Centres Garry Brennan – Bicycle Network Winnie Blackwell – Box Hill Institute Peter Redden – Deakin University **Workshops 1 and 2** John Nikas – Whitehorse City Council Vanessa McLean – Whitehorse City Council Chris Hui – Whitehorse City Council Lucy Menzies – Whitehorse City Council Callan Jones – AECOM Frank Jaskiewicz – AECOM Adeana Khoo – AECOM Aditya Malshe – Place Score	**Workshop 2** Michael Bayley – DoT/VicRoads	
Apologies	Sasha Yarwood – DoT/VicRoads Pirakan Pirakalathanan – DoT/VicRoads Knowles Tivendale – Movement and Place Adele McCarthy – Suburban Rail Loop Daniel Vincent-Smith – Whitehorse City Council Jeff Green – Whitehorse City Council Ilias Kostopoulos – Whitehorse City Council Kylie Legge – Place Score Cindy Plowman – Conversation Caravan		
File/Ref No.	60611526	Date	05-Sep-2019
Distribution	As above		

It is noted that the Issues and Opportunities Workshops were held over two sessions. Participants from AECOM-Place Score and Whitehorse City Council attended both sessions.

The workshops included interactive sessions where participants were split into groups to discuss issues and opportunities under a number of topics. As such, these minutes do not provide a transcript of the workshops, but are instead intended to provide a summary of the key points and main outcomes captured from both workshops.

The presentation slides used in the workshop are attached to these minutes.

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No	Item	Action	Date
1.	Chris Hui (CH) welcomed participants and opened the session with an acknowledgement of country. Attendees introduced themselves. CH noted that AECOM together with Place Score have been engaged to prepare the ITS.		
2.	Callan Jones (CJ) ran through the agenda for the workshop.		
3.	CH explained the background and purpose of the project: • The timeframe for the ITS is generally the next 10 years and beyond, with significant growth in Box Hill expected over the next 10-20 years. • The ITS is intended to guide the future direction and development of transport, to ensure the infrastructure and provisions supports and caters for the significant growth expected. • Transport is key to liveability and the ITS is intended to guide WCC on what it can do to advocate and improve transport for all users.		
4.	CJ ran through the project timeline and current stage of the project, explaining this was still at an early stage of understanding the issues and opportunities from all stakeholders and the community. CJ highlighted in the timeline that there will be several opportunities to provide comment throughout the project.		
5.	Aditya Malshe (AM) from Place Score, working with AECOM to conduct engagement throughout the project, gave a brief summary of the Care Factor and Street Place Experience PX) Assessments undertaken over the past 2 weeks: • Quantitative and qualitative data has been collected at this stage • Data is still being collected on the Council's OurSay platform, with a full report of findings to be completed in a couple of weeks. • 200 people completed the Care Factor surveys, with a good mix of respondents in terms of age, gender and ancestry • Respondents were asked what they cared about the most. • The top 10 Care Factors have a mix of social and physical attributes - CF ranking is based on level of alignment within respondents • In a list of 50 attributes, "Ease of walking around" is the only transport attribute in top 10 at #2 – which means several respondents select this to be important to them – this is highly valued across various demographic groups • This is followed by 'Walking, cycling and public transport options' at #14 and Car Accessibility and Parking at #40 – very low in comparison. Even respondents who drove to the centre, ranked "ease of walking around" very high – therefore a clear emerging theme. • Although people tend to complain about parking, the data from 200 respondents shows that people care more about ease of walking around than car parking • Priorities are those attributes that are highly valued but performing poorly at present • According to your community, the top priorities mostly include attributes related to place/space for human interaction - but movement has an impact on place - and hence it determines other priorities • Making the centre walkable is currently the top transport priority for Box Hill users • Quantitative findings are supported by qualitative data which is being collected on OurSay – so far, some of the topics for which people are discussing the most are walkability (adding crossings, improving safety, street pedestrianisation, etc.) and improving the transport interchange.		

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No	Item	Action	Date
6.	CJ noted that AECOM undertook a background study for this project earlier in the year. CJ ran through the key findings from this study		

7.	CJ explained the format of the interactive sessions. Attendees split into 3 groups to discuss each topic in the session. The key points are summarised below, grouped into similar themes/ideas as much as possible. It is noted that parts of the topics overlap to some extent, therefore some points noted by attendees may fit under more than one topic or theme.
	
	<u>Transport interchange</u>
	• Interchange location
	  ○ Bus operational activities (layover, amenities etc.) should not be in the town centre – bus station should be relocated so buses do not have to go through the middle of the MAC to get there
	  ○ Some people alight on Whitehorse Road already (due to delays to buses entering interchange)
	  ○ Not the right place for a commuter car park / commuter car park not necessary here
	  ○ 'Destination' not 'interchange'
	• Bus network
	  ○ Bus network needs to be redesigned
	  ○ Potential consolidation of bus services (local vs regional services)?
	  ○ Rationalise bus route and number of buses
	• Facility quality/standard
	  ○ Poor accessibility for people with disability
	  ○ Substandard design for people using it
	  ○ Wayfinding not transparent
	• Miscellaneous
	  ○ Poor surveillance
	  ○ Effect of work hours and peak pricing
	  ○ Need staged approach – timeframe for transport interchange redevelopment is likely to be 10-15 years
	  ○ Potential on-street bus solution could be considered
	
	<u>Road space allocation</u>
	• Laneways
	  ○ Local laneways do not encourage walking / do not attract peds / Agree on laneways not being conducive for active transport – this can be altered with relevant ease, community involvement and potential art space creation
	• Whitehorse Road
	  ○ Whitehorse Rd – public space is inaccessible and not user-friendly – too much space for cars – divides north and south
	  ○ Whitehorse Road – 1 lane to the west, 2 lanes to the east, but 3 through Box Hill
	  ○ Change Whitehorse Road to 1 lane each way through MAC – remove parking on north lane – convert south lane to pedestrian mall
	• Roads for loading/service access
	  ○ Logistics and delivery / pick-up plan needed
	  ○ Role of Hopetoun and Carrington to provide car and loading access to retail centre		

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No	Item	Action	Date
	○ Specific freight-friendly areas / times to encourage overnight loading. • Walking/cycling routes ○ Pedestrian environment reflects a suburban outcome not a MAC ○ No legible bike network to or through Box Hill ○ In 20 years, you need parking for 1000 bikes at station – how do they get there? ○ New tech if legislated (e-scooters/cycling) ○ Footpaths are narrow ○ Box Hill city centre – PT infrastructure to health & education precincts – not a pleasant environment and does not encourage walking ○ Encourage people to walk from town centre to health and education areas ○ Pedestrians through, to health and education precinct. • Hierarchy / role of streets ○ Each end of Carrington could be 2-way. ○ Elgar, Middleborough – traffic routes ○ All roads (except one or two major highways e.g. Elgar, Middleborough and Canterbury) should be safe and welcoming bike routes • Miscellaneous ○ Perspective of managing the kerb ○ Parking is a VERY HIGH COST use of road space. Within MAC, road space should be used for visitors to MAC and residents, and banned for through traffic. ○ Station St between Whitehorse Road and Harrow St ○ Periodically changing road uses ○ Road space is congested <u>Active transport</u> • Walking/cycling environment ○ The environment is not supportive for walking and cycling – not obvious. ○ Public realm does not encourage active transport ○ Pedestrian access and road not attractive and does not feel safe / comfortable. ○ Potential opportunity for ped-only streets? Closure of Station St from Whitehorse Rd to Bank St. ○ Built form influence – active frontages on car parks, shopping centre and commercial. ○ Building canopies – sun and rain protection / Shade ○ Constrained space / busy roads / small footpaths ○ Education about sharing space: peds-bikes-cars ○ If we get the road conditions right, dedicated bike infrastructure isn't needed. ○ Reduced speed environment ○ Roads – straight, fast, congested, car parking ○ All roads into and around MAC need to be made safe for cycling and walking. • Network ○ Not enough bike lanes within Box Hill City Centre and at major institutions e.g. education, health ○ Lack of cycling lanes – an increase would encourage cyclists ○ Allocated road space for cyclists		

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No	Item	Action	Date
	○ Need to reduce conflict between peds/cyclists/vehicles ○ Cars have thousands of route options through streets to and in Box Hill. Walkers and cyclists need similar options and not limited to just a few 'designated' routes. ○ More options across train line ○ Map existing infrastructure for active transport – Proposed-SLC etc. ○ Bike Network – "to" vs "thru" ○ Really good walking options especially via parkland- is safety at night through these areas a consideration? • Bike parking ○ Cycling facilities not sufficient for cyclists ○ End of trip – audit for bike parking – showers / lockers ○ Management of bike parking (abandoned bikes) • Wayfinding ○ Good wayfinding required ○ Lack of pedestrian and bike legibility to and through town centre ○ Creation of Box Hill digital walking apps • Accessibility / standard ○ DDA Access – generally but also specifically the transport interchange and underpass ○ Equitable access at station (prams, mobility, cyclists) • Miscellaneous ○ Very different needs for each mode ○ "Living locally" – what does that mean? – majority of people who work in Box Hill live locally i.e. within 3km? ○ Better signal timing priority for peds ○ Innovative vehicles, e-scooters / new tech ○ Respond to the changing 'delivery' economy ○ A lot of people cross through Box Hill – poor public transport options – slow buses mean people drive – increasing traffic congestion ○ Peds – high volumes at crossings. Capacity on footpaths? Interchange. ○ Major attractors – education, station, others? <u>Safety</u> • Safety / personal security ○ Hospital shift workers and safety at night ○ Improve lighting and accessibility of laneways ○ Casual surveillance = creating a 24/7 economy ○ Improve lighting / public realm ○ Perceptions of safety • Construction disruptions ○ Safety around construction – roadworks, both vehicles and pedestrians ○ Timing of road works / construction – to avoid peak active transport times • Crossings ○ Peds unsafely crossing Station St ○ Wider crossing points ○ Road network layout – crossings not where they need to be- resulting in people taking chances ○ Provide crossings at appropriate locations ○ Traffic flow to reduce conflict with crossing peds		

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No	Item	Action	Date

	• Footpath capacity
	  ○ Can Box Hill handle the projected amount of pedestrians?
	  ○ Widen footpaths
	• Speeds
	  ○ Reduce speeds – local and main roads
	  ○ All roads except Elgar / Middleborough should be 40 max, with those closest to the MAC 30.
	  ○ Lower speeds
	• Bus stops
	  ○ Bus stops near safe crossing points
	  ○ Amenity at bus stops (more seating)
	  ○ Location of bus stops
	• Walking environment
	  ○ Environment not conducive to walking and cycling
	  ○ Low stress / low traffic environment needed
	  ○ Prioritised active transport routes
	  ○ Road design and choice of materiality to provide perception of 'safe' environment
	  ○ Active Street levels on new developments
	• Miscellaneous
	  ○ Parking on Station St blocking visibility
	  ○ Freight – have deliveries off-peak to avoid conflict
	
	<u>Car parking</u>
	• Safety / personal security
	  ○ Personal safety for people who walk or use buses
	  ○ Adequate light/security
	• Parking rates
	  ○ Possible maximum parking rates / reduce car parking rates for office buildings
	  ○ Decouple car parking from development
	  ○ Less car parks in residential development – but reserve for car share
	  ○ With autonomous vehicles, the need for public car parking may reduce in future. However private car parking may increase.
	  ○ Staging of parking provision reductions (key challenge)
	• Car park locations
	  ○ Appropriate car park entry locations to minimise impact on pedestrian outcomes
	  ○ Get rid of virtually ALL on-street parking, traders do much better from passing pedestrians and cyclists. Car visitors to Box Hill should have access to off-street parking on the outside of MAC. Car should not have to access centre of MAC for parking.
	  ○ Centralised parking space over dispersed parking space – outer locations of key precinct.
	  ○ Need to consolidate spaces around edges of MAC.
	  ○ Access to adjacent station – not enough car parking – so they can't ride the train to Box Hill
	  ○
	• Equitable parking (parking for those who need it)
	  ○ Affordable supply for 'needs'-based parking e.g. hospital, health services.
	  ○ Equitable access (limited mobility, low income)
	  ○ Box Hill is a service hub with lots of health/community services. Often access/mobility issues mean some people need to use		

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No	Item	Action	Date

	cars to travel. Low disabled parking around these facilities. Such things as NDIS has numbers coming to Box Hill for services.
	• Use of car parks / parking spaces
	  ○ Flexible car parking spaces
	  ○ Allocated car-share spaces
	  ○ Car parks only used at certain times of the day
	  ○ Kerb space – making more productive use of space – while still ensuring convenient parking is provided for necessary uses (e.g. drop-off)
	  ○ Shared use of car parking – art exhibitions etc
	  ○ Multi-use facilities – integrate use (car parking, commercial etc.)
	  ○ Active frontages on ground floor of car parks
	  ○ Space used by car parking
	• Miscellaneous
	  ○ EV charging infrastructure
	  ○ Improve wayfinding / use technology
	  ○ Flexibility to encourage development (work-zone allocations)
	  ○ Provide other transport modes
	  ○ Location, Availability
	  ○ Big emphasis by all to car parking: where is similar emphasis on convenient and large-scale bike parking?
	  ○ Costs
	
	<u>Other</u>
	• Schools
	  ○ Active transport for students
	  ○ Reduce school drop-offs
	  ○ No parking along school frontages
	  ○ Need to accommodate vulnerable users (children, but also the elderly)
	• Service/loading/freight
	  ○ Freight/loading movements / shopping delivery services are important and must be accommodated
	  ○ Introduce delivery time zones for large loading
	  ○ Cargo bikes could be considered for small, short trip deliveries
	• Suburban Rail Loop (SRL)
	  ○ Uncertainty surrounding SRL (timing, station location) needs to be considered in this ITS
	  ○ Need to consider connection between bus, SRL and interchange
	• Miscellaneous
	  ○ Illegal parking is impacting bus operations
	  ○ Multi-lingual / bi-lingual wayfinding and digital wayfinding (mobile apps etc.)
	  ○ Stagger working hours in large organisations
	  ○ Land use considerations – planning scheme parking requirements
	  ○ Transport outcomes need to support both community and economic outcomes – needs to be deliverable
	  ○ Different function for roads/spaces at different times of the day
	  ○ Trams also important function which hasn't been considered in other topics		

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No	Item	Action	Date
8.	CJ reiterated there will be further consultation opportunities, including on the Our Say platform. Further workshops will include feedback on discussion papers and the draft strategy. The AECOM project team will use outcomes from this workshop session, other consultation, including online comments, as inputs into an Issues and Opportunities Report to be prepared in the next month.		

Attached: Issues and Opportunities Workshop – Presentation Slides

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Appendix C

Community Insight Reports

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PLACESCORE™

ISSUES AND OPPORTUNITIES
COMMUNITY ENGAGEMENT AND RESEARCH FINDINGS

BOX HILL METROPOLITAN ACTIVITY CENTRE
INTEGRATED TRANSPORT STRATEGY

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PROJECT OVERVIEW

Place Score has been engaged by AECOM to undertake community and stakeholder engagement at Box Hill, VIC. The findings of this research with inform the preparation of the 'Box Hill Metropolitan Activity Centre (MAC) Integrated Transport Strategy (ITS)' for Whitehorse City Council (WCC).

This Issues and Opportunities Report synthesises past engagement report findings with the results of a range of engagement activities undertaken face-to-face and online between 20th August and 14th September 2019.

A total of over 510 people participated in this stage of the research.

Engagement Activity	Participant number
Review of past engagement conducted by WCC as a part of the Strategic Visioning process for Box Hill MAC (Jan, Feb 2019)	n=93
Town Centre Care Factor Survey	n=200
Street PX Assessment (Observation Study)	n=281
Our Say Forum	n=21 (29 ideas)
Our Say Mapping Tool	n=09 (23 ideas)

This Issues and Opportunities Report summarises the community's inputs against 5 key themes identified by AECOM:

1. Public Transport (incl. Transport interchange)
2. Streets and Public Spaces (Road space allocation)
3. Walking and Cycling
4. Safety
5. Car parking

It should be noted that quantitative evidence has been collected using Place Score's Place Experience (PX) Assessment tool, Care Factor (CF) tool and aggregated priorities based on PX and CF data. Qualitative evidence has been collected using Online Mapping and Forum tools on Council's OurSay platform.

Please refer to Appendix 1 to view the OurSay participation details and summary.

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THEME 1 – PUBLIC TRANSPORT (INC TRANSPORT INTERCHANGE)

This theme includes references to public transport generally, DDA compliance, transfer/wayfinding, capacity of PT services, general interchange layout, etc. The community engagement revealed the following areas of concern:

ISSUE 1: Inadequate management
Lack of adequate place management in terms of availability of signage or information, and presence of street cleaners is noted to be an issue at Whitehorse Road and Prospect Street.

Quantitative Evidence

- **Place Score's PX Assessments** at Whitehorse Road and Prospect Street reveal that '*Evidence of management (signage, information, street cleaners etc.)* is ranked 36 and 41 out of 50 respectively, indicating room for improvement.

ISSUE 2: Dissatisfaction with Interchange/Depot
Size and layout of the interchange facility is not equipped for the volume of passengers Box Hill now services. Public transport users are forced to connect to the station through the shopping centre.

Qualitative Evidence

- In **OurSay Mapping Activity** and **Online Forum**, participants identified that the single escalator within the depot creates an unsafe bottleneck. Connection between the station platforms and other modes of transport was found to be inconvenient. Participants noted the need to navigate street furniture and street traders in an already crowded environment. Location of the lift was stated to be difficult to identify.
- **Past engagement conducted by WCC** had several comments related to the ease of access for parents with prams and/or people using a mobility aid. Some respondents noted the unreliability of the single escalator. Respondents also stated the difficulty with entering and exiting from the commuter carpark.
- In **Mapping Activity** and **Online Forum**, the issue of train commuters requiring to travel through the centre to go between the train or bus was raised. Access was noted to be challenging given the number of centre stalls and volume of shoppers. Accessing the station before the centre opens at 8am was considered difficult as commuters were required to walk around the centre.

ISSUE 3: The Interchange does not reflect Box Hill identity or culture
Look and feel of the depot does not seem to reflect the vibrancy and direction of Box Hill.

Qualitative Evidence

- In **OurSay Mapping Activity** and **Online Forum,** the smell and wet, cold feeling of the depot was raised on repeated occasions. The unsavoury experience was noted to be an issue particularly at night and in Winters.

- **Past engagement conducted by WCC** reveals that in addition to the stark appearance of the interchange, respondents noted that the only colour used is in the form of advertisement. Existing seating and bins were found to be coated in gum or bird poo.

The community engagement revealed the following areas of opportunity:

OPPORTUNITY 1: Investment in public transport options
The community would support an increase in alternatives to private vehicle usage.

Quantitative Evidence:

- **Place Score's Care Factor Surveys** inform that more than 40% residents living outside Box Hill suburb (except Burwood) value '*Walking, cycling or public transport options*', which is higher than residents living in Box Hill. This indicates a need to invest in sustainable transport modes for getting them to the centre.

Qualitative Evidence:

- **Past engagement conducted by WCC** reveals that respondents provided an idea to create a shuttle service that connects nearby workers to the centre during lunch time, allowing them to leave their cars at work, thus reducing road congestion.
- In **Mapping Activity** and **Online Forum**, a desire to see improvements to the bus service, particularly its connectivity into the centre and station is revealed. Respondents also mention the need for better connections between Box Hill and Doncaster Shopping Centre on weekends, and more late-night bus services across the weekday and weekends.

OPPORTUNITY 2: Potential to change travel behaviour
There is an opportunity to support people across various demographics to change from private vehicles to public transport in Box Hill MAC.

Quantitative Evidence:

- **Place Score's Care Factor Surveys** inform that more private vehicle users care about '*Walking, cycling or public transport options*' compared to respondents using other modes - this is an indication that this group is likely to change travel behavior.
- **Place Score's Care Factor Surveys** inform that Box Hill associates care much lesser about *'Car accessibility and parking'* across all demographics compared to the National Benchmark. This attribute is also the least cared about of all primary and secondary movement-related attributes.

Qualitative Evidence

- **Past engagement conducted by WCC** reveals that many respondents considered availability of all-day car parking within close proximity to public transport to be rare, resultantly leading to car spaces being filled with traders

or centre staff. Ideas thus looked at creating a system that supports public transport use and encourages people to shop after work in the centre.

OPPORTUNITY 3: Improved connections between destinations and transport modes

The community would support improved pedestrian connectivity between destinations and different forms of transport to create a seamless experience.

Quantitative Evidence

- **Place Score's Care Factor Surveys** inform that *'Ease of walking around'* is the most valued movement attribute and has an overall Care Factor rank #2.
- **Place Score's priorities (aggregated PX and CF data)'** reveals *'Ease of walking around'* to be a high priority for improvement across all surveyed locations except Whitehorse Road (North side) and Carrington Road.

Qualitative Evidence

- In **OurSay Mapping Activity** and **Online Forum,** participants stated their preference to see a better-connected transportation system with ease of access to bus, tram and train services and facilities to support this use (toilets, parking, lighting, information).

OPPORTUNITY 4: Increase information to support public transport use

The community would value improvements to the overall place management of the area, in order to facilitate better wayfinding and navigation through the centre and interchange.

Quantitative Evidence

- **Place Score's Care Factor Surveys** inform that twice the number of respondents over 65 years care about *'Evidence of management (signage, information, street cleaners etc.)'* compared to the average for Box Hill associates.

Qualitative Evidence

- **Past engagement conducted by WCC** informs that some respondents would like to see advertisements replaced with transit information and technology used to directly notify them of services.

OPPORTUNITY 5: The Interchange as a hub connecting the community

There is an opportunity to make the interchange the heart of the centre, which would include creation of facilities that support and encourage repeated use.

Qualitative Evidence

- In **OurSay Mapping Activity** and **Online Forum,** participants stated their preference to see upgraded toilets and the installation of bike parking to support those riding to a tram, train or bus. Current toilets are found to be limited to Centro, which when closed are not available for use.
- In **past engagement conducted by WCC,** participants stated their preference for the interchange to be far more integrated into the community, with community uses (community meeting room, library services) embedded within the facility. Many respondents believed that the volume of foot traffic could also support cafes and restaurants, providing the area was cleaned up.

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THEME 2 – STREETS AND PUBLIC SPACES

This theme looks at general road cross-sections and how these impact movement of private vehicles, through-traffic and sustainable transport modes as well as the impacts on 'place' or function of the MAC. The community engagement revealed the following areas of concern:

ISSUE 1: Delays to public transport services and impacted traffic flows
Congestion created by cars is believed to delay public transport services. Likewise, merging lanes and reduced lanes of traffic are found to create bottlenecks, thus impacting overall flow of traffic.

Qualitative Evidence:

- In **Mapping Activity, Online Forum** and **past engagement conducted by WCC,** a key concern for public transport users was the delays created by road congestion. Particularly, Bus Route 903 was stated to be service requiring priority access through centre. Many respondents felt that delays discouraged people from using these services.
- **Past engagement conducted by WCC** reveals that the flow of traffic in peak hours from Whitehorse Road to Elgar Road is found to be impacted by the merging lane which is too short (needs to continue to Prospect St) to be effective.

The community engagement revealed the following areas of opportunity:

OPPORTUNITY 1: Reprioritisation of road space
The community identified the opportunity of reprioritising the way road space is allocated, in order to reduce congestion and improve traffic flow.

Qualitative Evidence:

- **Mapping Activity, Online Forum** and **past engagement conducted by WCC** reveal a few comments on congestion created by cars and the impacts of the same on Box Hill. Suggestions included introducing more one-way streets (Nelson Street to Young Street) with wider footpaths; prioritising bikes and buses and removing the cars on Carrington Road. Removing car parking along on Elgar Road between Hopetoun Parade and Carrington Road was considered as an opportunity to improve traffic flow.
- In **Mapping Activity** and **Online Forum,** ideas related to dedicating bus lanes along major roads including Carrington Road have been shared, to increase the use and improve the service of public transport.

OPPORTUNITY 2: Investment in improving place outcomes
There would be significant support in improving the overall place experience within the centre, which what a majority of Box Hill associates prioritise.

Quantitative Evidence:

- **Place Score's Care Factor Surveys** inform that 10% more respondents under the age of 25 care about '*Amount of public space (footpaths and public spaces)*' compared to the average.
- **Place Score's priorities (aggregated PX and CF data)** reveal that high priority investment is needed in *'Interesting things to look at (people, shops, views etc.)'*, *'Outdoor restaurant, cafe and/or bar seating'* and *'Unique mix or diversity of people in the area'* in order to improve place experience. If these 'place' and 'people' related attributes are to be improved, road space needs to be appropriately allocated as 'public' space for use by people.
- **Place Score's priorities (aggregated PX and CF data)** reveal secondary improvement priorities for the centre to be uniqueness attributes such as *'Landmarks, special features or meeting places'*, *'Local history, heritage buildings or features'*, *'Evidence of public events happening here (markets, street entertainers etc.)'*, *'One of a kind, quirky or unique features'* and *'Public art, community art, water or light feature'*. Streetscape design should incorporate and provide for the same in order to enhance place experience.

Qualitative Evidence:

- **Mapping Activity and Online Forum** reveals an idea to better use the train line which currently disconnects Box Hill. Some respondents would like to see this converted into a public space and a place for pedestrians and cyclists to enjoy.
- **Past engagement conducted by WCC** reveals ideas such as conversion of car parks and underused areas into green spaces or event spaces. Locations for removal of car parks as discussed by respondents include Market Street (public space) and Carrington Road (bike laneway).
- **Mapping Activity and Online Forum** inform that in addition to repurposing car parking, participants want to see congested streets and roads converted into public space. Bank Street, Station Street and Rutland Road were provided as examples of where this could be possible.
- In **Mapping Activity** and **Online Forum,** creating smoke free areas was suggested to increase the number of pedestrians using the area and create a more pleasant environment.

OPPORTUNITY 3: Diversion of transit traffic

Diversion of transit or through traffic out of Box Hill is seen as an opportunity to improve the place outcomes.

Qualitative Evidence:

- **Mapping Activity and Online Forum** suggested creating a bypass that took transit traffic out of Box Hill.

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THEME 3 – WALKING AND CYCLING

This theme aims to address active transport infrastructure generally, and its potential impact on Box Hill as a key destination/MAC. The community engagement revealed the following areas of concern:

ISSUE 1: Difficulty in walking around
This issue relates to the challenge of walking between destinations, a particular problem at Nelson Road.

Quantitative Evidence:

- **Place Score's PX Assessments** reveal that *'Ease of walking around'* performs the lowest of all primary movement attributes.
- **Place Score's PX Assessments** reveal that *'Ease of walking around'* and *'Walking paths that connect to other places'* perform the worst at Nelson Road, with PX Scores 4.2 points and 2.7 points lower than the average for those attributes respectively.

ISSUE 2: Challenges for cyclists
Moving between destinations by bicycle has been identified as an issue in Box Hill MAC.

Qualitative Evidence:

- In **past engagement conducted by WCC,** connectivity of cycling paths was raised as a concern, particularly in terms of connectivity between Box Hill Trail and Ringwood Trail. Cyclists were forced into the streets and onto busy roads.

ISSUE 3: Impact of delivery vehicles on pedestrians and cyclists
Lack of planning and consideration of delivery drivers and riders is found to be an issue in Box Hill MAC.

Qualitative Evidence:

- In **Mapping Activity** and **Online Forum,** increase in the number of food delivery drivers and riders has been noted; as well as the impact of the same on pedestrians and cyclists. Particularly parking on footpaths and blockage of access has been considered an issue.

The following opportunities related to this theme were identified through the community engagement.

OPPORTUNITY 1: Improving and encouraging walking
There lies an opportunity to improve and encourage walking around the centre by investing in walking paths that connect to various destinations, extending pedestrian crossing times and enforcing regulations for improving the physical environment.

Quantitative Evidence:

- **Place Score's Care Factor Surveys** inform that *'Ease of walking around'* is the most valued movement attribute and has an overall Care Factor rank #2.
- **Place Score's Care Factor Surveys** inform that apart from respondents over 65 years, *'Ease of walking around'* is the most valued movement attribute for all Box Hill users, including those accessing the centre by private vehicles.
- **Place Score's priorities (aggregated PX and CF data)** reveal *'Ease of walking around'* to be a high priority for improvement across all surveyed locations except Whitehorse Road (North side) and Carrington Road).
- **Place Score's Care Factor Surveys** inform that 10% more residents selected *'Walking paths that connect to other places'* to be more important to them compared to the average for Box Hill Associates.

Qualitative Evidence:

- In **Mapping Activity, Online Forum** and **past engagement conducted by WCC**, a desire to increase the amount of time given for people to cross roads was expressed, thus encouraging people to walk and making it safer for older people.
- In **Mapping Activity** and **Online Forum,** ideas to encourage walking to school through installation of signage, designation of safe routes and perhaps policing of routes were shared, with the intention being to reduce congestion created during school pick up and drop off times.

OPPORTUNITY 2: Improving bike connectivity and infrastructure

There is an opportunity to increase the amount of bike parking at the interchange and areas across Box Hill and improve bike connectivity from Box Hill to the city and beyond.

Qualitative Evidence:

- **Mapping Activity, Online Forum** and **past engagement conducted by WCC** reveal a desire for more bike parking, particularly within the train station and at other key transport services (tram and bike). A concern that abandoned bikes were overcrowding bike parking was also raised.
- In **past engagement conducted by WCC**, some respondents expressed the desire to have bike paths that can be used to travel into Melbourne. This would need connecting up varied bike paths to take in points of interest and key transit area.

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THEME 4 – SAFETY

This theme includes community input regarding personal and physical safety of the centre for walkers, cyclists, and drivers well as DDA compliance and construction associated with safety. The community engagement revealed the following areas of concern:

ISSUE 1: It can be dangerous to walk around

The general safety of the area is performing poorly according to the community, and it is a topic that is very important to them.

Quantitative Evidence:

- **Place Score's PX Assessments** reveal that *'Physical safety (paths, cars, lighting etc.)'* is one of the worst performing attributes at Prospect Street and Whitehorse Road.

Qualitative Evidence:

- In **Mapping Activity, Online Forum** and **past engagement conducted by WCC,** walking around Box Hill at night was considered to be unsafe. Underpass areas near Main Street and areas near the train station were stated to have this issue by a few respondents. Surrey Drive was also identified.

ISSUE 2: People don't feel safe

Areas in Box Hill are considered to be unsafe for pedestrians and commuters to walk around, particularly at night, with primary reasons being dumped bikes and trolleys and perception of Illegal activity near the train station.

Quantitative Evidence

- **Place Score's PX Assessments** reveal *'Sense of safety (for all ages, genders, day/night etc.)'* to be very poorly rated by young respondents (PX Rank #49/50) and public transport users (PX Rank #44/50) at Carrington Road.
- **Place Score's PX Assessments** reveal *'Sense of safety (for all ages, genders, day/night etc.)'* to be poorly rated by respondents between 45 and 64 years of age (PX Rank #32/50) at Whitehorse Road.

Qualitative Evidence

- In **Mapping Activity** and **Online Forum,** the illegal dumping of shopping trolleys and bikes were noted as a problem, creating an unsafe impression of the area, while also impacting pedestrian movement.
- In **Mapping Activity** and **Online Forum,** unsavory activities were raised as a concern for train users near the train station. Activities witnessed at night included nudity, drinking alcohol and perception that drug use was occurring. This was believed to deter train use.

The following opportunities related to Safety were identified through the community engagement.

OPPORTUNITY 1: Make it a safe place to move around on foot or by bike

The community supports the improved physical safety of the centre by means of interventions such as signage installation, better lighting and painting, separation of modes of travel and enforcement of speed limits.

Quantitative Evidence

- **Place Score's priorities (aggregated PX and CF data)** reveal *'Physical safety (paths, cars, lighting etc.)'* to be a secondary priority for improvement at Prospect Street, Station Street and Whitehorse Road.

Qualitative Evidence

- In **Mapping Activity** and **Online Forum,** anti-pedestrian barriers along Station Street were noted as a reminder that car use is favoured in the area. Recommendations included consideration of a different treatment to create a shared environment.
- In **Mapping Activity, Online Forum** and **past engagement conducted by WCC**, a need for signage to better separate pedestrians and cyclists was mentioned.
- In **Mapping Activity, Online Forum** and **past engagement conducted by WCC,** the underpass was highlighted as being overcrowded, lacking separation of pedestrians and cyclists and being uncomfortable to spend time in. Ideas included brightening it with lighting and paint and creating pathways for all users.
- In **past engagement conducted by WCC,** there was a concern regarding drivers speeding throughout the centre. Ideas to curb this behaviour included reducing the speed from 60km/h to 40km/h in the centre and installing a speed camera at the corner of Nelson Road and Whitehorse Road.
- In **Mapping Activity** and **Online Forum,** many respondents stated the need of creating a nice and safe experience to access Box Hill, with more pedestrian crossings across Station Street and Albion Road. Ideas such as reclaiming Station Street for cyclists and pedestrians and increasing planting across the whole of Box Hill were shared.

OPPORTUNITY 2: Make it feel safe to spend time in – day and night

There is an opportunity to make the centre feel safer for all through various interventions.

Quantitative Evidence

- **Place Score's priorities (aggregated PX and CF data)** reveal *'Sense of safety (for all ages, genders, day/night etc.)'* to be a secondary priority for improvement at Market street, Prospect Street and Carrington Road.

THEME 5 – CAR PARKING

This theme addresses topics such as cohesive parking supply/strategy/management, as well as parking rates for new developments. The community engagement revealed the following areas of concern:

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ISSUE 1: Conflicted community – for and against parking

Quantitative Evidence

- **Place Score's Care Factor** indicates that *'Car accessibility and parking'* is the 40th most important place attribute (out of 50 attributes) while *'Walking, cycling and public transport options'* are #14.
- **Only 13% of respondents who drove to Box Hill** selected **'***Car accessibility and parking'* as being most important to them, while 27% selected *'Walking, cycling and public transport options'*.

Qualitative Evidence

- **Past engagement conducted by WCC** reveals respondents' feedback around shortage in the amount of car parking causing illegal use of disabled parking facilities. A need for better enforcement of parking permits has been discussed.
- **Past engagement conducted by WCC** reveals concerns that increased density in the area does not recognise the need for personal car use. Many respondents noted the number of cars on side streets at night time as an evidence of this need.
- **Past engagement conducted by WCC** reveals the high cost of parking as an issue noted by many participants, with areas around the TAFE and the hospital being particularly difficult for workers, patients and students to access.

The following opportunities related to this theme were identified through the community engagement:

OPPORTUNITY 1: Shift investment to active and public transport, and other place improvements

The community would support increased investment of space and funding to diversify choice away from private vehicle dominance and improve the social aspects of place.

Quantitative Evidence

- **Place Score's PX Assessments** reveal that amongst all primary movement attributes, *'Walking, cycling or public transport options'* has the most impact on place experience whereas *'Car accessibility and parking'* has the least.
- **Place Score's Care Factor Surveys** inform that Box Hill associates care much less about *'Car accessibility and parking'* across all demographics compared to the National Benchmark. This is also the least-cared about attribute of all primary and secondary movement-related attributes.
- **Place Score's priorities (aggregated PX and CF data)'** reveal that *'Car accessibility and parking'* is not even close to being an improvement priority for the centre and its streets.

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OPPORTUNTY 2: Creating a park-and-ride precinct

The community would support consideration of a park-and-ride precinct/ commuter parking area outside of Box Hill MAC to take cars out of the centre, also using technology to guide drivers to car parking spots.

Qualitative Evidence

- In **Mapping Activity** and **Online Forum,** participants noted the need to provide commuter car parking in nearby suburbs to reduce the need for parking at Box Hill (Nunawading and Blackburn Stations were identified).
- **Past engagement conducted by WCC** reveals the idea to create a park and ride location outside of Box Hill to reduce congestion caused by commuters' cars.
- **Past engagement conducted by WCC** reveals ideas such as use of parking sensors and signage to notify drivers about available car parking, thus reducing the number of cars circling in the centre.

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APPENDIX 1: OURSAY ISSUES AND OPPORTUNTIES PARTICIPATION DETAILS

Conversation Caravan was engaged by Place Score to support the community and stakeholder engagement for the Integrated Transport Strategy (ITS) for Whitehorse City Council (WCC).

Methodology

This section summarises participation online using the City of Whitehorse online engagement platform OurSay.

This stage, Stage 1 was focused on understanding the issues and opportunities associated with personal transportation preferences. The online engagement was conducted between 26th August and 14th September 2019. Two engagement methods were used:

- Online mapping tool, for participants drop a pin that related to an idea or an improvement that needed to be made. Four pin choices were provided – walking, cycling, public transport use and car use.
- Online forum, four questions (forums) were created:
    - Q1 When walking to Box Hill centre, what issues do you experience? What are the opportunities to improve the experience for pedestrians?
    - Q2 When riding to Box Hill centre, what issues do you experience? What are the opportunities to improve the experience for cyclists?
    - Q3 When travelling to Box Hill centre by public transport, what issues do you experience? What are the opportunities to improve the experience of travelling to the centre by public transport?
    - Q4 When driving to Box Hill centre, what issues do you experience? What are the opportunities to improve the experience of driving to the centre?

Participation

The OurSay project platform attracted 1199 unique visitors, of this number 30 people made a comment or contribution, representing 2.5% conversion. A further 80 people voted, or like a comment or idea. This conversion rate is significantly lower than the desired industry standard of 10% conversion. In addition to this 217 people viewed a comment, or a vote made by the 110 people.

Participation by tool

Online mapping: tool attracted the following:

- 57 unique visitors (4.7% of total visitation).
- 9 people engaged (3.8% of all engaged).
- 23 ideas.

Online forum: here we break participation across the forum questions:

Q1

- 60 unique visitors (5% of total visitation).
- 6 people engaged (8.7% of all engaged).
- 4 ideas.

Q2

- 42 unique visitors (3.5% of total visitation).
- 0 people engaged.
- 0 ideas.

Q3

- 97 unique visitors (8% of total visitation).
- 11 people engaged (10.6% of all engaged).
- 22 ideas.

Q4

- 35 unique visitors (2.9% of total visitation).
- 4 people engaged (3.8% of all engaged).
- 3 ideas.

OPPORTUNITIES AND CHALLENGES

1. Online Mapping

Summarised below are the key opportunities and challenges by the online method type.

Opportunities

- Opportunity to improve and enhance the interchange through improved connections to other modes of transport.
- Improve pedestrian access across Box Hill through dedicated pathways, improved traffic signally and nicer streetscapes.

Challenge

- Encouraging public transport use particularly when the connectivity, reliability and service levels are low (bus particularly).
- Provision of carparking in an increasingly developed area. Poor planning and limited supply of carparking is creating pressure on existing carparking places.

2. Forum Tool

Summarised below are the key opportunities and challenges by each forum.

Q1 When walking to Box Hill centre, what issues do you experience? What are the opportunities to improve the experience for pedestrians?

Opportunities

- Creating a safer environment for pedestrians, particularly by widening the footpaths and reducing the amount of infrastructure on footpaths and enforcing the collection of trolleys and abandoned bikes.
- Introducing smoke free zones to improve the pedestrian environment and encourage walking through the centre.

Challenges

- Cleaning up the area, including the unsavory activities that are happening around the train station and within the underpass areas.
- Managing the congestion and traffic in the area to improve the pedestrian environment.

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Q2 When riding to Box Hill centre, what issues do you experience? What are the opportunities to improve the experience for cyclists?
No comments made.

Q3 When travelling to Box Hill centre by public transport, what issues do you experience? What are the opportunities to improve the experience of travelling to the centre by public transport?

Opportunities

- Upgrade the interchange to create a pleasant environment for commuters, including toilets, better signage, seating and a colourful environment.
- Create dedicated bus lanes along major roads to reduce the wait times and delays on bus services.

Challenges

- Encouraging public transport use particularly when the connectivity, reliability and service levels are low (bus particularly). Lack of weekend and evening services.
- Lack of connectivity between various transport modes, physical and structural improvements are needed to make these improvements.

Q4 When driving to Box Hill centre, what issues do you experience? What are the opportunities to improve the experience of driving to the centre?

Opportunities

- Increase the number of families walking to school and choosing to leave their car at home for short trips.
- Repurposing roads and streets to reduce or remove cars from these environments.

Challenges

- Increasing the size and availability of carparking spaces to cope with the current and future demand.
- Policing carparking that is allocated to commuters and people with a disability.

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REPORT CONTENTS

ABOUT PLACE SCORE AND THIS RESEARCH

Place Score has been engaged by AECOM to conduct community engagement at various stages of preparation of Box Hill Integrated Transport Strategy. This report includes findings from on-site engagement conducted during Stage 1.

Place Score offers two sophisticated data collection tools, Care Factor and Place Experience (PX) Assessments. Like a 'place census', Care Factor captures what your community really values, while PX Assessments measure the community's lived experience.

Together they help you identify what is important, how a place is performing and what the focus of change should be. An attribute with a high Care Factor but a low PX Assessment should be a priority for investment.

There are many benefits in using Place Score for your project research:

- Community segmentation; geographic and demographic
- Insights that can be used for strategic planning and implementation projects
- Quantitative data for evidence based planning to measure the impact of investment over time
- Identification of place attributes that the community all cares about as well as potential conflicts to minimise risk

HOW THE PLACE SCORE SYSTEM WORKS:

Care Factor
captures *what* attributes your community **'values'...**

PX Assessment
captures *how* your community **'rates'** each attribute...

A place attribute with a high Care Factor but a low PX Score should be prioritised.

WHERE AND WHEN WAS THIS DATA COLLECTED?

Between the 20th and the 27th of August 2019 Place Score collected Town Centre Care Factor surveys and PX Assessments within Box Hill Metropolitan Activity Centre (MAC) for AECOM (on behalf of Whitehorse City Council). This data is the basis for your Town Centre Community Insights Report.

TOWN CENTRE CARE FACTOR SURVEY

Which place attributes are most important to you in your ideal town centre?

- 200 respondents
- Face-to-face data was collected between the 20th and 27th of August 2019.

STREET PX ASSESSMENTS

How is each place attribute impacting your personal enjoyment of this place?

- 6 main street environments in Box Hill MAC
- 281 local residents, workers and visitors completed a PX Assessment
- 40+ respondents per PX location
- Face-to-face data was collected between the 20th and 27th of August 2019.

A total of 481 responses were collected during the research.

HOW ARE PLACE SCORE ATTRIBUTES CODED?

Place Score's Care Factor and PX Assessments include 50 attributes which cover a wide range of themes. For this project, Place Score has closely looked at 9 movement-related attributes, having primary or secondary association with the topics considered by AECOM for the Integrated Transport Strategy.

Primary attributes include 4 attributes associated with walking, cycling, public transport options and private vehicular transport whereas secondary attributes are 5 attributes that potentially influence the different modes of travel, such as safety, quality and amount of public space, and evidence of management.

ABOUT THE RESPONDENTS

Place Score aimed to collect a representative sample of your population as reflected by the 2016 Census.

DEMOGRAPHIC	Target*	Actual
CF Overall	n=200 for ±6.93% at 95% Confidence	n=200
15-24 yrs	17.4% ±5%	20.6%
25-44 yrs	33.0% ±5%	49.7%
45-64 yrs	28.6% ±5%	21.6%
65+ yrs	21.0% ±5%	8.0%
Male	48.2% ±5%	46.5%
Female	51.8% ±5%	53.5%
PX Overall	n=240 for ±3.2pts. at 95% Confidence	n=281
15-24 yrs	17.4% ±5%	23.9%
25-44 yrs	33.0% ±5%	46.8%
45-64 yrs	28.6% ±5%	22.9%
65+ yrs	21.0% ±5%	6.4%
Male	48.2% ±5%	45.9%
Female	51.8% ±5%	54.1%

CONFIDENCE LEVEL:

For Box Hill, a 95% confidence level can be assumed for all data included in this report with a margin of error of 6.93% for all Care Factor data and a margin of error of 3.5pts for all PX data.

At a street and town centre level, all PX data has a standard error of less than 4.7pts.

CARE FACTOR DATA

Data was collected via face-to-face surveys during the period of the 20th and the 27th of August 2019. A total of 200 people participated.

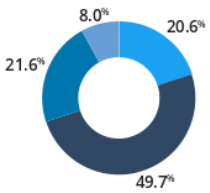
n=200

GENDER

46.5% 53.5% 0.0%

AGE[1]

15-24
25-44
45-64
65+



BIRTHPLACE

Australia	39%
India	17%
China	16%
Malaysia	4%
Vietnam	4%

PX DATA

Data was collected via face-to-face surveys during the period of the 20th and the 27th of August 2019. A total of 281 people participated.

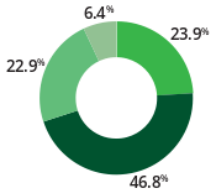
n=281

GENDER

54.1% 45.9% 0.0%

AGE[1]

15-24
25-44
45-64
65+



BIRTHPLACE

Australia	33.5%
China	33.5%
India	17.8%
New Zealand	3.9%
United Kingdom	2.5%

2013 CENSUS DATA

This column captures the make-up of your population in accordance with the 2016 census.

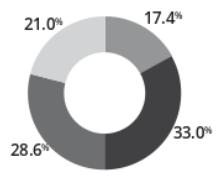
N=162,078

GENDER

48.2% 51.8% N/A%

AGE[1]

15-24
25-44
45-64
65+



BIRTHPLACE

Australia	57.2%
China	11.5%
India	3.0%
Malaysia	2.7%
England	2.4%

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Notes: [1]*Place Score does not actively collect surveys from people aged under 15. When collecting face to face data, Place Score are unable to survey people under the age of 15 years without parental consent. The ABS percentage of people aged 0-15 have been redistributed across other age groups.*

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EXECUTIVE SUMMARY

THIS SECTION PROVIDES AN EXECUTIVE SUMMARY OF KEY FINDINGS FOR BOX HILL METROPOLITAN ACTIVITY CENTRE (MAC).

9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

KEY FINDINGS OVERVIEW

This Executive Summary provides an overview of key findings from on-site engagement conducted by Place Score in Box Hill Metropolitan Activity Centre (MAC). It includes findings for the centre as a whole and those specifically related to movement, Place Score's Care Factor and PX data at a glance, and priorities for the centre and various streets. Lastly, a comparison of attributes with metropolitan Melbourne has been included.

WHAT DID WE LEARN?

The following gives an overview of what's working well and what needs to improve in Box Hill MAC. Highly valued attributes which perform well are considered as the strengths of the centre, whereas those which are not performing well are considered as priorities for improvement.

WHAT'S WORKING?

- Respondents consider Box Hill MAC to be generally welcoming, clean and having an overall neat visual look and character.
- The diversity of retail choices and particularly the presence of grocery and fresh food businesses is considered as a strength of the centre.
- Attributes such as '*Interesting things to look at*' and '*Ease of walking around*' are improvement priorities for all locations in Box Hill MAC except Whitehorse Road and Carrington Road where they are performing well and considered as strengths. Outdoor dining is also found to be performing well at Carrington Road.

WHAT NEEDS TO IMPROVE?

- According to your community, Box Hill MAC requires the most improvement in terms of 'place' related attributes such as interesting things to look at and outdoor dining.
- Improving the uniqueness of the centre in terms of presence of landmarks, unique features, public art and a diverse mix of people are secondary priorities for improvement.
- Improving the walkability of the centre is the only high priority investment required in terms of movement for Box Hill MAC.

OTHER CONSIDERATIONS

- Your community values the presence of a clean, walkable and unique centre that offers food retail and outdoor dining options.
- The 6 street main streets in Box Hill MAC are performing on average 7 points higher than Melbourne metropolitan average[1].
- Market Street is your best performing street, while Nelson Road performs the lowest.

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Notes: [1]*Based on data collected from 43 locations in Melbourne Metropolitan area*

MOVEMENT FINDINGS OVERVIEW

A majority of Box Hill associates[1] value a walkable town centre. The 6 street main streets are performing on average 7 points higher than Melbourne metropolitan average[2]. The only movement related attribute that is considered a priority is improving the '*Ease of walking around*'.

ACTIVE TRANSPORT

- '*Ease of walking around*' is identified as a high priority for improvement across all surveyed locations except Whitehorse Road (North side) and Carrington Road).
- Apart from respondents over 65 years, '*Ease of walking around*' is the most valued movement attribute for all Box Hill users, including those accessing the centre by private vehicle.
- Of all locations, Carrington Road performs the best in terms of '*Ease of walking around*' whereas Nelson Road performs the worst.

PUBLIC TRANSPORT

- '*Walking, cycling or public transport options*' is not a priority at present.
- Private vehicle users care more about '*Walking, cycling or public transport options*' compared to respondents using other modes. This indicates that this group is likely change travel behaviour
- '*Walking, cycling or public transport options*' is more valued by residents of suburbs just outside Box Hill, and respondents over 45 years.
- '*Walking, cycling or public transport options*' performs well across all locations (PX Score>80) and contributes the most to place experience compared to other primary movement attributes.

PRIVATE VEHICULAR TRANSPORT

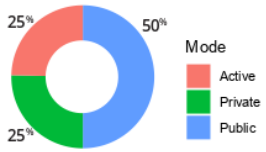
- '*Car accessibility and parking*' is neither a strength nor an improvement priority across the surveyed locations.
- Box Hill associates care much less about '*Car accessibility and parking*' across all demographics compared to the National Benchmark.
- This attribute performs the best at Market Street and the lowest at Nelson Road.
- It contributes the least to place experience compared to other primary movement attributes.

OTHER CONSIDERATIONS

- Apart from primary movement attributes, improving the physical safety of the centre and an overall sense of safety for different users is a secondary improvement priority.
- Primary movement attributes are generally found to impact place experience the most, compared to secondary attributes and non-movement attributes.
- Investment towards improving movement (for example, road space allocation) would potentially impact 'place' attributes which are among the broader priorities for the centre.

WHAT IS RESPONDENTS' STATED MODE OF TRAVEL[3]?

Place Score asked respondents of Care Factor Surveys and PX Assessments regarding their usual mode of travel to Box Hill MAC. Half of the surveyed respondents stated their usual mode to be public transport only (train/tram/bus). This is followed by an equal proportion of users travelling only by private vehicle (car/motorbike) and walking/cycling to the centre.



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Notes: [1]*All respondents associated with Box Hill as residents, visitors, workers or students*
[2]*Based on data collected from 43 locations in Melbourne Metropolitan area*
[3]*Based on 481 responses*

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MOVEMENT AND PLACE RECOMMENDATIONS

This section provides high-level recommendations for investing into improving the movement and place experience of Box Hill MAC. Each recommendation is supported by data collected by Place Score for this project.

IMPROVE WALKABLE CONNECTIONS INTO AND WITHIN THE CENTRE

- '*Ease of walking around*' is a high priority for improvement across all locations except Whitehorse Road (North side) and Carrington Road).
- '*Ease of walking around*' is the most valued movement attribute and has an overall Care Factor rank #2.
- '*Walking paths that connect to other places*' has Care Fcator rank #5 as per Box Hill residents.

IMPROVE THE PHYSICAL AND SOCIAL SAFETY OF THE CENTRE

- Improving the '*Sense of safety*' and '*Physical safety*' are secondary priorities for improving the movement experience of Box Hill streets except Nelson Road.
- A high percentage of respondents are found to care about '*Sense of safety*' and '*Physical safety*' (Care Factor rank within top 20).

CONSIDER A CAR DRIVER EDUCATION AND INCENTIVE PROGRAM TO ENCOURAGE CHANGE OF TRAVEL BEHAVIOUR

- '*Car accessibility and parking*' is the least valued (Care Factor rank #40) of all movement attributes, even by respondents using private vehicles for accessing Box Hill.
- Respondents using private vehicles care more about '*Walking, cycling or public transport options*' compared to those travelling to the centre by other modes.

INCREASE PUBLIC OPEN SPACE ADJACENT TO ROADS TO ACCOMMODATE OUTDOOR TRADING AND COMMUNITY SOCIAL ACTIVITIES

- '*Outdoor restaurant, cafe and/or bar seating*' is one of the topmost improvement priorities across the centre.
- Respondents highly value the presence of '*Outdoor restaurant, cafe and/or bar seating*'. This attribute has a Care Factor rank #4.

CONSIDER INTEGRATION OF UNIQUE STREETSCAPE FEATURES IN THE STREET DESIGN

- '*Interesting things to look at*' is the topmost overall improvement priority for Box Hill MAC. This attribute has a Care Factor rank #5.
- Other uniqueness attributes related to presence of landmarks, unique features and public art are among the secondary priorities for the centre.

PLACESCORE | Notes:

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BOX HILL MAC PLACE DATA AT A GLANCE

carefactor town centre

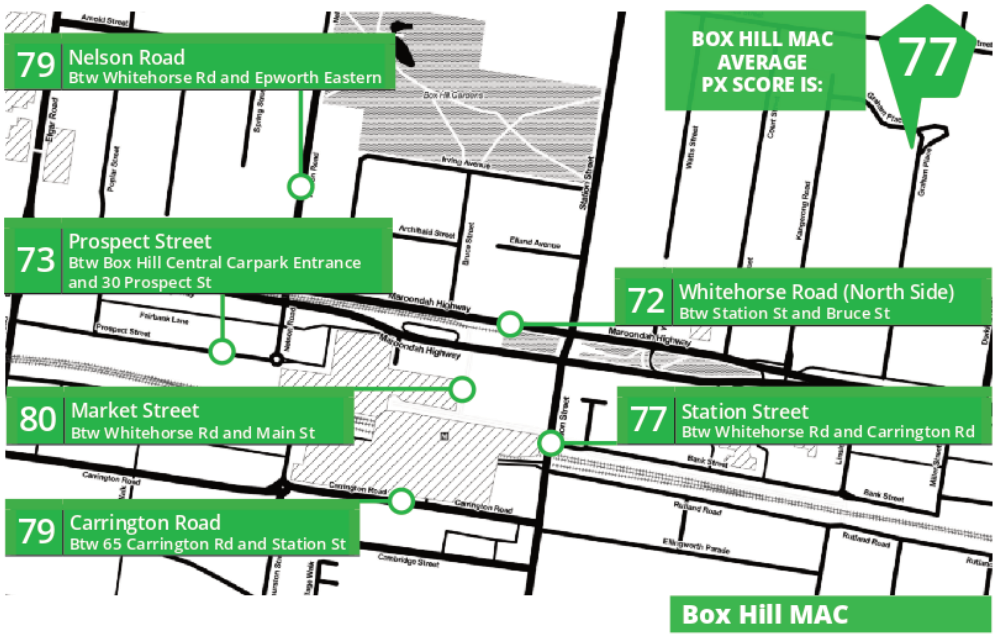
The Care Factor survey invites respondents to prioritise the place attributes that are most important to them in their ideal main street or town centre environment.

The following 5 attributes were select by the majority of your community as being important to them in their ideal town centre:

RANK	ATTRIBUTE	% OF n
#1	Cleanliness of public space	55%
#2	Ease of walking around (including crossing the street, moving between destinations)	52%
#3	Grocery and fresh food businesses	50%
#4	Outdoor restaurant, cafe and/or bar seating	48%
#5	Interesting things to look at (people, shops, views etc.)	45%

PXassessment street

A PX (Place Experience) Assessment is an observation study that asks respondents to rate how different aspects of a street are performing, resulting in a PX Score. The PX Score provides you with a number between 0 and 100 that captures your community's place experience. PX Assessments were undertaken at 6 main street locations in Box Hill MAC between the 20th and 27th of August 2019.



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Notes: *Care Factor percentages are based on the percentage of respondents that selected an attribute (n=584). PX Scores vary between 0 and 100. Scores above 70 are very good, 50-70 there is room for significant improvement, <50 urgent investment required. Map tiles by Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under ODbL.*

P.9 | Box Hill MAC CIR Oct 2019
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BOX HILL MAC STRENGTHS AND PRIORITIES

carefactor town centre
PXassessment street

PRIORITIES FOR THE BOX HILL TOWN CENTRE

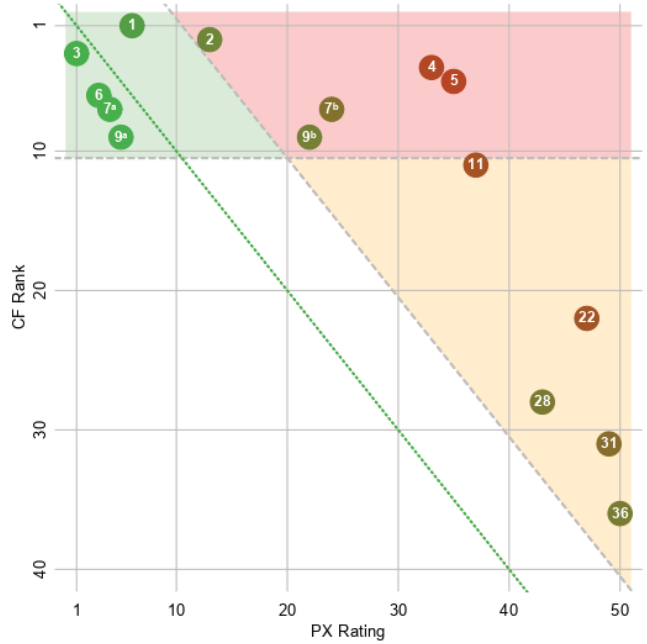
These tables and graph illustrate your town centre strengths, improvement priorities and secondary priorities.

STRENGTHS should be celebrated and protected.

IMPROVEMENT PRIORITIES identify the aspects of your town centre that are important to people but are currently under-performing. Improving these attributes will have the most significant impact on your community.

SECONDARY PRIORITIES identify attributes to look-out for, they are negatively affecting your town centre and can become more significant issues if more people start caring about them.

CF	STRENGTHS
9a	Welcoming to all people
7a	Overall look and visual character of the area
6	A cluster of similar businesses (food, cultural traders, fashion etc.)
3	Grocery and fresh food businesses
1	Cleanliness of public space



LEGEND

- *Horizontal: Top 10 CF threshold*
  Diagonal: Threshold showing attributes which PX rating is performing 10 pts worse than their CF ranking[1] (PX=CF+10)
- *Equal CF rank and PX Score (PX=CF)*

CF	IMPROVEMENT PRIORITIES
5	Interesting things to look at (people, shops, views etc.)
4	Outdoor restaurant, cafe and/or bar seating
7a	Unique mix or diversity of people in the area
9a	Maintenance of public spaces and street furniture
2	Ease of walking around (including crossing the street, moving between destinations)

CF	SECONDARY PRIORITIES
11	Landmarks, special features or meeting places
22	Local history, heritage buildings or features
31	Evidence of public events happening here (markets, street entertainers etc.)
28	One of a kind, quirky or unique features
36	Public art, community art, water or light feature

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Notes: *CF - Care Factor ranking out of 50 - the lower the number the higher the number of people who think this attribute is important. Strengths have a high CF and high PX. Priorities are the poorest performing CF ranked in the overall top 10. Secondary Priorities are the worst performing overall outside of the Top 10 CF.*

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BOX HILL MAC STREET IMPROVEMENT PRIORITIES

carefactor town centre
PXassessment street

TOWN CENTRE PX SCORES AND PRIORITIES

PX Assessments were undertaken in 6 main street locations. The highest PX Score was achieved at Market Street (80/100) while Whitehorse Road (North side) received the lowest score (72/100). The average of the 6 PX Scores is 77/100 while the current Metropolitan Melbourne average is 70/100.

Priorities for each location, and for the centre as a whole, are determined by aggregating the Care Factor data with the PX Assessment scores. The top 3 priorities for each location are those attributes with the highest Care Factor that are also performing poorly.

LOCATION NAME	AREAS INCLUDED	PX	PRIORITY 1	PRIORITY 2	PRIORITY 3
OVERALL AVERAGE	All surveyed locations reported on in this report	77	Interesting things to look at (people, shops, views etc.)	Outdoor restaurant, cafe and/or bar seating	Unique mix or diversity of people in the area
MARKET STREET	Btw Whitehorse Rd and Main St	80	Interesting things to look at (people, shops, views etc.)	Outdoor restaurant, cafe and/or bar seating	Grocery and fresh food businesses
PROSPECT STREET	Btw Box Hill Central Carpark Entrance and 30 Prospect St	73	Outdoor restaurant, cafe and/or bar seating	Interesting things to look at (people, shops, views etc.)	Unique mix or diversity of people in the area
STATION STREET	Btw Whitehorse Rd and Carrington Rd	77	Outdoor restaurant, cafe and/or bar seating	Interesting things to look at (people, shops, views etc.)	Unique mix or diversity of people in the area
WHITEHORSE ROAD (NORTH SIDE)	Btw Station St and Bruce St	72	Unique mix or diversity of people in the area	Maintenance of public spaces and street furniture	Outdoor restaurant, cafe and/or bar seating
CARRINGTON ROAD	Btw 65 Carrington Rd and Station St	79	Cleanliness of public space	Maintenance of public spaces and street furniture	Unique mix or diversity of people in the area
NELSON ROAD	Btw Whitehorse Rd and Epworth Eastern	79	Ease of walking around (including crossing the street, moving between destinations)	Maintenance of public spaces and street furniture	Interesting things to look at (people, shops, views etc.)

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Notes: *PX Scores vary between 0 and 100. Scores above 70 are very good, 50-70 there is room for significant improvement, <50 urgent investment required. Priorities have a high Care Factor and a low PX Score - People care highly about them, but they are perceived as performing poorly. Grayed cells identify the overall priorities, while green cells identify a location's priorities that differ from the overall top three priorities.*

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MELBOURNE BENCHMARK COMPARISON

PXassessment street

BOX HILL MAC PLACES ARE PERFORMING BETTER THAN THE MELBOURNE METRO AVERAGE

Your PX Scores act as a benchmark to track place performance over time and allows for comparison against other locations.

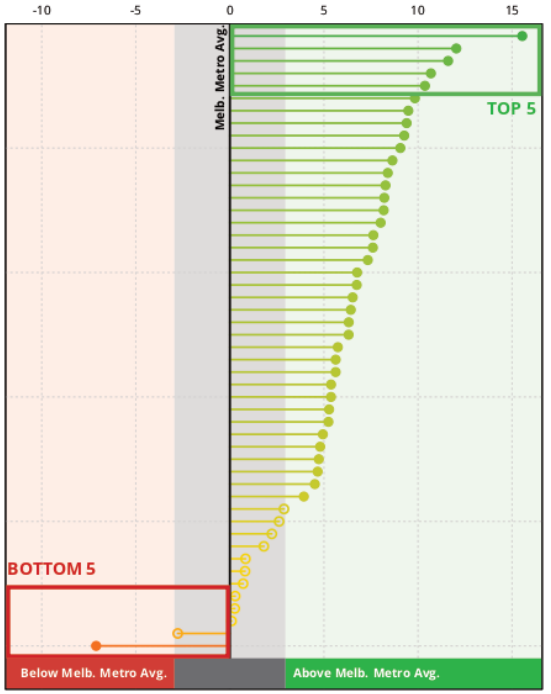
PX Scores:

- 77 Box Hill MAC Average
- 77 Boroondara LGA Average
- 75 Little Malop Street, Geelong
- 70 Melbourne Metro Average
- 70 Hampshire Road, Sunshine
- 56 Alfreida Street, St Albans

YOUR TOP 5 ATTRIBUTES COMPARED TO THE MELBOURNE METRO AVERAGE ARE:	DIFFERENCE FROM MELBOURNE METRO AVERAGE
Amenities and facilities (toilets, water bubblers, parents rooms etc.)	+15.5
A cluster of similar businesses (food, cultural traders, fashion etc.)	+12.0
Grocery and fresh food businesses	+11.6
Street furniture (including benches, bins, lights etc.)	+10.7
Cleanliness of public space	+10.4

YOUR BOTTOM 5 ATTRIBUTES COMPARED TO THE MELBOURNE METRO AVERAGE ARE:	DIFFERENCE FROM MELBOURNE METRO AVERAGE
Local history, heritage buildings or features	-7.1
Evidence of public events happening here (markets, street entertainers etc.)	-2.8
Interesting things to look at (people, shops, views etc.)	+0.1
Outdoor restaurant, cafe and/or bar seating	+0.3
Public art, community art, water or light feature	+0.3

PX Scores of all 50 attributes of Box Hill Average compared with Melbourne Metro Average.



PLACESCORE www.placescore.org

Notes: *Follow this link to see how all 50 Place Score attributes are performing compared to the national average. Each attribute is scored out of 100. *Within the margin of error. The grey area illustrates attributes that are within the margin of error, meaning you should be cautious as they could be a bit lower, higher or the same as the national average. Melbourne metro average sample used n=2,482 (Sept 2019)*

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MOVEMENT AND PLACE

THIS SECTION PROVIDES INSIGHTS AND RECOMMENDATIONS REGARDING MOVEMENT AND PLACE FOR BOX HILL MAC.

MOVEMENT FINDINGS OVERVIEW

A majority of Box Hill associates[1] value a walkable town centre. The 6 street main streets are performing on average 7 points higher than Melbourne metropolitan average[2]. The only movement related attribute that is considered a priority is improving the '*Ease of walking around*'.

ACTIVE TRANSPORT

- '*Ease of walking around*' is identified as a high priority for improvement across all surveyed locations except Whitehorse Road (North side) and Carrington Road).
- Apart from respondents over 65 years, '*Ease of walking around*' is the most valued movement attribute for all Box Hill users, including those accessing the centre by private vehicle.
- Of all locations, Carrington Road performs the best in terms of '*Ease of walking around*' whereas Nelson Road performs the worst.

PUBLIC TRANSPORT

- '*Walking, cycling or public transport options*' is not a priority at present.
- Private vehicle users care more about '*Walking, cycling or public transport options*' compared to respondents using other modes. This indicates that this group is likely change travel behaviour
- '*Walking, cycling or public transport options*' is more valued by residents of suburbs just outside Box Hill, and respondents over 45 years.
- '*Walking, cycling or public transport options*' performs well across all locations (PX Score>80) and contributes the most to place experience compared to other primary movement attributes.

PRIVATE VEHICULAR TRANSPORT

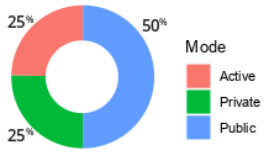
- '*Car accessibility and parking*' is neither a strength nor an improvement priority across the surveyed locations.
- Box Hill associates care much less about '*Car accessibility and parking*' across all demographics compared to the National Benchmark.
- This attribute performs the best at Market Street and the lowest at Nelson Road.
- It contributes the least to place experience compared to other primary movement attributes.

OTHER CONSIDERATIONS

- Apart from primary movement attributes, improving the physical safety of the centre and an overall sense of safety for different users is a secondary improvement priority.
- Primary movement attributes are generally found to impact place experience the most, compared to secondary attributes and non-movement attributes.
- Investment towards improving movement (for example, road space allocation) would potentially impact 'place' attributes which are among the broader priorities for the centre.

WHAT IS RESPONDENTS' STATED MODE OF TRAVEL[3]?

Place Score asked respondents of Care Factor Surveys and PX Assessments regarding their usual mode of travel to Box Hill MAC. Half of the surveyed respondents stated their usual mode to be public transport only (train/tram/bus). This is followed by an equal proportion of users travelling only by private vehicle (car/motorbike) and walking/cycling to the centre.



PLACESCORE

Notes:
[1] *All respondents associated with Box Hill as residents, visitors, workers or students*
[2] *Based on data collected from 43 locations in Melbourne Metropolitan area*
[3] *Based on 481 responses*

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MOVEMENT AND PLACE RECOMMENDATIONS

This section provides high-level recommendations for investing into improving the movement and place experience of Box Hill MAC. Each recommendation is supported by data collected by Place Score for this project.

IMPROVE WALKABLE CONNECTIONS INTO AND WITHIN THE CENTRE

- '*Ease of walking around*' is a high priority for improvement across all locations except Whitehorse Road (North side) and Carrington Road).
- '*Ease of walking around*' is the most valued movement attribute and has an overall Care Factor rank #2.
- '*Walking paths that connect to other places*' has Care Fcator rank #5 as per Box Hill residents.

IMPROVE THE PHYSICAL AND SOCIAL SAFETY OF THE CENTRE

- Improving the '*Sense of safety*' and '*Physical safety*' are secondary priorities for improving the movement experience of Box Hill streets except Nelson Road.
- A high percentage of respondents are found to care about '*Sense of safety*' and '*Physical safety*' (Care Factor rank within top 20).

CONSIDER A CAR DRIVER EDUCATION AND INCENTIVE PROGRAM TO ENCOURAGE CHANGE OF TRAVEL BEHAVIOUR

- '*Car accessibility and parking*' is the least valued (Care Factor rank #40) of all movement attributes, even by respondents using private vehicles for accessing Box Hill.
- Respondents using private vehicles care more about '*Walking, cycling or public transport options*' compared to those travelling to the centre by other modes.

INCREASE PUBLIC OPEN SPACE ADJACENT TO ROADS TO ACCOMMODATE OUTDOOR TRADING AND COMMUNITY SOCIAL ACTIVITIES

- '*Outdoor restaurant, cafe and/or bar seating*' is one of the topmost improvement priorities across the centre.
- Respondents highly value the presence of '*Outdoor restaurant, cafe and/or bar seating*'. This attribute has a Care Factor rank #4.

CONSIDER INTEGRATION OF UNIQUE STREETSCAPE FEATURES IN THE STREET DESIGN

- '*Interesting things to look at*' is the topmost overall improvement priority for Box Hill MAC. This attribute has a Care Factor rank #5.
- Other uniqueness attributes related to presence of landmarks, unique features and public art are among the secondary priorities for the centre.

PLACESCORE | Notes:

P.15 | Box Hill MAC CIR Oct 2019
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BOX HILL MAC MODAL CHOICE

WHO CARES ABOUT WHAT?

- '*Ease of walking around*' is the most valued movement attribute for all Box Hill users except respondents over 65 years. '*Car accessibility and parking*' is valued the least.
- Generally males, 45-64 aged respondents, Australian-born respondents and residents care more about being able to move around on foot, by bicycle and public transport compared to the average for all associates.
- Surprisingly, private vehicle users care more about '*Walking, cycling or public transport options*' compared to respondents using other modes.

The following table illustrates Care Factor percentages of different movement attributes for Box Hill users.

LEGEND
More valued than average for MAC
Less valued than average for MAC

	TOTAL (n=200)	Gender		Age				Country of birth		Association				Transport Mode		
		Men (n=93)	Women (n=107)	Under 25 (n=42)	25-44 (n=99)	45-64 (n=43)	65+ (n=16)*	Born in Australia (n=78)	Born Overseas (n=122)	Residents[1] (n=90)	Visitors (n=36)	Workers (n=34)	Students (n=45)	Only Active Transport Users (n=60)	Only Public Transport Users (n=92)	Only Private Vehicle Users (n=31)
Primary Alignment																
Ease of walking around (including crossing the street, moving between destinations)	**52%**	54%	50%	52%	47%	63%	44%	58%	48%	53%	47%	50%	49%	52%	49%	48%
Walking, cycling or public transport options	**36%**	37%	36%	26%	31%	49%	56%	47%	29%	39%	39%	29%	33%	27%	38%	45%
Walking paths that connect to other places	**31%**	31%	31%	33%	27%	40%	25%	40%	25%	41%	25%	26%	27%	32%	29%	35%
Car accessibility and parking	**19%**	22%	17%	19%	23%	16%	0%	17%	20%	18%	25%	18%	16%	13%	22%	23%
Secondary Alignment																
Sense of safety (for all ages, genders, day/night etc.)	**37%**	38%	36%	36%	41%	35%	19%	35%	39%	37%	36%	35%	42%	32%	38%	45%
Physical safety (paths, cars, lighting etc.)	**35%**	29%	39%	26%	37%	28%	56%	28%	39%	38%	36%	32%	29%	40%	37%	29%
Amount of public space (footpaths and public spaces)	**30%**	37%	23%	40%	24%	28%	38%	33%	27%	29%	25%	35%	29%	30%	28%	29%
Quality of public space (footpaths and public spaces)	**29%**	24%	33%	26%	29%	35%	13%	32%	26%	31%	17%	26%	33%	28%	29%	23%
Evidence of management (signage, information, street cleaners etc.)	**19%**	20%	17%	14%	19%	14%	38%	17%	20%	20%	22%	12%	18%	18%	18%	16%

PLACESCORE

Notes: **Small dataset*
[1] Respondents self-identified as residents of Box Hill area. This may include residents of suburbs living outside Box Hill (suburb).

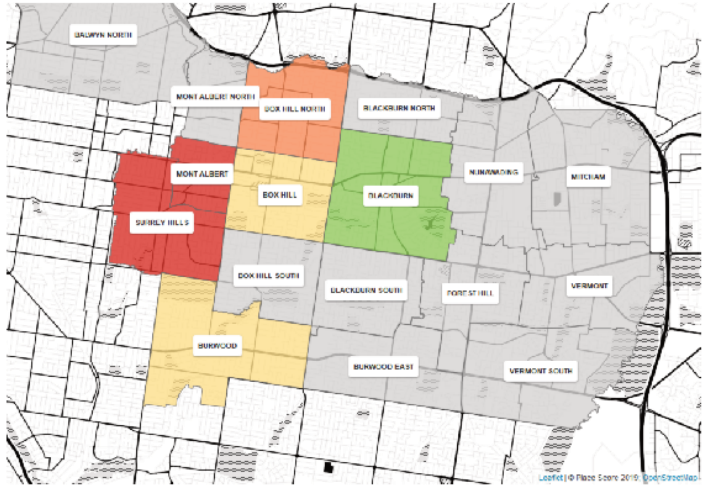
BOX HILL MAC MODAL CHOICE

WHO CARES ABOUT WHAT?

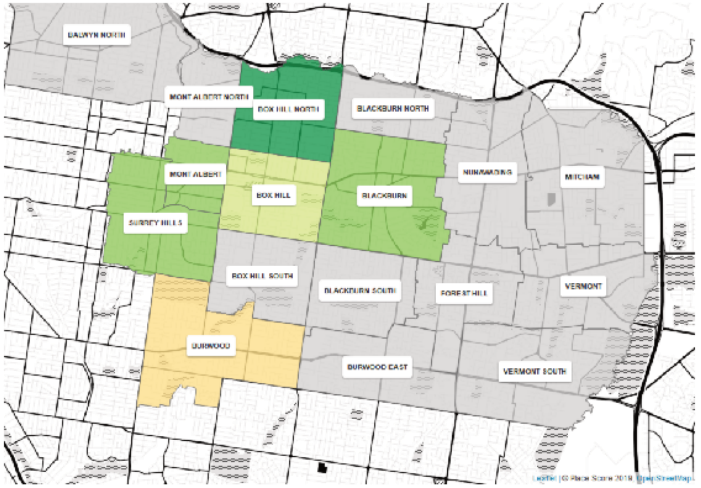
- A majority of Box Hill North residents value '*Walking, cycling or public transport options*' while less than 20% care about '*Car accessibility and parking*'. Mont Albert and Surrey Hills have a similar trend, however, even less residents of these suburbs value cars (under 10%). Residents of Blackburn and Burwood generally care equally about the two attributes.
- '*Walking, cycling or public transport options*' is valued by more respondents living just outside Box Hill (except Burwood) compared to the suburb itself. Investment should focus on improving walkable connections to the centre for these users.
- More Blackburn residents care about '*Car accessibility and parking*' compared to residents of other suburbs. Fewer residents living in Surrey Hills and Mont Albert consider this attribute to be of high value to them.

The following graphs compare Care Factor percentages of '*Car accessibility and parking*', and '*Walking, cycling or public transport options*' for residents of different suburbs in the LGA.

How much we value '*Car accessibility and parking*' by suburb



How much we value '*Walking, cycling or public transport options*' by suburb



LEGEND
% of respondents
- *0-10%*
- *10-20%*
- *20-30%*
- *30-40%*
- *40-50%*
- *50-60%*

PLACESCORE

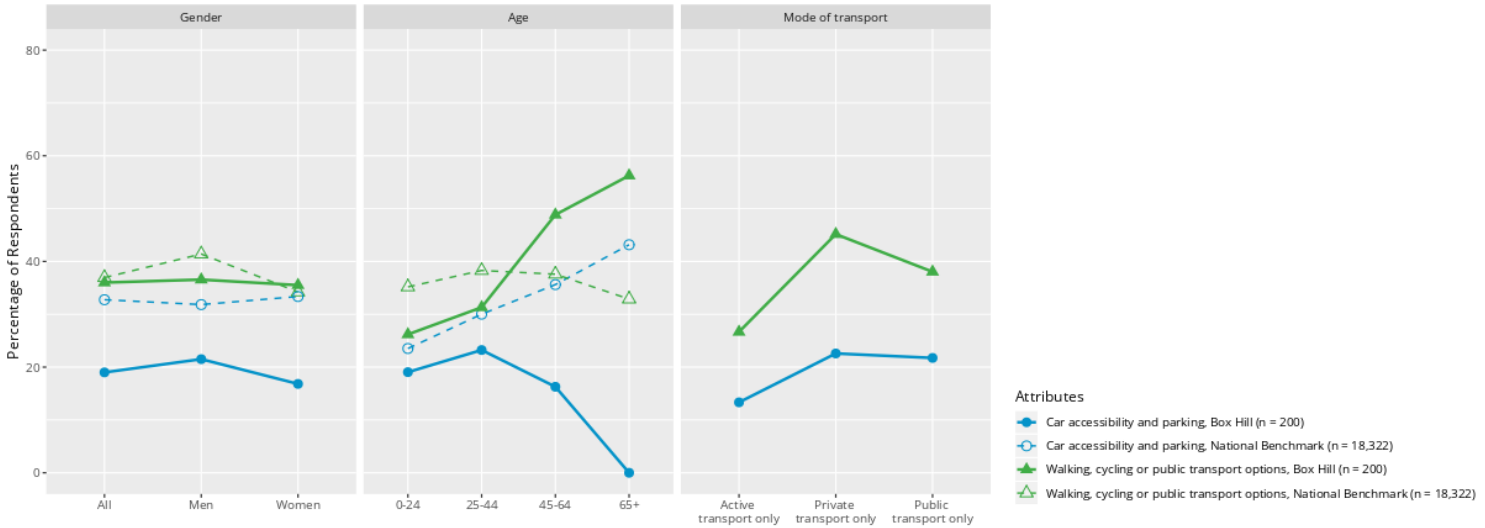
Notes: *These maps use data from the Care Factor Survey, based on suburb of residence of respondents. Respondents selected the top 3 attributes they cared the most about from 10 attributes. Suburbs with less than 5 respondents have been greyed out for legibility.*

NATIONAL BENCHMARK MOVEMENT COMPARISON

BOX HILL MAC VS NATIONAL BENCHMARK MODAL CHOICES CARE FACTOR

- For Box Hill associates[1], both genders value '*Car accessibility and parking*' almost equally, but significantly lower than the National Benchmark.
- Older respondents are more likely to value '*Walking, cycling or public transport options*' than '*Car accessibility and parking*', which is a different trend compared to that across Australia. On the other hand, younger respondents in Box Hill are found to care less about '*Walking, cycling or public transport options*' compared to the National Benchmark.
- Any investment in Box Hill should ensure that the elderly population gets easy access to the centre by walking, cycling and public transport options.

The following graph compares the Care Factor percentages of two movement attributes, namely '*Car accessibility and parking*', and '*Walking, cycling or public transport options*' for associates of Box Hill MAC and across Australia.



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Notes: [1]*Respondents associated with Box Hill as a resident, visitor, worker or student*
CF data per mode was collected only for this project, hence is not a part of the National Benchmark data

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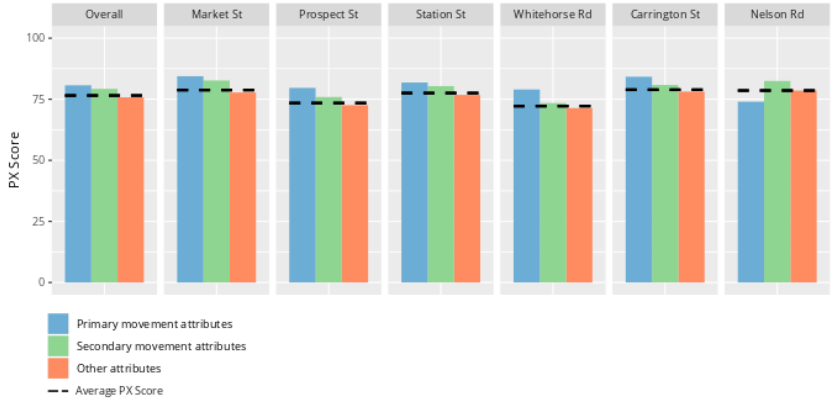
BOX HILL MAC MOVEMENT PERFORMANCE

HOW ARE THE MOVEMENT ATTRIBUTES IMPACTING PLACE EXPERIENCE?

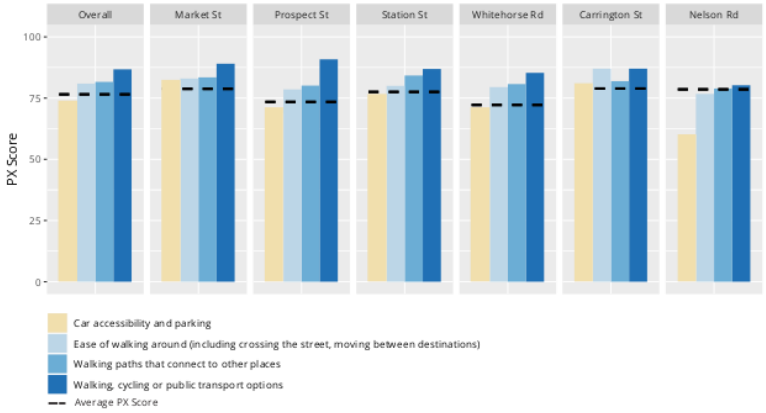
- Of all attributes impacting place experience, primary movement attributes are the most influential across all locations except Nelson Road where secondary movement attributes are more dominant.
- Amongst the primary movement attributes, '*Walking, cycling or public transport options*' has the most impact on place experience compared to the other attributes. It is one of the top 3 best performing attributes across different locations, with Prospect Street performing having the highest score for that attribute.
- '*Car accessibility and parking*' is found to have the least influence on place experience.
- For all primary movement attributes, Nelson Road has the lowest scores compared to other locations.

The following graphs compare the contribution of various movement attributes to the overall place experience of the centre and its streets.

PX Score Contribution by Theme



PX Score Contribution by Primary Movement Attributes



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Notes: *AT includes respondents only walking/cycling to the centre, PT includes respondents taking the train/tram/bus for accessing the centre, PV includes respondents using private vehicles for accessing the centre*
**Order of attributes is based on Box Hill overall CF ranking.*

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BOX HILL MAC MOVEMENT AND PLACE PRIORITIES

This page illustrates which movement related attributes are rated by the community as either strengths or priorities. The green bars indicate attributes that are strengths of the surveyed location, whereas red bars indicate attributes requiring high priority improvement (Attributes with CF #1-10). The yellow bars indicate attributes that are considered as secondary priorities for improvement (Attributes with CF #10-20). Length of the bar determines the extent to which the attribute is a strength or priority.

- In Box Hill MAC, investment should start with improving the '*Ease of walking around*' at all streets except for Whitehorse Road and Carrington Road where this attribute is performing well and should be protected and built upon.
- Improving physical safety of the centre and an overall sense of safety for different users is a secondary improvement priority.
- Other movement related attributes are performing better compared to the extent they are valued. Hence they are not priorities for improvement at present.

LEGEND
Strengths
High priority
Secondary priority

Movement Attributes	Market St	Prospect St	Station St	Whitehorse Rd	Carrington Rd	Nelson Rd
Car accessibility and parking						
Ease of walking around (including crossing the street, moving between destinations)						
Walking paths that connect to other places						
Walking, cycling or public transport options						
Amount of public space (footpaths and public spaces)						
Evidence of management (signage, information, street cleaners etc.)						
Physical safety (paths, cars, lighting etc.)						
Quality of public space (footpaths and public spaces)						
Sense of safety (for all ages, genders, day/night etc.)						

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Notes: *Strengths have a high CF and high PX. Priorities are the poorest performing attributes with CF ranked in the overall top 10 and a rank gap of less than -10. Secondary Priorities are the worst performing overall outside of the Top 10 CF. Table cells that are not highlighted show the rank gap of attributes which are either performing well compared to the extent they are valued or are not within the top 20 Care Factors.*
**Order of attributes is based on Box Hill overall CF ranking.*

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TOWN CENTRE CARE FACTOR

YOUR CARE FACTOR DATA ACTS AS A 'PLACE CENSUS', IDENTIFYING WHAT IS MOST IMPORTANT TO YOUR COMMUNITY REGARDING THEIR IDEAL TOWN CENTRE. THE DATA IS VALID FOR 3-5 YEARS AND CAN BE USED FOR A VARIETY OF STRATEGIC AND TACTICAL PROJECTS.

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TOWN CENTRE PLACE VALUES

carefactor town centre

THE BOX HILL COMMUNITY VALUES A TOWN CENTRE THAT IS:

CLEAN
Having a clean and well maintained town centre is important to your community. 'Cleanliness of public space' is the number one Care Factor.

WALKABLE
'Ease of walking around (including crossing the street, moving between destinations)' is the only transport related attribute in your community's top 10 Care Factor.

OFFERING RETAIL CHOICES AND ALFRESCO DINING
Your community values a town centre that has a cluster of similar businesses, including grocery and fresh food businesses as well as outdoor dining options.

WELCOMING AND DIVERSE
Your community's ideal town centre is one that has a diversity of people and feels welcoming.

INTERESTING
The opportunity to look at interesting things and the overall look and visual character of the area are important aspects of your community's ideal town centre.

DEMOGRAPHIC DIFFERENCES IN TOWN CENTRE VALUES	
25-44 YEARS OLD	67% of people aged 25-44 care about 'Cleanliness of public space' compared to only 37% of people aged 45-64.
45-64 YEARS OLD	44% of people aged 45-64 care about 'General condition of businesses and shopfronts' compared to only 26% of people aged 25-44.
MEN	37% of Men care about 'Amount of public space (footpaths and public spaces)' compared to only 23% of Women.
WOMEN	46% of Women care about 'Welcoming to all people' compared to only 31% of Men.
RESIDENTS	28% of Residents care about 'Evidence of community activity (community gardening, art, fundraising etc.)' compared to only 9% of Students.
STUDENTS	58% of Students care about 'Grocery and fresh food businesses' compared to only 43% of Residents.
AUSTRALASIAN ANCESTRY	45% of people with Australasian ancestry care about 'Walking, cycling or public transport options' compared to only 20% of people with Asian ancestry.
ASIAN ANCESTRY	55% of people with Asian ancestry care about 'Outdoor restaurant, café and/or bar seating' compared to only 38% of people with Australasian ancestry.

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Notes: *Care Factor percentages are based on the percentage of respondents that selected an attribute (n=200).*

TOWN CENTRE PLACE VALUES

carefactor town centre

The Care Factor survey asks respondents to select what is most important to them in each of five Place Dimensions.

The Place Dimensions and their associated ten Place Attributes reveal what attracts and attaches people to a town centre or main street environment, as well as the barriers to entry or connection.

BOX HILL TOP 10 CARE FACTORS

Box Hill top 10 Care Factors are ranked based on how many people selected each attribute as being important to them.

n=200

RANK	ATTRIBUTE	% OF PEOPLE
#1	**Cleanliness of public space**	55% CARE
#2	**Ease of walking around** (including crossing the street, moving between destinations)	52% LOOK & FUNCTION
#3	**Grocery and fresh food businesses**	50% SENSE OF WELCOME
#4	**Outdoor restaurant, cafe and/or bar seating**	48% THINGS TO DO
#5	**Interesting things to look at** (people, shops, views etc.)	45% THINGS TO DO
#6	**A cluster of similar businesses** (food, cultural traders, fashion etc.)	41% UNIQUE
=#7	**Unique mix or diversity of people in the area**	40% UNIQUE
=#7	**Overall look and visual character of the area**	40% LOOK & FUNCTION
=#9	**Maintenance of public spaces and street furniture**	39% CARE
=#9	**Welcoming to all people**	39% SENSE OF WELCOME

THE FIVE PLACE DIMENSIONS ARE:

CARE
How well a place is managed, maintained and improved. It considers care, pride, personal and financial investment in the area.

LOOK & FUNCTION
Physical characteristics of a place: how it looks and works, the buildings, public space and vegetation.

SENSE OF WELCOME
The social characteristics of a place, and how inviting it feels to a range of people regardless of age, income, gender, ethnicity or interests.

THINGS TO DO
Activities, events and inviting spaces to spend time in a place that might lead to a smile or a new friend.

UNIQUENESS
Physical, social, cultural or economic aspects of an area that make a place interesting, special or unique.

PLACESCORE

Notes: *Care Factor percentages are based on the percentage of respondents that selected an attribute (n=200).*

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TOWN CENTRE PLACE VALUES

carefactor town centre

DEMOGRAPHIC BREAKDOWN

The following tables illustrate the differences in values between demographic groups. The circled numbers refer to the top 10 Care Factor, while the colour identifies a demographic's top three attributes.

DEMOGRAPHIC BREAKDOWN[1]

		①1	②2	③3	④4	⑤5	⑥6	⑦7	⑦7	⑨9	⑨9	Highest rated attributes if not in the overall top ten
ALL	200											
Male	93	52%	54%	52%	52%	45%	39%	37%	34%	38%	31%	
Female	107	57%	50%	48%	46%	45%	43%	44%	45%	40%	46%	
Age												
0-24	42	36%	52%	57%	45%	50%	31%	52%	43%	33%	48%	
25-44	99	67%	47%	49%	53%	43%	44%	35%	38%	43%	36%	
45-64	43	37%	63%	44%	44%	51%	42%	42%	42%	42%	30%	Walking, cycling or public transport options(49%)
65+	16	75%	44%	44%	44%	25%	44%	38%	38%	19%	56%	Physical safety (paths, cars, lighting etc.)(56%), Walking, cycling or public transport options(56%)
Country of birth (Top 3)												
Australia	78	46%	58%	47%	42%	46%	37%	40%	35%	38%	36%	Walking, cycling or public transport options(47%)
India	34	76%	44%	53%	65%	35%	38%	32%	56%	50%	32%	
China	32	50%	56%	50%	56%	53%	47%	38%	28%	34%	44%	
Ancestry (Top 3)												
Asian	74	55%	54%	53%	55%	46%	38%	42%	39%	43%	49%	
Australasian	55	47%	58%	49%	38%	45%	44%	36%	36%	38%	33%	
European (including United Kingdom)	30	40%	47%	33%	40%	40%	37%	37%	40%	33%	40%	General condition of vegetation, street trees and other planting(53%), Walking, cycling or public transport options(50%), Local history, heritage buildings or features(47%)

DEMOGRAPHIC BREAKDOWN[1]

		①1	②2	③3	④4	⑤5	⑥6	⑦7	⑦7	⑨9	⑨9	Highest rated attributes if not in the overall top ten
ALL	200											
Identity												
Residents	90	51%	53%	43%	41%	41%	32%	42%	40%	38%	39%	
Visitors	36	67%	47%	47%	58%	47%	61%	44%	36%	33%	36%	
Workers	34	53%	50%	53%	53%	35%	35%	35%	32%	35%	38%	
Students	45	58%	49%	58%	49%	56%	42%	38%	49%	49%	47%	
Neighbourhood Type												
Inner-urban (Medium-high density)	196	55%	52%	51%	48%	45%	41%	40%	40%	39%	39%	

LEGEND
- *#1 attribute*
- *#2 attribute*
- *#3 attribute*

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Notes: *[1]Demographic breakdown should be used as a 'snapshot' as smaller samples (n=<80) do not meet the 95% confidence level.*
[2]Respondents were allowed to select more than one identity (Resident, visitor, worker, student)

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TOWN CENTRE PLACE VALUES

carefactor town centre

DEMOGRAPHIC BREAKDOWN

The following tables illustrate the differences in values between demographic groups based on their connection to the town centre.

LEGEND
#1 *Different from Box Hill Associates top 10 Care Factors*

BOX HILL ASSOCIATES[1]
n=200

RANK	ATTRIBUTE	% OF n
#1	Cleanliness of public space	55%
#2	Ease of walking around (including crossing the street, moving between destinations)	52%
#3	Grocery and fresh food businesses	50%
#4	Outdoor restaurant, cafe and/or bar seating	48%
#5	Interesting things to look at (people, shops, views etc.)	45%
#6	A cluster of similar businesses (food, cultural traders, fashion etc.)	41%
=#7	Unique mix or diversity of people in the area	40%
=#7	Overall look and visual character of the area	40%
=#9	Maintenance of public spaces and street furniture	39%
=#9	Welcoming to all people	39%

RESIDENTS[1]
n=90

RANK	ATTRIBUTE	% OF n
#1	Ease of walking around (including crossing the street, moving between destinations)	53%
#2	Cleanliness of public space	51%
#3	Grocery and fresh food businesses	43%
#4	Unique mix or diversity of people in the area*	42%
=#5	Interesting things to look at * (people, shops, views etc.)	41%
=#5	Outdoor restaurant, cafe and/ or bar seating*	41%
=#5	Things to do in the evening * (shopping, dining, entertainment etc.)	41%
=#5	Walking paths that connect to other places*	41%
#9	Overall look and visual character of the area*	40%
#10	General condition of buildings*	39%

STUDENTS[1]
n=45

RANK	ATTRIBUTE	% OF n
=#1	Cleanliness of public space	58%
=#1	Grocery and fresh food businesses	58%
#3	Interesting things to look at (people, shops, views etc.)	56%
#4	Landmarks, special features or meeting places	51%
=#5	Ease of walking around (including crossing the street, moving between destinations)	49%
=#5	Maintenance of public spaces and street furniture	49%
=#5	Outdoor restaurant, cafe and/or bar seating	49%
=#5	Overall look and visual character of the area	49%
#9	Welcoming to all people*	47%
#10	A cluster of similar businesses * (food, cultural traders, fashion etc.)	42%

WORKERS[1]
n=34

RANK	ATTRIBUTE	% OF n
=#1	Cleanliness of public space	53%
=#1	Grocery and fresh food businesses	53%
=#1	Outdoor restaurant, cafe and/or bar seating	53%
=#4	Ease of walking around * (including crossing the street, moving between destinations)	50%
=#4	Point of difference from other similar streets of places*	50%
#6	General condition of buildings*	47%
#7	Free and comfortable places to sit alone*	44%
#8	Interaction with locals/ other people in the area * (smiles, customer service etc.)	41%
=#9	General condition of businesses and shopfronts*	38%
=#9	Welcoming to all people*	38%

PLACESCORE

Notes: *[1]Respondents were allowed to select more than one identity. 'Associates' are people that identified Box Hill as their town centre. *Confidence level for this attribute is below the 95% threshold due to small sample.*

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PX ASSESSMENTS

THE PX SCORE IS A NUMBER BETWEEN ZERO AND 100 THAT MEASURES YOUR COMMUNITY'S LIVED PLACE EXPERIENCE. IT ALLOWS YOU TO IDENTIFY WHAT ATTRIBUTES ARE CONTRIBUTING POSITIVELY AND NEGATIVELY TO HOW YOUR TOWN CENTRE IS PERFORMING.

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HOW ARE YOUR STREETS PERFORMING?

PXassessment street

PEOPLE IDENTIFIED YOUR STREETS AS:

OFFERING A CHOICE OF RETAIL

Surveyed respondents rate '*Grocery and fresh food businesses*' to be the best performing attribute of your main streets. '*A cluster of similar businesses (food, cultural traders, fashion etc.)*' is also rated highly by the surveyed respondents.

OFFERING A CHOICE OF MOVEMENT OPTIONS

Your community perceives that '*walking, cycling or public transport options*' are performing well in the surveyed main streets.

NEEDING MORE ART AND ACTIVATION

Surveyed respondents rate '*Public art, community art, water of light feature*' as the worst performing attribute of your main streets. '*Evidence of public events happening here (markets, street entertainers festivals etc.)*' is also found to be poorly contributing to the place experience.

IN NEED OF PUBLIC INVESTMENT

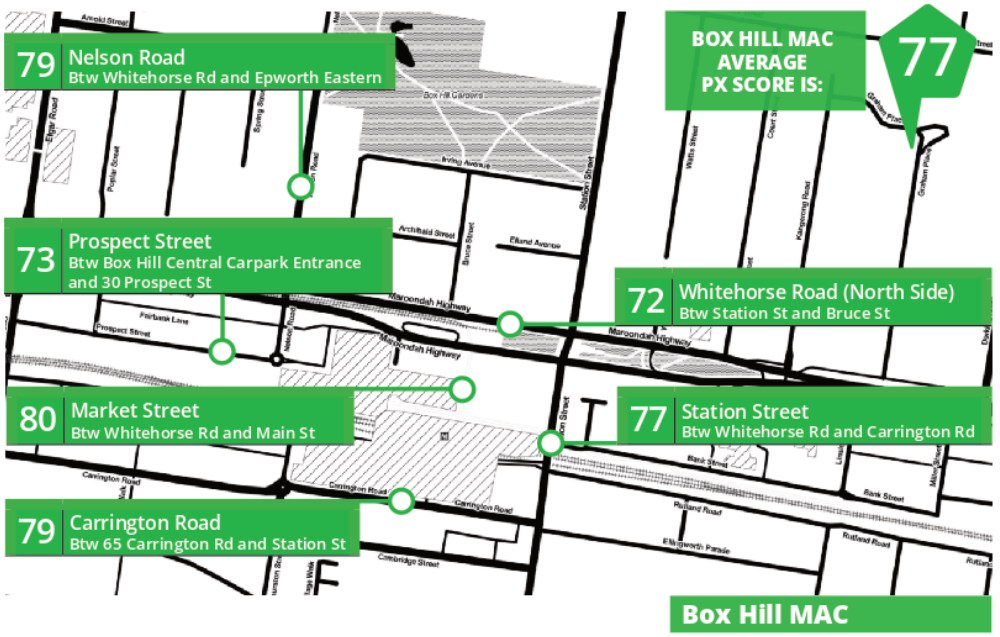
Your community perceives that there is not much evidence of recent public investment across the surveyed main streets.

ALIGNED

PX Scores of surveyed main streets in Box Hill MAC are relatively high, with a difference of only 8 points between the best and worst performing streets.

PXassessment street

A PX (Place Experience) Assessment is an observation study that asks respondents to rate how different aspects of a street are performing, resulting in a PX Score. The PX Score provides you with a number between 0 and 100 that captures your community's place experience. PX Assessments were undertaken at 6 main street locations in Box Hill MAC between the 20th and 27th of August 2019.



PLACESCORE

Notes: *PX Scores vary between 0 and 100. Scores above 70 are very good, 50-70 there is room for significant improvement, <50 urgent investment required. Map tiles by Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under ODbL.*

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HOW ARE YOUR STREETS PERFORMING?

PXassessment street

BREAKING DOWN YOUR PX SCORES

Your PX Score provides you with a measure of place performance from a representative sample of main street users. In addition it can be further analysed to reveal the scores of different demographic groups.

LEGEND
- *Under 10 respondents*
- *PX 70+ Performing well*
- *PX 50-69 Room for improvement*
- *PX <50 Urgent care needed*

Interesting findings:

- Older respondents were more likely to rate places positively compared to other age groups
- Resident perceptions are generally more positive than workers for all streets except Prospect Street

Location	n=	Total PX Score	Men	Women	0-24	25-44	45-64	65+	Resident[1]	Visitor[1]	Worker[1]	Student[1]
BOX HILL MAC AVERAGE	281	77	77	76	79	74	78	80	77	77	73	77
MARKET STREET	52	80	79	79	83	73	83	80	80	78	74	80
PROSPECT STREET	48	73	73	73	80	69	77	83	69	68	75	79
STATION STREET	45	77	80	76	76	77	79	79	78	78	75	76
WHITEHORSE ROAD	48	72	73	71	76	71	66	75	78	69	59	72
CARRINGTON ROAD	47	79	79	79	78	76	83	91	78	84	77	78
NELSON ROAD	41	79	78	79	78	81	75	77	79	85	67	78

PLACESCORE

Notes: *PX Scores vary between 0 and 100. Scores above 70 are very good, 50-70 there is room for significant improvement, <50 urgent investment required.*
[1]Respondents were allowed to select more than one identity (Resident, visitor, worker, student)

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HOW ARE YOUR STREETS PERFORMING?

PXassessment street

MARKET STREET HAS THE HIGHEST PX OF 80
WHITEHORSE ROAD HAS THE LOWEST PX OF 72

This page identifies how each Place Dimension is performing as well as the best and worse performing attributes for each main street. Each Place Dimension is scored out of 20 with a total PX Score out of 100

BOX HILL MAC AVERAGE

77 / 100

LOOK & FUNCTION 16/20
SENSE OF WELCOME 16/20
THINGS TO DO 15/20
UNIQUENESS 15/20
CARE 15/20

YOUR HIGHEST RATED PLACE ATTRIBUTES

The following place attributes rated highest overall:

- #1 Grocery and fresh food businesses
- #2 Walking, cycling or public transport options
- #3 A cluster of similar businesses (food, cultural traders, fashion etc.)

YOUR LOWEST RATED PLACE ATTRIBUTES

The following place attributes rated most poorly overall:

- #50 Public art, community art, water or light feature
- #49 Evidence of public events happening here (markets, street entertainers, festivals etc.)
- #48 Evidence of recent public investment (new planting, paving, street furniture etc.)

MARKET STREET

BTW WHITEHORSE RD AND MAIN ST

80

LOOK & FUNCTION 17
SENSE OF WELCOME 17
THINGS TO DO 15
UNIQUENESS 15
CARE 16

YOUR HIGHEST RATED PLACE ATTRIBUTES

The following place attributes rated highest overall:

- #1 Walking, cycling or public transport options
- #2 Diversity of price points ($ to $$$)
- #3 Cleanliness of public space

YOUR LOWEST RATED PLACE ATTRIBUTES

The following place attributes rated most poorly overall:

- #50 Evidence of public events happening here (markets, street entertainers, festivals etc.)
- #49 Evidence of recent public investment (new planting, paving, street furniture etc.)
- #48 Public art, community art, water or light feature

PROSPECT STREET

BTW BOX HILL CENTRAL CARPARK ENTRANCE AND 30 PROSPECT ST

73

LOOK & FUNCTION 15
SENSE OF WELCOME 16
THINGS TO DO 13
UNIQUENESS 14
CARE 15

YOUR HIGHEST RATED PLACE ATTRIBUTES

The following place attributes rated highest overall:

- #1 Walking, cycling or public transport options
- #2 Grocery and fresh food businesses
- #3 A cluster of similar businesses (food, cultural traders, fashion etc.)

YOUR LOWEST RATED PLACE ATTRIBUTES

The following place attributes rated most poorly overall:

- #50 Evidence of public events happening here (markets, street entertainers, festivals etc.)
- #49 Local history, heritage buildings or features
- #48 Public art, community art, water or light feature

STATION STREET

BTW WHITEHORSE RD AND CARRINGTON RD

77

LOOK & FUNCTION 16
SENSE OF WELCOME 16
THINGS TO DO 15
UNIQUENESS 15
CARE 15

YOUR HIGHEST RATED PLACE ATTRIBUTES

The following place attributes rated highest overall:

- #1 Physical comfort (including noise, smells, temperature)
- #2 Welcoming to all people
- #3 Walking, cycling or public transport options

YOUR LOWEST RATED PLACE ATTRIBUTES

The following place attributes rated most poorly overall:

- #50 Evidence of recent public investment (new planting, paving, street furniture etc.)
- #49 Evidence of recent private investment (new buildings, painting etc.)
- #48 Unusual or unique businesses/shops

PLACESCORE

Notes: *PX Scores vary between 0 and 100. Scores above 70 are very good, 50-70 there is room for significant improvement, <50 urgent investment required.*

P.29 | Box Hill MAC CIR Oct 2019
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HOW ARE YOUR STREETS PERFORMING?

PXassessment street

WHITEHORSE ROAD
BTW STATION ST AND BRUCE ST — 72

LOOK & FUNCTION 15
SENSE OF WELCOME 15
THINGS TO DO 15
UNIQUENESS 13
CARE 14

YOUR HIGHEST RATED PLACE ATTRIBUTES
The following place attributes rated highest overall:

- #1 Grocery and fresh food businesses
- #2 Walking, cycling or public transport options
- #3 A cluster of similar businesses (food, cultural traders, fashion etc.)

YOUR LOWEST RATED PLACE ATTRIBUTES
The following place attributes rated most poorly overall:

- #50 Public art, community art, water or light feature
- #49 Physical comfort (including noise, smells, temperature)
- #48 Interaction with locals/ other people in the area (smiles, customer service etc.)

CARRINGTON ROAD
BTW 65 CARRINGTON RD AND STATION ST — 79

LOOK & FUNCTION 16
SENSE OF WELCOME 16
THINGS TO DO 16
UNIQUENESS 15
CARE 16

YOUR HIGHEST RATED PLACE ATTRIBUTES
The following place attributes rated highest overall:

- #1 Grocery and fresh food businesses
- #2 A cluster of similar businesses (food, cultural traders, fashion etc.)
- #3 Things to do in the evening (shopping, dining, entertainment etc.)

YOUR LOWEST RATED PLACE ATTRIBUTES
The following place attributes rated most poorly overall:

- #50 One of a kind, quirky or unique features
- #49 Evidence of community activity (community gardening, art, fundraising etc.)
- #48 Evidence of recent public investment (new planting, paving, street furniture etc.)

NELSON ROAD
BTW WHITEHORSE RD AND ARNOLD ST — 79

LOOK & FUNCTION 16
SENSE OF WELCOME 16
THINGS TO DO 16
UNIQUENESS 15
CARE 16

YOUR HIGHEST RATED PLACE ATTRIBUTES
The following place attributes rated highest overall:

- #1 Grocery and fresh food businesses
- #2 Welcoming to all people
- #3 Quality of public space (footpaths and public spaces)

YOUR LOWEST RATED PLACE ATTRIBUTES
The following place attributes rated most poorly overall:

- #50 Car accessibility and parking
- #49 Landmarks, special features or meeting places
- #48 Public art, community art, water or light feature

PLACESCORE™

Notes: *PX Scores vary between 0 and 100. Scores above 70 are very good, 50-70 there is room for significant improvement, <50 urgent investment required.*

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BOX HILL MAC PLACE PRIORITIES

THIS SECTION DEFINES THE PLACE PRIORITIES PER LOCATION BASED ON AGGREGATED PX SCORES AND CARE FACTOR DATA FOR BOX HILL MAC.

9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

BOX HILL MAC - MARKET STREET

carefactor town centre
PXassessment street

PRIORITIES FOR MARKET STREET (BTW WHITEHORSE RD AND MAIN ST)

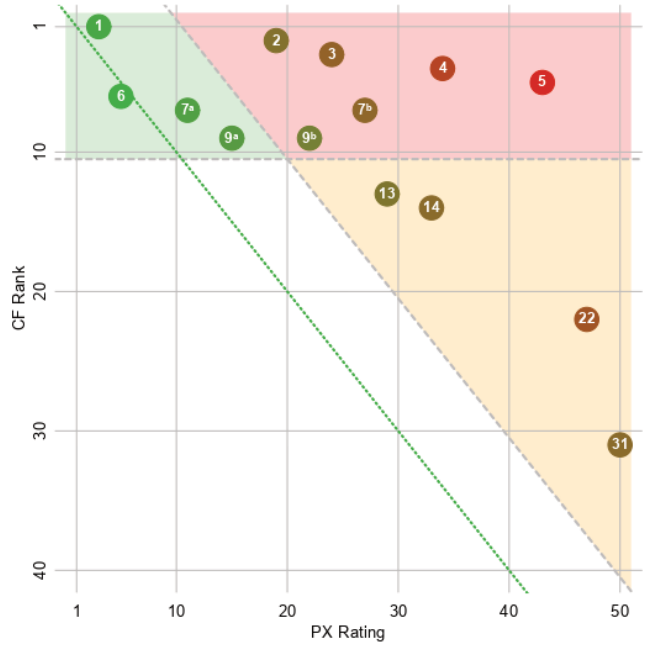
These tables and graph illustrate your town centre strengths, improvement priorities and secondary priorities.

STRENGTHS should be celebrated and protected.

IMPROVEMENT PRIORITIES identify the aspects of your town centre that are important to people but are currently under-performing. Improving these attributes will have the most significant impact on your community.

SECONDARY PRIORITIES identify attributes to look-out for, they are negatively affecting your town centre and can become more significant issues if more people start caring about them.

CF	STRENGTHS
6	**A cluster of similar businesses** (food, cultural traders, fashion etc.)
1	**Cleanliness of public space**
7a	**Overall look and visual character of the area**
9a	**Welcoming to all people**



CF	IMPROVEMENT PRIORITIES
5	**Interesting things to look at** (people, shops, views etc.)
4	**Outdoor restaurant, cafe and/or bar seating**
3	**Grocery and fresh food businesses**
7b	**Unique mix or diversity of people in the area**
2	**Ease of walking around** (including crossing the street, moving between destinations)
9b	**Maintenance of public spaces and street furniture**

CF	SECONDARY PRIORITIES
22	**Local history, heritage buildings or features**
14	**Things to do in the evening** (shopping, dining, entertainment etc.)
31	**Evidence of public events happening here** (markets, street entertainers etc.)
13	**Sense of safety** (for all ages, genders, day/night etc.)

LEGEND

- - - *Horizontal: Top 10 CF threshold Diagonal: Threshold showing attributes which PX rating is performing 10 pts worse than their CF ranking[1] (PX=CF+10)*

····· *Equal CF rank and PX Score (PX=CF)*

PLACESCORE™

Notes: *CF - Care Factor ranking out of 50 - the lower the number the higher the number of people who think this attribute is important. Strengths have a high CF and high PX. Priorities are the poorest performing CF ranked in the overall top 10. Secondary Priorities are the worst performing overall outside of the Top 10 CF. [1]A threshold difference of 10 pts between the CF rank and PX rating is used to assure that displayed priorities are not within the margin of error. Care Factor ranking is based on Box Hill ranking.*

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BOX HILL MAC - PROSPECT STREET

carefactor town centre
PXassessment street

PRIORITIES FOR PROSPECT STREET (BTW BOX HILL CENTRAL CARPARK ENTRANCE AND 30 PROSPECT ST)

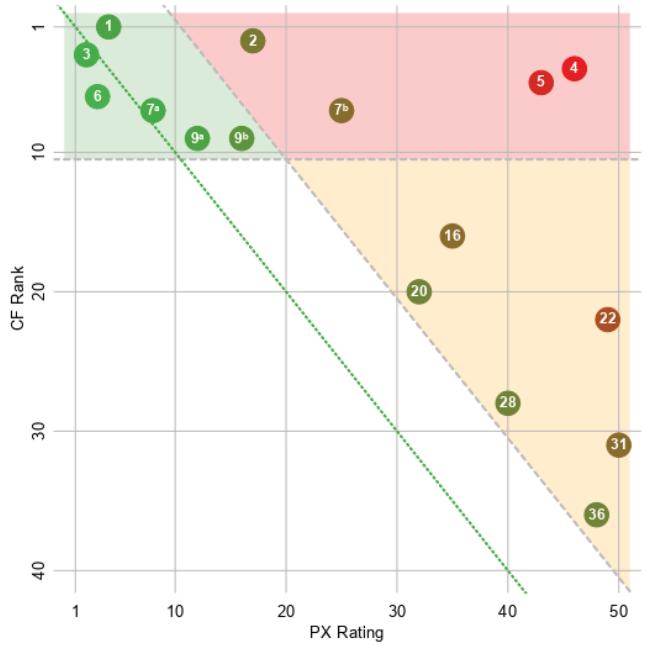
These tables and graph illustrate your town centre strengths, improvement priorities and secondary priorities.

STRENGTHS should be celebrated and protected.

IMPROVEMENT PRIORITIES identify the aspects of your town centre that are important to people but are currently under-performing. Improving these attributes will have the most significant impact on your community.

SECONDARY PRIORITIES identify attributes to look-out for, they are negatively affecting your town centre and can become more significant issues if more people start caring about them.

CF	STRENGTHS
6	A cluster of similar businesses (food, cultural traders, fashion etc.)
3	Grocery and fresh food businesses
7a	Overall look and visual character of the area
9a	Maintenance of public spaces and street furniture
1	Cleanliness of public space
9b	Welcoming to all people



CF	IMPROVEMENT PRIORITIES
4	Outdoor restaurant, cafe and/or bar seating
5	Interesting things to look at (people, shops, views etc.)
7b	Unique mix or diversity of people in the area
2	Ease of walking around (including crossing the street, moving between destinations)

CF	SECONDARY PRIORITIES
22	Local history, heritage buildings or features
16	Physical safety (paths, cars, lighting etc.)
31	Evidence of public events happening here (markets, street entertainers etc.)
20	Free and comfortable places to sit alone
28	One of a kind, quirky or unique features
36	Public art, community art, water or light feature

LEGEND

- - - *Horizontal: Top 10 CF threshold Diagonal: Threshold showing attributes which PX rating is performing 10 pts worse than their CF ranking[1] (PX=CF+10)*

····· *Equal CF rank and PX Score (PX=CF)*

PLACESCORE™

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BOX HILL MAC - STATION STREET

carefactor town centre
PXassessment street

PRIORITIES FOR STATION STREET (BTW WHITEHORSE RD AND CARRINGTON RD)

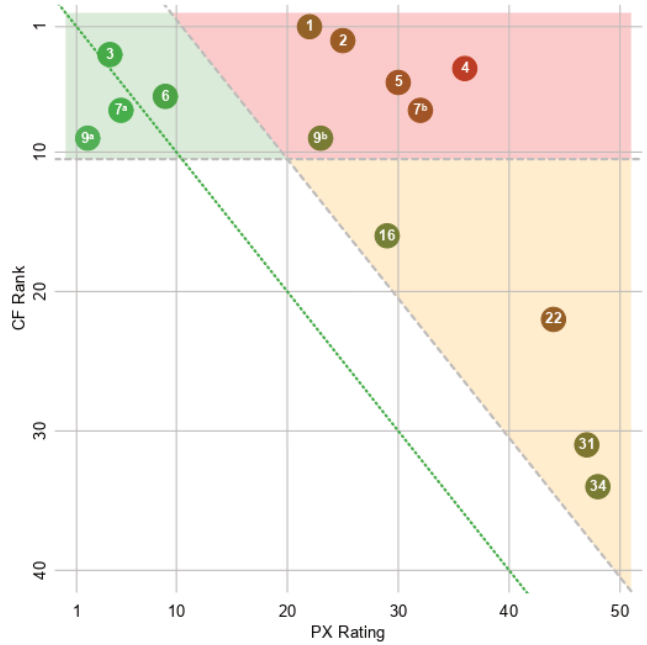
These tables and graph illustrate your town centre strengths, improvement priorities and secondary priorities.

STRENGTHS should be celebrated and protected.

IMPROVEMENT PRIORITIES identify the aspects of your town centre that are important to people but are currently under-performing. Improving these attributes will have the most significant impact on your community.

SECONDARY PRIORITIES identify attributes to look-out for, they are negatively affecting your town centre and can become more significant issues if more people start caring about them.

CF	STRENGTHS
9a	Welcoming to all people
7a	Overall look and visual character of the area
3	Grocery and fresh food businesses
6	A cluster of similar businesses (food, cultural traders, fashion etc.)



CF	IMPROVEMENT PRIORITIES
4	Outdoor restaurant, cafe and/or bar seating
5	Interesting things to look at (people, shops, views etc.)
7a	Unique mix or diversity of people in the area
2	Ease of walking around (including crossing the street, moving between destinations)
1	Cleanliness of public space
9a	Maintenance of public spaces and street furniture

CF	SECONDARY PRIORITIES
22	Local history, heritage buildings or features
31	Evidence of public events happening here (markets, street entertainers etc.)
34	Unusual or unique businesses/shops
16	Physical safety (paths, cars, lighting etc.)

LEGEND

- - - *Horizontal: Top 10 CF threshold Diagonal: Threshold showing attributes which PX rating is performing 10 pts worse than their CF ranking[1] (PX=CF+10)*

····· *Equal CF rank and PX Score (PX=CF)*

PLACESCORE

Notes: *CF - Care Factor ranking out of 50 - the lower the number the higher the number of people who think this attribute is important. Strengths have a high CF and high PX. Priorities are the poorest performing CF ranked in the overall top 10. Secondary Priorities are the worst performing overall outside of the Top 10 CF. [1]A threshold difference of 10 pts between the CF rank and PX rating is used to assure that displayed priorities are not within the margin of error. Care Factor ranking is based on Box Hill ranking.*

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BOX HILL MAC - WHITEHORSE ROAD (NORTH SIDE)

carefactor town centre
PXassessment street

PRIORITIES FOR WHITEHORSE ROAD (NORTH SIDE) (BTW STATION ST AND BRUCE ST)

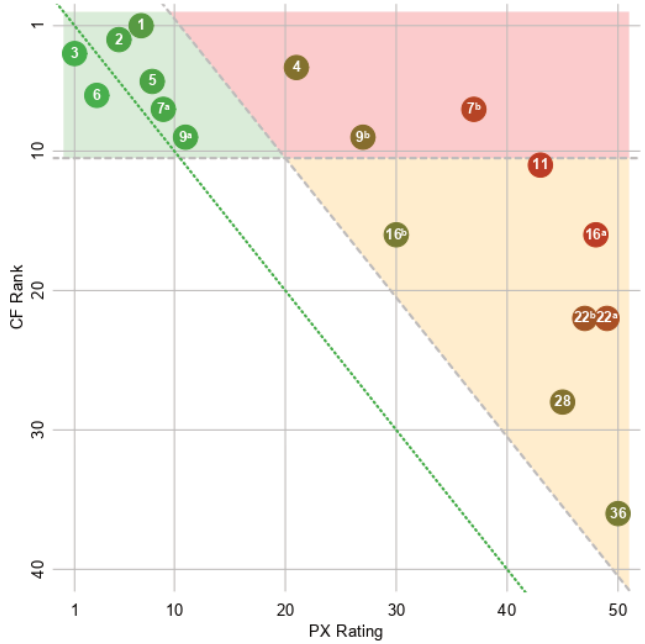
These tables and graph illustrate your town centre strengths, improvement priorities and secondary priorities.

STRENGTHS should be celebrated and protected.

IMPROVEMENT PRIORITIES identify the aspects of your town centre that are important to people but are currently under-performing. Improving these attributes will have the most significant impact on your community.

SECONDARY PRIORITIES identify attributes to look-out for, they are negatively affecting your town centre and can become more significant issues if more people start caring about them.

CF	STRENGTHS
6	**A cluster of similar businesses** (food, cultural traders, fashion etc.)
3	**Grocery and fresh food businesses**
7a	**Overall look and visual character of the area**
9a	**Welcoming to all people**
2	**Ease of walking around** (including crossing the street, moving between destinations)
5	**Interesting things to look at** (people, shops, views etc.)
1	**Cleanliness of public space**



CF	IMPROVEMENT PRIORITIES
7a	**Unique mix or diversity of people in the area**
9a	**Maintenance of public spaces and street furniture**
4	**Outdoor restaurant, cafe and/or bar seating**

CF	SECONDARY PRIORITIES
11	**Landmarks, special features or meeting places**
16a	**Interaction with locals/ other people in the area** (smiles, customer service etc.)
22a	**Physical comfort** (impacts from noise, smells, temperature)
22b	**Local history, heritage buildings or features**
28	**One of a kind, quirky or unique features**
16b	**Physical safety** (paths, cars, lighting etc.)
36	**Public art, community art, water or light feature**

LEGEND

- - - *Horizontal: Top 10 CF threshold Diagonal: Threshold showing attributes which PX rating is performing 10 pts worse than their CF ranking[1] (PX=CF+10)*

····· *Equal CF rank and PX Score (PX=CF)*

PLACESCORE

Notes: *CF - Care Factor ranking out of 50 - the lower the number the higher the number of people who think this attribute is important. Strengths have a high CF and high PX. Priorities are the poorest performing CF ranked in the overall top 10. Secondary Priorities are the worst performing overall outside of the Top 10 CF. [1]A threshold difference of 10 pts between the CF rank and PX rating is used to assure that displayed priorities are not within the margin of error. Care Factor ranking is based on Box Hill ranking.*

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BOX HILL MAC - CARRINGTON ROAD

carefactor town centre
PXassessment street

PRIORITIES FOR CARRINGTON ROAD (BTW 65 CARRINGTON RD AND STATION ST)

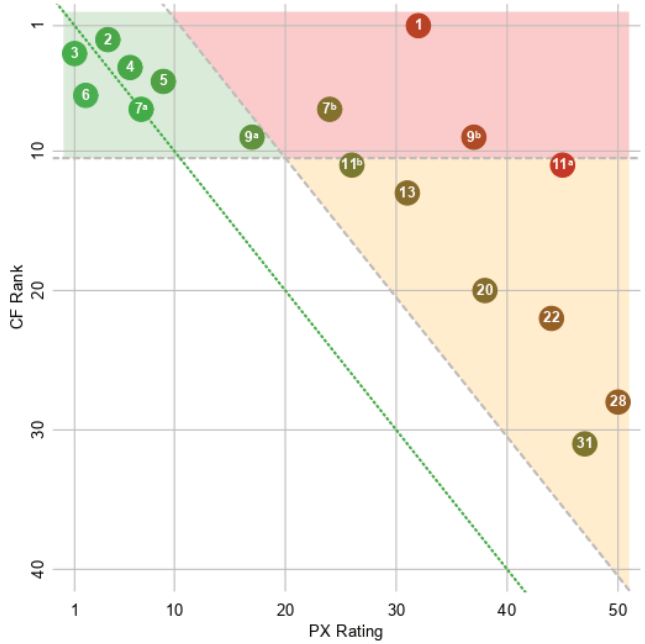
These tables and graph illustrate your town centre strengths, improvement priorities and secondary priorities.

STRENGTHS should be celebrated and protected.

IMPROVEMENT PRIORITIES identify the aspects of your town centre that are important to people but are currently under-performing. Improving these attributes will have the most significant impact on your community.

SECONDARY PRIORITIES identify attributes to look-out for, they are negatively affecting your town centre and can become more significant issues if more people start caring about them.

CF	STRENGTHS
6	**A cluster of similar businesses** (food, cultural traders, fashion etc.)
3	**Grocery and fresh food businesses**
7a	**Overall look and visual character of the area**
2	**Ease of walking around** (including crossing the street, moving between destinations)
4	**Outdoor restaurant, cafe and/or bar seating**
5	**Interesting things to look at** (people, shops, views etc.)
9a	**Welcoming to all people**



CF	IMPROVEMENT PRIORITIES
1	**Cleanliness of public space**
9a	**Maintenance of public spaces and street furniture**
7b	**Unique mix or diversity of people in the area**

CF	SECONDARY PRIORITIES
11a	**Landmarks, special features or meeting places**
28	**One of a kind, quirky or unique features**
22	**Local history, heritage buildings or features**
13	**Sense of safety** (for all ages, genders, day/night etc.)
20	**Free and comfortable places to sit alone**
31	**Evidence of public events happening here** (markets, street entertainers etc.)
11b	**General condition of buildings**

LEGEND

- - - *Horizontal: Top 10 CF threshold*
Diagonal: Threshold showing attributes which PX rating is performing 10 pts worse than their CF ranking[1] (PX=CF+10)

····· *Equal CF rank and PX Score (PX=CF)*

PLACESCORE

Notes: *CF - Care Factor ranking out of 50 - the lower the number the higher the number of people who think this attribute is important. Strengths have a high CF and high PX. Priorities are the poorest performing CF ranked in the overall top 10. Secondary Priorities are the worst performing overall outside of the Top 10 CF. [1]A threshold difference of 10 pts between the CF rank and PX rating is used to assure that displayed priorities are not within the margin of error. Care Factor ranking is based on Box Hill ranking.*

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BOX HILL MAC - NELSON ROAD

carefactor town centre
PXassessment street

PRIORITIES FOR NELSON ROAD (BTW WHITEHORSE RD AND EPWORTH EASTERN)

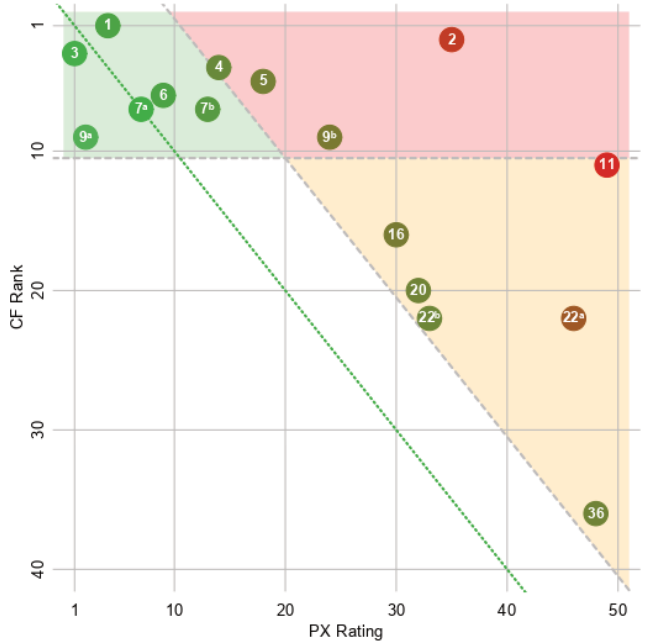
These tables and graph illustrate your town centre strengths, improvement priorities and secondary priorities.

STRENGTHS should be celebrated and protected.

IMPROVEMENT PRIORITIES identify the aspects of your town centre that are important to people but are currently under-performing. Improving these attributes will have the most significant impact on your community.

SECONDARY PRIORITIES identify attributes to look-out for, they are negatively affecting your town centre and can become more significant issues if more people start caring about them.

CF	STRENGTHS
9a	Welcoming to all people
3	Grocery and fresh food businesses
7a	Unique mix or diversity of people in the area
6	A cluster of similar businesses (food, cultural traders, fashion etc.)
1	Cleanliness of public space
7b	Overall look and visual character of the area



CF	IMPROVEMENT PRIORITIES
2	Ease of walking around (including crossing the street, moving between destinations)
9b	Maintenance of public spaces and street furniture
5	Interesting things to look at (people, shops, views etc.)
4	Outdoor restaurant, cafe and/or bar seating

CF	SECONDARY PRIORITIES
11	Landmarks, special features or meeting places
22a	Local history, heritage buildings or features
16	Interaction with locals/ other people in the area (smiles, customer service etc.)
20	Free and comfortable places to sit alone
36	Public art, community art, water or light feature
22b	Physical comfort (impacts from noise, smells, temperature)

LEGEND

- *Horizontal: Top 10 CF threshold*
  Diagonal: Threshold showing attributes which PX rating is performing 10 pts worse than their CF ranking[1] (PX=CF+10)
- *Equal CF rank and PX Score (PX=CF)*

PLACESCORE™

Notes: *CF - Care Factor ranking out of 50 - the lower the number the higher the number of people who think this attribute is important. Strengths have a high CF and high PX. Priorities are the poorest performing CF ranked in the overall top 10. Secondary Priorities are the worst performing overall outside of the Top 10 CF. [1]A threshold difference of 10 pts between the CF rank and PX rating is used to assure that displayed priorities are not within the margin of error. Care Factor ranking is based on Box Hill ranking.*

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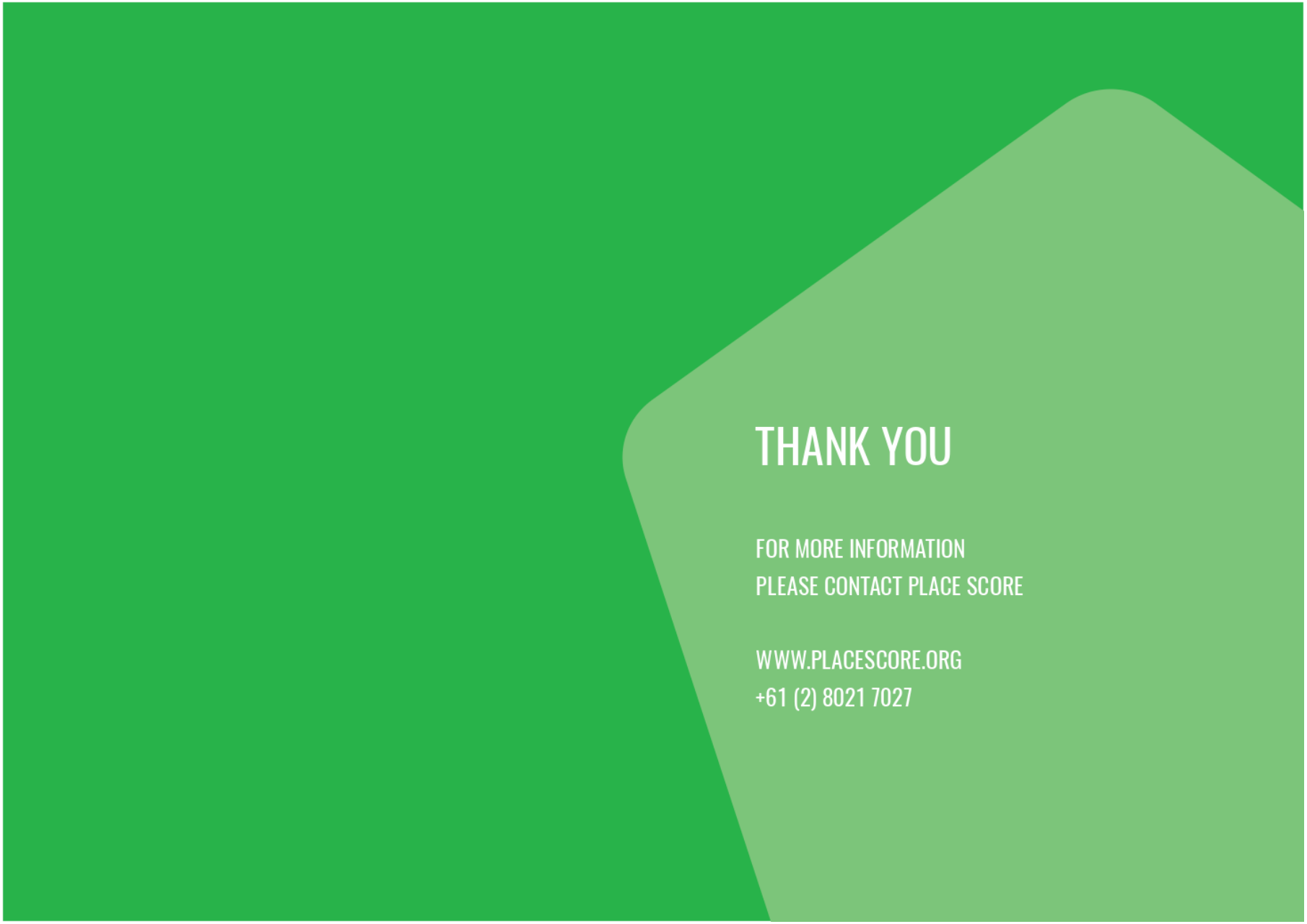

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9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

City of Whitehorse
Integrated Transport Strategy
Stage 2 Engagement Summary

November 2019
Prepared by Conversation Caravan

Executive Summary

Conversation Caravan was engaged by Place Partners to deliver the community and stakeholder engagement component of Stage 2. Stage 2 explored five topics in the form of discussion papers (prepared by AECOM), each topic focussed on the key issues and opportunities from Stage 1.

Engagement activities and questions were designed to encourage participants to consider the content contained within the discussion guides, presenting either an idea or a statement whereby participants need to consider the trade off, associated with the options. Where facts aided understanding or conversation they were included.

A combination of online engagement and face-to-face engagement was delivered between Wednesday 9 October and Wednesday 30 October 2019. Overall 248 people participated in Stage 2, having their say on the project at a street stand (163 people) through the online survey (46) or via a quick poll (39).

Table I provides a summary of support across the three engagement activities.

Table I Level of support across the five Discussion Papers

	Quick Poll N=56	**Online Survey N=46**	**Street Stand N=163**
Public transport	**93% Support** I support increasing public transport in and around the centre, including dedicated bus lanes along major roads and bus priority at traffic lights	**86% Support** Increasing public transport priority in and around Box Hill including dedicated bus lanes along major roads	95 Responses **47% Support** Bus lanes would improve public transport use by improving the bus service **53% Neutral**, but suggest Improvements towards public transport services and information systems
Streets and public spaces	**75% Support** I support increasing footpath widths and public space to allow for more dining space, seating, planting and places to meet others, even if it means removing some on-street parking	**56% Support** Creating a shared zone on the Vicinity carpark ramp from Hopetoun Parade to Main Street	54 responses **52% Support** Reduce the width of traffic along Whitehorse Road to make way for more public space and improved public amenity **44% Neutral,** but suggest Improved public space maintenance

Walking and cycling	**89% Support** I support prioritising walking infrastructure even if there are minor car delays	**66% Support** Provide more opportunities for pedestrians to cross Station Street, allow more time for people to cross at the traffic lights	39 responses **41% Support** Increased and improved pedestrian and cycle infrastructure **59% Neutral**, but suggest Strengthening the walking and cycling networks
Road safety	**82% Support** I support a focus on improving safety for people walking, cycling and driving, even if that means lowering speed limits	**74% Support** Decrease in the speed limit to 40km/h in streets where there is a mix of pedestrians and cyclists	31 responses **19% Support** Improving safety for people walking, cycling and driving, even if that means lowering speed limits **55% Neutral**, but suggest Improvements in road safety infrastructure and focus on reinforcing better driver, cyclist and pedestrian behaviour
Carparking	**66% Support** I support giving new buildings near the transport interchange the opportunity to reduce their parking requirements by providing alternatives such as car share and bike parking	**62% Support** Repurposing carparking spaces to allow for wider footpaths, more outdoor dining, seating, planting and places to meet others in Box Hill	56 responses **18% Support** Reduction of carparking in new developments **46% Neutral,** but suggest Improvements to be made to the public transport network to assist with the transition

Majority support for improving public transport use
Improving the public transport system attracted the highest level of support both online and via face-to-face. White respondents were supportive of the idea to create dedicated bus lanes, they also believed more work was needed to really embed public transport use. Seeing improvements in public transport necessary to reduce car use.

Inconveniencing drivers to make Box Hill safer is acceptable
Prioritising infrastructure that makes it easier for people to cross roads and move around Box Hill more freely, is acceptable even if it creates minor delays for drivers. Improving pedestrian infrastructure and doing more was supported by 100% of respondents through the face-to-face engagement.

Even the majority of online participants, that use a private vehicle to access Box Hill support ideas and initiatives where there is an improvement in safety for pedestrians or cyclists, even if there is a stated disadvantage to private vehicle users. For example:

- 55% support a decrease in the speed limit to 40km/h in streets where there is a mix of pedestrians and cyclists. Only five of this group support a further decrease to 30m/h.
- 50% support on-street carparking being repurposed for public space to allow for wider footpaths (more outdoor dining, seating and planting)

Reducing parking acceptable when it makes way for more public spaces
When the removal of carparking was considered alongside the need to improve walking and cycling, through increased footpath widths and public space it was met with little. The majority of respondents, 52% (face-to-face) were supportive of seeing Whitehorse Road reduced from four lanes of traffic, providing it created a welcoming space for the community.

When reduction in carparking was considered as a stand-alone item, through the introduction of planning scheme to reduce carparking in new developments, it attracted 18% support (face-to-face). Both questions attracted similar amounts of interest, 54 responses and 56 responses.

Some drivers need convincing that slowing down in Box Hill is needed
Of the online and face-to-face respondents that did not support a reduction in speed or the removal of carparking, they were mostly concerned that traffic will be slower and more congested as a result of these changes.

Other concerns included:

- Removal of carparking does not consider the growth that is occurring in the area and the increased vehicles.
- "Carparking spaces should be converted into clear ways to reduce travel times, not for people eating brunch."
- Some felt the term *destination* was not accurate in describing Box Hill, rather it's a place to run errands and therefore needs to be quick to exit and enter.
- Box Hill is not a nice place to have brunch outdoors, given the overshadowing and wind effect created by new developments.

Some were concerned that others did not have an alternative to driving:

- Public transport connections are not efficient or accessible.
- Car is required for grocery shopping or the purchase of bulky goods.
- Perception that older persons find driving easier to use.

Table of Contents

Introduction

Conversation Caravan was engaged by Place Partners to deliver the community and stakeholder engagement component of Stage 2. Stage 2 explored five topics in the form of discussion papers (prepared by AECOM), each topic focussed on the key issues and opportunities from Stage 1.

The five discussion papers considered:

- Public transport
- Streets and public spaces
- Walking and cycling
- Road safety
- Carparking.

Methodology

Each discussion paper explained the topic, its relationship to improving movement and connection in and around Box Hill, as well as facts for further consideration by the participant. Each discussion paper also included the issues and opportunities raised by participants during Stage 1 and proposed ideas to alleviate a challenge or integrate an opportunity to Box Hill.

Two engagement methods were used:

- Online engagement was conducted between Wednesday 9 October and Wednesday 30 October 2019.
- Face-to-face engagement, two street stands were held within Market Street Mall, Box Hill (corner of Market and Main Streets) one on Thursday 10 October and one on Saturday 12 October 2019, from 12:00 pm to 2:00 pm.

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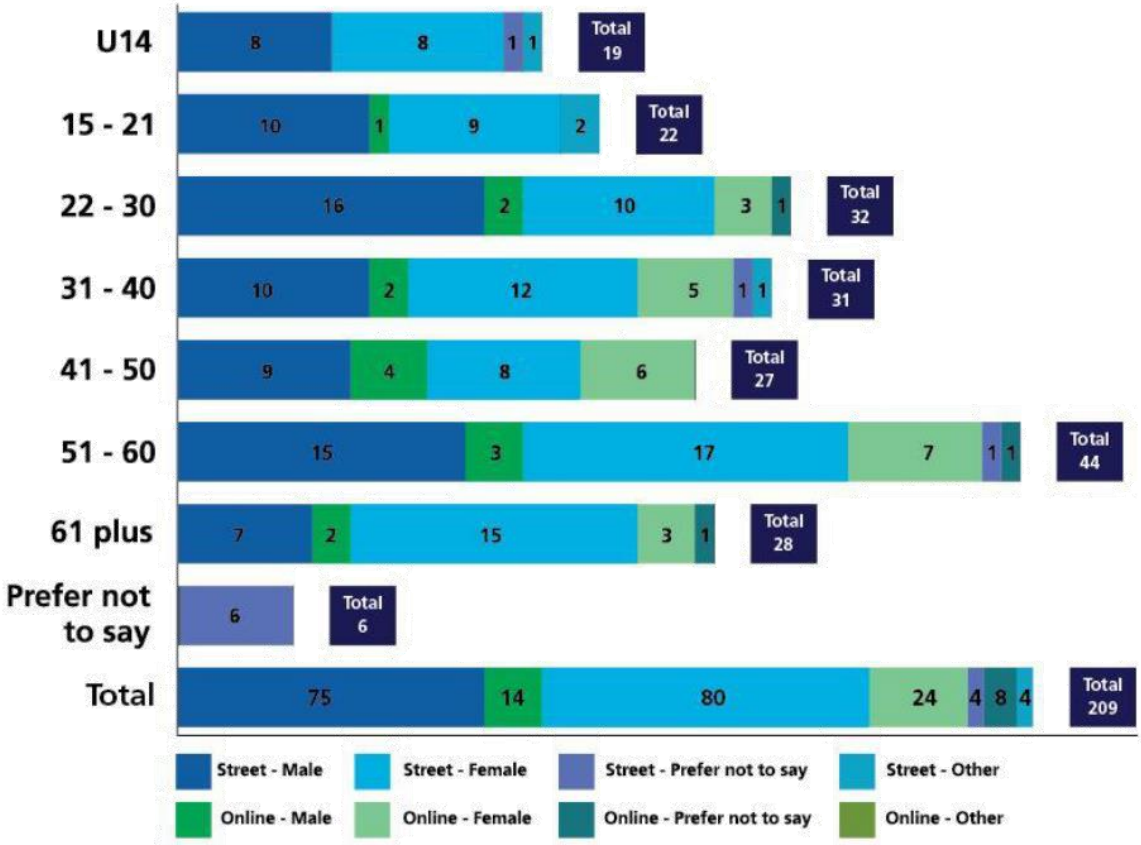
Participation

Overall 248 people participated in Stage 2, having their say on the project at a street stand (163 people) through the online survey (46) or via a quick poll (39). Demographic data was collected from people who completed a survey, or at a street stand. Diagram 1 shows the combined results of their age, gender and connection to Box Hill.

Diagram 1 Participation Demographics Combined Street Stand and Online Survey



Conversation Caravan | www.conversationcaravan.com.au
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Online Participation

The OurSay project platform allows us to understand a little more about respondents either through the sign in function, or the demographic questions asked as part of the survey.

Summarised in table 1 is a breakdown of participation by tool.

Table 1 Participation by online tool

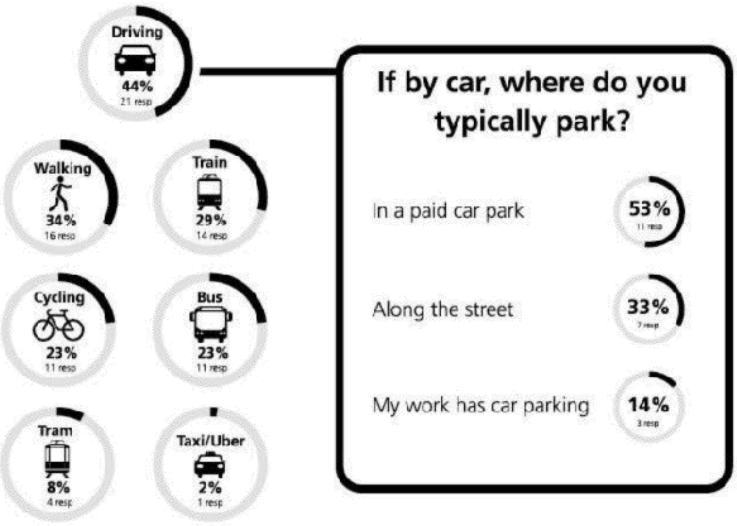
Online Survey	Quick poll
101 views, 46 submissions (46% conversion) average time to complete 19.13 minutes. 17 participants also completed the quick poll activity.	88 views, 56 submissions (63% conversion) average time to complete 1.35 minutes.

More detail about the online survey respondents

While reading the results of the survey, it is important to note that the largest cohort of respondents 44% (21 respondents) drive a car to access Box Hill and park in a carpark (52%), or along the street (33%). The majority of respondents (54%) use at least two forms of travel to access Box Hill. Diagram 2 shows the breakdown of travel modes to access Box Hill.

Diagram 2 Travel modes used to access Box Hill MAC

On an average day how would you get to Box Hill Activity Centre?



The largest cohort of respondents live in Box Hill (42%). Diagram 3 shows the suburb respondents live in, the raw data can be further analysed by AECOM to further determine travel preferences by location.

Point of Interest: Of the 15 respondents that lived in Box Hill, Box Hill North or Box Hill South typically accessed Box Hill using a form of active transport public transport (7), walking (8) or cycling (2). Only two respondents from these suburbs used a car to access Box Hill Activity Centre.

Diagram 3 Suburb of residents

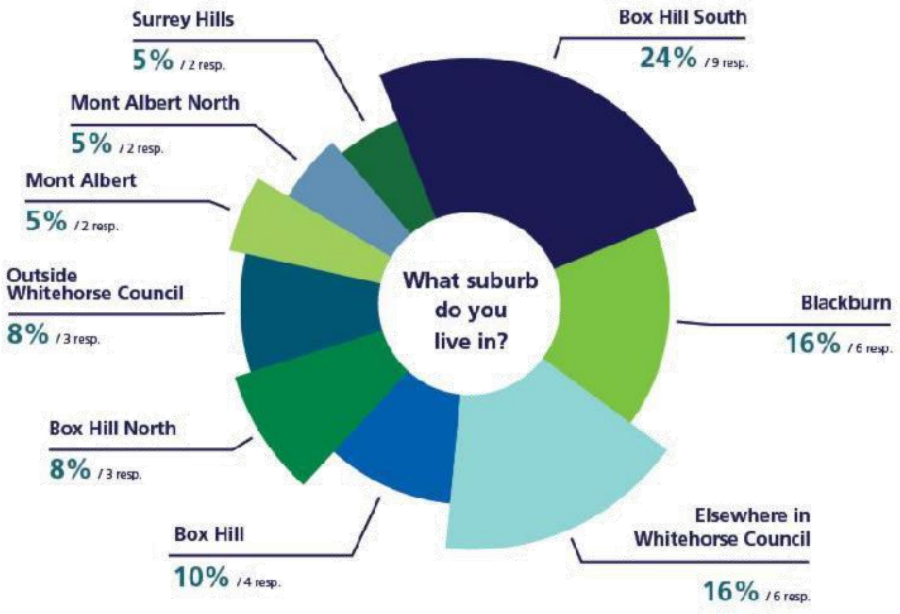


Diagram 4 Languages spoken at home

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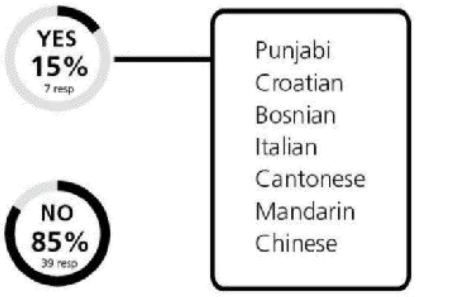
The majority of respondents did not speak another language at home (85%), diagram 4 shows the languages spoken by the remaining 15%.

Do you speak any other languages other than English at home?



Key Findings

Unanimous support for improving public transport use
Participants both online and via face-to-face were most interested in public transport. While participants were supportive of the idea to increase public transport use through the installation of dedicated bus lanes, they also believed more work is needed to really embed public transport use.

Of the responses collected in person, 47% or 45 respondents agreed that bus lanes would enhance public transport use by improving the bus service (timing, service, use). Of the responses collected 53%, or 50 respondents neither agreed nor disagreed with the idea, however had other ideas for improving public transport use. Suggestions included:

- Improving the cleanliness of the transport hub.
- Improving the reliability of the public transport service (frequency, service, times, capacity)

Likewise, increasing public transport priority in and around Box Hill (including providing dedicated bus lanes along major roads) attracted the highest level of support (86%) online.

People need alternatives before they can leave their cars at home
Participants were asked about their level of support for reducing the amount of carparking provided in new developments by developers. Of the people that provided their feedback, a reduction of carparking was met with some concern. Many participants felt that the alternatives (public transport, cycling, walking) were not a standard to be relied upon; they felt that more investment in public transport was needed in order to reduce reliance on cars. Preferring to see improvements made the public transport network to assist with transition.

Of the responses collected in person, 26 (46%) neither agreed, nor disagreed with a reduction in car spaces in new developments, preferring to speak to other suggestions to improve public transport or ways to reduce the demand for parking (higher costs, more restrictions). Of the responses collected, 21 (38%) did not support a reduction of carparking in new developments believing:

- Public transport use is not acceptable for people that need to do grocery shopping or purchase bulky goods.
- Older people or people with a disability need to drive and otherwise would not be able to access Box Hill.
- New buildings should have their own carparking to provide for their residents.

Many saw the task of reducing car use as one that needs to be supported by other improvements.

Parking not an issue if it makes way for more public spaces or public amenity
During the in person engagement, participants were presented with an idea to reduce the number of lanes of traffic along Whitehorse Road, using the extra space to make way for more public space and improved public amenity (seating, activity, planting, street furniture). The majority of responses (28 or 52%) were in favour of this idea and were excited about the prospect of this project. Believing this idea would help to:

- Encourage more people to walk or use public transport.
- Increase the friendliness of the area.
- Encourage more families to come.

Likewise, when the removal of carparking was considered alongside the need to improve walking and cycling, through increased footpath widths and public space it was met with no opposition. The majority of respondents, 59% (face-to-face) wanted more to be done to improve Box Hill for pedestrians and cyclists.

The preference for more public space and improved public amenity was also replicated online: 25 out of the 41 respondents supported on-street carparking being repurposed for public space. Believing this idea would help to:

- Reduce congestion caused by cars.
- Create a nicer experience, like removing cars from the CBD has.
- Educate drivers about the importance of car/bike/pedestrian separation.
- Improve walking and movement throughout the centre of Box Hill.
- Make the space safer for all users.

Drivers understand the benefits in creating a safer environment for pedestrians and cyclists

Of the online respondents, 20 people use a private vehicle as part of their journey to Box Hill Activity Centre and 8 people used private vehicle as their main mode of transport. Within this cohort, the majority of drivers support ideas and initiatives where there is an improvement in safety for pedestrians or cyclists, even if there is a stated disadvantage to private vehicle users. For example:

- 55% support a decrease in the speed limit to 40km/h in streets where there is a mix of pedestrians and cyclists. Only five of this group support a further decrease to 30m/h.
- 50% support on-street carparking being repurposed for public space to allow for wider footpaths, more outdoor dining, seating, planting and places to meet.

Findings by Method

Detailed below are the findings from each engagement method, please refer to Appendix 1 to view the raw data collected for each method.

Online Engagement

Online engagement was carried out using the City of Whitehorse engagement platform OurSay and was conducted between Wednesday 9 October and Wednesday 30 October 2019.

Two online tools were used:

- Quick poll, participants could provide a quick (yes or no) response to five questions. Each question included a fact to encourage the participant to consider their response:
  - Poll 1: I support a focus on improving safety for people walking, cycling and driving, even if it means lowering the posted speed limit. (Fact: There have been 127 injury crashes in the last five years (a rate of 1 crash every 2 weeks) within the Box Hill MAC area.)
  - Poll 2: I support increasing footpath widths and public space to allow for more outdoor dining, seating, planting and places to meet others, even if it means removing some on-street carparking. (Fact: Whitehorse Road at the Market Street Mall is 54 metres wide with about half allocated to traffic and parking lanes.)
  - Poll 3: I support increasing public transport use in and around the centre, including dedicated bus lanes along major roads and bus priority at traffic lights. (Fact: The Box Hill interchange is the 4th busiest in Melbourne.)
  - Poll 4: I support prioritising walking infrastructure (new zebra crossings and more green man time to cross roads), even if there are minor car delays. (Fact: Over 7,600 people walk to Box Hill train station each weekday.)
  - Poll 5: I support giving new buildings near the transport interchange the opportunity to reduce their parking requirements by providing alternatives such as car share and bike parking. (Fact: Thousands of additional apartments are planned within the next decade within Box Hill which has the potential to significantly increase local road congestion.)
- Online survey participants were invited to select one discussion paper to review and answer questions related to the material. At the completion of that discussion guide they were provided the option to choose additional discussion papers to review. Please refer to Appendix 2 to view the Survey.

Summarised are the key findings from each activity.

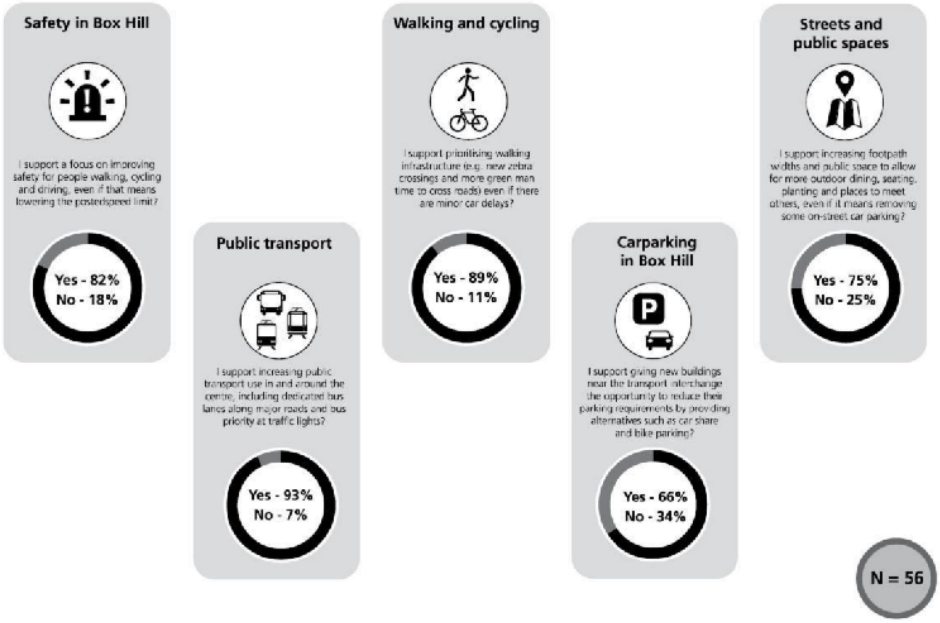
Quick Poll

A total of 56 participants completed all five quick polls. The majority (greater than 50% support) of respondents supported initiatives where there was a stated benefit towards improving safety of pedestrians, transport use and amenity of the area, even if it had a disadvantage towards private vehicle use.

The most supported quick polls were increasing public transport use by installing dedicated bus lanes along major roads (93%) and prioritising installation of walking infrastructure to improve safety even if it causes minor car delays (89%).

The quick poll with the least support was giving permission to developers to reduce carparking in new developments (66%), however it was still supported by the majority. Diagram 5 shows the level of support for each quick poll.

Diagram 5 Quick Poll Results

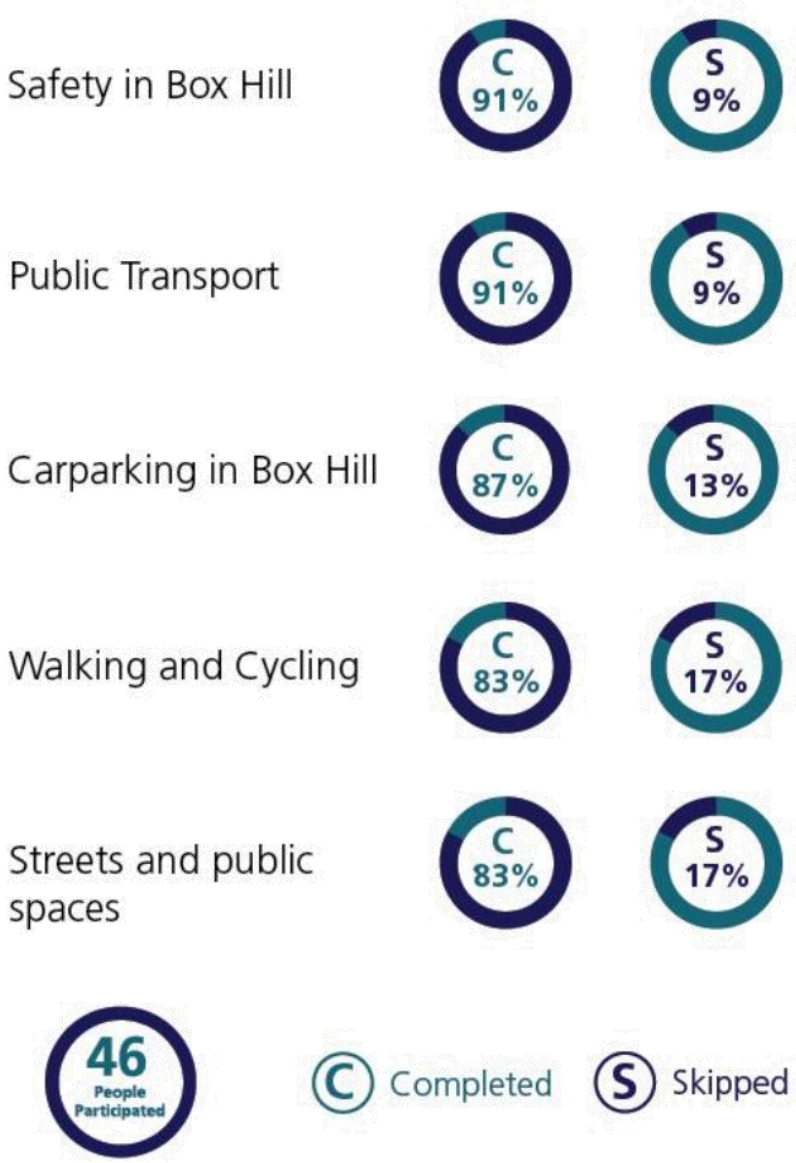


Online Survey

A total of 46 participants completed an online survey, 32 of these participants completed the survey in its entirety, taking the estimated 20 minutes to provide their feedback to each of the 5 discussion papers. The remaining 14 chose to skip through to the discussion papers that were of most interest to them. Of the 46 participants, 17 of these participants also completed the quick poll series.

Diagram 6 shows the completion rate for each discussion paper, public transport and safety in Box Hill attracted the most interest with the highest completion rate.

Diagram 6 Completion rate per Discussion Guide



While reading the results of the survey, it is important to note that the largest cohort of respondents 44% (21 respondents) drive a car to access Box Hill and park in a carpark (52%), or along the street (33%).

Respondents supported initiatives where there was a stated benefit towards improving safety of pedestrians, transport use and amenity of the area, even if it had a disadvantage towards private vehicle use. Suggestions included this trade off:

- Increasing public transport priority in and around Box Hill including dedicated bus lanes along major roads (86% support).
- Decreasing the speed limit to 40km/h in streets where there is a mix of pedestrians and cyclists (73% support).
- Providing more opportunities for pedestrians to cross Station Street, allowing more time for people to cross at the lights (66% support).
- Repurposing carparking spaces to allow for wider footpaths, more outdoor dining, seating, planting and places to meet others in Box Hill (62% support).
- Creating a shared zone on the Vicinity carpark ramp from Hopetoun Parade to Main Street (56% support).

Results are analysed within each discussion paper topic.

Public transport (91% completion)

Questions related to this discussion guide were completed by 42 respondents, or 91% of all online survey respondents.

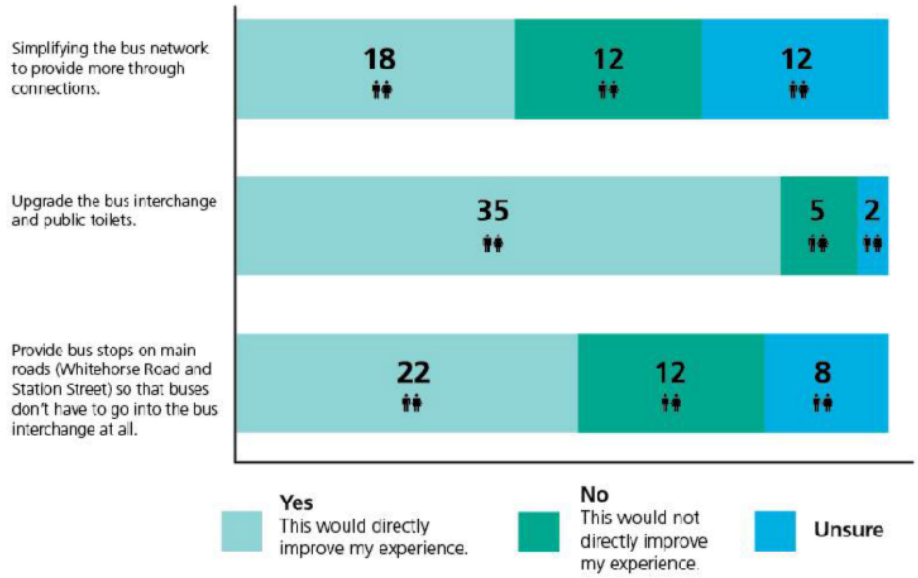
Of the 42 respondents, 36 (86%) supported increasing public transport priority in and around Box Hill, through the inclusion of dedicated bus lanes along major roads; believing that Box Hill is a well accessed and used transportation hub and it needs to hold up to its reputation. Other reasons provided for this response include:

- This idea would also keep buses out of car lanes.
- Box Hill is a major transport hub, it has been designed so that all forms of public transport filter into this space; therefore, consideration needs to be given to how they move away from the centre.
- Bus lane could also have the dual purpose of aiding cyclists.
- Decreasing car use can only be achieved when we strengthen public transport use.
- Will help to aid reliability and schedules.

Of the 42 respondents, 6 (14%) did not support the prioritisation of bus lanes through the inclusion of a dedicated bus lane; the overriding concern that traffic is already slow in the area and a reduction in lanes would further decrease the speed of travel for car users.

A series of ideas, put forward by Council and the community were tested with respondents. Respondents were asked to comment if the initiative would *directly improve their* experience, or *would have no direct impact.* Participants were also able to select *unsure*. Diagram 7 shows the responses to the ideas put forward.

Diagram 7 Ideas to improve public transport use and access



Other ideas to improve public transport
Participants were asked to put forward their suggestions to improve public transport Box Hill. 30 responses were received to this question. Themed below are the responses:

Improved transport links: 12 of the 30 respondents (40%) felt that enhanced linkages between transport modes were essential to improving public transport in the area, with many calling for the removal of the station and interchange from the shopping centre for accessibility reasons.

Updated facilities: 11 respondents expressed a desire for the train station, bus interchange and/or adjacent shopping centre to be redeveloped. Reasons stated included:

- poor safety (including lighting, visibility, platform space)
- poor pedestrian accessibility
- outdated facilities
- poor bus accessibility

Accessible timetables: Three respondents expressed frustration with the current format or bus and tram timetables and the lack of clarity about arrivals. Recommendations were received for real-time bus and tram trackers or timetables that are clearly visible at the transport hub.

Increase in services and routes: Seven participants stated a preference for enhanced bus and tram routes and/or an increase in services. This included:

- Frequent direct bus routes along main roads

- Smaller very frequent shuttle busses bringing people from within a 5-10km radius to the train station to reduce small trips and cut down on carparking requirements.
- Tram line extension from Station St/Tram Rd in Box Hill to Doncaster.
- More north-south public transport services.
- Increased bus frequency on weekends.
- Tram line extension to Middleborough Rd.

Other suggestions: Further suggestions included creating priority access for buses (such as bus lanes and over-passes) and undertaking regular community surveys to identify public transport needs and advocating to PTV for relevant changes.

Safety in Box Hill (91% completion)
Questions related to this discussion guide were completed by 42 respondents, or 91% of all online survey respondents.

Of the 42 respondents, 31 (74%) supported a decrease in the speed limit to 40km/h in streets where there is a mix of pedestrians and cyclists to improve the safety of pedestrians and cyclists. Other reasons provided for this response include:

- New developments will increase the population and the risk of injury.
- Research indicates that a collision with a pedestrian at 40km/h is less likely to result in death or serious injury than impacts at higher speeds.
- Help to educate people about driving safely in built up areas.
- May help to reduce congestion and pollution in Box Hill through a reduction in car users.

Of the 31 respondents that supported this reduction, 13 (40%) supported a further decrease to 30kp/h reasons stated include:

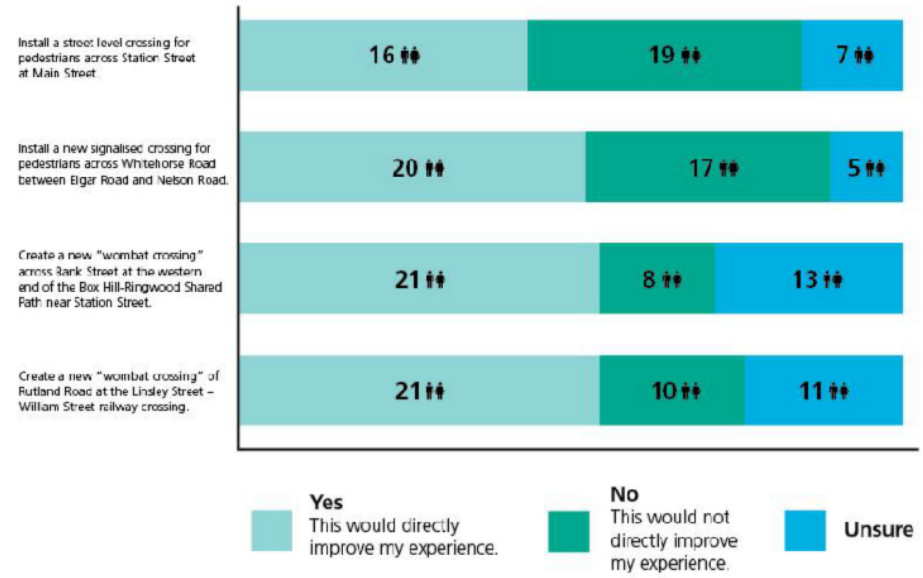
- Streets with “multi-users or particularly busy or narrow streets” would benefit from this reduction.
- “Sower the speed the less death and injury.”
- Recent developments are creating more blind spots in Box Hill.
- This has been effective in other areas of Australia (Adelaide cited).
- Box Hill as a lack of pedestrian infrastructure, “cheaper and faster way to make the area safer, while crossings are installed.”

Of the 42 respondents, 11 (26%) did not support a decrease in the speed limit citing increased congestion and an inconvenience to road users in an already built up area. Other reasons given include:

- Pedestrians currently cross without care, perception that a decrease in speed will increase this behaviour.
- Preference to educate all road users on how to travel safely.

A series of ideas, put forward by Council and the community were tested with respondents. Respondents were asked to comment if the initiative would *directly improve their* experience, *would have no direct impact;* participants were also able to select *unsure*. Diagram 8 shows the responses to the ideas put forward.

Diagram 8 Ideas to improve safety



Other ideas to improve the safety of the area
Participants were asked to put forward their suggestions to improve the safety of Box Hill Activity Centre. 34 responses were received for this question. Themed below are the responses.

Enhanced pedestrian access: 13 of the 34 respondents (38%), emphasized the need to enhance options for pedestrians. There were recommendations from four of the respondents to make the roads into shared areas, with pedestrians and cyclists having priority of the space. Recommendations included:

- lowered speed limits
- changes in paving
- traffic calming; and
- changing some roads to pedestrian/bike access only.

Changes to Carparking: 24% of respondents to this question (eight of 34), recommended changes to parking that improve safety in the area. Seven of those eight recommendations involved a reduction in the number of spaces available to park cars. Five respondents suggested either the removal of carparking along certain areas of Station St, or the introduction clearways. Other comments of note included:

- Making commuter park accessible only by using a Myki to limit spaces taken by those not commuting.
- Developing a multi-storey car park near Box Hill Gardens.
- Disincentivising car usage by making it more difficult to park.

Dedicated bus and cycle lanes: Four respondents suggested the implementation of bike lanes as a way of enhancing local safety, and a further four suggested new bus lanes.

Carparking in Box Hill (87% completion):
Questions related to this discussion guide were completed by 41 respondents, or 87% of all online survey respondents.

Of the 41 respondents, 25 (61%) supported on-street carparking being repurposed for public space, wider footpaths, more outdoor dining and improved public amenity (seating, planting and places to meet others); many stating a reduction in congestion and traffic as the reason for their support. Other reasons provided for this response include:

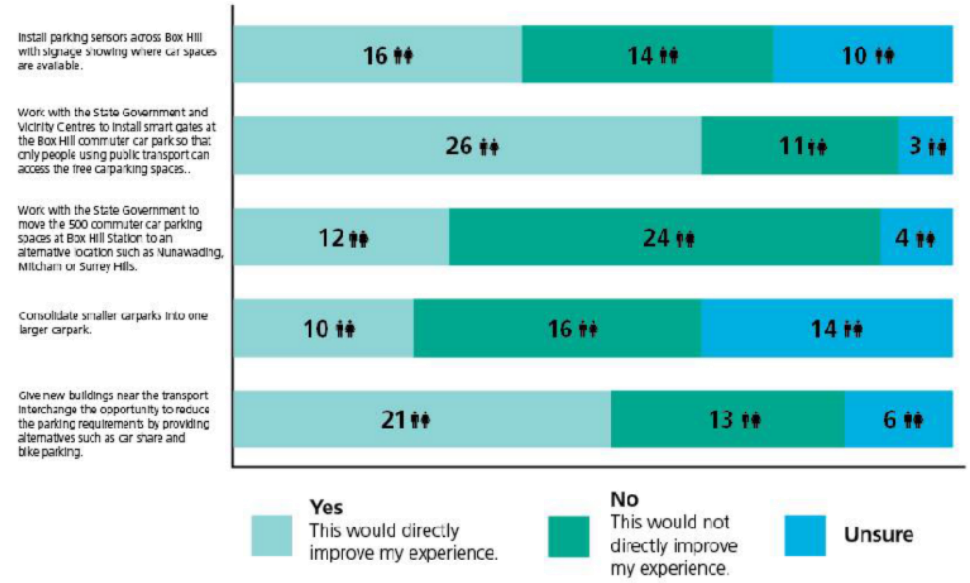
- Perception that parking on street creates a chaotic environment (reversing, waiting and circling areas).
- Box Hill needs more green spaces within the activity centre, increase in new housing developments is going to put even more pressure on the space available.
- Public space is only available within Vicinity or in front of cafes or shops; you are not welcome to stay for extended periods without spending money.
- Perception that increased foot traffic would help to support local businesses.

Of the 41 respondents, 15 (36%) did not support the reallocation of car spaces, many believe this will make it difficult to park in an area that is already difficult. Other reasons given include:

- Need to access free space for people working in the area.
- Traffic will be slower and more congested as a result of narrowing lanes, or closing lanes.
- Removing carparking spaces does not consider the growth that is occurring in the area and the increased vehicles.
- Idea is before its time "residents are not ready to get rid of their cars, try again in 10 years."
- "Carparking spaces should be converted into clear ways to reduce travel times, not for people eating brunch."

A series of ideas, put forward by Council and the community were tested with respondents. Respondents were asked to comment if the initiative would *directly improve their* experience, *would have no direct impact;* participants were also able to select *unsure*. Diagram 9 shows the responses to the ideas put forward.

Diagram 9 Ideas to manage carparking or reduce congestion in Box Hill



Other ideas to manage carparking or reduce congestion in Box Hill
Participants were asked to put forward their suggestions to manage carparking or ease congestion in Box Hill Activity Centre. 31 responses were received. Themed below are the responses.

Additional and/or cheaper carparking options: Eight of the 31 responses focused on providing more options for carparking, with easier access and cheaper rates to help manage carparking and reduce congestion in the area. This is a similar number (seven) to those advocating for the opposite (reduced carparking options or an increase in restrictions). The majority of these (five) requested that multi-storey carparks be built in various areas of Box Hill (including relocating the bus terminal underground and build a carpark directly above, or near Box Hill Gardens). One respondent suggested charging for carparking in the multi-stories during the day, but providing free parking after hours to promote greater usage of the MAC in the evenings. Another suggested mandatory public access to carparking in high density residential dwellings on the edges of the MAC.

Reduce carparking options and/or increase parking restrictions: Of the 31 responses received, seven suggested that Council commit to a reduction in car spaces and/or heightened parking restriction that deter unnecessary vehicles on roads. Suggestions included;

- More clearways throughout the area, and for longer periods (Station St., Carrington St. and parts of Elgar Rd. were mentioned).
- Reduced parking at the west end of Carrington St. to support traffic flow.
- Introducing restricted parking (including on Combarton St. in front of Box Hill Community Arts Centre).

Reduce population density: Three responses were received that recommended a reduction in the number of high density dwellings in the area that ultimately lead to more vehicles on the roads, along with greater levels of traffic congestion.

Restrict vehicle usage: Four responses suggested Council consider restricting vehicle usage in some streets around the MAC. This included:

- Only allowing essential vehicles, such as those with limited mobility, service vehicles or delivery vehicles to access.
- Allowing only bus usage on Carrington Rd.
- Removing vehicles from Carrington Rd. and opening it to pedestrian access only.

Sustainable travel: In addition, 13 respondents supported enhancing access to the area by public transport (seven), cycling (four), or walking (two). Overarching themes within this feedback included a desire for:

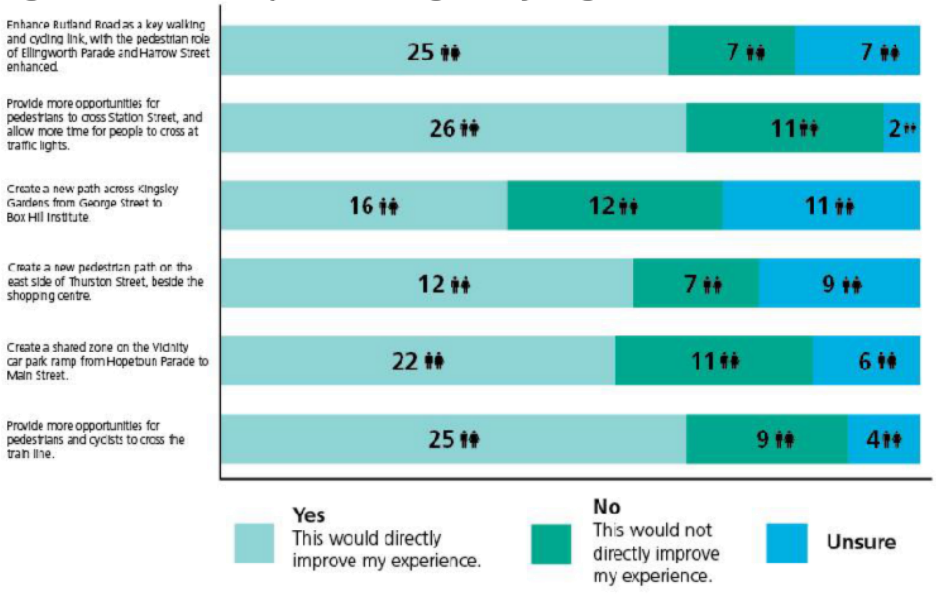
- enhanced bus and tram services;
- safer and more enjoyable cycling and walking options; and
- more incentives and enhanced education of sustainable travel options.

Walking and cycling (83% completion)

Questions related to this discussion guide were completed by 39 respondents, or 83% of all online survey respondents.

A series of ideas, put forward by Council and the community were tested with respondents. Respondents were asked to comment if the initiative would *directly improve their* experience, *would have no direct impact;* participants were also able to select *unsure*. Diagram 10 shows the responses to the ideas put forward.

Diagram 10 Ideas to improve walking and cycling



Other ideas to improve the walking or cycling in the area
Participants were asked to put forward their suggestions to improve walking or cycling in the Box Hill Activity Centre; reducing the speed limit and installing more pedestrian crossings featured highly in responses. Provided below are other ideas to improve walking or cycling in the area.

Improving cycling access and safety:

- Network should be designed so a 12 year old can ride it with confidence and with their parents not worrying about them.
- The new size of bikes (Tandems, families towing tag-a-longs or kiddies' trailers, adult trikes, cargo bikes, recumbents, handcycles)
- Need recharging points as bike transport is rapidly becoming electric increasing range of travel
- Cycle lights within pedestrian crossings.
- Create a separated bike path from Box Hill to Camberwell, and between Laburnum and Blackburn.
- Install the "Copenhagen style lanes to separate cycling and vehicle traffic."
- Bike or car share options.
- Keep cycle lanes clearly marked
- Create a separate bike path along Main Street Mall "it is too busy to be a shared bike/pedestrian area."

Improving walking access and safety:

- Places for people to rest (older people, families, ill people).
- Brightening some street "some streets are very ugly to walk through" including lighting.
- Pedestrian access needs to be maintained during development of new buildings.
- Pedestrian access needs to be included as part of new developments "new buildings are taking up a whole site now and blocking off access to pedestrians."
- Install more crossings, like the crossings along Carrington Road.
- Encourage more people to use the underground by pass on Station St "make it harder for people to cross Station St at ground level not easier."
- Zebra crossings on Whitehorse Road.
- Wider setbacks of new apartments "set further back from the road to allow pedestrian thoroughfare".
- Pedestrian crossings at the Nelson Rd and Prospect St roundabout.

Participants were also asked to consider where additional bike parking needs to be location and where the missing links in the network are. Diagram 11 shows a map of these missing links and locations for bike paths.

Diagram 11 Map of additional bike parking and routes required

Streets and public spaces (83% completion)
Questions related to this discussion guide were completed by 39 respondents, or 83% of all online survey respondents.

Of the 39 respondents, 24 (61%) supported on-street carparking being repurposed for public space, wider footpaths, more outdoor dining and improved public amenity (seating, planting and places to meet others); many stating a reduction in congestion and traffic as the reason for their support. Other reasons provided for this response include:

- Need to prioritise people over driver convenience and prioritise public transport over private vehicle convenience.
- Perception that more visible activity in the area would help to create a friendly and inviting area where more people want to come and experience what the area has to offer.
- Belief that modern cities have wide streetscapes for pedestrians and bike riders.
- Belief this change would help to attract a wider range of food businesses
- Increased development is creating a "closed in environment so need to open up public space for more trees and grass to balance out the concrete and people density."

Of the 39 respondents, 14 (36%) did not support the reallocation of car spaces, many believe this will make it difficult to park in an area that is already difficult. Other reasons given include:

- Some felt the term destination was not accurate in describing Box Hill, rather it's a place to run errands and therefore needs to be quick to exit and enter.
- Some felt public space in Box Hill would not be used as it was a "cold and windy place to sit" as a result of the development.
- Belief that Box Hill already has enough wide footpaths, particularly around Box Hill Central.
- Concern that doing this would *decrease* the amount of green space available in Box Hill.
- Belief that the provision of public space should be the responsibility of developers in developing new buildings.

Few required more information to assess the suitability of the road closure before agreeing or disagreeing.

Other ideas to improve streets and public spaces across Box Hill
Participants were asked to put forward their suggestions to improve the streets and access to public space across Box Hill. In this section participants again raised ideas related to the removal of cars on Carrington Road and Station St and reduction in carparking spaces (one side, or reallocation to public space). Themed below are the other responses.

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Carry out beautification:

- Plant more trees and garden beds.
- Change the surface in parts of Box Hill to stones, rather than smooth paving.
- Create large green sections of open space.
- Install more seating that is both attractive and functional.
- Add in more public art and sculptures.

Planning and local laws:

- Introduce smoking bans to discourage people from smoking on the pavement.
- Work with Police and Vicinity security to do regular patrols around Woolworths and surrounding areas.
- Inappropriate development is reducing the green space and "feel of Box Hill" change the design requirements to be considerate of the streetscape.

Work with retailers:

- Work with retailers to limit and improve outdoor advertising "it makes Box Hill look really tacky".
- Work with retailers to improve the look of their shopfronts to ensure they look "more professional and maintained". Perception that this was detracting from the area and causing people to feel unsafe.
- Create roof top or vertical gardens in areas where it can be accommodated.

Upkeep and maintain public areas:

- Ensure that public areas are regularly cleaned including a high pressure hose.
- Repair, replace chipped and cracked pavers.
- Update and maintain play equipment.
- Mow lawns and maintain garden beds more regularly.

Face-to-Face Engagement

Two street stands were held within Market Street Mall, Box Hill (corner of Market and Main Streets) one on Thursday 10 October, and one on Saturday 12 October 2019, from 12:00 pm to 2:00 pm.

Three activity stations were set up to invite participation:

- Activity 1 Introductory review of discussion guides, five questions were created to encourage participates to consider the dilemma (trade off and opportunity) for each discussion guide, using the same style (question and fact) as used for the online polls.
- Activity 2 Other improvement ideas, participants were invited to consider a map of the Box Hill MAC and consider ideas to improve Box Hill for public transport users, cyclists, drivers and pedestrians.
- Activity 3 Demographic information, this activity aimed at understanding who the project team spoke with as part of this engagement activity. Participants were asked to record their age, gender and connection to Box Hill.

Activities were designed to encourage participants to consider the content contained within the discussion guides, presenting either an idea or a statement whereby participants need to consider the trade off, associated with the options. Participants were encouraged to review as many discussion guides, as they had interest and time in participating in. Each discussion guide attracted a varying amount of interest and feedback, highlighting what the community is interested in.

Recorded below are the number of responses for each discussion guide:

1. Public transport 95 responses.
2. Carparking in Box Hill 56 responses.
3. Streets and public spaces 54 responses.
4. Walking and cycling 39 responses.
5. Safety in Box Hill 31 responses.

Please refer to Appendix 3 to view the Activity Plan for each street stand.

Summarised below are the key findings from each activity.

Activity 1 Introductory review of discussion guides

Public Transport (most discussed topic, 95 responses)

Do you support increasing public transport use in and around the centre, including dedicated bus lanes along major roads? Why? Why Not?

Participants agreed that more could be done to improve the access or efficiency of the bus service. The majority of responses related to improving the reliability, efficiency and frequency of public transport services more broadly.

<u>Those in support of the idea</u>

Of the responses collected, 47% or 45 responses were in favour of this idea, stating:

- “Bus lanes could work well, buses slow traffic either way so at least this way they will keep moving”.
- “Bus lanes should be located everywhere; they will benefit us and tourists”.

- "Trams and busses should be (located) together to make transport easier".
- "More trains, more trams, more busses".

There is more that can be done
Of the responses collected, 53% or 50 responses neither agreed, or disagreed with the idea, preferring to speak to other ideas and concerns they have with the current system, the most common are listed below:

- Improve the frequency of trains and buses on off peak hours.
- Improve the cleanliness of the transport hub, specifically bus terminals were ousted as not being cleaned enough or on a regular basis.
- Improve the reliability of the transport network (capacity and cancelations).
- Consider which services are being overused or underused and refining the rotes and services used.
- Improve signage and wayfinding, a perception that tourists and visitors "struggle with PT connections".
- Strengthen communication between Metro Trains and the public during cancellations and changes to service (information and display).
- Improving the public transport system before removing car access so that it can more than meet the needs of everyone before car traversal is limited.
- Improving travel information "more ways to see travel, Information screens and timetables at relevant locations (within the shopping centre included).
- Better access for people with a disability or access requirement (crowded Lifts).

Those against this idea
Of the responses collected, none directly opposed this idea.

Carparking (56 responses)
Do you support new buildings near the transport interchange having reduced parking elements by providing alternatives such as car share and bike parking? Why? Why not?
A reduction of carparking was met with some concern, many participants believing the alternatives (public transport, walking and cycling) were not at a standard to be relied upon. The majority of responses pertained to improving the public transport network before changes to carparking were made.

Those in support of the idea
Of the responses collected, 18% or 10 responses were in favour of this idea, believing that:

- In order to reduce congestion in the area, driving needed to be deterred by a lack of parking.
- No amount of car parks would/will be enough for the growing population.
- All needed amenity is available within a central location (Box Hill), and thus public transport should be used instead.

There is more that can be done
Of the responses collected, 46% or 26 responses neither agreed, or disagreed with the idea, preferring to speak to other suggestions on the topic:

- "The bus/trains need to be more reliable, so people don't feel they have to drive".
- Covering the railway tracks and using the space above them for parking could save space.
- Extended tram services that work with train and bus "to create a spiderweb network" for maximum coverage and utility.
- Adding interesting and colourful bike racks could encourage people to cycle instead.
- More street parking but with higher costs and two-hour restrictions.

Those against this idea
Of the responses collected, 38% or 21 responses did not support this idea. Several responses are listed below:

- Public transport connections are not efficient or accessible, therefore not suitable for grocery shopping or the purchase of bulky good.
- Students and teachers from the local education facilities need to use their cars to travel with heavy equipment and instruments.
- Disabled parking is not adequate a further reduction would also reduce this allocation.
- Disability support staff need to park close by to activities for long lengths of time, as their clients don't wish to walk too far from the shops they are visiting.
- Perception that older persons find driving easier to use.
- New buildings should have their own parking.

Streets and Public Spaces (54 responses)
Do you support changes to Whitehorse Road so that there is more public space, such as more outdoor dining, street trees and places to sit? Why? Why not?
The majority of responses were in favour of more public spaces and amenity for the area, seeking to be able to enjoy a pleasant atmosphere in combination with all the amenity Box Hill has to offer.

Those in support of the idea
Of the responses collected, 52% or 28 responses were in favour of this idea, and were excited about the prospect of this project. Local residents would like to see Box Hill open up as a more social and lively area to coincide with the available transport options to create a thriving economic and sociable area.

Below are some direct quotes from the community:

- "Yes! Make it a nicer place, more public seating."
- "Drinking fountains should be in the new stations and near bike paths."
- "I would like to see more options for street side restaurants and cafes!"
- "Create more gardens and space for people to socialise."
- "This will encourage active transport and local use which is good for public health."
- "This would create a shift in the area and encourage more families to come."
- "Anything the improves the friendliness of the area."
- "Fully Support and looking forward to it."

There is more that can be done

Of the responses collected, 44% or 24 responses neither agreed, or disagreed with the idea preferring to speak to other ideas to enhance Box Hill:

- "Setbacks are often used for rubbish dumping; Council needs compel the community to keep areas clean".
- More activities and events (live music incentives, Sunday market); "I would use the area if it has events."
- Ensure the area is pleasant specific comment around pigeons and their excrement on street furniture.

Those against this idea

Of the responses collected, 4% or 2 responses did not support this idea:

- "Only if it doesn't reduce traffic flow. Don't want it to be more jammed with traffic".
- The area is already "overdeveloped"; fearing that this would further contribute to this.

Walking/Cycling (39 responses)

Do you support increasing footpath widths and public space to allow for more outdoor dining, seating, planting and places to meet, even if it means removing some on-street carparking? Why? Why not?

Whilst the Carparking Discussion Guide incited some concern towards the removal of parking spaces, when considered alongside the topic of walking and cycling, safety and pedestrian priority was agreed upon.

Those in support of the idea

Of the responses collected, 41% or 16 responses were in favour of this idea, making comments such as:

- "Improved cycling and pedestrian access would help ease traffic congestion."
- "I live in actual Box Hill and I walk here every day."
- "Increase public space. Don't allow developers to block out sunshine and light in our public areas."
- "I would like to cycle everywhere but only ride to work because that is the only safe cycling area in box hill."
- One response noted his gratitude for this idea, stating wider footpaths would aid in his access as traversing the area in his wheelchair is difficult in some situations and areas.

There is more that can be done

Of the responses collected, 59% or 23 responses neither agreed, or disagreed with the idea and spoke to additional ways to strengthen cycling and walking in the area:

- Completion of the Bike paths throughout the suburb. Box Hill to Ringwood Bike path was mentioned specifically.
- Increased awareness and amenity for people with mobility issues.
- Helpful signage and information to make wayfinding easier for pedestrians.
- Sheltered bike parking for winter and rain.
- Pedestrian crossings that prioritise pedestrians over motorists.
- Replace removed on street parking with equivalent off street parking.
- Tunnels or bridges to cross the roads without interfering with traffic flow.

Safety (31 responses)

Do you support a focus on improving driver, pedestrian and cyclist safety even if that means lowering the posted speed limits? Why? Why not?

The topic of safety attracted a variety of responses, some related to the idea in question while others pertained to more general feedback about the area.

Those in support of the idea

Of the responses collected, 19% or 6 responses were in favour of this idea, believing that reducing the posted speed limits would:

- Make it easier for bikes to navigate through and around Box Hill (particularly Elgar Road).
- Improve environmental impacts by encouraging more people to use active transport, who may currently be too nervous to ride or walk.

One respondent though supportive of this initiative, wanted to ensure this initiative was used in areas "where appropriate"; ensuring that the streets selected for this treatment already had a good basis for cycling or walking, or had works planned to improve the streetscape.

There is more that can be done

Of the responses collected, 55% or 17 responses neither agreed, or disagreed with the idea, preferring to speak to other ideas that would improve safety or reinforce better driver, cyclist and pedestrian behaviour. Summarised below are the key ideas:

- Creating dedicated pedestrian infrastructure; bridges that cross over major roads Ringwood Road and Whitehorse road included and more pedestrian crossings.
- Installing other traffic calming treatments like speed humps in areas roads that are used as cut throughs.
- Installing more public lighting to create a safer night time environment.
- Increasing Police presence both to educate and reinforce road behaviour and reduce antisocial behaviour.
- Enclosing tram lines to reduce the risk of pedestrians colliding with trams.

Those against this idea

Of the responses collected, 26% or 8 responses did not support this idea, believing that reducing the posted speed limits would:

- Not have the intended impact and would likely increase jay-walking in the area.
- Make it more difficult for drivers, by making it more difficult to drive in and around the area.
- Reinforce complacent behaviour, pedestrians and cyclists were believed to ignore road rules and put themselves and the driver at risk of injury (there was a perception that this was due to a lack in understanding cultural norms and rules in Australia).
- Decrease pedestrian and cyclist safety, believing that both drivers, cyclists and pedestrians each need their own dedicated areas rather than putting more pressure on sharing road spaces.

Activity 2 Other improvement ideas

Travelling: When Travelling in and around Box Hill, what are your ideas to improve the experience for all users?

Participants were invited to put forward other ideas or concerns related to travel throughout the Box Hill area. The majority or responses were also considered within a discussion guide, however are summarised below:

- Coordination between transport systems with notice on other services at key locations.
- Connections between train and bus services that account for delays on either service.
- Scanners in carparks that detect and display how many free spaces are available for patrons.
- Public safety during both day and night. Local damage and alcohol use are preventing people from feeling safe when walking around.
- Bicycle lights at pedestrian crossings.
- Improvement of disability access.

Participants were invited to put forward ideas for improvement (yellow) or current transport hazards (red) experienced refer to Diagram 13. Diagram 14 – 22 provide more detail about these requests.

Diagram 13 Ideas for improvement or concerns

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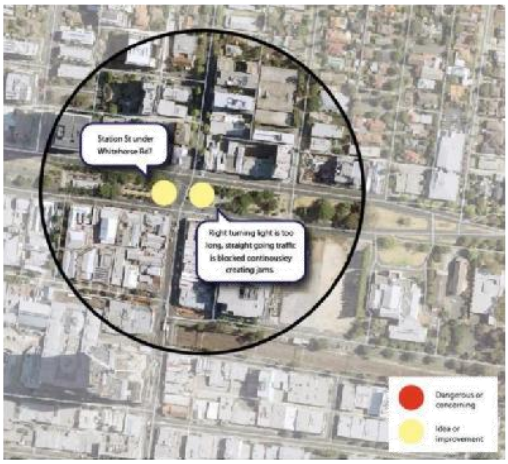
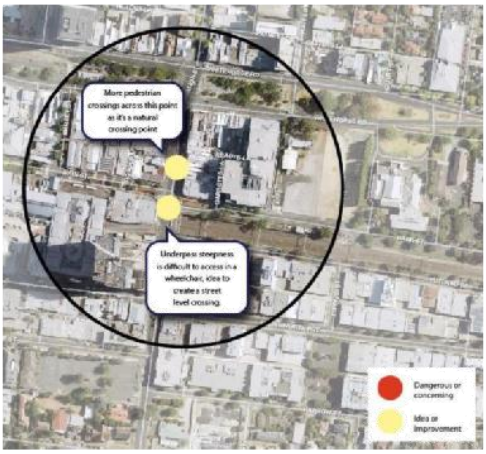
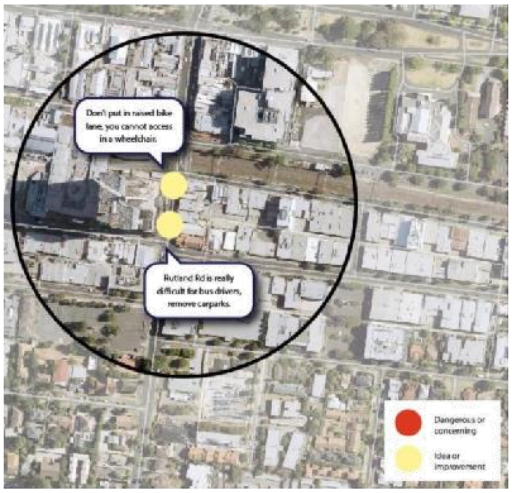
Diagram 14 – 22 Detailed ideas for improvement or concerns







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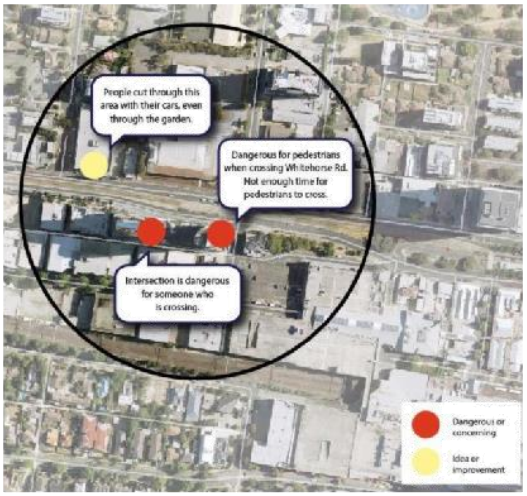

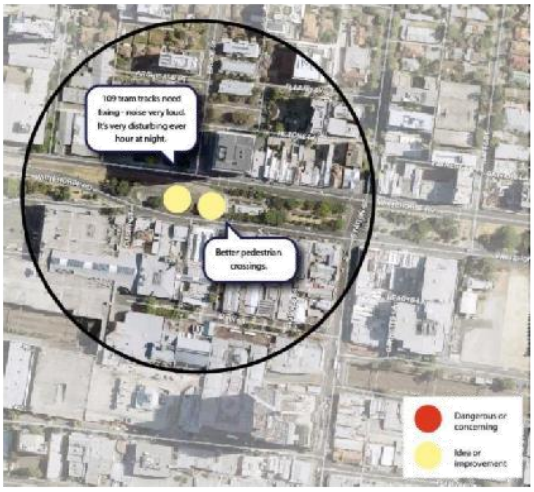

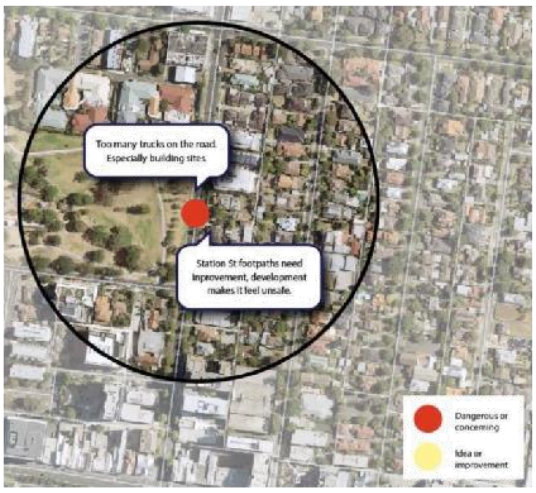

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APPENDIX C

Prioritisation Framework

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Box Hill MAC ITS | Prioritisation Framework | AECOM

Initiative #	Score	Delivery	Policy	Advocacy	Planning	Dependencies and key complementary actions	Precinct 1	Precinct 2	Precinct 3	Precinct 4	Precinct 5	Precinct 6	Precinct 7	Key stakeholders (in addition to community)	Responsibility to deliver change	Council cost (estimate) $ ($0 - $25,000) $$ ($25,000 - $100,000) $$$ ($100,000 - $250,000) $$$$ ($250,000+)	Ease of implementation Easy Medium Difficult	Immediate-term delivery (delivered in 0-3 years)	Short-term delivery (delivered in 4-6 years)	Medium term delivery (delivered in 7-10 years)	Long term delivery (delivered in 10+ years
WALKING AND CYCLING INFRASTRUCTURE																					
1. Upgrade primary walking routes																					
Action 1.1 – Widen footpaths	9	Yes			Yes	9.4, 11.1, 12.4, 12.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	VicRoads, affected residents and businesses	Council	$$$	Medium		Yes		
Action 1.2 – Improve pedestrian environment in the Box Hill mall	7	Yes			Yes	SRL, 1.2, 8.1, 21.1, 21.2	Yes							Vicinity and business owners	Council	$$$$	Medium			Yes	
Action 1.3 – Conduct a review of the existing streetscape elements	7	Yes			Yes	1.1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$$	Easy	Yes			
2. Improve accessibility and DDA-compliance																					
Action 2.1 – Upgrade footpaths to meet DDA requirements, where possible	4	Yes			Yes	1.1, 1.2, 1.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	VicRoads, community members with disabilities	Council	$$$	Easy	Yes			
Action 2.2 – Conduct accessibility audit of the public transport interchange	4			Yes	Yes	1.2	Yes							Vicinity, community members with disabilities	Department of Transport	$	Easy	Yes			
3. Provide additional and improved road crossings																					
Action 3.1 – Construct new pedestrian (zebra) / raised flat top (wombat) crossings	6	Yes			Yes	12.4, 12.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	VicRoads	Council	$$$	Medium	Yes	Yes		
Action 3.2 – Construct new signalised crossings	6			Yes		12.4, 12.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	VicRoads	VicRoads	$	Medium		Yes		
Action 3.3 – Improve crossings at all existing signalised intersections and crossings	5			Yes		12.4, 12.5	Yes	Yes	Yes		Yes			VicRoads	VicRoads	$	Medium	Yes			
Action 3.4 – Construct raised threshold intersection treatments	6	Yes				12.4, 12.5	Yes			Yes	Yes	Yes	Yes	VicRoads	Council	$$$	Medium	Yes	Yes		
Action 3.5 – Install signalised crossing countdown timers	5			Yes		12.4, 12.5	Yes	Yes	Yes		Yes			VicRoads	VicRoads	$	Medium			Yes	
Action 3.6 – Investigate opportunities to install illuminated DDA ground tactile markings linked to traffic signals	6			Yes	Yes	12.4, 12.5	Yes	Yes	Yes		Yes			VicRoads	VicRoads	$	Medium			Yes	
4. Formalise and upgrade primary cycling corridors																					
Action 4.1 – Construct physically separated paths	8	Yes		Yes		5.1, 12.4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	VicRoads, bicycle user groups	Council	$$$	Medium		Yes		
Action 4.2 – Construct bicycle boulevards / low stress cycling streets	8	Yes			Yes	5.1, 12.4	Yes					Yes	Yes	Bicycle user groups	Council	$$$	Medium	Yes	Yes		
Action 4.3 – Implement Strategic Cycling Corridors in Box Hill	8			Yes	Yes	5.1	Yes							Bicycle user groups and neighbouring local governments	VicRoads	$	Medium		Yes		
5. Provide new walking/cycling bridge over the railway line																					
Action 5.1 – Provide new walking/cycling bridge over railway line	7			Yes		1.1, 2.1, 4.1, 4.2, 8.1	Yes							Department of Transport, Metro Trains Melbourne, SRLA, Vicinity	Department of Transport, SRLA	$	Difficult			Yes	
6. Create attractive laneways																					
Action 6.1 – Revitalise laneways	6	Yes			Yes	NA	Yes				Yes			Adjoining business and land owners	Council	$$$	Difficult		Yes		
7. Improve bicycle end-of-trip facility provision																					
Action 7.1 – Provide end-of-trip facilities within key destinations	6			Yes		4.1, 4.2, 4.3		Yes			Yes			Education and health organisations	Education and health organisations	$	Easy		Yes		
Action 7.2 – Improve public end-of-trip facility provision	6				Yes	4.1, 4.2, 4.3	Yes				Yes	Yes		Bicycle user groups	Council	$$	Easy	Yes			
8. Improve wayfinding																					
Action 8.1 – Improve area-wide wayfinding	6	Yes			Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$$	Medium		Yes		
PUBLIC TRANSPORT																					
9. Upgrade Box Hill transport interchange																					
Action 9.1 – Make interim improvements to the bus interchange	3			Yes		NA	Yes							Vicinity, Department of Transport, bus operators	Department of Transport	$	Medium	Yes			
Action 9.2 – Provide real-time service information	5			Yes		NA	Yes							Department of Transport, Metro Trains Melbourne, Yarra Trams, bus operators	Department of Transport	$	Medium		Yes		
Action 9.3 – Deliver high quality end-of-trip station facilities	5			Yes		SRL	Yes							Vicinity, SRLA	Department of Transport	$	Medium			Yes	
Action 9.4 – Relocate and upgrade Box Hill bus interchange	8			Yes		SRL, 10.2, 19.3	Yes							Vicinity, Department of Transport, bus operators, SRLA	Department of Transport, SRLA	$	Difficult				Yes
10. Improve train and bus services																					
Action 10.1 – Increase train capacity	4			Yes		SRL	Yes							Department of Transport, Metro Trains Melbourne, SRLA	Department of Transport	$	Difficult				Yes
Action 10.2 – Restructure bus routes	5			Yes		SRL, 9.4, 10.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Department of Transport, bus operators	Department of Transport	$	Difficult			Yes	
Action 10.3 – Improve bus service levels	5			Yes		SRL, 9.4, 10.2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Department of Transport, bus operators	Department of Transport	$	Difficult			Yes	
11. Extend the tram line																					
Action 11.1 – Extend the tram line	8			Yes		SRL, 12.4	Yes	Yes	Yes		Yes			Department of Transport, Yarra Trams	Department of Transport	$	Difficult				Yes
TRAFFIC AND PARKING MANAGEMENT																					
12. Modify the road network to reduce through traffic on Whitehorse Road and Station Street																					
Action 12.1 – Modify intersections to reduce through traffic within the MAC	6			Yes	Yes	12.4, 12.5	Yes	Yes	Yes	Yes	Yes	Yes		VicRoads	VicRoads	$	Medium			Yes	
Action 12.2 – Modify traffic signal timings to prioritise active and public transport modes	4			Yes		12.4, 12.5	Yes	Yes	Yes	Yes	Yes	Yes		VicRoads	VicRoads	$	Easy	Yes			
Action 12.3 – Improve traffic routes along Elgar Road and Middleborough Road	2			Yes		12.4		Yes	Yes	Yes		Yes	Yes	VicRoads	VicRoads	$	Medium		Yes		
Action 12.4 – Reconfigure Whitehorse Road	8			Yes		12.5	Yes	Yes	Yes		Yes			Department of Transport, VicRoads	VicRoads	$	Difficult			Yes	
Action 12.5 – Reconfigure Station Street	8			Yes		12.4	Yes			Yes		Yes	Yes	Department of Transport, VicRoads	VicRoads	$	Difficult			Yes	
Action 12.6 – Improve connections between Elgar Road and Box Hill Central	2				Yes	12.4	Yes	Yes	Yes					NA	Council	$$	Easy			Yes	
13. Reduce vehicle speeds																					
Action 13.1 – Implement 40km/h speed limits on Whitehorse Road and Station Street	3			Yes		NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	VicRoads	VicRoads	$	Medium		Yes		
Action 13.2 – Undertake area-wide speed limit reductions	2			Yes	Yes	13.3, 13.4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$$	Easy	Yes			
Action 13.3 – Investigate further speed reductions to 30km/h	2				Yes	13.2, 13.4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$$	Easy			Yes	
Action 13.4 – Investigate sites for improved traffic calming	4	Yes			Yes	12.2, 13.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$$	Easy	Yes			
14. Manage parking supply and demand																					
Action 14.1 – Manage use of train station commuter car park	2			Yes		NA	Yes							Vicinity, Department of Transport	Department of Transport	$	Medium	Yes			
Action 14.2 – Relocate Box Hill Station commuter parking	3			Yes		NA	Yes							Vicinity, Department of Transport	Department of Transport	$	Difficult		Yes		
Action 14.3 – Review on-street parking in the MAC	2				Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$$	Easy	Yes			
Action 14.4 – Relocate off-street parking to outer areas within the MAC	5				Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Car park owners	Council	$$	Difficult				Yes
Action 14.5 – Relocate on-street long term parking and convert to short term zones	3	Yes			Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$$	Medium		Yes		
Action 14.6 – Manage motorcycle/scooter parking	2	Yes	Yes			NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$	Easy		Yes		
Action 14.7 – Provide electric vehicle charging points	2			Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes		Car park owners, Vicinity, Department of Transport	Council	$	Easy	Yes			
15. Repurpose spaces allocated to vehicles and enhance public space																					
Action 15.1 – Create parklets	6	Yes			Yes	NA	Yes							Adjoining business and land owners	Council	$$	Easy		Yes		
Action 15.2 – Convert off-street vehicle spaces to community uses for temporary periods	3	Yes			Yes	NA	Yes							Adjoining business and land owners	Council	$$	Medium		Yes		
Action 15.3 – Relocate Carrington Road taxi/rideshare facility	2	Yes		Yes	Yes	NA	Yes							Department of Transport, Taxi operators	Council	$$	Medium		Yes		
Action 15.4 – Investigate temporary closures of Carrington Road to vehicles	9				Yes	14.3	Yes							Vicinity, Adjoining business and land owners	Council	$	Easy		Yes		
Action 15.5 – Investigate decking over the railway line to create new public space	3			Yes	Yes	SRL	Yes							Department of Transport, Metro Trains Melbourne, SRLA	Department of Transport	$	Difficult				Yes
16. Improve parking wayfinding																					
Action 16.1 – Provide area-wide parking wayfinding	3	Yes			Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	VicRoads	Council	$$	Easy		Yes		
Action 16.2 – Develop a parking wayfinding app	3				Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$$	Medium		Yes		
17. Review development parking requirements																					
Action 17.1 – Review development parking rates in planning scheme	2		Yes			NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Developers	Council	$$	Medium	Yes			
18. Review loading zones																					
Action 18.1 – Review loading zones	1				Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes		Adjoining business and land owners	Council	$	Easy	Yes			
TRAVEL BEHAVIOUR																					
19. Implement behaviour change programs																					
Action 19.1 – Run active transport community events	5	Yes				NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$	Easy		Yes		
Action 19.2 – Run travel behaviour change program	5	Yes				NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$	Easy		Yes		
Action 19.3 – Support active transport promotional events	5	Yes				NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$	Easy		Yes		
Action 19.4 – Develop workplace and school travel plans	5	Yes				NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$$	Easy		Yes		
TECHNOLOGY AND EMERGING TRENDS																					
20. Implement car share schemes																					
Action 20.1 – Introduce car share	4	Yes		Yes		14.3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Car share operators, developers	Council, developers and car share operators	$	Medium	Yes			
Action 20.2 – Review car share parking requirements	3		Yes			NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Car share operators	Council	$	Medium	Yes			
21. Support emerging and niche transport types																					
Action 21.1 – Manage micro-mobility modes	3		Yes		Yes	1.2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Council	$$	Easy		Yes		
Action 21.2 – Manage food delivery bikes	2		Yes		Yes	1.2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Food delivery services	Council	$$	Easy	Yes			

9.1.5 – ATTACHMENT 1. Final Draft Box Hill ITS Public

ACKNOWLEDGEMENT OF COUNTRY

In the spirit of reconciliation, Whitehorse City Council acknowledges the Wurundjeri people as the traditional custodians of the land. We pay our respects to their Elders past and present.

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9.1.9 Investment and Economic Development Strategy Extension 2020-2022

Attachment 1 Draft Extension Strategy 2020 - 2022

9.1.9 – ATTACHMENT 1. Draft Extension Strategy 2020 - 2022

CITY OF WHITEHORSE

Investment & Economic Development Strategy

Extension 2020–2022

9.1.9 – ATTACHMENT 1. Draft Extension Strategy 2020 - 2022

The Investment and Economic Development Strategy Extension 2020 – 2022 has been developed by Whitehorse City Council. This document contains extracts from the Whitehorse Economic Development Strategy 2014 – 2019 (to view strategy go to wbiz.com.au) and information from an economic analysis prepared by SGS Economic and Planning in 2019.

9.1.9 – ATTACHMENT 1. Draft Extension Strategy 2020 - 2022

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9.1.9 – ATTACHMENT 1. Draft Extension Strategy 2020 - 2022

Introduction

The City of Whitehorse is located 15 kilometres east of Melbourne's Central Business District (CBD) and covers an area of 64 kilometres.

Access to the CBD from the City of Whitehorse is one of the key reasons businesses have selected the municipality as their base. They are well supported by an extensive train, tram and bus network, as well as arterial road connections, making travelling straightforward and convenient.

The municipality is strategically positioned to take the connective advantage through the Eastern Freeway and Eastlink, providing access to the CBD, Melbourne Airport, the Yarra Valley wine and tourism region in the east and Melbourne's bayside in the south.

The City of Whitehorse prides itself on having some of eastern Melbourne's most liveable suburbs. Residents benefit from the tree lined streets and enjoy a variety of parks, gardens and bushland environments. Restaurant and café dining options are vast and inspired by a diverse range of cultures.

The municipality is also host to a range of internationally renowned education institutions and state of the art health care facilities.

9.1.9 – ATTACHMENT 1. Draft Extension Strategy 2020 - 2022

Role of Local Government in Economic Development

Annually, federal and state governments develop policies and allocate resources to national, state, regional and local economic development. Local government are a key stakeholder and local leader because of its close engagement with residents and business communities.

The issues, opportunities and approaches taken to facilitate and promote economic development can and should differ between Councils in response to their local circumstances. It is this ability of local government to understand and respond to local conditions that give it such an important role in facilitating local and regional economic prosperity. However, it should be noted that local governments have limited jurisdiction, resources and a broad range of defined responsibilities.

It is therefore important that local governments carefully define the areas of strategic influence, priority focus areas, and the principles that will guide economic development in their respective jurisdictions.

Part 1A, Section 3C of the Local Government Act 1989 requires that all councils improve the quality of life of people within the local community.

Investment, jobs and the economic vitality of the municipality are all critical components in improving the quality of life for residents within the City of Whitehorse.

Legislative Framework

The Investment & Economic Development Strategy Extension 2020-2022 (I&EDSE 2020-2022) considers the primary economic objectives under the *Local Government Act 1989 Part 1A, Section 3C, Items 2 (a), (c) and (d).*

In seeking to achieve these objectives, the role of council is further specified within the Act as providing leadership by establishing strategic objectives and monitoring their achievement.

Local Government Act 1989
Part 1A, Section 3C

2 (a) to promote social, economic and environmental viability and sustainability of the municipal district.

2 (c) to improve the overall quality of life of people in the local community.

2(d) to promote appropriate business and employment opportunities.

9.1.9 – ATTACHMENT 1. Draft Extension Strategy 2020 - 2022

Strategic Aim

The I&EDSE 2020-2022 aims to expand on the Economic Development Strategy 2014-2019 and seeks to update, simplify and better align with current and future trends.

Importantly the I&EDSE 2020-2022 seeks to affiliate with the timing of the next Whitehorse Council Vision and Plan.

The I&EDSE 2020-2022 will continue to guide Council in the following areas:

- Retain and expand local businesses.
- Attract new businesses that contribute positively to the overall enhancement of the local economy.
- Support and promote quality of life for the Whitehorse community.

The I&EDSE 2020-2022 sits under the Whitehorse Council Plan 2017-2021 Strategic Direction 5: Support a healthy local economy, and is supported by the following Council strategies, plans, and legislation:

- Whitehorse Council Plan 2017-2021
- Municipal Public Health and Wellbeing Plan 2017-2021
- Whitehorse Industrial Precinct Review 2019
- Tally Ho Major Activity Centre Urban Design Framework
- Whitehorse Industrial Strategy 2011
- Whitehorse Retail Strategy 2010
- MegaMile (West) and Blackburn Activity Centre Urban Design Framework 2010
- Nunawading / MegaMile Major Activity Centre and Mitcham Neighbourhood Activity Structure Plan 2018
- Open Space Strategy 2007
- Whitehorse Planning Scheme
- Box Hill Activity Centre Structure Plan 2007
- *Planning and Environment Act 1987*
- *Local Government Act 1989*

Mission Statement

The I&EDSE 2020-2022 incorporates a mission statement. This statement is intended to give purpose and meaning to why the Investment and Economic Development Unit exists, and provides the foundation and guidance for strategic planning and work priorities.

The Investment & Economic Development Unit exists to direct and implement the 'Investment & Economic Development Strategy Extension 2020-2022 and beyond' focussing on improving quality of life for people living, working, studying and visiting the City of Whitehorse.

9.1.9 – ATTACHMENT 1. Draft Extension Strategy 2020 - 2022

Economic Development Mandate

The four key areas of the economic development Mandate remain consistent from the Economic Development Strategy 2014-19, and will continue to guide all economic development work that Council undertakes.

The Mandate informs the manner in which the Strategic Project Areas are chosen and acted on, and are based on sound principles of sustainable economic development.

The Mandate areas include:

- Helping Businesses Grow and Prosper
- Responsible Leadership and Advocacy
- Facilitating Connections
- Promoting Sustainable Development

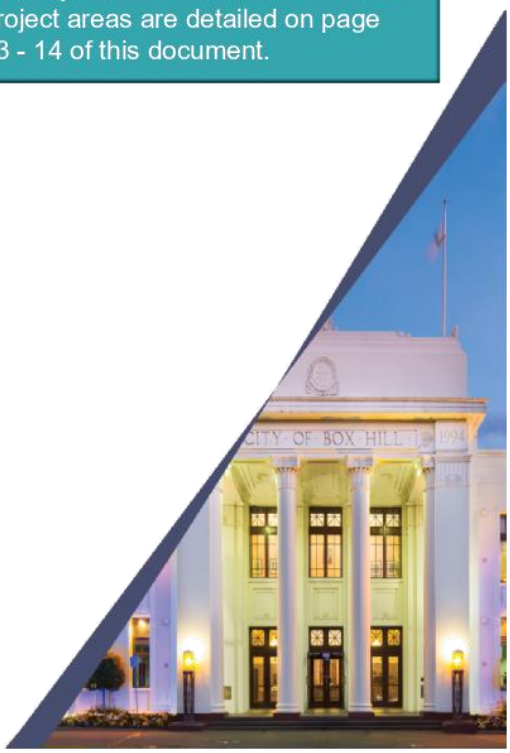
Strategic Project Areas

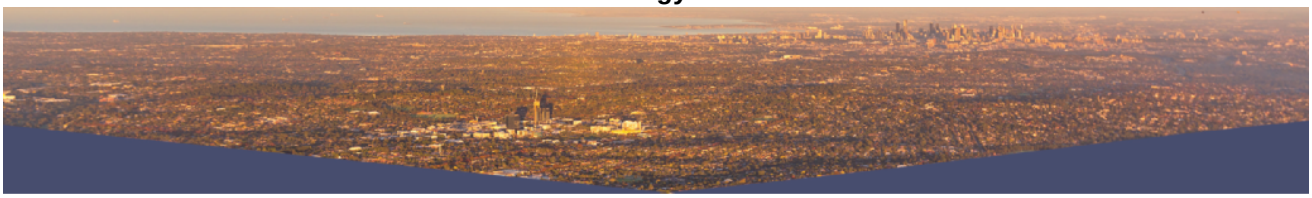
The strategic project areas are high level directions that Council commits to undertaking for the duration of the strategy period (2020 - 2022) to achieve the Mission.

The objectives associated with these project areas are detailed on page 13 - 14 of this document.

The five strategic project areas include:

1. Investment
2. Priority Places
3. People, Jobs and Industry Development
4. Regional Development and Advocacy
5. Research, Analysis and Advisory





The Melbourne East Region

Melbourne's East is home to the Cities of Knox, Manningham, Maroondah, Monash, Whitehorse and the Shire of Yarra Ranges.

The region consists primarily of residential zoned land, with centres of knowledge-intensive and population servicing industries. These industries, as well as the increasing level of *know-how* and *human economy*, contribute in making a high-income, high-growth regional economy.

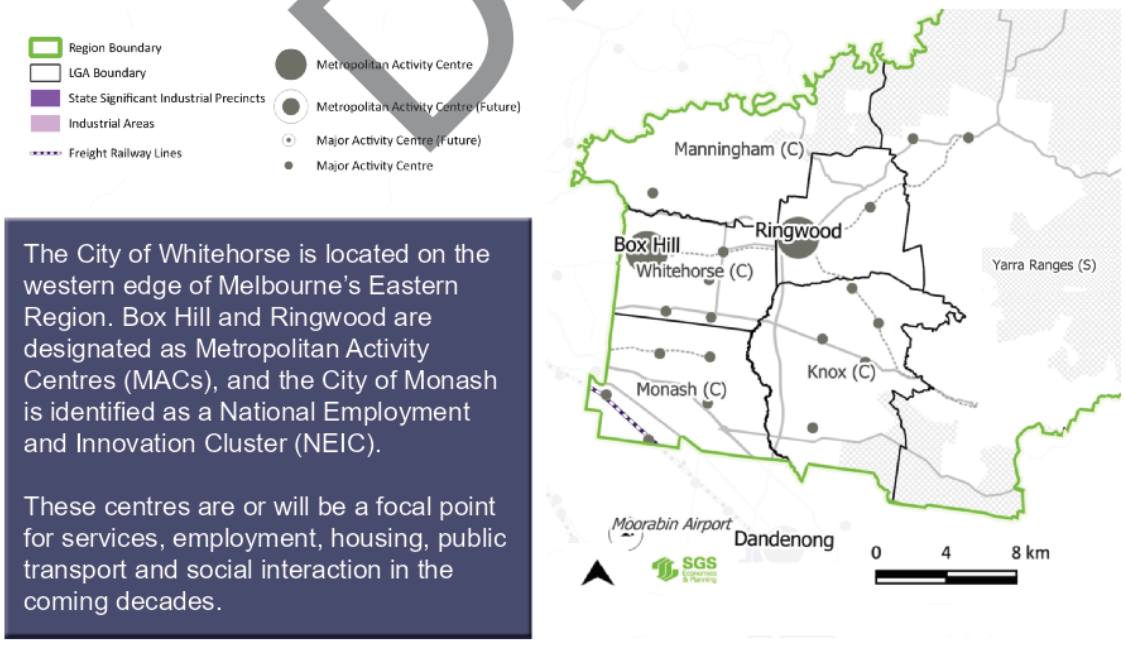
Owing to the scale of its organisations, health and education is the most concentrated sector. These organisations include;

- Box Hill TAFE
- Deakin University
- Monash University
- Box Hill Hospital
- Knox Private Hospital
- Maroondah Hospital
- Monash Medical Centre
- Monash National Employment Innovation Cluster (NEIC)

Major freight and road networks include;

- Burwood Highway
- Eastern Freeway
- EastLink
- Maroondah Highway
- Monash Freeway
- Princess Highway

Key Economic Features of the Eastern Metro Region



The City of Whitehorse is located on the western edge of Melbourne's Eastern Region. Box Hill and Ringwood are designated as Metropolitan Activity Centres (MACs), and the City of Monash is identified as a National Employment and Innovation Cluster (NEIC).

These centres are or will be a focal point for services, employment, housing, public transport and social interaction in the coming decades.

Source: SGS Economics and Planning (2019)

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The Whitehorse Economy

The health care and education industries are key industries for Whitehorse. They are more concentrated in Whitehorse than Greater Melbourne and are set for growth over the coming decades. They also act as export industries, providing products and service to people and businesses from outside of Whitehorse.

Professional, scientific and technical services, and knowledge jobs are important industries to the Whitehorse economy. Box Hill will be the focal area for the knowledge economy to expand strongly in Whitehorse, and more broadly in Melbourne's Eastern Region. By 2041 Whitehorse will account for more than 40% of the Eastern Melbourne region's knowledge-intensive jobs. Box Hill will account for 15% on its own.

The growth in knowledge-intensive industries, alongside health care and education, will create jobs, increase the scale of trade in goods and services, and attract talent and investment into the municipality. The growth in knowledge-intensive jobs, plus health care and education, adds up to a high income, high growth economy into the future.

There is a pipeline of investment in transport infrastructure set to be rolled out in Whitehorse. These investments include the State Government infrastructure projects,

- North East Link
- Suburban Rail Loop, and
- Mont Albert and Surrey Hills level crossing removals.

This infrastructure will assist in making Whitehorse a more desirable place to live and work as well as improving the productivity of the Whitehorse economy.

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Gross Regional Product

Gross Regional Product is a monetary measure of the market value of all final goods and services in a region.

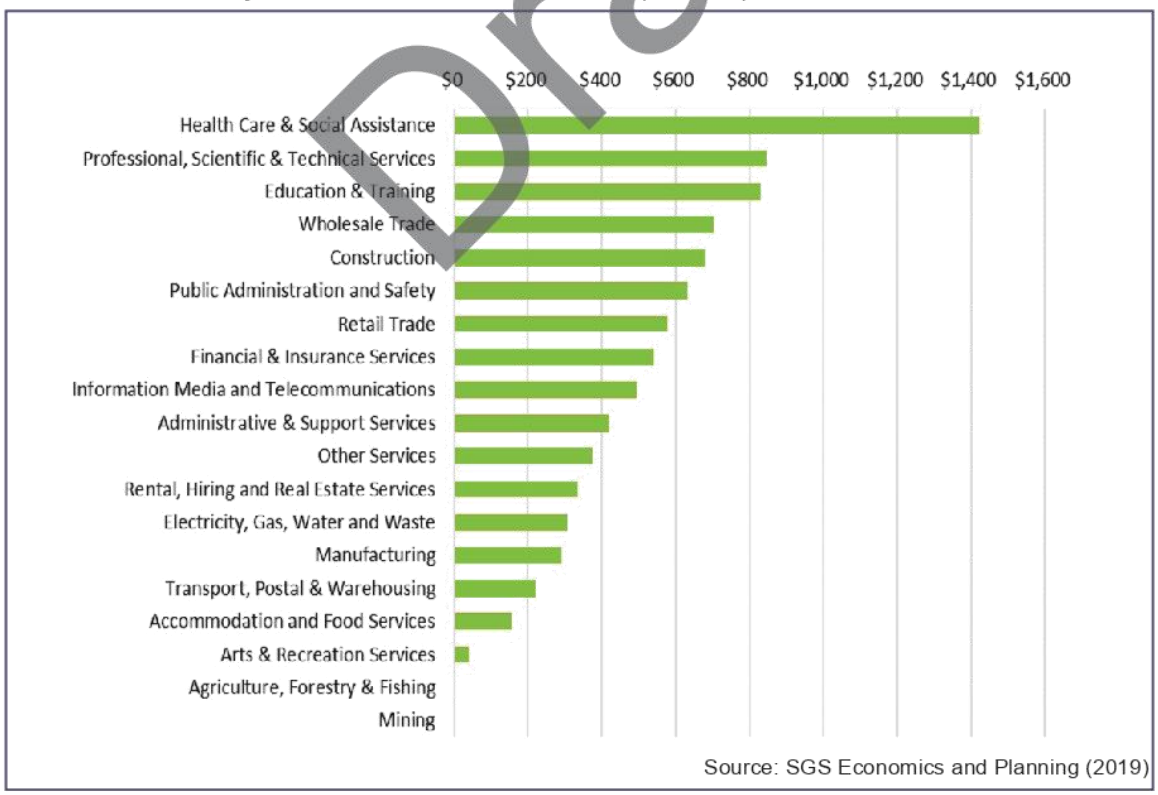
In 2018/19 Whitehorse's Gross Regional Product (GRP) was $10.8 billion accounting for 3.05% of the value of goods and services produced in Greater Melbourne.

For comparison, Whitehorse's population is around 3.6% of Greater Melbourne's.

The largest industries in Whitehorse, in terms of the gross value of goods and services produced, are:

- Health Care and Social Assistance
- Professional Scientific and Technical
- Education and Training.

Contribution of Industry Sectors to Whitehorse GRP 2018/19 ($millions)



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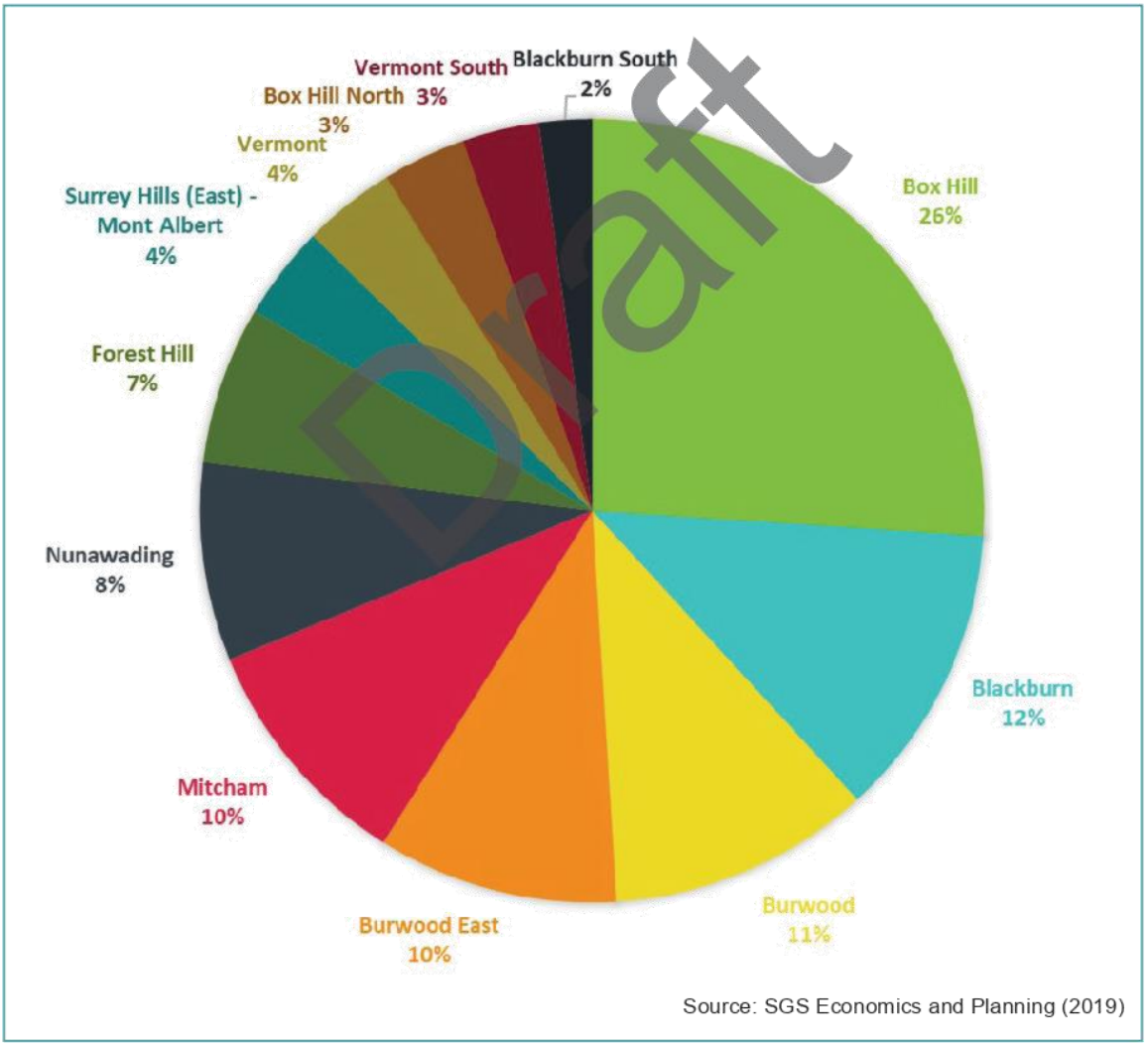
The production of goods and services is not evenly distributed across the LGA.

As shown in the graph below, a quarter of the goods and services are produced in Box Hill alone.

Share of Whitehorse's Gross Value of Goods and Services Produced in 2018/19 (by SA2)



Source: SGS Economics and Planning (2019)

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Effective Job Density

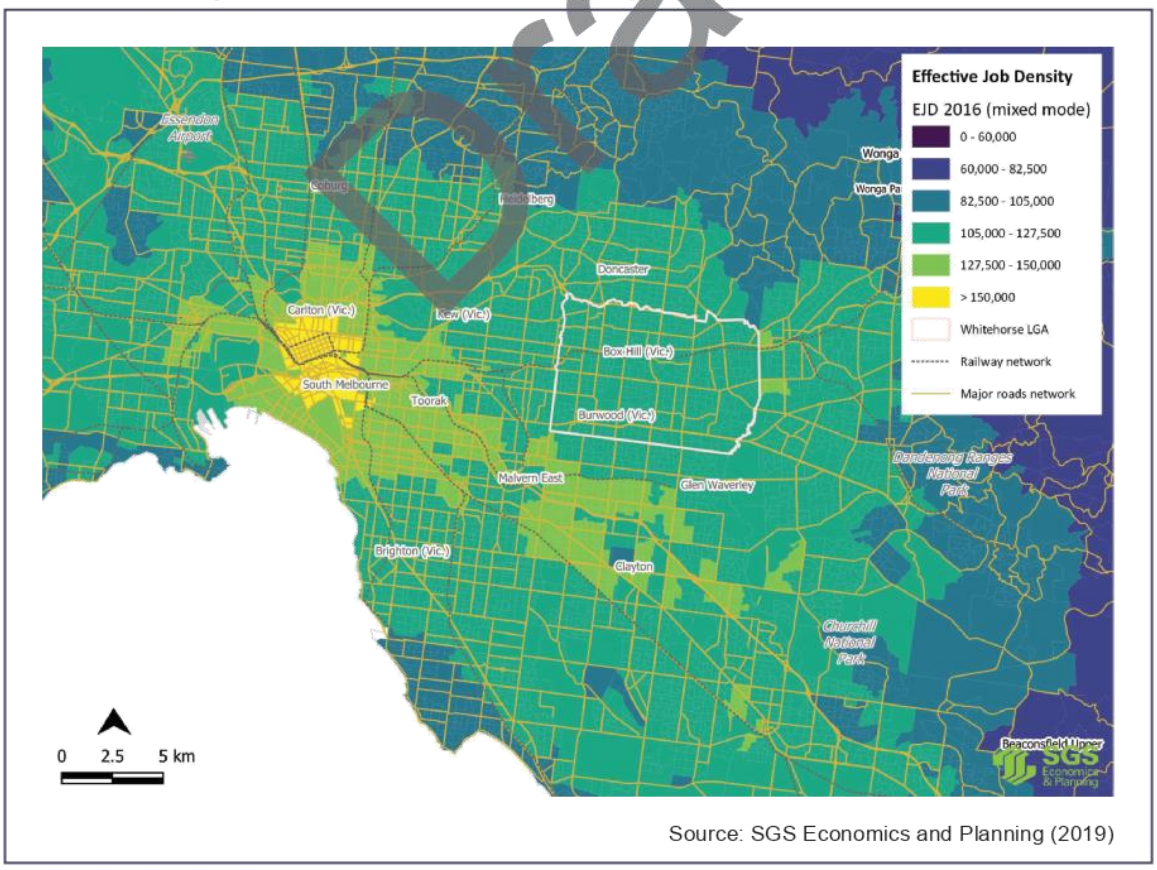
In Whitehorse, Effective Job Density (EJD) is high but lower than the inner suburbs of Melbourne and suburbs to the south. Access to highways, train and rail lines and population centres are broadly spread across Whitehorse.

From a business perspective, higher levels of connectivity mean that businesses enjoy advantages through better access to skills, suppliers and complementary enterprises. It is this access that drives new knowledge and innovation in modern economies.

Businesses located in Whitehorse may have a slight disadvantage compared to other areas of Melbourne. Results are more favorable when looking at car transport only and this suggests Whitehorse's lower ranking is impacted by a lower supply of public transport connectivity to population centres.

Effective Job Density is a measure that indicates the accessibility of workers for businesses in a given area and is based on how long it takes workers to get to jobs. This is strongly linked to the provision of public transport and road networks.

Effective Job Density 2016 - Road Network and Public Transport



Source: SGS Economics and Planning (2019)

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Industry Grouping By Share

The map below shows employment in Whitehorse in 2016, separated into four broad industry groupings.

Population Serving
Industries that supply goods and services to the local population, eg. retail trade and construction. These industries are most prevalent in areas that are predominantly residential.

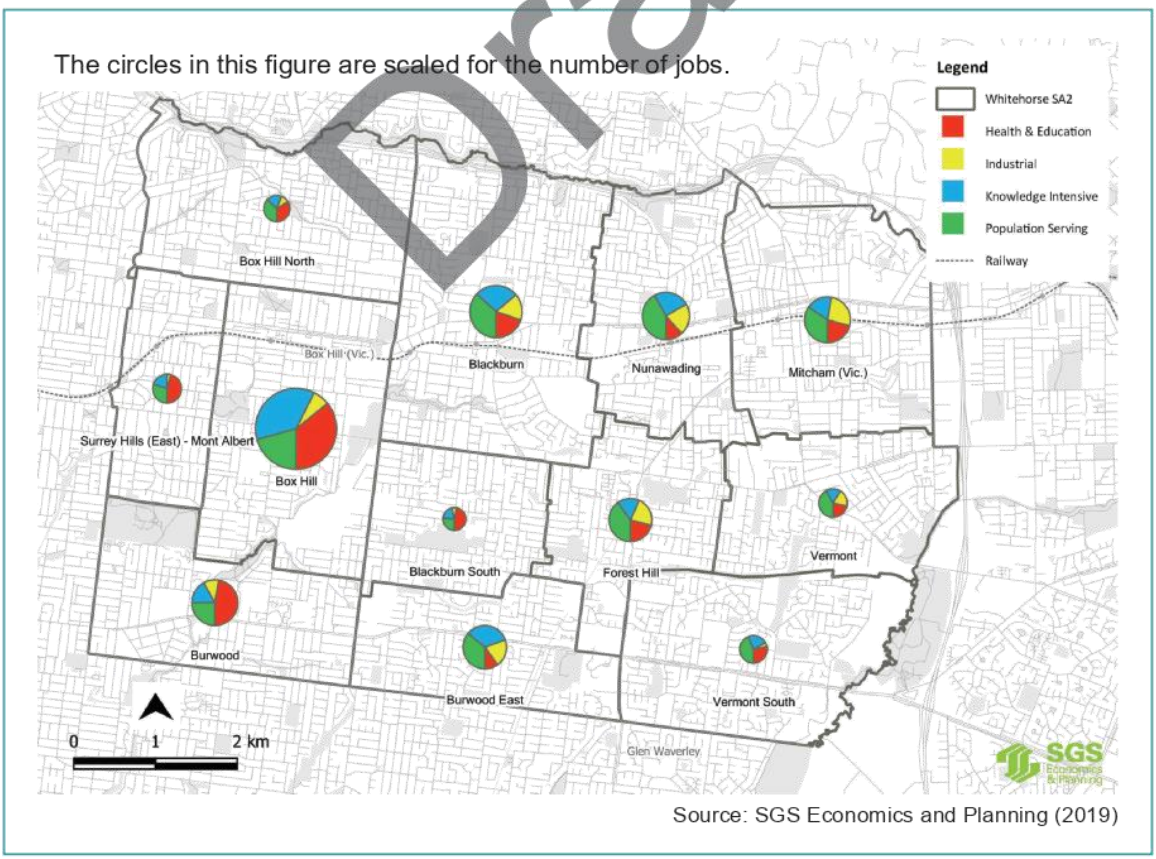
Health and Education
Made up of hospitals and other health services, and education, from childcare through to University. These industries are most prominent in Box Hill, Burwood and Blackburn South.

Industrial
Including manufacturing, agriculture, utilities and transport industries. Mitcham and Nunawading have the highest number of industrial jobs in Whitehorse.

Knowledge-Intensive
These industries include the financial and insurance services industry and the professional, scientific and technical services industry. 40% of these jobs are located in Box Hill.

Box Hill has the highest number of jobs with 22,501, followed by Blackburn with 9,388.

Map of Industry Grouping Share (by SA2)



Source: SGS Economics and Planning (2019)

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Employment

The graph below shows employment in these four industry groups in 2011 and 2016, and also projections for 2021, 2026 and 2031. The projections show the following.

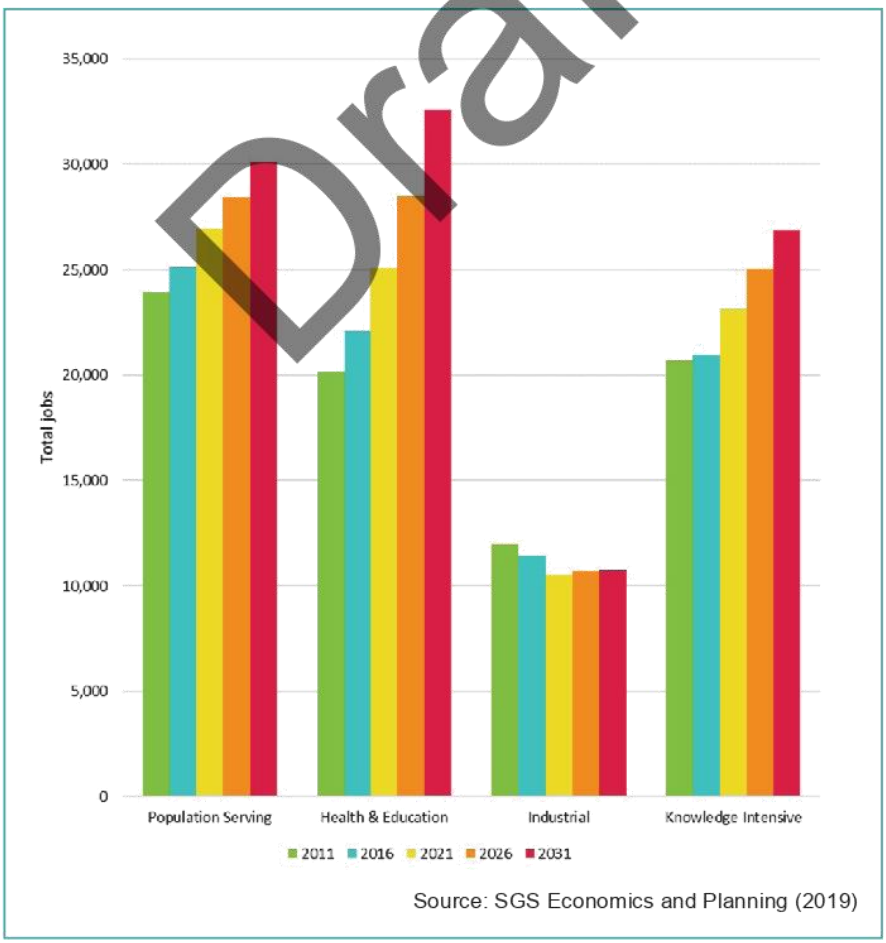
Population Serving
The population and housing boom have driven rising demand for population serving activity. This is forecast to continue into the future.

Health and education
This is forecast to be the largest industry group by 2021. Employment in this industry group has grown strongly since 2011 with this growth forecast to continue.

Industrial
This industry group saw a decline between 2011 and 2016. Employment is projected to remain relatively static from 2021 onwards. A loss of jobs in these sectors reflects broader macroeconomic changes towards automation and contraction of these sectors in inner cities.

Knowledge Intensive
The number of jobs in knowledge intensive industries are also forecast to grow, but not at the same rate as health and education.

Employment by Broader Industry sector in the Whitehorse Local Government Area (2011-31)



Source: SGS Economics and Planning (2019)

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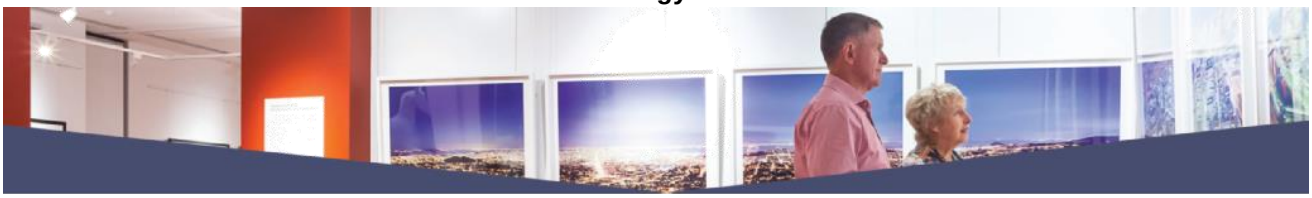

Whitehorse's Comparative Advantage

Location Quotient (LQ) analysis captures the comparative strengths of a local area's economy and can reveal what makes an area 'unique' based on physical, technological and intellectual characteristics.

When the LQ value is higher than one, it is an indication that a local economy is relatively specialised and has a competitive advantage in that industry over other regions (in this case the rest of Greater Melbourne).

An LQ of greater than 1.2 is generally regarded as an industry sector with a significant specialisation and possibly a key economic strength; higher numbers mean greater specialisations.

Whitehorse has five industry sectors (out of 19) with a LQ score above 1.2:

- Health Care and Social Assistance (1.59)
- Education and Training (1.50)
- Other Services (including repair and personal services, i.e. mechanics or hairdressers) (1.50).
- Public Administration and Safety (including knowledge-intensive government services and offices) (1.22)
- Information, Media and Telecommunications (1.22). This industry is knowledge intensive.

The LQ score of Health Care and Social Assistance, Information, Media and Telecommunications and Other Services have been increasing since 2011. An increase suggests that these industry sectors are growing in Whitehorse faster than Greater Melbourne.

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Strategic Project Area Objectives

The objectives for each of the five Strategic Project Areas are listed below.

These key objectives, which all work towards achieving the I&EDSE 2020-2022 Mission have been developed in line with the four economic development Mandate themes, and an analysis of the local economy.

An Action Plan will accompany this Strategy Extension and will outline how the objectives will be achieved.

1. Investment

a. Monitor and support innovation and emerging sectors.

b. Promote Whitehorse's growing knowledge economy focusing on the leading sectors.

c. Continue to advocate for appropriate infrastructure provisions across the municipality.

d. Maintain and grow existing partnerships and relationships across all levels of government.

e. Advocate for investments in quality transport infrastructure that will support innovative, knowledge based business and commercial activity.

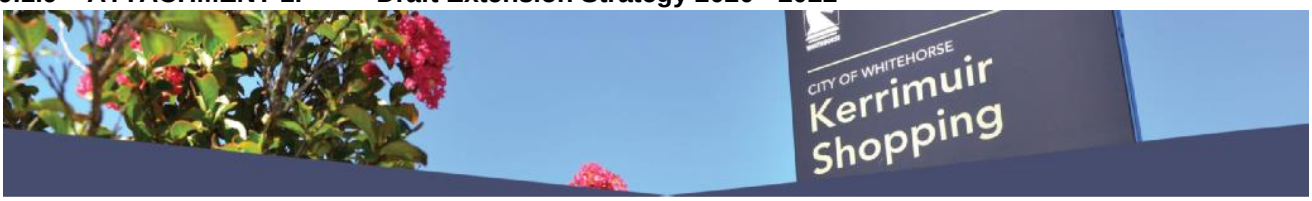
2. Priority Places

a. Foster the shared vision for Box Hill Metropolitan Activity Centre (MAC).

b. Identify and address barriers to growth and development of Box Hill MAC through policy and action.

c. Advocate for Whitehorse as a destination choice to visit, live, study and work.

d. Collaborate with major stakeholders and businesses throughout Whitehorse to facilitate sustainable investment and economic viability within the municipality.



3. People, Jobs and Industry Development

a. Provide relevant and effective support to local businesses and business associations (i.e. Whitehorse Business Group).

b. Promote and support ongoing prosperity of retail activity centres, industrial precincts, and business parks.

c. Provision of up to date information on business services, funding and grants to local businesses.

d. Facilitate opportunities for businesses to connect.

e. Advocate for appropriate land uses and quality open spaces to attract skilled residents and employers to the municipality.

4. Regional Development and Advocacy

a. Monitor and support Whitehorse industry sectors, and identify potential impacts from infrastructure projects.

b. Leverage opportunities and advocate for positive outcomes relating to major projects that will have an impact on exisiting Whitehorse industries (i.e. Suburban Rail Loop).

c. Provide relevant and effective support to regional business, and economic development associations.

5. Research, Analysis and Advisory

a. Research and identify emerging and future trends (i.e. social, economic, environmental and technological).

b. Analysis of global and national trends to assist in stimulating the local economy.

c. Provide advisory services to relevant stakeholders, based on current economic research and analysis.

9.1.9 – ATTACHMENT 1. Draft Extension Strategy 2020 - 2022

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Independent insight.

SGS Economics & Planning

Data from SGS charts for Whitehorse City Council

FROM FIGURE 3: SHARE OF WHITEHORSE'S GROSS VALUE OF GOODS AND SERVICES PRODUCED, BY SA2 IN 2018/19 (RANKED BY SHARE)

SA2	2018/19	Share
Box Hill	$2,814	26%
Blackburn	$1,315	12%
Burwood	$1,170	11%
Burwood East	$1,074	10%
Mitcham	$1,065	10%
Nunawading	$885	8%
Forest Hill	$703	7%
Surrey Hills (East) - Mont Albert	$421	4%
Vermont	$412	4%
Box Hill North	$373	3%
Vermont South	$342	3%
Blackburn South	$237	2%

Source: SGS Economics and Planning, Economic Performance of Australia's Cities and Regions (2019)

FROM FIGURE 5: MAP OF INDUSTRY GROUPING SHARE BY SA2, SIZE OF INDUSTRY GROUP 2018/19 ($ MILLIONS)

SA2	Health & Education	Industrial	Knowledge Intensive	Population Serving
Blackburn	1,856	1,548	2,537	3,447
Blackburn South	858	113	364	478
Box Hill	8,068	1,519	8,252	4,661
Box Hill North	807	244	442	877
Burwood	3,413	790	1,220	1,794
Burwood East	665	1,343	2,187	2,365
Forest Hill	1,344	1,457	1,073	2,578
Mitcham (Vic.)	1,505	1,923	1,324	2,488
Nunawading	896	1,662	1,884	3,224
Surrey Hills (East) - Mont Albert	1,332	129	580	870
Vermont	612	563	476	1,188
Vermont South	744	131	616	1,156

Source: SGS Economics and Planning, Economic Performance of Australia's Cities and Regions (2019)

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FROM FIGURE 6: EMPLOYMENT BY BROADER INDUSTRY SECTOR IN THE WHITEHORSE LGA (2011-31)

Industry sector grouping	2011	2016	2021	2026	2031
Population Serving	23,943	25,126	26,972	28,466	30,087
Health & Education	20,168	22,101	25,063	28,507	32,611
Industrial	11,981	11,422	10,536	10,709	10,748
Knowledge Intensive	20,679	20,957	23,167	25,060	26,898
Total	76,771	79,606	85,737	92,743	100,344

Source: SGS Economics and Planning, Small Area Model (2019)