ADDENDUM ATTACHMENT BOOKLET

ORDINARY COUNCIL MEETING

25 AUGUST 2021

LIVERPOOL CITY COUNCIL

LIVERPOOL THE GREAT SOUTH WEST

ONLINE

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PLANNING PROPOSAL

60-80 Southern Cross Avenue & 45-65 Hall Circuit, Middleton Grange



Prepared for Manta Group Pty Ltd
Submitted to Liverpool City Council

Post Exhibition Revision
October 2019

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APPENDICIES	TITLE
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Introduction

This planning proposal is submitted in accordance with Section 3.33 of the Environmental Planning and Assessment (EP&A) Act 1979 and provides an outline and justification for the proposed amendments to the development controls at 60-80 Southern Cross Avenue and 45-65 Hall Circuit, Middleton Grange ("the site"). The proposal amends Liverpool Local Environmental Plan (LEP) 2008.

The Planning Proposal was originally lodged with Liverpool City Council in June 2015. The matter was considered by Council at its meeting of 16 December 2015, where Council supported the progression of the Planning Proposal to the next stage in the Part 3 Plan Making process. A Gateway determination was issued by the delegate of the Greater Sydney Commission on 15 August 2016. The Gateway endorsed the Planning Proposal subject to conditions that would need to be addressed and approved prior to the progression of the proposal to the next stage being consultation and exhibition.

A revised traffic assessment was submitted to Council in October 2017, an updated flood impact assessment in December 2017 and revised Planning Proposal in July 2018. The revised planning proposal was endorsed by the Department of Planning and Environment in accordance with the Gateway conditions and the planning proposal was publicly exhibited from 29 August to 26 October 2018.

The Planning Proposal was subsequently progressed to a meeting of Council on 12 December 2018. At the meeting Council resolved "*Withdraws support for the planning proposal pursuant to Section 3.35 of the Environmental Planning & Assessment Act 1979*". However, on 31 July 2019 in respect to Notice of Motion (NOMR 01), Council resolved among other things to '*clarify the range of residential units under the current zoning controls*' in a report back to the September 2019 Council Meeting, and '*commit that if any amendments were to be made by the proponent for the Middleton Grange Town Centre planning proposal an exhibition/community consultation period of 28 days would be undertaken*'.

A further report was considered on 25 September 2019. At the meeting Council resolved, among other things that '*should the proponent submit a revised proposal, delegates to the CEO to allocate appropriate council resources to progress a preliminary assessment and place on exhibition the revised planning proposal in order to deliver a Town Centre for the people of Middleton Grange in the most timely manner possible*'.

This amended planning proposal is submitted to address the previous concerns raised by constituents for the purposes of exhibition, with the objective of facilitating a town centre for the people of Middleton Grange in a timely manner.

In accordance with relevant NSW Department of Planning and Environment guidelines, including '*A Guide to Preparing Local Environmental Plans*' (2016) and '*A Guide to Preparing Planning Proposals*' (2016), this planning proposal comprises the following parts:

Part 1	A statement of the objectives or intended outcomes of the proposed instrument
Part 2	An explanation of the provisions that are to be included in the proposed instrument
Part 3	The justification for those objectives, outcomes and the process for their implementation based on technical studies
Part 4	The existing controls that apply to the site based on the Councils LEP Maps
Part 5	Details of the community consultation to be undertaken on the planning proposal

This planning proposal forms part of a package of supporting documents. The Planning Proposal application is supported by the following specialist studies appended to this report:

- Urban Design Report prepared by Pacific Planning and Christiansen O'Brien Architects
- Traffic Impact Assessment, prepared by Lyle Marshall & Partners Pty Ltd
- Social Impact Assessment – Response to submissions prepared by Judith Stubbs & Associates
- Economic Impact Assessment – Response to submissions prepared by PPM Consulting Pty Ltd
- Landscape Concept Plan prepared by Habit8
- Development Control Plan prepared by Christiansen O'Brien Architects
- Stormwater Management Strategy prepared by J. Wyndham Prince

This planning proposal will facilitate the development of the Middleton Grange town centre. The proposal realigns the zones boundaries to ensure a more logical road layout and more permeable pedestrian movements. The town centre will incorporate mixed use buildings, providing opportunities for retail and commercial investment within the Middleton Grange Town Centre.

It will incorporate retail uses such as a supermarket, specialty retail, cafes and coffee shops and restaurants. It will also attract health and community services and over approximately 7,600sq.m of open space across large public areas. The town centre will support new residents and generate new jobs for the region.

The Middleton Grange Town Centre is located 7 km west of Liverpool CBD, 5 km north-east of Leppington Station, and 7.5km from the future Western Sydney Aerotropolis. It is bound by Southern Cross Avenue to the north, Bravo Road and the Middleton Grange Public School to the east, Flynn Avenue & Hall Circuit to the south with existing residential development to the west. The town centre is 350 metres to the north of the future Fifteenth Avenue rapid transport system, connecting Liverpool to the Aerotropolis via Middleton Grange



Figure 1: Aerial view of the subject site

Background

The development of the Middleton Grange Town Centre has a long and complex history. Therefore, it is important to consider the background to the planning and development of the site that has led to this planning proposal.

Middleton Grange town centre controls

The suburb of Middleton Grange was created in 2005 when the land was rezoned. This included the land at the Middleton Grange town centre, which incorporated land zoned B2 Local Centre, R1 General Residential, RE1 Public Recreation and SP2 Infrastructure (Drainage).

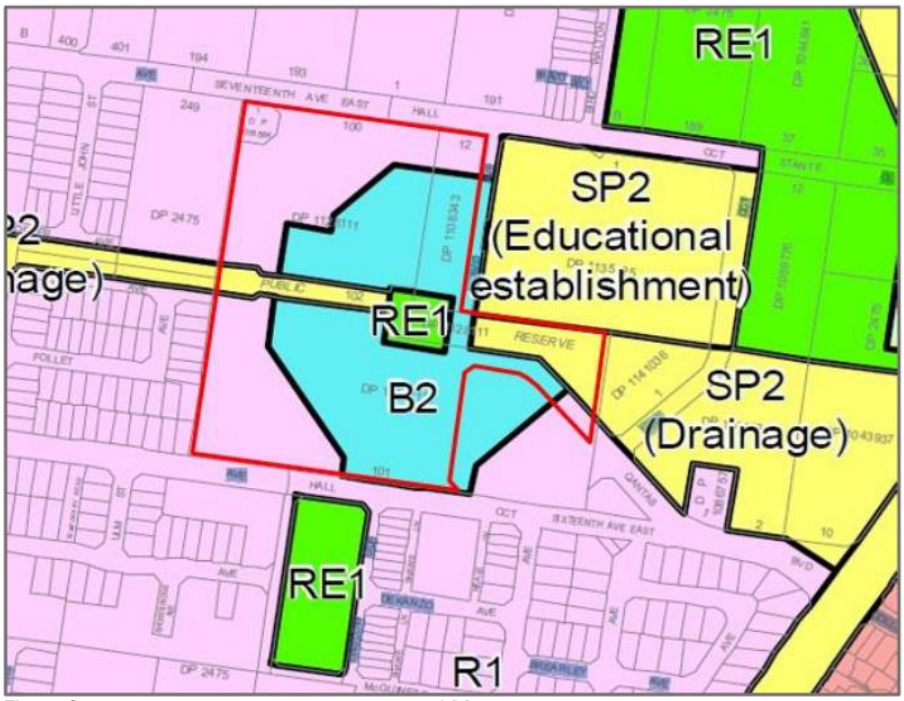


Figure 2: Land use zoning under Liverpool LEP 2008

With regard to the areas of the site in the respective R1 and B2 zones, and the applicable development standards for each, the site can accommodate a density of up to approximately 626 dwellings and 15,800sqm² of commercial space under the current controls. The basis of this is presented in Table 1 below.

The Middleton Grange town centre includes the following:

Zone	Area (m²)	FSR	Height (m)	Approx potential GFA (m²)	Approx no. of dwellings	Approx no. of dwellings with cl.5.3 applied	Commercial space (m²) (cl.5.3)
R1 – General Residential	26,189	0.75:1	8.5	20,000	209	122	0
B2 – Local Centre	32,1278	1.5:1 (Area 4)	18	47,000	374	504	11,730 (15,808)
RE1 – Public Recreation	751	N/A	N/A	N/A			
			Total	**66,600**	**583**	**626**	**11,730 (15,808)**

Table 1: Existing controls and development potential under Liverpool LEP 2008

The site is also affected by the Land Reservation Acquisition Map to facilitate future community uses. This can be viewed in the below extract at Figure 3.

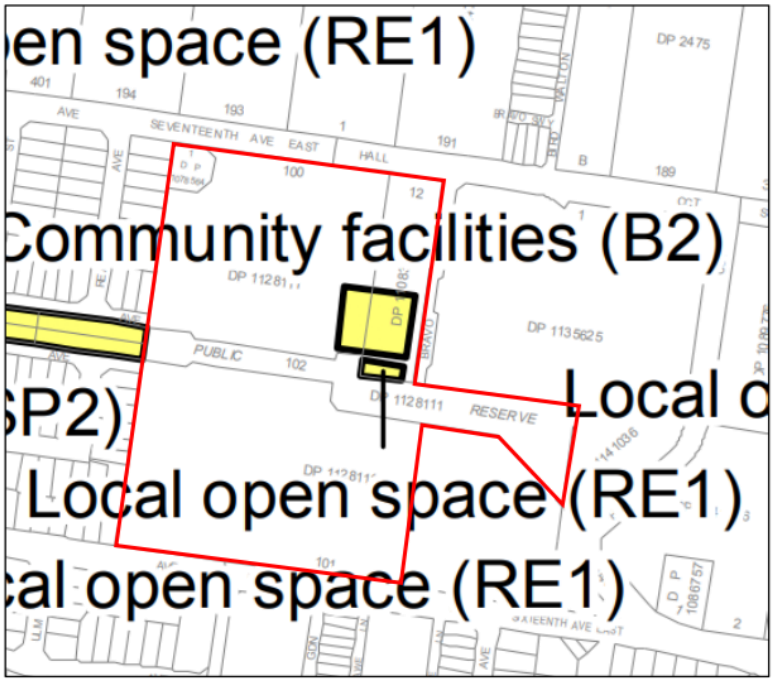


Figure 3: Land Reservation Acquisition Map under Liverpool LEP 2008

Development Applications

The site has been subject to a number of development applications (DAs) and approvals relevant to the development of the site.

DA-67/2007

In October 2006, **DA-67/2007** was approved. This included the subdivision of existing lots into eight (8) torrens title, four (4) public reserve and three (3) residue lots and included associated roads and drainage works. The DA was modified on 1 February 2008 to "*subdivision of existing lots into: seven (7) torrens title lots, four (4) public reserve lots, two (2) residue lots and associated roads, intersection and pedestrian treatment and drainage works*".

The approval is included at Figure 4 below.

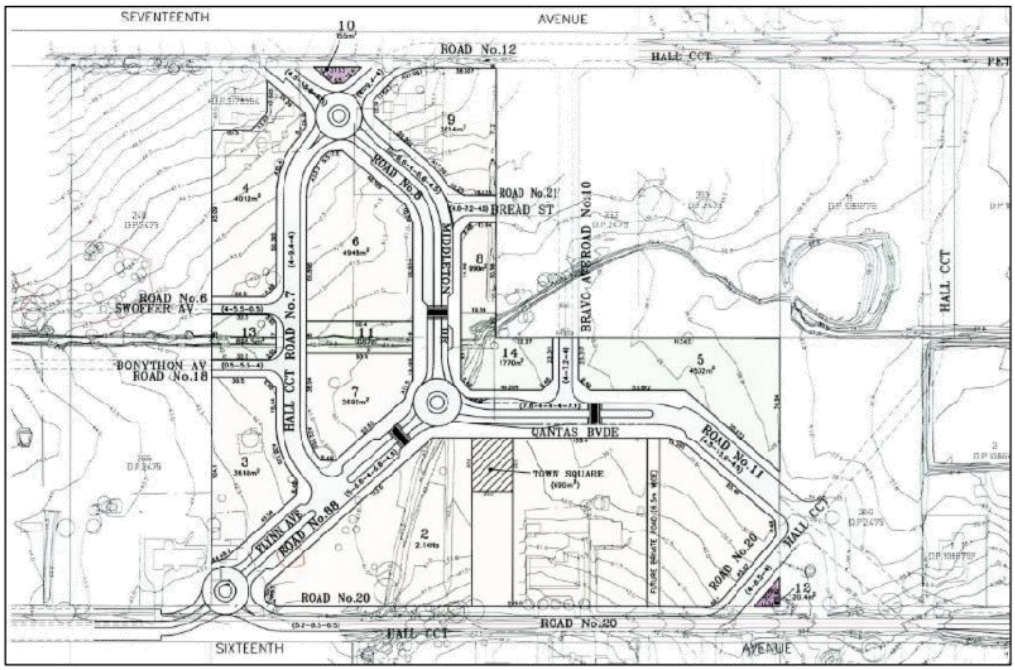


Figure 4: DA-67/2007

DA-1179/08

The development consent was substantially commenced in 2007 when on-site geotechnical investigations were undertaken in accordance with condition 6.2 of the consent. A Construction Certificate was also issued (CCE-31/2008) for DA-64/2007 and its modification DA-64/2007/A. The site was further subdivided in 2008 as per the below layout.

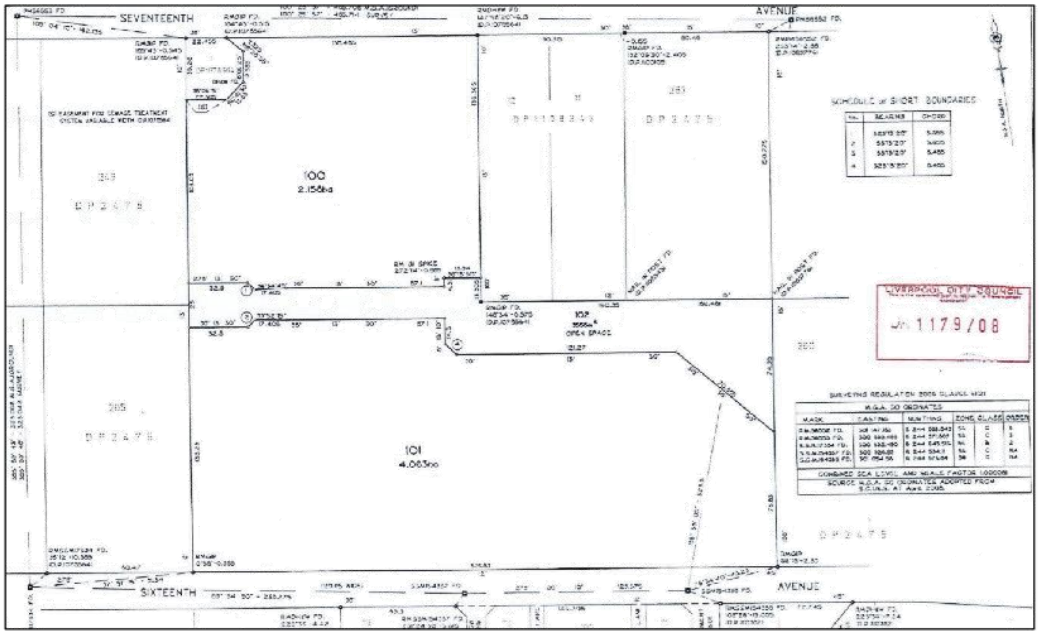


Figure 5: DA-1179/08

DA-74/2015

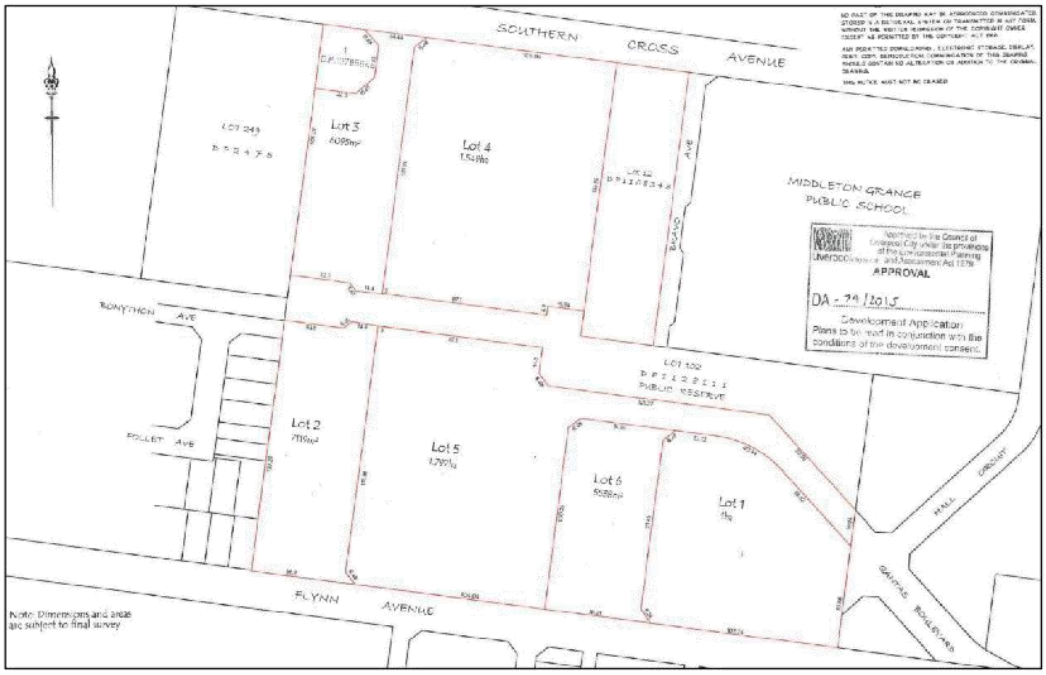


Figure 6: DA-74/2015

Over the subsequent years the development of the site did not progress as more detailed site layout, road network and building footprints were considered and preferred. A revised layout was progressed and a new DA for the subdivision of the site was advanced in accordance with the revised site layout. This was lodged in January 2015 and approved on 1 April 2015. The approved and still current subdivision plan is visible in Figure 6 above.

DA-64/2007/B

On 27 September 2018, a further modification application was lodged with Council in relation to the road layout and drainage reserve. The modification amends the approval DA-64/2007 and is known as DA-64/2007/B. The road layout reflects the approved lot layout discussed above under DA-74/2015, and the zone boundary and alignment being proposed under the planning proposal discussed in this planning proposal.

Major Project Application

On 14 March 2019, a request for the Secretary's Environmental Assessment Requirements (SEARs) for the approval of a medical centre containing a general practice facility with associated medical and health related activities and ancillary retail suites and cafes was made to the Department of Planning and Environment. The project also includes the creation of new public roads and urban park.

As the proposal is for a 'medical centre' with a capital investment value of more than $30 million, it is State Significant Development (SSD) under State Environmental Planning Policy (State and Regional Development) 2011.

The proposal applies to land within Lots 12 and 4 of the Middleton Grange town centre, which includes multiple zones and development controls. The SEARs was issued on 19 June 2019 to inform the preparation of the environmental impact statement and progression towards public exhibition of the development.

The initial proposed plans are included below and illustrate the indicative land uses, elevations and massing.

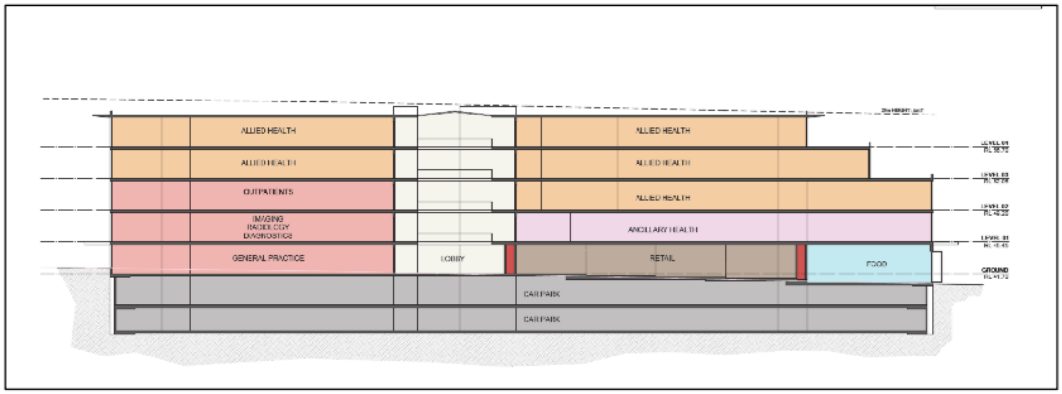


Figure 7: Indicative section



Figure 8: Indicative western elevation



Figure 9: Middleton Grange town centre indicative massing- SSD application location.

Planning Proposal

The Planning Proposal was originally lodged with Liverpool City Council on 25 June 2015. The planning proposal, as stated in the Council report sought the following amendments:

- Realign the boundary of the B2 Local Centre and R1 General Residential zoned lands respectively to align with the cadastre boundaries of the approved super-lot subdivision, reducing the number of lots which have split zonings and to facilitate rationale building and development boundaries;
- Rezone part of the site from RE1 Public Recreation to B2 Local Centre to accommodate a future publicly accessible through site link within the Town Centre;
- Rezone part of the site from B2 Local Centre to RE1 Public Recreation to provide a consolidated area of public open space within the north-eastern portion of the site (the quantum of RE1 Public Recreation zoned land remains unchanged);

- Amend Schedule 1 – 'Additional Permitted Uses' to enable the use of the R1 General Residential zoned land for business premises, hotel or motel accommodation, health services facility, and restaurant or café;
- Amend Schedule 1 – 'Additional Permitted Uses' to enable the use of land zoned B2 Local Centre within the Middleton Grange Town Centre for hotel or motel accommodation; and
- Amend the Liverpool Development Control Plan 2008 – Middleton Grange Road Network to support the Planning Proposal objectives.
- To increase the FSR from 1.5:1 for land zoned B2 Local Centre and from 0.75:1 for land zoned R1 General Residential to 2.5:1.
- To amend the maximum building height of 18m for land zoned B2 Local Centre and 8.5m for land zoned R1 General Residential to a range of heights including 14m within the western and south-east corner of the site to 28m and 35m within the central portion of the site.

The Council report, in considering the merits and justification for the planning proposal noted the following:

> "*Prior to lodgement of the Planning Proposal, and subsequently, the proponents have held a number of discussions with Council Officers for the development and refinement of the proposal. These discussions addressed the key considerations for the proposal and necessary technical requirements and studies for its support*".
>
> *"The objective of the Planning Proposal is to enable a broader range of permissible uses within the planned town centre. This will provide opportunities for retail and commercial investment to support the residential catchment for Middleton Grange and accommodate an improved configuration of public open space".*
>
> *"A further objective of the proposal is to rationalise the zoning boundary between the B2 Local Centre and R1 General Residential zoned portions of the site to reflect cadastre boundaries and reduce the number of lots that have split zoning, which is also supported by a more rational and efficient road network within the Town Centre. The intended outcome of the Planning Proposal is to facilitate development of the site in a coordinated fashion and, in doing so, achieve the site's highest and best use".*
>
> *"The degree of intensification is desirable to create a viable and vibrant town centre. This intensification of the subject site as a mixed-use town centre holds merit as it would provide a unique offer in Liverpool. The proposal embodies a level of compactness for a town centre which will be able to provide higher uses and amenities for the local catchment of Middleton Grange".*

The matter was considered by Council at its meeting of 16 December 2015, where Council in supporting the progression of the Planning Proposal to the next stage in the Part 3 Plan Making process, resolved to:

1. *Endorse, in principle, the Planning Proposal to rezone land at 60-80 Southern Cross Avenue and 45-65 Hall Circuit, Middleton Grange.*
2. *Delegate to the CEO to negotiate with the proponent regarding increased open space to support the increased residential density, including the completion of a comprehensive Social Impact Assessment.*
3. *Delegate to the CEO the authority to approve the final Planning Proposal to administer this rezoning, for submission to the Department of Planning and Environment for Gateway.*

A Gateway determination was issued by the delegate of the Greater Sydney Commission on 15 August 2016. The Gateway in supporting the progression of the Planning Proposal included a number of conditions that would need to be addressed and approved prior to the progression of the proposal to consultation and exhibition.

Conditions 1 and 2 of the Gateway were relevant as follows:

1. *In relation to s117 Direction 4.3 Flood Prone Land, prior to exhibition, Council is required to:*
    a. *Undertake and provide relevant flood studies that demonstrate consistency with this Direction; and*
    b. *Include a Flood Planning Area map in the proposal.*
2. *Prior to public exhibition, Council must revise the planning proposal to include the flooding information and to provide additional information regarding:*
    a. *Transition of proposed heights to existing neighbouring zones and overshadowing impacts,*
    b. *Proposed controls for proposed commercial uses in residential zones, for example, this may include proposed controls to limit, or encourage certain commercial floor areas, or controls to ensure a proportion of residential uses, and*
    c. *Provide the revised planning proposal to the Department for review.*

Subsequently detailed urban design work and economic viability analysis was undertaken to adequately address the matters raised in the Gateway determination, particularly the issue related to transition of height to neighbouring zones and overshadowing impacts. A revised Planning Proposal and Urban Design Report were prepared in June 2018 and was forwarded to the Department of Planning and Environment on 20 June 2018, which included the following controls:



Figure 10: Proposed Maximum building height map (for exhibition)

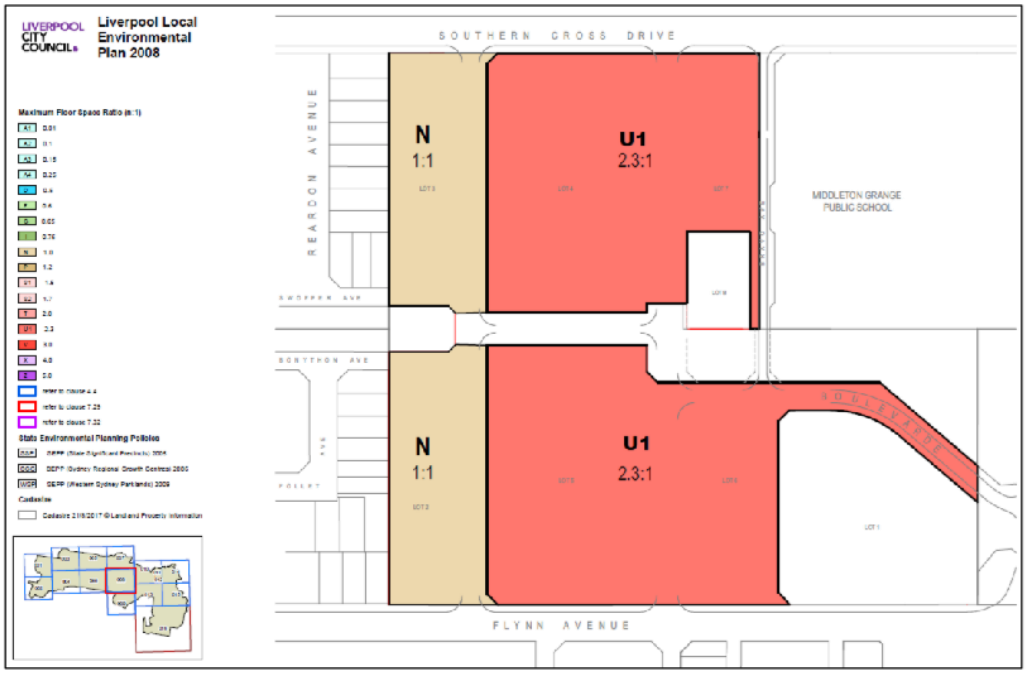


Figure 11: Proposed Maximum FSR map (for exhibition)

The Department confirmed on 28 June 2018 that the Gateway conditions had been adequately addressed and that the proposal could proceed to public exhibition, on the condition that the proposal was updated to reflect the Greater Sydney Plan and the Western City District Plan. This planning proposal was revised (July 2018) for the purposes of public exhibition.

Public Exhibition

The Planning Proposal was exhibited from Wednesday 29 August 2018 to Friday 26 October 2018 in accordance with the Gateway.

The existing capacity of the site was a critical issue that affected the negative reception from the community to the Planning Proposal.

The notice of exhibition clearly states that:

Under the current controls, the site is capable of supporting within the planned Town Centre:

- *Approximately 176 dwellings (medium density and low rise shop-top housing), and*
- *Approximately 5,000m2 of retail development.*

As previously discussed, the site, under the existing controls has the capacity to accommodate between approximately **583 to 626 dwellings and 12,200m² to 15,800 of commercial/retail floorspace**.

Further, a community forum was held on Monday 17 September 2018. Some practical concerns were raised by the community. Of particular interest was:

1. The maximum heights being proposed (i.e. 12 storeys);
2. The amount of apartments;
3. The amount of open space;
4. The lack of investment in public infrastructure over a number of years in the suburb of Middleton Grange and the impact that the development of the town centre may have on the road network.
5. The erroneous claim that the proposal was to be mainly a social housing development.

Council Meeting – 12 December 2018

The Planning Proposal was subsequently progressed to a meeting of Council on 12 December 2018.

At the meeting, Council resolved amongst other things to:

"5. Withdraws support for the planning proposal pursuant to Section 3.35 of the Environmental Planning & Assessment Act 1979;"

However, on 31 July 2019 in respect to Notice of Motion (NOMR 01), Council resolved among other things to '*clarify the range of residential units under the current zoning controls*' in a report back to the September 2019 Council Meeting, and '*commit that if any amendments were to be made by the proponent for the Middleton Grange Town Centre planning proposal an exhibition/community consultation period of 28 days would be undertaken'*.

A further report was considered on 25 September 2019.

At the meeting Council resolved considered the clarification on the range of residential units under the current zoning controls, which ranged up to an assumed potential of **647 dwellings** under the current controls.

That Council:

1. *Receives and notes the report;*
2. *Notes that the proponent seeks to lodge a revised planning proposal that offers to address all the previous concerns raised by constituents;*
3. *Supports in principle the development of a Town Centre;*
4. *Should the proponent submit a revised proposal, delegates to the CEO to allocate appropriate council resources to progress a preliminary assessment and place on exhibition the revised planning proposal in order to deliver a Town Centre for the people of Middleton Grange in the most timely manner possible;*
5. *Support the principle of the grid road layout in Middleton Grange; and*
6. *Undertake community consultation in conjunction with the assessment of an application and that the community consultation to not overlap the* December/January holiday period.

This amended planning proposal is submitted to address the previous concerns raised by constituents for the purposes of exhibition, with the objective of facilitating a town centre for the people of Middleton Grange in a timely manner.

Site Identification

The site is shown below in Figure 12 edged in heavy red.

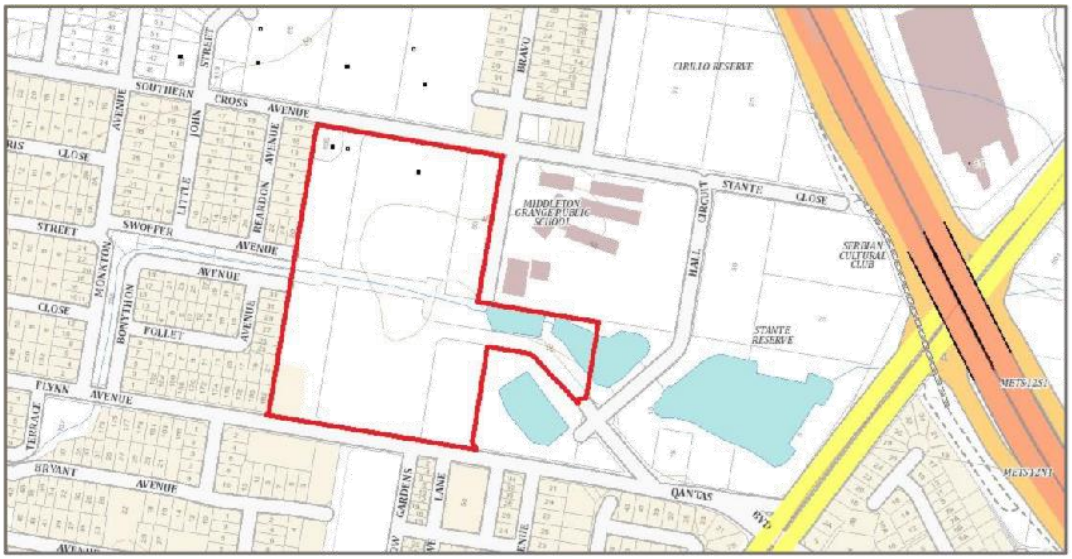


Figure 12: Site plan (Source: Six Maps)

The site currently comprises eight (8) lots and is legally described as:

- Lots 2, 3, 4, 5, and 6 in DP 1207518;
- Lot 1 in DP 1078564;
- Lot 12 in DP 1108343; and
- Lot 102 in DP 1128111

The site is an irregular in shape and has an area of approximately 69,000sq.m. It has a 200m northern frontage to Southern Cross Avenue and a 220m southern frontage to Flynn Avenue. Bravo Avenue bounds part of the site along the eastern side while residential blocks adjoin to the west. The site is generally known as 60 - 80 Southern Cross Avenue and 45-65 Hall Circuit, Middleton Grange.

Principle Development Standards

Table 2 below summarises the principle standards that currently apply to the subject site as set out in Liverpool LEP 2008. Figure 13 below shows the zoning map that covers the site.

Land Zoning	Maximum Building Height	Maximum Floor Space Ratio (FSR)	Other
B2 – Local Centre R1 – General Residential RE1 – Public Recreation SP2 - Drainage	18m ("P") 8.5m ("I")	1.5:1 ("S1" - Area 4) 0.75:1 ("I")	Flood Planning Dwelling Density

Table 2: Site Development Standards

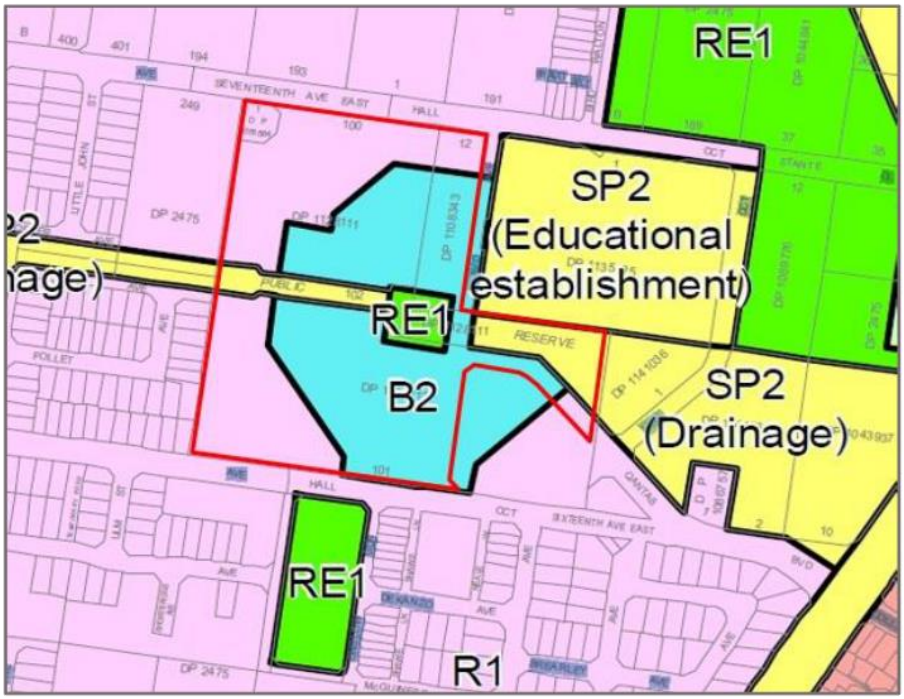


Figure 13: Zoning Map

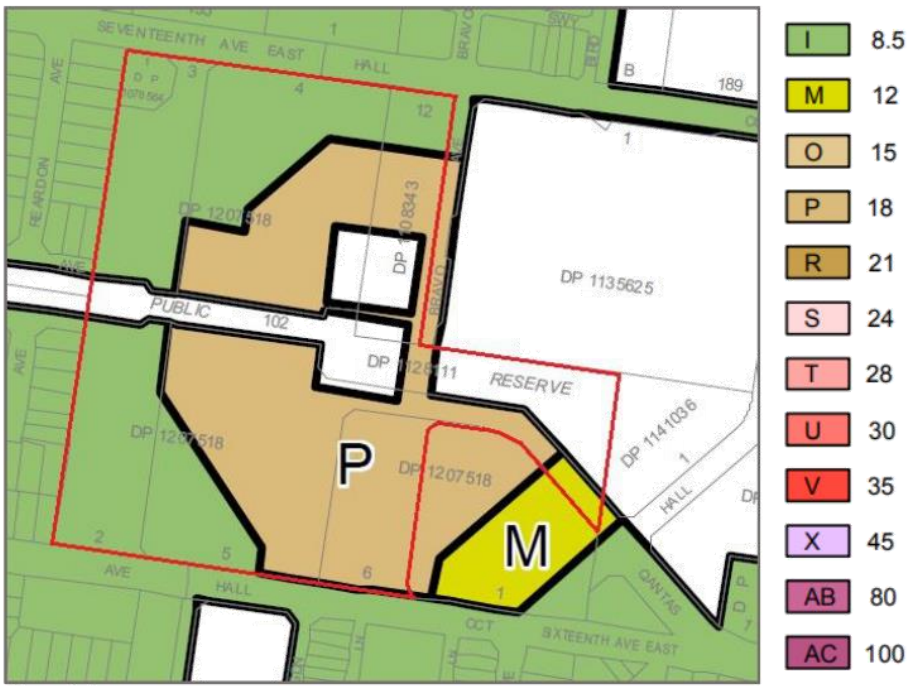


Figure 14: Maximum Building Height Map

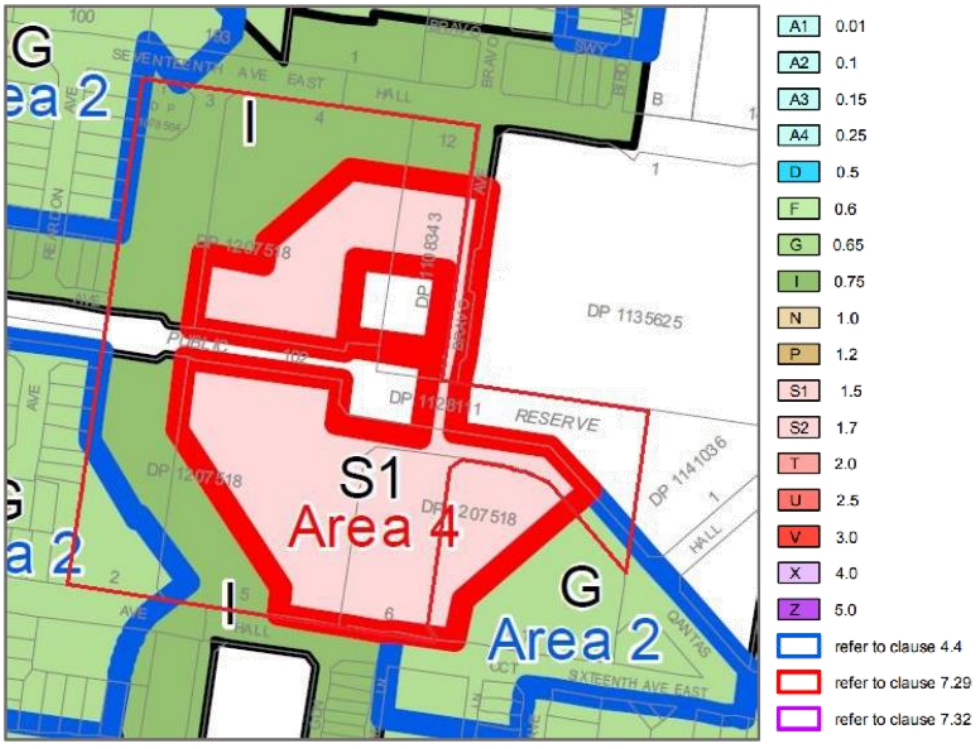


Figure 15: Maximum Floor Space Ratio Map

Response to Submissions

As previously discussed, a number of concerns were raised by the community during the public exhibition period. Some practical concerns were raised, of particular interest was:

1. The maximum heights being proposed (i.e. 12 storeys);
2. The amount of apartments;
3. The amount of open space;
4. The lack of investment in public infrastructure over a number of years in the suburb of Middleton Grange and the impact that the development of the town centre may have on the road network.
5. The erroneous claim that the proposal was to be mainly a social housing development.

The development concept has subsequently been further refined to address the concerns and matters raised by the community. In particular the issue of 12 storeys was considered too high. While the planning proposal demonstrated that there was no overshadowing impacts and the heights created a transition to lower density development, the heights and transitions in the concept have been revisited. Key amendments have been made to address the community's concerns regarding height and other matters as follows:

1. Maximum Building Height

- The maximum height within the town centre is now only 8 storeys and this is only for part of the central portion of the development.
- The split height across the western Lots 2 and 3 is retained to provide for an appropriate transition from 8.5 metres on neighbouring land to 9.5 metres (2 storeys) immediately adjoining, and up to 14 metres (4 storeys) along the frontage to Main Street.
- The additional 3,000sq.m of open space within the central portion has opened up the town centre, creating a feeling of breathability, not crowded by buildings, filled with light and space for people to play, linger and sit with passive and active recreational opportunities.
- The reductions in height have also been complemented by internal building heights transitions with laneways and through links further reducing building bulk and long street frontages. The creation of laneways also creates additional pedestrian interface and active frontages, creating a more welcoming and vibrant centre fostering a sense of place and community pride.

2. Road Layout

A modification to Middleton Drive and subsequently the local road network has been made in the revised concept.

As more detailed planning has occurred for the key retail centre at the southern part of the town centre, it was identified that larger footprints were required to accommodate future retail tenants. This has resulted in the removal of the bottom half of Middleton Drive and replaced with a single level retail use, that also creates a through link connecting the centre of the site to Flynn Avenue. This has been advanced in consultation with the Council staff and the proponents traffic consultant to ensure the traffic movement and access is acceptable.

The main street has been relocated to the west (i.e. 21.4 metres) and Middleton Drive becomes a local access street (i.e. 17.4 metres), connecting through to Qantas Blvd. In doing so, the connection between the two public open spaces in strengthened given the lower volume street which is further enhanced by traffic calming measures and shared spaces.

In conjunction with the removal of the bottom half of Middleton Drive, the northern block (Lot 4) has been broken up to create new pedestrian laneways with activated frontages to improve moveability and create diverse and innovative spaces for residents of Middleton Grange.

3. Open Space

The area of public open space within the town centre has been doubled as a result of the widening of the space between northern Lot 4 and southern Lot 5.

It was considered that this provided the opportunity for variety in use of public spaces and creates a focal point for the community. Locating additional open space in this location draws people towards the centre of the town, combining with the east west pedestrian links and the new northern laneway/through link. The Landscape Concept identifies this space as a village green, where activity spills out from adjoining buildings, with dining, kiosks, performance space, water features and public art – creating a safe and desirable space for people to gather.

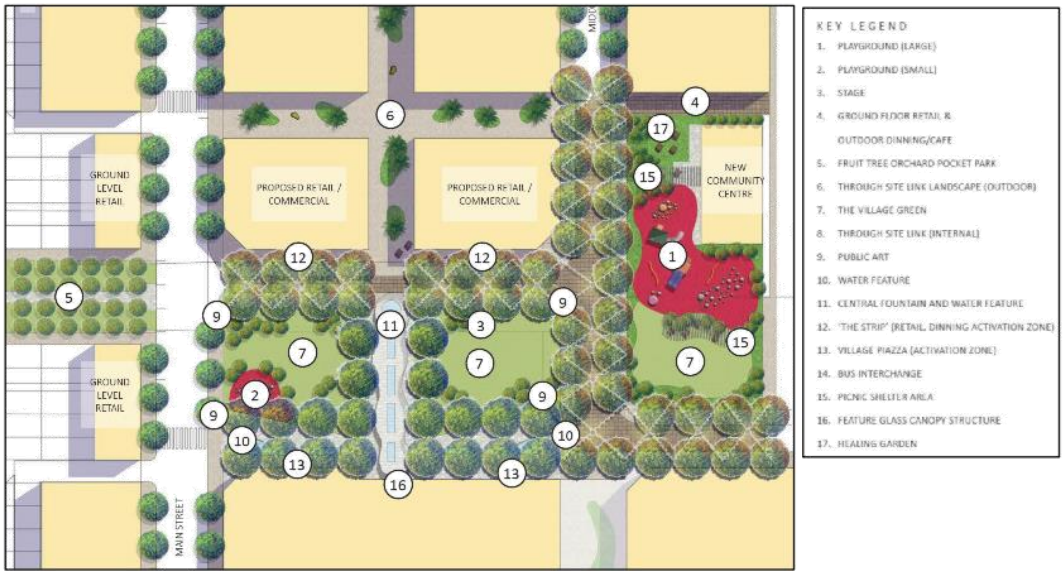


Figure 16: Town centre open space and landscape plan

It is important to note the now considerable increase in open space and publicly accessible areas since the town centre was originally zoned in 2005. Under the existing controls, 751sq.m is zoned for public recreation with a further 1,249sq.m of area owned by Council or was to be acquired.

The exhibited Planning Proposal (August – October 2018) refined the location of open space, creating approximately 2,500sq.m of public open space and space for a community centre facility within it. While this

reflected a significant increase in the amount of open space, the concept plan was reviewed to ascertain whether even more open space could be provided to support the existing and future residents of Middleton Grange and create a people friendly environment and foster a strong sense of place.

As can be seen in the below figures, a significant amount of open space has now been provided through the centre of the town centre. 7,632sq.m of land, including the large park areas, the public forecourt and the community facility. Further, new public laneways have also been created to support connectivity and through links within the centre.

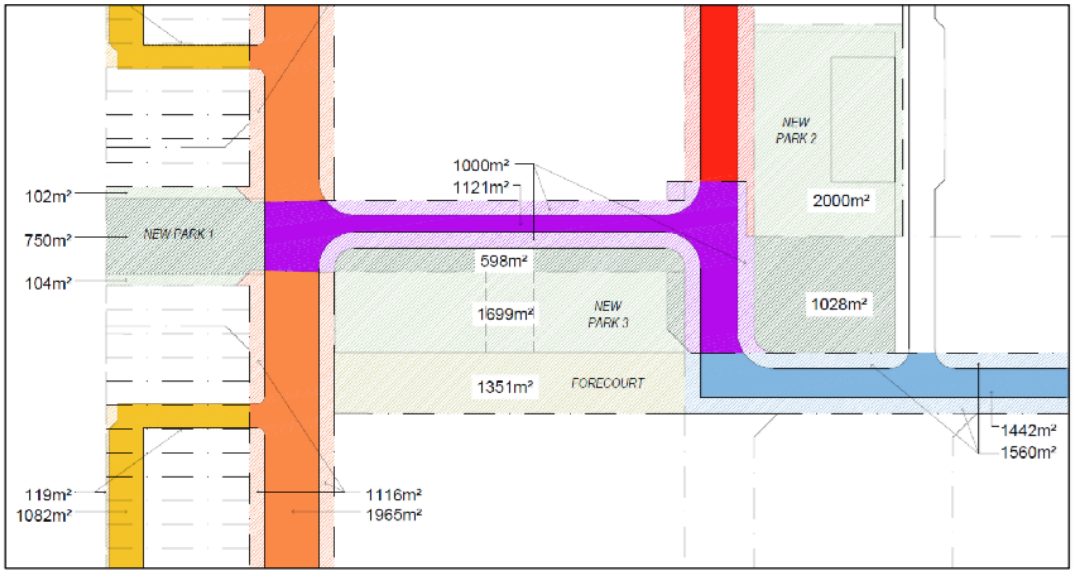


Figure 17: Open Space Structure Plan

LEGEND & AREAS

OPEN SPACE

DESCRIPTION	AREA (m²)
NEW PARK 01 ON PROPOSED SITE	206
NEW PARK 02 ON PROPOSED SITE	2000
NEW PARK 03 ON PROPOSED SITE	1699
NEW PUBLIC FORECOURT	1351
SUB-TOTAL	**5256**
NEW PARK 01 ON COUNCIL LAND	750
NEW PARK 02 ON COUNCIL LAND	1028
NEW PARK 03 ON COUNCIL LAND	598
SUB-TOTAL	**2376**
TOTAL	**7632**

Figure 18: Open space area breakdown

4. Medical Centre

As previously discussed, following feedback from the community and an identified need for medical facilities that are accessible to the Middleton Grange community, an application was lodged for a medical centre containing a general practice facility with associated medical and health related activities and ancillary retail suites and cafes was made to the Department of Planning, Industry and Environment. The project also includes the creation of new public roads and urban park.

The medical centre is 5 storeys in height with activated ground floor main streets. The building transitions in height towards the open space to protect and ensure solar access.

The medical centre and ancillary ground floor uses accommodates approximately 15,000sq.m of floorspace.

5. Number of Apartments

Following concerns raised by the community during public exhibition and as indicated in the yield table below, there has been a reduction in the town centre gross floor area (GFA) from that endorsed by Council in 2015, and a further reduction in apartments from the planning proposal exhibited.

The exhibited planning proposal contemplated up to 912 apartments within the town centre. However, with the introduction of the medical centre and ancillary medical commercial uses, the larger footprint of the shopping centre, and the reduction in height (which is effectively the removal of upper level apartments, the number of apartments within the town centre has reduced to approximately 671.

The average FSR across the site is 1.98:1, reduced from 2.5:1 from that initially endorsed by Council. This constitutes only an overall increase across the town centre from 1.16:1/1.3:1 to 1.98:1, but provides for significant public benefits for the broader community including double the amount of open space, state infrastructure contribution of $2.5m for regional road upgrades, and local contribution of approximately $24m.

Scheme Description	Dwellings	Residential GFA (sq.m)	Change to residential GFA (sq.m)
Existing controls under Liverpool LEP 2008	583	54,829	
Existing controls under Liverpool LEP 2008 with Cl 5.3 applied to B2	626	58,909	4,079
Planning Proposal – endorsed by Council 2015	924	86733	31,903
Planning Proposal - exhibited	912	86,031	-702
Planning Proposal – Proposed 2019	671	63,703	-22,546

Table 3: Apartment analysis

Amended Development Scenario

While the planning proposal only seeks to amend the Liverpool LEP 2008 by way of revisions to the zone boundaries, and amendments to the height and FSR controls, detailed design has been undertaken to demonstrate the development outcomes for the site and to ensure the revisions as a consequence of feedback from the community can be accommodated. A revised Urban Design Report has been prepared in support of the Planning Proposal and is attached. This illustrates how the amendments to the development outcome for the Middleton Grange town centre have been incorporated.

Figure 19 below illustrates the revised Concept Plan for the Middleton Grange town centre, and Figure 20 illustrates the town centre cross section looking north, with the new laneway through the centre of the site, and the medical facility to the right (east). Further sections are included in the urban design report.



Figure 19: Middleton Grange town centre Concept Plan

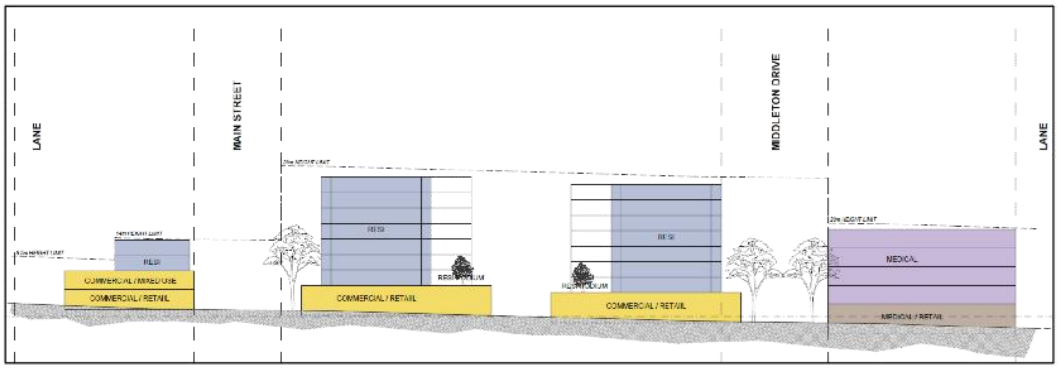


Figure 20: Town centre cross section looking north

Figures 21 and 22 below also illustrates the revised heights for the northern and southern sections of the town centre in site plan form. The maximum height anywhere in the town centre is 8 storeys (29 metres) and this is only a small section in the context of the full scheme and is now complemented by new pedestrian thoroughfares and laneways.

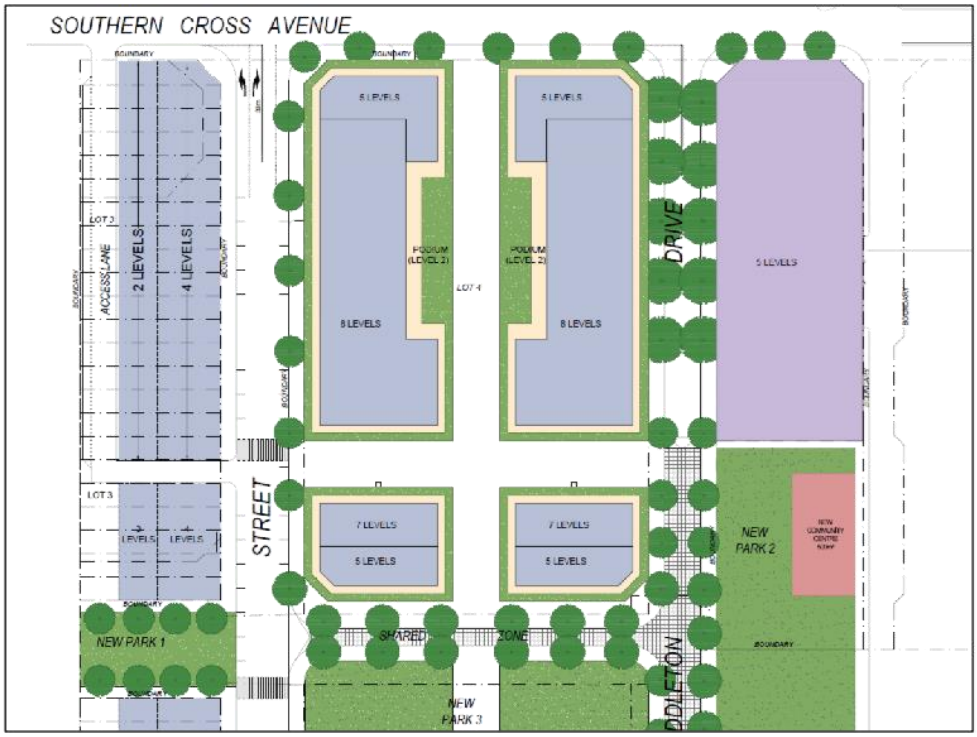


Figure 21: Northern section site plan

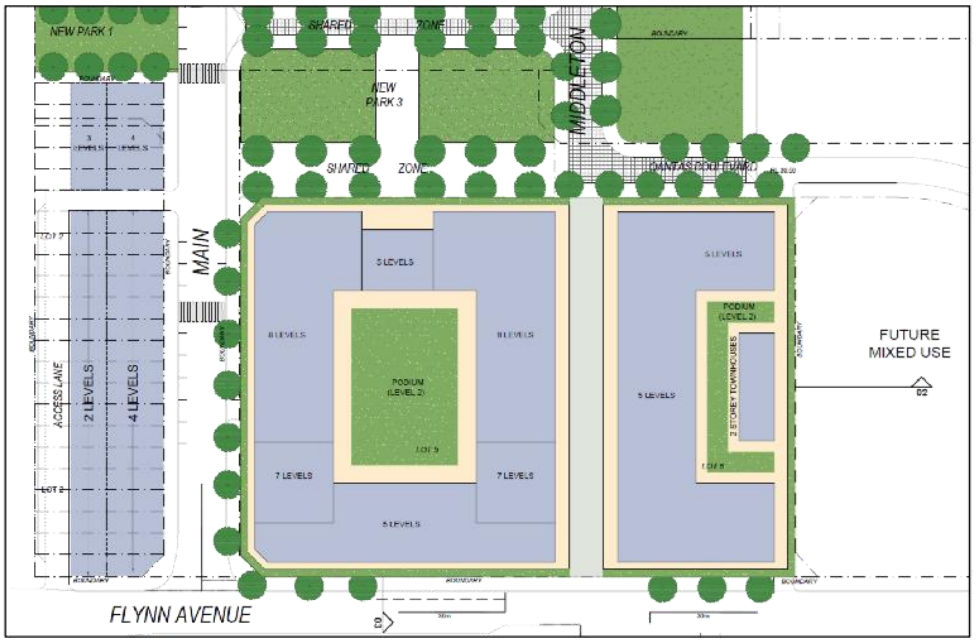


Figure 22: Southern section site plan

PLANNING PROPOSAL

Part 1 – Statement of Objectives

The main objectives of this Planning Proposal are:

- To facilitate the development of the Middleton Grange town centre.
- To realign the zone boundaries between the R1 General Residential and B2 Local Centre, to create a more logical and permeable site layout.
- To provide for a maximum height of 8 storeys in the town centre.
- To minimise over shadowing ensuring adjoining land is not impacted and town centre open space and pedestrian areas receive significant solar access.
- To transition heights at sensitive edges, such as near adjoining residential land and open spaces.
- To relocate and more than double the amount of open space available under the existing controls including the addition of open space provision at no cost to Council as per the offer issued to Council on 18 September 2019.
- To create a vibrant town centre for local existing and new residents.
- To ensure strong north south and east west connections through the site for pedestrians, cyclists and vehicles, as well as ensuring access to the future rapid transit route at Fifteenth Avenue.

The proposed amendment will facilitate the creation of a new town centre compromising a mix of uses in buildings ranging from 2 storeys to 8 storeys. The new Town Centre will comprise the following approximate uses:

- Approximately 671 new dwellings;
- Shops and office space;
- A medical and health centre;
- New roads and infrastructure;
- Over 7,500q.m of open space and publicly accessible areas;
- A new community facility;
- Child play areas;

Further indicative concept and massing diagrams are included in the attached urban design report.

Part 2 – Explanation of Provisions

This Planning Proposal seeks to amend the Liverpool LEP 2008 to achieve the objectives outlined in Part 1, as follows:

1. Amend the Liverpool Local Environmental Plan 2008 Zoning Map by making internal boundary adjustments to the R1 General Residential and B2 Local Centre boundaries.

2. Amend the Liverpool Local Environmental Plan 2008 Floor Space Ratio Map to part 1:1 and part 2.3:1 as shown on the proposed map.

3. Amend the Liverpool Local Environmental Plan 2008 Height of Building Map to part 9.5 metres, 14 metres, 20 metres, and 29 metres as shown on the proposed map.

4. Amend the Liverpool Local Environmental Plan 2008 Land Reservation Acquisition Map as it relates to RE1 zoned land on the site, as shown on the proposed map.

5. Amendment of the Liverpool Local Environmental Plan 2008 to include "restaurant or café" as an additional permitted use in the R1 General Residential zoned land. As restaurants and cafés are not permitted in the R1 zone, this will allow them to be included in a future development subject to appropriate development consent. This amendment will assist with activating the street edge as per the desired future character for the town centre.

Liverpool Local Environmental Plan 2008 defines "restaurant or café" as follows:

"Restaurant or café" means a building or place the principal purpose of which is the preparation and serving, on a retail basis, of food and drink to people for consumption on the premises, whether or not liquor, take away meals and drinks or entertainment are also provided.

The above amendments will facilitate the future development of the Middleton Grange town centre in accordance with the zone and permissible land uses, with the consent of Liverpool City Council.

SUMMARY OF PROPOSED CHANGES TO LEP CONTROLS		
	Current (LLEP 2008)	**Proposed**
Zoning	B2 – Local Centre R1 – General Residential RE1 – Public Recreation SP2 - Drainage	No changes other than internal boundary adjustments
Floor Space Ratio	1.5:1 ("S1" - Area 4) 0.75:1 ("I")	2.3:1 ("T1") for B2 land 1:1 ("N") for R1 land
Height of Buildings	18m ("P") 8.5m ("I")	9.5m ("J") 14m ("N") 20m ("Q") 29m ("T1")

Table 4: Proposed Development Controls

Part 3 – Justification

Section A - Need for the Planning Proposal

1. Is the planning proposal a result of any strategic study or report?

The Planning Proposal facilitates the future redevelopment of the site for the purposes of the Middleton Grange town centre.

The suburb of Middleton Grange was created in 2005 when the land was rezoned. This included the land at the Middleton Grange town centre, which incorporated land zoned B2 Local Centre, R1 General Residential, RE1 Public Recreation and SP2 Infrastructure (Drainage). The site has therefore always been identified for the purposes, capable of supporting between 580 and 630 dwellings and approximately 12,000sq.m of commercial and retail floor space.

The site has not redeveloped since this time under the current controls and zone layout. The Planning Proposal amends the zone boundary layout, to facilitate a more logical town centre layout and road and pedestrian network and support the redevelopment of the Middleton Grange town centre.

2. Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

The planning proposal is the appropriate means of achieving the stated objectives and intended outcomes.

Section B – Relationship to the strategic planning framework

3. Is the planning proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy?

Greater Sydney Region Plan: A Metropolis of Three Cities

In March 2018, the Greater Sydney Commission released The Greater Sydney Region Plan: A Metropolis of Three Cities, the new strategic document to bring to life the vision of Greater Sydney as a vibrant and sustainable metropolis of the Eastern Harbour City, Central River City and Western Parkland City.

The Plan is built on a vision of three cities where most residents live within 30 minutes of their jobs, education and health facilities, services and great places. The three cities include:

- the Western Parkland City
- the Central River City
- the Eastern Harbour City.

The subject site is within the Western Parkland City. The population of the Western Parkland City is projected to grow from 740,000 in 2016 to 1.1 million by 2036, and to well over 1.5 million by 2056.

The Middleton Grange town centre forms the focal point of the new and evolving community at Middleton Grange. It is 7km to the west of the Liverpool Metropolitan Cluster, 5km north of the Leppington strategic and transit orientated centre, and 7.5km from the new Western Sydney Aerotropolis. The Middleton Grange town centre is also 700 metres from the M7 Motorway connecting the area to the Western Economic Corridor, and 350 metres from the new Fifteenth Avenue rapid transit route that will connect Liverpool City Centre to the new Western Sydney Aerotropolis.

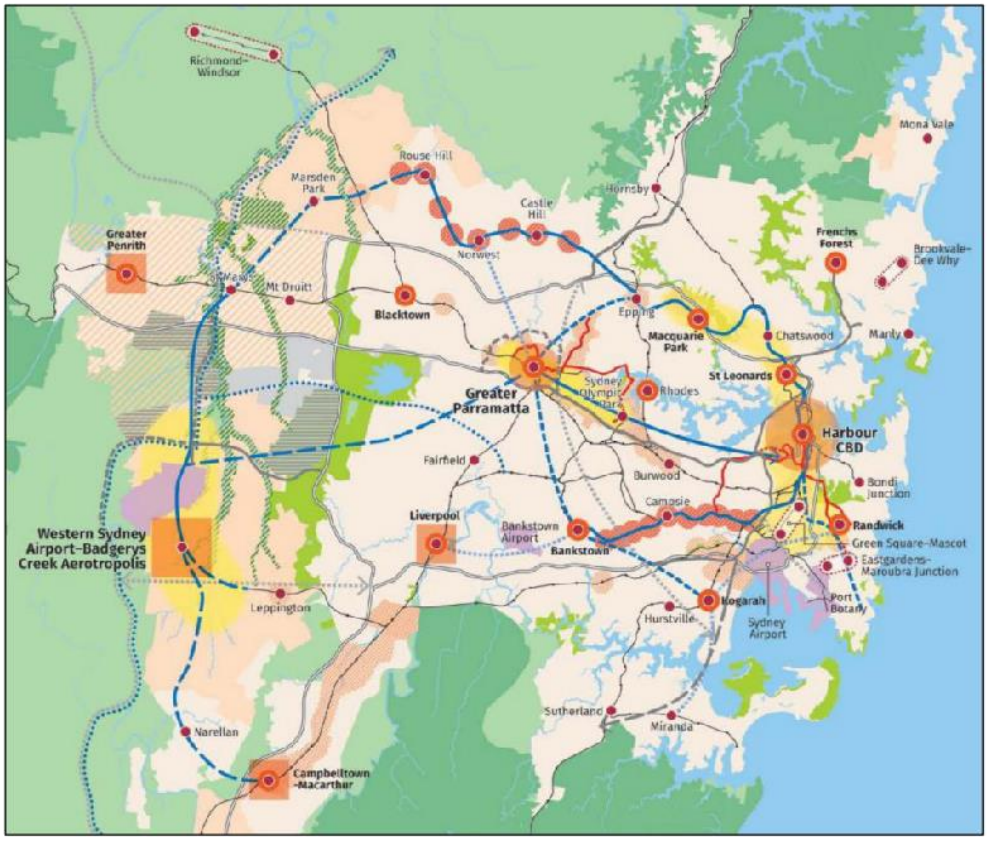


Figure 23: Structure Plan for Metropolis of Three Cities

The Greater Sydney Plan identifies ten directions for the three cities to deliver and monitor the objectives to create a liveable, productive and sustainable City. These include:

1. A city supported by infrastructure
2. A collaborative city
3. A city of people
4. Housing the city
5. A city of great places
6. A well-connected city
7. Jobs and skills for the city
8. A city in its landscape
9. An efficient city
10. A resilient city

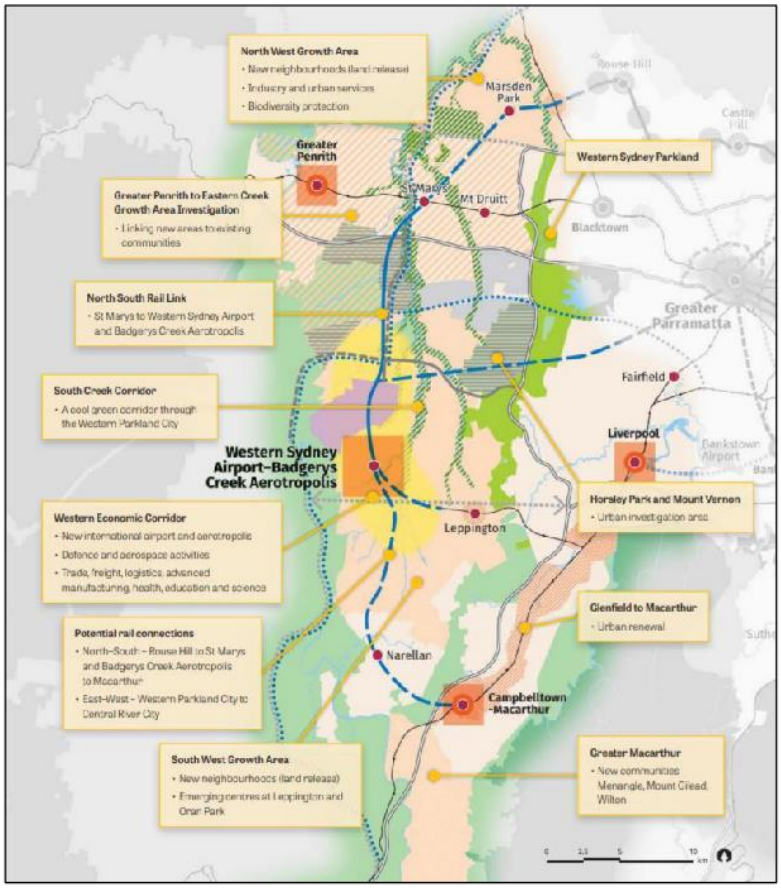


Figure 24: Western Parkland City Structure Plan

The Planning Proposal is considered against the direction of the Greater Sydney Plan in Table 5 below:

PART 3 INFRASTRUCTURE AND COLLABORATION		
A CITY SUPPORTED BY INFRASTRUCTURE		
1.	**INFRASTRUCTURE SUPPORTS THE THREE CITIES**	
1.1	Prioritise infrastructure investments to support the vision of A Metropolis of Three Cities.	N/A
1.2	Sequence growth across the three cities to promote north-south and east-west connections	Consistent The Planning Proposal will facilitate housing, jobs and employment opportunities in the Western Parkland City. The Middletown Grange town centre is also well connected to public and private transport infrastructure connecting future residents and jobs to Greater Sydney and the other Cities.

		The site is 700 metres from the M7 Motorway connecting the area to the Western Economic Corridor and north-south connections, and 350 metres from the new Fifteenth Avenue rapid transit route that will connect Liverpool City Centre to the new Western Sydney Aerotropolis and east-west connections.
2.	**INFRASTRUCTURE ALIGNS WITH FORECAST GROWTH – GROWTH INFRASTRUCTURE COMPACT**	
2.1	Align forecast growth with infrastructure	Consistent The Middleton Grange town centre is an area identified for growth and change to support the growing community in the area. The M7 Motorway opened in 2003 and formed a major piece of transport infrastructure in western Sydney. Further, the Leppington train station, 5 km to the south, forms the terminus of the South West Rail link, which opened in 2015. The Inner West and Leppington Line connects the area to the City and the Cumberland Line connects the area to Parramatta and Blacktown.
2.2	Sequence infrastructure provision across Greater Sydney using a place-based approach	Consistent Place based priorities will continue to be considered as growth and change is experienced in this area of the Western Parkland City. This includes upgrades to the road network, such as Elizabeth Drive to the north and Bringelly Road, new schools, and a focus on growth in the Liverpool Metropolitan Cluster, improving access to employment, health and education. Further, the South West Rail line will connect to the Western Sydney Aerotropolis and the Fifteenth Avenue rapid transit route will connect Middleton Grange to Liverpool and the aerotropolis. These investments in infrastructure are aligned to the forecast in population growth in the south west.
3.	**INFRASTRUCTURE ADAPTS TO MEET FUTURE NEEDS**	
3.1	Consider the adaptability of infrastructure and its potential shared use when preparing infrastructure strategies and plans.	N/A
4.	**INFRASTRUCTURE USE IS OPTIMISED**	
4.1	Maximise the utility of existing infrastructure assets and consider strategies to influence behaviour changes, to reduce the demand for new infrastructure, including supporting the development of adaptive and flexible regulations to allow decentralised utilities	N/A
A COLLABORATIVE CITY		

5.	**BENEFITS OF GROWTH REALISED BY COLLABORATION OF GOVERNMENTS, COMMUNITY AND BUSINESS**	
A1	Identify, prioritise and deliver Collaboration Areas.	The suburb of Middleton Grange has been developing since 2004. Its growth and development has been carefully planned between Council, State agencies, industry and community input. This has included how the area is planned and the location of green spaces, amenities, education and services. The Planning Proposal seeks to facilitate the delivery of the Middleton Grange town centre and the planning of the centre has involved a collaborative approach between Council, State agencies and the proponent. Further, consultation with the community has assisted understand the needs, requirements and concerns of the community. This has directly informed the amended planning proposal.
A2	Coordinate land use and infrastructure for the Western City District	Consistent It is noted that "*the implementation and governance commitments of the Western Sydney City Deal identify that the Greater Sydney Commission will coordinate land use and infrastructure for the Western City District*". The Middleton Grange town centre will benefit from the six priority domains of the Western Sydney City Deal including connectivity, jobs, skills and education, planning and housing, liveability and environment and governance.
PART 4 LIVIBILITY		
A CITY FOR PEOPLE		
6.	**SERVICES AND INFRASTRUCTURE MEET COMMUNITIES CHANGING NEEDS**	
6.1	Deliver social infrastructure that reflects the needs of the community now and in the future.	Consistent. The Middleton Grange town centre seeks to improve physical, social and spatial accessibility for the local community. While the Planning Proposal only seeks to amend the planning controls to facilitate future development applications, the town centre will be designed to be a place accessible by all people including older people and people with a disability. The concentration of people living within the town centre will also ensure passive surveillance ensuring the principles of Crime Prevention Through Environmental Design creates a safer and more accessible place for all people. While the exhibited planning proposal facilitated an increase in the amount of public open space, the concept has been revisited to ascertain whether further open space could be provided. The revised concept further increases the amount that was exhibited to provide more open areas for the

		community. This was considered a very important need for the people of Middleton Grange and the planning proposal could both support a reduction in height and increase the amount of open space to the benefit of the people of Middleton Grange.
6.2	Optimise the use of available public land for social infrastructure.	While the Planning Proposal applies to land in private ownership, the Middleton Grange town centre includes land to be zoned RE1 Public Recreation to create a public space at the heart of the community. Further, other forms of social infrastructure including medical, health, convenience and services will be provided within the town centre.
7.	**COMMUNITIES ARE HEALTHY, RESILIENT AND SOCIALLY CONNECTED**	
7.1	Deliver healthy, safe and inclusive places for people of all ages and abilities that support active, resilient and socially connected communities by: • providing walkable places at a human scale with active street life • prioritising opportunities for people to walk, cycle and use public transport • co-locating schools, health, aged care, sporting and cultural facilities promoting local access to healthy fresh food and supporting local fresh food production.	Consistent. The mixed-use Middleton Grange town centre will be a community hub and focal point for future residents. The location of the town centre in proximity to the Middleton Grange suburb supports the concept of 20-minute walkable neighbourhoods to improve people's health and well-being. The town centre is also well located in proximity to open space and public places creating an active and more socially connected community which will be healthier and better able to adapt to change. The concept plan for the town centre seeks to provide permeability through the site and active street frontages, with activity and social interaction spilling out on to the streets creating spontaneity and community cultural life at a human walkable scale.
8.	**GREATER SYDNEY'S COMMUNITIES ARE CULTURALLY RICH WITH DIVERSE NEIGHBOURHOODS**	
8.1	Incorporate cultural and linguistic diversity in strategic planning and engagement.	Middleton Grange is a newly forming community which has been growing and evolving since 2004. The town centre will now form the focal point for this community. As the planning and development of the town centre progresses a place-based planning approach will be able to be applied to ensure cultural diversity in the community is recognised and future land uses respond to the different ways in which people of all cultures and linguistic backgrounds engage and contribute to the community.
8.2	Consider the local infrastructure implications of areas that accommodate large migrant and refugee populations.	
9.	**GREATER SYDNEY CELEBRATES THE ARTS AND SUPPORTS CREATIVE INDUSTRIES AND INNOVATION**	
9.1	Facilitate opportunities for creative and artistic expression and participation, wherever feasible with a minimum regulatory burden, including:	Consistent. The proposed land use controls and zoning provide flexibility to achieve this objective.

	• arts enterprises and facilities and creative industries • interim and temporary uses • appropriate development of the night-time economy.	Cafes and restaurants seek to enliven the town centre through the day and support the night-time economy. Commercial and business spaces are adaptable to support creative uses and facilities in conjunction with the community uses associated with the public park. Further refinement will be progressed during the development application process.
HOUSING THE CITY		
10. GREATER HOUSING SUPPLY		
A3	Prepare housing strategies	The Planning Proposal will facilitate approximately 671 dwellings. Under the existing controls, the town centre would have accommodated between 583 to 626 dwellings, so this is a minor increase to that currently permissible This will only make a minor difference to Council's housing growth. The suburb of Middleton Grange was rezoned in 2005 for urban renewal and future growth. The Planning Proposal supports the identification of Middleton Grange for future housing and the town centre as a focal point for the community: a place with access to public transport and jobs, connecting homes with work; a place that is safe and attractive and is characterised by quality urban design and architecture.
A4	Develop 6–10 year housing targets	The Greater Sydney Commission will work with Council and public agencies to prepare 6-10 year housing targets. The NSW Government has identified that 725,000 additional homes will be needed by 2036 to meet demand based on current population projections. The Western City, within which Middleton Grange is located, has a housing supply target of 39,850 from 2016-2021 and 184,500 to 2036. The Planning Proposal will facilitate the future town centre for Middleton Grange and also support housing growth and supply within the Western City.
11. HOUSING IS MORE DIVERSE AND AFFORDABLE		
11.1	Prepare Affordable Rental Housing Target Schemes, following development of implementation arrangements.	N/A
11.2	State agencies, when disposing or developing surplus land for residential or mixed-use projects include, where viable, a range of initiatives to address housing diversity and/or affordable rental housing.	N/A

A5	Implement Affordable Rental Housing Targets	N/A
A CITY OF GREAT PLACES		
12.	**GREAT PLACES THAT BRING PEOPLE TOGETHER**	
12.1	Using a place-based and collaborative approach throughout planning, design, development and management, deliver great places by: • prioritising a people-friendly public realm and open spaces as a central organising design principle • recognising and balancing the dual function of streets as places for people and movement • providing fine grain urban form, diverse land use mix, high amenity and walkability in and within a 10-minute walk of centres • integrating social infrastructure to support social connections and provide a community hub • recognising and celebrating the character of a place and its people.	The Planning Proposal while not seeking development consent will facilitate future development applications. This stage in the planning will set the future land use controls and zoning to allow for the design of future buildings, streets and considerable open landscaped spaces. The Middleton Grange town centre will be a place in its own right, somewhere that fosters pride in the new and evolving community within Middleton Grange. The principles of 'Great places that bring people together will be invaluable to achieving a vibrant pedestrian orientated hub, that is accessible and easy to move within. The commercial and retail component along with restaurants and cafes will ensure a vibrant and interesting public realm that is safe and inviting for all members of the community.
12.2	In Collaboration Areas, Planned Precincts and planning for centres: • investigate opportunities for precinct-based provision of adaptable car parking and infrastructure in lieu of private provision of car parking • ensure parking availability takes into account the level of access by public transport • consider the capacity for places to change and evolve, and accommodate diverse activities over time • incorporate facilities to encourage the use of car sharing, electric and hybrid vehicles including charging stations.	Consistent. While not a metropolitan or strategic centre, the Middleton Grange town centre provides a significant role for the community. The town centre will need to be adaptable and responsive to diverse activities over time. Further, parking innovations and access to the nearby train stations and the Fifteenth Avenue rapid transit should be considered to reduce reliance on the motor vehicle and promote sustainable practices and forms of transport.
13.	**ENVIRONMENTAL HERITAGE IS IDENTIFIED, CONSERVED AND ENHANCED**	
13.1	Identify, conserve and enhance environmental heritage by: • engaging with the community early in the planning process to understand heritage values and how they contribute to the significance of the place • applying adaptive re-use and interpreting heritage to foster distinctive local places	N/A The site is part of a growth area being the suburb of Middleton Grange. There is no known environmental heritage. The exhibition of the Planning Proposal did not raise any heritage concerns by the community and further consultation will allow further consideration of this.

	• managing and monitoring the cumulative impact of development on the heritage values and character of places.	
PART 5 PRODUCTIVITY		
A WELL CONNECTED CITY		
14.	**A METROPOLIS OF THREE CITIES – INTEGRATED LAND USE AND TRANSPORT CREATES WALKABLE AND 30-MINUTE CITIES**	
14.1	Integrate land use and transport plans to deliver the 30-minute city.	*"A 30 – minute city is where most people can travel to their nearest metropolitan centre or cluster by public transport within 30 minutes; and where everyone can travel to their nearest strategic centre by public transport seven days a week to access jobs, shops and services".* Middleton Grange is currently served by bus route 853. This service links Carnes Hill and Liverpool via Middleton Grange and Hoxton Park Road. It operates along Flynn Avenue, immediately south of the site. This bus route takes less than 30mins to reach to Liverpool metropolitan cluster. Further, the proposed Fifteenth Avenue rapid transit route that connects Liverpool to the Western Sydney Aerotropolis is less than 350 metres away. This transit route was not identified when the site was originally zoned in 2005 for up to 630 dwellings. The context for the site has therefore changed and will connect future residents to opportunities in Liverpool and the Aerotropolis, while also providing opportunities from elsewhere with Middleton Grange.
14.2	Investigate, plan and protect future transport and infrastructure corridors.	The subject site is 5km north of Leppington train station. The Greater Sydney Region Plan identifies future investigation of a mass transit rail link between Leppington and the Western Sydney Aerotropolis. This would have significant implications for an area like Middleton Grange, opening up access to significant job and employment opportunities associated with the Economic Corridor. Further, the Fifteenth Avenue rapid transit is less than 350 metres to the south of the site and will also support access via new transport and infrastructure corridors to and from the site. Further upgrades to road infrastructure is also being considered and investigated, including Bringelly Road, and the Northern Road, which will improve private transport to the Economic Corridor to the west.

14.3	Support innovative approaches to the operation of business, educational and institutional establishments to improve the performance of the transport network.	N/A
15.	**THE EASTERN, GPOP AND WESTERN ECONOMIC CORRIDORS ARE BETTER CONNECTED AND MORE COMPETITIVE**	
A6	Collaborate to deliver the Greater Parramatta and the Olympic Peninsula (GPOP) vision	N/A
A7	Develop a growth infrastructure compact for GPOP	N/A
15.1	Prioritise public transport investment to deliver the 30-minute city objective for strategic centres along the economic corridors.	The Fifteenth Avenue Smart Transit Corridor is identified to travel through Middleton Grange connecting Liverpool City to the Western Sydney Aerotropolis. Fifteenth Avenue is less than 350 metres from the town centre. This major piece if transport infrastructure will enhance access to and from the economic corridor and the Liverpool Metropolitan Centre. This directly achieves these objectives including the 30-minute city objective.
15.2	Prioritise transport investments that enhance access to the economic corridors and between centres within the corridors.	
	 *Liverpool City Draft Local Strategic Planning Statement Structure Plan*	
15.3	Co-locate health, education, social and community facilities in strategic centres along the economic corridors.	The location of the Middleton Grange town centre will benefit from new health, education, social and community facilities in strategic centres along the economic corridor.
16.	**FREIGHT AND LOGISTICS NETWORK IS COMPETITIVE AND EFFICIENT**	
16.1	Manage the interfaces of industrial areas, trade gateways and intermodal facilities	N/A
16.2	Optimise the efficiency and effectiveness of the freight handling and logistics network by:	N/A

	• protecting current and future freight corridors and shared freight corridors • balancing the need to minimise negative impacts of freight movements on urban amenity with the need to support efficient freight movements and deliveries • identifying and protecting key freight routes • limiting incompatible uses in areas expected to have intense freight activity.	
17.	**REGIONAL CONNECTIVITY IS ENHANCED**	
17.1	Investigate and plan for the land use implications of potential long-term regional transport connections.	The Middleton Grange town centre is well located to take advantage initially of the opportunities of connectivity within the Western City, and from existing connections to the Central and Eastern cities. In the longer term further growth opportunities will arise from north-south connections to the Illawarra, the Central Coast/Greater Newcastle regions and Canberra and environs.
JOBS AND SKILLS FOR THE CITY		
18.	**HARBOUR CBD IS STRONGER AND MORE COMPETITIVE**	
18.1	Prioritise: • public transport projects to the harbour CBD to improve business-to-business connections and support the 30-minute city • infrastructure investments, particularly those focused on access to the transport network, which enhance walkability within 2 kilometres of metropolitan or strategic centres or 10 minutes walking distance of a local centre • infrastructure investments, particularly those focused on access to the transport network, which enhance cycling connectivity within 5 kilometres of strategic centres or 10 kilometres of the Harbour CBD.	N/A
18.2	Develop and implement land use and infrastructure plans which strengthen the international competitiveness of the Harbour CBD and grow its vibrancy by: • further growing an internationally competitive commercial sector to support an innovation economy	N/A

	• providing residential development without compromising commercial development • providing a wide range of cultural, entertainment, arts and leisure activities • providing a diverse and vibrant night-time economy, in a way that responds to potential negative impacts.	
19.	**GREATER PARRAMATTA IS STRONGER AND BETTER CONNECTED**	
19.1	Prioritise noted infrastructure investments	N/A
19.2	Develop and implement land use and infrastructure plans which strengthen the economic competitiveness and grow its vibrancy by: • enabling the development of an internationally competitive health and education precinct at Westmead • creating opportunities for an expanded office market • balancing residential development with the needs of commercial development, including if required, a commercial core • providing for a wide range of cultural, entertainment, arts and leisure activities • improving the quality of Parramatta Park and Parramatta River and their walking and cycling connections to Westmead and the Parramatta CBD • providing for a diverse and vibrant night-time economy in a way that responds to potential negative impacts.	N/A
20.	**WESTERN SYDNEY AIRPORT AND BADGERYS CREEK AEROTROPOLIS ARE ECONOMIC CATALYSTS FOR WESTERN PARKLAND CITY**	
20.1	Prioritise: • public transport investments to improve north-south and east-west connections to the metropolitan cluster • infrastructure investments, particularly those focused on access to the transport network, which enhance walkability within 2 kilometres of the metropolitan cluster of strategic centres or 10 minute walking distance of a local centre • infrastructure investments, particularly those focused on access to the transport network, which enhance cycling connectivity within 5 kilometres of	Over the life of the plan the pattern of the Western City will be based on the integration of land use, transport and other infrastructure. The proximity of the site to the Liverpool and Leppington train stations and the M7 motorway connects the site immediately to the rail and road networks and the benefits of accessibility to these economic corridors and metropolitan centres and clusters. Therefore, the suburb of Middleton Grange and its town centre is well located to take advantage of infrastructure and economic growth in western Economic corridors. The Middleton Grange town centre itself, the subject of this Planning Proposal is designed to meet the needs of the new establishing Middleton Grange

	strategic centres or 10 kilometres of the metropolitan cluster.	community. It will deliver walkable streets to ensure a pedestrian friendly neighbourhood and support cycling connectivity. Since the Planning Proposal was lodged the strategic planning framework has changed and evolved in accordance with the Government's strategic plan. The evolving Western Sydney Aerotropolis is now 7.5km away from the town centre offering access to jobs and the economic corridor. Further, the proposed Fifteenth Avenue Smart Transit Corridor has been identified less than 350 metres away. Therefore, the strategic context of the site has significantly changed since the original/existing controls were set, and the proposed controls establish a centre for the existing strategic context. Further decisions on the alignment of roads and mass transit will be progressed by State agencies and the Greater Sydney Commission, while the development of the Middleton Grange town centre will provide the goods, services, recreation and jobs to support the local community.
20.2	Develop and implement land use and infrastructure plans for the Western Sydney Airport, the metropolitan cluster, the Western Sydney Employment Area and strategic centres in the Western Sydney Parkland City by: • Supporting commercial development, aerospace and defence industries and the innovation economy • Supporting internationally competitive freight and logistics sectors • Planning vibrant strategic centres and attracting health and education facilities, cultural entertainment, arts and leisure activities • Creating high quality places with a focus on walking and cycling • Improving transport connections across the Western Parkland City	The strategic planning principles identified for the Western Parkland City will be incorporated in to the detailed design and development applications stages for the town centre.
21.	**INTERNATIONALLY COMPETITIVE HEALTH, EDUCATION, RESEARCH AND INNOVATION PRECINCTS**	
21.1	Develop and implement land use and infrastructure plans for health and education precincts that: • create the conditions for the continued co-location of health and education facilities, and services to support the precinct and growth of the precincts • have high levels of accessibility	Liverpool is identified by the Greater Sydney Region Plan as a metropolitan cluster and Health and Education Precinct. The Middleton Grange town centre is 7km from the Liverpool CBD or less than a 30 minute bus journey.

	• attract associated businesses, industries and commercialisation of research • facilitate housing opportunities for students and workers within 30 minutes of the precinct.	Further, the Western Sydney Aerotropolis is 7.5 km away, and forms part of the very important Western Sydney Economic Corridor. The proposed Fifteenth Avenue Smart Transit Corridor make both strategically important areas easily accessible within 30 minutes.
22.	**INVESTMENT AND BUSINESS ACTIVITY IN CENTRES**	
22.1	Provide access to jobs, goods and services in centres by: • attracting significant investment and business activity in strategic centres to provide jobs growth • diversifying the range of activities in all centres • creating vibrant, safe places and a quality public realm • focusing on a human-scale public realm and locally accessible open space • balancing the efficient movement of people and goods with supporting the liveability of places on the road network • improving the walkability within and to centres • completing and improving a safe and connected cycling network to and within centres • improving public transport services to all strategic centres • conserving and interpreting heritage significance • designing parking that can be adapted to future uses • providing for a diverse and vibrant night-time economy in a way that responds to potential negative impacts • creating the conditions for residential development within strategic centres and within walking distance (up to 10 minutes), but not at the expense of the attraction and growth of jobs, retailing and services; where appropriate, strategic centres should define commercial cores informed by an assessment of their need.	Middleton Grange town centre is not a strategic centre but will serve as a focal point for the community and a destination that includes jobs, cafes and restaurants, retail and local business activity. It is of a scale that serves the evolving Middleton Grange suburb, and the emerging context close to the Western Sydney Economic Corridor. It is within 5km of Leppington, 7km of the Liverpool CBD, and 7.5 km of the Western Sydney Aerotropolis and Economic Corridor. Many of the principles for activity in Centres will be adopted in the development phase of the project to ensure vibrant and safe places, efficient movement of people and traffic, walkable neighbourhoods with good accessibility and permeability, and a diverse and vibrant night-time economy.
22.2	Create new centres in accordance with the principles for Greater Sydney's centres.	Consistent. The Middleton Grange town centre, while not developed and constructed is a long established centre by zoning and strategy. The centre is zoned to accommodate up to 630 dwellings and 12,000-

		16,000sq.m of commercial and retail space. The Planning Proposal further refines the layout and development of the centre, while noting the change to the strategic planning framework since 2005, that includes the Western Sydney Aerotropolis nearby (7.5km) and the proposed Fifteenth Avenue Smart Transit Corridor (350 metres). Further detailed assessment will be considered at the development application stage against the principles for Greater Sydney's centres.
23.	**INDUSTRIAL AND URBAN SERVICES LAND IS PLANNED, RETAINED AND MANAGED**	
23.1	Retain, review and plan industrial and urban services land in accordance with the principles for managing industrial and urban services land.	N/A
23.2	Consider office development in industrial zones where it does not compromise industrial or urban services activities in the South and Western City Districts.	N/A
24.	**ECONOMIC SECTORS ARE TARGETED FOR SUCCESS**	
24.1	Consider the barriers to the growth of internationally competitive trade sectors including engaging with industry and assessing regulatory barriers.	N/A
24.2	Consider the following issues when preparing plans for tourism and visitation: • encouraging the development of a range of well-designed and located facilities • enhancing the amenity, vibrancy and safety of centres and township precincts • supporting the development of places for artistic and cultural activities • improving public facilities and access • protecting heritage and biodiversity to enhance cultural and eco-tourism • supporting appropriate growth of the night-time economy • developing industry skills critical to growing the visitor economy • incorporating transport planning to serve the transport access needs of tourists.	Consistent
24.3	Protect and support agricultural production and mineral resources (in particular construction materials) by preventing inappropriately dispersed urban activities in rural areas.	N/A

24.4	Provide a regulatory environment that enables economic opportunities created by changing technologies.	N/A
PART 6 SUSTAINABILITY		
A CITY IN ITS LANDSCAPE		
25.	**THE COAST AND WATERWAYS ARE PROTECTED AND HEALTHIER**	
25.1	Protect environmentally sensitive areas of waterways and the coastal environment area.	N/A
25.2	Enhance sustainability and liveability by improving and managing access to waterways, foreshores and the coast for recreation, tourism, cultural events and water-based transport.	N/A
25.3	Improve the health of catchments and waterways through a risk-based approach to managing the cumulative impacts of development including coordinated monitoring of outcomes.	N/A
25.4	Reinstate more natural conditions in highly modified urban waterways.	N/A
26.	**A COOL AND GREEN PARKLAND CITY IN THE SOUTH CREEK CORRIDOR**	
26.1	Implement the South Creek Corridor Project and use the design principles for South Creek to deliver a cool and green Western Parkland City.	While the site is not within the South Creek Corridor future residents will likely have access to it. Future development will also adopt design principles to provide for a green Western Parkland City.
27.	**BIODIVERSITY IS PROTECTED, URBAN BUSHLAND AND REMNANT VEGETATION IS ENHANCED**	
27.1	Protect and enhance biodiversity by: • supporting landscape-scale biodiversity conservation and the restoration of bushland corridors • managing urban bushland and remnant vegetation as green infrastructure • managing urban development and urban bushland to reduce edge-effect impacts.	Consistent
28.	**SCENIC AND CULTURAL LANDSCAPES ARE PROTECTED**	
28.1	Identify and protect scenic and cultural landscapes.	Consistent
28.2	Enhance and protect views of scenic and cultural landscapes from the public realm.	Consistent
29.	**ENVIRONMENTAL, SOCIAL AND ECONOMIC VALUES IN RURAL AREAS ARE PROTECTED AND ENHANCED**	
29.1	Maintain or enhance the values of the Metropolitan Rural Area using place-based planning to deliver targeted environmental, social and economic outcomes.	N/A The site is not located within the Metropolitan Urban Area as identified by Figure 49 of the Greater Sydney Region Plan.

29.1	Limit urban development to within the Urban Area, except for the investigation areas at Horsley Park, Orchard Hills, and east of The Northern Road, Luddenham.	N/A
30.	**URBAN TREE CANOPY COVER IS INCREASED**	
30.1	Expand urban tree canopy in the public realm.	Opportunities for public planting have been identified in the attached Landscape Plan. The Landscape Plan includes a tree planting strategy which includes the types of trees and locations, to provides for an urban canopy along main streets, the open spaces, and through links.
31.	**PUBLIC OPEN SPACE IS ACCESSIBLE, PROTECTED AND ENHANCED**	
31.1	Maximise the use of existing open space and protect, enhance and expand public open space.	The Planning Proposal has been amended since the initial public exhibition (August-October 2018) to increase the amount of open space to approximately 7,632sq.m. This includes: • 3,028sq.m public park including 500sq.m community centre on the east side of the town centre; • 3,648sq.m new park in centre of the town centre; and • 956sq.m new park to the west. The open space will be designed to be attractive and define the character of the area. It will be a focal point for the community and will make the neighbourhood pleasant and welcoming. The attached Landscape Plan details the vision for open space and pedestrian areas throughout the town centre. The site is also close to other open spaces throughout the Middleton Grange suburb ensuring access to open space is enhanced and contributes to a healthier community.
32.	**THE GREEN GRID LINKS PARKS, OPEN SPACES, BUSHLAND AND WALKING AND CYCLING PATHS**	
32.1	Progressively refine the detailed design and delivery of: • Greater Sydney Green Grid priority corridors • opportunities for connections that form the long-term vision of the network • walking and cycling links for transport as well as leisure and recreational trips.	Consistent.
AN EFFICIENT CITY		
33.	**A LOW-CARBON CITY CONTRIBUTES TO NET-ZERO EMISSIONS BY 2050 AND MITIGATES CLIMATE CHANGE**	

33.1	Support initiatives that contribute to the aspirational objective of achieving net-zero emissions by 2050 especially through the establishment of low-carbon precincts in Planned Precincts, Growth Areas and Collaboration Areas.	Consistent. With good access to nearby existing and future public transport (including the Fifteenth Avenue Smart transit corridor) and proximity to metropolitan clusters and health and education precincts (including the Liverpool CBD and the Western Sydney Aerotropolis) the Middleton Grange town centre seeks to achieve the objective of reducing trip generation and car dependency by locating jobs and homes close together. This is also achieved through the commercial/retail component of the town centre which will provide job and employment opportunities and community and social infrastructure, further encouraging resident retention in the area and reducing car dependency.
34.	**ENERGY AND WATER FLOWS ARE CAPTURED, USED AND RE-USED**	
34.1	Support precinct-based initiatives to increase renewable energy generation and energy and water efficiency especially in Planned Precincts and Growth Areas, Collaboration Areas and State Significant Precincts.	Consistent The Planning Proposal does not consider energy efficiency and water flows, but during the detailed development application stage consideration will be given to opportunities to generate energy sustainably, and to store, distribute and use energy more efficiently. This also considers the way of using resources, so energy, water and waste are used efficiently and continually recycled and re-used.
35.	**MORE WASTE IS RE-USED AND RECYCLED TO SUPPORT THE DEVELOPMENT OF A CIRCULAR ECONOMY**	
35.1	Protect existing, and identify new, locations for waste recycling and management.	N/A
35.2	Support innovative solutions to reduce the volume of waste and reduce waste transport requirements.	N/A
A RESILIENT CITY		
36.	**PEOPLE AND PLACES ADAPT TO CLIMATE CHANGE AND FUTURE SHOCKS AND STRESSES**	
36.1	Support initiatives that respond to the impacts of climate change.	Consistent
37.	**EXPOSURE TO NATURAL AND URBAN HAZARDS IS REDUCED**	
37.1	Avoid locating new urban development in areas exposed to natural and urban hazards and consider options to limit the intensification of development in existing urban areas most exposed to hazards.	Consistent
37.2	Respond to the direction for managing flood risk in the Hawkesbury-Nepean Valley as set out in Resilient Valley, Resilient Communities – Hawkesbury-Nepean Valley Flood Risk Management Strategy.	N/A

38.	**HEATWAVES AND EXTREME HEAT ARE MANAGED**	
38.1	Mitigate the urban heat island effect and reduce vulnerability to extreme heat.	Consistent The area for green open spaces in the town centre has been doubled. A new Landscape Plan prepared by Habit8 has been prepared and is attached at Appendix G and details the extensive mature tree planting throughout the town centre which is being advanced at this stage to create a green network within the town centre. Further design opportunities to mitigate the urban heat island effect should be explored at DA stage when detailed design of buildings and public spaces will be explored.

Table 5: Consistency with the Greater Sydney Region Plan – A Metropolis of Three Cities

Western City District Plan

Greater Sydney's three cities identified in the Greater Sydney Region Plan – A Metropolis of Three Cities reach across five districts. The Western City District is framed by the region's Protected Natural Area and Metropolitan Rural Area and incorporates the local government areas of Blue Mountains; Hawkesbury; Penrith; Camden; Campbelltown; Fairfield; Liverpool; and Wollondilly. Its primary focus is the Western Parkland City.

The Western City District Plan was released in March 2018 to set the priorities and actions for improving the quality of life for residents as the district grows and changes.

"The vision for Greater Sydney as a metropolis of three cities means residents in the Western City District will have quicker and easier access to a wider range of jobs, housing types and activities. The vision will improve the District's lifestyle and environmental assets".

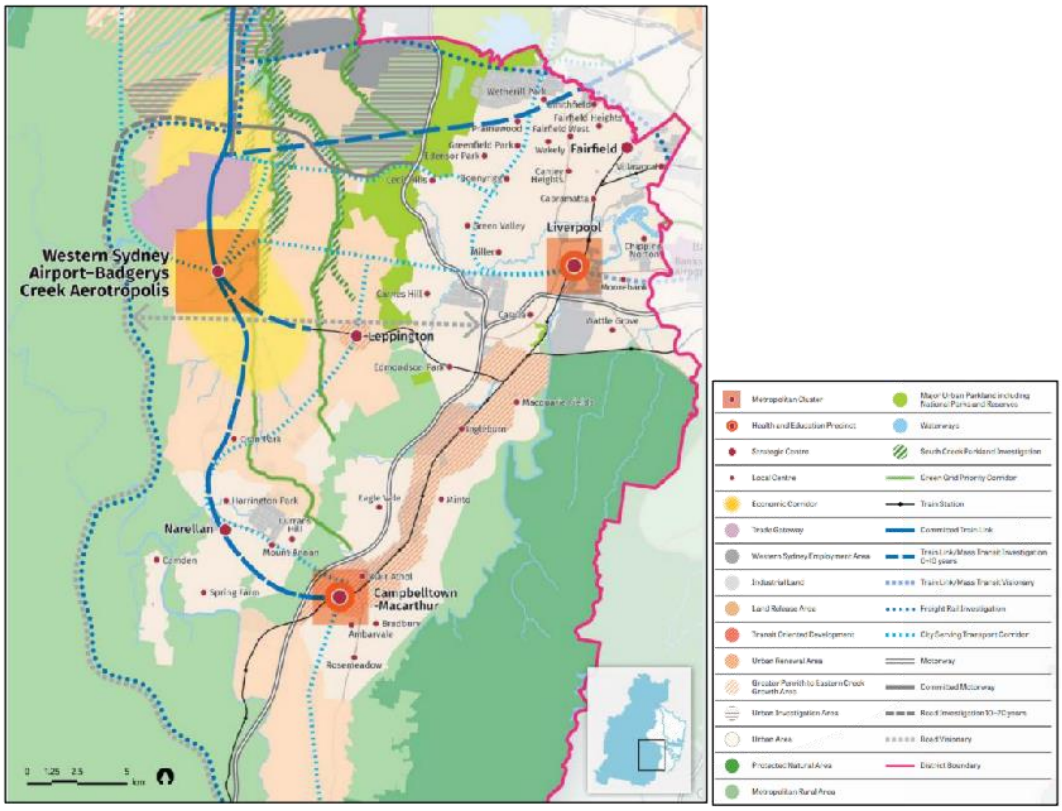
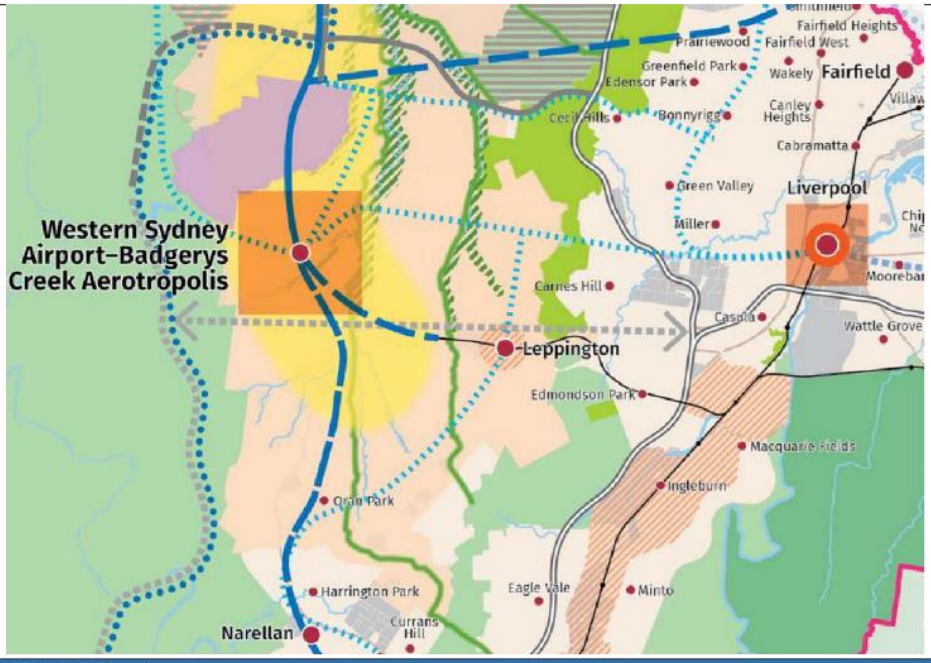


Figure 25: Western City District Structure Plan

Consistency with the Western City District planning priorities and indictors is considered in Table 6 below:

A CITY SUPPORTED BY INFRASTRUCTURE		
DIRECTION: PLANNING FOR A CITY SUPPORTED BY INFRASTRUCTURE		
P.I	Potential Indicator: Increased 30-minute access to a metropolitan centre/cluster	The Middleton Grange town centre is 7km to the west of the Liverpool metropolitan cluster and health and education precinct and 7.5km from the Western Sydney Aerotropolis. Middleton Grange is currently served by bus route 853. This service links Carnes Hill and Liverpool via Middleton Grange and Hoxton Park Road. It operates along Flynn Avenue, immediately south of the site. This bus route takes less than 30mins to reach to Liverpool metropolitan cluster. Further, the suburb of Middleton Grange will be served by the Fifteenth Avenue Smart Transit Corridor that will connect the Liverpool CBD to the Western Sydney Aerotropolis via Middleton Grange.
W.1	Planning Priority W1 Planning for a city supported by infrastructure	The Western Sydney City Deal will be the single largest planning, investment and delivery partnership in the history of the nation, involving the Australian and NSW Governments, together with the eight local governments of the District. The Western City District Plan responds to major transport, health and education investments either committed or planned across the Western District. The Middleton Grange town centre is ideally located to take advantage of opportunities associated with improved infrastructure and access to jobs in the Liverpool metropolitan cluster and Economic Corridor. As can be seen from the below Western City Structure Plan, the Middleton Grange town centre (to the north of Cairns Hill) is ideally located between Liverpool CBD and the future Western Sydney Airport and Economic Corridor. Leppington railway station is 5km to the south and a proposed mass transit rail link to the airport has been identified, while Middleton Grange is in the immediate vicinity of a proposed 'City Servicing Transport Corridor' that will connect Liverpool to the Western Sydney Airport via Middleton Grange. The site is therefore ideally located in proximity to existing and future infrastructure and economic growth.



A COLLABORATIVE CITY		
DIRECTION: WORKING TOGETHER TO GROW A GREATER SYDNEY		
P.I	Potential Indicator: Increased use of public resources such as open space and community facilities	The Greater Sydney Commission is also collaborating with local councils to improve regional open space and deliver Greater Sydney's Green Grid through the administration and management of the Metropolitan Greenspace Program. The Planning Proposal includes open space within the Middleton Grange town centre designed to be activated by surrounding land uses with passive surveillance from residential development to ensure safety. Other areas of open space are also nearby, and the town centre has been designed to ensure permeability through the centre to easily connect to surrounding areas via activated and vibrant streets.
W.2	Planning Priority W2 Working through collaboration	Consistent
A CITY FOR PEOPLE		
DIRECTION: CELEBRATING DIVERSITY AND PUTTING PEOPLE AT THE HEART OF PLANNING		
P.I	Potential Indicator: Increased walkable access to local centres	Consistent
W.3	Planning Priority W3 Providing services and social infrastructure to meet people's changing needs	Consistent The role of the Middleton Grange town centre will be to provide services and infrastructure for the broader Middleton Grange community.

W4	Planning Priority W4 Fostering healthy, creative, culturally rich and socially connected communities	Consistent The town centre will be well connected to the broader suburb to facilitate walkable neighbourhoods and embrace a sense of identity for the evolving community, catering for ages, disabilities and ethnicities.
HOUSING THE CITY		
DIRECTION: GIVING PEOPLE HOUSING CHOICES		
P.I	Potential Indicator: Increased housing completions (by type)	Consistent The 5-year housing supply target for Liverpool local government area to 2021 is 8,250. Under the existing controls, the Middleton Grange town centre has the capacity to accommodate approximately 580 to 630 dwellings. The planning proposal slightly amends the planning controls for the town centre, in conjunction with zoning realignments, to provide for approximately 671 dwellings; a small increase in conjunction with the emerging strategic planning framework, identified by the state governments Greater Sydney and Western City Plans.
	Number of councils that implement Affordable Rental Housing Target Schemes	N/A
W.5	Planning Priority W5 Providing housing supply, choice and affordability with access to jobs, services and public transport	Consistent The Middleton Grange town centre will supply a mix of new housing and jobs, within 7km of the Liverpool metropolitan cluster, 7.5km of the Western Sydney Aerotropolis and 5km from the Leppington train station. Future infrastructure improvements, including the Fifteenth Avenue Smart Transit Corridor (350 metres to the south) also support connections to the Western Sydney Airport and associated economic corridor.
A CITY OF GREAT PLACES		
DIRECTION: DESIGNING PLACES FOR PEOPLE		
P.I	Potential Indicator: Increased access to open space	The Planning Proposal has been amended since the initial public exhibition (August-October 2018) to increase the amount of open space to approximately 7,632sq.m. This includes: • 3,028sq.m public park including 500sq.m community centre on the east side of the town centre; • 3,648sq.m new park in centre of the town centre; and • 956sq.m new park to the west. The open space will be designed to be attractive and define the character of the area. It will be a focal point

		for the community and will make the neighbourhood pleasant and welcoming. The attached Landscape Plan details the vision for open space and pedestrian areas throughout the town centre. The site is also close to other open spaces throughout the Middleton Grange suburb ensuring access to open space is enhanced and contributes to a healthier community.
W.6	Planning Priority W6 Creating and renewing great places and local centres, and respecting the District's heritage	The Planning Proposal is informed by a concept that will be further refined during the development application process. The attached urban design report includes design principles to ensure that the Middleton Grange town centre is a great place for residents and the local community.
A WELL CONNECTED CITY		
DIRECTION: DEVELOPING A MORE ACCESSIBLE AND WALKABLE CITY		
P.I	Potential Indicator: Percentage of dwellings located within 30 minutes by public transport of a metropolitan centre/ cluster	Consistent Middleton Grange town centre is 7 km west of Liverpool metropolitan cluster and 7.5 km east of the Western Sydney Aerotropolis and Economic Corridor - and less than a 30 minute bus trip under existing conditions. The Fifteenth Avenue Smart Transit Corridor is identified to travel through Middleton Grange connecting Liverpool City to the Western Sydney Aerotropolis. Fifteenth Avenue is less than 350 metres from the town centre. This major piece if transport infrastructure will enhance access to and from the economic corridor and the Liverpool Metropolitan Centre. This directly achieves these objectives including the 30-minute city objective.
	Percentage of dwellings located within 30 minutes by public transport of a strategic centre	
W.7	Planning Priority W7 Establishing the land use and transport structure to deliver a liveable, productive and sustainable Western Parkland City	Consistent
JOBS AND SKILLS FOR THE CITY		
DIRECTION: CREATING THE CONDITIONS FOR A STRONGER ECONOMY		
P.I	Potential Indicator: Increased jobs in metropolitan and strategic centres	Consistent The growth in housing and population within the Middleton Grange town centre will support the Liverpool metropolitan cluster and the Western Sydney Aerotropolis and Economic Corridor by providing an

		available workforce in close proximity as the Western City economy grows.
W.8	Planning Priority W8 Leveraging industry opportunities from the Western Sydney Airport and Badgerys Creek Aerotropolis	N/A
W.9	Planning Priority W9 Growing and strengthening the metropolitan cluster	N/A
W.10	Planning Priority W10 Maximising freight and logistics opportunities and planning and managing industrial and urban services land	N/A
W.11	Planning Priority W11 Growing investment, business opportunities and jobs in strategic centres	N/A
A CITY IN ITS LANDSCAPE		
DIRECTION: VALUING GREEN SPACES AND LANDSCAPE		
P.I	Potential Indicator: Increased urban tree canopy	Opportunities for public planting have been identified in the attached Landscape Plan. The Landscape Plan includes a tree planting strategy which includes the types of trees and locations, to provides for an urban canopy along main streets, the open spaces, and through links.
	Expanded Greater Sydney Green Grid	N/A
W.12	Planning Priority W12 Protecting and improving the health and enjoyment of the District's waterways	N/A
W.13	Planning Priority W13 Creating a Parkland City urban structure and identity, with South Creek as a defining spatial element	N/A
W.14	Planning Priority W14 Protecting and enhancing bushland and biodiversity	N/A
W.15	Planning Priority W15 Increasing urban tree canopy cover and delivering Green Grid connections	Consistent
W.16	Planning Priority W16 Protecting and enhancing scenic and cultural landscapes	N/A

W.17	Planning Priority W17 Better managing rural areas	N/A
W.18	Planning Priority W18 Delivering high quality open space	Consistent
AN EFFICIENT CITY		
DIRECTION: USING RESOURCES WISELY		
P.I	Potential Indicator: Reduced transport related greenhouse gas emissions	With good access to nearby existing and future public transport and proximity to metropolitan clusters and health and education precincts the Middleton Grange town centre seeks to achieve the objective of reducing trip generation and car dependency. This is also achieved through the commercial/retail component of the town centre which will provide job and employment opportunities and community and social infrastructure, further encouraging resident retention in the area and reducing car dependency. The Planning Proposal does not consider energy efficiency and water flows, but during the detailed development application stage consideration will be given to opportunities to generate energy sustainably, and to store, distribute and use energy more efficiently. This also considers the way of using resources, so energy, water and waste are used efficiently and continually recycled and re-used.
	Reduced energy use per capita	
W.19	Planning Priority W19 Reducing carbon emissions and managing energy, water and waste efficiently	
A RESILIENT CITY		
DIRECTION: ADAPTING TO A CHANGING WORLD		
P.I	Number of councils with standardised state-wide natural hazard information	N/A
P.20	Planning Priority W20 Adapting to the impacts of urban and natural hazards and climate change	Consistent

Table 6: Consistency with the Western City District Plan

4. Is the planning proposal consistent with a council's local strategy or other local strategic plan?

Liverpool Retail Centres Hierarchy Review (2012)

In 2012, Hill PDA prepared a retail centres hierarchy review for Council based largely on existing and imminent centres. It excluded potential centres in the South West Growth Centre (SWGC) given that land use configurations within the SWGC were unclear at the time of the review. The Middleton Grange Town Centre was noted as an imminent centre. The centre had been zoned for retail and commercial purposes but had not been developed.

At the time of preparing the review, Hill PDA estimated the catchment area for retail centres within the Liverpool LGA to contain about 398,000 residents, increasing to around 526,000 by 2031. The review

determined existing demand for retail floor space in the Liverpool LGA would increase from approximately 397,000m2 in 2012 to 511,000m2 by 2031. This represented an increase of 6,000 m2 per year. Whilst the study does not specify demand for retail floor space at Middleton Grange, the exhibited concept and estimated floor areas would represent just 3.5 years of required retail demand across the Liverpool LGA.

Since the Review was undertaken, the strategic planning framework for the Western District and this area of Sydney has changed significantly. The current hierarchy of centres for Liverpool does not anticipate the development of the Western Sydney Aerotropolis. At 7.5km from the airport, and connected by a rapid transit system at Fifteenth Avenue, Middleton Grange is ideally located to support airport-related industries, businesses and workers.

Further, the size and tenant mix is not expected to compete with other nearby centres, including Carnes Hill. Currently shoppers and workers need to travel more than 2 kilometres to access local retail. The development of the town centre will allow residents to walk locally to shops rather than increasing vehicular movements.

Business Centres and Corridors Strategy Review 2013

Council carried out a review of its business centres and corridors strategy in 2013. The purpose of the strategy and review was to consolidate the LGA's ability to cater for growth generally in the professional services sector.

The strategies identified by the review were:

1. *Preserve a commercial core area (excluding residential) in the Liverpool CBD for future business, office and retail growth.*
2. *Limit professional office premises to business zones to capitalise on, and concentrate infrastructure and services.*
3. *Establish and maintain Liverpool's Retail Centre Hierarchy.*
4. *Support the expansion of existing retail and business centres in accordance with the adopted Retail Centres Hierarchy 2012.*
5. *Ensure that new centres complement existing centres and do not impact upon their viability.*
6. *Expand start-up business opportunities (and restrict residential) in extended enterprise corridor zones leading into main centres and nodes.*
7. *Support growth of existing bulky goods clusters in accordance with the retail centre hierarchy and limit other locations to serve a district role."*

The planning proposal seeks to establish and extend a local centre, creating a more functional and viable town centre. It will not derogate from Liverpool as a centre but provide appropriate local uses for future residents. These uses will encourage affordability and encourage start-up businesses and local connections. The proposal is consistent with the objectives above.

Further, and as discussed above the Review did not anticipate the development of the Western Sydney Aerotropolis. At 7.5km from the airport, and connected by a rapid transit system at Fifteenth Avenue, Middleton Grange is ideally located to support airport-related industries, businesses and workers. The strategic planning framework within which the 2013 Review was written has therefore significantly changed, with unprecedented growth proposed and occurring in Western Sydney.

The attached PPM Consulting economic response report addresses in detail the Liverpool Retail Centres Hierarchy Review and the Business Centres and Corridors Strategy Review, noting that:

- restricting retail space lowers total factor productivity, thereby making retail products more expensive across the board.
- the *draft Centres Policy: Planning for Retail and Commercial Development* states that new town centres should be able to be established and grow.
- the Harper Reviews conclusions that restrictions of retail and commercial space lead to slower growth, fewer jobs or higher prices.

Community Strategic Plan – Our Home Liverpool 2027

The Liverpool Community Strategic Plan was endorsed in 2017 to define the vision and priorities of the community for the next ten years to 2027. The Plan sets the direction for Council, government, business, the not-for-profit sector and residents and provides a guide for stakeholders to work together and to capitalise on the opportunities which will keep Liverpool moving forward.

The Plan seeks to support the broader strategic planning framework including the Greater Sydney Plan and the Western City District Plan. This is achieved through the Plan's four directions, Creating Connection, Leading through Collaboration, Generating Opportunity and Strengthening and Protecting our Environment, which form the structure for the community's priorities.

The table below considers these key directions:

Direction	Response
1. Creating Connection This direction emphasises the importance of connections within Liverpool to create a harmonious community	The key vision for the Middleton Grange town centre is to connect the community by creating a town centre that provides open spaces and community facilities that foster an inclusive and dynamic environment and creates a sense of place and focal point for residents and visitors to congregate and enjoy. There is no focal point for the community in Middleton Grange and the town centre will be just that, within walking distance for many residents. The Planning Proposal facilitates over 7,000sq.m of open space, with through site links and laneways. The Landscape Plan provides a variety of usable spaces for varying purposes, whether passive or active recreation.
2. Strengthening and Protecting our environment This direction is about planning high-quality, sustainable urban environments to create a great place to live, work and play.	The Planning Proposal is required to reflect the current concept and realign the layout. This is the outcome of an urban design review that sought to create a more logical and permeable town centre, with open spaces and through links. The town centre facilitated by the Planning Proposal directly achieves the key objectives to create more green spaces; to create well-planned, attractive and people friendly urban

	environments; and improve access and safety in public areas for the community.
3. Generating Opportunity This direction underlines the need for Council to support economic growth, including employment and investment options	The town centre has been zoned accordingly since 2005 and unfortunately remained undeveloped. The Planning Proposal now facilitates a new town centre more responsive to the communities needs that responds to the new strategic planning framework for Western Sydney. The town centre is 7.5km from the Western Sydney Economic Corridor and 350 metres from the proposed Fifteenth Avenue Rapid Transit Corridor. It is well located to support jobs, economic growth and small business start up opportunities. The Planning Proposal creates employment space, through new retail, offices, and medical and health facilities and creates a great place to work through the design and open space of the town centre. The centre supports the creation of small businesses by providing office and commercial spaces and has been carefully considered from a traffic management point of view with significant contributions that support the surrounding road network.
4. Leading Through Collaboration This direction highlights the importance of a Council proactively leading the community, while continually engaging the community to ensure an aligned vision.	The Planning Proposal was publicly exhibited from August to October 2018. The community raised a number of concerns while acknowledging the need for a town centre that provides local facilities and services. A number of amendments have been made to the Planning Proposal in response to the communities input, including a reduction in height, a reduction in the number of apartments, the inclusion of medical and health facilities, and doubling the amount of communal open space. A further period of consultation will be undertaken on the revisions.

Table 7: Response to Liverpool Community Strategic Plan Directions

Liverpool Draft Local Strategic Planning Statement

Recent amendments to the Environmental Planning & Assessment Act 1979 require Council's in Sydney to prepare local strategic planning statements (LSPS) which will set out the 20-year vision for land-use in the local area, the special character and values that are to be preserved and how change will be managed into the future.
The statements will implement actions in the regional and district plans, and the council's own priorities in the community strategic plan it prepares under local government legislation.

The *draft Liverpool Local Strategic Planning Statement – Connected Liverpool 2050* has been prepared and was exhibited for 6 weeks from June to August 2019. Connected Liverpool 2050 is the Council's 30 year land use vision for the Liverpool LGA, which will guide development, balancing the need for housing, jobs and services as well as parks, community facilities and the natural environment.

The LSPS lists the planning priorities across four areas, being Connectivity, Productivity, Liveability, and Sustainability. In doing so, it gives effect to the Greater Sydney Region Plan and Western City District Plan and has been informed by the Liverpool Community Strategic Plan discussed above.

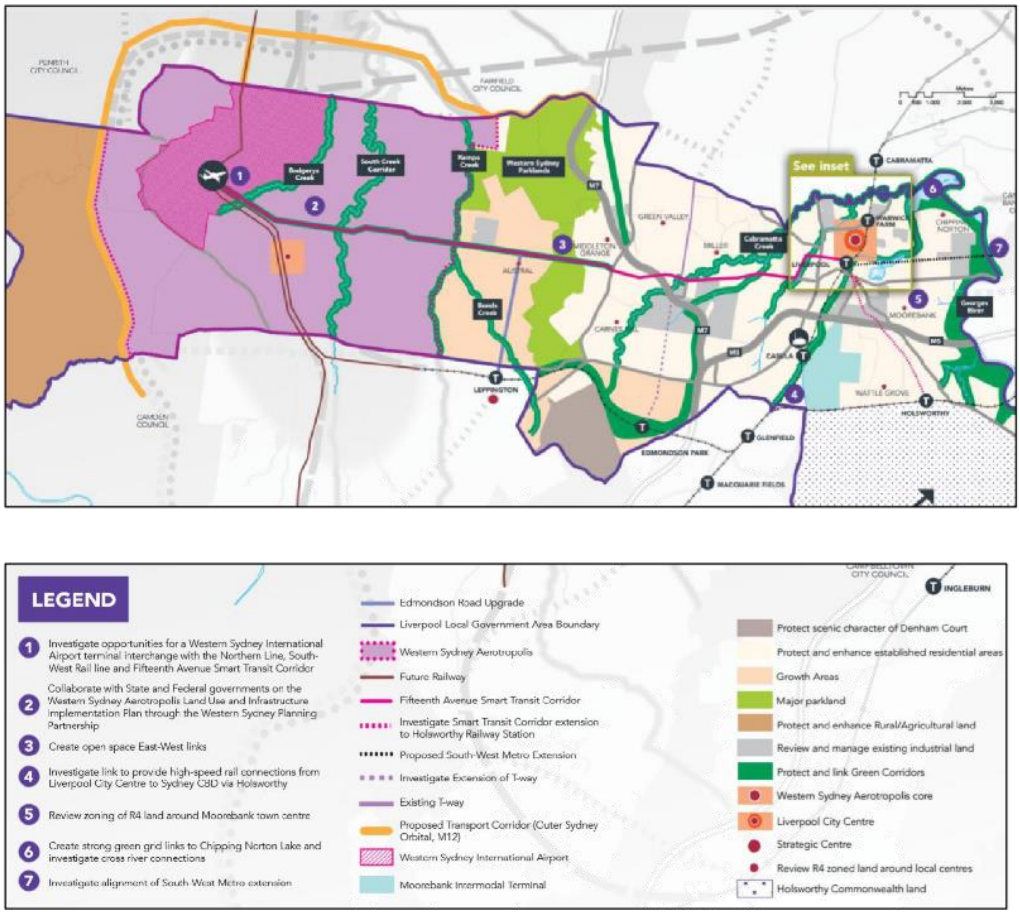


Figure 26: Draft Liverpool LSPS Structure Plan

Council's flagship project is the Fifteenth Avenue Smart Transit Corridor, which "uses electric, autonomous technology to seamlessly connect residents to the vast commercial and industrial employment opportunities provided by *Western Sydney International Airport, while spurring sustainable transit- and landscape-oriented development along its route*".

The Planning Proposal facilitates the development of the Middleton Grange town centre. It is located less than 350 metres from the Fifteenth Avenue Smart Transit Corridor connecting Middleton Grange to the Liverpool metropolitan centre, the Western Sydney Airport, and the Economic Corridor.

The Planning Proposal realigns zone boundaries to create a more connected and accessible town centre, increases the amount of open space considerable, and provides a slight increase in accommodation. Further, the Planning Proposal seeks to support the delivery of important health and medical facilities, services and goods for the local community, and jobs and business start up space creating new opportunities for existing and future residents.

Through the concept proposed for the town centre, the location in relation to transport, and the emerging strategic planning framework, the Planning Proposal seeks to achieve the following in accordance with the Liverpool LSPS:

- An accessible and connected suburb;
- A vibrant, mixed-use and walkable town centre;
- High-quality, plentiful and accessible community facilities, open space and infrastructure in a growth area;
- Housing choice for different needs, with density focused in the Middleton Grange town centre, with good access to the Fifteenth Avenue Smart Transit Corridor;
- A safe, healthy and inclusive place shaping the wellbeing of the Liverpool community;
- An attractive environment for local jobs, business, tourism and investment; and
- A green, sustainable, resilient and water-sensitive town centre.

5. Is the planning proposal consistent with applicable State Environmental Planning Policies?

The consistency of this Planning Proposal with applicable State Environmental Planning Policies (SEPPs) is outlined in Table 8 below.

ASSESSMENT AGAINST SEPPS	
State Environmental Planning Policy	**Comment**
SEPP No 1—Development Standards	Consistent
SEPP No 14—Coastal Wetlands	N/A
SEPP No 19—Bushland in Urban Areas	N/A
SEPP No 21—Caravan Parks	N/A
SEPP No 26—Littoral Rainforests	N/A
SEPP No 30—Intensive Agriculture	N/A
SEPP No 33—Hazardous and Offensive Development	N/A
SEPP No 36—Manufactured Home Estates	N/A
SEPP No 44—Koala Habitat Protection	N/A
SEPP No 47—Moore Park Showground	N/A
SEPP No 50—Canal Estate Development	N/A
SEPP No 52—Farm Dams and Other Works in Land and Water Management Plan Areas	N/A

SEPP No 55—Remediation of Land	In accordance with clause 6 of SEPP No. 55, a planning authority is to consider whether the land to which a planning proposal relates is contaminated, and if the land is contaminated, the planning authority is satisfied that the land is suitable or will be suitable after remediation for the purposes for which the land is proposed to be used. The potential for contamination across the site is considered low and is unlikely to prevent the planning and development of land for the proposed uses. Further assessment will be undertaken at DA stage.
SEPP No 62—Sustainable Aquaculture	N/A
SEPP No 64—Advertising and Signage	Consistent
SEPP No 65—Design Quality of Residential Flat Development	This planning proposal envisages residential flat buildings on the site. The detailed design of future buildings will be subject to the provisions of the Apartment Design Guide (ADG) at the DA stage. The concepts presented in the Urban Design Report comply with the principles and objectives set out in the ADG, particularly in regard to building separation distances, privacy and solar access.
SEPP No 70—Affordable Housing (Revised Schemes)	Consistent
SEPP No 71—Coastal Protection	N/A
SEPP (Affordable Rental Housing) 2009	Consistent
SEPP (Building Sustainability Index: BASIX) 2004	Consistent
SEPP (Exempt and Complying Development Codes) 2008	Consistent
SEPP (Housing for Seniors or People with a Disability) 2004	Consistent
SEPP (Infrastructure) 2007	Consistent
SEPP (Integration and Repeals) 2011	Consistent
SEPP (Kosciuszko National Park— Alpine Resorts) 2007	N/A
SEPP (Kurnell Peninsula) 1989	N/A
SEPP (Major Development) 2005	N/A
SEPP (Mining, Petroleum Production and Extractive Industries) 2007	N/A
SEPP (Miscellaneous Consent Provisions) 2007	Consistent
SEPP (Penrith Lakes Scheme) 1989	N/A
SEPP (Rural Lands) 2008	N/A
SEPP (State and Regional Development) 2011	N/A
SEPP (State Significant Precincts) 2005	N/A
SEPP (Sydney Drinking Water Catchment) 2011	Consistent
SEPP (Sydney Region Growth Centres) 2006	Consistent
SEPP (Three ports) 2013	N/A

SEPP (Urban Renewal) 2010	Consistent
SEPP (Western Sydney Employment Area) 2009	N/A
SEPP (Western Sydney Parklands) 2009	N/A

Table 8: Consistency with SEPPs

6. Is the planning proposal consistent with applicable Ministerial Directions (s.9.1 directions)?

This Planning Proposal has been assessed against each relevant Section 9.1 Direction. Consistency or otherwise is addressed in Table 9 below.

ASSESSMENT AGAINST SECTION 9.1 DIRECTIONS		
No.	**Title**	**Comment**
1.	**Employment and Resources**	
1.1	Business and Industrial Zones	The proposal provides for new job-generating land uses that will include retail, recreation, commercial and medical uses. The subject site is currently zoned for employment opportunities and this proposal seeks to extend the area of land available for employment uses. The site is in proximity to major access routes including Cowpasture Road, M7 Motorway and the Fifteenth Avenue Smart Transit Corridor. The planning proposal seeks to enhance an already zoned centre (i.e. Middleton Grange Town Centre) in close proximity to the Western Sydney Aerotropolis and Economic Corridor that wasn't identified when the site was originally zoned. The planning proposal is consistent with the objectives of this direction.
1.2	Rural Zones	N/A
1.3	Mining, Petroleum Production and Extractive Industries	N/A
1.4	Oyster Aquaculture	N/A
1.5	Rural Lands	N/A
2.	**Environment and Heritage**	
2.1	Environment Protection Zones	N/A
2.2	Coastal Protection	N/A
2.3	Heritage Conservation	Consistent. No impact on heritage items.
2.4	Recreation Vehicle Areas	N/A
2.5	Application of E2 and E3 Zones and Environmental Overlays in Far North Coast LEPs	N/A
3.	**Housing Infrastructure and Urban Development**	
3.1	Residential Zones *The objectives of this direction are:*	The proposal is consistent with this objective. It provides housing choice and meets future housing needs within a local centre in a high growth area of

	(a) to encourage a variety and choice of housing types to provide for existing and future housing needs, *(b) to make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services,* *(c) to minimise the impact of residential development on the environment and resource lands.*	Sydney. It represents an efficient and effective use of infrastructure and will attract new infrastructure and services to benefit the broader population. The site will be developed in an integrated fashion meaning that impacts can generally be managed within the overall site. The building heights are proposed to transition to respect the allowable heights of adjoining lands.
3.2	Caravan Parks and Manufactured Home Estates	N/A
3.3	Home Occupations	Consistent
3.4	Integrating Land Use and Transport (1) *The objective of this direction is to ensure that urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve the following planning objectives:* *(a) improving access to housing, jobs and services by walking, cycling and public transport, and* *(b) increasing the choice of available transport and reducing dependence on cars, and* *(c) reducing travel demand including the number of trips generated by development and the distances travelled, especially by car, and* *(d) supporting the efficient and viable operation of public transport services, and* *(e) providing for the efficient movement of freight.*	The Planning Proposal is consistent with these objectives. It provides for the development of Middleton Grange Town Centre which will provide improved access to housing, jobs and health and community services by walking, cycling and public transport. Mixed uses will allow for multi-purpose trips by visitors and residents. The site is located in proximity to the local bus network and the proposed Fifteenth Avenue Smart Transit Corridor. Employment uses near housing directly supports the objectives of placing homes near to jobs.
3.5	Development Near Licensed Aerodromes	N/A
3.6	Shooting Ranges	N/A
4.	**Hazard and Risk**	
4.1	Acid Sulfate Soils	
4.2	Mine Subsidence and Unstable Land	N/A
4.3	Flood Prone Land *The objectives of this direction are:* *(a) to ensure that development of flood prone land is consistent with the NSW*	The site is partially flood prone and comments from the State Emergency Service (SES) have been sought as a part of the previous agency consultation process. The SES recommended that an assessment of the

	Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005, and *(b) to ensure that the provisions of an LEP on flood prone land is commensurate with flood hazard and includes consideration of the potential flood impacts both on and off the subject land.*	flood risk of the site be undertaken so that a proper assessment can be carried out. It suggested: • Zoning should not enable development that will result in an intolerable increase in risk to life, health or property of people living on the flood plain. • Risk assessment should consider the full range of flooding, including events up to the Probable Maximum Flood (PMF) and not focus only on the 1% AEP flood. • Risk assessment should have particular regard to flooding warning and evacuation demand on existing and future access/egress routes. Consideration should also be given to the impacts of localised flooding on evacuation routes. • In the context of future development, self-evacuation of the community should be achieved in a manner should be achieved in a manner which is consistent with the NSW SES's principles for evacuation. • Future development must not conflict with the NSW SES's flood response and evacuation strategy for the existing community. • Evacuation must not require people to drive or walk through flood water. • Development strategies relying on an assumption that mass rescues may be possible where evacuation either fails or is not implemented are not acceptable to the NSW SES. • The NSW SES is opposed to the imposition of development consent conditions requiring flood evacuation plans rather than the application of sound land use planning and flood risk management. Due to portions of the site being below the Probable Maximum Flood (PMF) level, the Office of Environment and Heritage (OEH) raised similar issues. The OEH suggested that a Flood Study be undertaken for both existing and developed conditions. Specifically, it should comprise: • A comprehensive understanding of the flood risk to people and properties for the full range of the floods up to and including the PMF event for existing and future conditions. • An assessment of the impact of the proposal on the existing flood behaviour including any potential reduction of floodway and flood storage areas or redistribution of flow which may result in increasing

		of flood levels on adjacent, downstream or upstream areas. • Identification of appropriate mitigation measures, if necessary, to offset potential flood risk arising from the project. Any proposed mitigation work should be modelled and assessed on an overall catchment basis in order to ensure it fits its purpose and meets criteria of the Council where it is located. This will help ensure that the proposal has no adverse impact on surrounding areas. • An assessment of the impacts of earthworks and filling around the flood prone land up to the PMF level. The assessment should be based on understanding the cumulative flood impacts of various development within the catchment. The proposal should ensure that any filling is limited to flood fringe areas identified in accordance with the Floodplain Development Manual (2005). • A sensitivity analysis to determine the potential impacts from climate change on flooding behaviour. • An emergency response plan should be prepared in consultation with the State Emergency Service (SES) Regional Controller in order to manage floods and overland flow above the flood planning level. This plan should include an assessment of the flood evacuation needs to ensure that risk to people is minimised. A flooding and stormwater management Strategy has been prepared (August 2017) by J. Wyndham Prince and is attached. The Strategy has been prepared to further assess the flood impacts of a section of the Southern Creek within Middleton Grange. In relation to the SES submission, the Strategy notes: "*the site is located well clear of regional flooding and based on contours in the area, evacuation could easily occur towards a higher area with a rising grade. On this basis, we note that many of SES's comments in their letter to Liverpool City Council, dated 10th February 2017, are not applicable to the site and are therefore satisfied*". In relation to the OEH submission, the Strategy also notes: • *1% AEP and PMF results of flooding are provided in Appendix B* • *Flood Impacts are provided in Appendix B and show no impact to the surrounding properties.*

		• *It is noted that no mitigation works are required to support this development since there is no impact on surrounding areas.* • *The site is not located in flood prone land from Cabramatta Creek (Bewsher 2011) and therefore does not affect flood storage nor require compensatory works.* Further, on 12 January 2018, Council staff confirmed that it is "*generally satisfied with the flood impact assessment report and flood mapping*". Therefore, for the purposes of Section 9.1 Direction 4.3, the Planning Proposal has satisfied the condition of the Gateway determination.
4.4	Planning for Bushfire Protection	N/A
5.	**Regional Planning**	
5.1	Implementation of Regional Strategies	Consistent
5.2	Sydney Drinking Water Catchments	Consistent
5.3	Farmland of State and Regional Significance on the NSW Far North Coast	N/A
5.4	Commercial and Retail Development along the Pacific Highway, North Coast	N/A
5.8	Second Sydney Airport: Badgerys Creek	N/A
5.9	North West Rail Link Corridor Strategy	N/A
5.10	Implementation of Regional Plans	N/A
6.	**Local Plan Making**	
6.1	Approval and Referral Requirements	
6.2	Reserving Land for Public Purposes *The objectives of this direction are:* *(a) to facilitate the provision of public services and facilities by reserving land for public purposes, and* *(b) to facilitate the removal of reservations of land for public purposes where the land is no longer required for acquisition.*	The Planning Proposal removes the reservation of land for "community facilities" and "public open space". The removal will allow the Town Centre and associated infrastructure (including road network) to be constructed in a logical format that reflects the site boundaries. Importantly, the proposal does not result in a reduction of public open space or community facilities. A 500m2 community facility is located at the western area of the site. Land reserved for public open space is proposed to be rezoned RE1 Public Recreation.
6.3	Site Specific Provisions	None provided. A letter of offer was issued to Council for the additional open space on 18 September 2019. This will lead to the consideration of a VPA for its development and use at future development application stages.

7. Metropolitan Planning		
7.1	Implementation of A Plan for Growing Sydney	The Planning Proposal has included a detailed assessment against the Greater Sydney Plan and the Western City District Plan. The site was originally zoned for the proposed purpose in 2005 supporting with the Middleton Grange town centre supporting approximately 580 to 630 dwellings. The planning proposal slightly amends the planning controls for the town centre, in conjunction with zoning realignments, to provide for approximately 671 dwellings; a small increase in conjunction with the strategic planning framework which has significantly changed the context for growth in Greater Western Sydney.
7.2	Implementation of Greater Macarthur Land Release Investigation	N/A
7.3	Parramatta Road Corridor Urban Transformation Strategy	N/A
7.4	Implementation of North West Priority Growth Area Interim Land Use and Infrastructure Plan	N/A
7.5	Implementation of Greater Parramatta Priority Growth Area Interim Land Use and Infrastructure Implementation Plan	N/A
7.6	Implementation of Wilton Priority Growth Area Interim Land Use and Infrastructure Implementation Plan	N/A
7.7	Implementation of Glenfield to Macarthur Urban Renewal Corridor	N/A

Table 9: Consistency with Section 9.1 Directions

Section C – Environmental, social and economic impact

7. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

The site presently comprises five dwelling houses and ancillary structures and has very little vegetation. The site does not contain any critical habitat for threatened species, populations or significant ecological communities.

8. Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

Flooding

The site is partially flood prone. The Gateway determination issued by the delegate of the Greater Sydney Commission on 15 August 2016, included the following condition in relation to flooding:

1. *In relation to s117 Direction 4.3* (now 9.1) *Flood Prone Land, prior to public exhibition, Council is required to:*
   a. *Undertake and provide relevant flood studies that demonstrate consistency with this Direction; and*
   b. *Include a Flood Planning Area Map in the proposal.*

Subsequently a Flooding Report was prepared by J.Wyndham Price, which addresses the s9.1 demonstrating the suitability of the site and further assess the flood impacts of a section of the Southern Creek within Middleton Grange.

A trunk drainage culvert was previously approved by Liverpool Council (11 July 2008, CCE-31/2008) in 2008. However, since this time the design rationale for the town centre has changed and evolved to create a better outcome, which involves the 'piping' of the drainage channel rather than an open channel. The piping of this channel will allow significant land to be used as part of the town centre open space.

J. Wyndham Prince previously completed a simplified, one dimensional flow analysis in May 2017. The attached assessment is a more sophisticated, two dimensional (TUFLOW) model to further interrogate the flooding impacts. The Study concludes:

- *"TUFLOW modelling results show that the proposed piping of the channel will result in an improved outcome for the town centre, as the proposed open channel no longer provides an appropriate means of conveying flows through the Town Centre due to a modification in the assumed catchment conditions. The allocated land will be used in the public interest, and will be a better use of the space for the community than the open channel."*
- *"It is noted that no mitigation works are required to support this development since there is no impact on surrounding areas".*

Further, as per the Gateway determination the State Emergency Service (SES) and the Office of Environment and Heritage (OEH) were consulted.

The SES recommended that an assessment of the flood risk of the site be undertaken so that a proper assessment can be carried out. It suggested:

- Zoning should not enable development that will result in an intolerable increase in risk to life, health or property of people living on the flood plain.
- Risk assessment should consider the full range of flooding, including events up to the Probable Maximum Flood (PMF) and not focus only on the 1% AEP flood.
- Risk assessment should have particular regard to flooding warning and evacuation demand on existing and future access/egress routes. Consideration should also be given to the impacts of localised flooding on evacuation routes.
- In the context of future development, self-evacuation of the community should be achieved in a manner should be achieved in a manner which is consistent with the NSW SES's principles for evacuation.
- Future development must not conflict with the NSW SES's flood response and evacuation strategy for the existing community.
- Evacuation must not require people to drive or walk through flood water.
- Development strategies relying on an assumption that mass rescues may be possible where evacuation either fails or is not implemented are not acceptable to the NSW SES.
- The NSW SES is opposed to the imposition of development consent conditions requiring flood evacuation plans rather than the application of sound land use planning and flood risk management.

OEH also raised similar issues. The OEH suggested that a Flood Study be undertaken for both existing and developed conditions. Specifically, it should comprise:

- A comprehensive understanding of the flood risk to people and properties for the full range of the floods up to and including the PMF event for existing and future conditions.
- An assessment of the impact of the proposal on the existing flood behaviour including any potential reduction of floodway and flood storage areas or redistribution of flow which may result in increasing of flood levels on adjacent, downstream or upstream areas.
- Identification of appropriate mitigation measures, if necessary, to offset potential flood risk arising from the project. Any proposed mitigation work should be modelled and assessed on an overall catchment basis in order to ensure it fits its purpose and meets criteria of the Council where it is located. This will help ensure that the proposal has no adverse impact on surrounding areas.
- An assessment of the impacts of earthworks and filling around the flood prone land up to the PMF level. The assessment should be based on understanding the cumulative flood impacts of various development within the catchment. The proposal should ensure that any filling is limited to flood fringe areas identified in accordance with the Floodplain Development Manual (2005).
- A sensitivity analysis to determine the potential impacts from climate change on flooding behaviour.
- An emergency response plan should be prepared in consultation with the SES Regional Controller in order to manage floods and overland flow above the flood planning level. This plan should include an assessment of the flood evacuation needs to ensure that risk to people is minimised.

A flooding and stormwater management Strategy has been prepared (August 2017) by J. Wyndham Prince and is attached. The Strategy has been prepared to further assess the flood impacts of a section of the Southern Creek within Middleton Grange.

In relation to the SES submission, the J.Wyndham Price Study notes:

"*the site is located well clear of regional flooding and based on contours in the area, evacuation could easily occur towards a higher area with a rising grade. On this basis, we note that many of SES's comments in their letter to Liverpool City Council, dated 10th February 2017, are not applicable to the site and are therefore satisfied*".

In relation to the OEH submission, the Study also notes:

- *1% AEP and PMF results of flooding are provided in Appendix B*
- *Flood Impacts are provided in Appendix B and show no impact to the surrounding properties.*
- *It is noted that no mitigation works are required to support this development since there is no impact on surrounding areas.*
- *The site is not located in flood prone land from Cabramatta Creek (Bewsher 2011) and therefore does not affect flood storage nor require compensatory works.*

Finally, on 12 January 2018, Council staff confirmed that it is "*generally satisfied with the flood impact assessment report and flood mapping*".

9. Has the planning proposal adequately addressed any social and economic effects?

Economic Impacts

An economic analysis was undertaken by MacroPlan Dimasi in June 2015 as part of the original Planning Proposal. That analysis demonstrated that there would be no adverse impact on the roles and functions of the higher order centres in the region, noting that local centres serve local residents. This ensures that no significant impact will occur on other local shops nearby. Certain community services may have a larger catchment but new services are positive to all residents in these catchments.

The analysis also identified the following general benefits:

- Reduced travel distances for current and future residents accessing retail uses, local amenities and community and entertainment uses.
- Additional retail choice and competition.
- Improved housing choice and improved affordability.
- Improved job access for future residents of the Middleton Grange town centre.
- Increased investment into the Liverpool LGA.
- Supporting local council strategic plans and policies which outline a need for additional retail and commercial floor space across the Liverpool LGA and identify Middleton Grange as a key town centre within the centres hierarchy.

The Economic Assessment provided an assessment of the trade area and catchment served by the centre. It looked at the need and demand for employment generating uses, provided an overview of the hierarchy of centres and an assessment of economic and community benefits.

A supplementary report was also prepared by PPM Consulting that analysed the impact of a lower FSR at Middletown Grange Town Centre. The report outlined the consequences of a reduction in FSR, and noted that If the project is made unviable, it will not produce any of the benefits outlined in the MacroPlan Dimasi report. This includes retail choice, housing cost, choice and affordability, and a VPA worth between $15 million and $20 million. The FSR has been revised but achieves the same GFA of around 112,000sq.m to ensure the viability of the project.

As discussed throughout, the Planning Proposal has been amended following in August-October 2018, which has included a reduction in height, a reduction in apartment numbers, an increase in the amount of open space and the inclusion of health and medical facilities for the community.

As part of the revised Planning Proposal PPM Consulting were requested to provide an economic response to submissions to the Planning Proposal, being the 'Sue Weatherly and Associates Report' and the 'Urbis Report'. The PPM Consulting response report is attached.

Social Impacts

A detailed Social Impact Assessment (SIA) was is prepared by Judith Stubbs & Associates in 2016 in support of the Planning Proposal. The findings of that study established key social impacts and made appropriate recommendations. The Assessment concluded:

> *"There are likely to be a range of positive benefits associated with the proposal to amend controls and with the development as proposed, including the opportunity to address the current lack of baseline services in Middleton Grange.*
>
> *A number of potential adverse impacts have also been identified. Most of these are able to be mitigated through good urban design in detailed planning stages, the provision of relevant services and facilities, and other mitigations proposed in this report.*
>
> *Significant additional benefit to the local and wider community could be provided through partnering with Council to address backlog issues such as lack of connectivity, very poor amenity in the public domain, lack of basic services, provision of attractive meeting spaces throughout the development, improved urban and social integration between the existing and proposed developments, and a direct and indirect contribution to affordable housing."*

Following the issuing of the Gateway determination in August 2016 and public exhibition in August-October 2018, a number of amendments have been made to the planning proposal, including a reduction in height, a reduction in apartment numbers, an increase in the amount of open space and the inclusion of health and medical facilities for the community.

As part of the revised Planning Proposal Judith Stubbs and Associates were requested to respond to a review of the SIA undertaken by Elton Consulting on behalf of Charter Hall. Charter Hall (via two investment funds) is the owner and operator of Carnes Hill Market Place. The Review is attached and concludes that only one of Elton Consulting's conclusions is substantive, being that the 2016 SIA did not contain an outline of the methodology used to conduct the CSIA as required by Section 9.1 of Council's Social Impact Assessment Policy. This omission is addressed in Section 2.2 of the report attached.

The report also concludes:

> *"Elton Consulting has a fundamental misunderstanding of the SIA process in stating that the findings within the JSA SIA do not adequately support the development of a much larger town centre than is already proposed.46 The author does not appear to understand the requirements of Section 4.15(1)(b) of the Environmental Planning and Assessment Act 1979. This section requires the consent authority to consider the "likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality", rather than some alternative development. One of the purposes of Social Impact Assessment is to identify potential social impacts associated with the development and recommend appropriate mitigation. The degree to which mitigation is taken up or not is a matter for the consent authority in discharging their duty under Section 4.15(1)(b) of the Act.*
>
> *Liverpool Social Impact Assessment Policy states (at section 7.3.1) that "A CSIA is an in-depth assessment of the potential social impacts of a development proposal." Mitigation measures are required under section 9.5. An SIA is not a* ***justification or a support*** *of the proposal."*

Section D – State and Commonwealth interests

10. Is there adequate public infrastructure for the proposal?

Public Transport

Middleton Grange is currently served by bus route 853. This service links Carnes Hill and Liverpool via Middleton Grange and Hoxton Park Road. It operates along Flynn Avenue, immediately south of the site. This bus route takes less than 30mins to reach to Liverpool metropolitan cluster.

Further, the proposed Fifteenth Avenue rapid transit route that connects Liverpool to the Western Sydney Aerotropolis is less than 350 metres away. This transit route was not identified when the site was originally zoned in 2005 for up to 630 dwellings. The context for the site has therefore changed and will connect future residents to opportunities in Liverpool and the Aerotropolis, while also providing opportunities from elsewhere with Middleton Grange.

Traffic

When the suburb of Middleton Grange was rezoned in 2005, there was an expectation that the suburb would develop to accommodate 10,000 residents, of which some would have been accommodated in the dwellings that would be located in the town centre, which would have been up to 626 under the current controls.

Further, and as previously discussed, the principle purpose of the planning proposal was to realign zone boundaries to reflect the revised lot layout which was registered after the layout received consent in 2015. The proposal also supports the concept site layout including roads, new open space and access arrangements. The previous zoning and masterplan for the site, was not conducive to a logical development outcome including building and roads orientation and in 2015, under agreement, the 2005 road layout was dispensed with by the council.

The Gateway determination issued by the Department of Planning and Environment in August 2016 required consultation with RMS and Transport for NSW prior to public exhibition.

The planning proposal was supported by a Traffic Impact Assessment prepared by TRAFFIX. The assessment was undertaken to assess the traffic impacts and understand the infrastructure required to support the future development of the town centre.

To understand existing conditions, TRAFFIX developed a base case traffic model approved by RMS and assessed five (5) scenarios using the Aimsum model. The modelling found some delays under existing conditions, particularly to roundabouts along Kingsford Smith Avenue and north-bound along Cowpasture Road in the AM peak and south-bound on Cowpasture Road in the PM peak.

All scenario testing was therefore undertaken on the assumption of partial road widening of Cowpasture Road as well as additional right turn lanes at the intersection of Cowpasture Road and Fifteenth Avenue and Sixteenth Avenue; the connection of Middleton Drive and Aviation Road under the M7; and the conversion of the one lane left turn to a two-lane signalised left turn from Sixteenth Avenue to Cowpasture Road, which result in a reduction in traffic delays. See below diagrams that illustrate the TRAFFIX recommendations.



Figure 27: Proposed changes to Kingsford Smith/Fifteenth Avenue



Figure 28: Proposed changes to Cowpasture Road and Fifteenth Avenue



Figure 29: Proposed changes to Cowpasture Road and Sixteenth Avenue

The TRAFFIX report concluded that under the scenario of future growth and trips generated by the development of the Middleton Grange town centre, noting the substantial development that has already occurred in accordance with the 2005 rezoning, the road network could operate satisfactorily with a number of roads network improvements. These included:

- Connection of Middleton Drive & Aviation Road under the M7,
- Sixteenth Avenue with two-lane signalised left turn to Cowpasture Road,
- Conversion of Roundabout at Kingsford Smith/ Fifteenth Avenue to a signalised intersection,
- Conversion of Roundabout at Kingsford Smith/ Flynn Avenue to a signalised intersection,
- Fifteenth Avenue with two lane right turn to Cowpasture Road,
- No right turn from Sixteenth avenue (Flynn Avenue) to Qantas Boulevard, except Buses,
- Three-Lane Cowpasture Northbound from Fifteenth Avenue to above Airfield Drive, and
- Three-Lane Cowpasture Southbound from M7 to Sixteenth Avenue.
- Addition of development access roads; and
- Two-Lane East Bound at Sixteenth Avenue (Flynn Avenue) in the vicinity of the Site

On 11 December 2017, RMS confirmed that it "*raises no objection to the planning proposal being placed on exhibition provided that any identified and agreed regional road and transport infrastructure to support the proposal is incorporated into a planning agreement between the proponent and Liverpool City Council prior to the gazettal of the draft LEP*".

Noting the RMS advice of 11 December 2017, the RMS support hinged on the advancement of a planning agreement being reached to support the regional road and transport infrastructure.

In this context, it is worth noting that when the suburb of Middleton Grange was rezoned in 2005, there was an expectation that the suburb would develop to accommodate 10,000 residents, of which some would have

been accommodated in the potential 600 plus dwellings that the town centre is capable of supporting under the current controls.

In rezoning the suburb of Middleton Grange, there would also have been a need to progressively upgrade infrastructure and the local road network to accommodate the gradual growth in population. Therefore, the development of the Middleton Grange town centre is not wholly responsible for the existing traffic conditions or those that could be expected from the future development.

To facilitate an appropriate response to the RMS requirement a considered study has been undertaken of the relevant s.7.11 infrastructure plan and works in kind policy that applies to Middleton Grange. The assessment results in a proposed offer to be made from the applicant; the details of which are considered in more detail below under the public infrastructure contributions section.

Further to the above, a modification to Middleton Drive and the local road network has subsequently been made in the revised concept.

As more detailed planning has occurred for the key retail centre at the southern part of the town centre, it was identified that larger footprints were required to accommodate future retail tenants. This has resulted in the removal of the bottom half of Middleton Drive and replaced with a single level retail use, that also creates a through link connecting the centre of the site to Flynn Avenue. This has been advanced in consultation with the Council staff and the proponents traffic consultant to ensure the traffic movement and access is acceptable.

The main street has been relocated to the west (i.e. 21.4 metres) and Middleton Drive becomes a local access street (i.e. 17.4 metres), connecting through to Qantas Blvd. In doing so, the connection between the two public open spaces is strengthened, as a consequence of the lower volume street which is further enhanced by traffic calming measures and shared spaces.

In conjunction with the removal of the bottom half of Middleton Drive, the northern block (Lot 4) has been broken up to create new pedestrian laneways with activated frontages to improve moveability and create diverse and innovative spaces for residents of Middleton Grange.

Additional Traffic and AIMSUN Modelling to align with revised Planning Proposal

Further, as a consequence of the reduction in the number of apartments and the new medical and health facilities, a new Traffic Assessment Report has been prepared by Lyle Marshall & Partners. The Assessment is included at Appendix D, which includes a detailed investigative Modelling report prepared Bitzios Consulting using AIMSUN which reflects all proposed road infrastructure changes and the influence of future public transport infrastructure and the projected land use changes to the year 2030.

The proposed infrastructure upgrades associated with the development of the town centre were included in the AIMSUN scenario testing, with some of these previously identified in the Traffic Impact Assessment prepared by TRAFFIX (September 2017) discussed above. The planned and proposed infrastructure upgrades are discussed in Section 7 of the attached Traffic Impact Assessment (October 2019) prepared by Lyle Marshal & Partners, with an extract of the infrastructure upgrades illustrated diagrammatically in Figure 30 below.

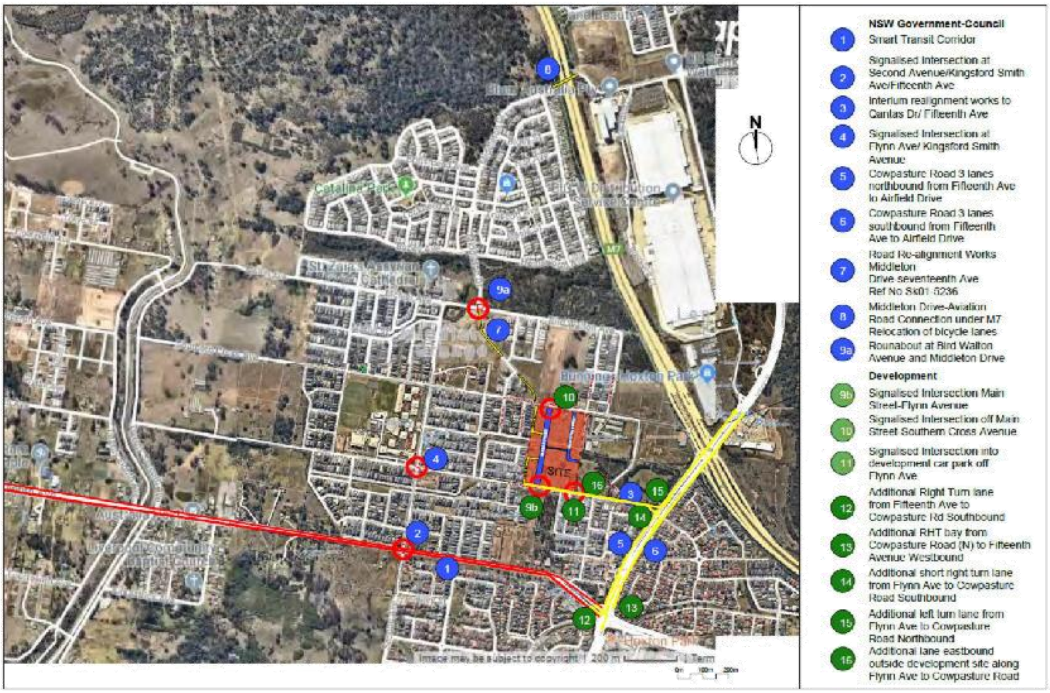


Figure 30: Middleton Grange Infrastructure upgrades

There are two Council/Government initiatives which had not been included in the modelling prepared by Traffix (Traffic Impact Assessment report reference No 16.068r04v01 dated September 2017) which have been included in the Lyle Marshall & Partners Traffic Impact Assessment and Bitzios modelling report.

In the Traffix Traffic Impact Assessment the development access roads are all give way priority roads and there is no signalised intersections as detailed on pages 48-52. This would result in higher road speeds and difficulties with pedestrian access. Signalising the access development roads allows for pedestrian access and will reduce speeds upon approaches to the town centre. This is supported in the AIMSUN modelling.
A summary table is below:

Proposed Infrastructure Council and NSW Government Initiatives		Traffix TIA	LMP-Bitzios
1	Smart Transit Corridor. Additional lanes east and westbound. Separated Bus Lane eastbound and westbound.	No	Yes
2	Signalised Intersection at Second Avenue/Kingsford Smith Avenue/Fifteenth Avenue	Yes	Yes
3	Interium re-alignment works to Qantas Dr/Fifteenth Ave. A copy of the Interium works	No	Yes
	No Right Turn into Qantas Boulevarde from Flynn Avenue except for Buses	Yes	No
4	Signalised Intersection at Flynn Ave/Kingsford Smith Avenue	Yes	Yes

5	Cowpasture Road 3 lanes northbound from Fifteenth Ave to Airfield Drive	Yes	Yes
6	Cowpasture Road 3 lanes southbound from Fifteenth Ave to Airfield Drive	Yes	Yes
7	Road Re-alignment Works Middleton Drive-seventeenth Ave Ref No Sk01-5236	No	Yes
8	Middleton Drive-Aviation Road Connection under M7. Relocation of bicycle lanes	Yes	Yes
9a	Roundabout at Bird Walton Avenue and Middleton Drive.	No	Yes
Proposed Infrastructure For Development			
9b	Signalised Intersection Main Street-Flynn Avenue	No	Yes
10	Signalised Intersection at Main Street and Southern Cross Avenue (Hall Circuit).	No	Yes
11	Signalised Intersection into development car park Shawe Lane off Flynn Avenue (Hall Circuit).	No	Yes
12	Additional Right Turn lane from Fifteenth Ave to Cowpasture Rd Southbound.	Yes	Yes
13	Additional Right Turn lane from Cowpasture Road (N) to Fifteenth Avenue Westbound	Yes	Yes
14	Additional short right turn lane from Flynn Ave to Cowpasture Road Southbound.	Yes	Yes
15	Additional left turn lane from Flynn Ave to Cowpasture Road Northbound	Yes	Yes
16	Additional Eastbound lane across Development Site in Flynn Avenue to Cowpasture Road.	Yes	Yes
	Additional Right Turn lane from Cowpasture Road to Flynn Avenue (Sixteenth Avenue) Westbound	Yes	No

Table 10: Difference between the TRAFFIX and Bitzios proposed infrastructure upgrades

The Traffic Modelling Assessment prepared by Bitzios assessed three scenarios using the AIMSUN modelling. This included a '2030 Do Minimum'; a '2030 With LEP Development'; and '2030 With Proposed Development'.

The AIMSUN modelling and Bitzios Report concluded as follows:

- *The "2030 with LEP development" was tested based on the current LEP and including identified Council and State Government Infrastructure upgrades. This scenario showed that under these conditions the network was constrained and operating at near capacity.*
- *The "2030 with proposed development" modelling demonstrates that with the development's proposed road network upgrades that the network will operate with spare capacity.*
- *The "2030 with proposed development" modelling generally demonstrates a reduction in travel time and an improvement in level of service for the key intersections across the network compared to the "2030 Do Minimum" and "2030 with LEP development" scenarios.*

Public Infrastructure Contributions

The proponent will be liable to pay approximately $24.7 million in s7.11 contributions to Liverpool City Council. These contributions are to cover the proponent's proportion of the total Middleton Grange infrastructure plan, which totals approximately $65.4 million. The proponent is therefore paying for approximately 38 per cent of the planned local infrastructure, which includes local roads, recreation facilities, water cycle management and a contribution towards council's administration of the plan.

The 38 per cent is in proportion to the proponent's share of the total Middleton Grange masterplanned area. Table 11 shows that the masterplanned area is 152,000m^2, with the proponent taking up 57,265m^2 of this.

Site Area (m^2)	**57,265**
Masterplanned Area (m^2)	152,000
Site as proportion of total masterplanned area (%)	38

Table 11: Proposal in Proportion to Middleton Grange Masterplan

The infrastructure plan for Middleton Grange consists of the high-level items outlined in Table 12.

	Land ($)	Works ($)	Total ($)
Multi-purpose Community Centre	124,000	1,816,435	
Recreation Facilities	17,587,466	5,734,054	
Transport	3,383,630	9,676,693	
Water Cycle	15,724,947	7,555,328	
Admin, etc		3,844,500	
Total	36,820,043	28,617,010	65,447,053

Table 12: Middleton Grange Masterplan Infrastructure Works

Land and works for the plan come to $65.4 million.

State Roads

There are three state roads on the list of roads. These are shown at Table 13.

Upgrade Location	Upgrade Type	Area (m^2)	Cost ($)
➢ **Connection of Middleton Drive & Aviation Road under the M7**	grade separated	1,000	764,000
➢ **Three-Lane Cowpasture Northbound from Fifteenth Avenue to above Airfield Drive**	at grade	5,115	3,401,475
➢ **Three-Lane Cowpasture Southbound from M7 to Sixteenth Avenue.**	at grade	2,244	1,714,416
Total State Roads			5,879,891

Table 13: State Roads Upgrades

The, traffic studies show that, had RMS upgraded the state roads as scheduled, the traffic impact from the Planning Proposal would have been negligible. Table 14 shows the state roads that the proponent is proposing to assist upgrading in contribution. The total cost comes to $2.5 million. It is proposed that a satisfactory arrangement process with the state that would mimic a State Infrastructure Contribution levy be considered to be charged on a negotiated percentage quantum of the total cost to facilitate the delivery of these works. Further, it is proposed that the agreement would provide the opportunity to provide the contribution as a Works in Kind to ensure that the roads delivery is provided prior to or during the delivery of various stages of the development of the Town Centre scheme. A works in kind process for the delivery of state roads is considered sensible as it is proposed that the proponent will be required to deliver the local roads infrastructure as a Works in Kind agreement as the development scheme is delivered.

Upgrade Location	Upgrade Type	Area (m^2)	Cost ($)
➢ **Connection of Middleton Drive & Aviation Road under the M7**	grade separated	1,000	764,000
➢ **Three-Lane Cowpasture Southbound from M7 to Sixteenth Avenue.**	at grade	2,244	1,714,416
Total State Roads			2,478,416

Table 14: Proposed State Roads Upgrades – Works in Kind

Local Infrastructure – Proposed S7.11 Works In Kind

The Middleton Grange planning framework is supported by a detailed Works in Kind policy. The proponent, as part of a Works in Kind agreement, is prepared to undertake works including road work, drainage works and works in relation to community and recreation facilities.

Multi-Purpose Community Centre

The multi-purpose community centre is best located in the town centre, which the proponent is proposing to provide. Previous discussions and agreements with the council have shown that this centre should be located within the new park. This community facility could also be provided within one of the town centre buildings rather than within the open space, on negotiation and preference from Council.

The proponent is prepared to offset part of their s7.11 contributions against building the multi-purpose community centre and dedicating it to Liverpool City Council. This would total $1.9 million (in 2009 dollars).

Recreation Facilities

As part of its proposed development, the proponent will be building and dedicating a park adjacent to the public school site to the west. As discussed above, the community centre will be located in the park. There is a line item in the infrastructure plan for Middleton Grange for a small park in the northern area, eastern side, valued at $531,805 for land and $107,332 for works.

However, as previously negotiated with council and supported by the 2015 subdivision consent, the park will be larger and reoriented. This increases the value of the park to be offset against s.7.11 contributions to $2.3 million.

Transport

Local roads are required as part of any development. These are usually built by the developer and dedicated to council at a point agreed upon during the development cycle.

Fourteen local road works have been identified as part of the infrastructure plan that are relevant to the proposed development. These are shown in Table 15 in 2009 dollars.

No.	Item	Total Land Cost ($)	Total Works Cost ($)	Total Cost ($)
R1	Collector Centre Street Park frontage (one side) (Qantas Boulevarde)	1,242,356	612,611	
R2	Local Street Type 2 (drainage frontage both sides) Hall Cct between WM1 and WM2	0	119,678	
C1	Bridge - Creek crossing between water management facilities on Hall Cct	0	204,000	
R3	Local Street Type 1 Drainage Frontage (both sides) (Bravo Ave between Qantas and Globe)	0	37,627	
R4	Local Street Type 1 Community frontage (one side) (Bravo Ave between Globe and Beard)	59,195	16,382	
C2	Bridge - Neighbourhood Centre Bravo Ave		205,000	
R5	Collector Centre Street including over culvert drainage frontage (one side) (Middleton Dr near Globe)	49,192	28,922	
R6	Collector Centre Street over Culvert Drainage frontage (both sides) (Middleton Dr near Globe)	0	35,754	
C3	Bridge - Middleton Drive	0	205,000	
R7	Local Street Type 2 over culvert eastern side (both sides) (Hall Cct at Swoffer Ave)	0	17,657	
R8	Local Street Type 2 including over culvert western side (one side) (Hall Cct near Swoffer St)	14,378	5,948	
C4	Culvert - eastern end of WM4	0	205,000	

No.	Item	Total Land Cost ($)	Total Works Cost ($)	Total Cost ($)
R9	Collector Centre Street drainage frontage including culvert on northern side (both sides) (Flynn Boulevard at Swoffer St)	0	57,603	
R10	Collector Centre Street drainage frontage including culvert on southern side (one side) (Flynn Boulevarde at Swoffer St)	0	47,581	
Total		**1,365,121**	**1,798,763**	**3,163,884**

NOTE: This list may be incomplete and is subject to negotiations between Manta Group and Liverpool City Council.

Table 15: Proposed Local Roads as Part of Overall Road Requirements for Precinct

As can be seen, the land and works total $3.2 million in 2009 dollars.

Drainage

Drainage works are required as part of the development of the precinct. The proponent is responsible for drainage on and from their site. Table 16 shows the items relevant to the proposed development.

No.	Item	Total Land Cost ($)	Total Works Cost ($)	Total ($)
WM1	Entry Parklands	5,531,720	898,384	
WM2	Wetlands	2,392,372	445,893	
WM3	Water cycle area in village centre	414,765	127,812	
WM4	Water cycle area on southern creek west of village centre	1,132,120	237,731	
Total		**9,470,977**	**1,709,820**	**11,180,797**

Table 16: Proposed Drainage Works as Part of Overall Road Requirements for Precinct

Total Works in Kind

Table 17 shows the total works in kind proposed as part of the proponent's s7.11 contributions. The total comes to $18.6 million in 2009 dollars (and 2015 dollars for the park).

Item	Land ($)	Works ($)	Total ($)
Community Centre*	124,000	1,816,435	
Parks+		2,300,000	
Local Roads*	1,365,121	1,798,763	
Drainage Works*	9,470,977	1,709,820	
Total	**10,960,098**	**7,625,018**	**18,585,116**

* 2009 dollars

+ 2015 dollars

Table 17: Total Proposed Works in Kind for Local Infrastructure (2009 and 2015 dollars)

An escalation to 2019 dollars is required for both the works and the land. The proponent would be required to pay any shortfall from their total contributions' liability in cash, if there is a shortfall.

In addition, the proponent would do works in kind on state roads at an agreed value with the state agency. If this was done in terms of a Special Infrastructure Contribution, it would come to $3,699 per residential apartment or $22/m2 of development.

Escalation

Liverpool City Council's infrastructure plan for Middleton Grange is denominated in 2009 dollars, and the park is denominated in 2015 dollars. It is proposed to escalate the land and works values by the All Groups Consumer Price Index for Sydney. Table 18 shows the growth in consumer prices between December 2010 (the year of the Infrastructure Plan), December 2015 (for the park) and December 2018.

Item	% Increase
CPI Inflation from 2010	19.1
CPI Inflation from 2015	5.8

Table 18: Consumer Price Index (All Groups, Sydney) – Percentage Increases to December 2018

Table 19 shows the escalated amounts for the total proposed works in kind.

Item	Total ($)
Community Centre*	2,311,058
Parks+	2,433,400
Local Roads*	3,768,186
Drainage Works*	13,316,329
Total	22,134,873

Table 19: Total Proposed Works in Kind for Local Infrastructure (Current Dollars)

As shown in Table 13, it is proposed that proponent undertake $22.1 million of works in kind for local infrastructure. It is also proposed that there will be an additional provision for state infrastructure as referenced above with that negotiated amount as a result of negotiations with the relevant state agency to be provided in addition to the aforementioned local infrastructure contributions.

Charge Back From 2009 Contributions

We have been advised that, in 2009, Liverpool City Council were paid a sum of $212,000 in s94 contributions (as they were then known) in relation to the 2007 consent for roads and civil works. The drainage works associated with the contribution have been completed. There is a question as to the whether any nexus could be properly established between such development and an increase in demand for public amenities and services, which is an essential element for requiring a local infrastructure contribution. Therefore, the sum of $212,000 should be charged back (with interest) against the 7.11 contributions to local infrastructure. This

Further, the planning proposal has facilitated the significant increase in public open space to that envisaged under the exhibited Planning Proposal. Noting that the provision of the additional open space through the centre of the town centre was not contemplated under the s.7.11 contributions plan, the provision of the additional open space could result in a scenario where additional monies are required to secure the open space.

To ensure any adverse impacts do not occur to the s.7.11 plan, it is proposed that the open space is made available to the public at no cost to Council, as per the letter of offer issued to Council on 18 September 2019. An extract from that offer is included below.



Figure 31: Extract from VPA offer 18 September 2019

Utilities and Services

The full range of utility services including electricity, telecommunications, water, sewer and stormwater are all currently available within Middleton Grange. These services will support the future development which will be further studied during the detailed development assessment process.

Sydney Water were consulted during the initial public exhibition and confirmed there is sufficient trunk and treatment capacity for the initial development. For wastewater, the development can be connected to the 225mm wastewater mains within the development. Detailed requirements, including water main extensions or relocations/diversions, will be provided at the DA stage.

11. What are the views of state and Commonwealth public authorities consulted in accordance with the Gateway determination?

The Gateway determination issued by the delegate of the Greater Sydney Commission on 15 August 2016, included the following condition in relation to public authority consultation:

3. *Prior to public exhibition, consultation is required with the following public authorities under section 56(2)(d) of the Act and to comply with the requirements of relevant S117 Directions:*
Office of Environment and Heritage
Roads and Maritime Services
Transport for New South Wales
Sydney Water
Department of Education
State Emergency Service

The public authorities were consulted in September 2016. The below table summarises the outcome of this consultation:

Public authority	Response
Office of Environment and Heritage	Comments raised by the OEH in relation to flooding are discussed under Section C on page 62 of this Panning Proposal.
Roads and Maritime Services	An assessment of the proposed road layout in February 2017 and updated traffic modelling using the AIMSUN model was undertaken in accordance with the requirements of RMS and Council in support of the original planning proposal. On 11 December 2017, RMS confirmed that it *"raises no objection to the planning proposal being placed on exhibition provided that any identified and agreed regional road and transport infrastructure to support the proposal is incorporated into a planning agreement between the proponent and Liverpool City Council prior to the gazettal of the draft LEP"*. Detailed consideration of public infrastructure contributions is included under *"10. Is there adequate public infrastructure for the proposal?"* in Section D. As a consequence of the reduction in the number of apartments, the new medical and health facilities, and the revised road layout, a new Traffic Assessment Report has been prepared by Lyle Marshall & Partners. The Assessment is included at **Appendix D**, which includes a detailed investigative Modelling report prepared Bitzios Consulting using AIMSUN which reflects all proposed road infrastructure changes and the influence of future public

	transport infrastructure and the projected land use changes to the year 2030. RMS will be further consulted on the revised assessment and modelling during the next stage in the process.
Transport for NSW	The matters raised by RMS were also raised by TfNSW. A new Traffic Assessment Report has been prepared by Lyle Marshall & Partners. TfNSW will be further consulted on the revised assessment and modelling during the next stage in the process.
Sydney Water	The site is currently serviced by Cecil Park Water Supply Zone for drinking water. Sydney Water has confirmed that there is sufficient trunk capacity for the initial proposed zoning changes. The site is serviced by 100-200mm water mains. Extensions and upsizing will be required from the existing mains in the area to ensure there is sufficient capacity for the development. Detailed requirements, including water main extensions or relocations/diversions, will be provided at the DA stage. The site is also serviced with Recycled Water from the Hoxton Park scheme. The site is located within the Malabar Wastewater System and is currently serviced by the Hoxton Park Carrier. Sydney Water has confirmed there is sufficient trunk and treatment capacity for the initial development. For wastewater, the development can be connected to the 225mm wastewater mains within the development. Detailed requirements, including water main extensions or relocations/diversions, will be provided at the DA stage.
Department of Education	The Department of Education provides no objection to the planning proposal. The Department of Education has provided comment on the potential impacts on the Middleton Grange Public School which is located to the east of the site. The Department of Education suggests upper level setbacks and the use of non-reflective building materials. Appropriate controls can be contained within the relevant Development Control Plan.

State Emergency Service	Comments raised by the SES in relation to flooding are discussed under Section C on page 62 of this Panning Proposal.

Table 20: Response to public agency comments

Part 4 – Mapping

Maps illustrating the current Liverpool LEP 2008 controls, including the land zoning, maximum height of buildings and floor space ratio maps are located in the Introduction to this Planning Proposal.

The maps for the proposed amendments to the Liverpool LEP 2008 are included below:

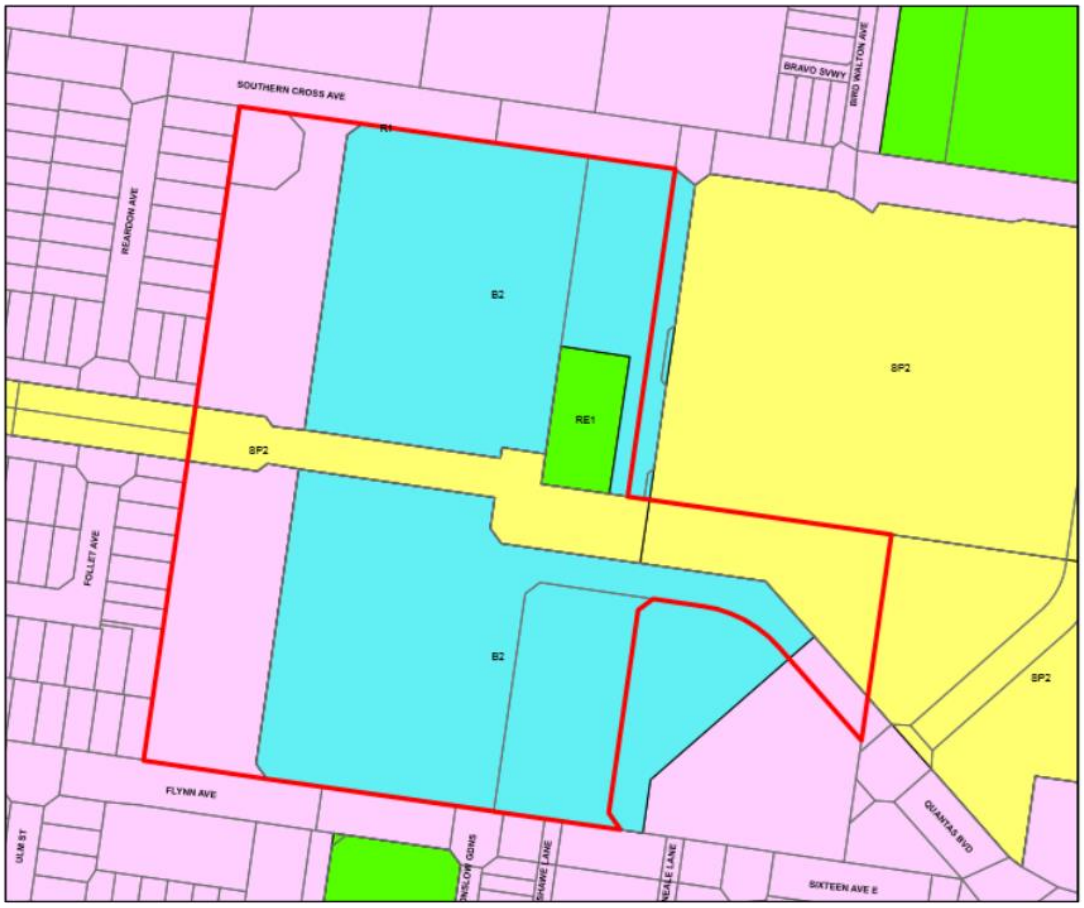


Figure 32: Proposed Land Zoning Map

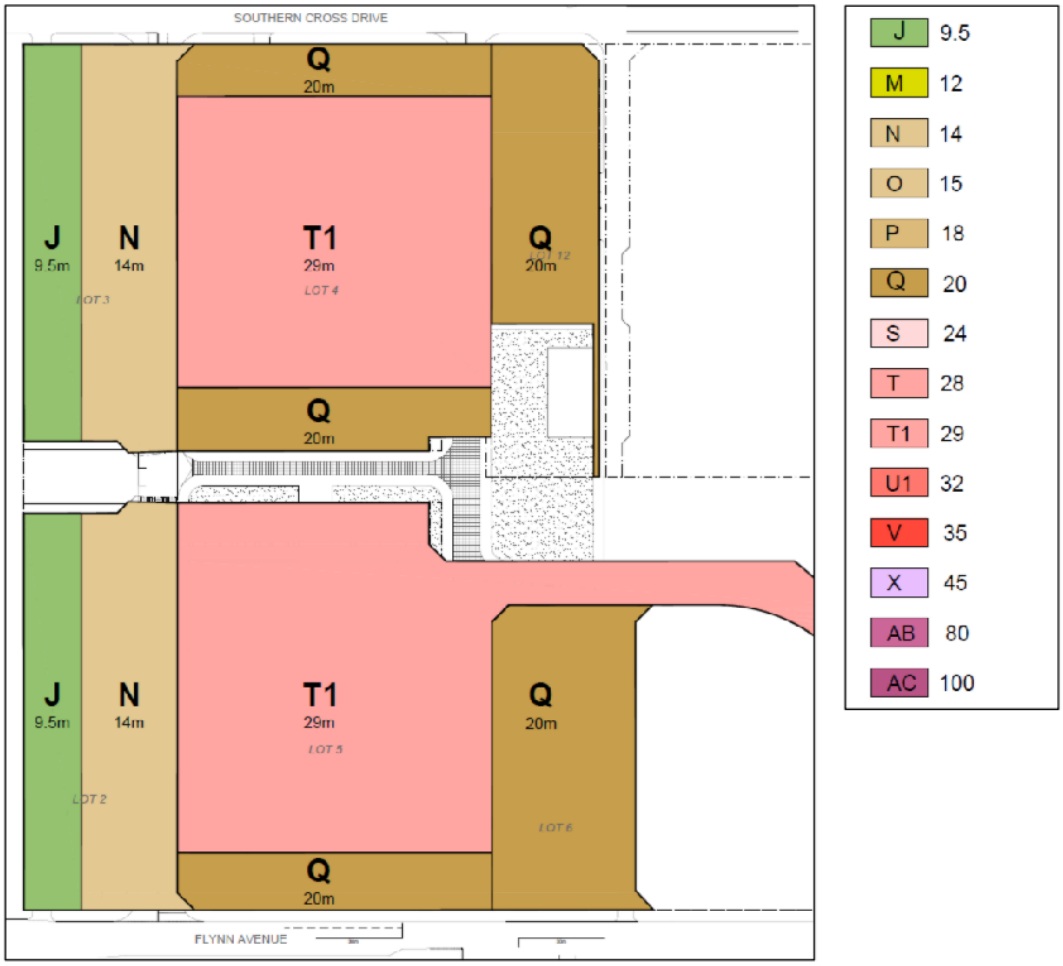


Figure 33: Proposed Maximum Height of Buildings Map

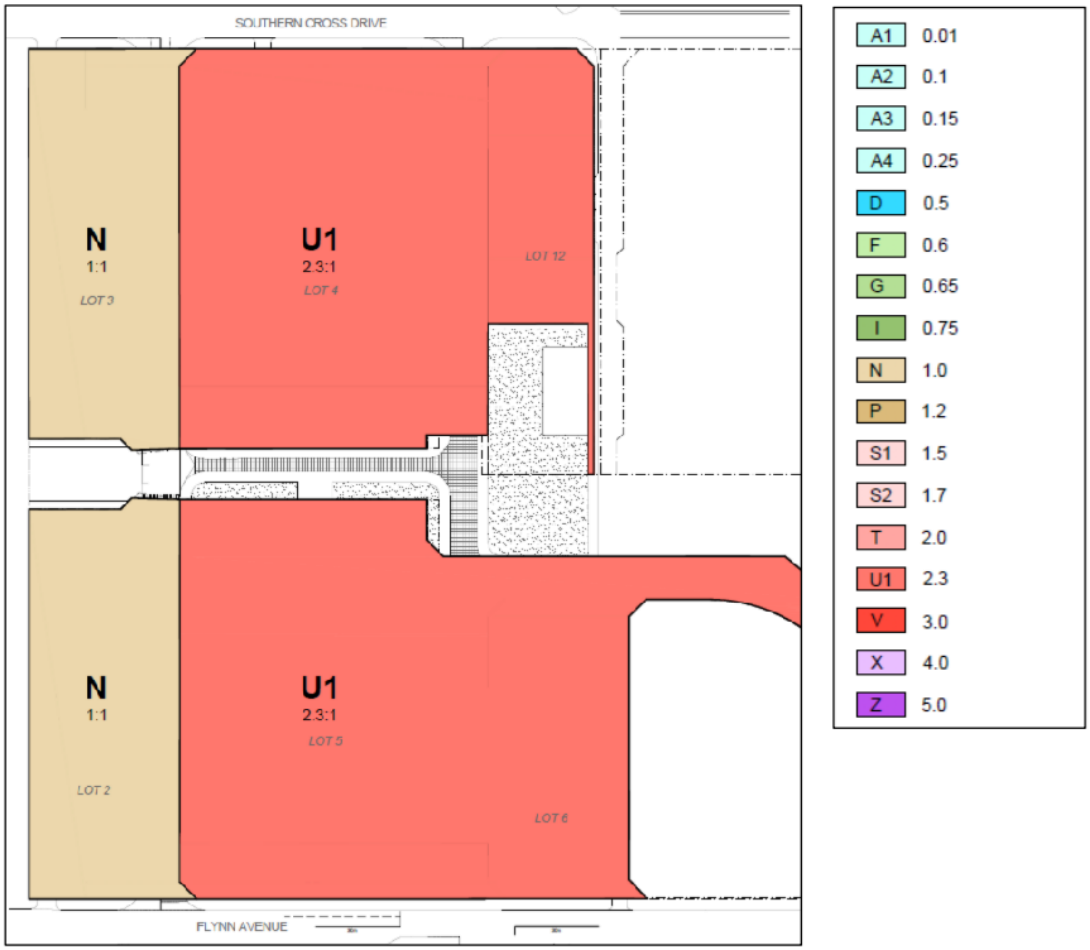


Figure 34: Proposed Maximum Floor Space Ratio Map

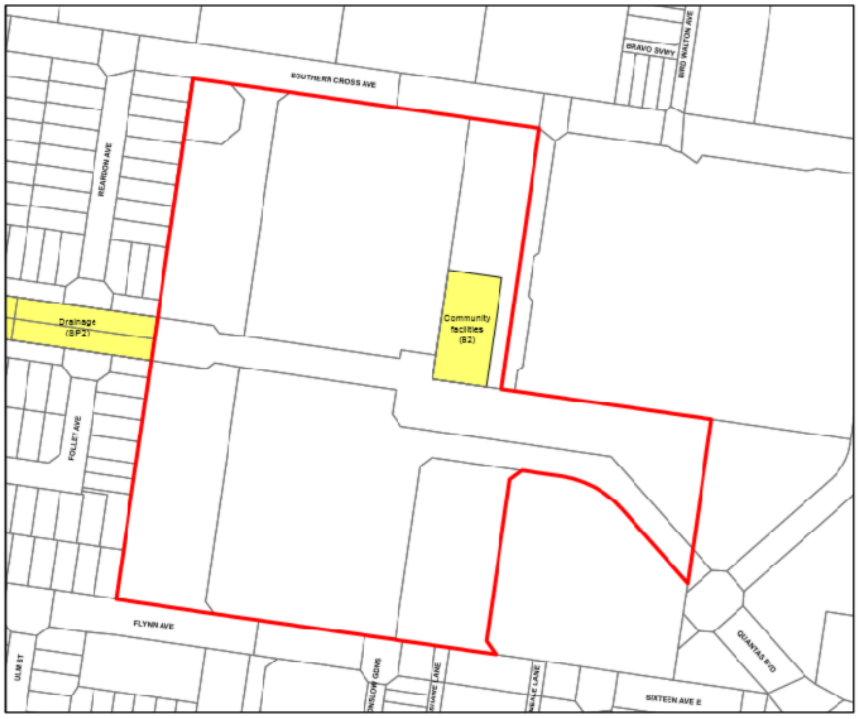


Figure 35: Proposed Land Reservation and Acquisition Map



Figure 36: Proposed Flood Mapping Map

Part 5 Community Consultation

The Planning Proposal was publicly exhibited from Wednesday 29 August 2018 to Friday 26 October 2018 in accordance with the Gateway.

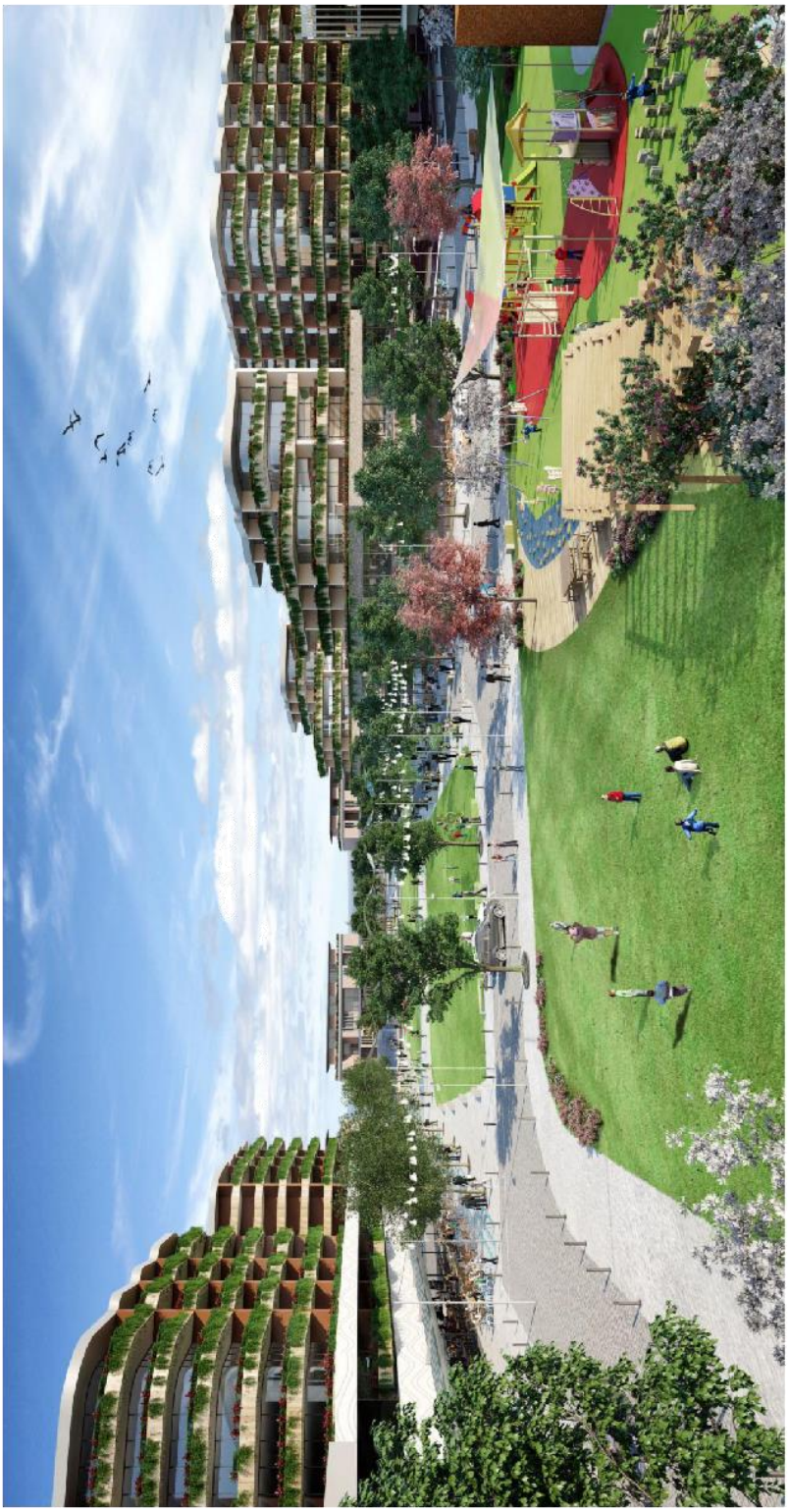
As previously discussed, a number of concerns were raised by the community during the public exhibition period. Some practical concerns were raised, of particular interest was:

1. The maximum heights being proposed (i.e. 12 storeys);
2. The amount of apartments;
3. The amount of open space;
4. The lack of investment in public infrastructure over a number of years in the suburb of Middleton Grange and the impact that the development of the town centre may have on the road network.
5. The erroneous claim that the proposal was to be mainly a social housing development.

The development concept has subsequently been further refined to address the concerns and matters raised by the community. In particular the issue of 12 storeys was considered too high. While the planning proposal demonstrated that there was no overshadowing impacts and the heights created a transition to lower density development, the heights and transitions in the concept have been revisited. Key amendments have been made to address the community's concerns regarding height and other matters.

The amendments have been discussed in detail in the Introduction to this Planning Proposal and the concept is detailed within the attached Urban Design Report.

Further consultation will now occur with the community to consider the refinements.



MIDDLETON GRANGE TOWN CENTRE

URBAN DESIGN REPORT – October 2019

christiansenobrienarchitects

PACIFIC PLANNING

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1.0 INTRODUCTION

1.1 Subject Site

The subject site is located in the suburb of Middleton Grange to the west of the Westlink M7 (700m) and Cowpasture Road (500m). It is bounded by Southern Cross Avenue to the north, Middleton Grange Public School to the east, Fifteenth Avenue to the south and Kingsford Smith Avenue to the west. The site has been identified as the future town centre for the Middleton Grange suburb. The town centre will provide a mix of retail and commercial uses supported by residential and other employment generating uses.



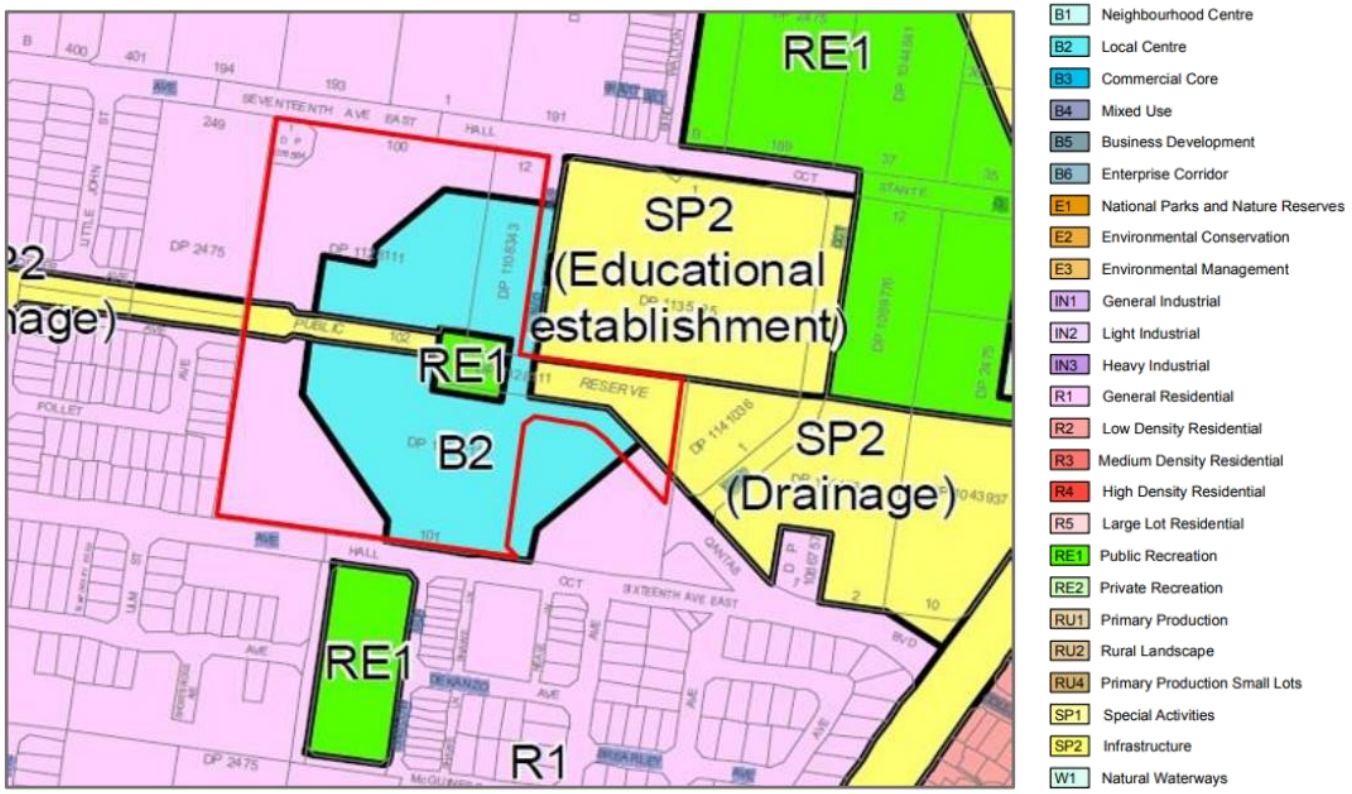
Subject Site

2.0 PLANNING FRAMEWORK

2.1 Liverpool LEP 2008

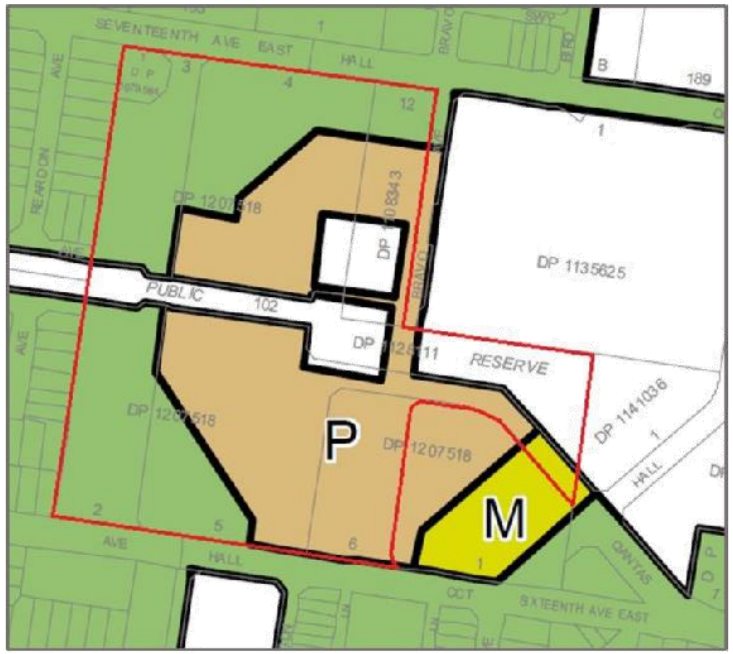
The Primary planning instrument applicable to the subject land is the Liverpool Local Environmental Plan 2008.

2.1.1 Land Zoning



The subject site is zoned part B2 Local Centre; R1 General Residential; RE1 Public Recreation and SP2 Drainage, as illustrated above.

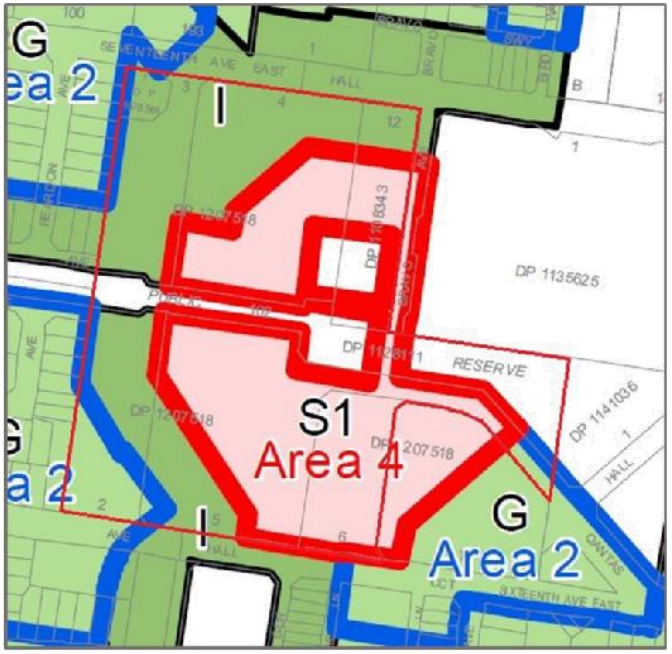
2.1.2 Height of Buildings



I	8.5
M	12
O	15
P	18

As illustrated above, the maximum height of buildings for the subject site is part 8.5 metres and part 18 metres.

2.1.3 Floor Space Ratio



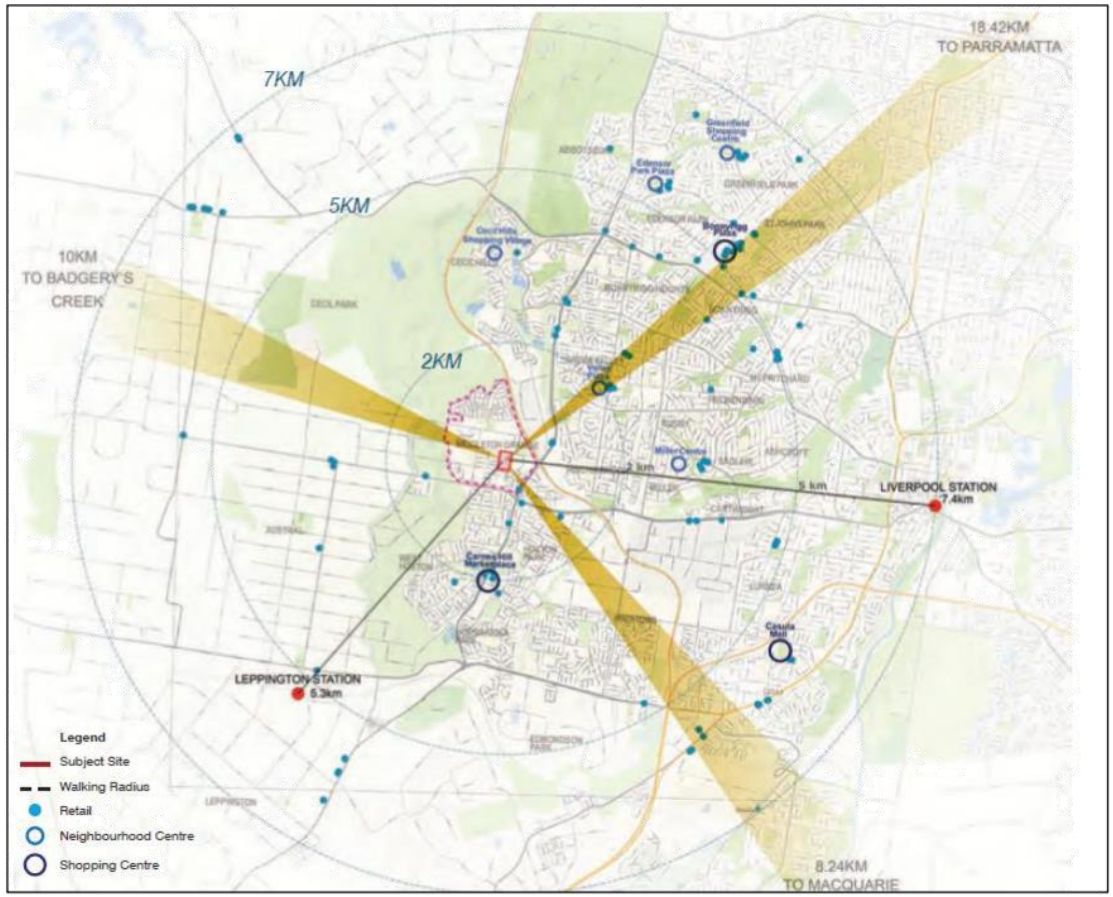
F	0.6
G	0.65
I	0.75
N	1.0
P	1.2
S1	1.5

As illustrated above, the maximum floor space ratio for the subject site is part 0.75:1 and part 1.5:1.

Part of the site is also subject to Clause 7.29 (Area 4) which stipulates that no more than 25% of the gross floor area of all buildings may be used for the purposes of business premises.

3.0 SITE ANALYSIS

3.1 Regional Context



Source: Middleton Grange Urban Design Report, 26 November 2015, Urbis

The subject site is at the heart of the suburb of Middleton Grange and will serve as the town centre for this growing and evolving new community.

The suburb is well serviced by public and private transport opportunities. Leppington train Station, is approximately 5.3 kilometres south west, while Liverpool train station and CBD is 7.4km to the east. Meanwhile the regional road links are extremely close with the Westlink M7 being approximately 700 metres to the west and Cowpasture Road being approximately 500m south-west.

The subject site is strategically located within the Western Sydney Growth Area and includes a number of social and educational facilities in close proximity, including Middleton Grange Primary School, Thomas Hassall Anglican College, The Hoxton Park Technical College and the Liverpool College of higher education.

3.2 Local Context



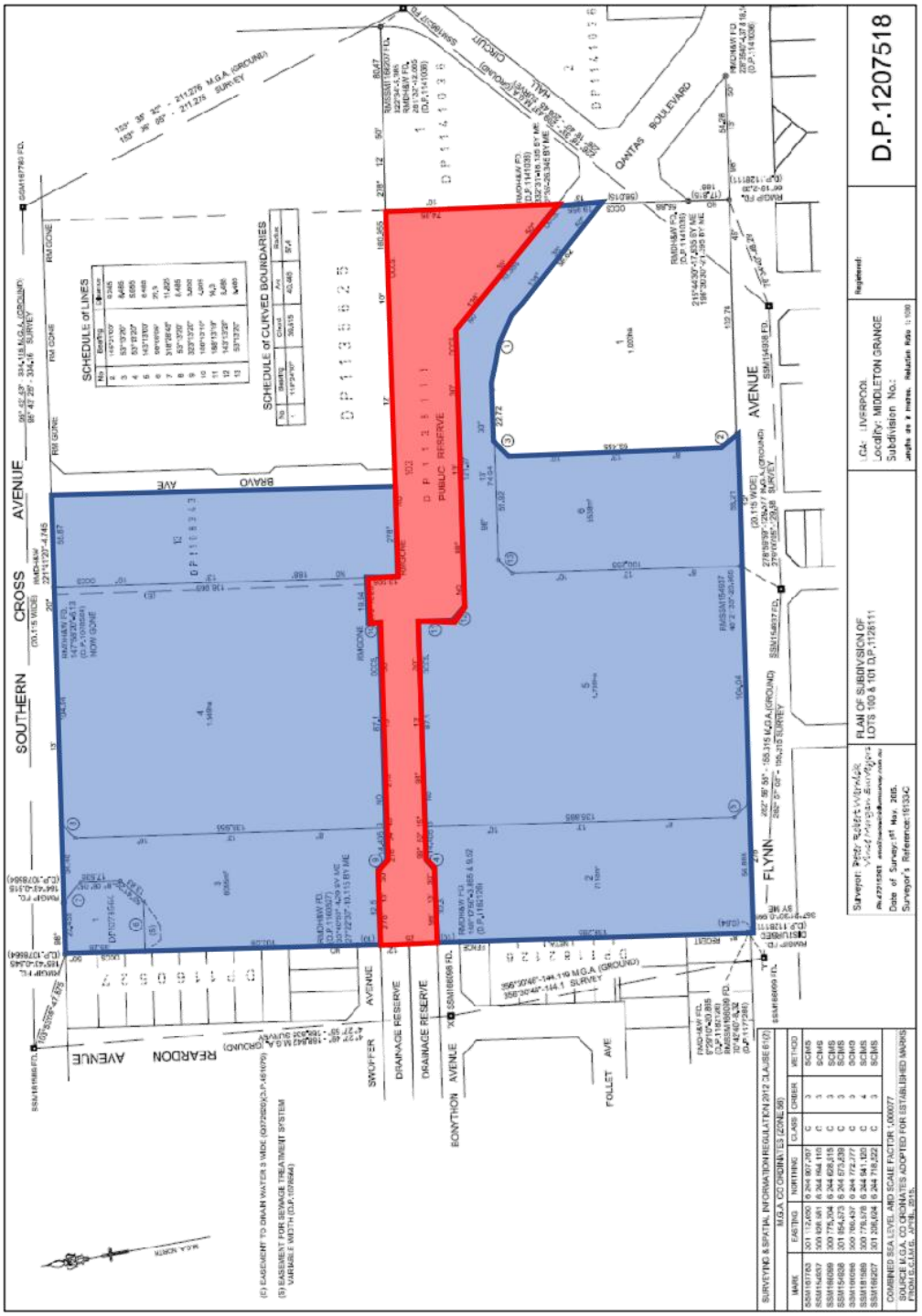
Source: Middleton Grange Urban Design Report, 26 November 2015, Urbis

The site is 600 metres from the on/off ramps to the Westlink M7 via Flynn Avenue and Cowpasture Road.

The site is very close to existing educational facilities as discussed earlier, and is adjoined to the east by the Middleton Grange public school.

While the Planning Proposal seeks to facilitate a small open space within the development, there are also a number of recreational and open space within close proximity to the site, directly to the south (opposite) of the site and to the east and north.

The site will serve as the future town centre bring people together from the community and providing further jobs, employment, recreation and social opportunities.



3.3 Site Survey

4.0 BACKGROUND

The Planning Proposal was originally lodged with Liverpool City Council in June 2015. The matter was considered by Council at its meeting of 16 December 2015, where Council in supporting the progression of the Planning Proposal to the next stage in the Part 3 Plan Making process, resolved to:

1. *Endorse, in principle, the Planning Proposal to rezone land at 60-80 Southern Cross Avenue and 45-65 Hall Circuit, Middleton Grange.*
2. *Delegate to the CEO to negotiate with the proponent regarding increased open space to support the increased residential density, including the completion of a comprehensive Social Impact Assessment.*
3. *3. Delegate to the CEO the authority to approve the final Planning Proposal to administer this rezoning, for submission to the Department of Planning and Environment for Gateway.*

A Gateway determination was issued by the delegate of the Greater Sydney Commission on 15 August 2016. The Gateway in supporting the progression of the Planning Proposal included a number of conditions that would need to be addressed and approved prior to the progression of the proposal to consultation and exhibition. This included *to provide additional information regarding transition of proposed heights to existing neighbouring zones and overshadowing impacts.*

Specifically, the Planning Proposal sought to:



Draft maximum floor space ratio map (2015)

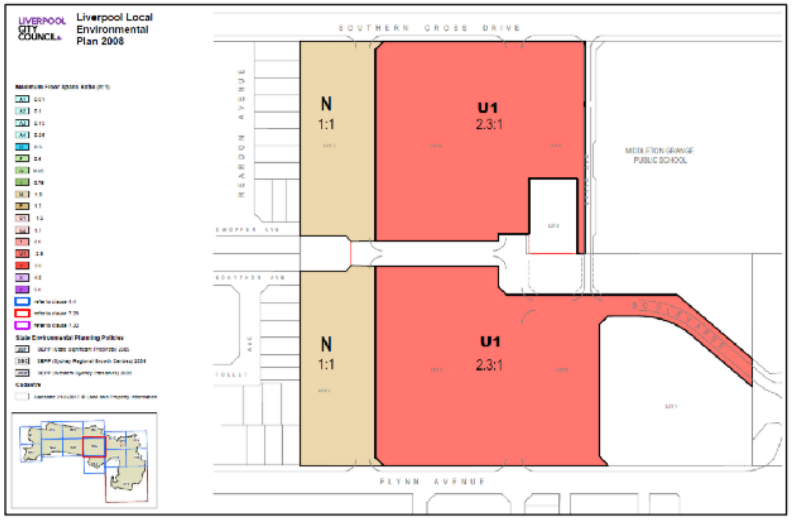
to increase the maximum floor space ratio from part 1.5:1 and 0.75:1 to 2.5:1



Draft maximum height of buildings map (2015)

increase the maximum height of buildings from part 8.5 metres and part 18 metres to part 14 metres, 18 metres, 28 metres and 35 metres





4.1 Revised Proposal and public exhibition

Detailed subsequently urban design work and economic viability analysis was undertaken to adequately address the matters raised in the Gateway determination, particularly the issue related to transition of height to neighbouring zones and overshadowing impacts. A revised Planning Proposal and Urban Design Report were prepared in June 2018 and was forwarded to the Department of Planning and Environment on 20 June 2018, which included the following controls:

Height: part 9.5m, 14m, 20m, 32m, and 35m
FSR: part 1:1 and 2.3:1
The Department confirmed on 28 June 2018 that the Gateway conditions had been adequately addressed and that the proposal could proceed to public exhibition. The planning proposal was revised (July 2018) for the purposes of public exhibition.

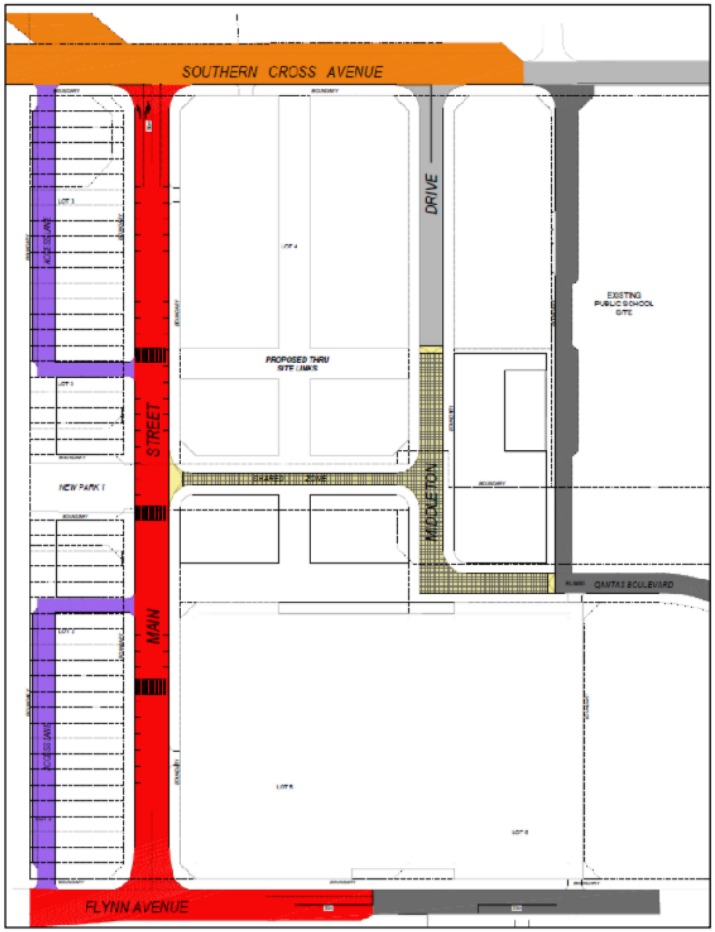
The Planning Proposal was exhibited from Wednesday 29 August 2018 to Friday 26 October 2018 in accordance with the Gateway.

Further, a community forum was held on Monday 17 September 2018. Some practical concerns were raised by the community. Of particular interest was:

1. The maximum heights being proposed (i.e. 12 storeys);
2. The amount of apartments;
3. The amount of open space;
4. The lack of investment in public infrastructure over a number of years in the suburb of Middleton Grange and the impact that the development of the town centre may have on the road network.
5. The erroneous claim that the proposal was to be mainly a social housing development.

5.0 DESIGN PRINCIPLES

5.1 Street network and hierarchy



A detailed set of design principles were established very early in the process that have informed the layout and design features of the town centre. This included site access and circulation, the public domain and pedestrian circulation, and open space and building typology.

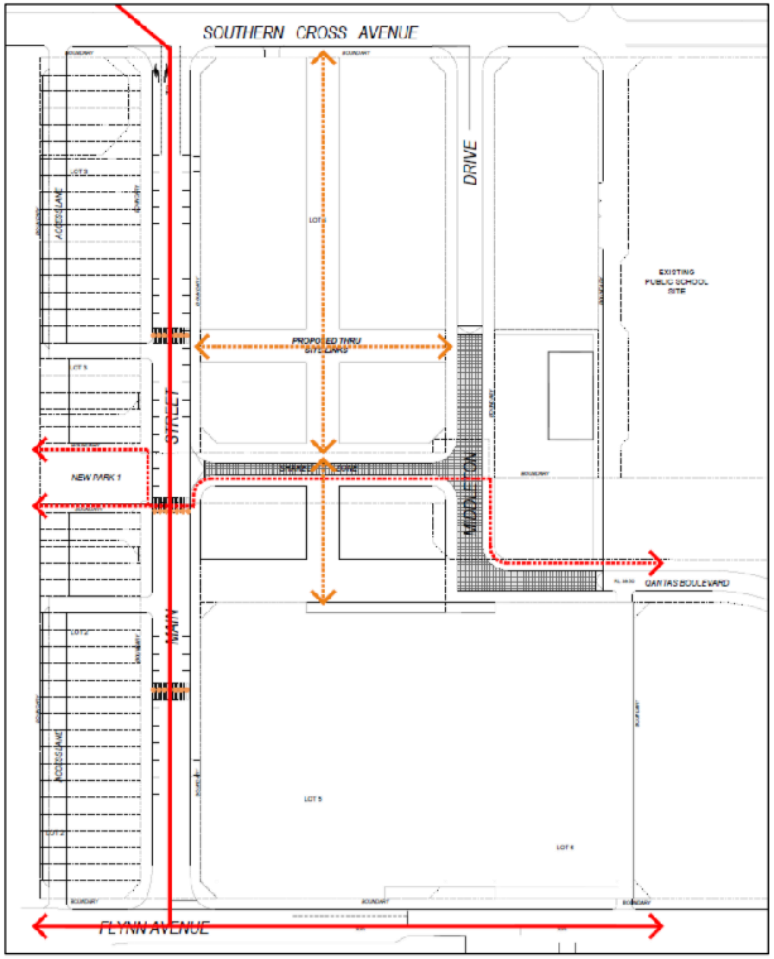
Following the feedback made during the public exhibition of the planning proposal, the design principles were again reviewed with a focus on further enhancing the public domain, movement of pedestrians and public spaces.

The street hierarchy was slightly amended to relocate the main street to the west, include an additional 3,000sq.m of open space through the centre of the site and creating a much more pedestrian friendly environment with a focal point to the centre for the people of Middleton Grange. With significant shared spaces and traffic calming introduced, the town centre becomes more welcoming, easier to access, and unintimidating for pedestrians. Walking and pedestrian permeability and connectivity are prioritised to make it easier for the people of Middleton Grange to access the town centre and move freely within it.

STREET NETWORK LEGEND

- SHARED ZONE
- LANEWAY
- LOCAL ACCESS STREET
- NEIGHBOURHOOD CENTRE STREET 21.4m
- LOCAL ACCESS STREET 17.4m
- NEIGHBOURHOOD CONNECTOR STREET

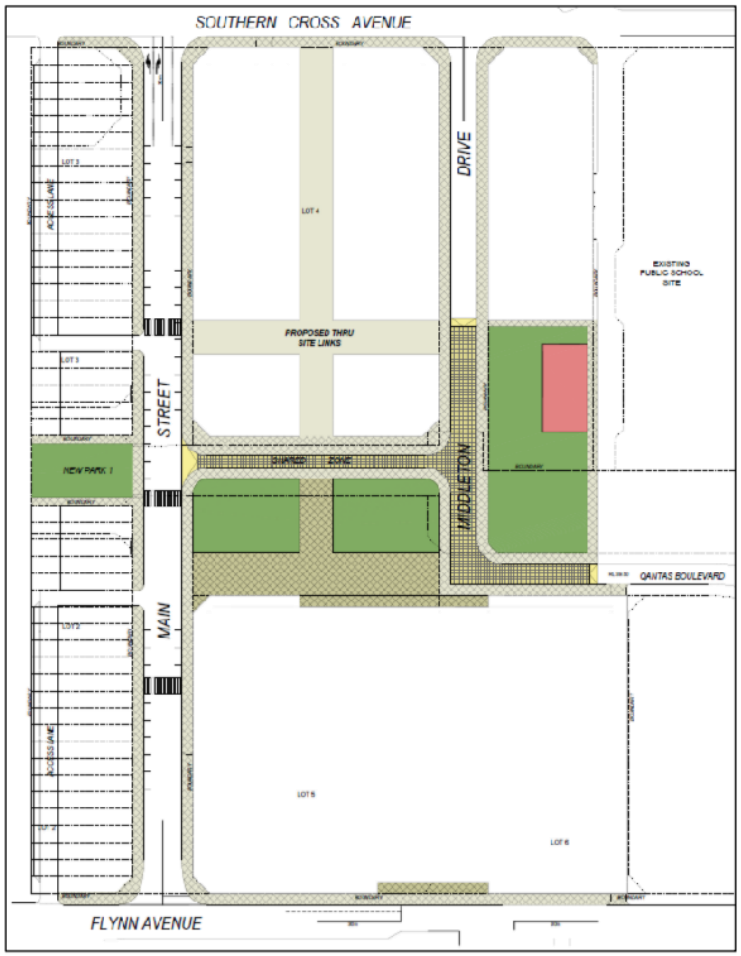
5.2 Pedestrian circulation and cycling links



STREET FRONT ACTIVATION LEGEND

- CYCLE PATH IN OPEN SPACE OR PARK EDGE ST
- CYCLE LANE ON ROAD
- PEDESTRIAN LINK

5.3 Public Open Space - Quality of the Public Relam



The refined concept has facilitated a further review of the amount, quality and design of the open space being proposed within the Middleton Grange town centre. This has resulted in a significant increase in the quantum of open space and opportunities for a variety of uses and designs.

Focus has been made on the arrangement of paving, planting, orientation and connectivity within and between spaces. Pedestrian activity and human interest is supported and encouraged with passive spaces of green soft landscaping and hard landscaping, with activity spilling out on to the streets from ground floor uses.

Streets and street junctions are designed as public spaces (rather than just traffic routes) with significant street trees and street lighting to reinforce the public domain and human scale.

Building facades along the routes are enlivened by active uses with design elements. Building design will be targeted to give interest to passers-by and make the building's function apparent, while views out of the building facilitate overlooking, to contribute to safety.

Traffic speeds are managed on Middleton Drive by the traffic-calming measures as an integral part of the urban design of the public domain.

PUBLIC OPEN SPACE LEGEND

- PUBLIC PLAZA / FORECOURT
- HIGH QUALITY PAVEMENT
- PEDESTRIAN CROSSINGS
- PEDESTRIAN LINKS
- PUBLIC OPEN SPACE
- COMMUNITY CENTER

5.3.1 Landscape Masterplan

The detailed analysis of the landscaping treatment of the public domain has been considered in the Landscape Plan prepared by Habit8, that supports the Planning Proposal.

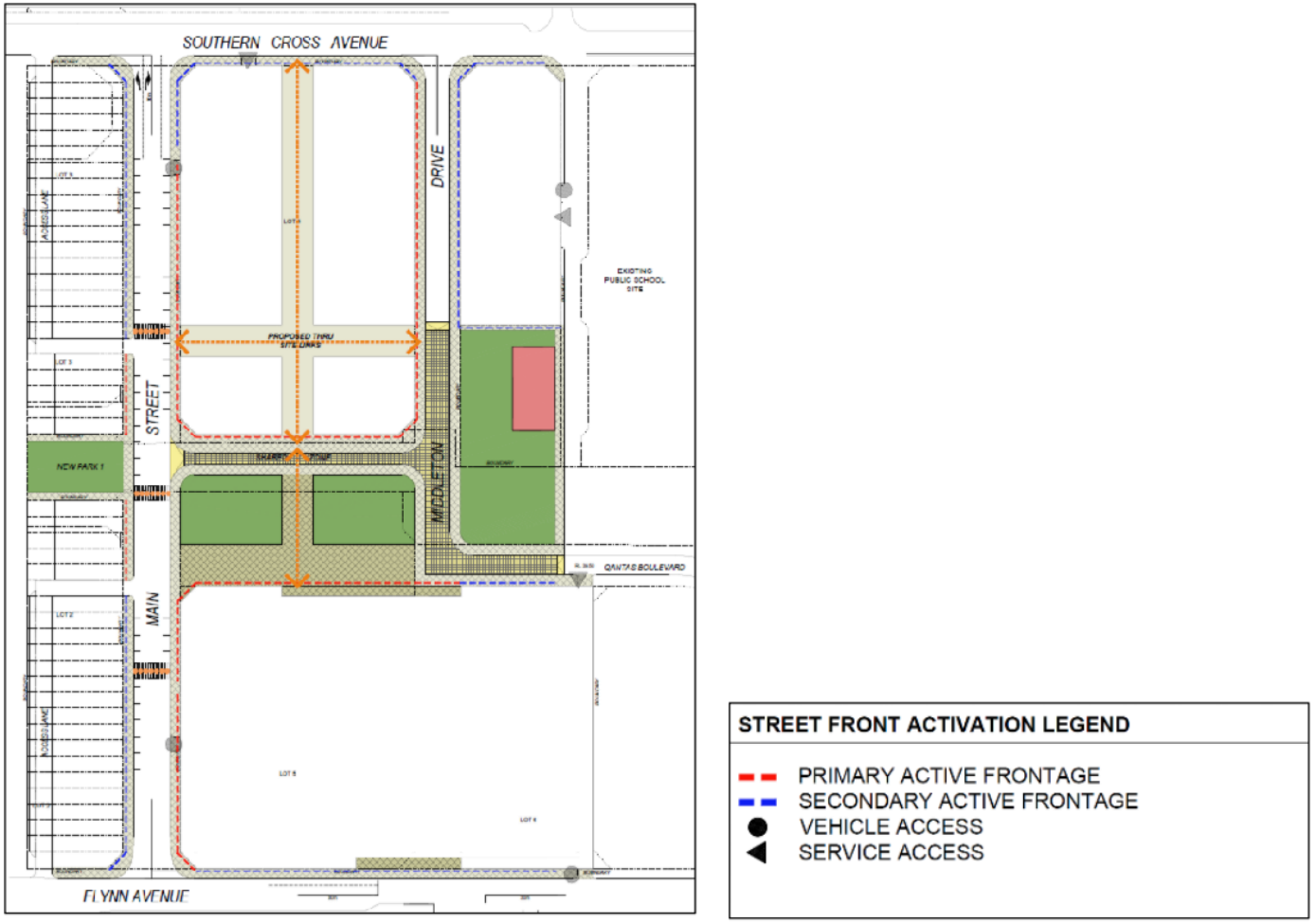
Specific landscape design treatment to enhance the public realm is promoted by the creation of specific design treatments to the central open space, the new community centre area, pedestrian laneways and main streets.

Allocation of significant street tree planting is provided including type and location. The allocation of specific community uses in the open space are scheduled including public art, the new children's active playground, community orchid, village green and water feature.

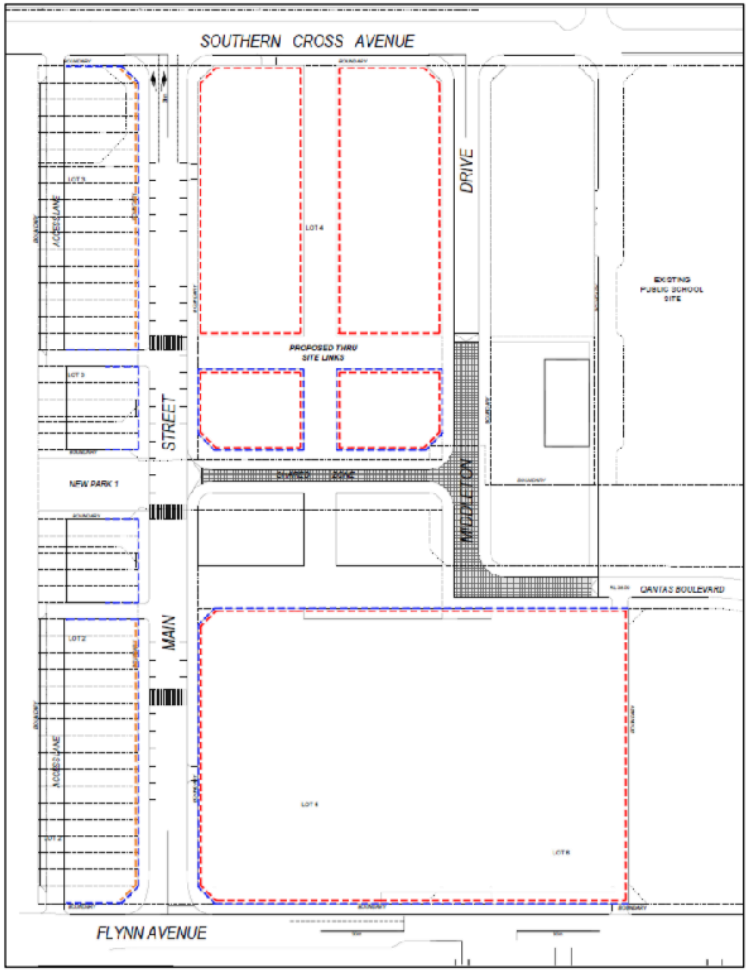




5.4 Street Front Activation



5.5 Street setbacks and interface



STREET FRONT ACTIVATION LEGEND

- 2 STOREY STREET WALL
- 4m UPPER LEVEL SETBACK
- 1m UPPER LEVEL SETBACK

6.0 REVISED BUILDING CONCEPT

6.1 Concept Plan



Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

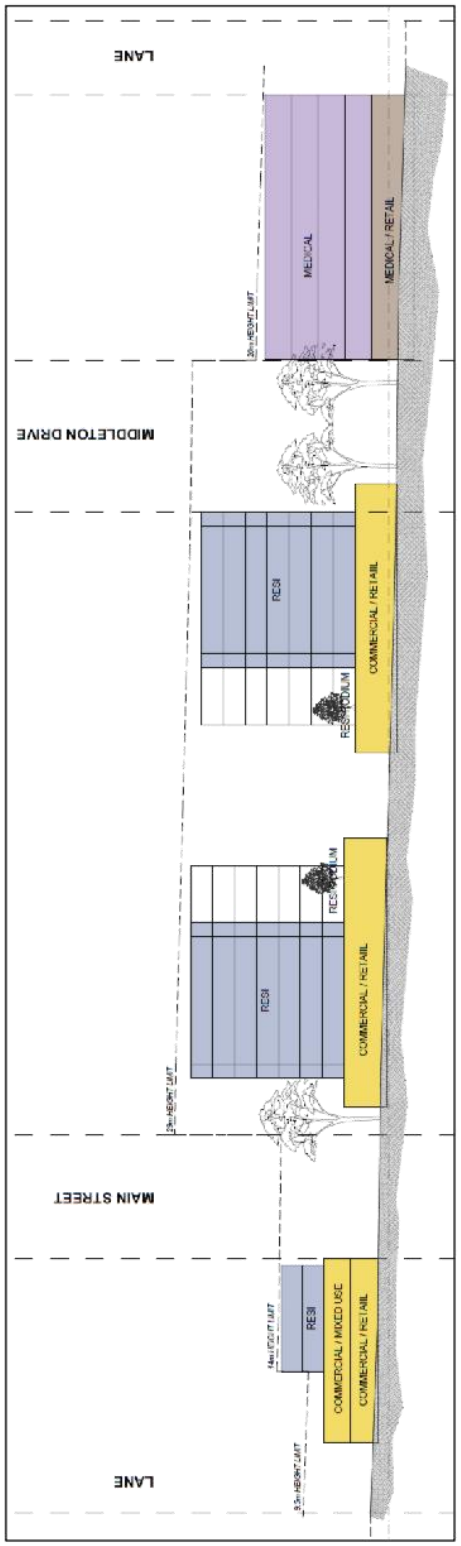
Following public exhibition in August-October 2018, the development concept was further refined to address the concerns and matters raised by the community. The issue of height was raised, being that 12 storeys was too high. While the planning proposal demonstrated that there was no overshadowing impacts and the heights created a transition to lower density development, the heights and transitions in the concept have been revisited. The key amendments have been made to address the community's concerns regarding height.

- The maximum height within the town centre is now only 8 storeys and this is only for part of the central portion of the development.
- The split height across the western Lots 2 and 3 is retained to provide for an appropriate transition from 8.5 metres on neighbouring land to 9.5 metres (2 storeys) immediately adjoining, and up to 14 metres (4 storeys) along the frontage to Main Street.
- The additional 3,000sq. of open space within the central portion has opened up the town centre, creating a feeling of breathability, not crowded by buildings, filled with light and space for people to play, linger and sit with passive and active recreational opportunities.
- The reductions in height have also been complemented by internal building heights transitions with laneways and through links further reducing building bulk and long street frontages. The creation of laneways also creates additional pedestrian interface and active frontages, creating a more welcoming and vibrant centre fostering a sense of place and community pride.

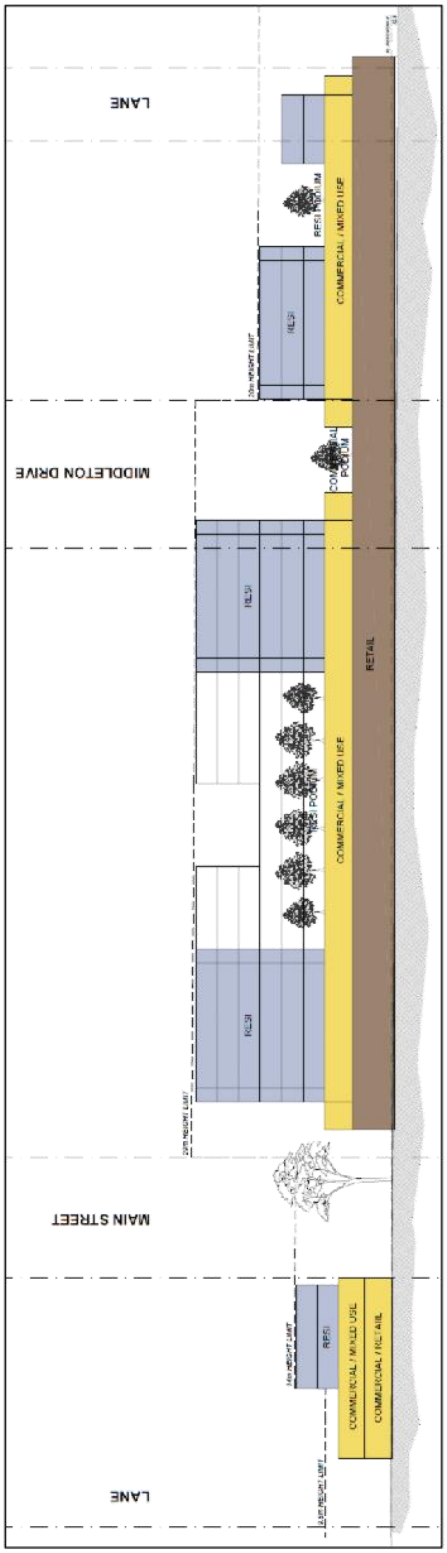








NORTH CROSS SECTION



SOUTH CROSS SECTION

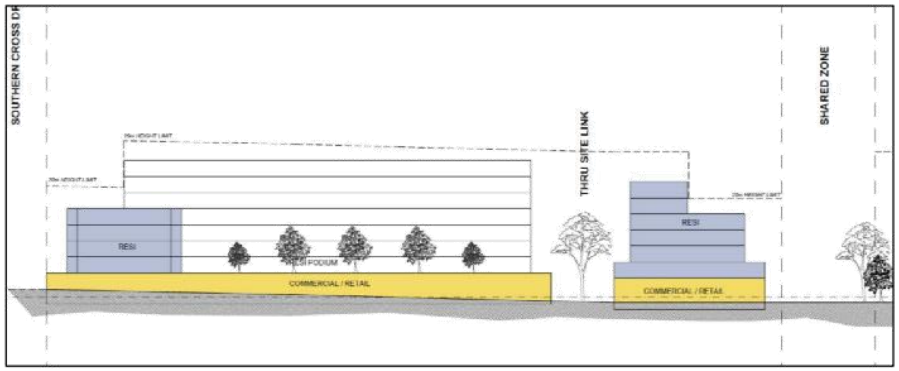
Source: Proposed town centre sections, Christiansen O'Brien Architects Pty Ltd

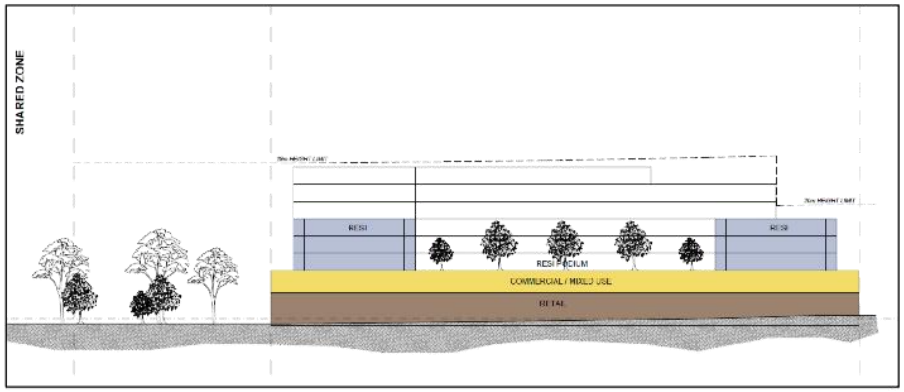
6.2 Town Centre cross sections

The cross-section diagrams above illustrate the northern and southern sections of the town centre.

The **northern section** illustrates the transition from 8.5 metres on neighbouring land to the west, to 9.5metres (2 storeys) at the direct interface with the development and then up to 14 metres (4 storeys) to Main Street. This in turn provides a better transition from the west of the street to the east of the street where the height increases to 29 metres (8 storeys). The building form has been separated by a laneway, that reduces the sense of building mass and creates additional pedestrian frontage through the open to the air laneway. It also creates a more welcoming approach to the town centre from the north, and a visual connection through to the central open space in the centre of the site. A 20 metre interface with Southern Cross Avenue is retained to provide the appropriate height transition, as illustrated right.

The southern section also illustrates the transition from 8.5 metres on neighbouring land to the west, to 9.5metres (2 storeys) at the direct interface with the development and then to 14 metres (4 storeys) Main Street. Height's within the central portion include a 1-2 storey podium, with heights above ranging up to 6, 7 and 8 storeys (29 metres). This transitions back to the east, being 4 and 5 storeys (20 metres). The issue of transition in height has been thought through across the development to adjoining zones, rather than just at the interface. The transition in heights also retains the urban design outcomes sough to allow sunlight to open spaces, laneways and streets and create active frontages to facilitate a vibrant and welcoming town centre.

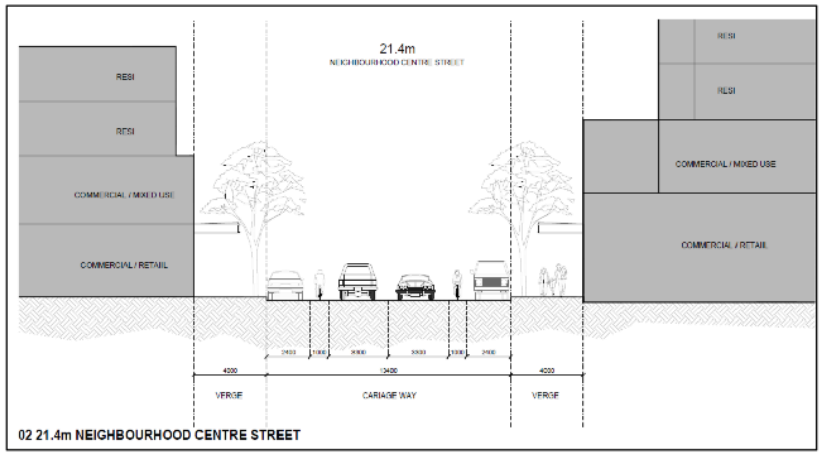


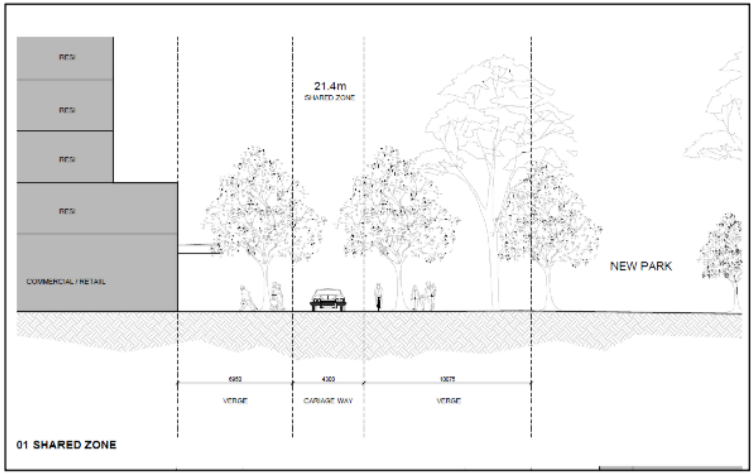


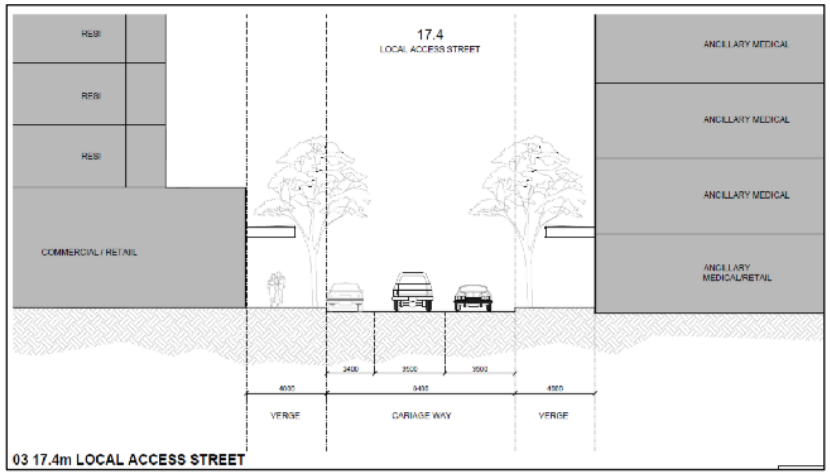
6.3 STREET CROSS SECTIONS

The following cross sections illustrate the three-street hierarchy included within the town centre. The street network and heirarchy diagram on page 9 illustrates the location of the streets and the perspectives in Section 8 provide some visual context. The three streets include:

1. East west shared zone – 21.4 metres, including pedestrian areas;
2. Neighborhood centre street (Main Street) – 21.4 metres; and
3. Local Access Street (Middleton Drive) – 17.4 metres



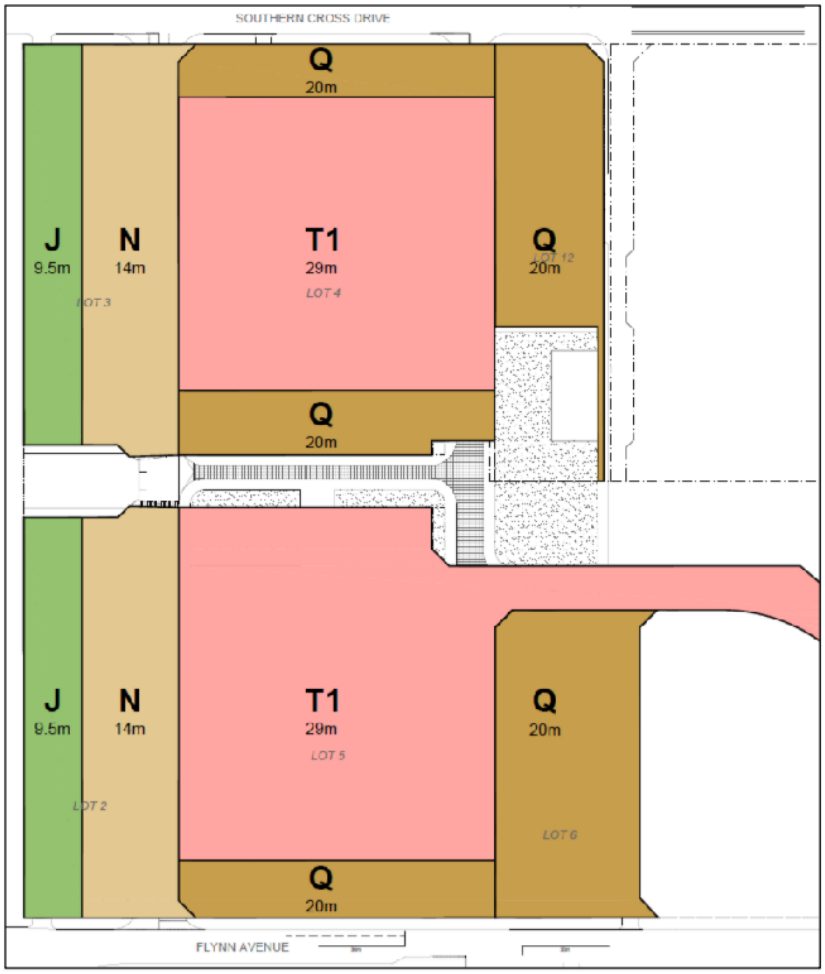


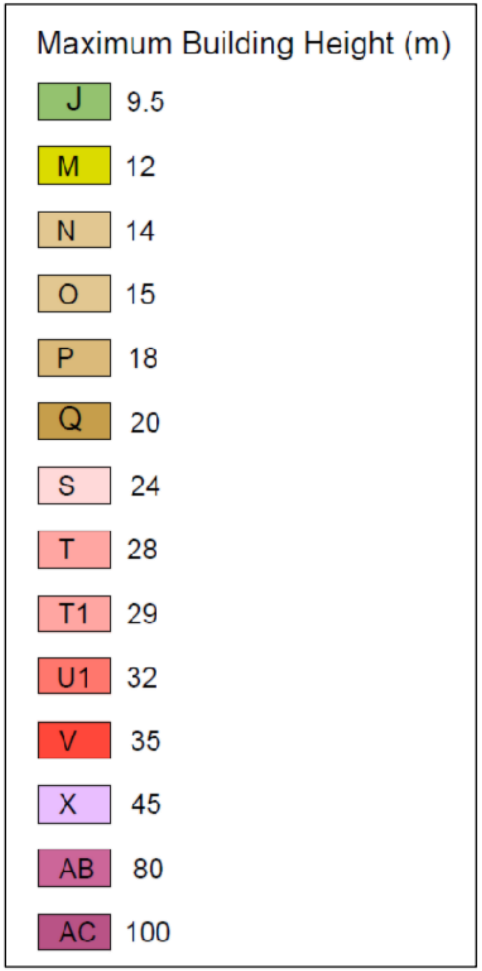


Source: Proposed street sections, Christiansen O'Brien Architects Pty Ltd

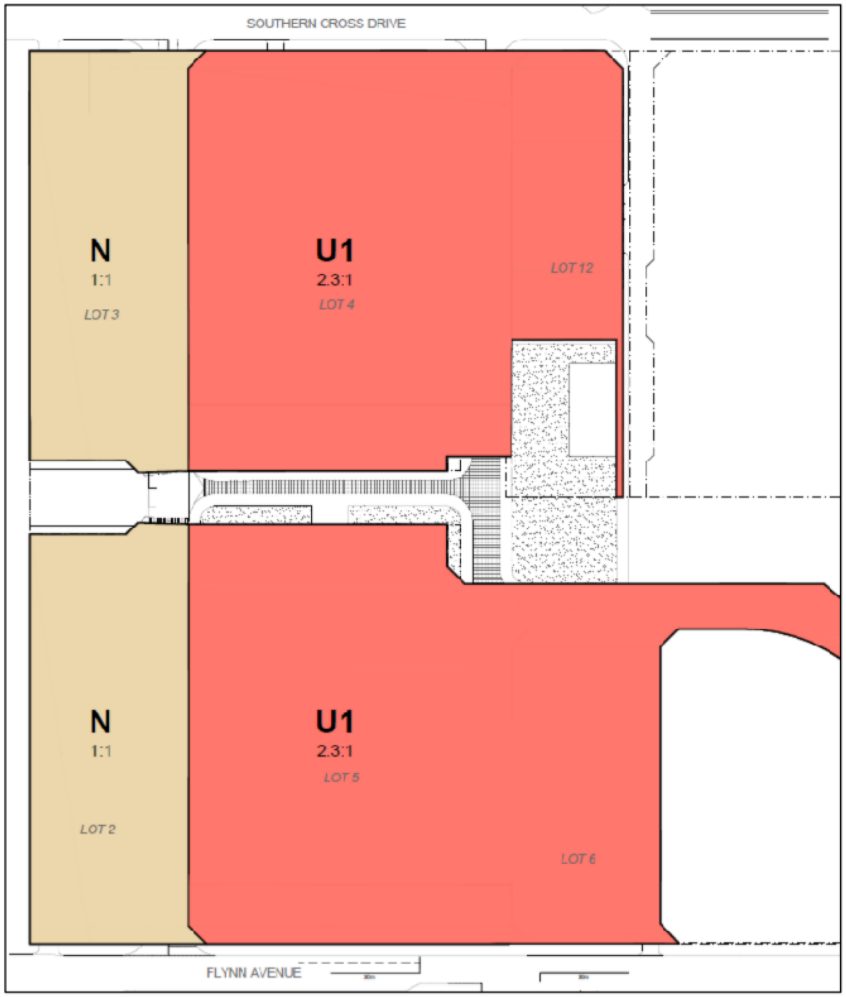
7.0 DRAFT LEP MAPS

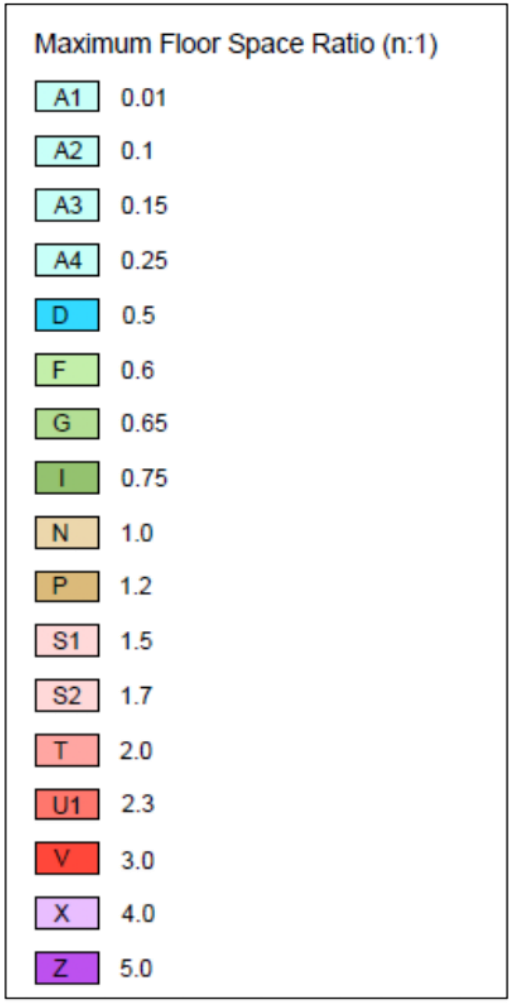
7.1 Draft Liverpool LEP 2008 Maximum Building Height Map





7.2 Draft Liverpool LEP 2008 Maximum FSR Map





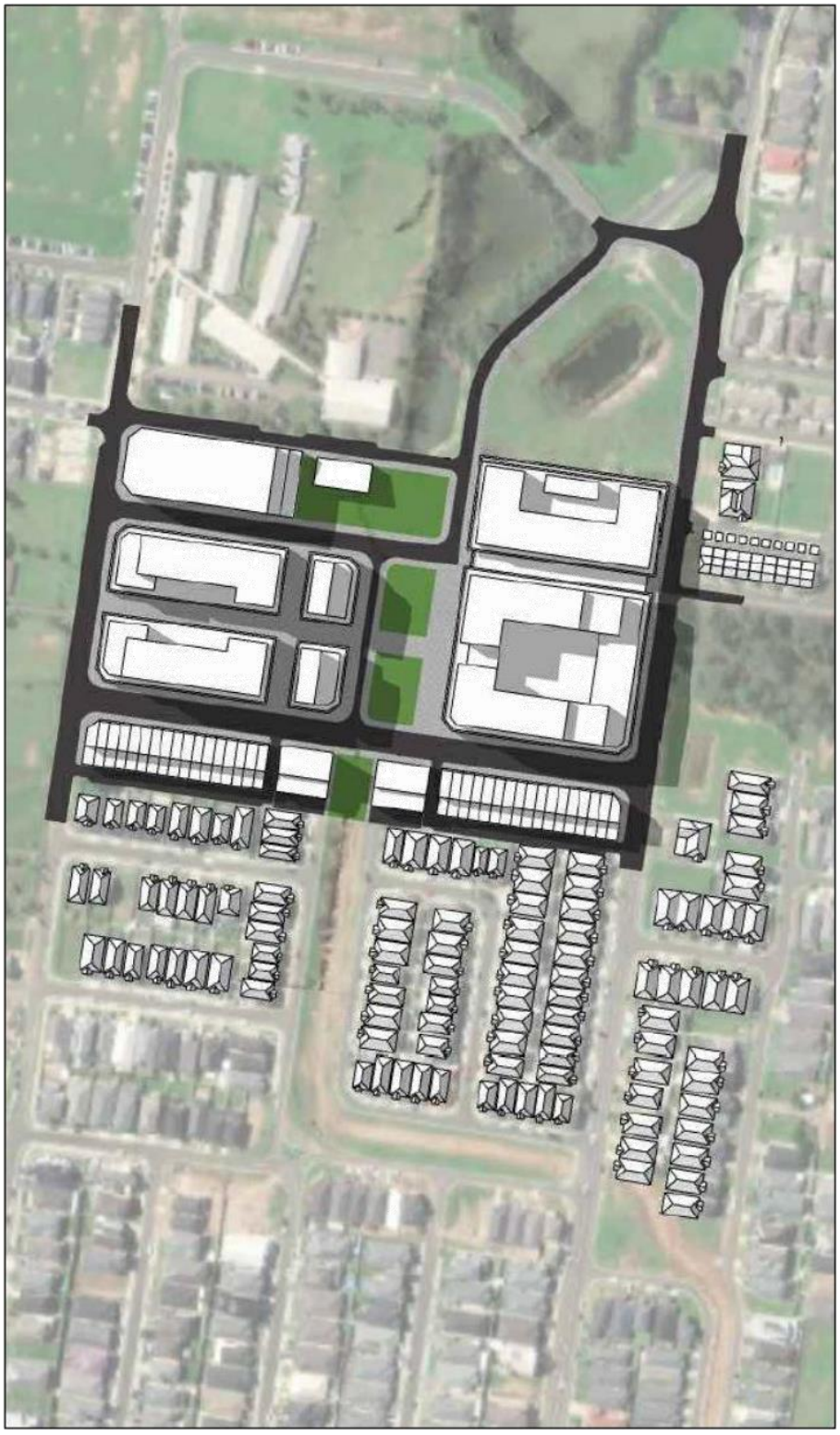
8.0 SHADOW DIAGRAMS

8.1 Winter Solstice



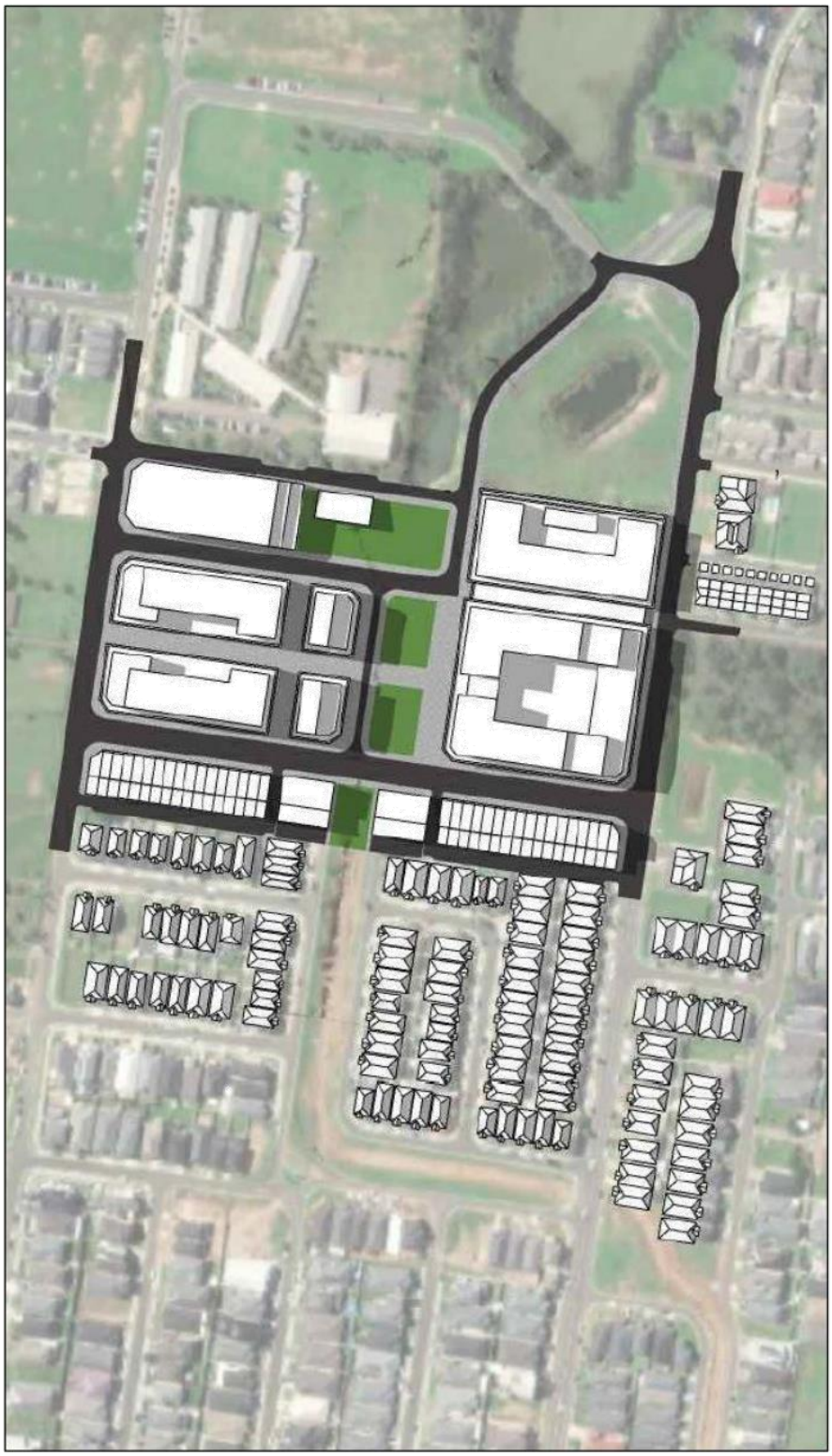
Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 0900 ON 21 June



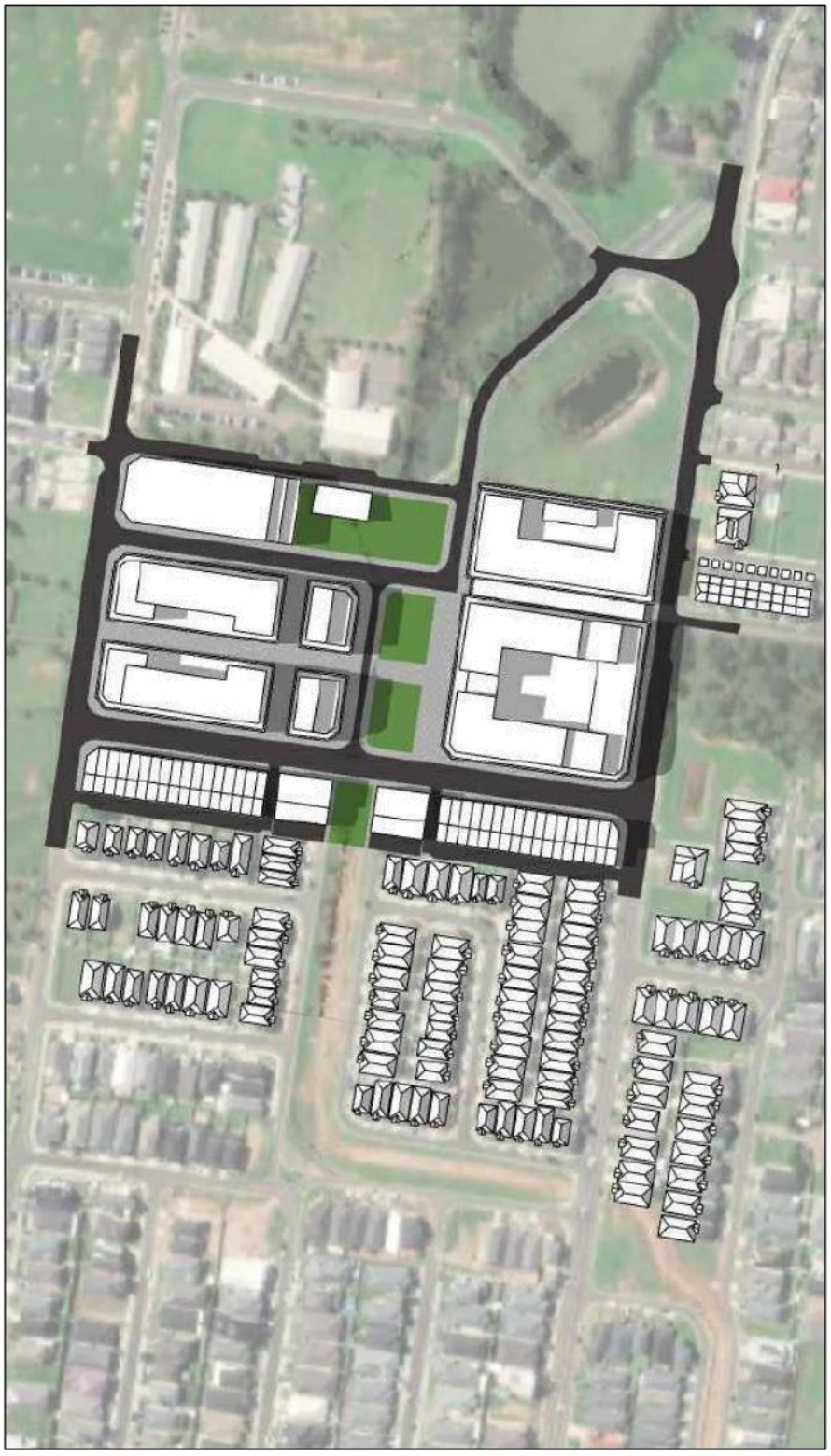
Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 1000 ON 21 June



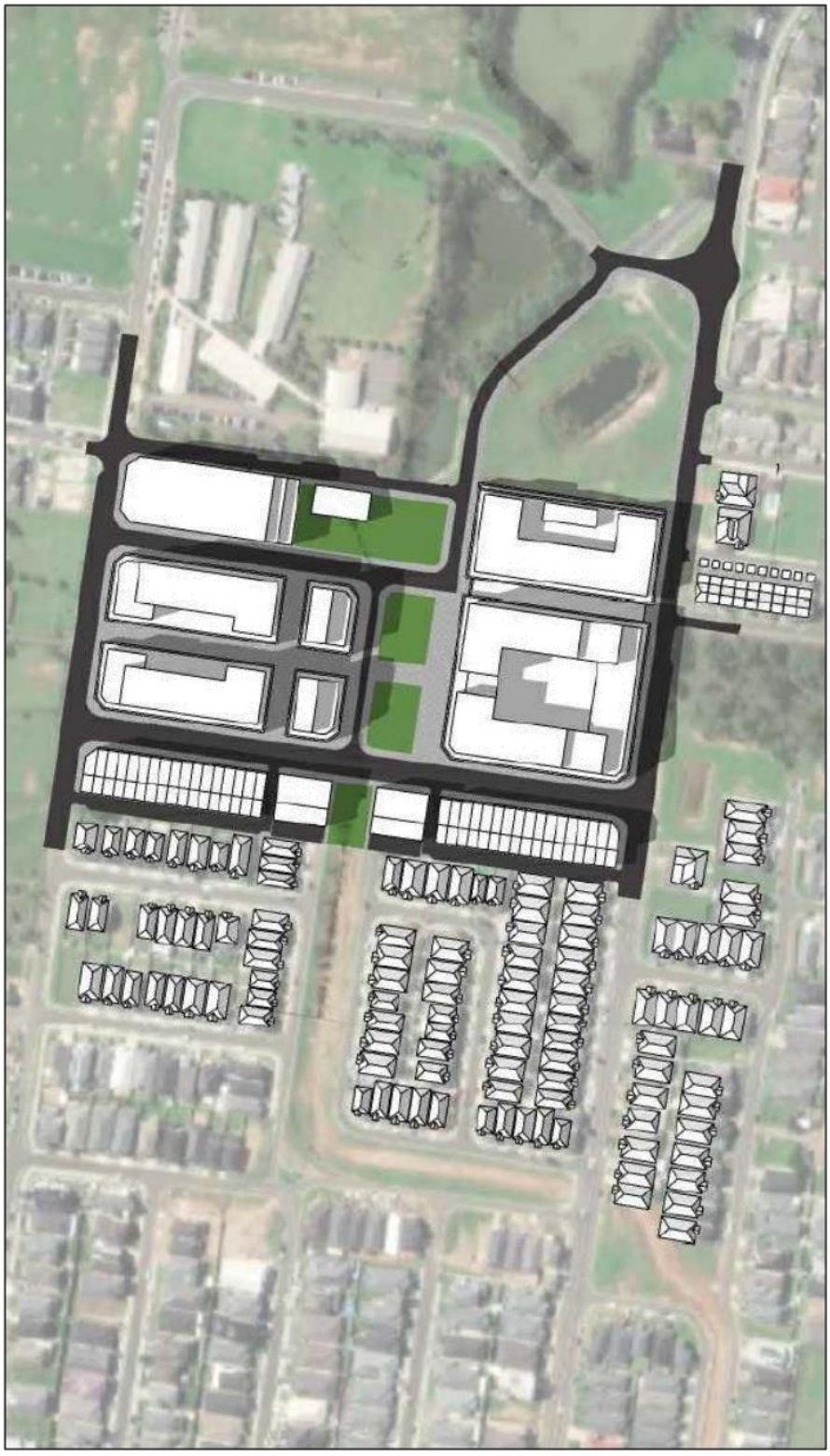
Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 1100 ON 21 June



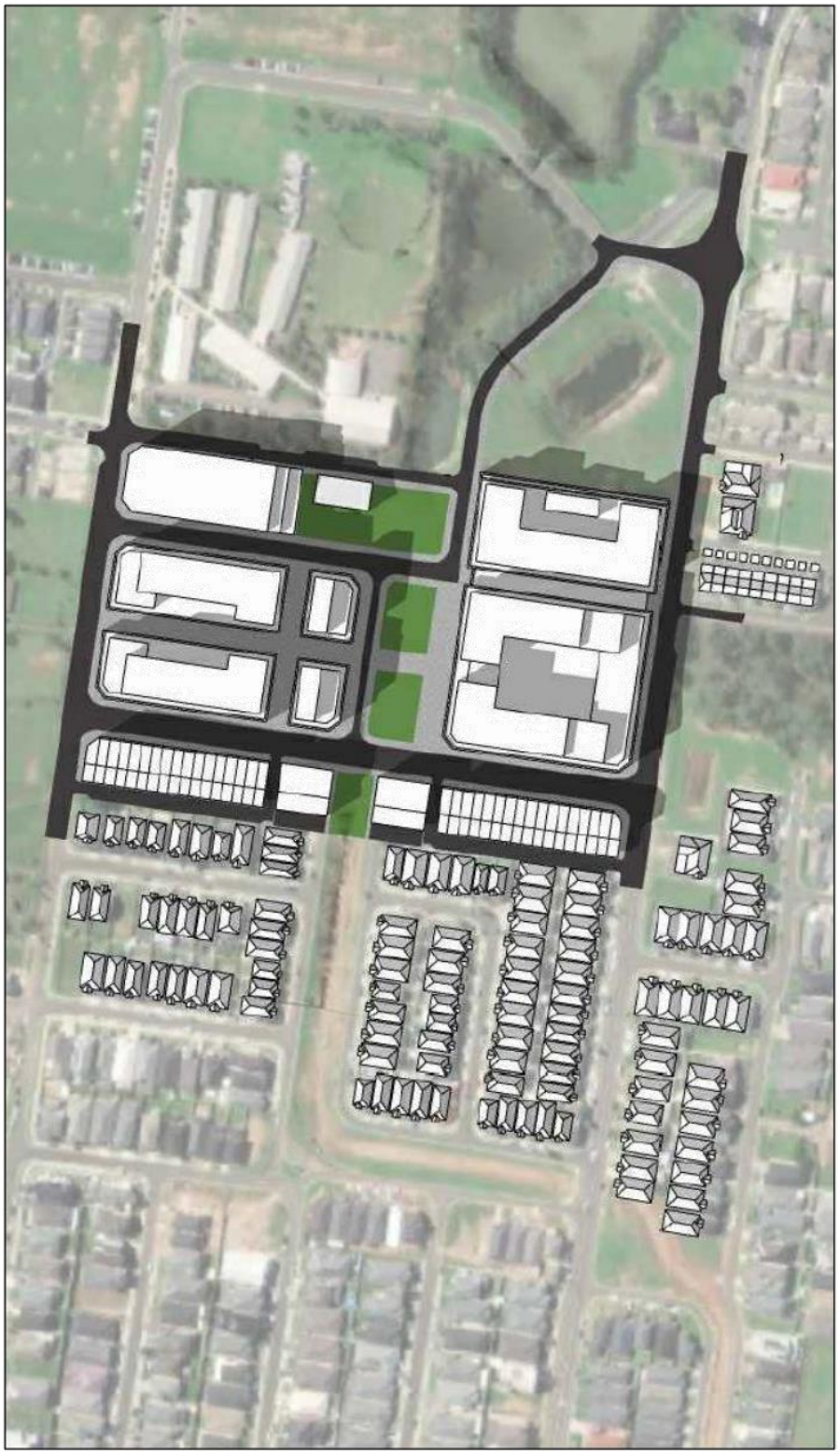
Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 1200 ON 21 June



Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 1300 ON 21 June



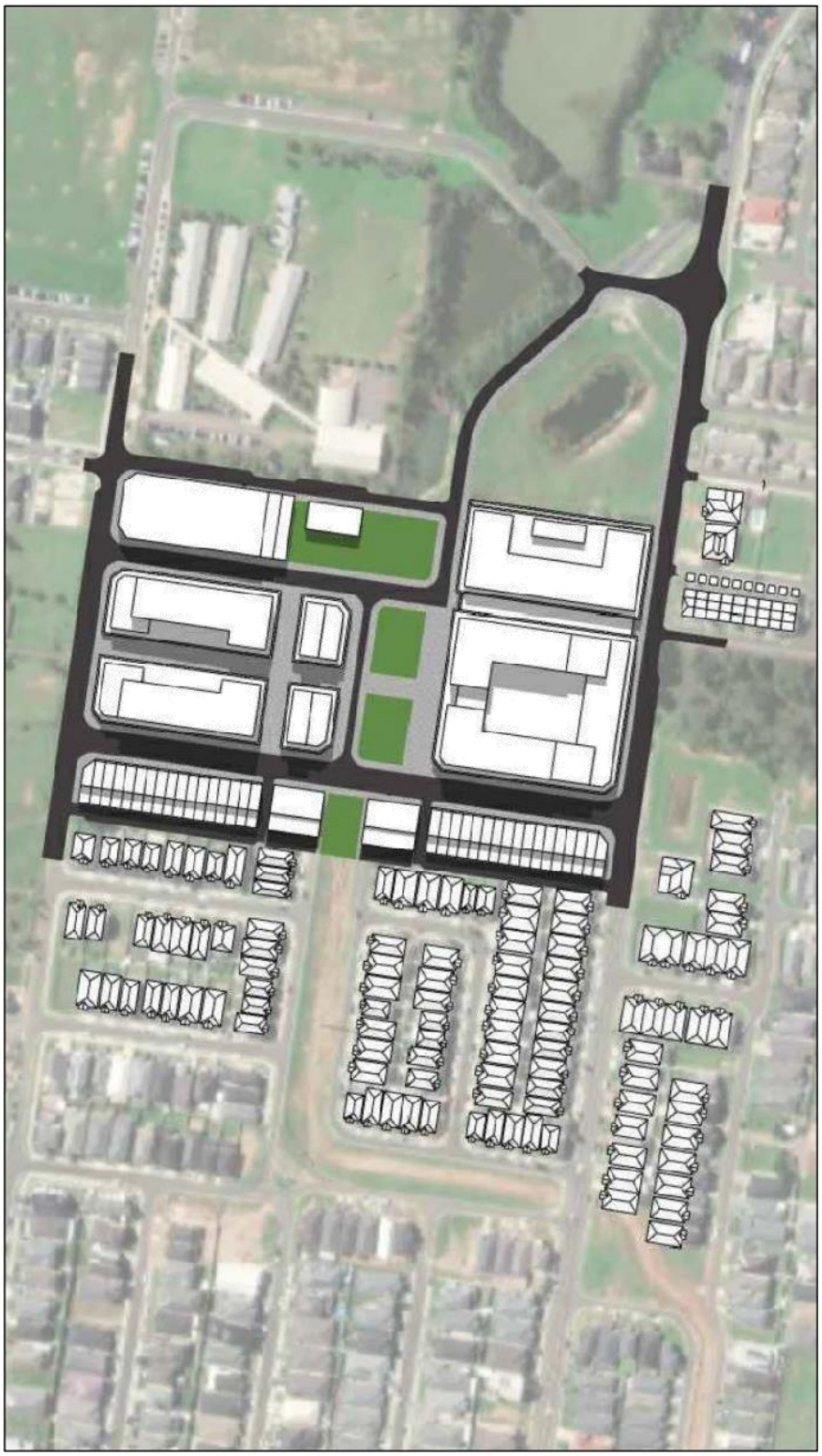
Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 1400 ON 21 June



Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

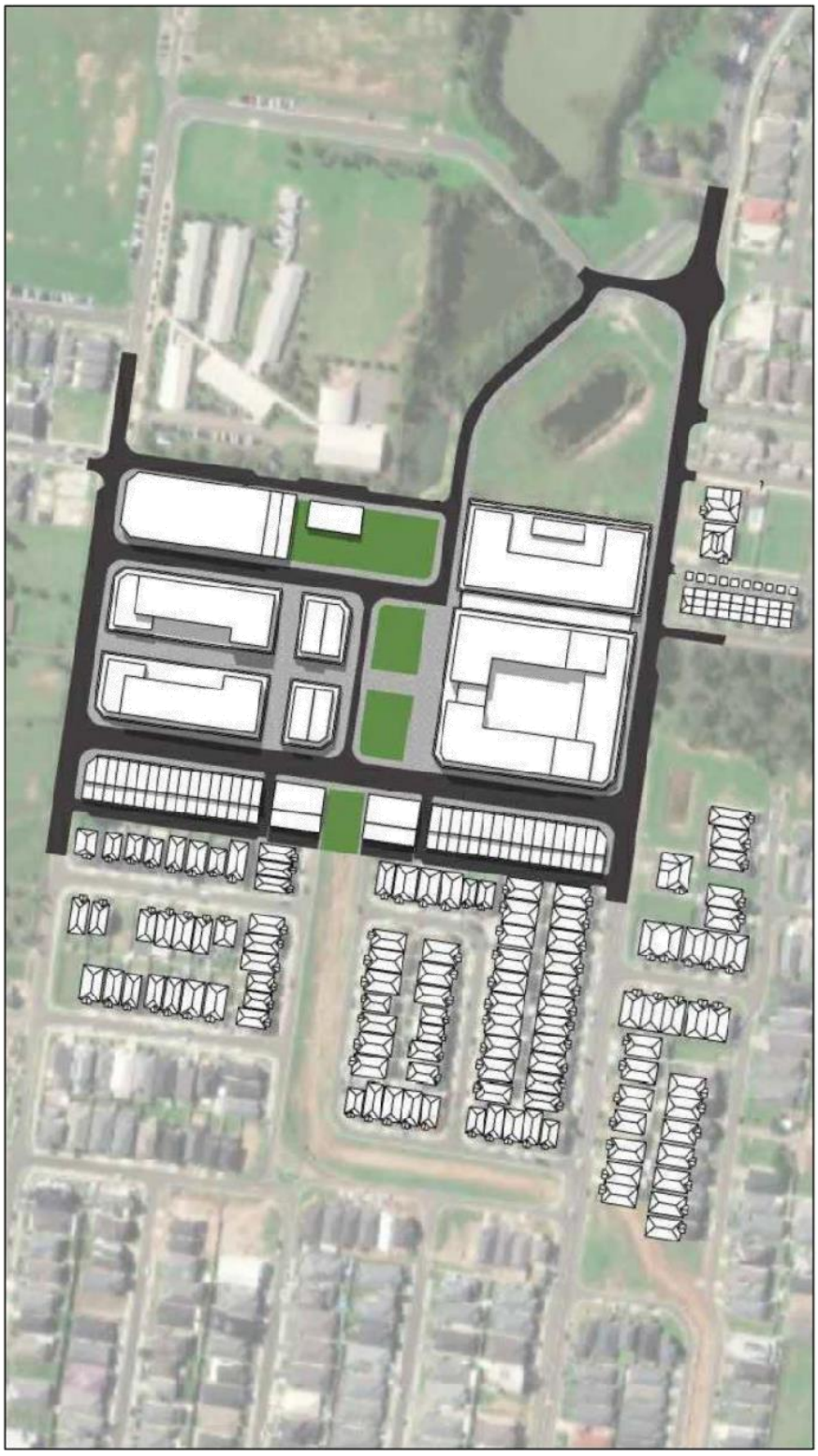
SOLAR DIAGRAM – 1500 ON 21 June



Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

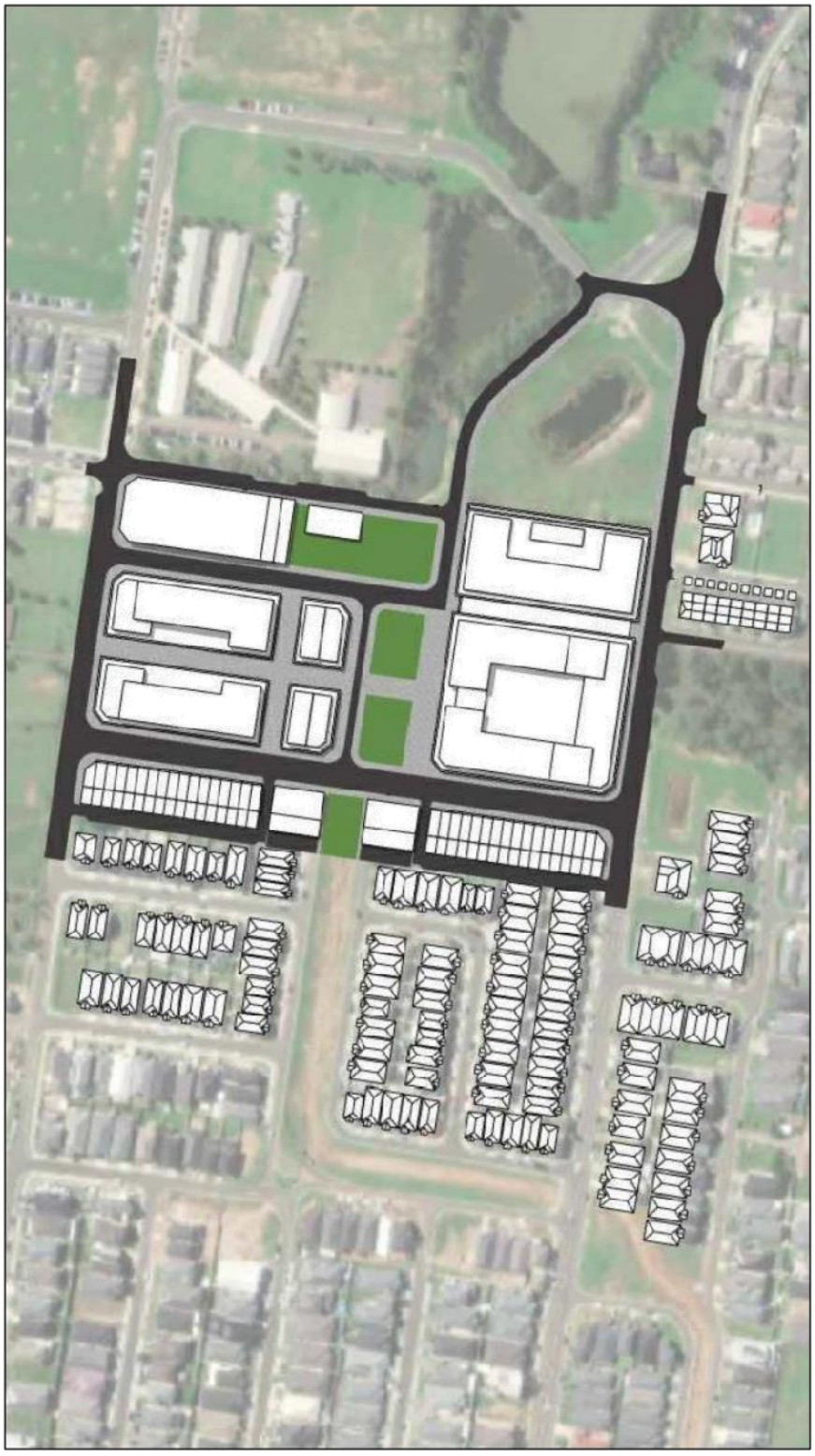
SOLAR DIAGRAM – 0900 ON 21 December

8.2 Summer Solstice



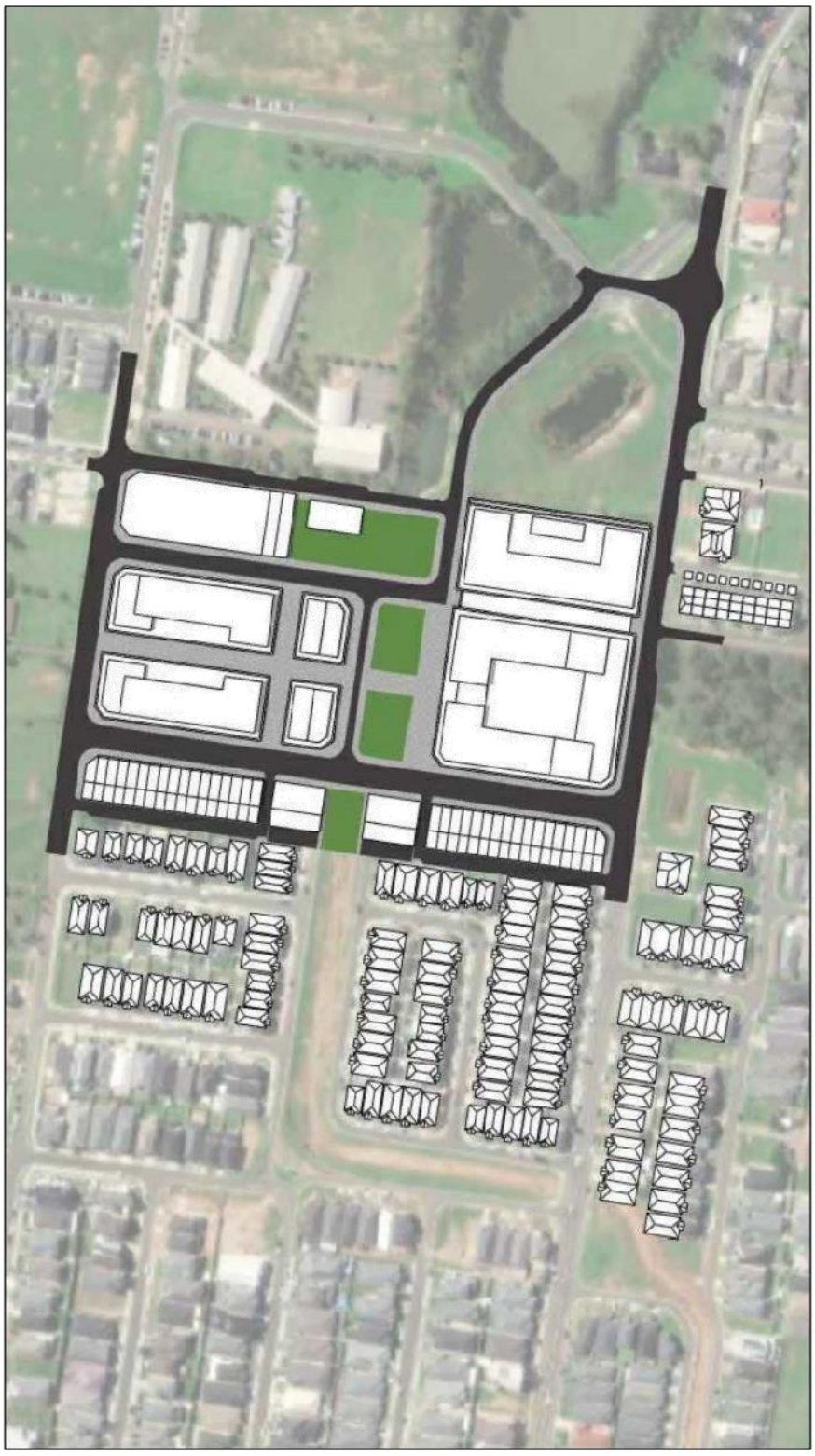
Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 1000 ON 21 December



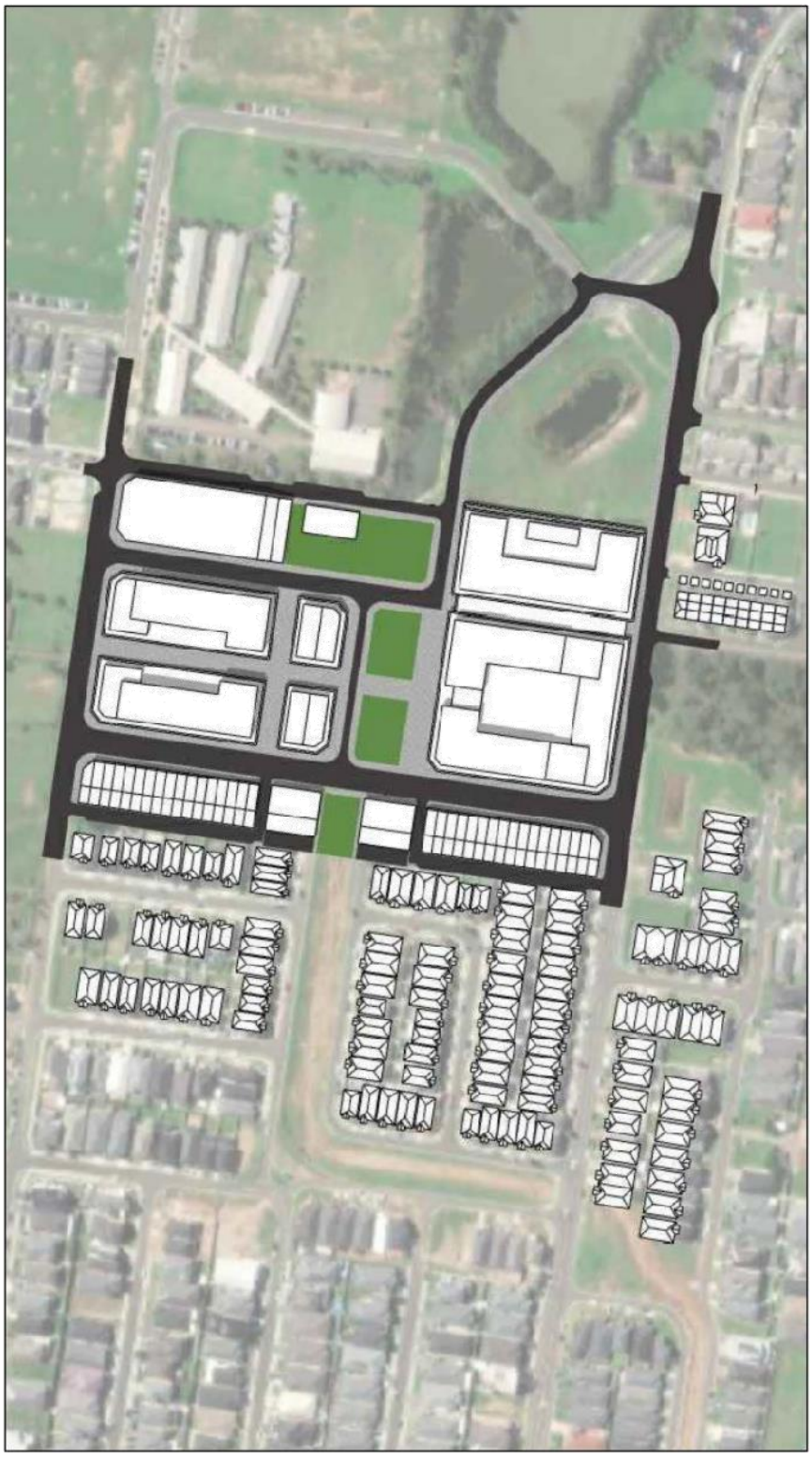
Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 1100 ON 21 December



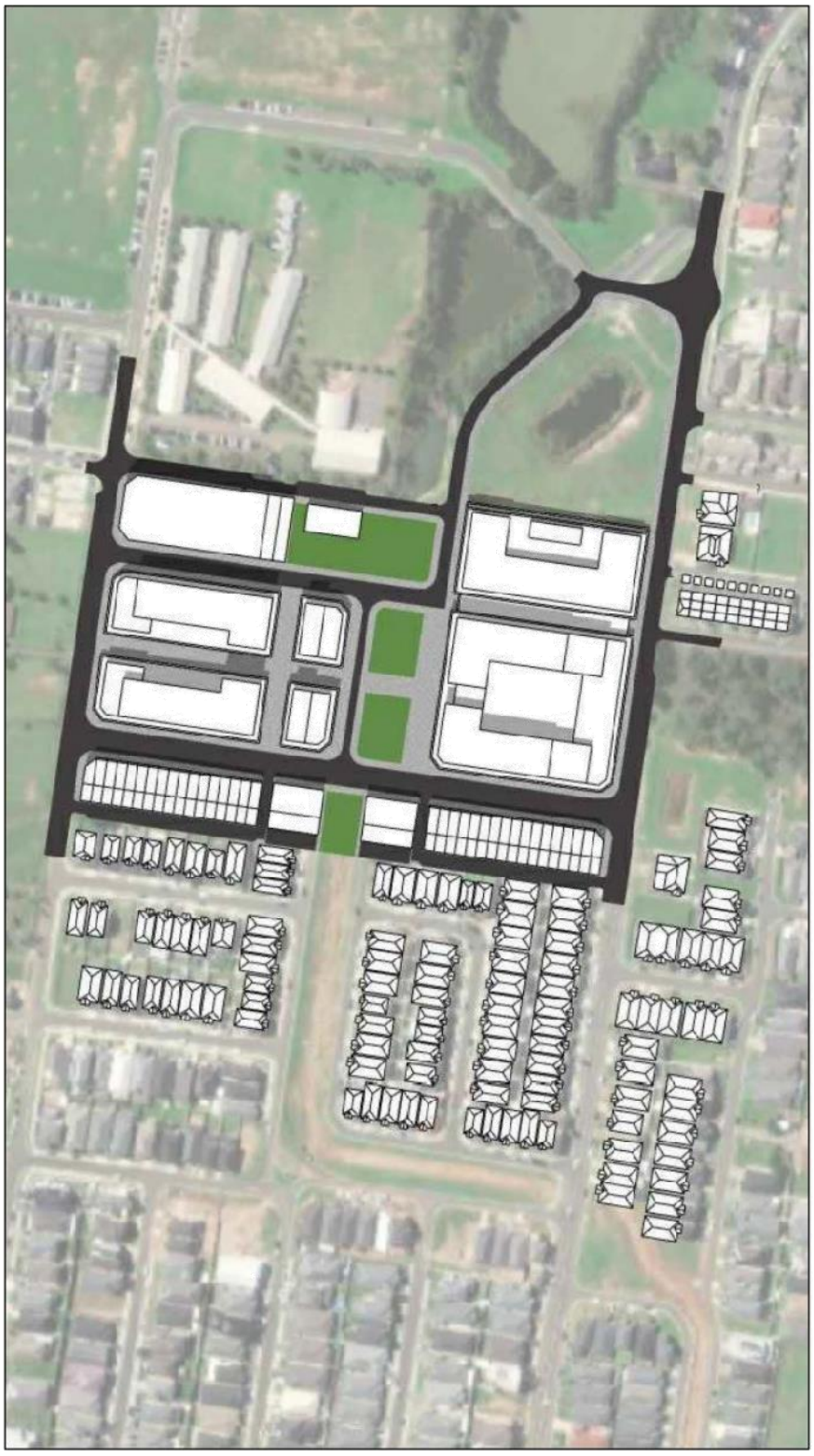
Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 1200 ON 21 December



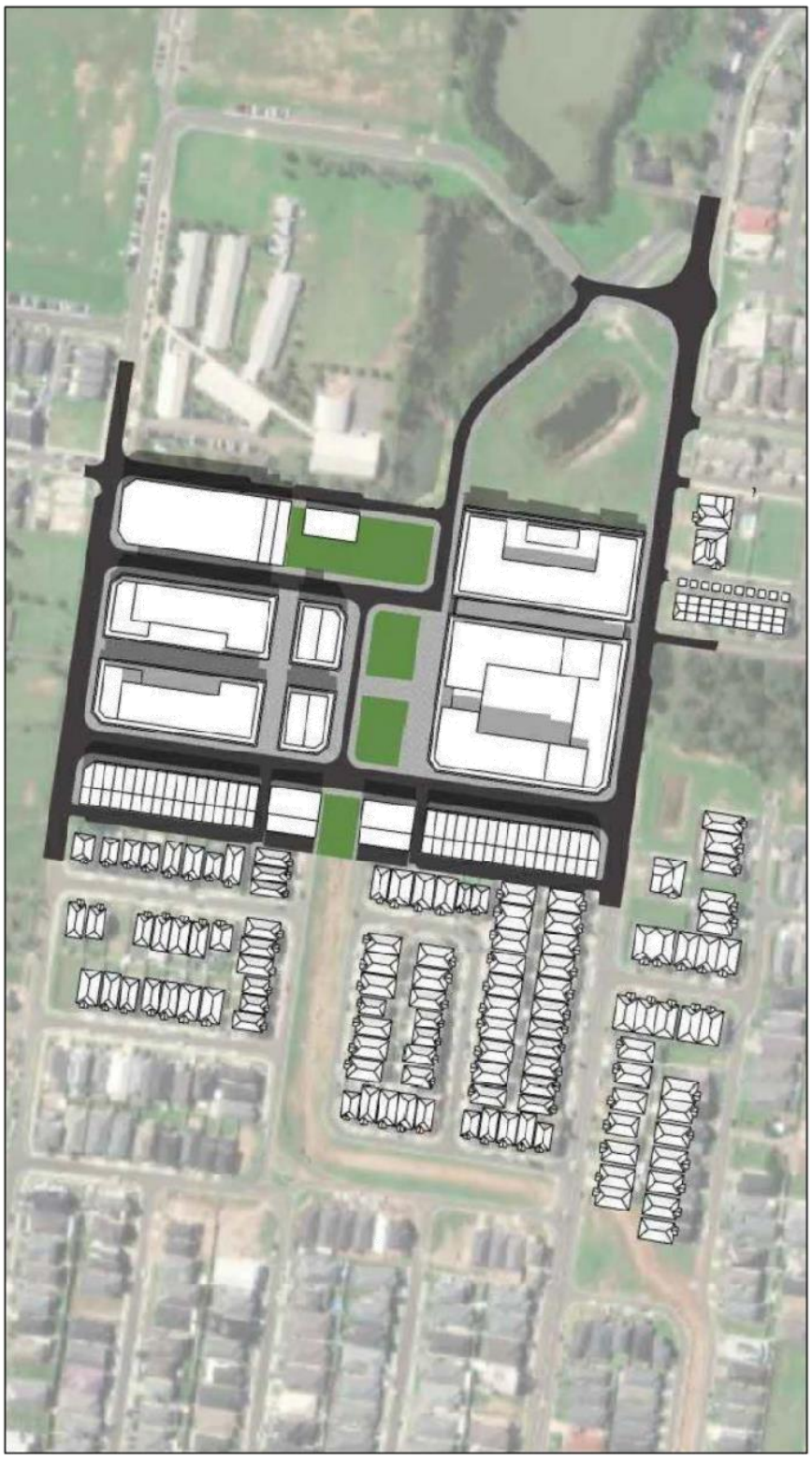
Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 1300 ON 21 December



Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 1400 ON 21 December



Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

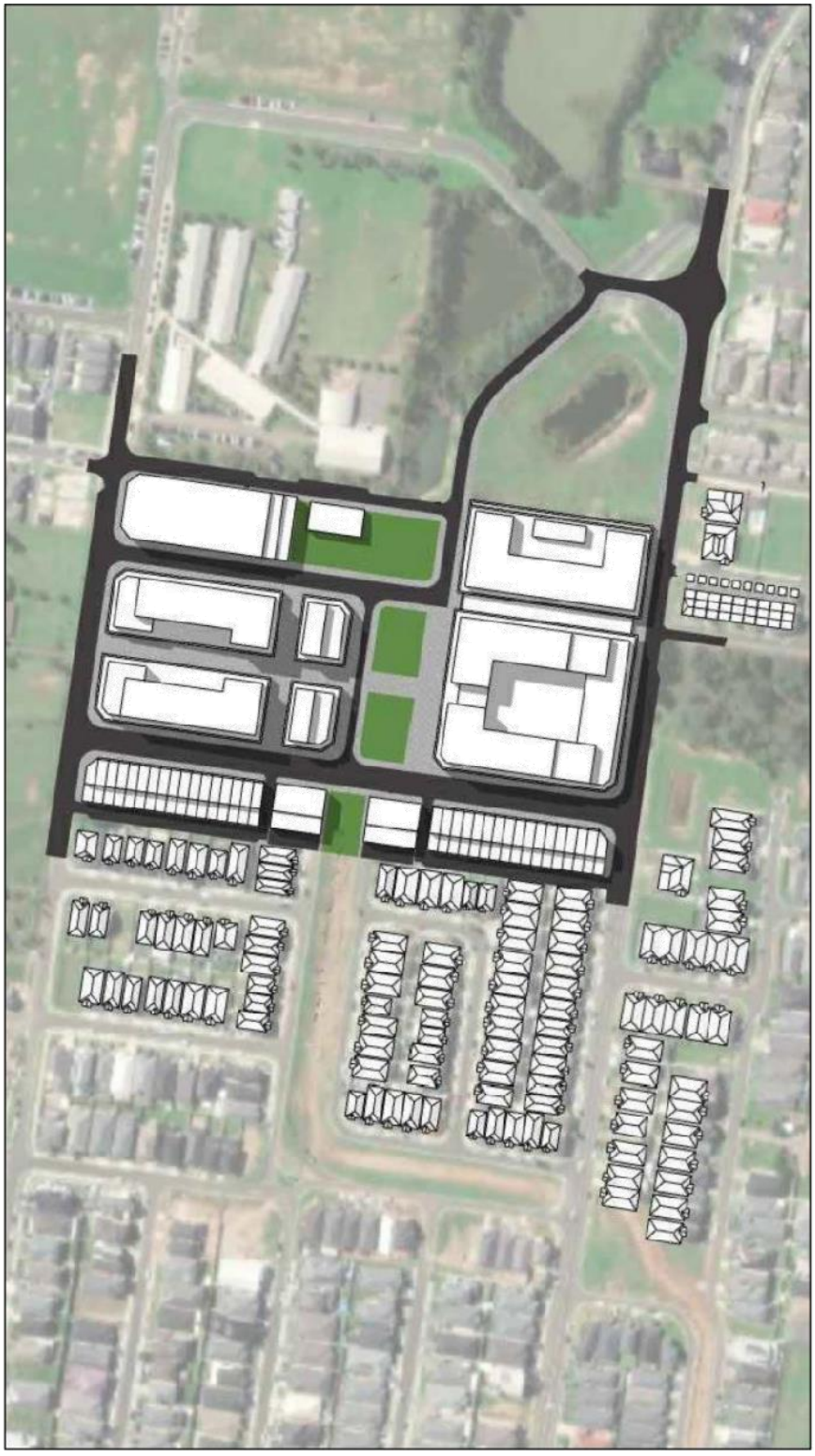
SOLAR DIAGRAM – 1500 ON 21 December

8.3 Autumn and Spring Equinox



Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 0900 ON 21 March and September



Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

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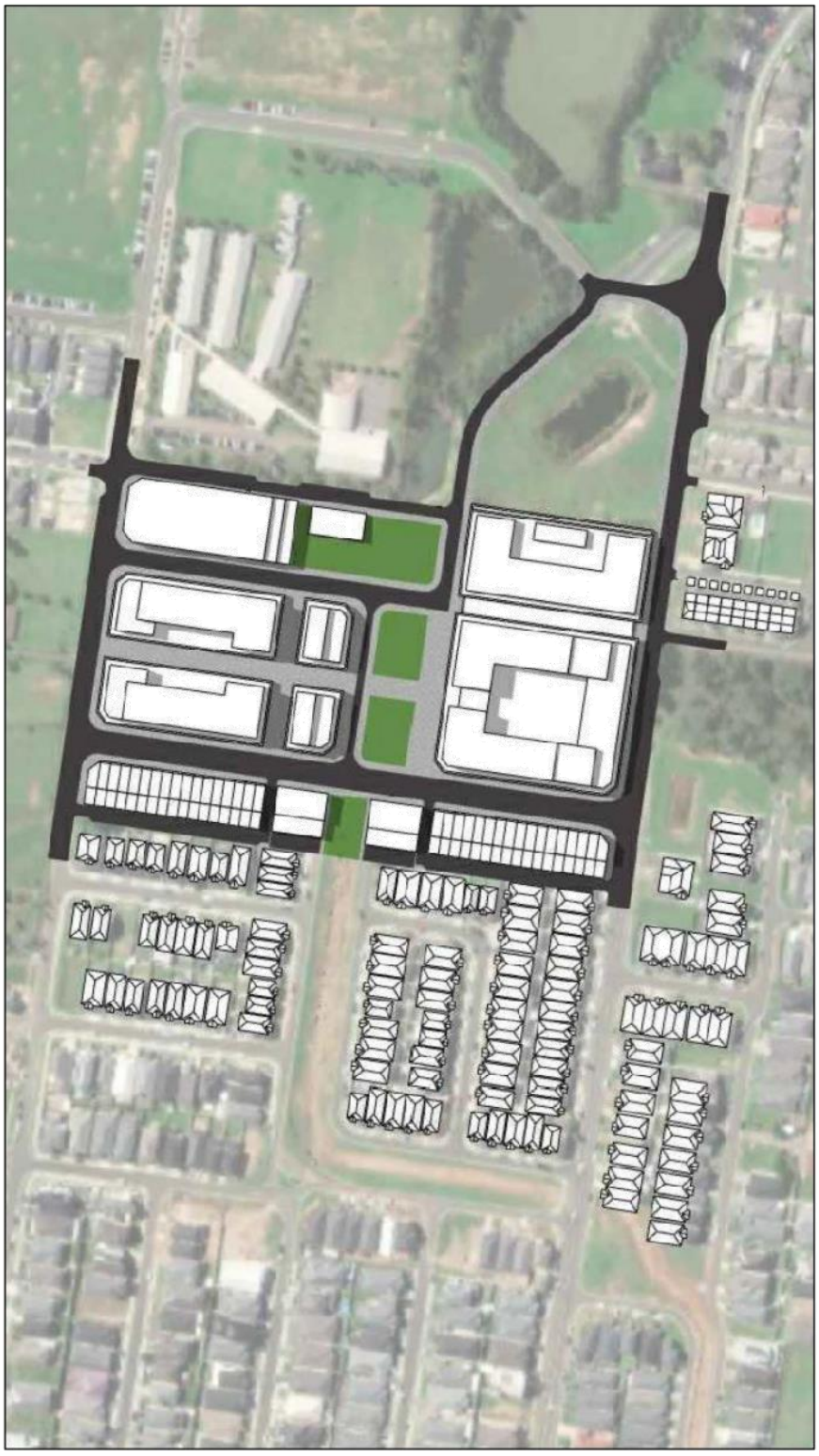

Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

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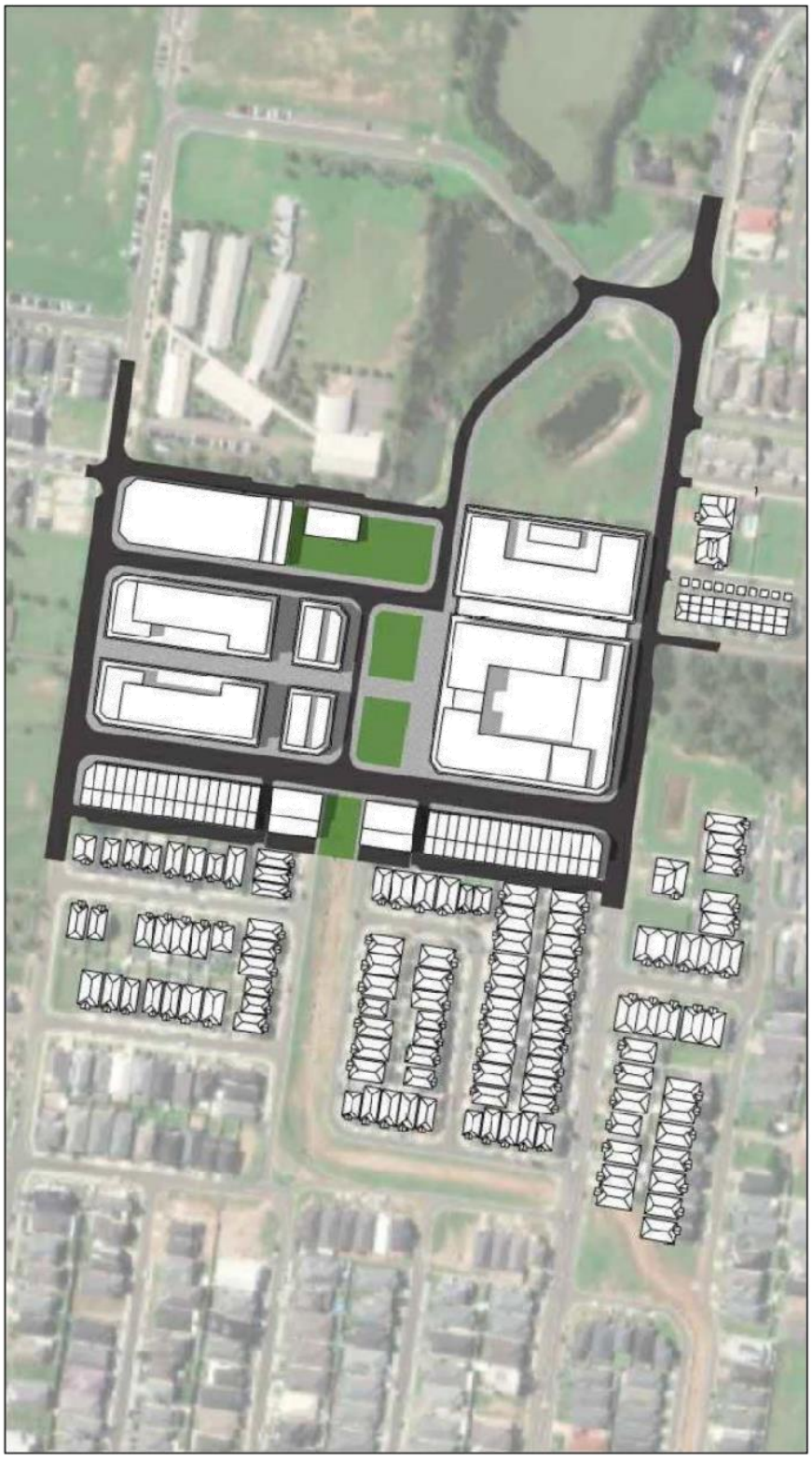

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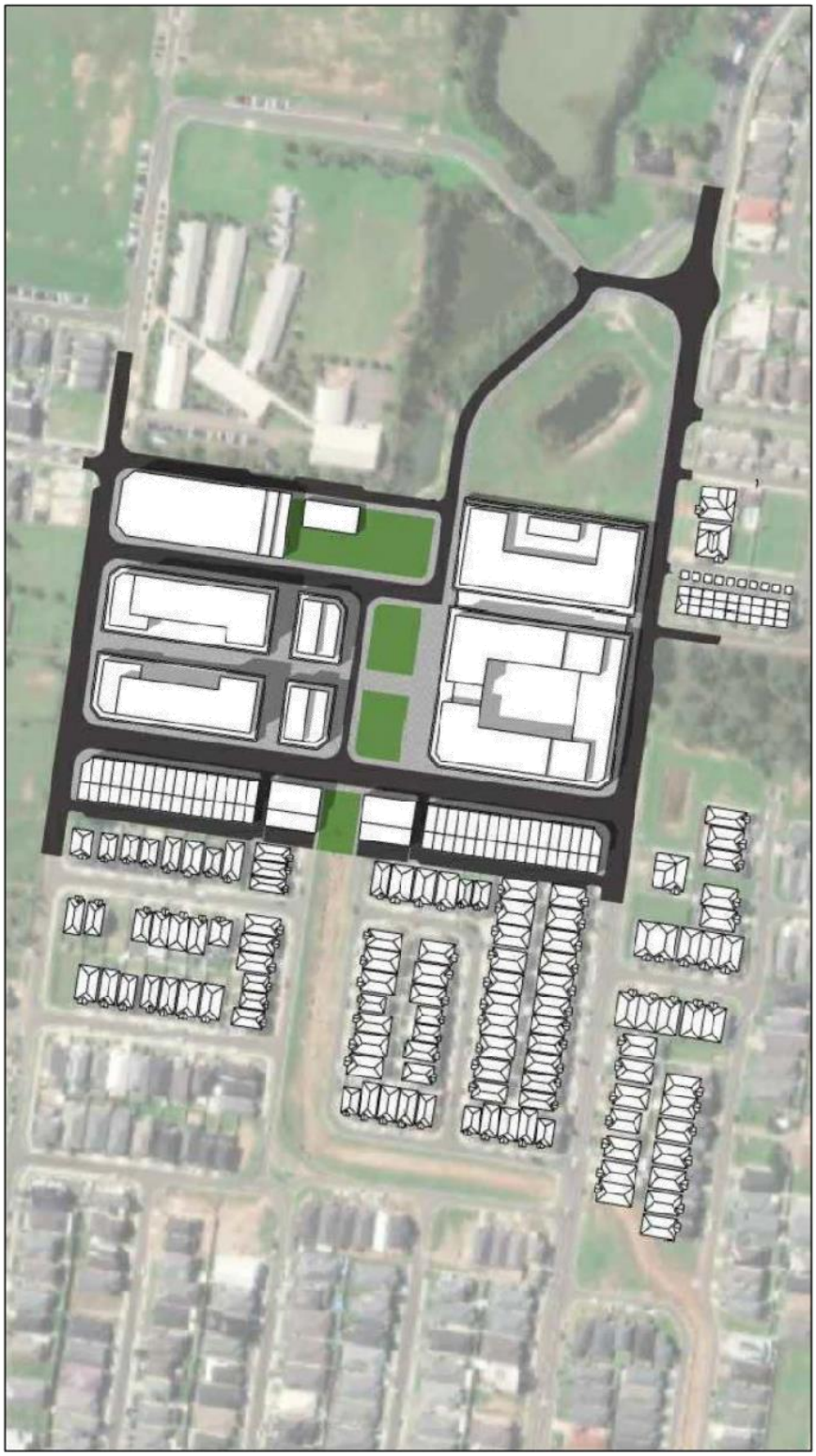

Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

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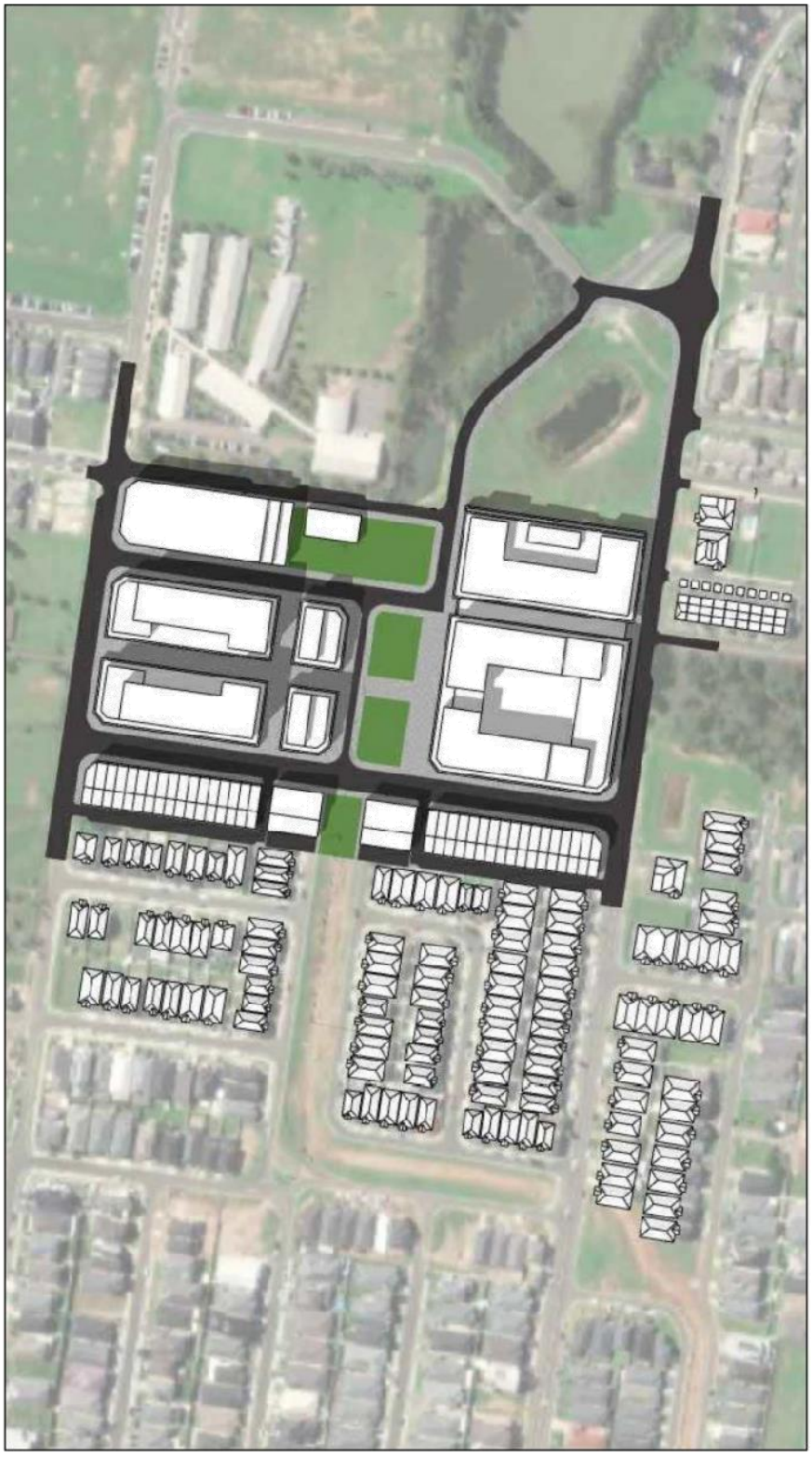

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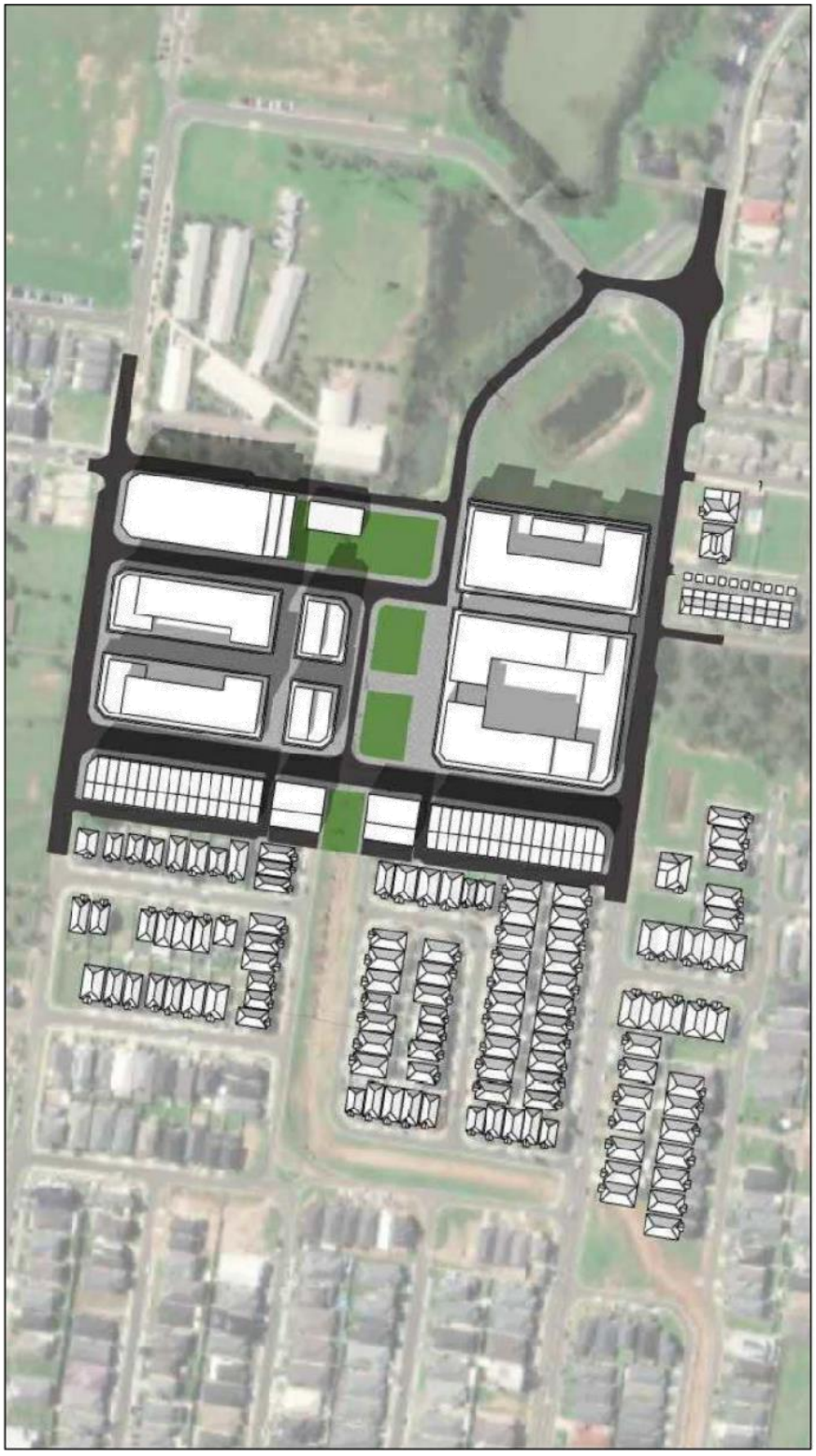


Source: Proposed Concept Plans, Christiansen O'Brien Architects Pty Ltd

SOLAR DIAGRAM – 1400 ON 21 March and September

8.4 Solar Analysis

The shadow diagrams above illustrate the solar access impacts on 21st June (the shortest day of the year); and also include 21st December (the longest day of the year and the Spring and Autumn Equinox (21st March and September). In relation to the shadow diagrams on the shortest day of the year, the analysis demonstrates:

1 Minimal impact to residential properties to the west, and no impact after 10.00am (+5hrs clear solar access between 9.00am and 3.00pm).

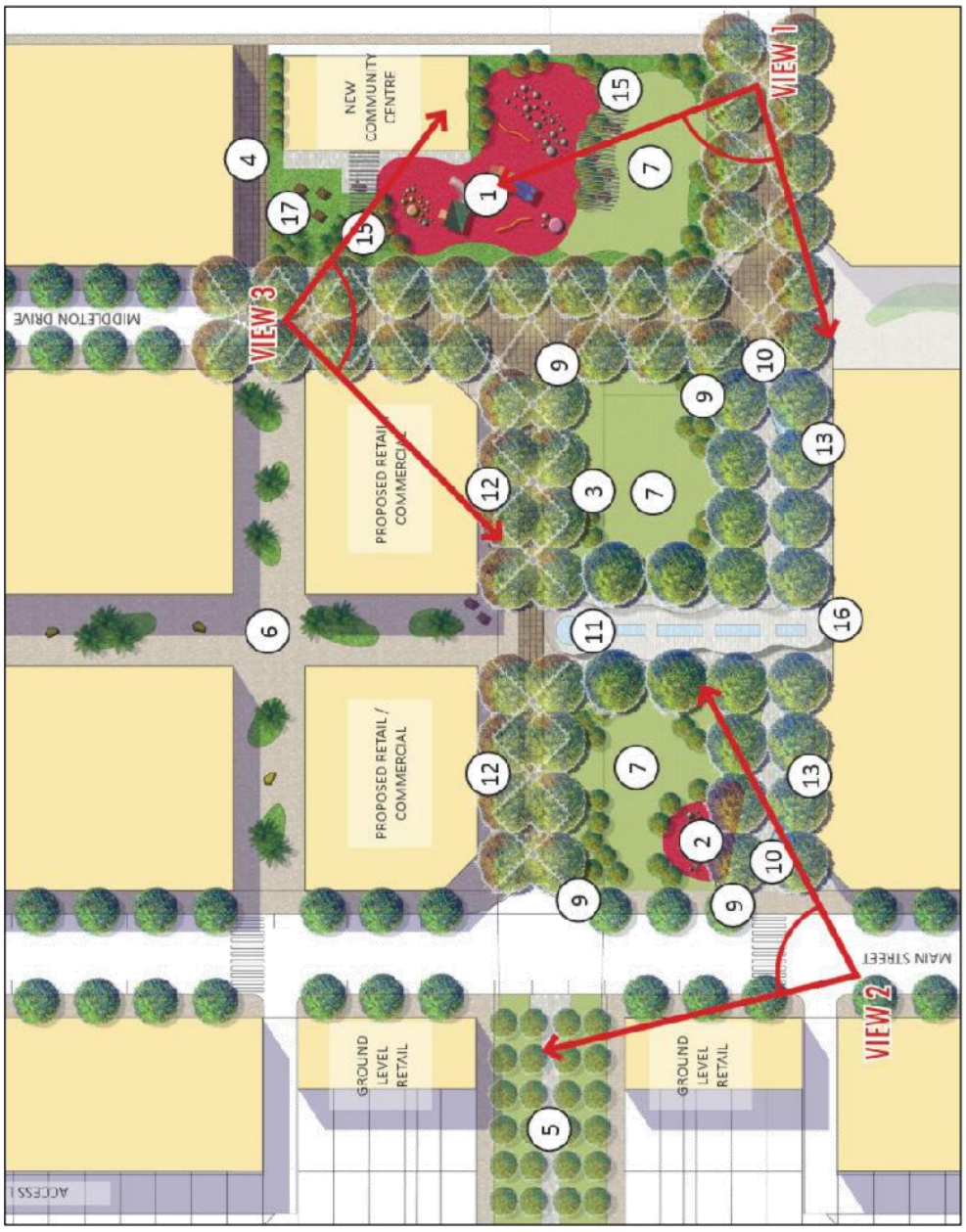
2 Minimal impact to properties south of Flynn Avenue. (Basically no shadow impact to existing residential properties to the south between 10.00am and 2.00pm - +4hrs clear solar access between 9.00am and 3.00pm).

3 Minimal impact to communal open space. (No significant shadows cast before 1.00pm +4hrs clear solar access between 9.00am and 1.00pm). Additional open space provided in revised scheme facilitating additional areas with clear solar access later in the day where other areas may be in shade. Therefore, residents and visitors will be able to access open space in the town centre that will receive sunlight at any time of day.

4 Minimal impact to school. (No significant shadows cast before 2.00pm +5hrs clear solar access between 9.00am and 2.00pm).

5 Good solar access to private open space (on Podium between 10.00am-1.00pm – 3hrs)

6 Good solar access to ground floor active uses along the main streets at various parts of the day encouraging cafes and alfresco uses to activate the street edge.


NEW COMMUNITY CENTRE
PROPOSED RETAIL / COMMERCIAL
PROPOSED RETAIL / COMMERCIAL
GROUND LEVEL RETAIL
GROUND LEVEL RETAIL
MIDDLETON DRIVE
MAIN STREET
ACCESS
VIEW 1
VIEW 2
VIEW 3

8.1 View 1

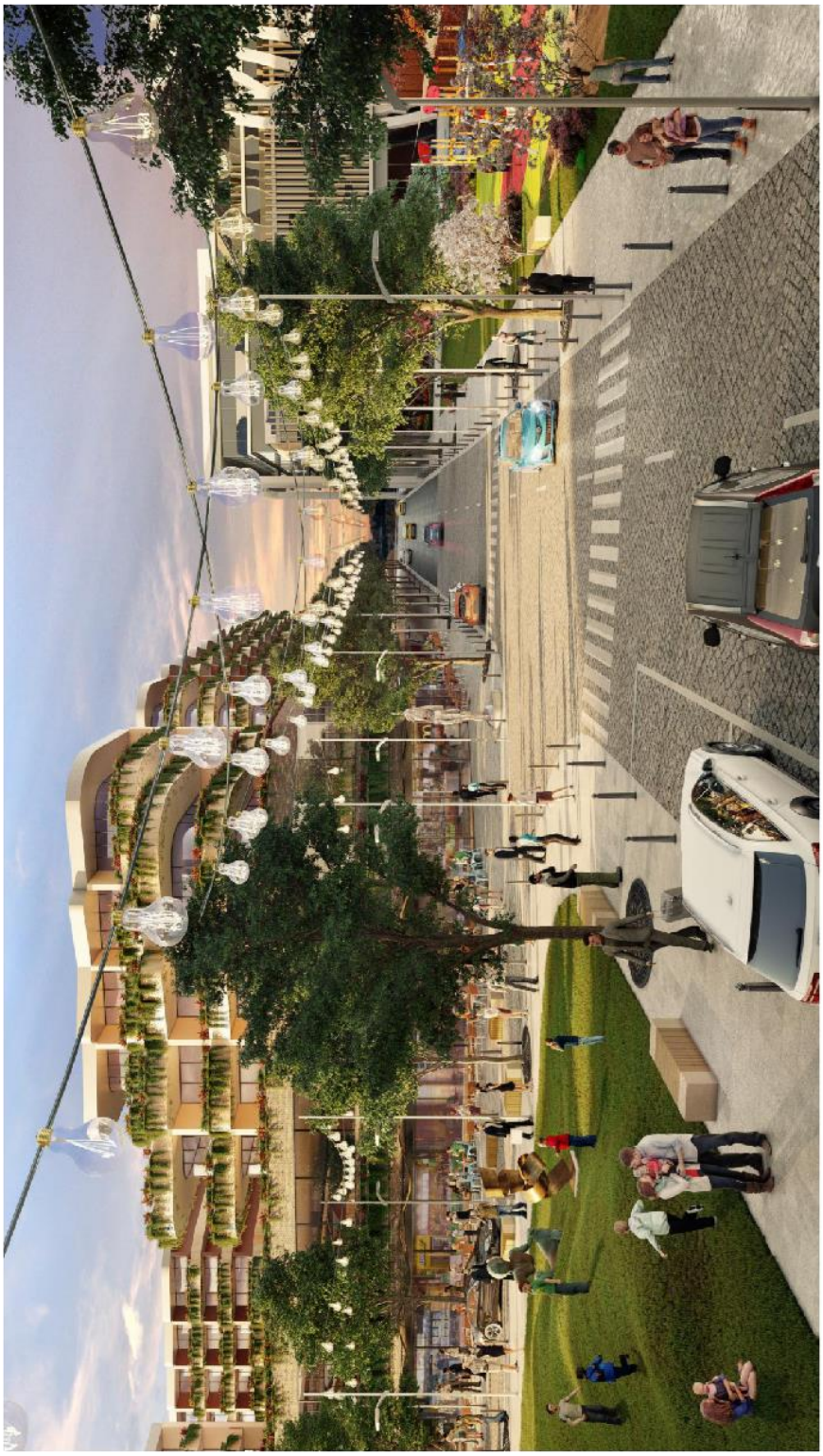


8.2 View 2



8.3 View 3





8.0 CONCLUSION

This Urban Design Report has been prepared by Pacific Planning Pty Ltd on behalf of Manta Group Pty Ltd to support the Planning Proposal for the Middleton Grange town centre. Specifically, this report addresses the matters raised during the public exhibition of the planning proposal in August to October 2018.

The key issues raised during the public exhibition period included:

1. The maximum heights being proposed (i.e. 12 storeys);
2. The amount of apartments;
3. The amount of open space;
4. The lack of investment in public infrastructure over a number of years in the suburb of Middleton Grange and the impact that the development of the town centre may have on the road network; and
5. The erroneous claim that the proposal was to be mainly a social housing development.

This report outlines the refined design principles and amendments to the exhibited Planning Proposal, which includes:

- A reduction in maximum building height from 35 and 32 metres (12 storeys) to 29 metres (8 storeys);
- Further increase and amendments to the internal height transition, particularly to the new area of open space and adjoining land;
- A reduction in the number of apartments in the town centre, from 912 dwellings to 671 dwellings;
- Significant increase in the amount of open space, from 751sq.m to 7,632sq.m;
- The creation of new laneways and through links, to reduce building bulk and mass, increase permeability and accessibility, and create additional active frontages to pedestrian spaces;
- Increased amount of shared vehicle and pedestrian space, with traffic calming measures, to provide a larger consolidated safe area of communal open space for residents and visitors of Middleton Grange;
- The Inclusion of a new medical centre on the eastern part of the town centre.

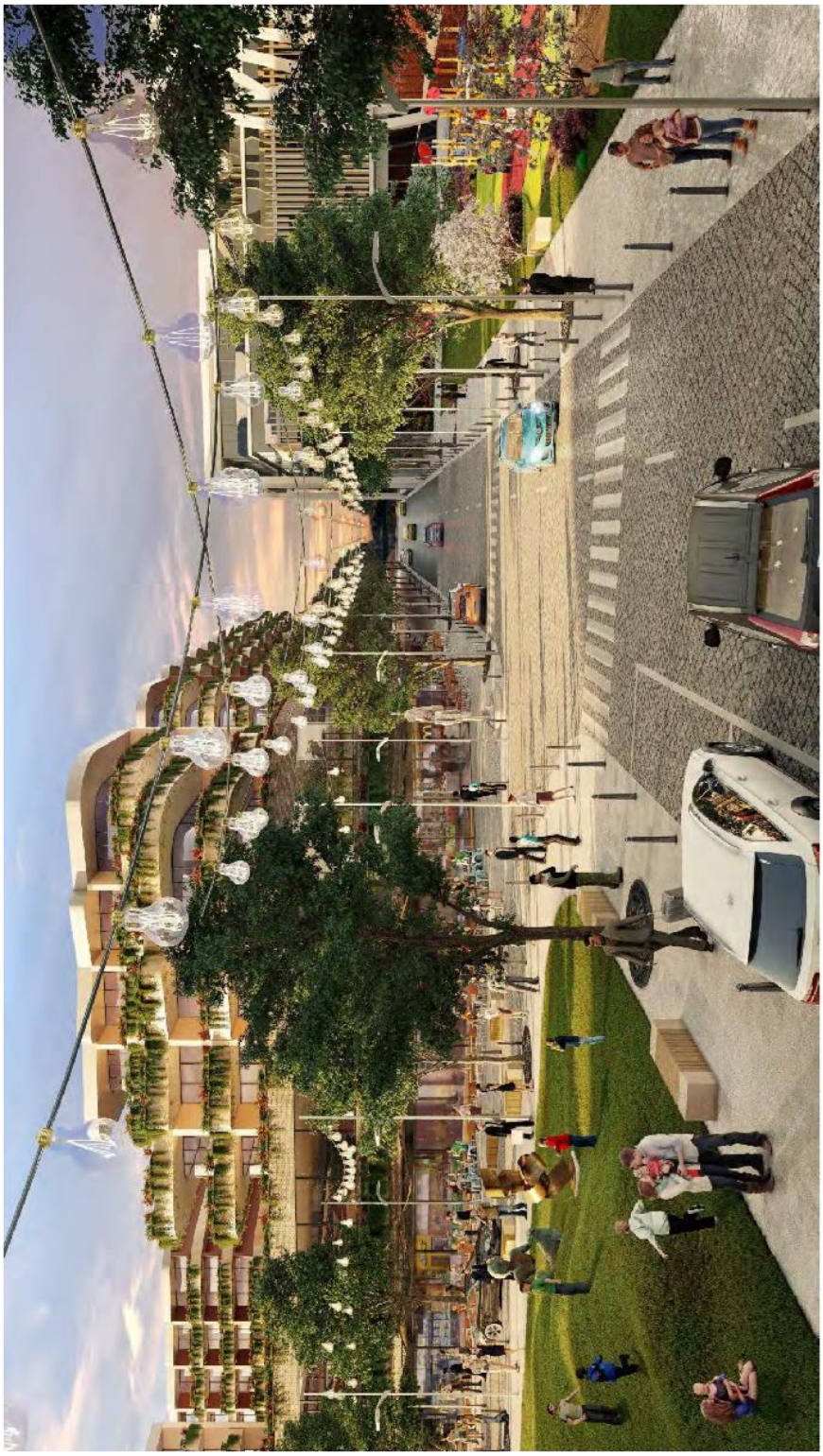
In making the changes to the development concept above, the Planning Proposal has been amended, and seeks to:

- increase the maximum height of buildings from part 8.5 metres and part 18 metres to part 9.5 metres, 14 metres, 20 metres and 29 metres; and
- increase the maximum floor space ratio from part 1.5:1 and 0.75:1 to part 1:1 and 2.3:1.

The proposed transition in heights creates a transition from 8.5 metres on the adjoining land to the west to 9.5 metre along that interface. The block then increases to 14 metres along the frontage to Main Street, allowing for commercial/retail along the ground floor to activate the main street of the town centre. The transition across the street to 29 metres (8 storeys) is more appropriate in defining the main street. A 20 metre height limit to the south and east ensures an appropriate transition to neighbouring sites including the school. The benefits of the reduction in these locations is supported by the overshadowing analysis.

The proposed density of 1:1 and 2.3:1 provides for an average FSR across the town centre of 1.98:1 and facilitates approximately 7,600sq.m, a 911% increase on open space under the existing controls.

The amendment to the principle development controls will facilitate a vibrant and sustainable town centre for the community, which includes residential accommodation that supports housing choice, diversity and affordability in Middleton Grange, jobs and employment, services, recreation and entertainment, and medicinal and social services. The town centre will become a focal point for the community that also fosters a sense of place and pride.



MIDDLETON GRANGE TOWN CENTRE

VISUALISATIONS – October 2019

LANDSCAPE MASTERPLAN - 3D VIEW LOCATIONS



KEY LEGEND

1. PLAYGROUND (LARGE)
2. PLAYGROUND (SMALL)
3. STAGE
4. GROUND FLOOR RETAIL & OUTDOOR DINNING/CAFE
5. FRUIT TREE ORCHARD POCKET PARK
6. THROUGH SITE LINK LANDSCAPE (OUTDOOR)
7. THE VILLAGE GREEN
8. THROUGH SITE LINK (INTERNAL)
9. PUBLIC ART
10. WATER FEATURE
11. CENTRAL FOUNTAIN AND WATER FEATURE
12. 'THE STRIP' (RETAIL, DINNING ACTIVATION ZONE)
13. VILLAGE PIAZZA (ACTIVATION ZONE)
14. BUS INTERCHANGE
15. PICNIC SHELTER AREA
16. FEATURE GLASS CANOPY STRUCTURE
17. HEALING GARDEN

SHARED ROAD TREES (DECIDUOUS) >10m HEIGHT
PLAZA TREES (EVERGREEN) <10m HEIGHT
STREET TREES (NATIVE EVERGREEN) 8m HEIGHT
ORCHARD FRUIT TREES
PALM PLANTING
CATENARY LIGHTING
SHARED ROAD

NORTH

10 0 10 20 30 40 50m
Scale 1:1000 @A3

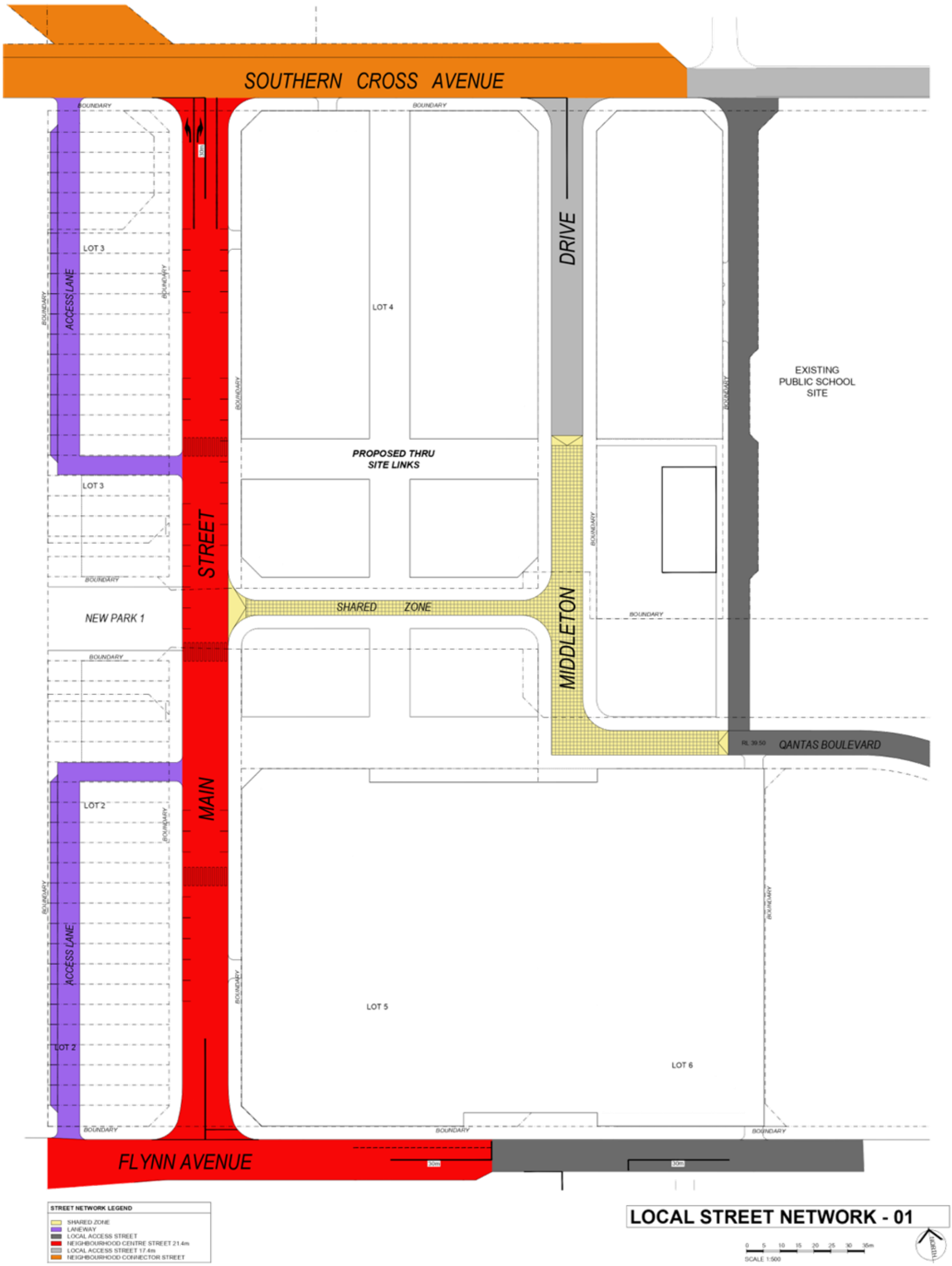
habit8
502 4-6 Bowrine Pl., Caremilla, NSW 2230
www.habit8.com.au
P: (02) 93607771

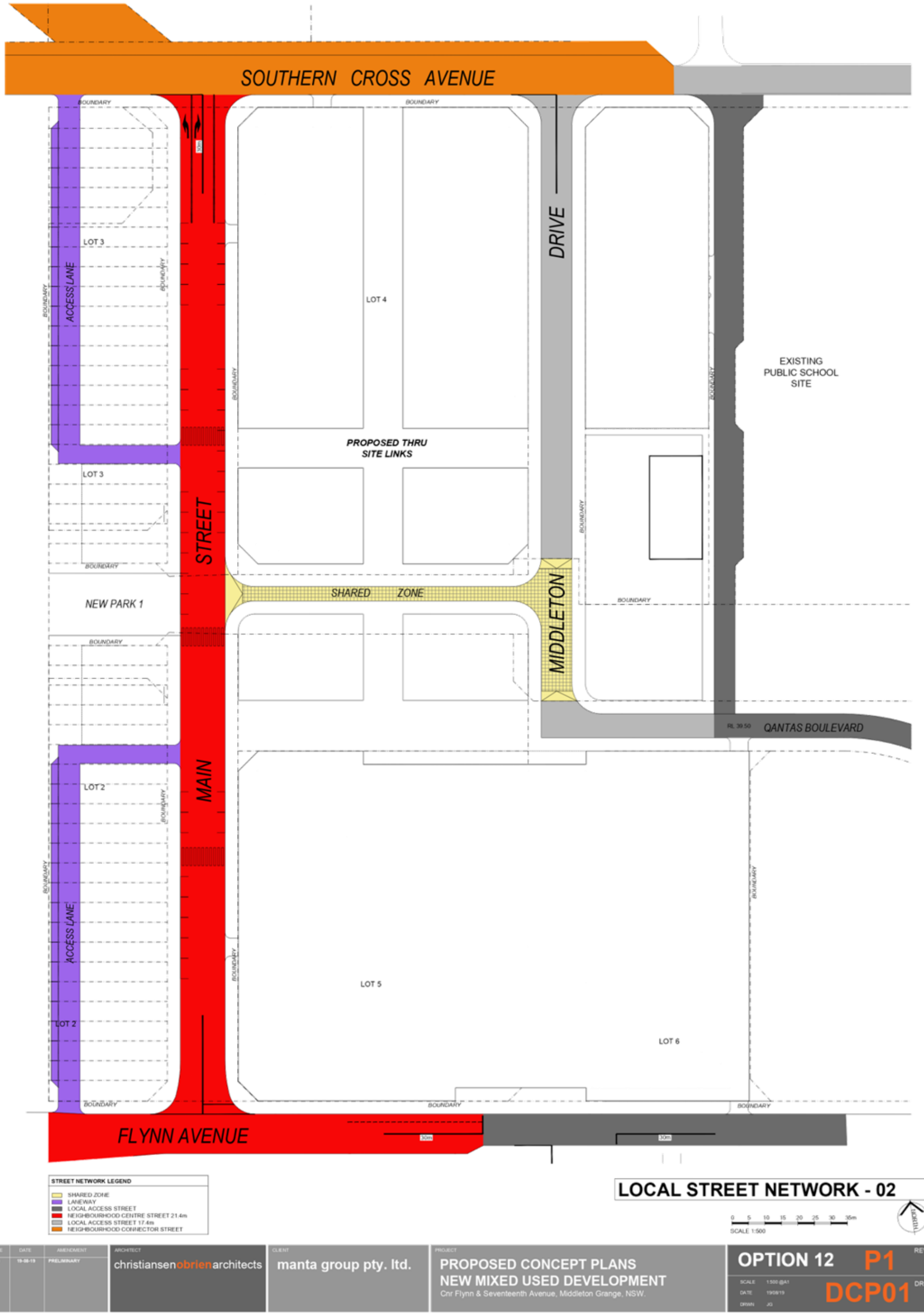









SOUTHERN CROSS AVENUE
BOUNDARY
LOT 3
ACCESS LANE
LOT 4
DRIVE
EXISTING
PUBLIC SCHOOL
SITE
PROPOSED THRU
SITE LINKS
STREET
SHARED ZONE
MIDDLETON
NEW PARK 1
QANTAS BOULEVARD
LOT 2
MAIN
LOT 5
LOT 6
FLYNN AVENUE
STREET NETWORK LEGEND
SHARED ZONE
LANEWAY
LOCAL ACCESS STREET
NEIGHBOURHOOD CENTRE STREET 21.4m
LOCAL ACCESS STREET 17.4m
NEIGHBOURHOOD CONNECTOR STREET
LOCAL STREET NETWORK - 01
SCALE 1:500
NORTH
ISSUE P1
DATE 19-08-19
AMENDMENT PRELIMINARY
ARCHITECT christiansenobrienarchitects
CLIENT manta group pty. ltd.
PROJECT PROPOSED CONCEPT PLANS
NEW MIXED USED DEVELOPMENT
Cnr Flynn & Seventeenth Avenue, Middleton Grange, NSW.
OPTION 12
REV P1
SCALE 1:500 @A1
DATE 19/08/19
DRWN JG
DRG DCP01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BOUNDARY
LOT 3
ACCESS LANE
LOT 4
DRIVE
EXISTING
PUBLIC SCHOOL
SITE
PROPOSED THRU
SITE LINKS
STREET
SHARED ZONE
MIDDLETON
NEW PARK 1
QANTAS BOULEVARD
RL 39.50
LOT 2
MAIN
LOT 5
LOT 6
FLYNN AVENUE
STREET NETWORK LEGEND
SHARED ZONE
LANEWAY
LOCAL ACCESS STREET
NEIGHBOURHOOD CENTRE STREET 21.4m
LOCAL ACCESS STREET 17.4m
NEIGHBOURHOOD CONNECTOR STREET
LOCAL STREET NETWORK - 02
SCALE 1:500
NORTH
ISSUE P1
DATE 19-08-19
AMENDMENT PRELIMINARY
ARCHITECT christiansenobrienarchitects
CLIENT manta group pty. ltd.
PROJECT PROPOSED CONCEPT PLANS
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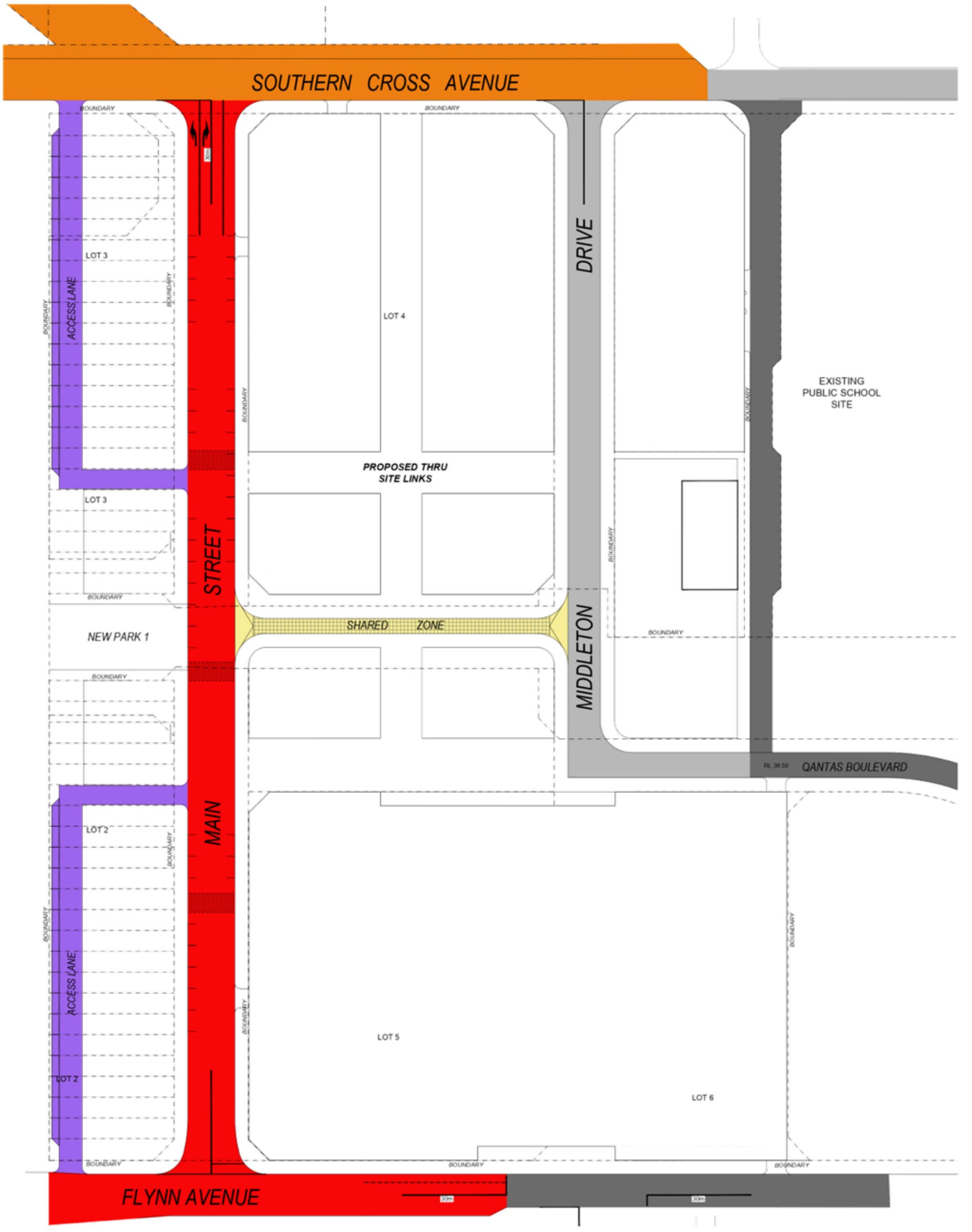
Cnr Flynn & Seventeenth Avenue, Middleton Grange, NSW.
OPTION 12
REV P1
SCALE 1:500 @A1
DATE 19/08/19
DRWN JG
DRG DCP01


SOUTHERN CROSS AVENUE
BOUNDARY
LOT 3
ACCESS LANE
LOT 4
DRIVE
EXISTING PUBLIC SCHOOL SITE
PROPOSED THRU SITE LINKS
STREET
SHARED ZONE
MIDDLETON
NEW PARK 1
QANTAS BOULEVARD
RL 39.50
MAIN
LOT 2
LOT 5
LOT 6
FLYNN AVENUE
30m
STREET NETWORK LEGEND
SHARED ZONE
LANEWAY
LOCAL ACCESS STREET
NEIGHBOURHOOD CENTRE STREET 21.4m
LOCAL ACCESS STREET 17.4m
NEIGHBOURHOOD CONNECTOR STREET
LOCAL STREET NETWORK - 03
SCALE 1:500
ISSUE P1
DATE 19-06-19
AMENDMENT PRELIMINARY
ARCHITECT christiansenobrienarchitects
CLIENT manta group pty. ltd.
PROJECT PROPOSED CONCEPT PLANS
NEW MIXED USED DEVELOPMENT
Cnr Flynn & Seventeenth Avenue, Middleton Grange, NSW.
OPTION 12
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SCALE 1:500 @A1
DATE 19/06/19
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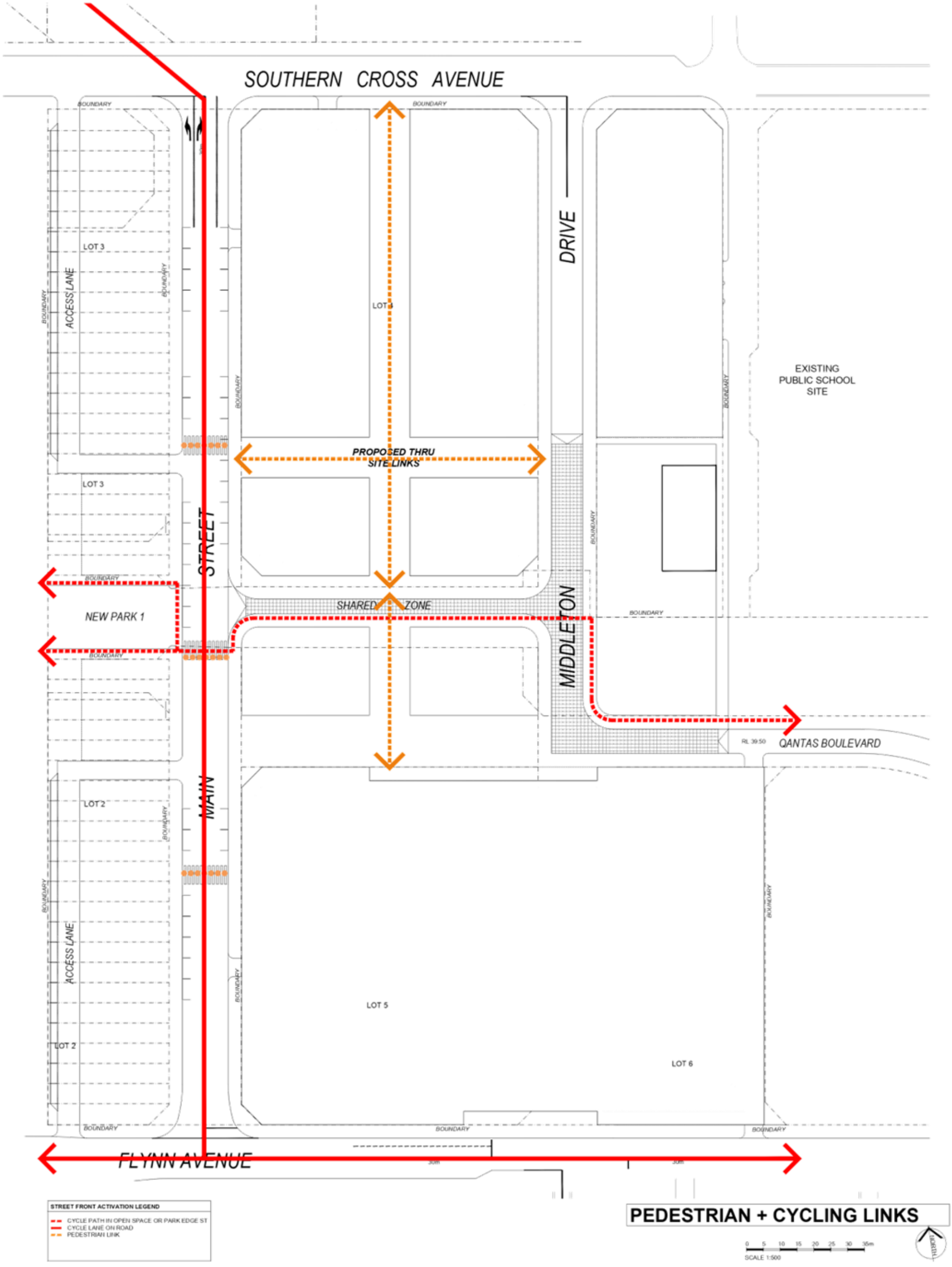
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BOUNDARY
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ACCESS LANE
LOT 4
DRIVE
EXISTING
PUBLIC SCHOOL
SITE
PROPOSED THRU
SITE LINKS
STREET
NEW PARK 1
SHARED ZONE
MIDDLETON
RL 39.50
QANTAS BOULEVARD
LOT 2
MAIN
LOT 5
LOT 6
FLYNN AVENUE
STREET FRONT ACTIVATION LEGEND
CYCLE PATH IN OPEN SPACE OR PARK EDGE ST
CYCLE LANE ON ROAD
PEDESTRIAN LINK
PEDESTRIAN + CYCLING LINKS
SCALE 1:500
ISSUE
DATE
AMENDMENT
P1
19-08-19
PRELIMINARY
ARCHITECT
christiansenobrienarchitects
CLIENT
manta group pty. ltd.
PROJECT
PROPOSED CONCEPT PLANS
NEW MIXED USED DEVELOPMENT
Cnr Flynn & Seventeenth Avenue, Middleton Grange, NSW.
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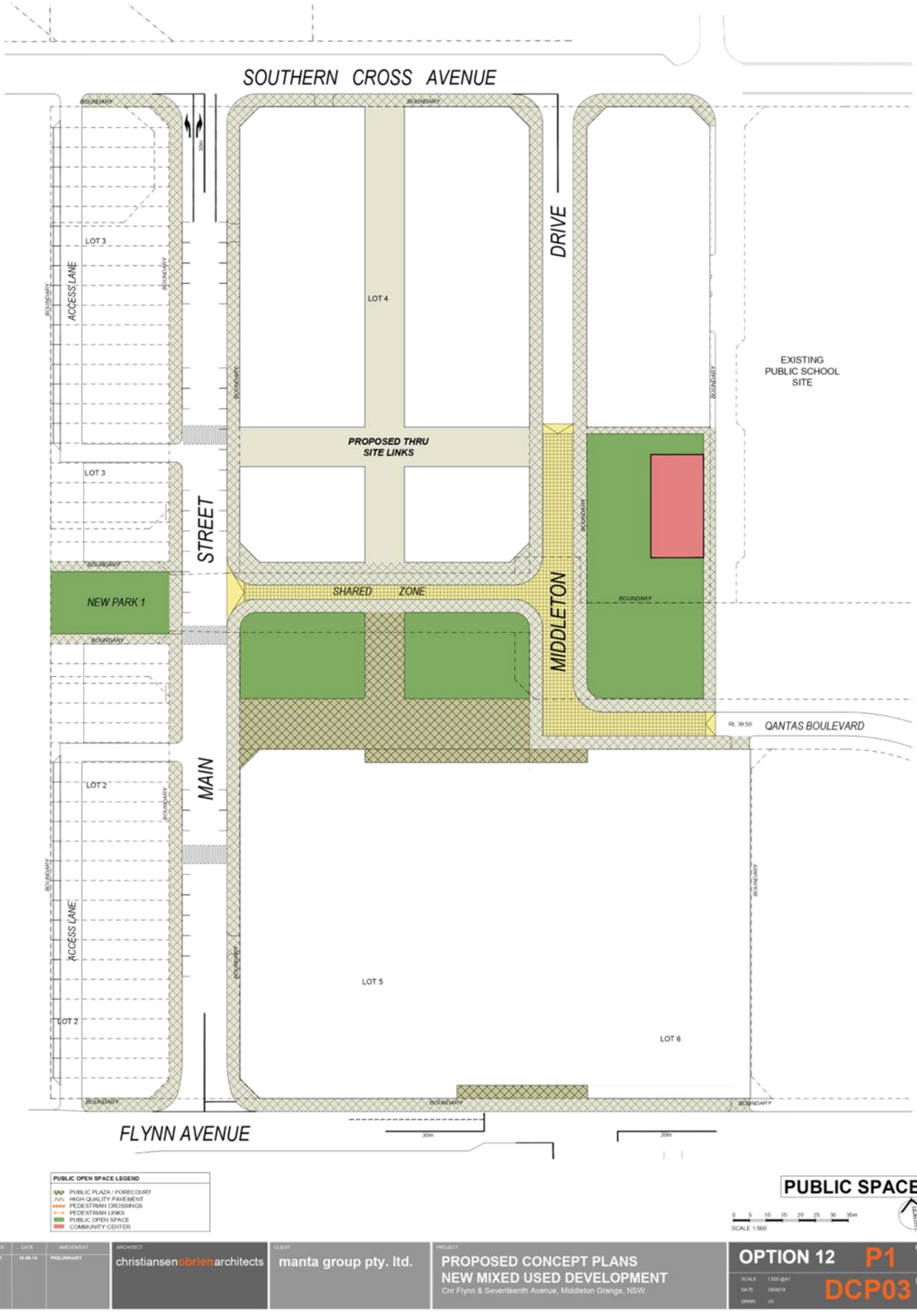
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LOT 4
DRIVE
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SITE LINKS
STREET
NEW PARK 1
SHARED ZONE
MIDDLETON
RL 39.50
QANTAS BOULEVARD
MAIN
LOT 2
LOT 5
LOT 6
FLYNN AVENUE
PUBLIC OPEN SPACE LEGEND
PUBLIC PLAZA / FORECOURT
HIGH QUALITY PAVEMENT
PEDESTRIAN CROSSINGS
PEDESTRIAN LINKS
PUBLIC OPEN SPACE
COMMUNITY CENTER
PUBLIC SPACE
SCALE 1:500
ISSUE P1
DATE 19-08-19
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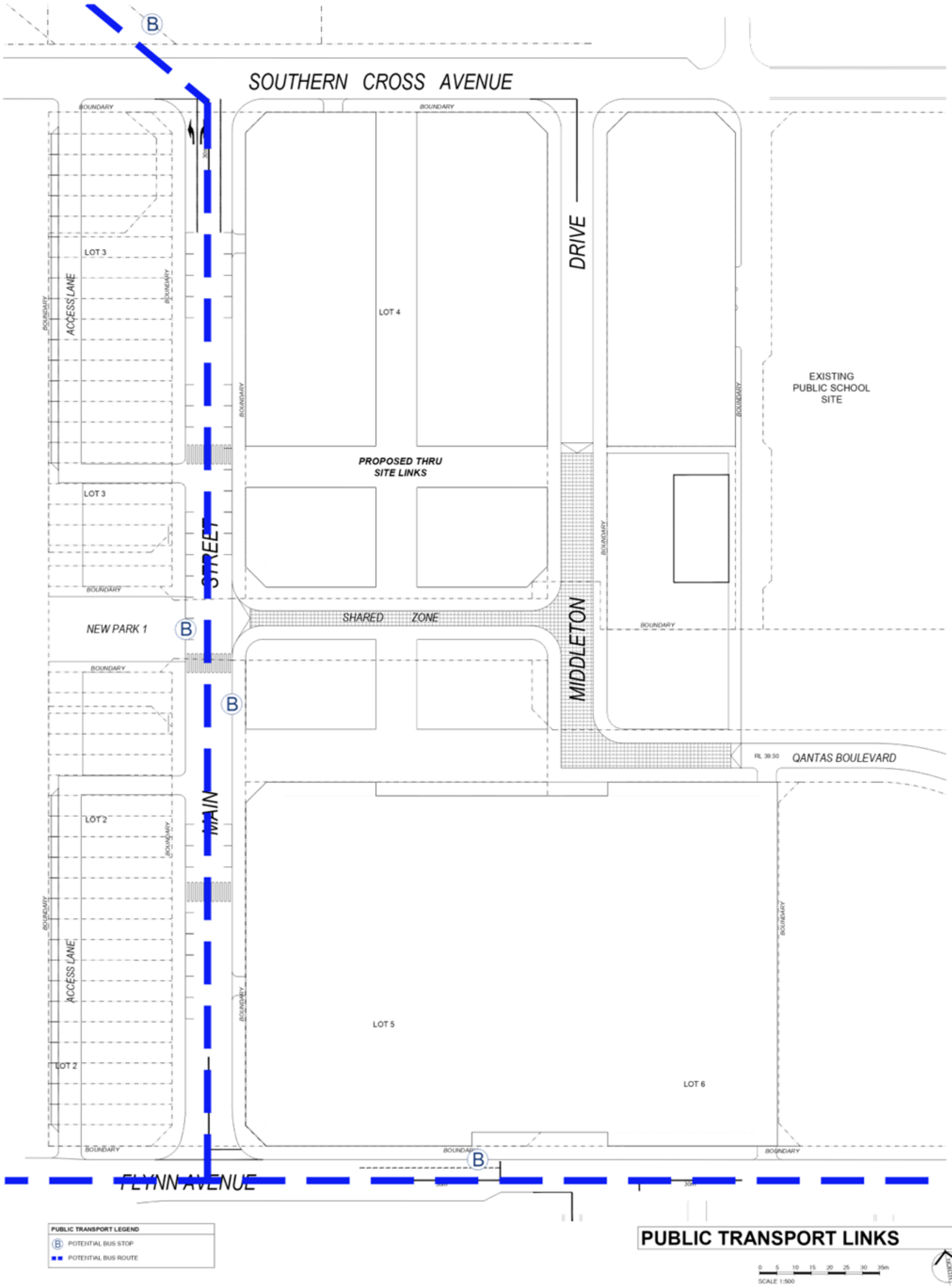
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BOUNDARY
LOT 3
ACCESS LANE
LOT 4
DRIVE
EXISTING PUBLIC SCHOOL SITE
PROPOSED THRU SITE LINKS
LOT 3
MAIN STREET
NEW PARK 1
SHARED ZONE
MIDDLETON
QANTAS BOULEVARD
RL 39.50
LOT 2
LOT 5
LOT 6
FLYNN AVENUE
PUBLIC TRANSPORT LEGEND
POTENTIAL BUS STOP
POTENTIAL BUS ROUTE
PUBLIC TRANSPORT LINKS
SCALE 1:500
ISSUE P1
DATE 19-08-19
AMENDMENT PRELIMINARY
ARCHITECT christiansenobrienarchitects
CLIENT manta group pty. ltd.
PROJECT PROPOSED CONCEPT PLANS NEW MIXED USED DEVELOPMENT
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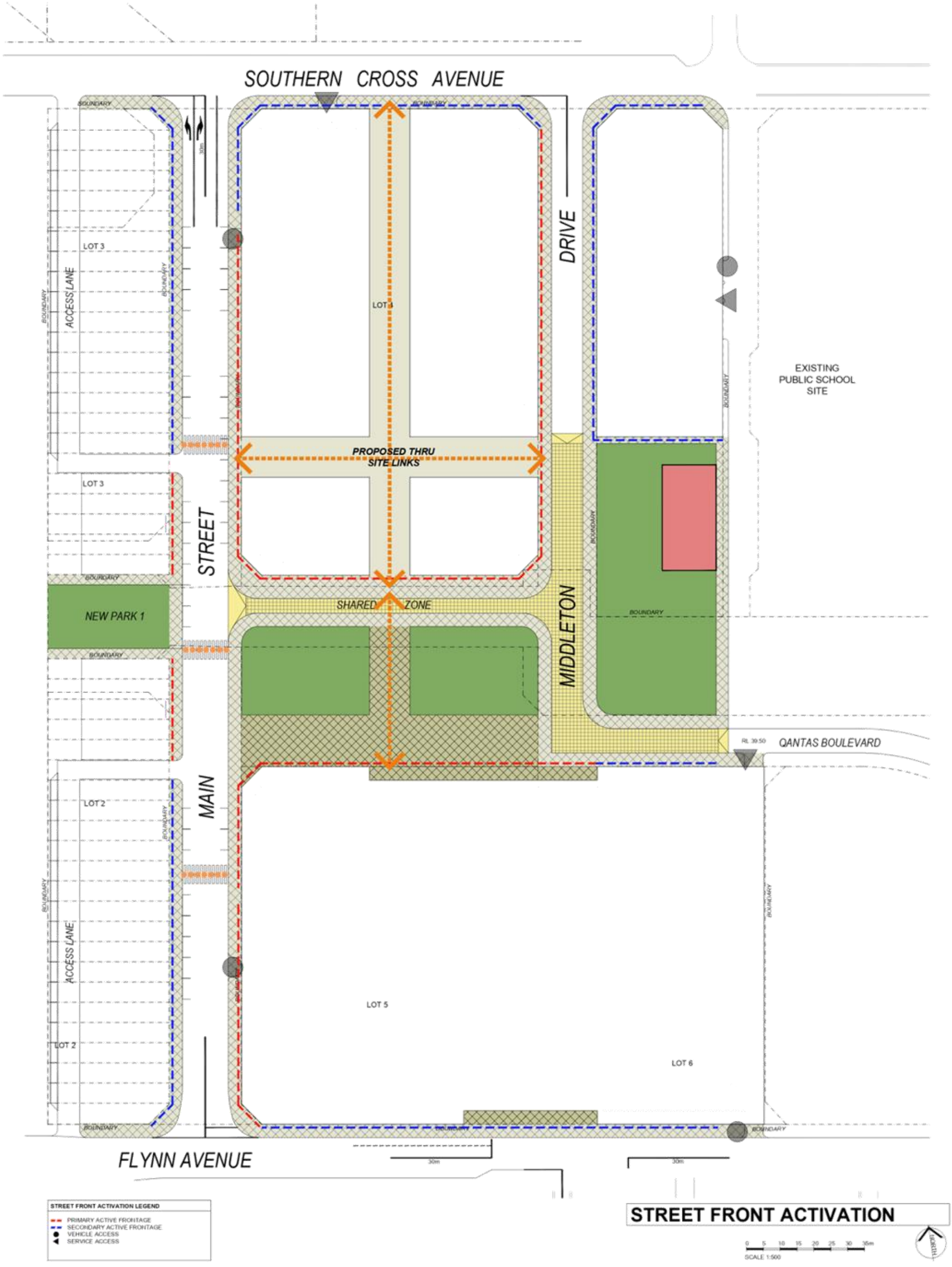
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DRIVE
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ACCESS LANE
BOUNDARY
LOT 4
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PROPOSED THRU SITE LINKS
LOT 3
STREET
NEW PARK 1
SHARED ZONE
MIDDLETON
RL 39.50
QANTAS BOULEVARD
LOT 2
MAIN
LOT 5
LOT 6
FLYNN AVENUE
30m
STREET FRONT ACTIVATION LEGEND
PRIMARY ACTIVE FRONTAGE
SECONDARY ACTIVE FRONTAGE
VEHICLE ACCESS
SERVICE ACCESS
STREET FRONT ACTIVATION
SCALE 1:500
christiansenobrienarchitects
manta group pty. ltd.
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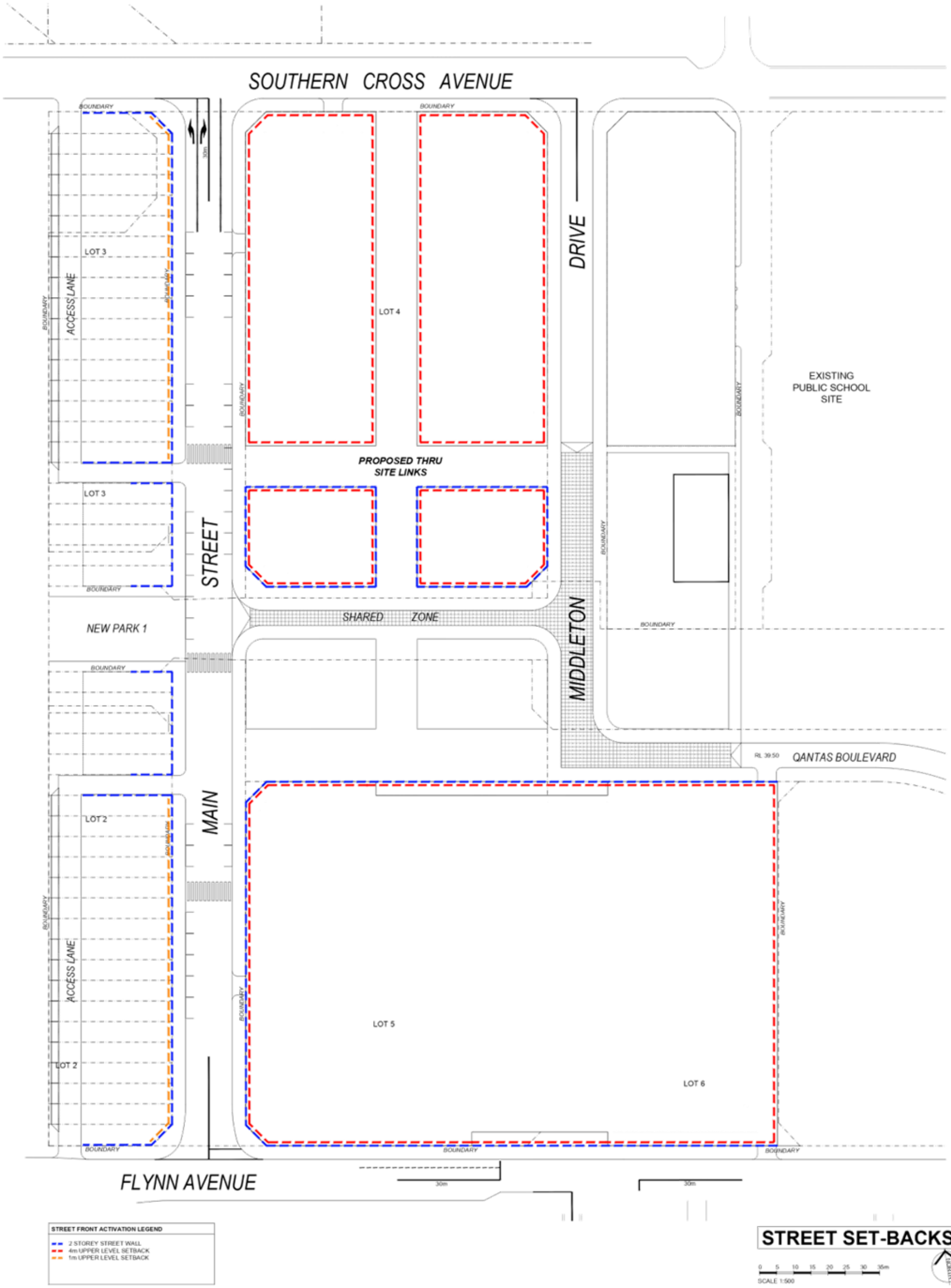

ISSUE	DATE	AMENDMENT
P1	19-08-19	PRELIMINARY

ARCHITECT: christiansenobrienarchitects

CLIENT: manta group pty. ltd.

PROJECT: PROPOSED CONCEPT PLANS
NEW MIXED USED DEVELOPMENT
Cnr Flynn & Seventeenth Avenue, Middleton Grange, NSW.

OPTION 12 P1 REV

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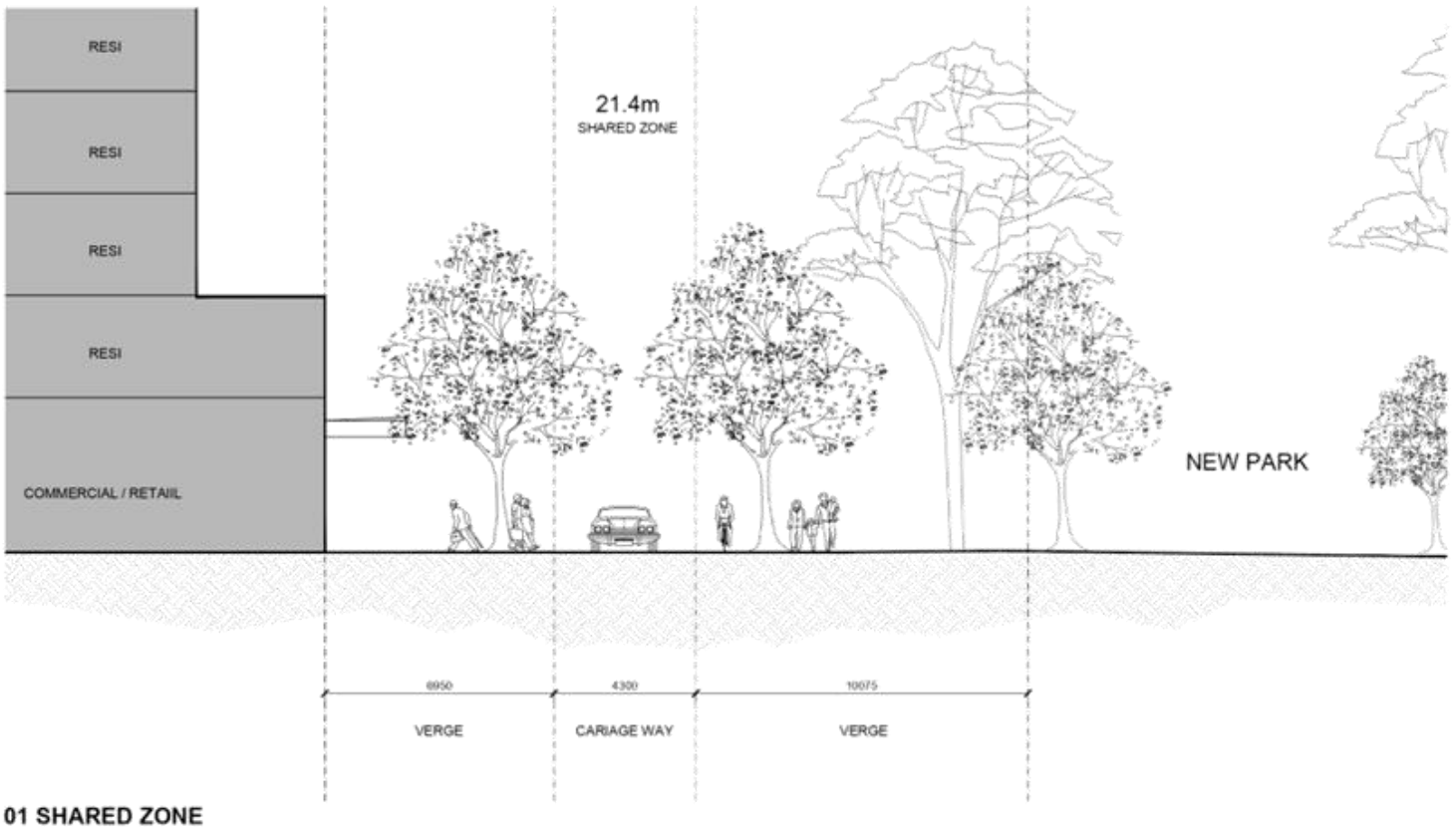
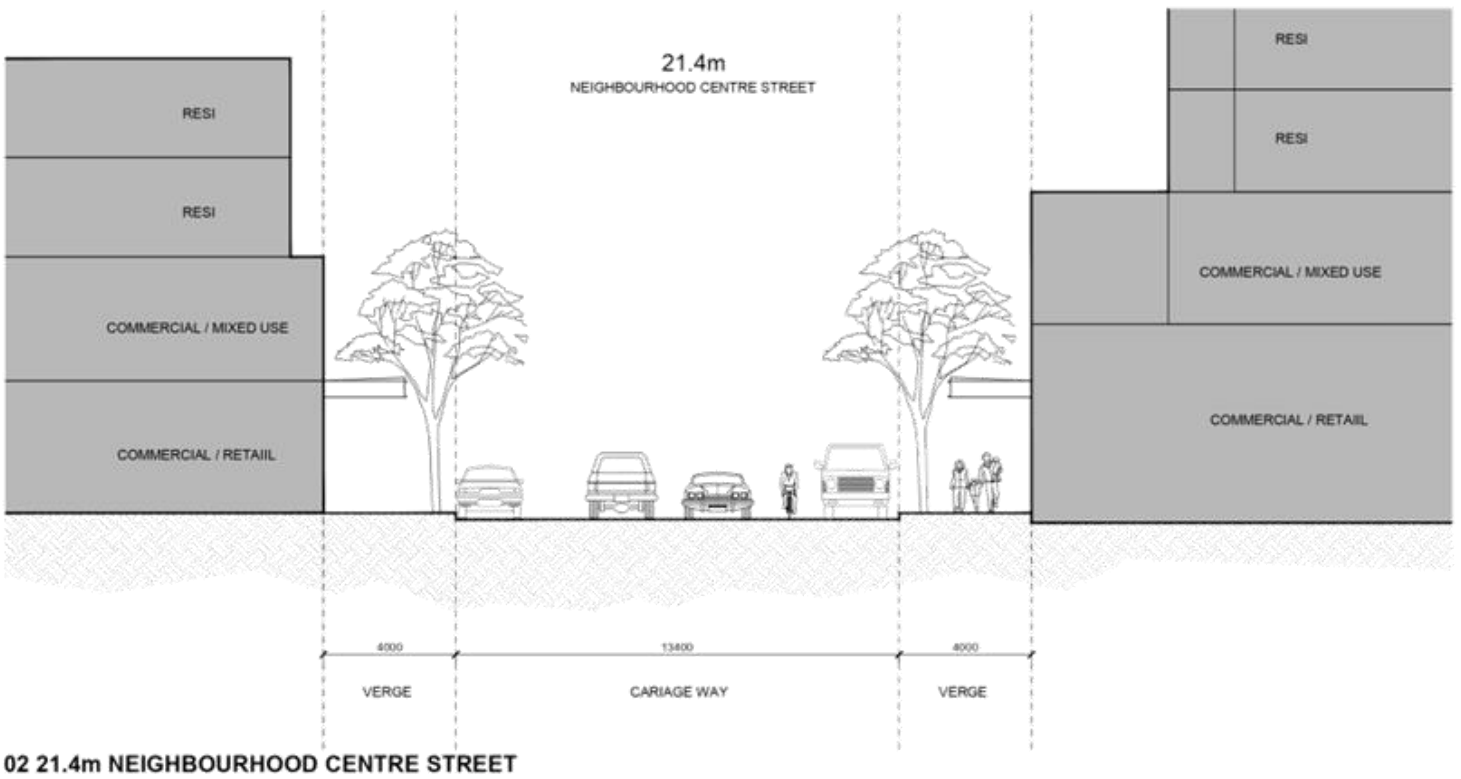
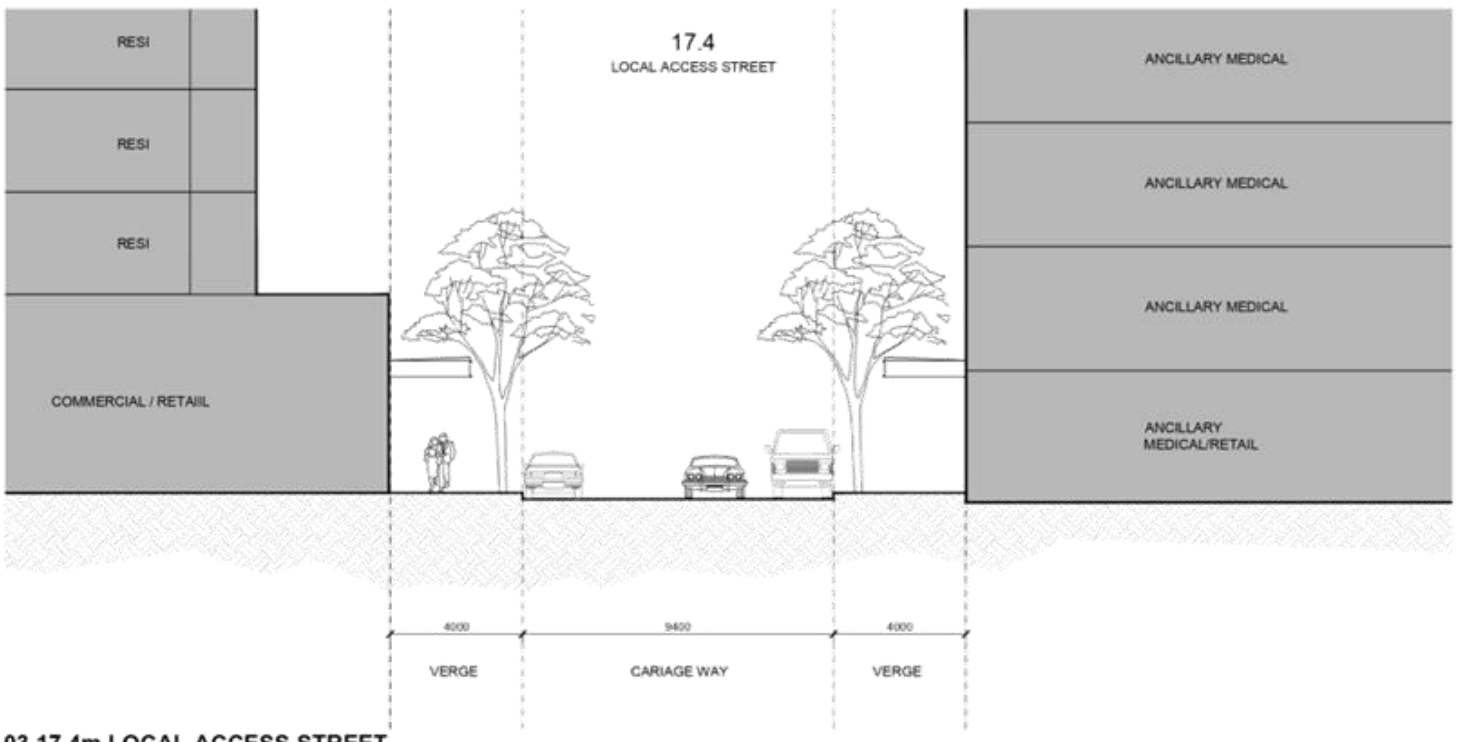


01 SHARED ZONE



02 21.4m NEIGHBOURHOOD CENTRE STREET



03 17.4m LOCAL ACCESS STREET

STREET SECTIONS

0 5 10 15 20 25 30 35m
SCALE 1:500

ISSUE	DATE	AMENDMENT
P1	19-06-19	PRELIMINARY

architect
christiansenobrienarchitects

manta group pty. ltd.

BUILDING HEIGHTS
NEW MIXED USED DEVELOPMENT
Cnr Flynn & Seventeenth Avenue, Middleton Grange, NSW.

OPTION 12 REV **P1**

SCALE N.T.S
DATE 19/06/19
DRWN JG

DRG **DCP07**

PACIFIC PLANNING PTY LTD

TRAFFIC IMPACT ASSESSMENT REPORT FOR 60-80 SOUTHERN CROSS AVENUE AND 45-65 (HALL CIRCUIT) FLYNN AVENUE MIDDLETON GRANGE

Prepared by:

Lyle Marshall & Partners Pty Ltd
Consulting Engineers,
Transportation and Environmental Planners

Suite 31, 401 Pacific Highway
ARTARMON NSW 2064

Phone: (02) 9436 2064
lyle@lylemarshall.com.au

Job No.: 1196-19
Report No.: 23/19E **OCTOBER 2019**

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Figure 6A **Traffic Generation Future Development Traffic AM Peak Hour**
Figure 6B **Traffic Generation Future Development Traffic PM Peak Hour**
Figure 7 **Precinct Parking**

Figure 8 **Infrastructure Map**

APPENDICES

APPENDIX A:
PLANNING PROPOSAL ENVELOPE
Plan prepared by Christensen Architects
Street Sections Drawing Option 12 – DCP07-P1 prepared by Christiansen Obrien Architects

APPENDIX B:
TRAFFIC GENERATION CALCULATIONS
Table 3.2a- Precinct 7
Table 3.2b- Precinct 6
Table 3.2c- Precinct 5
Table 3.2d- Precinct 4
Table 3.2e- Precinct 3
Table 3.2f- Precinct 2

APPENDIX C:
Table 4.4 Parking Summary

APPENDIX D:

- **Seventeenth Avenue/Middleton Drive-Option 1 Layout Drawing No SK01-5236 August 2019-Prepared by Mepstead & Associates dated 8.8.19**
- **Interium Road Upgrade-Sixteenth Avenue Middleton Grange-Drawing DS2018/013 - 301A prepared by Liverpool City Council dated 17.4.19**
- **Southern Cross Avenue Intersection Sketch Drawing 040-18-SK003B Prepared by Craig and Rhodes for Defence Housing Australia dated 19.3.19**

APPENDIX E:
Aimsum Report Prepared by Bitzios Consulting October 2019.

1.0 EXECUTIVE SUMMARY

The proposal adopts the transport planning objectives first identified in the Report Integrating Land Use -Improving Transport Choice prepared by NSW Department of Urban Affairs and Planning and now incorporated into the Transport for NSW-Future Transport Strategy 2056. These objectives include reducing (VKT) vehicle kilometres travelled by car, promoting active and sustainable transport and promoting active lifestyle choices. These objectives are delivered in this proposal by reducing car dependent travel for local trips by having good bicycle and pedestrian accessible travel paths and by providing parklands and green spaces within the development. The inclusion of social and employment services within this local centre will reduce car dependent trips and promotive active lifestyle choice for all user types. A new Smart Transit Corridor along Fifteenth Avenue as shown in Liverpool Council's *The Draft Strategic Planning Document -A Land Use Vision 2050* will provide better public transport access for this centre.

The proposal provides more employment opportunities with proposed office space, restaurants, a medical centre and ancillary medical office suites as well as Soho housing component for smaller business operations. A smaller supermarket and mini- minor market and associated food and eateries will provide employment opportunities surrounding the new parklands. The new parklands will provide social and recreational infrastructure as well as supporting an active travel lifestyle. These parklands will provide flora and fauna connections to the green parklands north of the subject site.

The revised scheme has reduced the amount of residential density on the site from 912 units to 670 residential dwellings and provides a greater mix of employment and social uses. The proposed FSR on the site ranges from 1:1 (R1 zone) to 2.3:1 (B2 zone) and enables a total maximum 1.98:1 density for the scheme. This density is not considered high in its context and can sustainably enable the desired urban objectives the scheme promotes.

Middleton Grange will be a key local centre between the new Western Sydney International (Nancy-Bird Walton) Airport and Liverpool CBD and this proposal will provide a catchment population of workers and residents along the new Smart Transit corridor.

This report is provided in support of a Planning Proposal. Initial discussions have been held with Liverpool Council to ascertain the road and public transport infrastructure considerations after a draft traffic study was provided for comment. A detailed investigative Modelling report prepared using AIMSUN has been prepared by Bitzios Consulting and is located in Appendix E of this report. The modelling report reflects all proposed road infrastructure changes and the influence of future public transport infrastructure and the projected land use changes to the year 2030.

2.0 INTRODUCTION

2.1 Background

We have been engaged to review the traffic and parking requirements in support of a proposed Town Centre at 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue Middleton Grange. The development is located within the Liverpool Council Local Government Area and has been planned with consideration to Councils Planning Policy Framework.

.

The site is shown in **Figure 1 Location Plan.**

2.2 Scope of Report

This application relates to the planning proposal for the site for a Town Centre comprising 670 residential units in addition to the following components and associated gross floor areas (GFA) stated in **Table 3.1a.**

Table 3.1a Summary of Uses and Areas

	Uses	Area M^2	No of Units
Summary	Neighbourhood Shops	4060	
	Retail Shops	5822	
	Café Restaurant	6447	
	Office	7023	
	Commercial-Entertainment	2862	
	Childcare	505	
	Gymnasium	3500	
	Medical Centre	1175	
	Imaging Diagnostic	1189	
	Ancillary Health Offices	1964	
	Medical Suites	7012	
	Outpatients	1189	
	Major Supermarket	2600	
	Mini Major	1200	
	Soho Ground Floor	1200	
	Residential Units		670
	Community Centre	500	
	Total	**48248**	

Each area per precinct is identified in **Table 3.1b.**

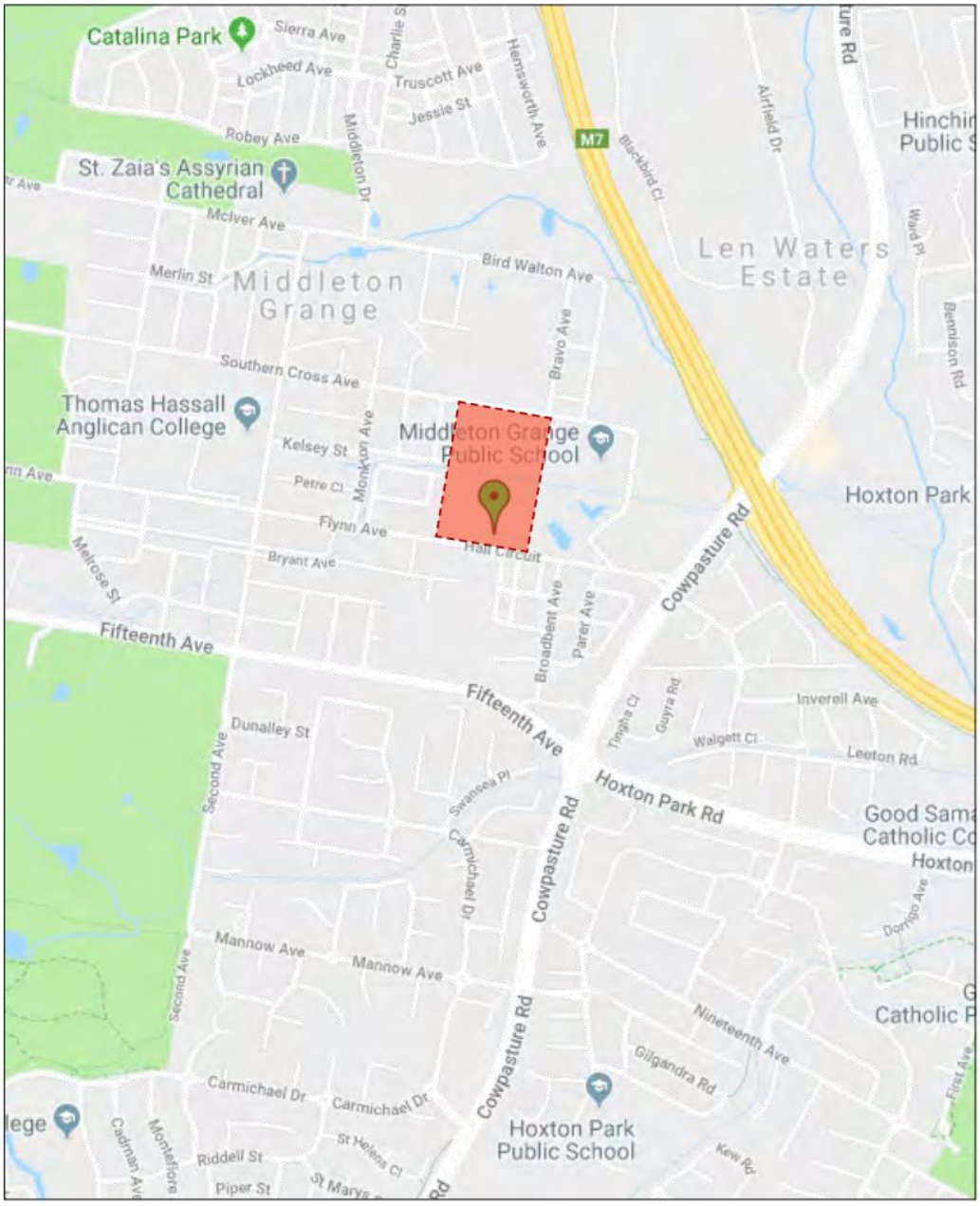


FIGURE 1: LOCATION PLAN

22/10/2019

Table 3.1b PROPOSED Summary Of Uses and Areas

SUMMARY

Location	Uses	Area M^2	No of Units
Precinct Lot 2	Neighbourhood shops	2030	
	Café Restaurant	718	
	Ground Floor Soho	600	
	Residential Terrace		17
	Residential Shop Top		12
	Total	**3348**	
Precinct Lot 3	Neighbourhood shops	2030	
	Café Restaurant	724	
	Ground Floor Soho	600	
	Residential Soho		
	Residential Terrace		17
	Residential Shop Top		12
	Total	**3354**	
Precinct Lot 4	Retail Shops	1790	
	Café Restaurant	2000	
	Commercial/Entertainment	2862	
	Childcare Centre	505	
	Residential		292
	Total	**7157**	
Precinct Lot 5	Major Supermarket	2600	
	Liquor Store	300	
	Retail Shops	2600	
	Café Restaurant	1000	
	Gymnasium	3500	
	Office	4135	
	Residential		241
Total GFA	**Total**	**14135**	
Precinct Lot 6	Mini Major	1200	
	Café-Retail	1500	
	Retail Shops	580	
	Office	2888	
	Residential		79
Total GFA	**Total**	**6168**	
Precinct Lot 7	Medical Centre **	1175	
	Retail	552	
	Café Restaurant	505	
	Imaging Diagnostic	1189	
	Ancillary Health Offices	1964	
	Medical Suites-offices	7012	
	Outpatients	1189	
	Total	**13586**	
Parkland*	Community Centre	500	
		48248	**670**

(2.2 Continued)

In preparation of this traffic report, we also refer the following Statutory Controls and Reports.

- Liverpool Council DCP-2008 Part 2.5- Middleton Grange.
- Liverpool Council DCP-2008 Part 1-General Controls For All Development.
- Liverpool Council Local Environmental Plan 2008.
- Connected Liverpool 2050 – Draft Local Strategic Planning Statement a Land Use vision to 2050 – Liverpool City Council.
- Future Transport Strategy 2056 – NSW Government.
- Middleton Grange Town Centre Public Transport Options Paper prepared by Transit Systems Next Generation Transport
- Base Model Development Report 60-80 Southern Cross Avenue & 45-65 Hall Circuit Middleton Grange Reference 16.068r01v02 September 2017 prepared by Traffix.
- Traffic Impact Assessment 60-80 Southern Cross Avenue & 45-65 Hall Circuit Middleton Grange Reference 16.068r04v01September 2017 prepared by Traffix.
- Letter Report prepared by Traffix Traffic and Transport Planners dated September 18, 2019.

We have been provided with a revised summary of the retail and commercial areas of the development from Pacific Planning. We have also referred to the SEARS Application drawings for Lot 7 Precinct and to the Proposed Concept Plans Option 12 for the Development.

We have investigated the traffic generation for each Precinct/ Lot Area. We refer to the summary traffic generation shown in Table 3.4 which states the areas for each Precinct Lot and summary of residential units.

3.0 EXISTING TRAFFIC CONDITIONS

3.1 Existing Site

As each precinct has its own unique characteristics and this is reflected in the way that the traffic generation yield is calculated in our analysis.

The subject site is located approximately 7.0 kilometres west of Liverpool CBD and 600 metres travel distance (450 metres Radial distance) west of the Westlink M7 Motorway Interchange with Cowpasture Road. The site is located approximately 12.5km to the proposed Western Sydney Airport.

The site is irregular in configuration and has a total site area of 6.27 hectares. It has a northern frontage to Southern Cross Avenue and a southern frontage to Flynn Avenue of approximately 200 and 220 metres, respectively. The eastern boundary of approximately 310 metres is shared with the existing public school and vacant land, with the remaining western boundary of approximately 300 metres shared with neighbouring residential dwellings.

The site currently accommodates four (4) residential dwellings, comprising two (2) dwellings in the northern section and two (2) in the southern section. Vehicular access is currently provided to each existing residential dwelling from Southern Cross Avenue and Flynn Avenue, respectively. A Location Plan is presented in **Figure 1.** The connection of the site to M7, future M9 Orbital and Western Sydney Airport is shown in **Figure 2A Overall Site Connection Plan**. The Site is shown in **Figure 2B Site Plan.**

3.2 Road Inventory

The road hierarchy in the vicinity of the site is shown in **Figure 3** with the following roads of particular interest:-

M7 Motorway (Westlink): A privately operated toll-way also known as the 'Western Sydney Orbital' that generally traverses north-south between Baulkham Hills in the north and Prestons in the south. It is subject to 100km/h speed zoning and accommodates two (2) lanes of traffic in each direction along a divided carriageway.

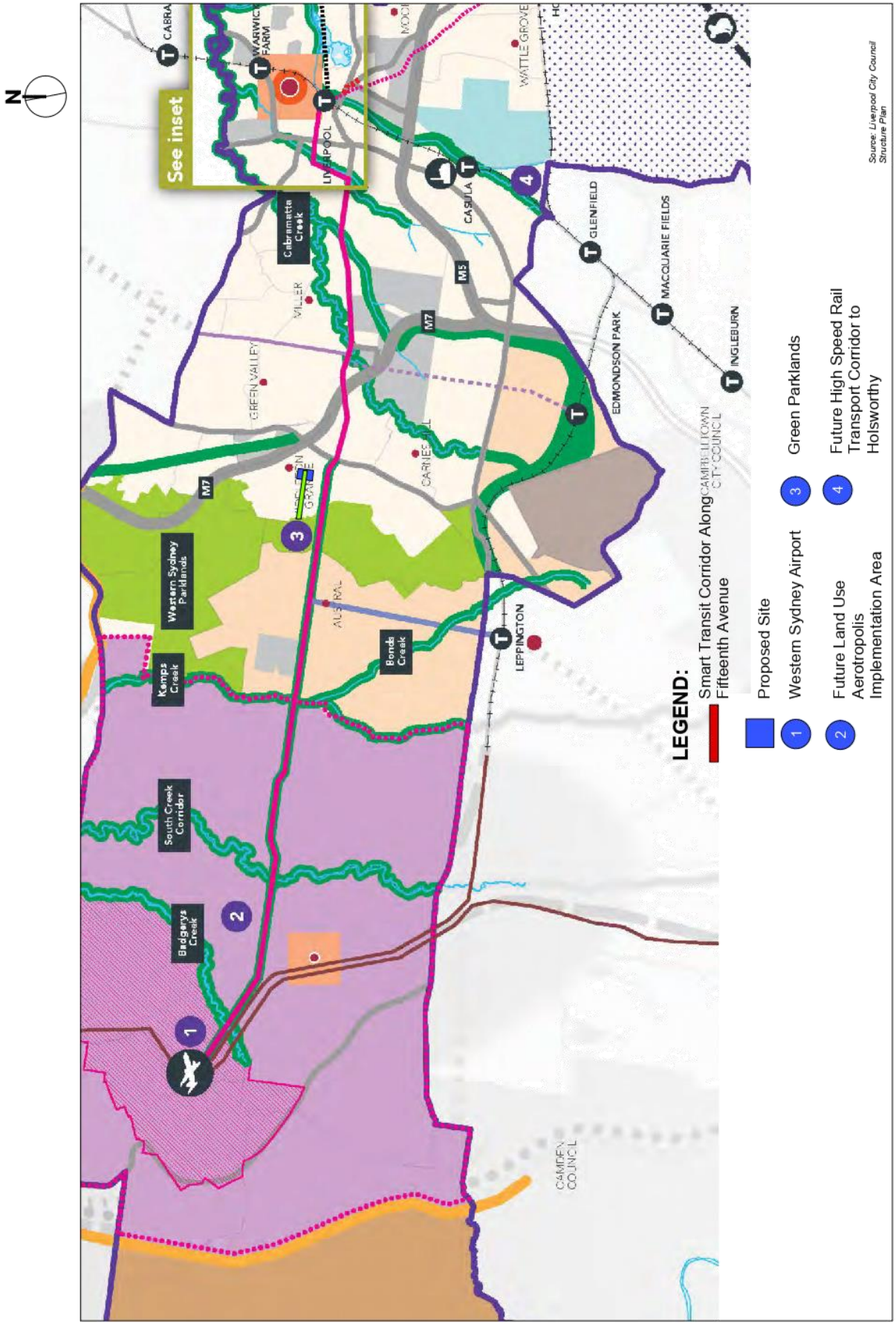


FIGURE 2A: OVERALL SITE CONNECTION PLAN

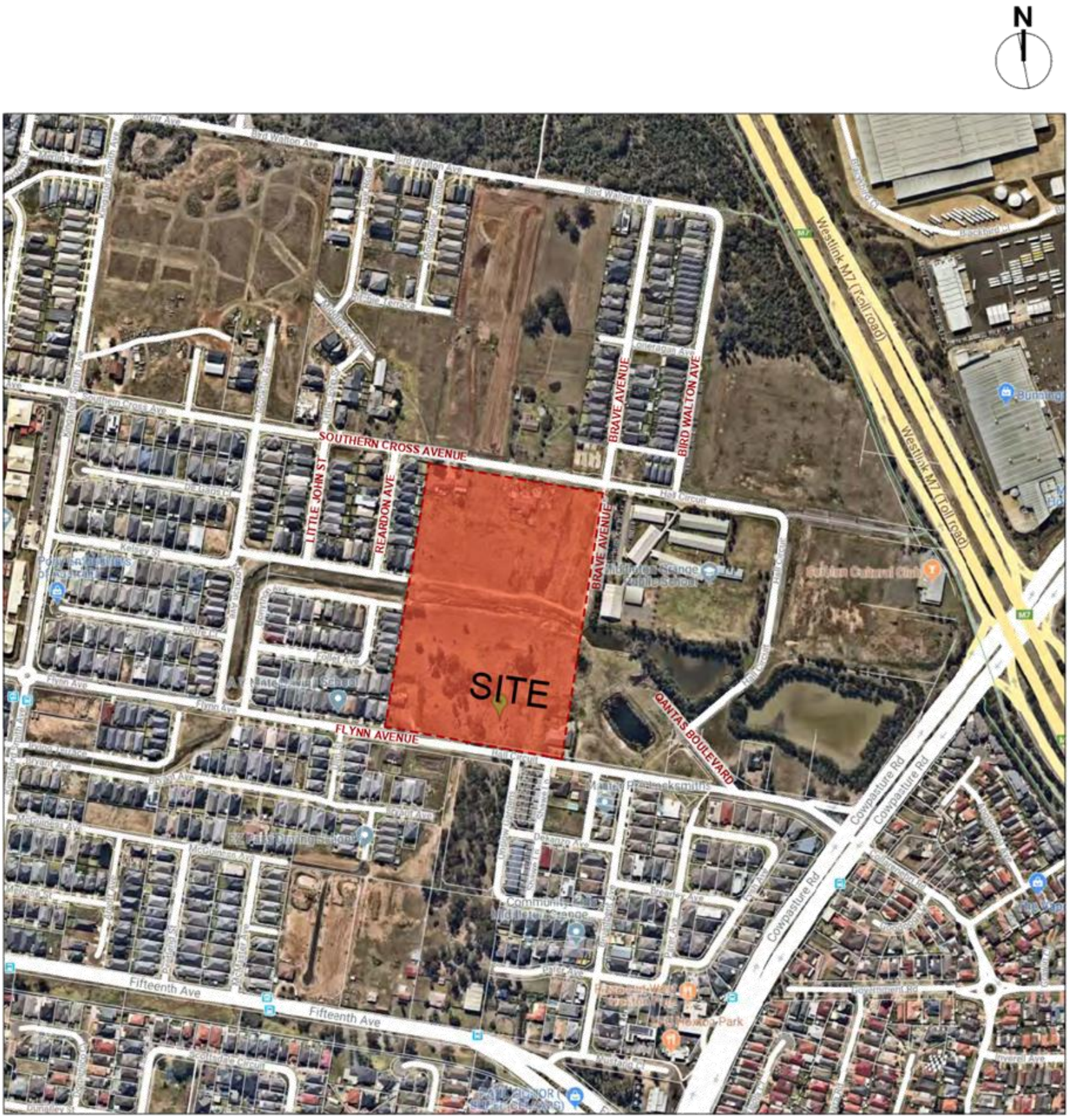


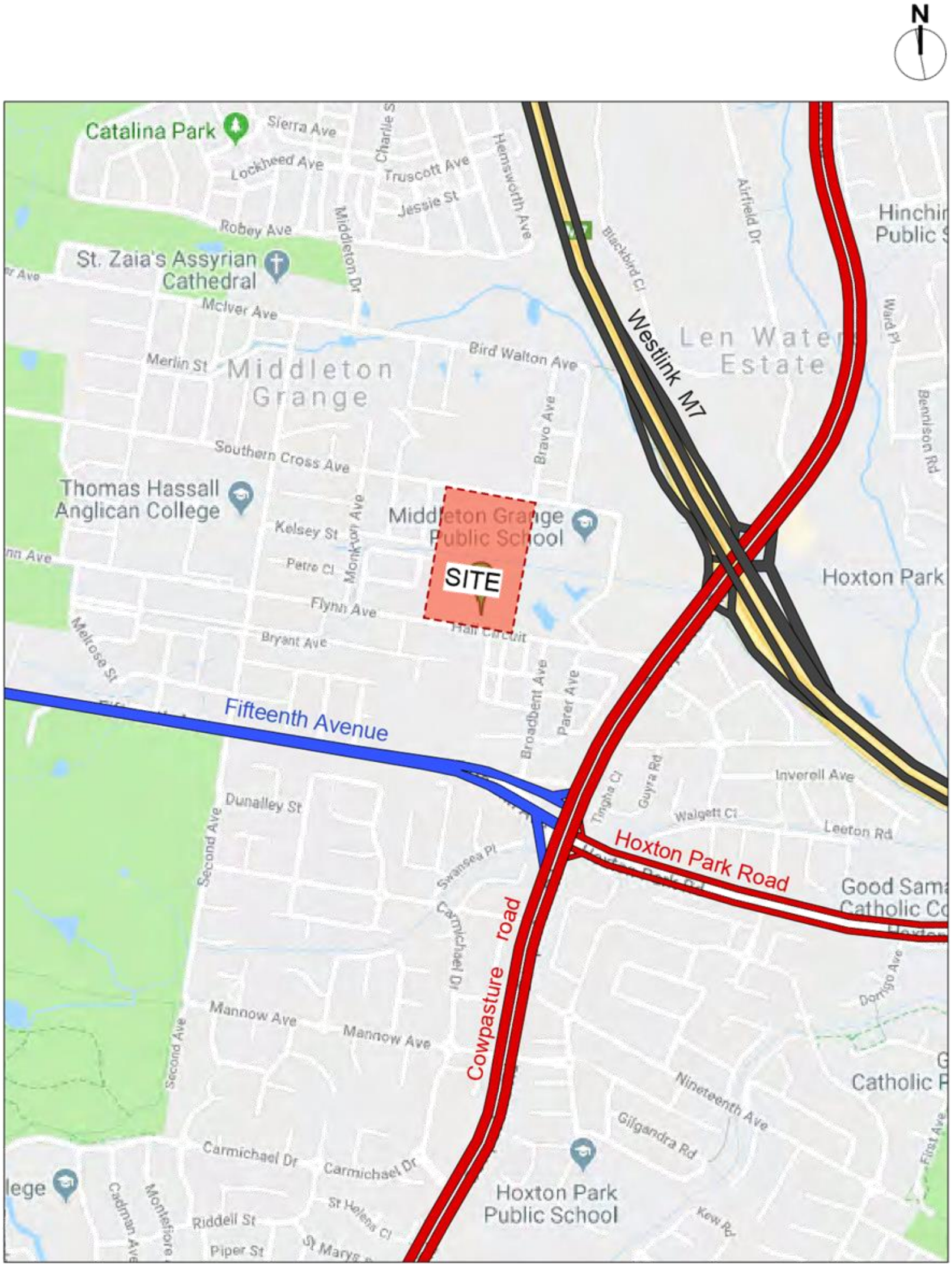
FIGURE 2B: SITE PLAN

0m 100m 200m

(3.2 continued)

Cowpasture Road:	An RMS Main Road (MR 648) that traverses north-south between the Horsley Drive in the north and Camden Valley Way in the south. Within the vicinity of the site. It is subject to 70km/h speed zoning and accommodates two (2) lanes of traffic in each direction. Cowpasture Road does not permit on-street parking.
Hall Circuit:	A local road that generally traverses east-west between Qantas Boulevard in the east and Southern Cross Avenue in the west, noting that there is an alternate Hall Circuit in the south between Flynn Avenue and Sixteenth Avenue East. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction, with unrestricted on-street parking permitted along both sides of the road.
Flynn Avenue:	A local road that traverses east-west between Hall Circuit in the east and Twenty Seventh Avenue in the west. Within the vicinity of the site, it is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction, with unrestricted on-street parking permitted along both sides of the road.
Bravo Avenue:	A local road that traverses north-south between Bird Walton Avenue in the north and Southern Cross Avenue in the south. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction, with unrestricted on-street parking permitted along both sides of the road. In relation to the site, Bravo Avenue is proposed to extend southbound and connect onto Qantas Boulevard.

It can be seen from **Figure 3** that the site is conveniently located with respect to the arterial (Westlink M7 Motorway) and sub-arterial (Cowpasture Road) roads serving the region. As such, the local road network is able to distribute traffic and provide connections onto the wider road network.



LEGEND:

- Arterial Road
- Sub-arterial Roads
- Collector Roads

FIGURE 3: ROAD HIERARCHY

0m 100m 200m

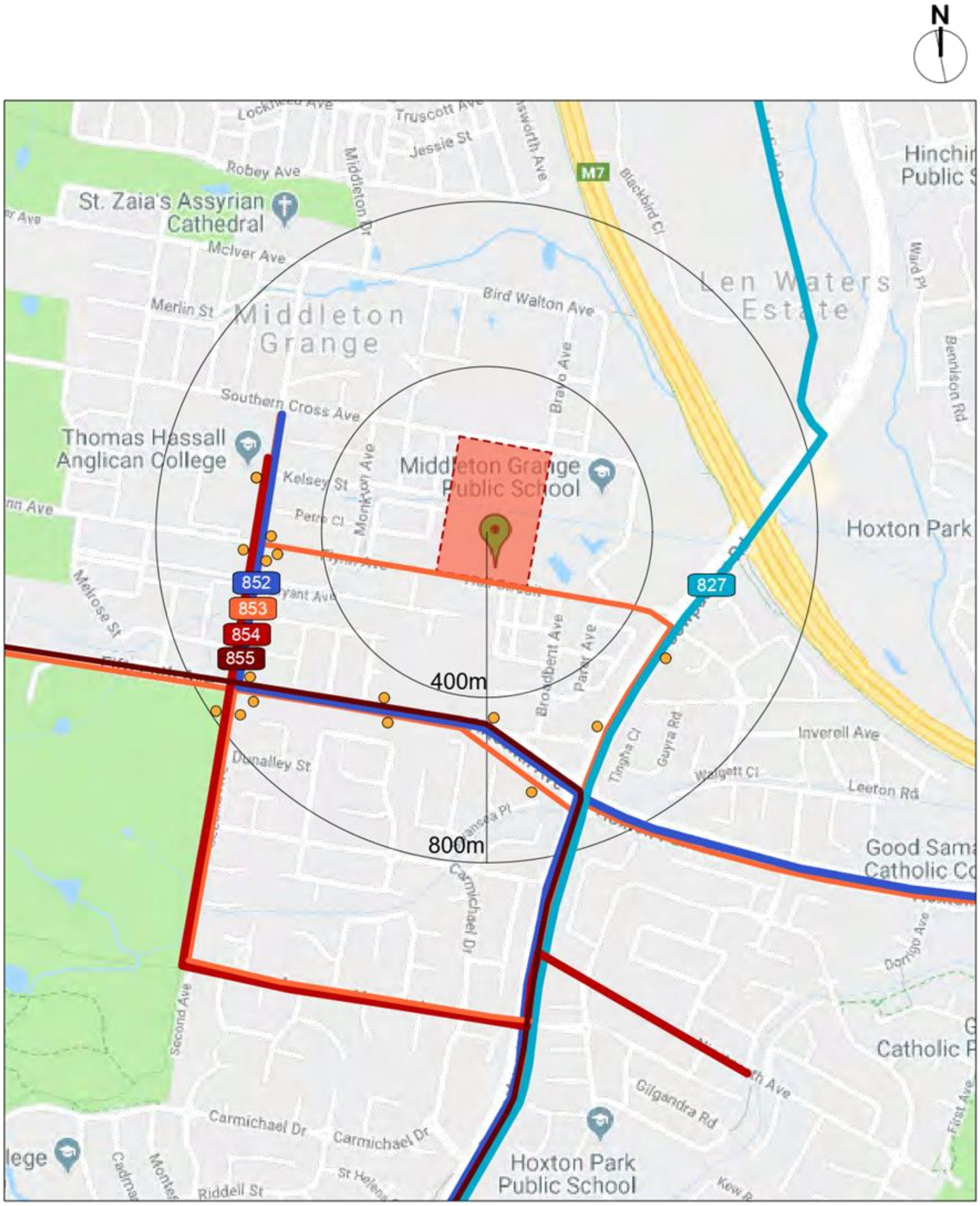
3.3 Public Transport

The existing bus services that operate in the locality are shown in **Figure 4**. It is evident that the development has limited access to public transport services with bus stops along Cowpasture Road and Kingsford Smith Avenue. These bus stops provide services to the following routes:

- 827 – Carnes Hill Marketplace to Liverpool via Bonnyrigg Heights.
- 852 – Carnes Hill Marketplace to Liverpool via Greenway Drive and Cowpasture Road.
- 853 - Carnes Hill to Liverpool via Hoxton Park Road.
- 854 - Carnes Hill to Liverpool via Greenway Drive and Hoxton Park Road.
- 855 – Rutleigh Park to Liverpool via Austral and Leppington Station.

Furthermore, the above bus routes provide regular services to Liverpool Railway Station, thereby providing commuters' access along the following lines:

- T2 – Inner West and South Line.
- T3 – Bankstown Line.
- T5 – Cumberland Line.



LEGEND:

- Bus Stop
- 827 Carnes Hill Marketplace to Liverpool
- 852 Carnes Hill Marketplace to Liverpool
- 853 Carnes Hill to Liverpool
- 854 Carnes Hill to Liverpool
- 855 Rutleigh Park to Liverpool

FIGURE 4: PUBLIC TRANSPORT

0m 100m 200m

4.0 TRAFFIC EFFECTS OF PROPOSED DEVELOPMENT

4.1 Proposed Development

A detailed description of the proposed development is provided in the SEE Report prepared separately. The overall development seeks to provide a wide range of uses and this is detailed in the design of the 6 precinct areas.

The design is centred on active transport links and parklands and creates a community and central social hub.

Reference is made to the Urban Design Report prepared by Christensen Obrien Architects. A site Plan is located in **Appendix A** showing the street layout and precinct locations.

4.2 Internal Roads

The proposed internal road network comprises of two (2) primary roads and associated access lanes and service vehicle access lanes. The indicative roads and access lanes are shown in **Figure 5.**

Main Street	A local road that traverses north-south and provides the primary link between Southern Cross Avenue in the north and Flynn Avenue to the south. This road also provides connections to the rear access lanes of Lots 2 and 3 with an additional:" shared zone" between Main Street and Middleton Drive.
Middleton Drive	A local road that traverses north-east and provides connection between Southern Cross Drive in the north and Qantas Boulevard in the east. This road also provides a connection to Main Street in the west. The majority of this road is to be designated as a "shared zone" which will promote active transport links within the site.
Access Lanes	There are various laneways proposed for the subdivision with access lanes located to the west of Lots 2 and 3 and service lanes located for Lots 5 and 6 to the west.

The streets have followed the sectional design properties of *Liverpool DCP Part 2.5 – Middleton Grange*. Street Sections showing the cross-sectional properties of the streets is located in **Appendix A** of this report.



FIGURE 5: INTERNAL ROAD NETWORK

4.3 Traffic Generation

As each precinct has its own unique characteristics and this is reflected in the way that the traffic generation yield is calculated in our analysis.

A thorough preliminary investigation into the appropriate planning uses for each precinct was undertaken by the planners and the traffic generation was calculated according to each precinct (Lot).

For the purposes of comparison, the previous traffic generation prepared by Traffix (Reference No 16.068r04v01) dated September 2017 is summarised below:-

Table 4.3a

Uses	Total Units	Area M^2	Traffic Generation		Total	
			IN	OUT		
Residential Units	912		73	292	365	AM
			292	73	365	PM
Commercial		2533	41	10	51	AM
			8	32	41	PM
Retail		20240	81	20	101	AM
			607	607	1214	PM
		TOTAL	195	322	**517**	AM
			907	712	**1620**	PM

4.3.1 Traffic Generation Rates

The traffic generation rates outlined in the RMS Guide to Traffic Generating Developments 2002, RMS Technical Direction TDT 2013/04a and Council's recommendations have been adopted for the purpose of this development.

These applicable rates are summarised in **Table 4.3b**.

Table 4.3b

	Traffic Rate	Rate	AM Peak Period Rate		Traffic Rate	Rate	PM Peak Period	
Land Use			**IN**	**OUT**			**IN**	**OUT**
Residential	Council Advice	0.4 trips per dwelling	0.25	0.75	Council Advice	0.4 trips per dwelling	0.66	0.33
Retail	Council Advice	0.5 trips per 100m2 LFA			Council Advice	0.5 trips per 100m2 LFA		
Retail Supermarket/Mimi Major	RMS Guide To Traffic Generating Developments	155 A(SM)per 1000m2 Thurs Peak PM 0.1	0.1	0.1	RMS	155 A(SM)per 1000m2 Thurs Peak PM 0.9	0.5	0.5
Commercial	RMS	RMS 2.02/100M^2	0.80	0.20	RMS 1.63/100M^2	RMS 1.63/100M^2	0.2	0.8
Restaurant	RMS	5 per 100m2 PM Only				5 per 100m2 PM Only	0.5	0.5
Medical Centre	RMS/data	Based upon number of consulting rooms 2.22 trips per room	0.50	0.50	RMS/data	Based upon number of consulting rooms 2.22 trips per room	0.5	0.5
Childcare Centre	RMS/data	60 children at 0.8 trips per child over 2 hours	0.50	0.50	RMS/data	60 children at 0.7 trips per child over 2 hours	0.5	0.5
Gymnasium**	RMS/data	3 per 100m2 PM Only			RMS/data	3 per 100m2 PM Only	peak after 6pm	

The following assumptions have been made in the calculation of the traffic generation for this site namely:-

- A reduction of 20% for linked and multipurpose trips from retail to other retail given the amount of retail on the site and a supermarket and mini major such as Aldi and other uses in accordance with the *RMS Guide to Traffic Generating Developments Section 3.6 Retail*.

- We refer to the *Connected Liverpool Strategy 2050* and which states a proposed smart transit corridor along Fifteenth Avenue. The smart transit corridor will not be operational until 2024-2025.This will provide future travel mode choice and assist in the future reduction of traffic generation as well as increase active transport trips.

(4.3.1 Continued)

- Active transport by way of bicycle path and shared paths will help to reduce car dependency within the development.
- Precinct 7 uses are stated in the SEARs application and traffic generation has been calculated accordingly. It is noted that further selection of uses will be subject to the major project application process.
- Precinct 5 has the retail areas broken into retail, a major supermarket, café/restaurant and on the first-floor entertainment/Commercial spaces and gymnasium and childcare centre.
- The office traffic generation rate used across the development is the Liverpool rate in the *RMS TDT 2013/04a* of 2.02 trips/ 100m^2 for AM and 1.63 trips/ 100 m^2 for PM.
- The car driver rate from the JTW data should also be used in the calculations for office and medical centre use.
- The calculation of traffic generation for the medical centre refers to the *RMS Traffic Generating Developments and Analysis Data No 20* and also our own reports on medical centres. Traffic Generation is typically derived from the number of consulting rooms. We estimate that there could be up to 60 consultancy rooms with an average waiting time of 27 minutes for each room. We have assumed an occupancy rate of 85%. We have assumed that the ancillary health could be specialist's rooms. The car driver rate from the JTW data should also be used in the calculations.
- We have assumed the rate for residential units of 0.4 which we understand has been provided by Council and documented in Council's meeting minutes dated 27th February 2017.
- A further reduction in traffic generation for residential has been made for Soho Style apartments in Precinct Areas lots 2 and 3. About 25% could be assigned. The commercial component on the ground floor would not generate traffic generation for the commercial component as it is owner occupied. This has not been adopted as part of the current scenario summary.

(4.3.1 Continued)

The summary calculations show an AM Peak Hour Traffic Generation of **774** vehicles in the AM and **1427** vehicles in the PM Peak Hour. Each Precinct has been calculated and is included in **Appendix A.**

Table 4.3c PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 (Hall Circuit) Flynn Ave Middleton Grange

Use	Area M^2	No of Units	Generation Rate	TOTAL	Reduction for multi-purpose trips 20% for retail/café/medical
Precinct Lot 2	3348	29	TOTAL AM	20.2	19
		29	TOTAL PM	87	72
Precinct Lot 3	3354		TOTAL AM	20.2	19
			TOTAL PM	87	72
Precinct Lot 4	7157	292	TOTAL AM	206.2	188
			TOTAL PM	376	324
Precinct Lot 5	14135	241	TOTAL AM	223.5	214
			TOTAL PM	484	405
Precinct Lot 6	6168	79	TOTAL AM	106.0	103
			TOTAL PM	326	276
Precinct Lot 7	13586	0	TOTAL AM	283	231
			TOTAL PM	342	278
		670	AM	859	**774**
			PM	1702	**1427**

The traffic Generation from each precinct has been shown for the AM and PM Peak Hours in **Figure 6A** and **Figure 6B** Respectively.

4.4 Vehicular Access To and From The site

All heavy rigid and articulated vehicles up to 19 metres long vehicle will access the site via Qantas Boulevarde as confirmed by Liverpool Council.

Each precinct ingress and egress point is identified in **Figure 7**.

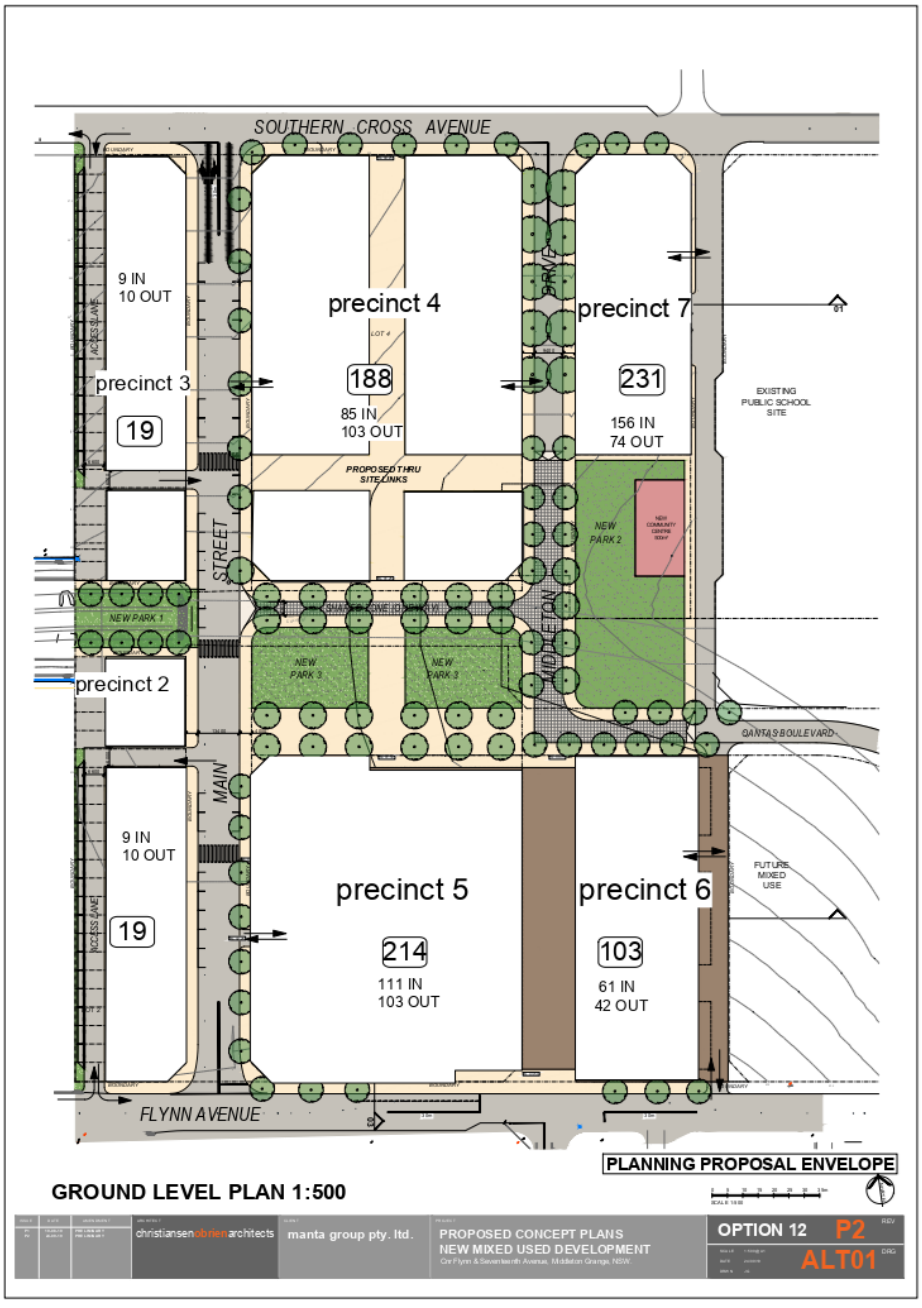


Figure 6A Traffic Generation
Future Development Traffic
AM Peak Hour

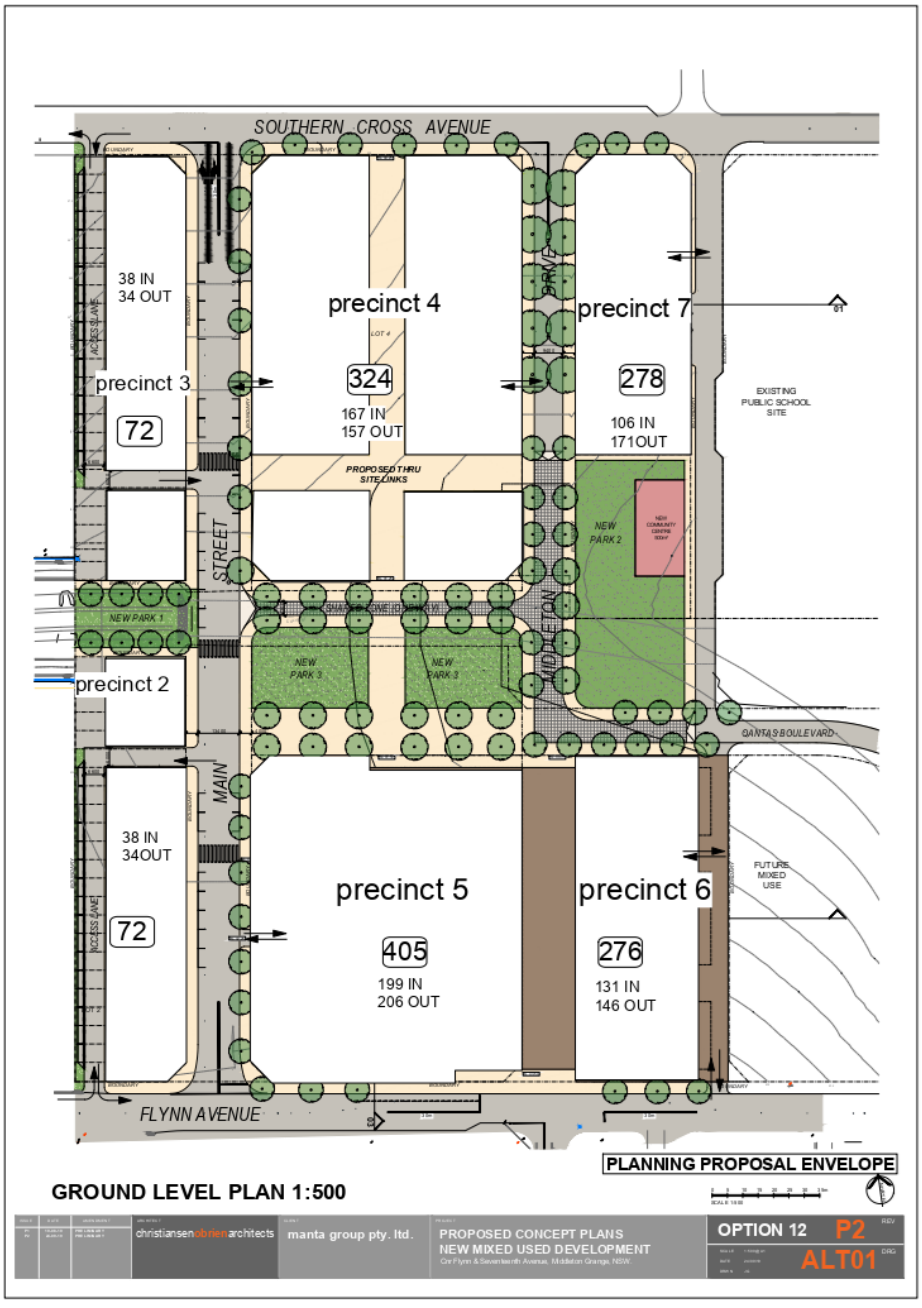


Figure 6B Traffic Generation
Future Development Traffic
PM Peak Hour

5.0 PARKING REQUIREMENTS

5.1 Car Parking

The Liverpool Development Control Plan 2008(DCP) provides the car parking rates and provisions for various components of the proposal. Typically, developments located outside the Liverpool City Centre would attract the following recommended rates based on the associated leasable floor areas (LFA) and Gross Floor Areas (GFA's).

Table 5.1 PROPOSED PARKING RATES

	Parking Rate	Rate (See Table 13 LDCP)
Land Use		
Residential	1 Bedroom	1 space per on bedroom dwelling
	2 Bedroom	1.5 spaces per 2 bedroom dwelling
	3 Bedroom	2 spaces per three bedroom dwelling
	Visitor	1 visitor space per 4 bedroom dwelling
Commercial	Offices	1 space per 35m2 LFA (Business Zones)
	Childcare	1 space per 35m2 LFA (Business Zones)
	Medical Suites	1 space per 35m2 LFA
	Medical Centre	1 space per 25m2 LFA
	Restaurant	1 space per 20m2 LFA (Business Zones)
	Gymnasium	1 space per 22m2 LFA
Retail	Shops	1 space per 25m2 LFA
	Entertainment-Commercial	1 space per 25m2 LFA

5.2 Accessible Parking

The Liverpool Development Control Plan 2008(DCP) specifies the accessible parking rates for developments with over 20 car parking spaces. These rates are associated with land uses and are listed below:-

1 per 100 car parking spaces (Retail, Commercial, Industry, and Transport)
2 per 100 car parking spaces (Community, Recreation, Accommodation or Education)
3 per 100 car parking spaces (Entertainment or Health)

5.3 Motorbike Parking

The Liverpool Development Control Plan 2008(DCP) recommends a motorcycle parking rate of 1 space per 20 car parking spaces for developments within the Liverpool City Centre. We note that there is not a rate suggested for areas outside of the City Centre.

All Residential-Mixed Use developments should provide motorbike parking as suggested by the Architectural Design Guide (ADG) for residential use.

5.4 Bicycle Parking

The Liverpool Development Control Plan 2008(DCP) outlines bicycle parking provision at the following recommended rates presented in **Table 5.2**.

Table 5.2 PROPOSED BICYCLE PARKING RATES

	DCP Bicycle Parking Rates	
Land Use	**Residential/Staff**	**Visitor/Customer**
Residential	Greater of the following:- 1 space per 2 dwellings or 1 space per 4 bedrooms	1 space per 10 dwellings
Commercial Offices	1 space per 200m2 GFA	1 space per 750m2 GFA
Shopping Centres	1 space per 300m2 GFA	1 space per 750m2 LFA
Medical Centres and Health Consulting Rooms	1 space per 10 staff	2 spaces per centres. Plus 1 space per 5 consulting room.
Indoor Facilities (Gym)	1 space per 10 staff	2 spaces Plus 1 space per 100m2 GFA

5.4 Servicing

The Liverpool Development Control Plan 2008(DCP) outlines the service vehicle provision and the following rates are stated in **Table 5.3**.

Table 5.3 SERVICING REQUIREMENTS

	DCP Parking Rates	
Land Use	**Zoning**	**Service and Loading**
Multi Dwelling Housing and Residential Flat Buildings	Residential and Business Zones	Service areas for removalists and garbage servicing
Office Premises	Business Zones	LFA> 2000m2 require waste collection vehicle
Retail Premises	Business Zones	LFA> 4000m2 require waste collection vehicle
Restaurants	Residential Zones	Waste Collection Vehicle Service Requirements
Medical Centres and Health Consulting Rooms	N/A	LFA> 2000m2 require waste collection vehicle Servicing for small van
Indoor Facilities (Gym)	Business Zones	Service Access for a small rigid vehicle

A detailed summary of the parking provision in **Table 4.4** is provided in **Appendix C** of this report.

A summary of each precinct area parking supply is shown in **Figure 7.**

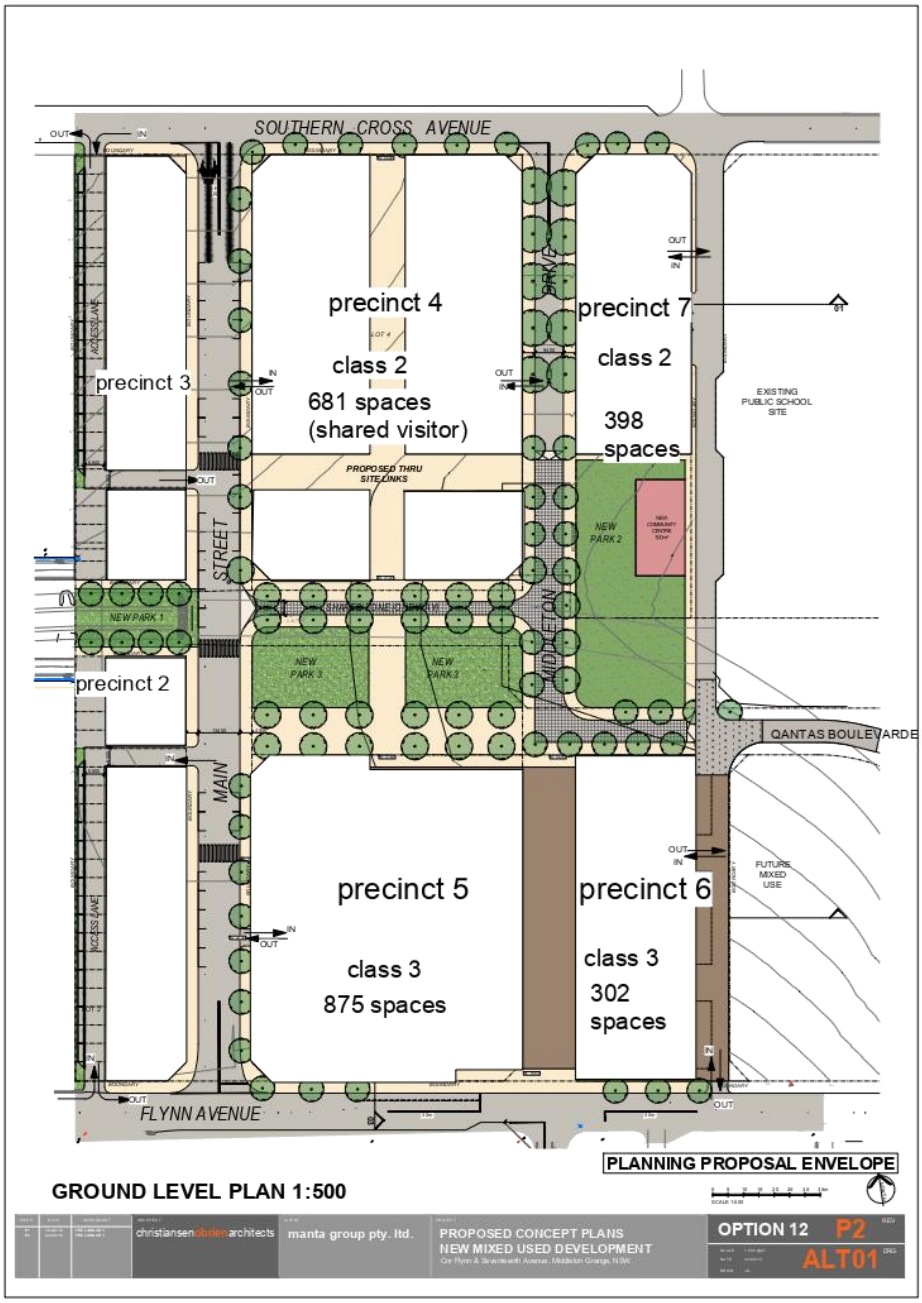


Figure 7 Precinct Parking

6.0 PUBLIC BENEFIT RECOMMENDATIONS

The following transport infrastructure benefits have been identified as shown in the Planning Proposal Envelope Plan located in **Appendix A**.

These key actions include:-

Land Uses- *Employment and mixed use focus along Southern Cross Avenue, Flynn Avenue and Eastern Side of Main Street.*
Transport and Movement- *Capitalise on development around transport modes. Reduce car dependency by improving access to public and active transport infrastructure.*
Place-making-*. Break up large blocks with laneways and through site linkages. Facilitate site amalgamation to provide opportunities for master-planned redevelopment which delivers good public open space outcomes.*
Open space, linkages and connections-*Reinforce the cycle link as a connection to the cycle links for Middleton Grange Network. Leverage new development to provide new open space, high quality and active public domains and new through-site links.*

6.1 Bicycle Travel Path and Facilities

The shared access laneways will provide cycle links and active transport links through the north-south connections and east to west connections through the development. On street cycle way paths can be provided in Main Street.

6.2 On Street Parking Bays

Main Street will provide on street parking for local neighbourhood shops on both east and western sides of the street. It is anticipated that ½ hour parking between 8am and 6pm will allow for customer parking to the retail use for Precinct Lots 2 and 3 and for Lot 4.

6.3 Pedestrian Pathways

Pedestrian pathways have been provided to all streets in accordance with the Street Sections Layouts in the DCP.
Internal Shared paths will have landscape planting to further enhance internal active spaces.

6.4 Bus Shelter Upgrade in Flynn Avenue

A new bus shelter could be incorporated into the site frontage along Flynn Avenue which is connected to the new north-south pedestrian link through the site.

6.5 New Parks 1, 2 and 3

A new public open space parks will promote social and active lifestyle opportunities. New Park 1 has access off Main Street between Precincts 2 and 3. New Park 3 runs east to west between Main Street and Middleton Drive. New Park 2 provides a large parkland facility between Middleton Drive and Bravo Avenue.

7.0 PROPOSED INFRASTRUCTURE

7.1 Proposed Infrastructure Council and NSW Government Initiatives

A number of future planned infrastructure upgrades are proposed by Liverpool Council and approved developments and Transport for NSW. These are shown diagrammatically in **Figure 8** in this report and listed below.

1. Smart Transit Corridor. Additional lanes east and westbound. Separated Bus Lane eastbound and westbound.
2. Signalised Intersection at Second Avenue/Kingsford Smith Avenue/Fifteenth Avenue
3. Interium re-alignment works to Qantas Dr/Fifteenth Ave. A copy of the Interium works is located in **Appendix D** of this report.
4. Signalised Intersection at Flynn Ave/Kingsford Smith Avenue.
5. Cowpasture Road 3 lanes northbound from Fifteenth Ave to Airfield Drive
6. Cowpasture Road 3 lanes southbound from Fifteenth Ave to Airfield Drive
7. Road Re-alignment Works Middleton Drive-seventeenth Ave Ref No Sk01-5236
8. Middleton Drive-Aviation Road Connection under M7. Relocation of bicycle lanes

9.a. Roundabout at Bird Walton Avenue and Middleton Drive.

7.2 Proposed Infrastructure For Development

Proposed infrastructure upgrades for the development are included in scenario testing in the AIMSUN modelling report prepared by Bitzios Consulting. Items 12-15 were first identified in the TIA report number 16.068r04v01 prepared by Traffix in September 2017.

9.b. Signalised Intersection Main Street-Flynn Avenue (Hall Circuit).

10. Signalised Intersection at Main Street and Southern Cross Avenue (Hall Circuit).
11. Signalised Intersection into development car park (Private Access) off Flynn Avenue (Hall Circuit).
12. Additional Right Turn lane from Fifteenth Ave to Cowpasture Rd Southbound.
13. Additional Right Turn lane from Cowpasture Road (N) to Fifteenth Avenue Westbound.
14. Additional short right turn lane from Flynn Ave to Cowpasture Road Southbound.
15. Additional left turn lane from Flynn Ave to Cowpasture Road Northbound.
16. Additional Eastbound lane across Development Site in Flynn Avenue to Cowpasture Road.

These infrastructure developments have been checked as a result of the modelling carried out by Bitzios Consulting. The modelling report is located in Appendix E of this report.

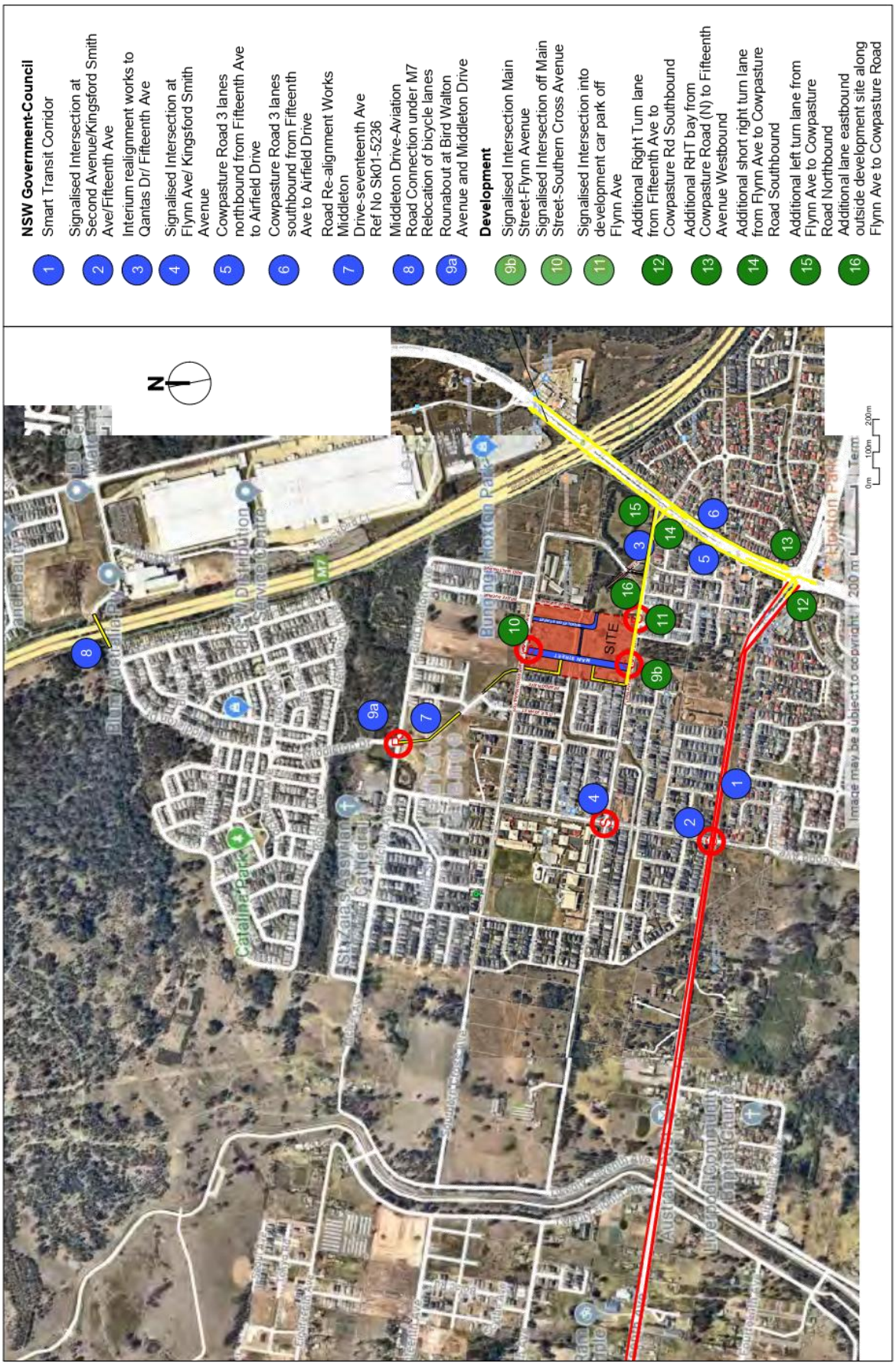


FIGURE 8: INFRASTRUCTURE MAP
SHOWING STATE GOVERNMENT, COUNCIL PLANNED INFRASTRUCTURE AND PROPOSED DEVELOPMENT INFRASTRUCTURE

8.0 AIMSUN MODELLING

8.1 AIMSUN Modelling Background

Previous Modelling was carried in Report Base Model Development Report 60-80 Southern Cross Avenue & 45-65 Hall Circuit Middleton Grange reference number 16.068r01v02 September 2017 prepared by Traffix. We refer to page 2 of the TIA report by Traffix Reference No 16.068404v01 which states:-

"The scope and requirements of this modelling report were outlined by RMS during an inception meeting held on 29 March 2017. In this regards the "base case model" has been developed by Traffix and has been reviewed and approved by RMS for use".

The base case model was obtained from Traffix for the purposes of preparing the development scenarios.

8.2 AIMSUN Development Scenarios

The AIMSUN modelling is proposed to develop the following scenario tests as follows:-

Develop a year 2030"do minimum model" which includes all future committed road network improvements and background traffic growth within the study area. The "do minimum model" does not include traffic from the proposed development.

Development of a "2030 with development model 1" which is the same as the "2030 do minimum model" but with development traffic added and based on the development size as per the current 2008 LEP.

Development of a "2030 with development model 2" which is the same as the "2030 do minimum model" but with development traffic based on the new development proposal.

The scenario tests will include all assumptions listed in Section 7 and the background development traffic and growth determined in consultation with the Transport For NSW-RMS. The impacts of upon key road links and intersections will be summarized in the Modelling Report prepared by Bitzios Consulting.

9.0 CONCLUSIONS AND SUMMARY

- The revised scheme has reduced the amount of residential density on the site from 912 units to 670 residential dwellings and provides a greater mix of employment and social uses. The proposed FSR on the site ranges from 1:1 (R1 zone) to 2.3:1 (B2 zone) and enables a total maximum 1.98:1 density for the scheme.

- This density is not considered high in its context and can sustainably enable the desired urban objectives the scheme promotes and is supported by the AIMSUN modelling.

- The "2030 with development model 2 Future development model with the proposed development and upgrades will operate with spare capacity across the network.

- The 2030 with development model 1" current LEP was tested with the identified Council and Government Infrastructure upgrades and showed that under these conditions the network was slightly constrained and operating at near capacity.

- The improvements shown in the Future 2030 development model 2 demonstrate an improvement in travel time and an improvement in level of service for the key intersections across the network.

APPENDICES

APPENDIX A

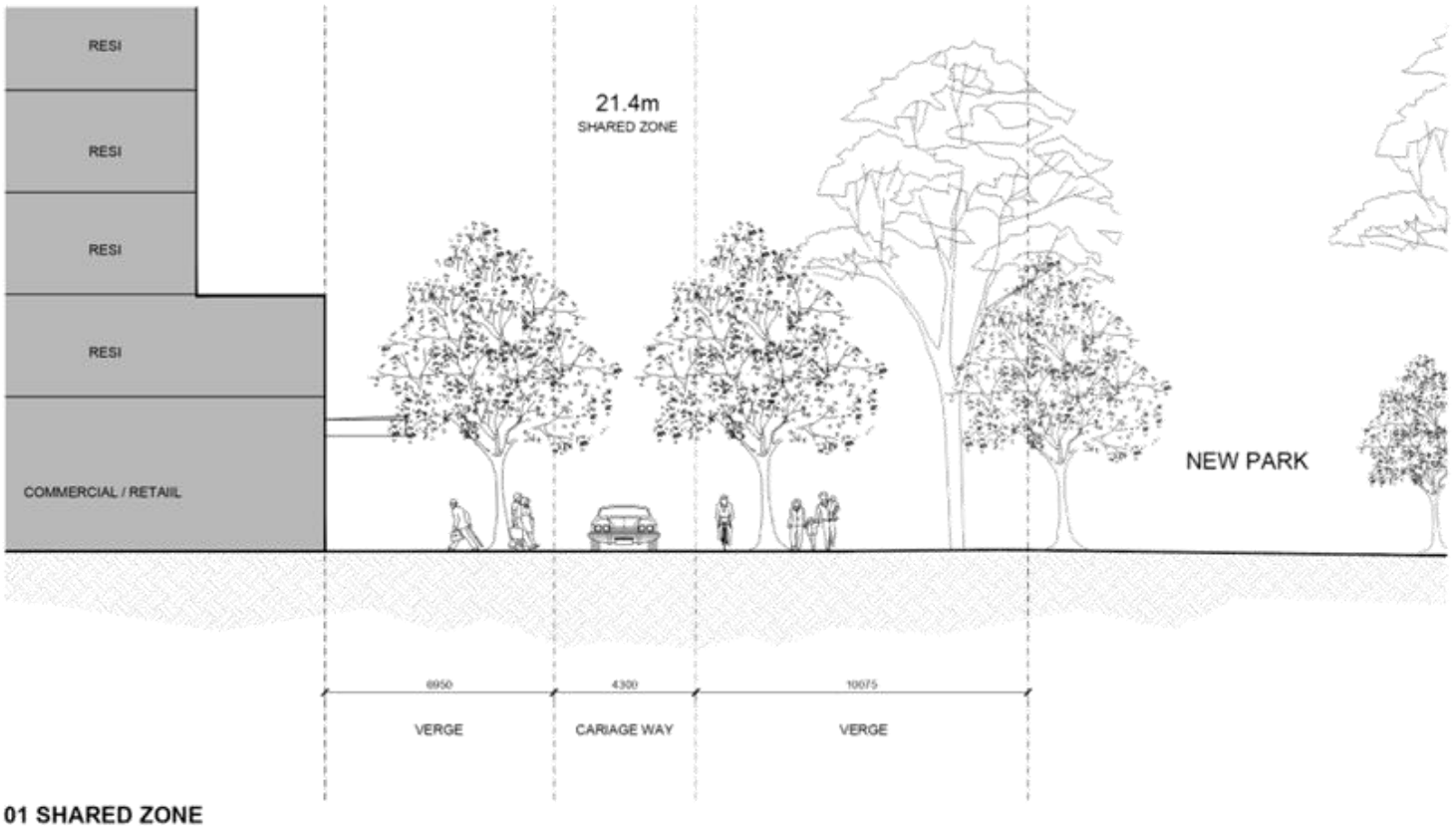


PLANNING PROPOSAL ENVELOPE

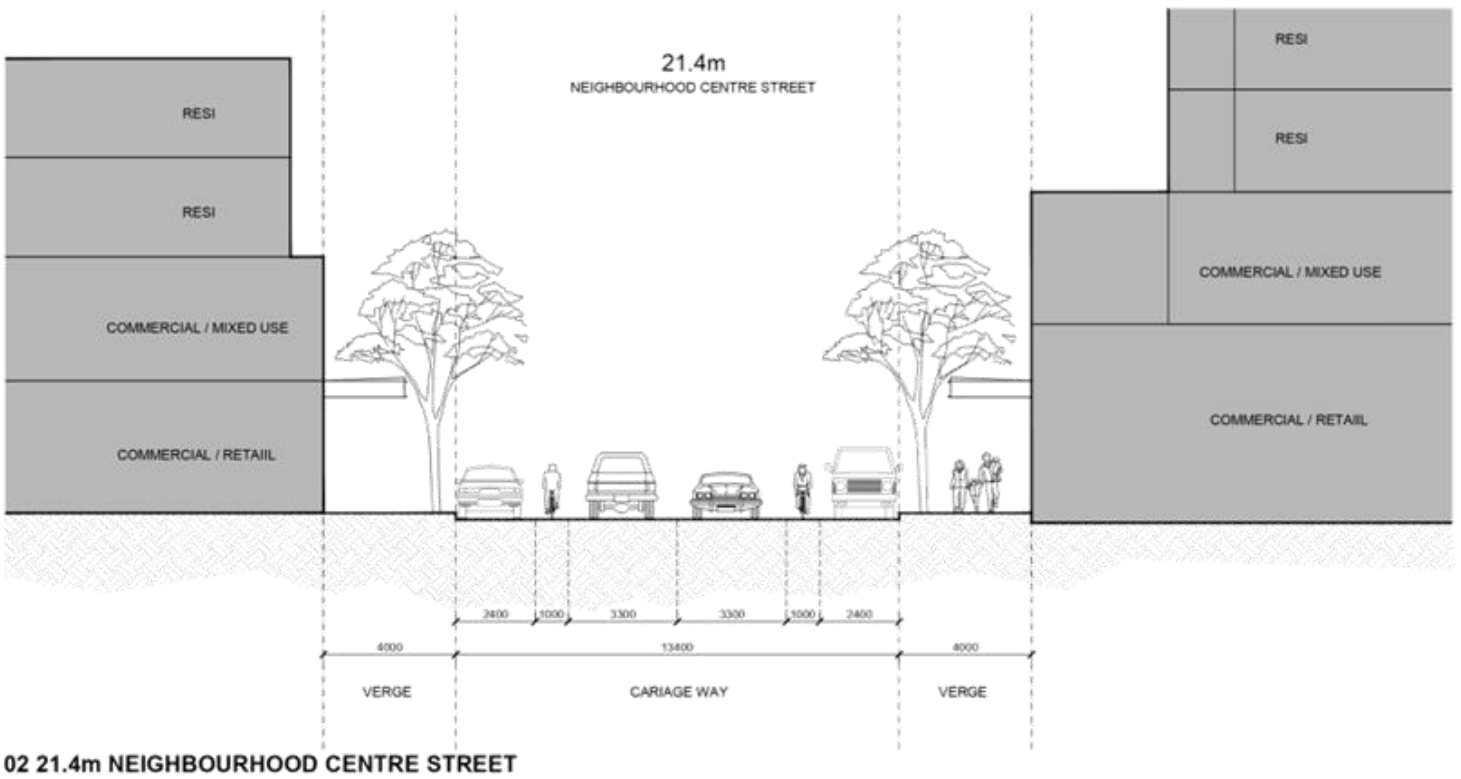
GROUND LEVEL PLAN 1:500

SCALE 1:500

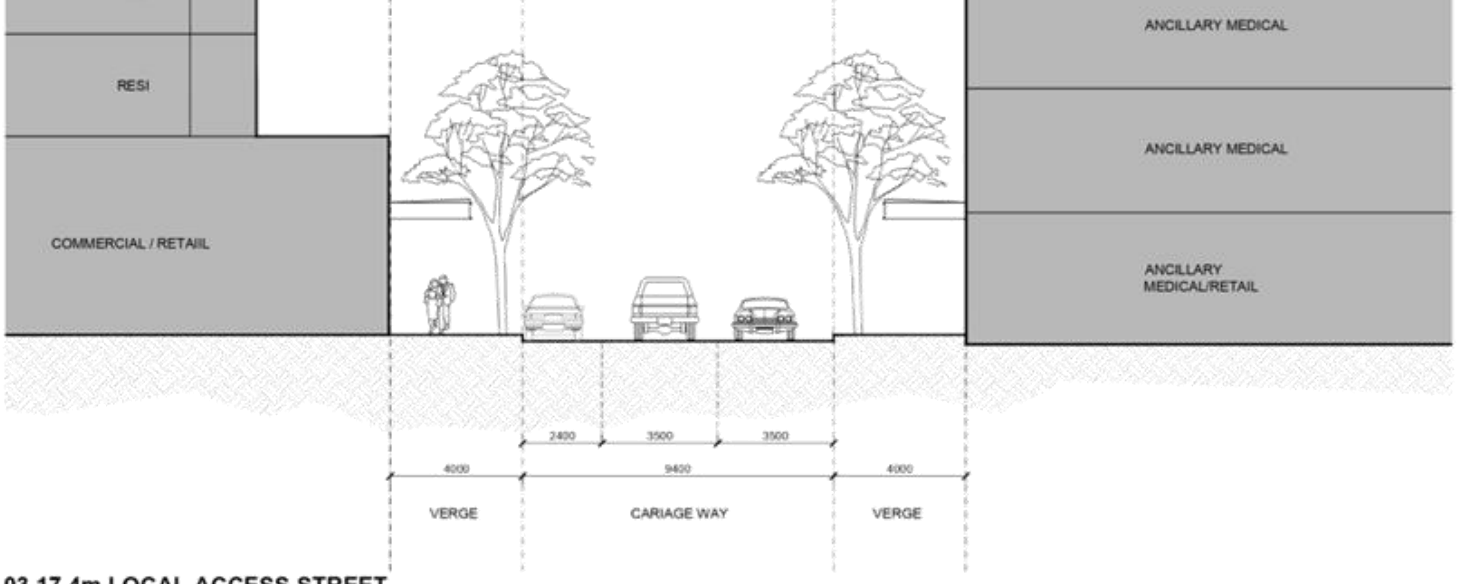
christiansenobrienarchitects | manta group pty. ltd. | PROPOSED CONCEPT PLANS NEW MIXED USED DEVELOPMENT, Cnr Flynn & Seventeenth Avenue, Middleton Grange, NSW | OPTION 12 P1 ALT01



01 SHARED ZONE



02 21.4m NEIGHBOURHOOD CENTRE STREET



03 17.4m LOCAL ACCESS STREET

STREET SECTIONS

0 5 10 15 20 25 30 35m
SCALE 1:500

ISSUE	DATE	AMENDMENT
P1	19-02-19	PRELIMINARY
P2	24-09-19	PRELIMINARY

architect
christiansenobrienarchitects

manta group pty. ltd.

BUILDING HEIGHTS
NEW MIXED USED DEVELOPMENT
Cnr Flynn & Seventeenth Avenue, Middleton Grange, NSW.

OPTION 12 REV **P2**

SCALE N.T.S
DATE 24/09/19
DRWN JG

DRG **DCP07**

APPENDIX B

26/09/2019

Table 3.3a PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 Hall Circuit(Flynn Ave) Middleton Grange

Precinct Lot 7

Location	Use	Area M^2 GFA	Area M^2 LFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 20% for retail and medical centre	
Ground	Medical Centre **	1175		RMS Data and Analysis-2.22 x 30 x 0.85 x0.733	20.75	20.75	41.50			37.3	AM-PM
	Retail	552	469	0.5 trips per 100m2 LFA AM 6 trips per 100m2 PM							
				AM 0.8 IN & 0.2 OUT	1.88	0.47	2.35			1.9	AM
				PM 0.5 IN & OUT	14.08	14.08	28.15			22.5	PM
	Café Restaurant	505		5 per 100m2 PM Only	12.63	12.63	25.25			20.2	PM
First Floor	Imaging Diagnostic	1189		RMS Data and Analysis-2.22 x 30 x 0.85 x0.733	20.75	20.75	41.50			33.2	AM-PM
	Ancillary Health	1964		RMS 2.02/100M^2; 50% IN & OUT (Liverpool)	19.84	19.84	39.67			31.7	PM
	Ancillary Health			RMS 1.63/100M^2; 50% IN & OUT (Liverpool)	16.01	16.01	32.01			25.6	AM-PM
Upper Levels	Office	7012		RMS 2.02/100M^2; 80% IN and 20% OUT AM and 20% IN 80% Out in PM	113.31	28.33	141.64			113.3	AM
				RMS 1.63/100M^2; 80% IN and 20% OUT AM and 20% IN 80% Out in PM	22.86	91.44	114.30			91.4	PM
	Outpatients	1189		RMS 2.02/100M^2; 80% IN and 20% OUT AM and 20% IN 80% Out in PM	19.21	4.80	24.02			19.2	AM
				RMS 1.63/100M^2; 80% IN and 20% OUT AM and 20% IN 80% Out in PM	3.88	15.50	19.38			15.5	PM
	Total	**13586**		TOTAL AM	192	91	283	156.3	74.2	231	
				TOTAL PM	131	211	342	106.2	171.3	278	

NOTES ** Medical Centre assumed 30 rooms- Imaging Diagnostic assume 30 rooms
Average Length of stay 27 minutes or Rate of 2.22 per hour
85% occupancy rate of rooms
car driver mode 73.33%
Rates for Office uses TDT 2013/04a for Liverpool

26/09/2019

Table 3.3b PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 (Hall Circuit) Flynn Ave Middleton Grange

Precinct Lot 6

Location	Use	Area M^2 GFA	Area M^2 LFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 20% for retail/café	
Ground	Mini Major	1200	1020	RMS 155A(SM) THURS; 155 x*1020/1000							
				AM (10% Trips AM)AM 0.1 IN and OUT	8	8	15.81			12.6	AM
				PM (90% Trips) 0.5 IN & OUT	71	71	142.3			113.8	PM
	Café/Retail	1500		5 per 100m2 PM Only	38	38	75			60.0	PM
	Retail Shops	580	493	0.5 trips per 100m2 LFA AM 6 trips per 100m2 PM							
				AM 0.8 IN & 0.2 OUT	0.20	0.05	0.25			0.2	AM
				PM 0.5 IN & OUT	14.79	14.79	29.58			23.7	PM
First Floor	Office **	2888		RMS 2.02/100M^2; 80% IN and 20% OUT AM and 20% IN 80% Out in PM	46.67	11.67	58.34			58.3	AM
				RMS 1.63/100M^2; 80% IN and 20% OUT AM and 20% IN 80% Out in PM	9.41	37.66	47.07			47.1	PM
	Total	**6168**									
				Hour	IN	OUT	TOTAL	IN	OUT		
Residential	No Of Units/A	Traffic Gen Rate			0.25	0.75					
	79	0.4		AM	7.90	23.70	31.60			31.6	AM
					0.67	0.33					
	79	0.4		PM	21.07	10.53	31.60			31.6	PM
				TOTAL AM	63	43	106.0	60.8	42.0	103	
				TOTAL PM	154	172	326	130.6	145.6	276	

NOTES ** Rates for Office uses TDT 2013/04a for Liverpool

26/09/2019

Table 3.3c PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 (Hall Circuit) Flynn Ave Middleton Grange

Precinct Lot 5

Location	Use	Area M² GFA	Area M² LFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 20% for retail/café		
Ground	Major Retail Supermarket	2600	2210	RMS 155A(SM) THURS; 155 x*1020/1000								
				AM)AM 0.1 IN and OUT	15.5	15.5	31.0			24.80	AM	
				PM (90% Trips) 0.5 IN & OUT	60	60	119.3			95.47	PM	
				0.5 trips per 100m2 LFA AM 6 trips per 100m2 PM								
	Liquor Store	300		AM 0.8 IN & 0.2 OUT	1.20	0.30	1.50			1.20	AM	
				PM 0.5 IN & OUT	9	9	18			14.40	PM	
	Retail Shops	2600	2210	0.5 trips per 100m2 LFA AM 6 trips per 100m2 PM								
				AM 0.8 IN & 0.2 OUT	8.84	2.21	11.05			8.84	AM	
				PM 0.5 IN & OUT	66.30	66.30	132.60			106.08	PM	
	Café/restaurant	1000		5 per 100m2 PM Only	25.00	25.00	50.00			40.00	PM	
First Floor	Gymnasium and Health Precinct **	3500		3 per 100m2 PM Only	52.50	52.50	105.00			0.00	PM	Peak after 6pm**
	Office	4135		RMS 2.02/100M²; 80% IN and 20% OUT AM and 20% IN 80% Out in PM	66.82	16.71	83.53			83.53	AM	
				RMS 1.63/100M²; 80% IN and 20% OUT AM and 20% IN 80% Out in PM	13.48	53.92	67.40			67.40	PM	
	Total	**14135**										
				Hour	IN	OUT	TOTAL					
Residential	No Of Units/A	Traffic Gen Rate			0.25	0.75						
	241	0.4		AM	24.10	72.30	96.40			96.40	AM	
					0.67	0.33						
	241	0.4		PM	64.27	32.13	96.40			96.40	PM	
				TOTAL AM	116.5	107.0	223.5	111.3	103.0	214		
				TOTAL PM	238	246	484	199	206	405		

26/09/2019

Table 3.3d PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 (Hall Circuit) Flynn Ave Middleton Grange

Precinct Lot 4

Use	Area M^2 GFA	Area M^2 LFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 20% retail/ entertainment/café	
Retail Shops	1790	1522	0.5 trips per 100m2 LFA AM 6 trips per 100m2 LFA PM							
			AM 0.8 IN & 0.2 OUT	6.09	1.52	7.61			6.09	AM
			PM 0.5 IN & OUT	45.66	45.66	91.32			73.06	PM
Café/restaurant	2000		5 per 100m2 PM Only	50.00	50.00	100.00			80.00	PM
Entertainment/ Commercial	2862		RMS 2.02/100M^2; 80% IN and 20% OUT AM and 20% IN 80% Out in PM	46.25	11.56	57.81			46.25	AM
			RMS 1.63/100M^2; 80% IN and 20% OUT AM and 20% IN	9.33	37.32	46.65			37.32	PM
Childcare	505		60 children at 0.8/2 trips AM and 60 x 0.7\2PM	12.00	12.00	24.00			19.20	AM
			60 children at 0.7/2 trips PM	10.50	10.50	21.00			16.80	PM
Total	**7157**									
			Hour	IN	OUT	TOTAL				
No Of Units/Area	Traffic Gen Rate			0.25	0.75					
292	0.4		AM	29.20	87.60	116.80			116.80	AM
				0.67	0.33					
292	0.4		PM	77.87	38.93	116.80			116.80	PM
			TOTAL AM	93.54	112.68	206.2	85.4	103.0	188	
			TOTAL PM	193.36	182.41	376	167	157	324	

26/09/2019

Table 3.3e PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 Flynn Ave Middleton Grange

Precinct Lot 3

Location	Use	Area M² GFA	Area M² LFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 20% for retail/café	
Ground	Neighbourhood Shops	2030	1726	0.5 trips per 100m2 LFA AM 6 trips per 100m2 PM							
				AM 0.8 IN & 0.2 OUT	6.90	1.73	8.63			6.90	AM
				PM 0.5 IN & OUT	19.84	19.84	39.69			31.75	PM
	Café/restaurant	724		5 per 100m2 PM Only	18.10	18.10	36.20			28.96	PM
	Soho	600		Note: Ground Floor does not generate as owner occupied							
	Total	**3354**									
				Hour	IN	OUT	TOTAL	IN	OUT		
Residential	No Of Units/Area	Traffic Gen Rate			0.25	0.75					
	29	0.4		AM	2.90	8.70	11.60			11.60	AM
					0.67	0.33					
	29	0.4		PM	7.73	3.87	11.60			11.60	PM
				TOTAL AM	9.80	10.43	20.2	9.0	9.5	18.50	
				TOTAL PM	45.68	41.81	87	38	35	72.31	

26/09/2019

Table 3.3f PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 (Hall Circuit) Flynn Ave Middleton Grange

Precinct Lot 2

Location	Use	Area M^2 GFA	Area M^2 LFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 20% for retail/café	
Ground	Neighbourhood shops	2030	1726	0.5 trips per 100m2 LFA AM 6 trips per 100m2 PM							
				AM 0.8 IN & 0.2 OUT	6.90	1.73	8.63			6.90	AM
				PM 0.5 IN & OUT	19.84	19.84	39.69			31.75	PM
	Café/restaurant	718		5 per 100m2 PM Only	17.95	17.95	35.90			28.72	PM
	Soho	600									
	Total	**3348**									
				Hour	IN	OUT	TOTAL	IN	OUT		
Residential	No Of Units/Area	Traffic Gen Rate			0.25	0.75					
	29	0.4		AM	2.90	8.70	11.60			11.60	AM
					0.67	0.33					
	29	0.4		PM	7.73	3.87	11.60			11.60	PM
				TOTAL AM	9.80	10.43	20.2	9.0	9.5	18.50	
				TOTAL PM	45.53	41.66	87	38	34	72.07	

APPENDIX C

26/09/2019

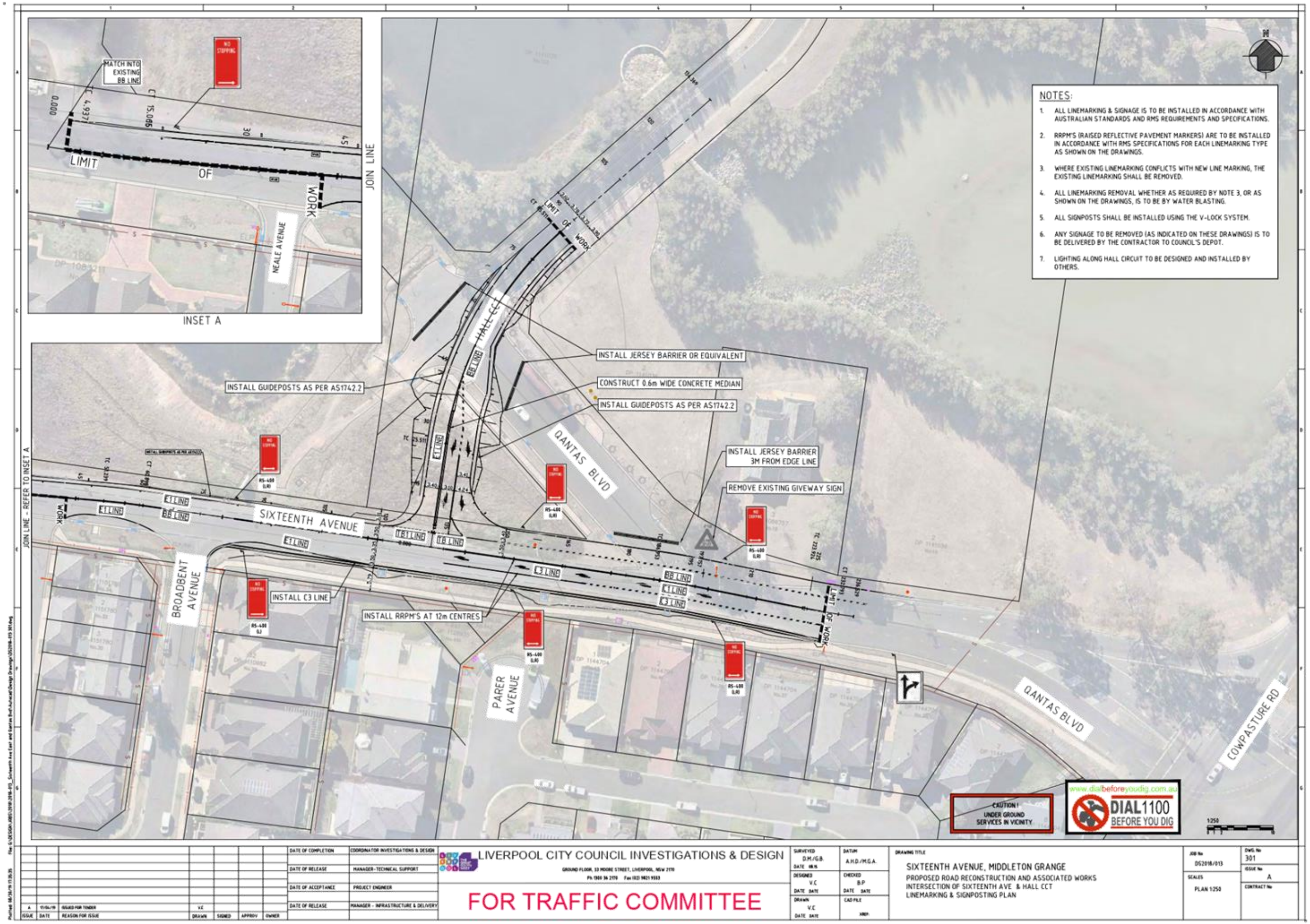
Table 4.4 Proposed Summary Of Uses and Parking

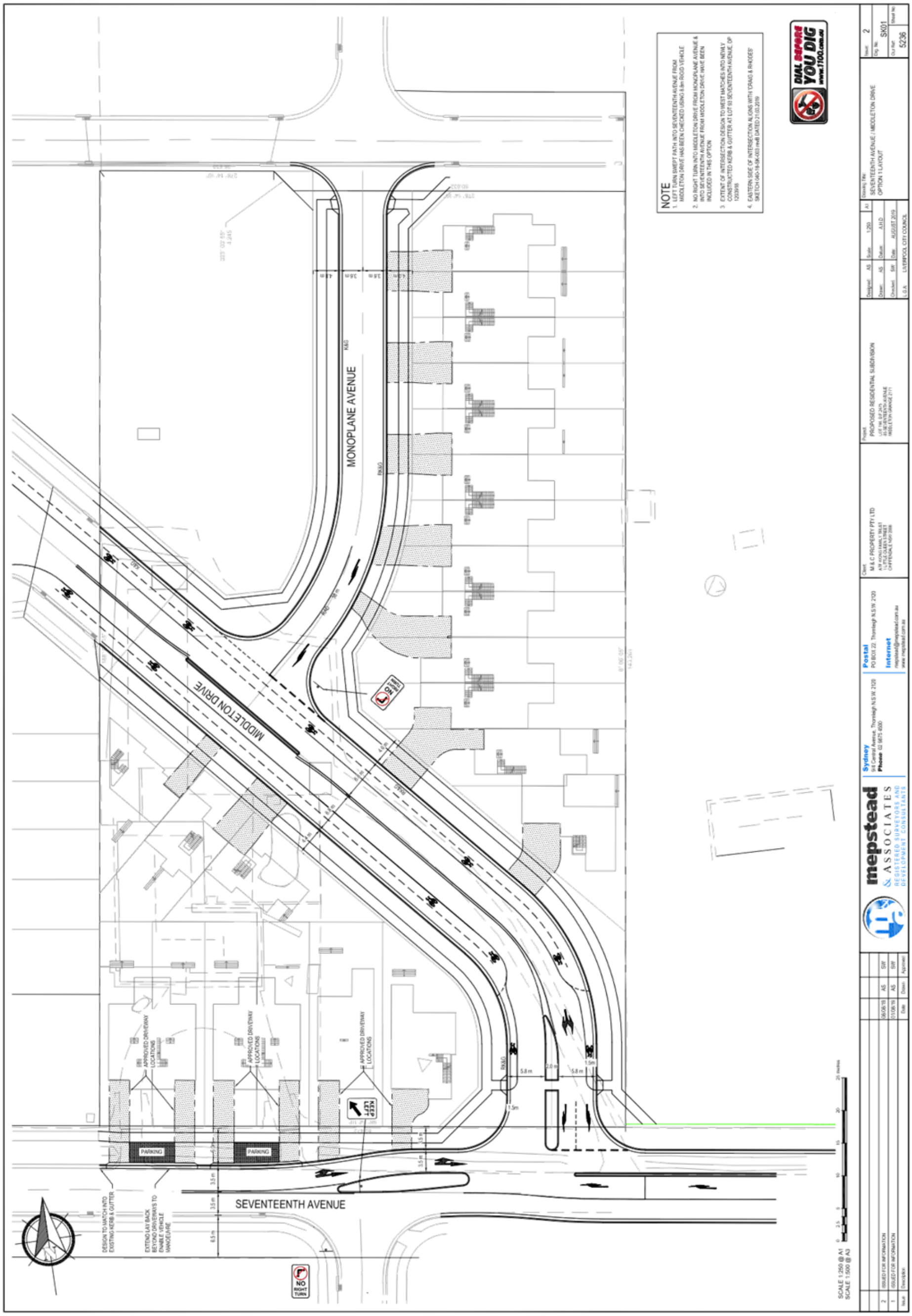
SUMMARY

Location	Uses	Area M^2	LFA**	No of Units	Parking Rate	Parking Required	
Precinct Lot 2	Neighbourhood Shops	2030	1725.5		1 space per 25m2 LFA	69.0	
	Café Restaurant	718	610.3		1 space per 25m2 LFA	24	
	Ground Floor Soho	600					
	Residential			**29**			
	Residential Soho			5	2 spaces per 3 bedrooms	10	
	Residential Terrace			12	2 spaces per 3 bedrooms	24	
	Residential Shop Top			12	2 spaces per 3 bedrooms	24	
	Visitor					7	
		3348				**158**	
Precinct Lot 3	Neighbourhood Shops	2030	1725.5		1 space per 25m2 LFA	69	
	Café Restaurant	724	615.4		1 space per 25m2 LFA	25	
	Ground Floor Soho	600					
	Residential			**29**			
	Residential Soho			5	2 spaces per 3 bedrooms	10	
	Residential Terrace			12	2 spaces per 3 bedrooms	24	
	Residential Shop Top			12	2 spaces per 3 bedrooms	24	
	Visitor					7	
		3354				**159**	
Precinct Lot 4	Retail Shops	1790	1521.5		1 space per 25m2 LFA	61	
	Café Restaurant	2000	1700		1 space per 20m2 LFA	85	
	Commerical/Enterainment	2862	2432.7		1 space per 25m2 LFA	97	
Shared/Visitor	Childcare Centre	505			1 space per 35 LFA	14	
	Residential			**292**			
	1 bed			58	1 space/dwelling	58	
	2 bed			204	1.5 spaces/dwelling	307	
	3 bed			29	2 spaces/dwelling	58	
	Visitor					73	* shared
		7157				**681**	
Precinct Lot 5	Major Supermarket	2600	2210		1 space per 25m2 LFA	88	
	Retail Shops	2600	2210		1 space per 25m2 LFA	88	
	Retail Liquor	300	255		1 space per 25m2 LFA	10	
	Café Restaurant	1000	850		1 space per 20m2 LFA	43	
	Gymnasium	3500	2975		1 space per 22m2	135	
	Office	4135	3514.75		1 space per 35 LFA	100	
	Residential			**241**			
	1 bed			48	1 space/dwelling	48	
	2 bed			169	1.5 spaces/dwelling	253	
	3 bed			24	2 spaces/dwelling	48	
	Visitor					60	
Total GFA		14135				**875**	
Precinct Lot 6	Mini Major	1200	1020		1 space per 25m2 LFA	41	
	Café-Retail	1500	1275		1 space per 20m2 LFA	51	
	Retail Shops	580	493		1 space per 25m2 LFA	20	
	Office	2888	2454.8		1 space per 35 LFA	70	
	Residential			**79**			
	1 bed			16	1 space/dwelling	16	
	2 bed			55	1.5 spaces/dwelling	83	
	3 bed			8	2 spaces/dwelling	2	
	Visitor					20	
Total GFA		6168				**302**	
Precinct Lot 7	Medical Centre **	1175	999		1 space per 25m2 LFA	40	
	Retail	552	469		1 space per 25m2 LFA	19	
	Café Restaurant	505	429		1 space per 20m2 LFA	21	
	Imaging Diagnostic	1189	1011		1 space per 25 LFA	40	
	Ancillary Health Offices	1964	1669		1 space per 35 LFA	48	
	Outpatient	1189	1011		1 space per 35 LFA	29	
	Medical Suites	7012	5960.2		1 space per 35 LFA	200	
	Total	**13586**				**398**	
Parkland	**Community Centre**	**500**					
	TOTAL	**48248**		**670**		**2572**	

Note * Shared Visitor Res with retail parking

APPENDIX D


INSET A
MATCH INTO EXISTING BB LINE
NO STOPPING
LIMIT OF WORK
NEALE AVENUE
JOIN LINE
JOIN LINE - REFER TO INSET A
NOTES:
1. ALL LINEMARKING & SIGNAGE IS TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND RMS REQUIREMENTS AND SPECIFICATIONS.
2. RRPM'S (RAISED REFLECTIVE PAVEMENT MARKERS) ARE TO BE INSTALLED IN ACCORDANCE WITH RMS SPECIFICATIONS FOR EACH LINEMARKING TYPE AS SHOWN ON THE DRAWINGS.
3. WHERE EXISTING LINEMARKING CONFLICTS WITH NEW LINE MARKING, THE EXISTING LINEMARKING SHALL BE REMOVED.
4. ALL LINEMARKING REMOVAL WHETHER AS REQUIRED BY NOTE 3, OR AS SHOWN ON THE DRAWINGS, IS TO BE BY WATER BLASTING.
5. ALL SIGNPOSTS SHALL BE INSTALLED USING THE V-LOCK SYSTEM.
6. ANY SIGNAGE TO BE REMOVED (AS INDICATED ON THESE DRAWINGS) IS TO BE DELIVERED BY THE CONTRACTOR TO COUNCIL'S DEPOT.
7. LIGHTING ALONG HALL CIRCUIT TO BE DESIGNED AND INSTALLED BY OTHERS.
INSTALL JERSEY BARRIER OR EQUIVALENT
CONSTRUCT 0.6m WIDE CONCRETE MEDIAN
INSTALL GUIDEPOSTS AS PER AS1742.2
INSTALL GUIDEPOSTS AS PER AS1742.2
INSTALL JERSEY BARRIER 3M FROM EDGE LINE
REMOVE EXISTING GIVEWAY SIGN
INSTALL C3 LINE
INSTALL RRPM'S AT 12m CENTRES
HALL CCT
QANTAS BLVD
SIXTEENTH AVENUE
BROADBENT AVENUE
PARER AVENUE
COWPASTURE RD
LIMIT OF WORK
CAUTION! UNDER GROUND SERVICES IN VICINITY
www.dialbeforeyoudig.com.au
DIAL1100 BEFORE YOU DIG
1:250
LIVERPOOL CITY COUNCIL INVESTIGATIONS & DESIGN
GROUND FLOOR, 33 MOORE STREET, LIVERPOOL, NSW 2170
Ph 1300 36 2170 Fax (02) 9821 9333
FOR TRAFFIC COMMITTEE
DATE OF COMPLETION
COORDINATOR INVESTIGATIONS & DESIGN
DATE OF RELEASE
MANAGER-TECHNICAL SUPPORT
DATE OF ACCEPTANCE
PROJECT ENGINEER
DATE OF RELEASE
MANAGER - INFRASTRUCTURE & DELIVERY
A 17/04/19 ISSUED FOR TENDER V.C
ISSUE DATE REASON FOR ISSUE DRAWN SIGNED APPROV OWNER
SURVEYED G.M./G.B. DATE 08.15
DESIGNED V.C DATE DATE
DRAWN V.C DATE DATE
DATUM A.H.D./M.G.A.
CHECKED B.P DATE DATE
CAD FILE
DRAWING TITLE
SIXTEENTH AVENUE, MIDDLETON GRANGE
PROPOSED ROAD RECONSTRUCTION AND ASSOCIATED WORKS
INTERSECTION OF SIXTEENTH AVE & HALL CCT
LINEMARKING & SIGNPOSTING PLAN
JOB No DS2018/013
SCALES PLAN 1:250
DWG No 301
ISSUE No A
CONTRACT No


NOTE
1. LEFT TURN SWEPT PATH INTO SEVENTEENTH AVENUE FROM MIDDLETON DRIVE HAS BEEN CHECKED USING 8.8m RIGID VEHICLE
2. NO RIGHT TURN INTO MIDDLETON DRIVE FROM MONOPLANE AVENUE & INTO SEVENTEENTH AVENUE FROM MIDDLETON DRIVE HAVE BEEN INCLUDED IN THIS OPTION
3. EXTENT OF INTERSECTION DESIGN TO WEST MATCHES INTO NEWLY CONSTRUCTED KERB & GUTTER AT LOT 93 SEVENTEENTH AVENUE, DP 1203916
4. EASTERN SIDE OF INTERSECTION ALIGNS WITH CRAIG & RHODES' SKETCH 040-18-SK-003 revB DATED 21.03.2019
DIAL BEFORE YOU DIG www.1100.com.au
MONOPLANE AVENUE
MIDDLETON DRIVE
SEVENTEENTH AVENUE
APPROVED DRIVEWAY LOCATIONS
PARKING
NO RIGHT TURN
KEEP LEFT
DESIGN TO MATCH INTO EXISTING KERB & GUTTER
EXTEND LAY BACK BEYOND DRIVEWAYS TO ENABLE VEHICLE MANOEUVRE
SCALE 1:250 @ A1
SCALE 1:500 @ A3
Drawing Title: SEVENTEENTH AVENUE / MIDDLETON DRIVE OPTION 1 LAYOUT
Dwg. No: SK01
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Our Ref: 5236
Designed: AS
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Checked: SW
L.G.A.: LIVERPOOL CITY COUNCIL
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Datum: AHD
Date: AUGUST 2019
Project: PROPOSED RESIDENTIAL SUBDIVISION
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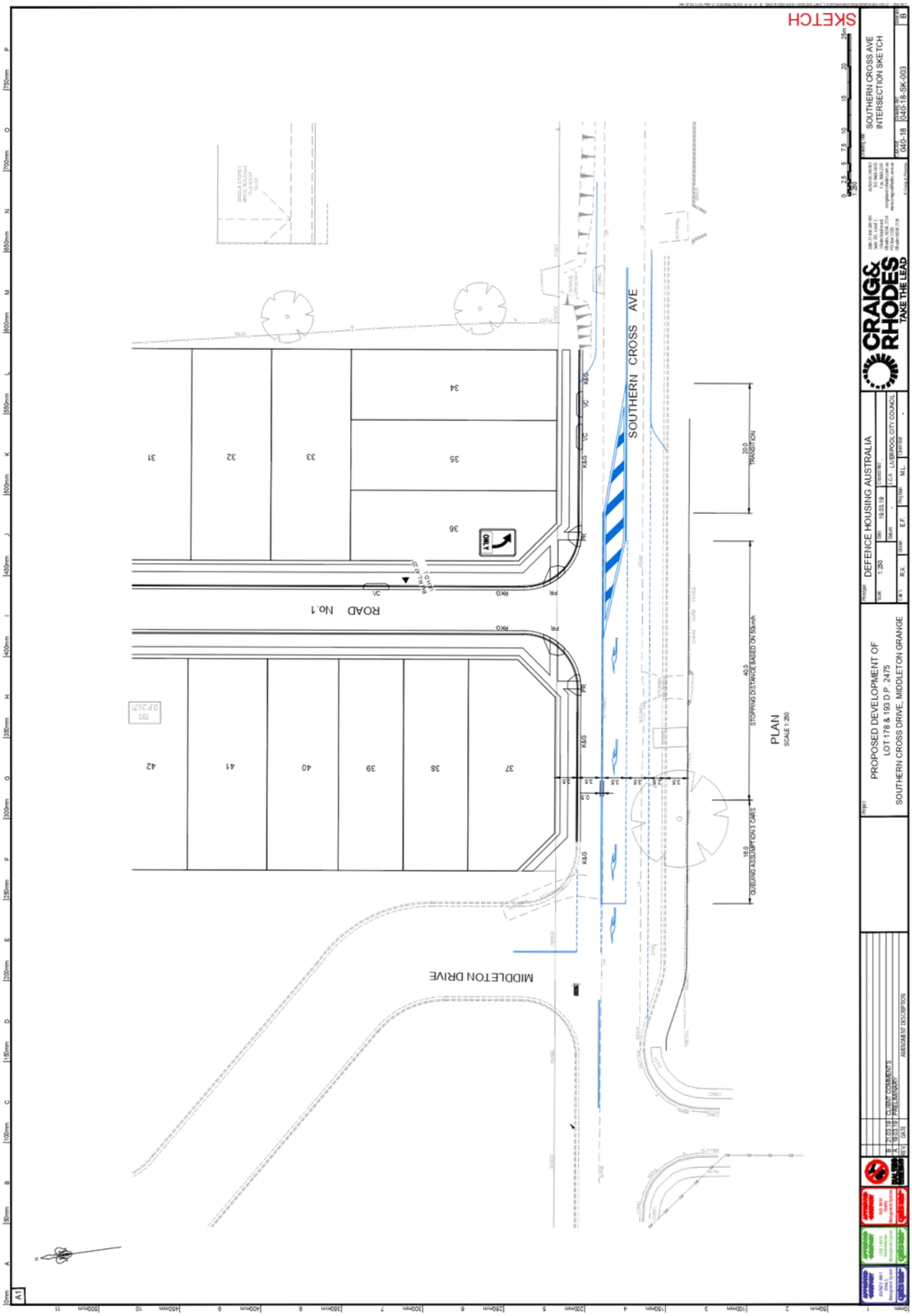
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SOUTHERN CROSS AVE
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ROAD No.1
MIDDLETON DRIVE
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SCALE 1:250
20.0 TRANSITION
40.0 STOPPING DISTANCE BASED ON 50km/h
16.0 QUEUING ASSUMPTION 3 CARS
CRAIG & RHODES
TAKE THE LEAD
DEFENCE HOUSING AUSTRALIA
PROPOSED DEVELOPMENT OF
LOT 178 & 193 D.P. 2475
SOUTHERN CROSS DRIVE, MIDDLETON GRANGE
LIVERPOOL CITY COUNCIL
B 21.03.19 CLIENT COMMENTS
A 19.03.19 PRELIMINARY
REV DATE AMENDMENT DESCRIPTION
A1

APPENDIX E

60-80 Southern Cross Avenue and 45-65 Hall Circuit, Middleton Grange

Traffic Modelling Assessment

Pacific Planning Pty Ltd

25 October 2019



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1. INTRODUCTION

1.1 Background

A Town Centre development is proposed at 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue in Middleton Grange. The development is located within the Liverpool Council Local Government Area. The Town Centre development proposal includes 670 residential dwellings and 48,248 square meters of mixed use facilities including office space, restaurants, a medical centre and ancillary medical office suites, as well as smaller business operations.

A 2017 'existing conditions' (Base) Aimsun model was developed by Traffix. The model includes all key roads within the Middleton Grange. Sections of Hoxton Park Road and Cowpasture Road were also included in the model.

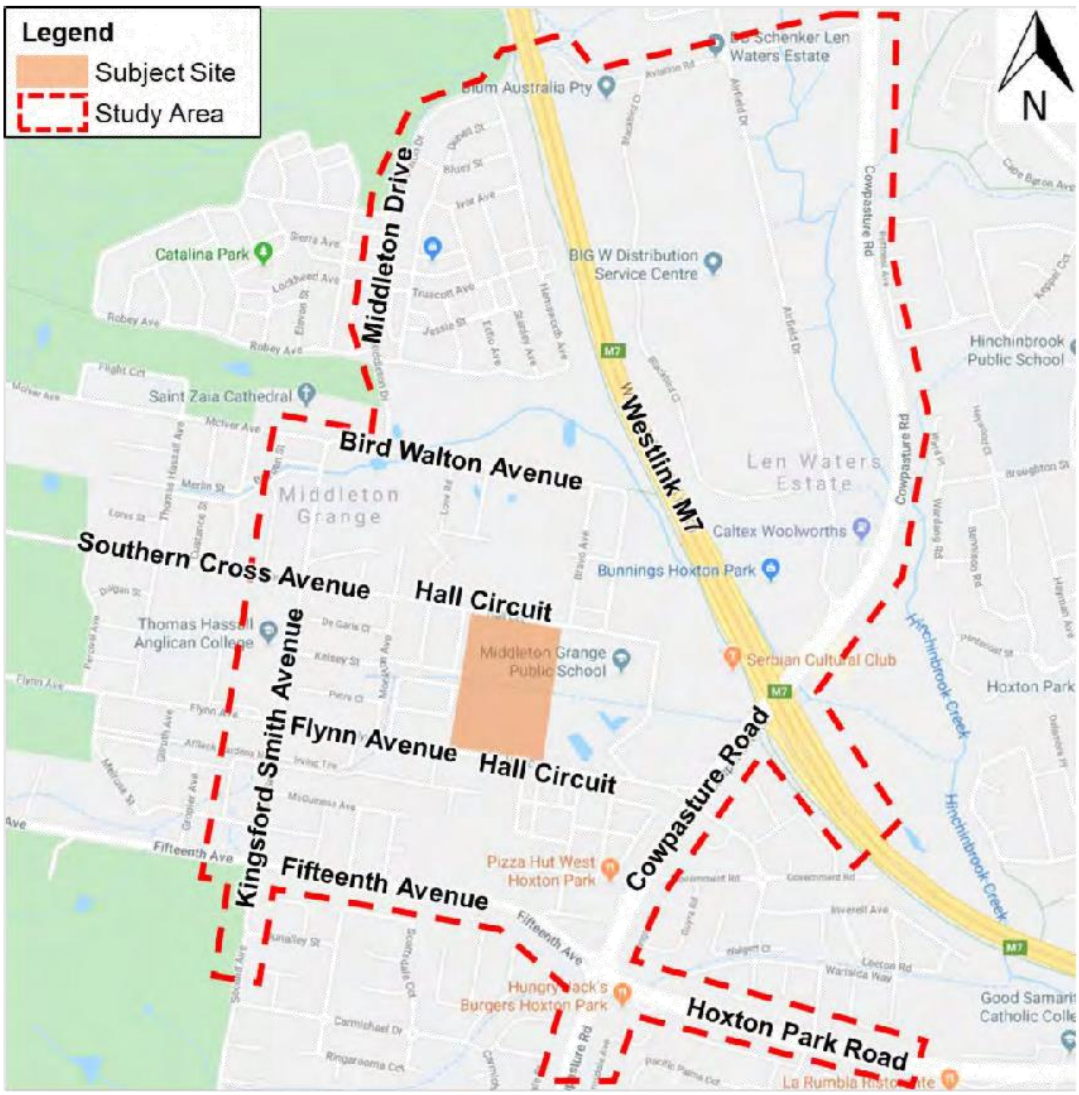
Pacific Planning Pty Ltd has engaged Bitzios Consulting to undertake a traffic assessment of the proposed development using the 2017 Base Aimsun Model for the assessment. This report summarises the outcomes of the traffic assessment.

1.2 Site Location and Study Area

The subject site is located at 60-80 Southern Cross Avenue and 45-65 Hall Circuit, Middleton Grange Town Centre, in the Liverpool Local Government Area, NSW. The study area and extent of the modelled network is bounded by Aviation Road in the north, Cowpasture Road in the east, Fifteenth Avenue in the south and Kingsford Smith Avenue in the west. Other roads within the study area include:

- Hoxton Park Road
- Westlink M7 Motorway (M7) on and off-ramps at Cowpasture Road
- Southern Cross Avenue
- Hall Circuit
- Flynn Avenue
- Bird Walton Avenue
- Middleton Drive.

The site location and study area are shown in Figure 1.1.



Adapted from Google Maps

Figure 1.1: Site Location and Study Area

2. EXISTING CONDITIONS

2.1 Subject Site

The subject site (1 to 6/-/DP1207518, 1/-/DP1078564 and 12/-/DP1108343) currently includes five single dwellings on predominantly greenfield land and is approximately 7.9 hectares in total. The land is currently zoned B2 Local Centre, R1 General Residential, RE1 Public Recreation and SP2 Drainage under the Liverpool Local Environmental Plan (LEP) 2008.

2.2 Road Network and Hierarchy

The road network contained within the study area includes a mix of state and local roads. Cowpasture Road, Hoxton Park Road and the M7 provide the primary connections between the study area and the wider road network. The classification of roads within the study area are as follows:

- State roads:
  - Cowpasture Road
  - Hoxton Park Road
  - M7.
- Local roads:
  - All other roads.

The study area's road hierarchy is illustrated in Figure 2.1.

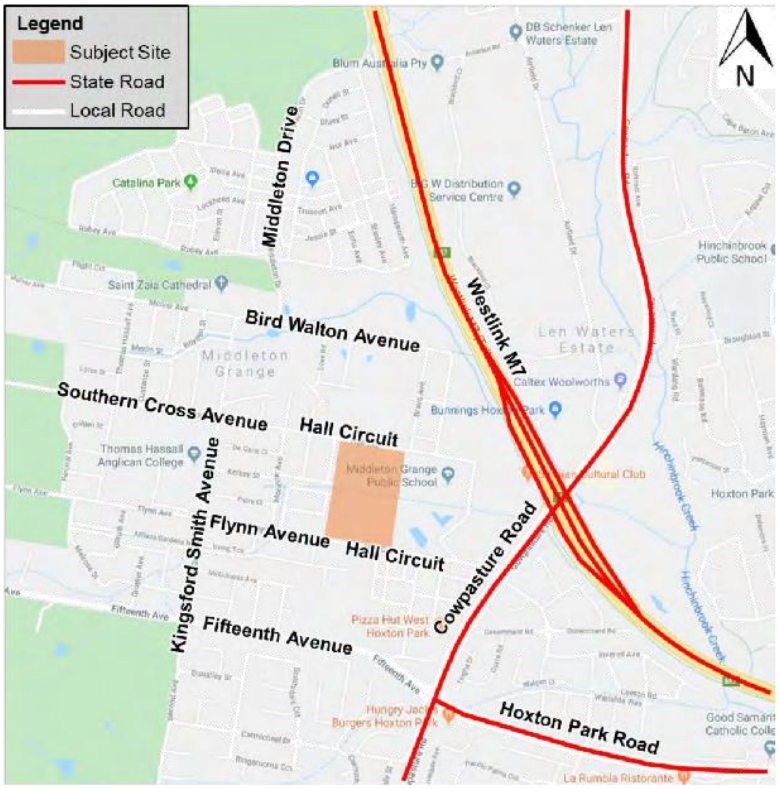


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Figure 2.1: Road Hierarchy Within the Study Area

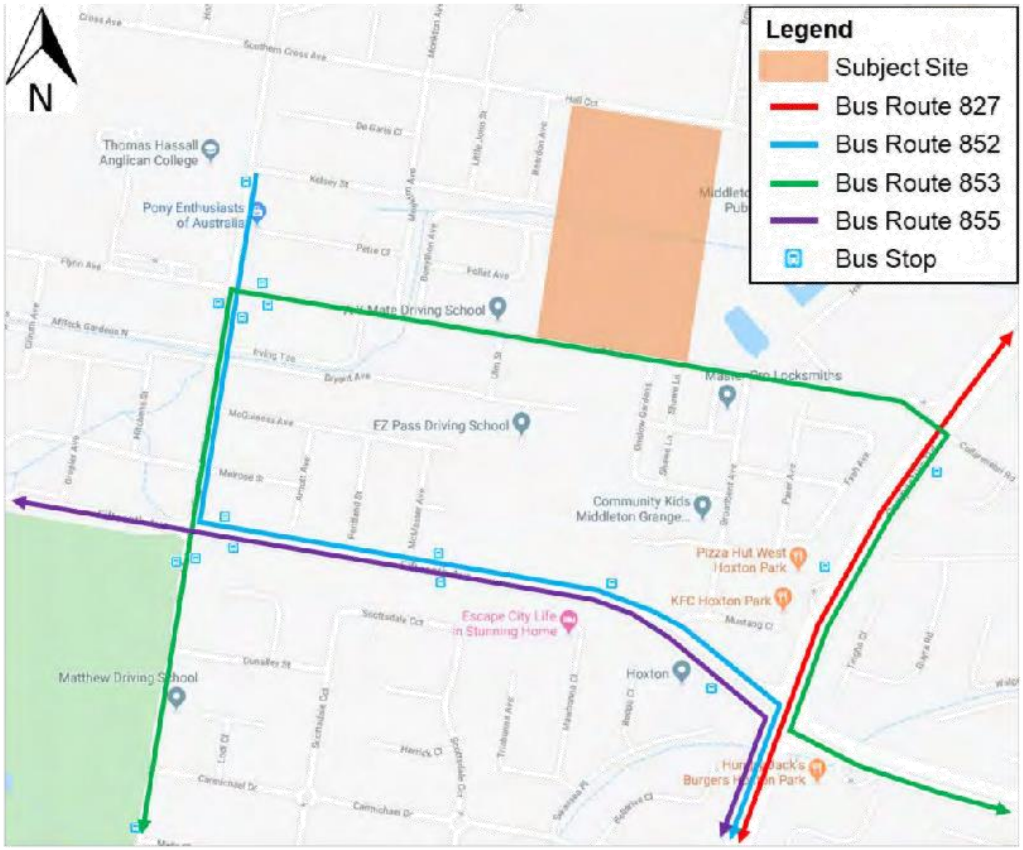
2.3 Public Transport Network and Services

2.3.1 Buses

The study area is serviced by three bus routes, all operated by Interline Bus Services. Routes and service frequencies are summarised in Table 2.1. A map of the bus routes is shown in Figure 2.2.

Table 2.1: Bus Routes and Frequency

Route No.	Route Description	Direction of Travel	Service Frequency
827	Carnes Hill Marketplace to Liverpool via Bonnyrigg Heights	Both directions	30 mins (daily)
852	Carnes Hill Marketplace to Liverpool via Greenway Dr & Cowpasture Rd	Carnes Hill Marketplace to Liverpool	1 service (late off-peak)
853	Carnes Hill to Liverpool via Hoxton Park Rd	Both directions	15-30 (peak periods) 60 mins (off peak periods, weekends and public holidays)
855	Rutleigh Park to Liverpool via Austral & Leppington Station	Both directions	7-9 services (Monday-Friday) 3-4 services (weekends and public holidays)



Adapted from Google Maps

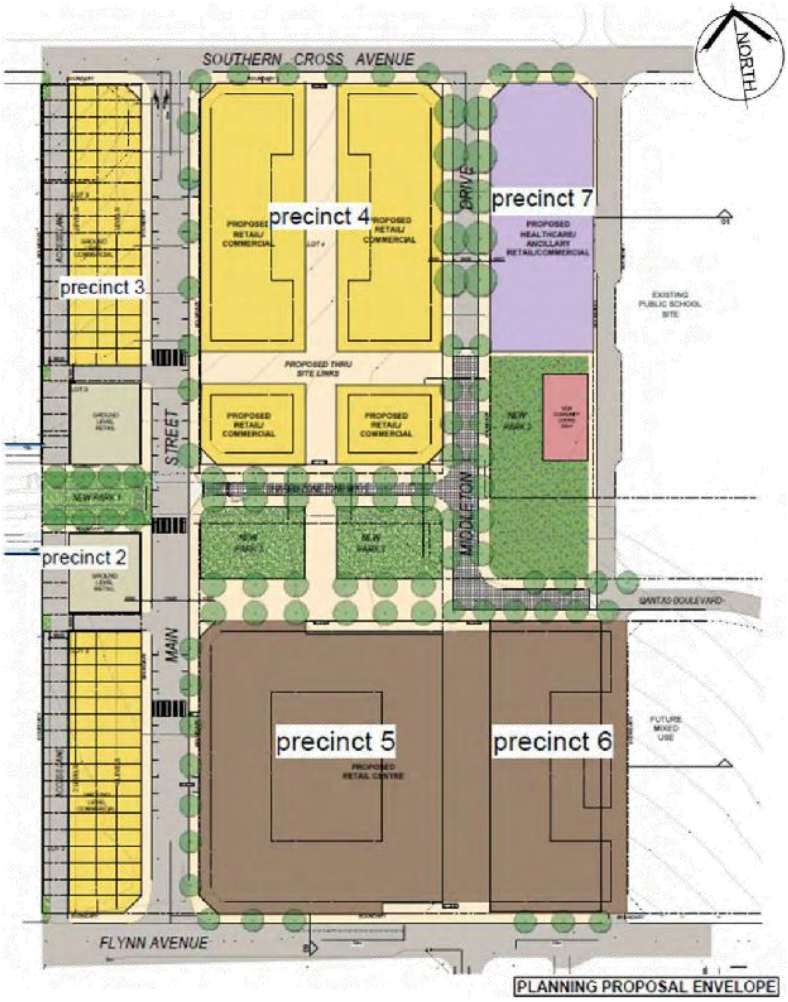
Figure 2.2: Bus Routes Near the Subject Site

3. DEVELOPMENT PROPOSAL

3.1 Development Description and Layout

The proposed development will be split into six precincts (or lots) with additional uses as follows and as shown in Figure 3.1:

- Precinct 2 – Ground level retail
- Precinct 3 – Ground level commercial
- Precinct 4 – Retail/commercial
- Precincts 5 and 6 – Retail centre
- Precinct 7 – Health care and ancillary retail/commercial
- Community centre
- Three parks.



Source: Proposed Concept Plans New Mixed Used Development (Christensen Obrien Architects, 24 September 2019)

Figure 3.1: Proposed Development Layout

3.2 Development Yields

A breakdown of the yield of each component of the proposed development is shown in Table 3.1.

Table 3.1: Proposed Development Components and Yields

Component	GFA (m^2)	Units
Ancillary health offices	1,964	-
Café restaurant	6,447	-
Childcare	505	-
Commercial-Entertainment	2,862	-
Community centre	500	-
Gymnasium	3,500	-
Imaging diagnostic	1,189	-
Major supermarket	2,600	-
Medical centre	1,175	-
Medical suites	7,012	-
Mini major	1,200	-
Neighbourhood shops	4,060	-
Office	7,023	-
Outpatients	1,189	-
Residential units	-	670
Retail shops	5,822	-
Soho ground floor	1,200	-
Total	**48,248**	**670**

Source: Traffic Impact Report For 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue Middleton Grange (Lyle Marshall & Partners Pty Ltd, September 2019) Table 3.1a

The specific precinct yields are attached in **Appendix A.**

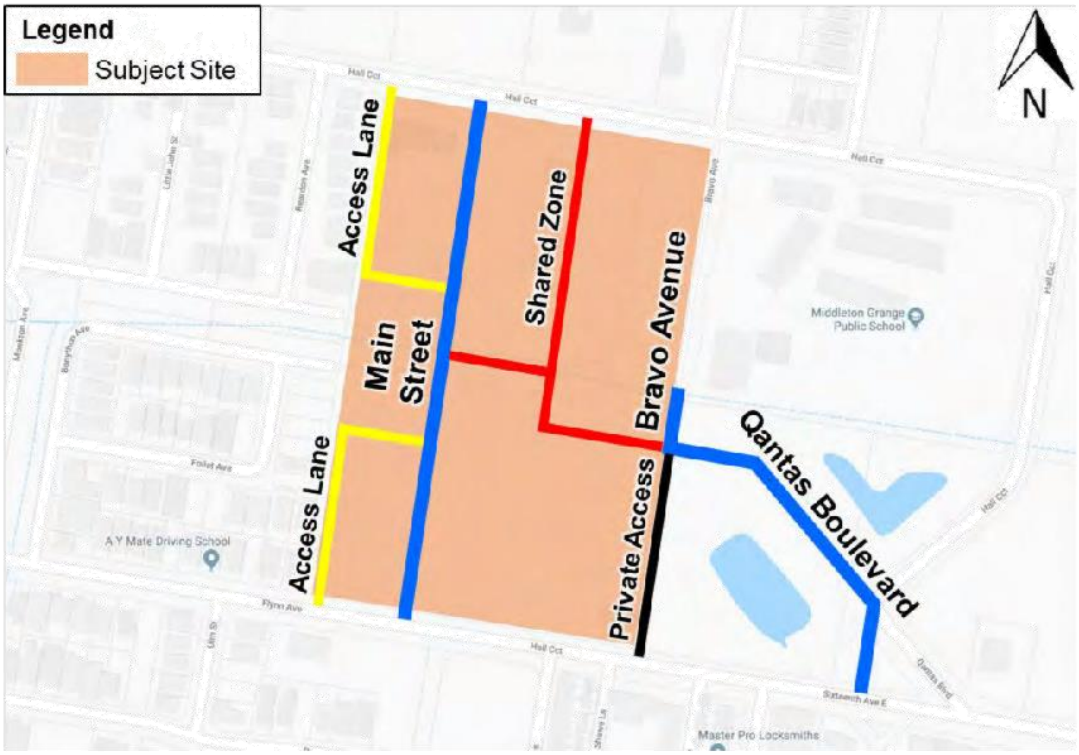
3.3 Internal Road Arrangement

The proposed road network within the development includes two primary north-south roads:

- Main Street linking both sides of Hall Circuit
- An extension of Bravo Avenue south to a new Qantas Boulevard alignment west and south to Sixteenth Avenue East.

There will also be shared zones from Main Street and Hall Circuit north to Qantas Boulevard and Bravo Avenue, two access lanes on the western side and a private access road for the Precinct 6 development on the south-eastern side.

The internal road layout is shown in Figure 3.2.



Source: Proposed Concept Plans New Mixed Used Development (Christensen Obrien Architects, 24 September 2019)

Figure 3.2: Proposed Internal Road Network

4. TRAFFIC GENERATION AND DISTRIBUTION

4.1 Background Traffic Growth

Background traffic growth was extracted from (Sydney Travel Forecasting Model) STFM sub-area matrices, provided by Roads and Maritime Services for the years 2018 and 2031. The STFM model outputs were based on 'LU16' forecasts for population and employment.

A number of assumptions were made in the processing of the STFM outputs:

- As the provided matrices were for two-hour peak periods in the AM and PM peak, a factor of **0.55** was applied to estimate the one-hour peak period demands
- The internal zone representing internal Middleton Grange traffic was removed from the calculation of the growth matrices because future development traffic within the study was calculated separately and added to the background growth
- A factor of **0.8** was applied to certain origin-destination pairs in the PM peak hour, to account for a spreading of traffic to outside of the peak hour period as drivers will naturally seek to avoid growing congestion during peak periods
- The O-D pairs which were factored down include:
  - North-south through traffic between Cowpasture Road (south) and Cowpasture Road (north)
  - East-west through traffic between Hoxton Park Road (east) and Fifteenth Avenue (west)
  - Turning traffic between Hoxton Park Road (east) and Cowpasture Road (south).

The future year (2031) base demand matrices were calculated considering the above and then adding the zone-to-zone growth between 2016 and 2031 from the STFM to the 2018 Base Aimsun model traffic demands.

4.2 LEP Traffic

For one of the modelled scenarios, named the **LEP Scenario**, the subject site is assumed to be developed according to what is currently achievable under the 2008 LEP under Clause 5.3 and the 'B2" designation. The development yields for this scenario were provided by Pacific Planning Pty Ltd and are shown below in Table 4.1.

Table 4.1: LEP Site Yields

Table 2008 LEP with Cl 5.3 Applied B2

Zone	Area(m2)	FSR	Height	Approx Potential GFA (m2)	Approx No Dwellings	Retail Space/Non Residential	RES GFA	Non Res GFA
R1-General Residential	15310	0.75:1	8.5	11482.5	122	0		
B2- Local Centre	42157	1:5:1 (Area 4)	18	63235	504	15808	58909	
RE1- Public Recreation	751	N/A	N/A	N/A				
Open Space not RE1	1249							
			Total	74717.5	626	15808		15808
			Total Res GFA + Non RES					74717

Source: Preliminary Traffic Assessment Report for 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue Middleton Grange (Pacific Planning Pty Ltd, September 2019) Table 3.1c

4.3 Traffic Generation Rates

The traffic generation rates adopted were based on Pacific Planning Pty Ltd's preliminary traffic assessment report for the development (dated September 2019) as summarised in Table 4.2.

Table 4.2: Traffic Generation Rates

	Traffic Rate	Rate	AM Peak Period Rate		Traffic Rate	Rate	PM Peak Period	
Land Use			IN	OUT			IN	OUT
Residential	Council Advice	0.4 trips per dwelling	0.25	0.75	Council Advice	0.4 trips per dwelling	0.66	0.33
Retail	Council Advice	0.5 trips per 100m2 LFA			Council Advice	0.5 trips per 100m2 LFA		
Retail Supermarket/Mimi Major	RMS Guide To Traffic Generating Developments	155 A(SM)per 1000m2 Thurs Peak PM 0.1	0.1	0.1	RMS	155 A(SM)per 1000m2 Thurs Peak PM 0.9	0.5	0.5
Commercial	RMS	RMS 2.02/100M^2	0.80	0.20	RMS 1.63/100M^2	RMS 1.63/100M^2	0.2	0.8
Restaurant	RMS	5 per 100m2 PM Only				5 per 100m2 PM Only	0.5	0.5
Medical Centre	RMS/data	Based upon number of consulting rooms 2.22 trips per room	0.50	0.50	RMS/data	Based upon number of consulting rooms 2.22 trips per room	0.5	0.5
Childcare Centre	RMS/data	60 children at 0.8 trips per child over 2 hours	0.50	0.50	RMS/data	60 children at 0.7 trips per child over 2 hours	0.5	0.5
Gymnasium**	RMS/data	3 per 100m2 PM Only			RMS/data	3 per 100m2 PM Only	peak after 6pm	

Source: Preliminary Traffic Assessment Report for 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue Middleton Grange (Pacific Planning Pty Ltd, September 2019) Table 3.1c

4.4 Traffic Generation

4.4.1 LEP Scenario Traffic

Based on the allowable yields under the LEP identified in Section 4.2, and the trip generation rates / splits in Section 4.3, the traffic generation presented in Table 4.4 was used for the LEP scenario.

Table 4.3: LEP Scenario Traffic Generation

Peak	Total Traffic Generated	Directional Traffic Splits	
		IN	OUT
AM	329 trips	102 trips	227 trips
PM	329 trips	207 trips	122 trips

4.4.2 Development Scenario Traffic

The traffic generation for this scenario was based on the above rates in Section 4.3 and the development components provided by Lyle Marshall & Partners Pty Ltd (dated 27 September 2019). The AM and PM peak hour traffic volumes in and out of each precinct are provided in Table 4.4 and Table 4.5 respectively.

Table 4.4: AM Peak Development Traffic Generation

Precinct	AM Peak Traffic Volume		Total Traffic Volume Generated
	In	Out	
2	9	10	19
3	9	10	19
4	85	103	188
5	111	103	214
6	61	42	103
7	156	74	230
Total In/Out Traffic Volume	**431**	**342**	**773**
Total In/Out Split	**56%**	**44%**	**100%**

Source: Scope of Work Attachment (Lyle Marshall & Partners Pty Ltd, September 2019) Figure 7A

Table 4.5: PM Peak Development Traffic Generation

Precinct	PM Peak Traffic Volume		Total Traffic Volume Generated
	In	Out	
2	38	34	72
3	38	34	72
4	167	157	324
5	199	206	405
6	131	146	277
7	106	171	277
Total In/Out Traffic Volume	**679**	**748**	**1,427**
Total In/Out Split	**48%**	**52%**	**100%**

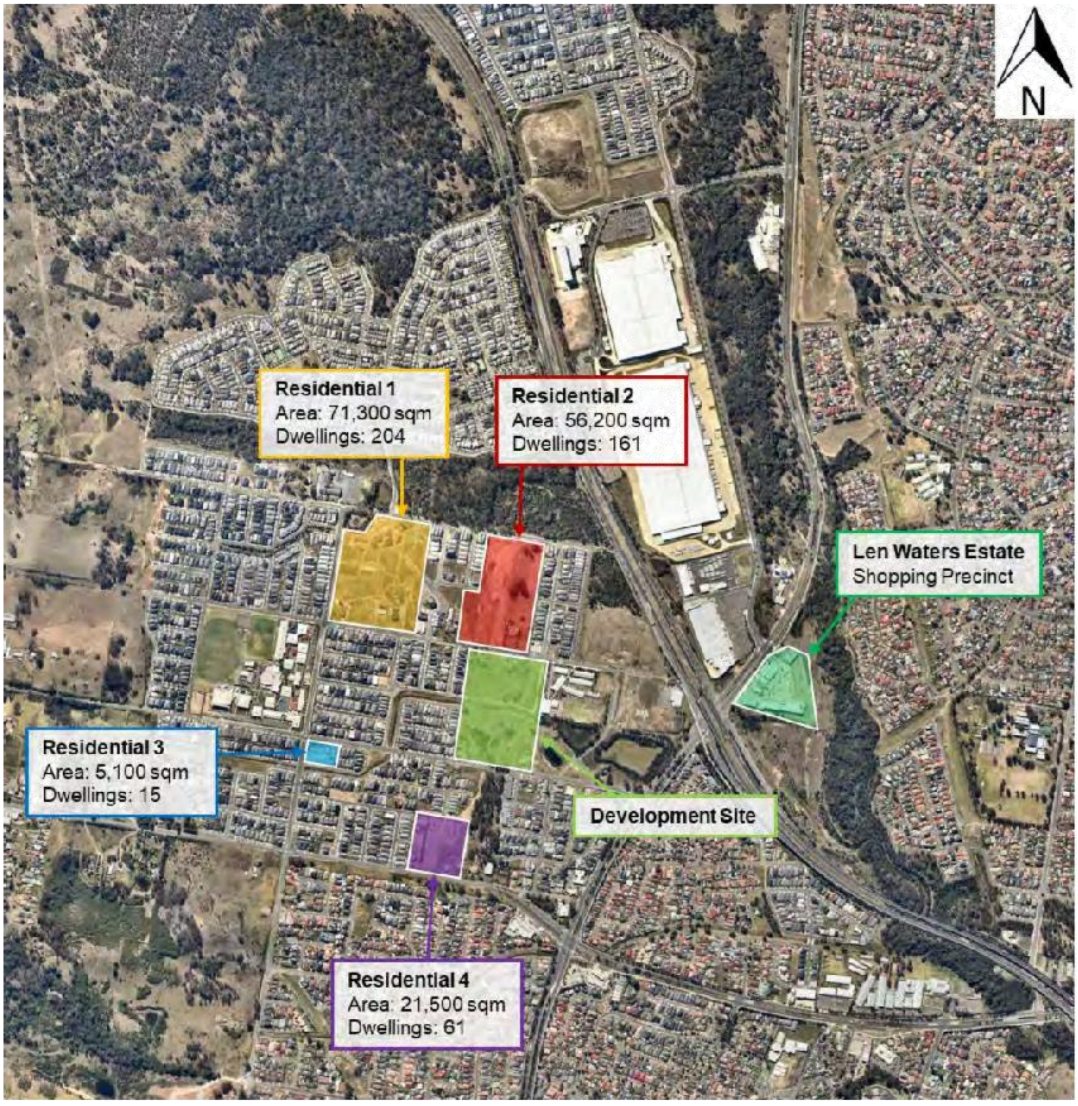
Source: Scope of Work Attachment (Lyle Marshall & Partners Pty Ltd, September 2019) Figure 7B

4.5 Other Surrounding Developments

4.5.1 Other Development Components

There are four other land areas in Middleton Grange that were both vacant and zoned for residential development under the Liverpool LEP 2008. These areas were assumed to be fully developed by 2030 and their traffic was included in the AIMSUN traffic modelling. Residential dwelling sites in Residential Areas 1, 2 and 4 were assumed to be 350m^2 in area and each dwelling site in Residential Area 3 was assumed to be 340m^2 in site area.

The study area also includes the Len Waters Estate located east of the Cowpasture Road/Airfield Drive intersection and which includes an ALDI, McDonalds, Oporto, Move Yourself and Guzman y Gomez. The locations of each development area are shown in Figure 4.1.



Adapted from Nearmap

Figure 4.1: Areas of Expected Development Within the Study Area

4.5.2 Traffic Generation – Other sites

The traffic generation for the residential development areas (numbered 1 to 4) was calculated based on the estimated number of residential dwellings in each area.

The following rates for low density dwelling were adopted from Roads and Maritime Services' Technical Direction TDT2013/4a:

- AM Peak: 0.99 trips per dwelling
- PM Peak: 0.95 trips per dwelling.

The total residential development traffic generation (not associated with the proposed development) is summarised in Table 4.6.

Table 4.6: Residential Development Peak Development Traffic Generation

Peak	Development	Total Trips Generated	Traffic Split		Directional Trips Generated	
			IN	OUT	IN	OUT
AM	Residential 1	194	25%	75%	49	146
	Residential 2	153			38	115
	Residential 3	14			4	11
	Residential 4	58			15	44
	TOTAL	**419**			**105**	**314**
PM	Residential 1	202	67%	33%	135	67
	Residential 2	159			107	52
	Residential 3	15			10	5
	Residential 4	60			40	20
	TOTAL	**436**			**292**	**144**

The Len Waters Estate Shopping Precinct is accessed via a new connection to the south-east at the Cowpasture Road / Airfield Drive traffic signals. From satellite imagery, the total area of the precinct was measured to be approximately 23,600 m^2. For the purpose of this assessment, it was assumed that 20% of the total area is allocated as Gross Leasable Floor Area (GLFA), amounting to 4,720 m^2.

The following rates for small suburban shopping centres were selected for estimation of the site's trip generation, based off surveys undertaken by Bitzios Consulting for Roads and Maritime for shopping centres under 10,000m^2:

- AM Peak: (0.066 * GLFA) + 126 trips
- PM Peak: (0.089 * GLFA) + 170 trips.

The total precinct traffic generation is summarised in Table 4.7.

Table 4.7: Shopping Precinct Peak Development Traffic Generation

Peak	Total Traffic Generated	Traffic Split		Directional Traffic Split	
		IN	OUT	IN	OUT
AM	438 trips	50%	50%	219 trips	219 trips
PM	590 trips	50%	50%	295 trips	295 trips

4.6 Trip Distribution

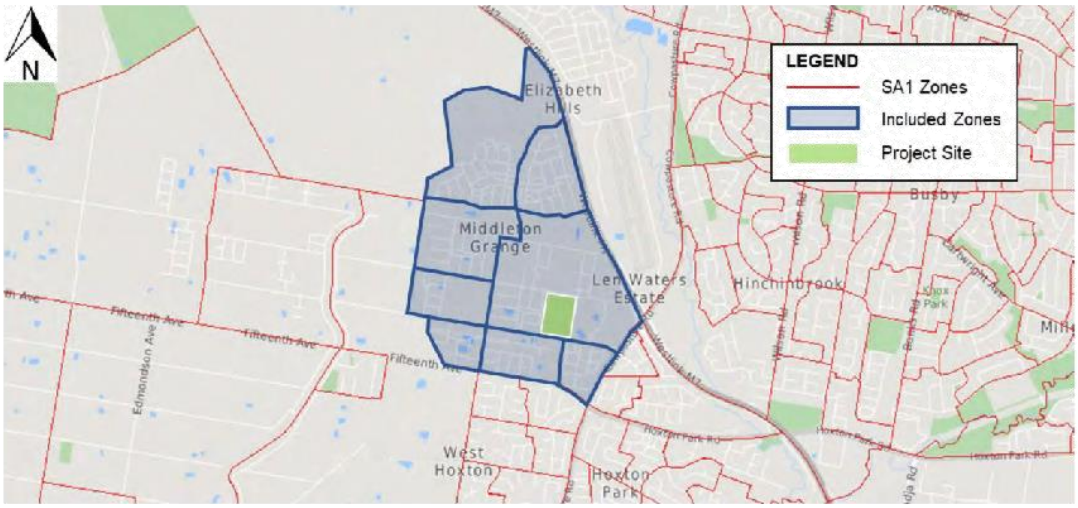
4.6.1 Methodology

The development trip distribution was estimated by comparing the following sources:

- 2016 Australian Bureau of Statistics (ABS) Census Journey to Work data
- Transport Performance and Analytics (TPA) 2018 and 2031 Sydney Strategic Traffic Forecasting Model (STFM) data.

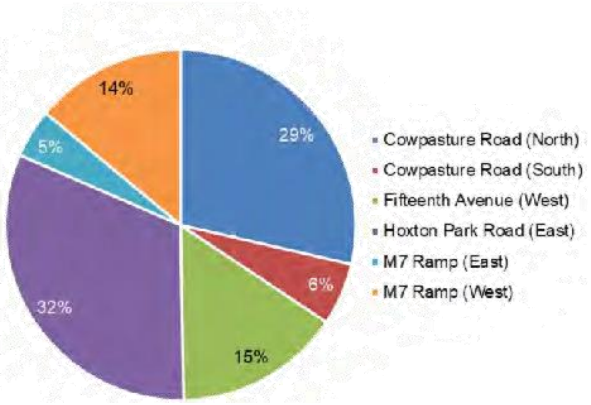
4.6.2 2016 Journey to Work Data

The Statistical Area Level 1 (SA1) regions included in the Journey to Work analysis are shown in Figure 4.2. The trip distribution of residents from and employees to these regions are shown in Figure 4.3 and Figure 4.4 respectively.



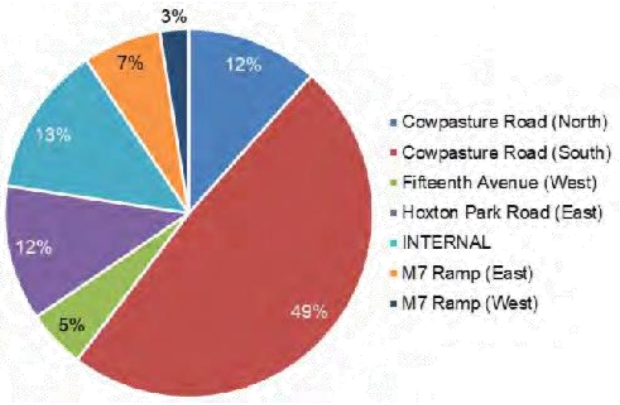
Source: https://itt.abs.gov.au/itt/r.jsp?ABSMaps

Figure 4.2: SA1 Regions Included in Journey to Work Analysis



Source: ABS TableBuilder 2016

Figure 4.3: Journey to Work Trip Distribution of Residents from Middleton Grange



Source: ABS TableBuilder 2016

Figure 4.4: Journey to Work Trip Distribution of Employees to Middleton Grange

The estimated traffic distribution as based on the JTW data is summarised in Table 4.8.

Table 4.8: JTW Estimated Trip Distributions

External Zone	AM Peak		PM Peak	
	In	Out	In	Out
Cowpasture Road (North)	12%	29%	29%	12%
Cowpasture Road (South)	49%	6%	6%	49%
Fifteenth Avenue (West)	5%	15%	15%	5%
Flynn Avenue (West)	0%	0%	0%	0%
Hoxton Park Road (East)	12%	32%	32%	12%
M7 Ramp (East)	7%	5%	5%	7%
M7 Ramp (West)	3%	14%	14%	3%
Second Avenue	0%	0%	0%	0%
Southern Cross Avenue (West)	0%	0%	0%	0%
Internal Zones	13%	0%	0%	13%

4.6.3 2018 and 2031 STFM Model Outputs

The STFM 'cordon' matrices for the study area was assessed to determine development traffic distribution assumptions for the AM (7:30-8:30am) and PM (4:45-5:45pm) peak periods. These were based on the proportions of the trip growth between the Middleton Grange (internal zone) and the wider road network (external zones) between 2018 and 2031.

The resulting combined traffic distribution of residents from the study area and employees to the study area are summarised in Table 4.9 for both peak periods.

Table 4.9: STFM 2018-2031 AM and PM Peak In/Out Trip Distribution

External Zone	AM Peak		PM Peak	
	In	Out	In	Out
Cowpasture Road (North)	10%	8%	11%	11%
Cowpasture Road (South)	2%	5%	8%	3%
Fifteenth Avenue (West)	16%	9%	11%	21%
Flynn Avenue (West)	3 %	1%	2%	2%
Hoxton Park Road (East)	29%	44%	39%	29%
M7 Ramp (East)	8 %	9%	7%	7%
M7 Ramp (West)	5%	7%	5%	6%
Second Avenue	18%	10%	9%	14%
Southern Cross Avenue (West)	9%	7%	8%	7%

4.6.4 Comparison between JTW and STFM distribution

The distributions based on JTW and STFM data were compared to ascertain the degree of difference between the two methodologies. It was found that the STFM distribution favoured origins and destinations along Hoxton Park Road to the east and Fifteenth Avenue to the west, with a lesser emphasis of Cowpasture Road to the south.

It was considered that the JTW data will not appropriately reflect the planned future expansion of Hoxton Park Road and Fifteenth Avenue to be a major east-west corridor with bus transit services. Furthermore, the planned Western Sydney Airport located in Badgerys Creek to the west is expected to significantly affect the existing traffic distribution of the area. The 2016 JTW data does not reflect these future changes.

The STFM distribution was determined to be the more appropriate source for the purpose of distributing trips to/from the future developments in the model.

4.7 Peak Hour Profiles

For a more sensitive release of traffic within the peak hour, 15-minute peak hour profiles were extracted from the base model traffic demand matrices for the study area. The profiles are presented in Table 4.10.

Table 4.10: Peak Hour Profiles – AM and PM Peak

Time Period	AM Peak	PM Peak
7:30 AM - 7:45 AM	24%	25%
7:45 AM - 8:00 AM	26%	23%
8:00 AM - 8:15 AM	26%	25%
8:15 AM - 8:30 AM	24%	26%

5. FUTURE NETWORK UPGRADES

5.1 Overview

In conjunction with future development in the area and the new airport, the NSW Government and Council are committing to a number of upgrades to the surrounding road network. These upgrades are included in all future modelling scenarios.

The proposed network upgrades are detailed in the following sections. Preliminary schematic designs for the intersection upgrades are attached in **Appendix B.**

5.2 Fifteenth Avenue Smart Transit Corridor

The Fifteenth Avenue Smart Transit (FAST) Corridor is a key bus service corridor between the future Western Sydney International Airport and Liverpool Railway Station via Fifteenth Avenue, Hoxton Park Road and the existing T-way as shown in Figure 5.1 below. The corridor is to include a dedicated bus lane in each direction on Fifteen Avenue within the study area.



Source: Connected Liverpool 2050

Figure 5.1: Proposed Fifteenth Avenue Smart Transit Corridor

5.3 Fifteenth Avenue/Kingsford Smith Avenue/Second Avenue Signalised Intersection

The Fifteenth Avenue/Kingsford Smith Avenue/Second Avenue roundabout is proposed to be upgraded to a signalised intersection. Both Fifteenth Avenue approaches will have two general traffic lanes, a bus lane and a short right turn lane. Both the Kingsford Smith Avenue and Second Avenue approaches will have a left turn/through lane and a short right turn lane. Pedestrian crossings will be provided on all sides. Figure 5.2 shows the concept layout of this intersection.



Adapted from Nearmap

Figure 5.2: Proposed Fifteenth Avenue/Kingsford Smith Avenue/Second Avenue Signalised Intersection

5.4 Kingsford Smith Avenue/Flynn Avenue Signalised Intersection

The Kingsford Smith Avenue/Flynn Avenue roundabout is proposed to be upgraded to a signalised intersection. The north, east and west approaches will each have a left turn/through lane and a short right turn lane, and the south approach will have two lanes. Pedestrian crossings will be provided on all sides. Figure 5.3 shows the concept layout of this intersection.



Adapted from Nearmap

Figure 5.3: Proposed Kingsford Smith Avenue/Flynn Avenue Signalised Intersection

5.5 Cowpasture Road Widening between Hoxton Park Road/Fifteenth Avenue and Airfield Drive

To increase capacity of the primary north-corridor in the area, Cowpasture Road between Hoxton Park Road/Fifteenth Avenue and Airfield Drive will be widened from two through lanes to three through lanes in both directions. This will allow additional through traffic flow through the traffic signals along Cowpasture Road in this section.

5.6 Middleton Drive Road Realignment

Middleton Drive between Love Road and Little John Street will be extended north to the Bird Walton Avenue/McIver Road/Middleton Drive intersection and south to Hall Circuit at the north-western end of the subject site. Figure 5.4 shows the proposed alignment.



Adapted from Nearmap

Figure 5.4: Proposed Middleton Drive Road Realignment

5.7 Middleton Drive and Bird Walton Avenue roundabout

As a part of the re-alignment of Middleton Drive, the new intersection with Bird Walton Avenue is upgraded to be a single-lane roundabout, based on Liverpool City Council's advice that the subject intersection will be upgraded as a part of the subdivision of the adjacent allotment.

5.8 Middleton Drive-Aviation Road Connection

Middleton Drive and Aviation Road will be connected via a new road under the M7, providing an additional link between Cowpasture Road and Middleton Grange. The existing bicycle lanes west of the M7 will be relocated as a result.

6. PERFORMANCE ASSESSMENT CRITERIA

6.1 Performance Measures

Traffic performance measures were identified at the following three levels:

- **Intersection Level:** measures including delays and Level of Service (LoS) for each turning movement
- **Route Level:** including travel time and delays along key road sections
- **Network Level:** including travel time and distance travelled by all vehicles within the study area.

6.2 Intersection Measures

The following measures were proposed to evaluate the individual turning movements:

- Individual turning volumes
- Individual turning movement delay and overall intersection delay
- LoS for individual turning movements and intersections overall
- Average Queue Length on each approach of an intersection
- Maximum Queue Length on each approach of an intersection.

LoS is a measure of an intersection's operational performance and is related to the number of seconds vehicles are delayed at each approach. Table 6.1 shows the standard LoS criteria for intersection assessment.

Table 6.1: Intersection Level of Service Criteria

Level of Service	Average Delay (sec/veh)	Traffic Signals and Roundabouts	Give Way and Stop Signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode
F	> 70	Flow breakdown; forced flow	Intersection failure

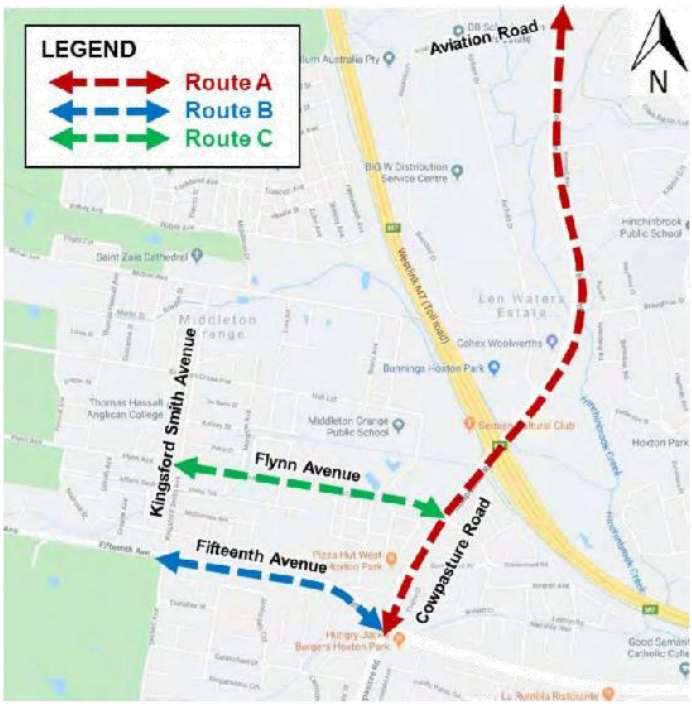
Source: Roads and Maritime Guide to Traffic Generating Developments (2002) Table 4.2

These criteria recommend that for signalised intersections, the LoS is given by the average vehicle delay for all movements, whereas for roundabouts and priority-controlled intersections with give way and stop signs, the LoS is determined by the movement with the highest delay.

6.3 Route Level

The following three travel routes, as also shown in Figure 6.1, provide measures of congestion within the study area:

- **Route A:** Cowpasture Road between Fifteenth Avenue and Aviation Road (northbound and southbound)
- **Route B:** Fifteenth Avenue between Kingsford Smith Avenue and Cowpasture Road (eastbound and westbound)
- **Route C:** Flynn Avenue between Kingsford Smith Avenue and Cowpasture Road (eastbound and westbound).



Adapted from Google Maps

Figure 6.1: Travel Time Survey Routes

6.4 Network Level

The following network performance measures have been used:

- Vehicle Kilometres Travelled (VKT)
- Vehicle Hours Travelled (VHT)
- Average network speed (km/h)
- Completed Trips at the end of the peak period
- Incomplete Trips at the end of the peak period
- Unreleased Trips at the end of the peak period.

At the end of each simulation, AIMSUN provides a summary of the above measures. In a congested network with a substantial number of unreleased trips, the VKT and VHT outputs were adjusted to account for unreleased trips.

7. 2030 NETWORK PERFORMANCE

7.1 Scenarios Assessed

Table 7.1 summarises the three scenarios assessed as part of the AIMSUN traffic modelling.

Table 7.1: Scenarios Assessed

Scenario	Description	AM	PM
2030 Do Minimum	▪ Background traffic growth only ▪ Other committed development traffic (Residential 1-4 and Len Waters Shopping Precinct) as per Figure 4.1 ▪ All network improvements committed by the NSW Government and Council as per Section 4.6.4	√	√
2030 With LEP Development	▪ 'Do Minimum' plus with development traffic as per the Liverpool LEP 2008 for the subject site	√	√
2030 With Proposed Development	▪ 'Do Minimum' plus with development traffic as per the revised development proposal for the subject site	√	√

7.2 Proposed Development Upgrades

In addition to the committed road upgrades detailed in Section 5, a number of further upgrades are proposed as a part of the subject site's development proposal. These upgrades are detailed in the following sub-sections, with schematic designs provided in **Appendix C.**

Furthermore, a future bus service was coded into the model demands, operating along the FAST corridor on Fifteenth Avenue with a 10-minute frequency in both directions.

7.2.1 Additional Eastbound Travel Lane

An additional eastbound travel lane will be provided on Flynn Avenue/Hall Circuit from the development site frontage to Cowpasture Road, which will increase the capacity of the main street servicing the development and allow it to accommodate the development traffic.

7.2.2 Hall Circuit south/Main Street Signalised Intersection

A new signalised T-intersection will be provided at Hall Circuit and the new Main Street at the southern end of the subject site. The north and west approaches will each have two lanes, and the east approach will have a through lane and a short right turn lane. Pedestrian crossings will be provided on all sides. Figure 7.1 shows the concept layout of this intersection.

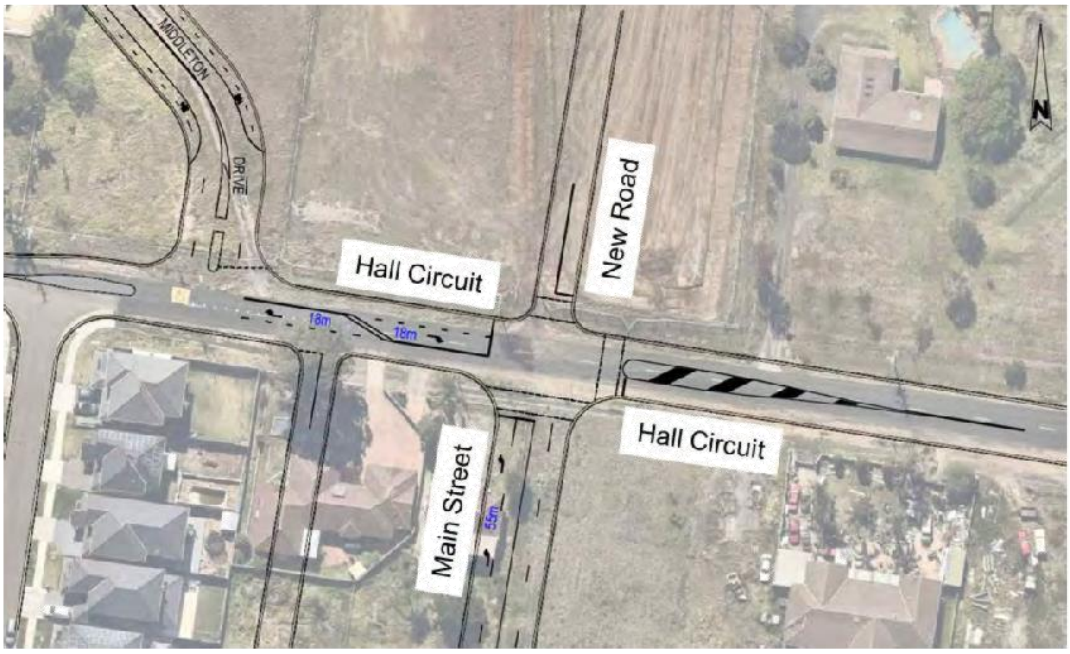


Adapted from Nearmap

Figure 7.1: Proposed Hall Circuit south/Main Street Signalised Intersection

7.2.3 Hall Circuit north/Main Street Signalised Intersection

A new signalised intersection will be provided at Hall Circuit and the new Main Street at the northern end of the subject site. The north and east approaches will each have one lane, the south approach will have a short left turn lane and a through/right turn lane, and the west approach will have a through lane and a short right turn lane. Pedestrian crossings will be provided on the northern, eastern and southern sides. Figure 7.2 shows the concept layout of this intersection.



Adapted from Nearmap

Figure 7.2: Proposed Hall Circuit north/Main Street Signalised Intersection

7.2.4 Hall Circuit south/Shawe Lane/Private Access Signalised Intersection

A new signalised staggered T-intersection will be provided at Hall Circuit south/Shawe Lane and the Precinct 6 development private access road at the south-eastern of the development. The north, east and south approaches will have one lane, and the west approach will have two lanes. Pedestrian crossings will be provided on all sides. Figure 7.3 shows the concept layout of this intersection.



Adapted from Nearmap

Figure 7.3: Proposed Hall Circuit south/Shawe Lane/Private Access Signalised Intersection

7.2.5 Cowpasture Road/Hoxton Park Road/Fifteenth Avenue Intersection Upgrades

The Cowpasture Road/Hoxton Park Road/Fifteenth Avenue signalised intersection will have the following upgrades as shown in Figure 7.4:

- Bus lane along Hoxton Park Road and Fifteenth Avenue in both directions
- Additional short right turn lane from Cowpasture Road (north) into Fifteenth Avenue (west)
- Additional short right turn lane from Fifteenth Avenue (west) into Cowpasture Road (south).



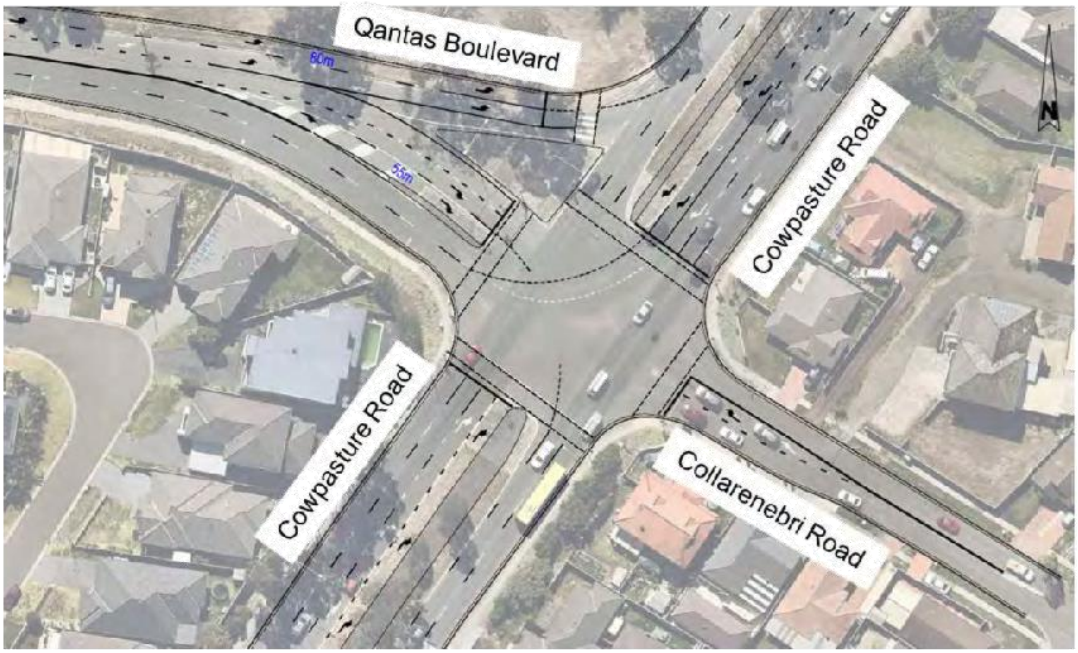
Adapted from Nearmap

Figure 7.4: Proposed Upgraded Cowpasture Road/Hoxton Park Road/Fifteenth Avenue Intersection

7.2.6 Cowpasture Road/ Collarenebri Road/Qantas Boulevard Intersection Upgrades

The Cowpasture Road/Hoxton Park Road/Fifteenth Avenue signalised intersection will have the following upgrades as shown in Figure 7.5:

- Additional through lane along Cowpasture Road in both directions
- Additional short right turn lane from Cowpasture Road (north) into Qantas Boulevard (west)
- Additional short right turn lane from Qantas Boulevard (west) into Cowpasture Road (south)
- Conversion of the left turn with care slip lane from Qantas Boulevard (west) into Cowpasture Road (north) to dual signalised left turn slip lanes with a pedestrian crossing.



Adapted from Nearmap

Figure 7.5: Proposed Upgraded Cowpasture Road/Collarenebri Road/Qantas Boulevard Intersection

7.3 Intersection Performance Outputs

7.3.1 Intersection Analysis

The performance comparison of the key network intersections is summarised in Table 7.2. The results from the three (3) scenarios are compared to show development impacts on network level of service. The detailed results are provided in Appendix D.

Table 7.2: Intersection Level of Service Comparison – AM and PM Peaks

Intersection	Level of Service					
	Do Minimum		LEP Development		Proposed Development	
	AM	PM	AM	PM	AM	PM
Cowpasture Road Flynn Avenue Collarenebri Road	B	C	B	C	B	B
Cowpasture Road Hoxton Park Road Fifteenth Avenue	B	B	B	B	B	B
Kingsford Smith Avenue Fifteenth Avenue Second Avenue	D	D	D	D	E	E
Kingsford Smith Avenue Flynn Avenue	C	B	C	B	D	C
Cowpasture Road Westlink M7	B	B	B	B	B	B
Cowpasture Road Airfield Drive	B	F	B	F	A	C
Main Street Flynn Street	A	A	B	A	A	A

The key findings are summarised below:

- Overall results indicate that the Do Minimum future base network operates at mostly optimal levels of service, with the exception of the Cowpasture Road / Airfield Drive intersection (which experiences some delays due to the addition of the eastern approach connecting to the new shopping precinct)
- Likewise, the LEP development scenario exhibits largely similar results, with some minor decreases in LOS observed
- The proposed development scenario, including the accompanying upgrades, is not observed to result in any significant decrease in intersection level of service at any of the key intersections
- The LOS of the Cowpasture Road / Airfield Drive intersection during the PM peak improves to LOS C in the proposed development scenario, from LOS F in both the Do Minimum and LEP development scenarios. The improvements are attributed to reduction in the PM peak southbound queues on Cowpasture Road as shown in Figure 7.6.
- The LOS of the new traffic signals at the Kingsford Smith Avenue / Fifteenth Avenue / Second Avenue intersection decreases from LOS D in the Do Minimum and LEP development scenarios to LOS E in the proposed development scenario due to an increase in overall intersection delays by approximately 15 seconds.



Figure 7.6: Queues Southbound on Cowpasture Road

7.3.2 Middleton Drive and Aviation Road Connection

The connection of Middleton Drive and Aviation Road under the M7 will attract up to 400 vehicles from the Cowpasture Road north-south corridor by providing an alternative access / exit from the Middleton Grange catchment. This will alleviate the traffic pressure at the Cowpasture Road / Flynn Avenue intersection, particularly the left-turn traveling northbound during the AM peak period.

The connection also improves network connectivity by servicing traffic predominantly from the northern side of the study area.

7.3.3 Development Site Access Intersections

The three (3) traffic signals proposed as part of the development site access points were found to exhibit a satisfactory intersection performance capable of accommodating the development traffic. The performance at these intersections show minimal delays, with overall intersection performance operating at an optimal LOS A to B.

7.4 Route Performance Outputs

Average vehicle travel times through each section of route identified in Section 6.1.2 were extracted from the models. The travel time graphs are provided in **Appendix E** and described below.

The AM northbound travel time along Route A (the Cowpasture Road north-south corridor) is shown in Figure 7.7. The graph indicates that there is minimal difference between the three (3) scenarios in terms of northbound travel time. Overall, the Proposed Development scenario shows the quickest travel times, with overall durations of between 5 and 6 minutes for the length of the route.

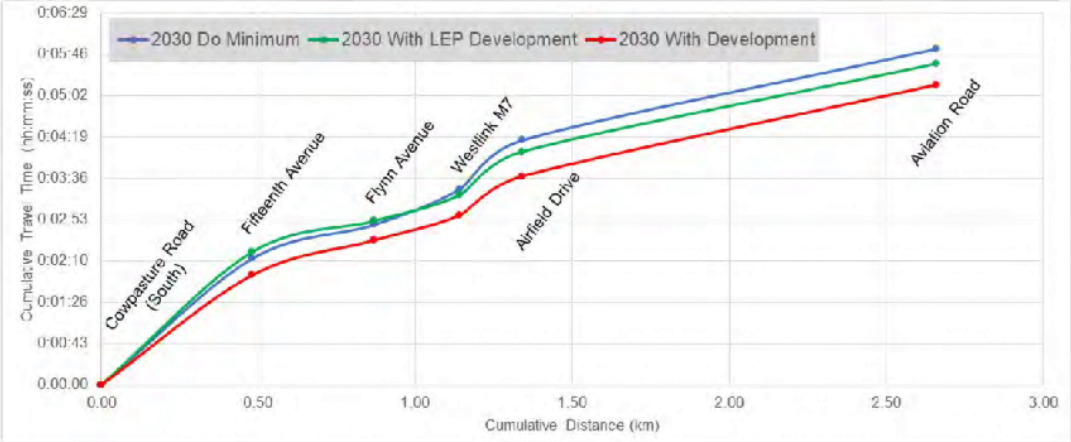


Figure 7.7: AM Travel Time – Route A Northbound

The AM eastbound travel time along Route B (the Fifteenth Avenue east-west corridor) is shown in Figure 7.8. The graph indicates that while there is minimal difference in travel times between the Do Minimum and LEP development scenarios, there is an increase in travel time of approximately one minute for the Proposed Development scenario. This is primarily due to delays at the Fifteenth Avenue / Kingsford Smith Avenue intersection, due to the additional eastbound demand during the morning peak. It is noted that past the Kingsford Smith Avenue intersection, the travel time remains largely consistent with the other scenarios.

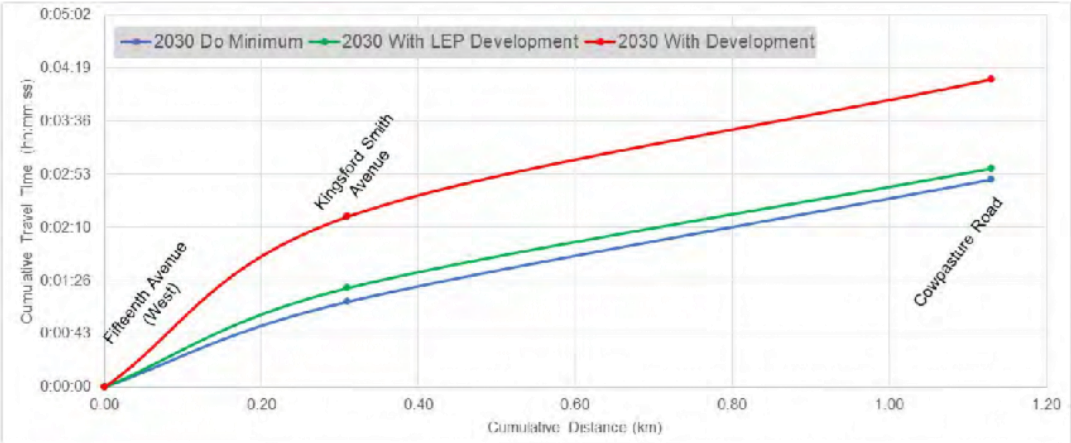


Figure 7.8: AM Travel Time – Route B Eastbound

The AM eastbound travel time along Route C (the Flynn Avenue east-west street which will service development traffic) is shown in Figure 7.9. There is a sizeable increase in travel time for the LEP Development scenario relative to the Do Minimum scenario. This is reflective of the increased eastbound traffic which is constrained by the existing layout at the Cowpasture Road intersection (i.e. with its single short right turn bay).

Conversely, the Proposed Development scenario exhibits similar travel times as the Do Minimum scenario, which is indicative that the proposed road upgrades to accompany the development are capable of mitigating travel time impacts and accommodating the development traffic demands.

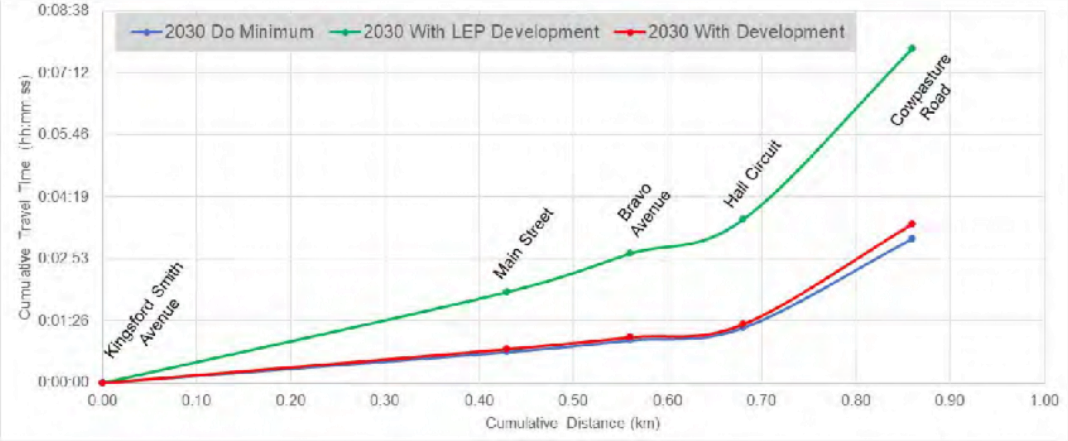


Figure 7.9: AM Travel Time – Route C Eastbound

The PM southbound travel time along Route A is shown in Figure 7.10 below. A significant decrease in travel time for the southbound movement is observed in for the Proposed Development scenario relative to the other cases, with the Do Minimum and LEP development scenarios having similar travel times. This is expected to arise primarily due to the provision of the right-turn bay on the north approach of the Cowpasture Road / Fifteenth Avenue / Hoxton Park Road traffic signals. The increased right turners due to increased future demand for westbound traffic resulted in overspilling of the existing single right turn bay, causing friction in the southbound traffic stream. This is alleviated significantly by the proposed upgrades under the Proposed Development scenario.

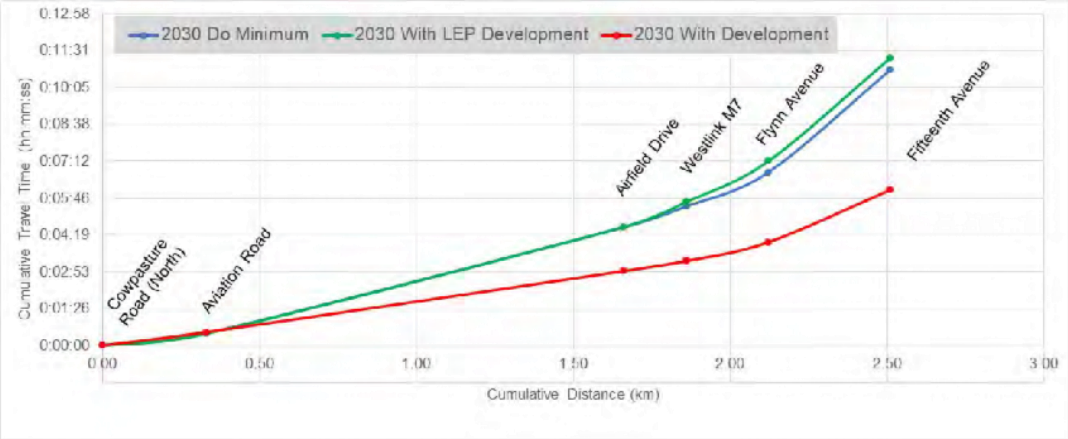


Figure 7.10: PM Travel Time – Route A Southbound

7.5 Network Performance Outputs

The network statistics for all three (3) scenarios in the modelled AM and PM peak hours are summarised in Table 7.3. The statistics extracted from model results include Vehicle Hours Travelled (VHT) and Vehicle Kilometres Travelled (VKT), as well as the average speed through the network.

Table 7.3: 2030 With Development 1 Intersection Performance – AM and PM Peaks

Measure	2030 Do Minimum		2030 With LEP Development		2030 With Proposed Developments	
	AM	PM	AM	PM	AM	PM
Total Input Flow (veh)	11,525	10,447	11,658	10,788	12,183	11,984
Total Travel Time (hr)	790	872	875	949	894	992
Total Distance (km)	22,931	20,473	23,139	21,016	23,851	23,043
Total Delay (hr)	75	84	93	93	96	97
Average Speed (km/hr)	29.0	23.5	26.5	22.1	26.7	23.2
Average Travel Time (min)	4.2	5.0	4.6	5.3	4.5	5.0
Average Distance (km)	2.0	2.0	2.0	1.9	2.0	1.9
Average Delay (s)	24	29	30	31	29	29
Unreleased Trips (veh)	114	0	265	0	192	0
Stops (occurrences)	15,710	15,540	18,409	18,063	19,747	21,970
Completed Trips (veh)	11,416	10,113	11,477	10,431	12,055	11,707

The overall findings are summarised below:

- VHT and VKT both increase with the Proposed Development scenario due to the increase in traffic demands
- Total delay time experienced by vehicles in the network increases with the Proposed Development, which is expected due to the higher volume of vehicles serviced by the network
- While the average vehicle delay in the Proposed Development scenario is higher than the Do Minimum scenario, it is shown to be slightly lower than in the LEP development scenario
- A significant number of additional trips are completed during the Proposed Development scenario model runs, with minimal unreleased trips in the AM peak and no unreleased trips in the PM peak for all scenarios.

8. CONCLUSIONS

Key conclusions from the assessment of the traffic impacts of the proposed development at 60-80 Southern Cross Avenue and 45-65 Hall Circuit Middleton Grange are:

- The scheme includes a total of 670 residential dwellings and variety of commercial, retail and recreational uses.
- The "2030 with LEP development" was tested based on the current LEP and including identified Council and State Government Infrastructure upgrades. This scenario showed that under these conditions the network was constrained and operating at near capacity.
- The "2030 with proposed development" modelling demonstrates that with the development's proposed road network upgrades that the network will operate with spare capacity.
- The "2030 with proposed development" modelling generally demonstrates a reduction in travel time and an improvement in level of service for the key intersections across the network compared to the "2030 Do Minimum" and "2030 with LEP development" scenarios.

Appendix A: Precinct Yields



26/09/2019

Table 3.1b PROPOSED Summary Of Uses and Areas

SUMMARY

Location	Uses	Area M^2	No of Units
Precinct Lot 2	Neighbourhood shops	2030	
	Café Restaurant	718	
	Ground Floor Soho	600	
	Residential Terrace		17
	Residential Shop Top		12
	Total	**3348**	
Precinct Lot 3	Neighbourhood shops	2030	
	Café Restaurant	724	
	Ground Floor Soho	600	
	Residential Soho		
	Residential Terrace		17
	Residential Shop Top		12
	Total	**3354**	
Precinct Lot 4	Retail Shops	1790	
	Café Restaurant	2000	
	Commercial/Entertainment	2862	
	Childcare Centre	505	
	Residential		292
	Total	**7157**	
Precinct Lot 5	Major Supermarket	2600	
	Liquor Store	300	
	Retail Shops	2600	
	Café Restaurant	1000	
	Gymnasium	3500	
	Office	4135	
	Residential		241
Total GFA	**Total**	**14135**	
Precinct Lot 6	Mini Major	1200	
	Café-Retail	1500	
	Retail Shops	580	
	Office	2888	
	Residential		79
Total GFA	**Total**	**6168**	
Precinct Lot 7	Medical Centre **	1175	
	Retail	552	
	Café Restaurant	505	
	Imaging Diagnostic	1189	
	Ancillary Health Offices	1964	
	Medical Suites-offices	7012	
	Outpatients	1189	
	Total	**13586**	
Parkland*	Community Centre	500	
		48248	**670**

Appendix B: Committed Road Network Upgrades





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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 — 0 5 10 15 20 25 — 1:500

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

Title: Intersection Layout Concept
Fifteenth Avenue, Second Avenue &
Kingsford Smith Avenue

Design	Drawn	Checked
J.Y	G.Y	A.A
PRELIMINARY		Date: 24.10.2019
Project Number: P4356	Sheet Number: 1	Issue: 001



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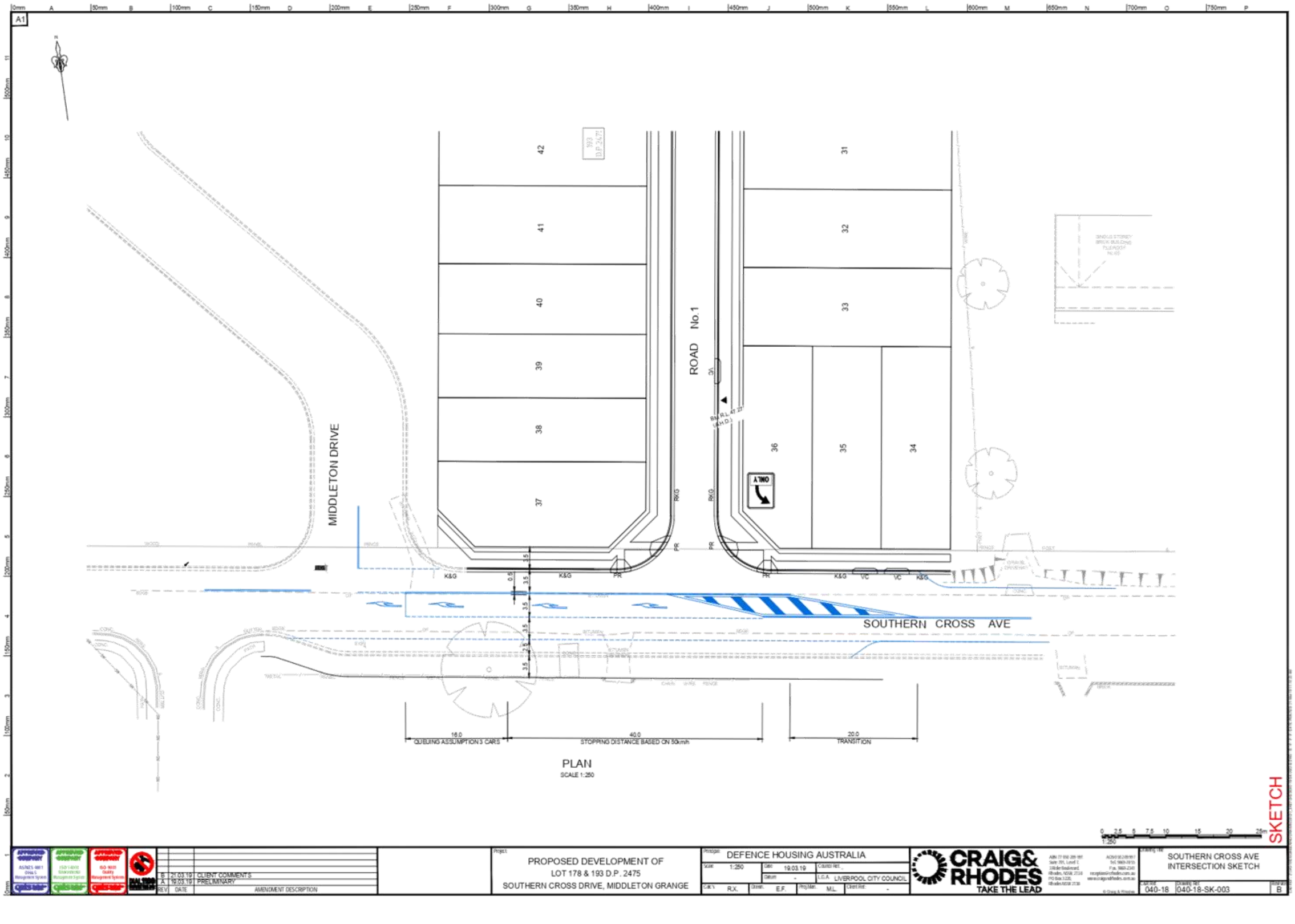
Issue	REVISIONS Revisions Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 0 5 10 15 20 25 1:500

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

Title: Intersection Layout Concept
Flynn Avenue & Kingsford Smith Avenue

Design	Drawn	Checked
J.Y	G.Y	A.A
PRELIMINARY		Date: 24.10.2019
Project Number: P4356	Sheet Number: 2	Issue: 001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PR
VC
RKG
16.0
QUEUING ASSUMPTION 3 CARS
40.0
STOPPING DISTANCE BASED ON 50km/h
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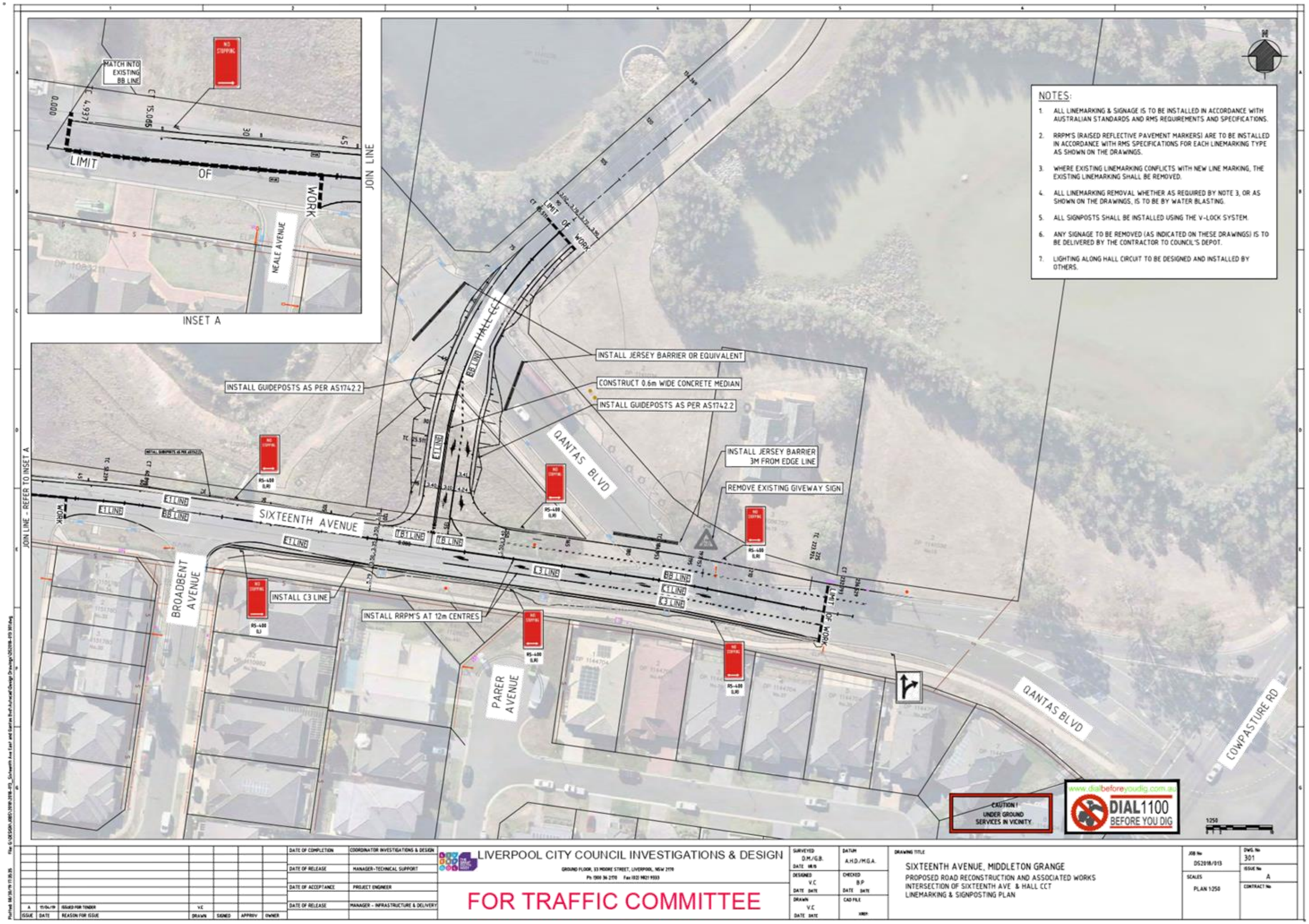
PLAN
SCALE 1:250
SKETCH
B 21.03.19 CLIENT COMMENTS
A 19.03.19 PRELIMINARY
REV DATE AMENDMENT DESCRIPTION
PROPOSED DEVELOPMENT OF
LOT 178 & 193 D.P. 2475
SOUTHERN CROSS DRIVE, MIDDLETON GRANGE
DEFENCE HOUSING AUSTRALIA
1:250
19.03.19
LIVERPOOL CITY COUNCIL
R.X.
E.F.
M.L.
CRAIG& RHODES
TAKE THE LEAD
SOUTHERN CROSS AVE
INTERSECTION SKETCH
040-18
040-18-SK-003
B


MATCH INTO EXISTING BB LINE
NO STOPPING
LIMIT OF WORK
NEALE AVENUE
JOIN LINE
INSET A
JOIN LINE - REFER TO INSET A
NOTES:
1. ALL LINEMARKING & SIGNAGE IS TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND RMS REQUIREMENTS AND SPECIFICATIONS.
2. RRPM'S (RAISED REFLECTIVE PAVEMENT MARKERS) ARE TO BE INSTALLED IN ACCORDANCE WITH RMS SPECIFICATIONS FOR EACH LINEMARKING TYPE AS SHOWN ON THE DRAWINGS.
3. WHERE EXISTING LINEMARKING CONFLICTS WITH NEW LINE MARKING, THE EXISTING LINEMARKING SHALL BE REMOVED.
4. ALL LINEMARKING REMOVAL WHETHER AS REQUIRED BY NOTE 3, OR AS SHOWN ON THE DRAWINGS, IS TO BE BY WATER BLASTING.
5. ALL SIGNPOSTS SHALL BE INSTALLED USING THE V-LOCK SYSTEM.
6. ANY SIGNAGE TO BE REMOVED (AS INDICATED ON THESE DRAWINGS) IS TO BE DELIVERED BY THE CONTRACTOR TO COUNCIL'S DEPOT.
7. LIGHTING ALONG HALL CIRCUIT TO BE DESIGNED AND INSTALLED BY OTHERS.
INSTALL JERSEY BARRIER OR EQUIVALENT
CONSTRUCT 0.6m WIDE CONCRETE MEDIAN
INSTALL GUIDEPOSTS AS PER AS1742.2
INSTALL GUIDEPOSTS AS PER AS1742.2
INSTALL JERSEY BARRIER 3M FROM EDGE LINE
REMOVE EXISTING GIVEWAY SIGN
INSTALL C3 LINE
INSTALL RRPM'S AT 12m CENTRES
HALL CCT
QANTAS BLVD
SIXTEENTH AVENUE
BROADBENT AVENUE
PARER AVENUE
COWPASTURE RD
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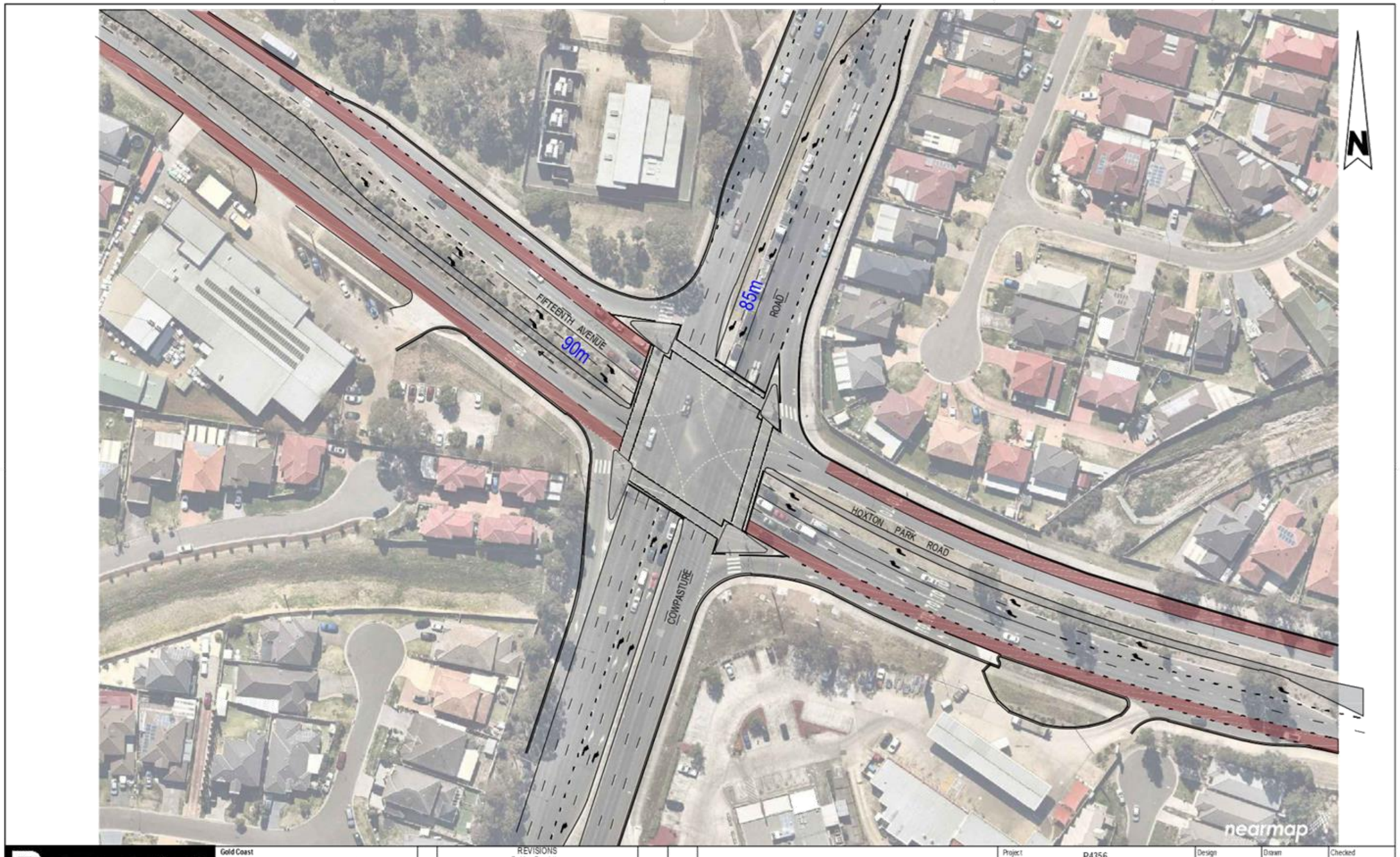
SIXTEENTH AVENUE, MIDDLETON GRANGE
PROPOSED ROAD RECONSTRUCTION AND ASSOCIATED WORKS
INTERSECTION OF SIXTEENTH AVE & HALL CCT
LINEMARKING & SIGNPOSTING PLAN
JOB No DS2018/013
SCALES PLAN 1:250
DWG No 301
ISSUE No A
CONTRACT No

Appendix C: Upgrades Proposed by the Development





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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 0 10 20 30 40 50 1:1000

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

Title: Intersection Layout Concept
Fifteenth Avenue, Hoxton Park Road &
Cowpasture Road

Design	Drawn	Checked
J.Y	G.Y	A.A

PRELIMINARY

Date: 24.10.2019

Project Number	Sheet Number	Issue
P4356	3	001



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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 0 5 10 15 20 25 1:500

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

Title: Intersection Layout Concept
Sixteenth Avenue, Cowpasture Road &
Collarenibri Road

Design	Drawn	Checked
J.Y	G.Y	A.A

PRELIMINARY

Date: 24.10.2019

Project Number	Sheet Number	Issue
P4356	4	001



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Issue	REVISIONS Revisions Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 0 5 10 15 20 25 1:500

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

Title: Intersection Layout Concept
Sixteenth Avenue, Bravo Avenue,
Hall Circuit & Shawe Lane

Design	Drawn	Checked
J.Y	G.Y	A.A

PRELIMINARY

Date: 24.10.2019

Project Number	Sheet Number	Issue
P4356	5	001



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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 — 0 5 10 15 20 25 — 1:500

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

Title: Intersection Layout Concept
Flynn Avenue, Hall Circuit & New Road

Design	Drawn	Checked
J.Y	G.Y	A.A

PRELIMINARY

Date: 24.10.2019

Project Number	Sheet Number	Issue
P4356	6	001



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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 — 0 5 10 15 20 25 — 1:500

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

Title: Intersection Layout Concept
Southern Cross Avenue, New Road &
Main Development Road

Design	Drawn	Checked
J.Y	G.Y	A.A

PRELIMINARY

Date: 24.10.2019

Project Number	Sheet Number	Issue
P4356	7	001

Appendix D: 2030 Intersection Results Comparison



P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Intersection Results Comparison 2030

AM Peak 0730-0830

								Volume (veh)			Delay (seconds)			Level of Service			Average Queue (veh)			Maximum Queue (veh)		
ID	Intersection	Aimsun Code	Turn Number	Movement Code	From	To	Turn	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development
101	Cowpasture Road	8592	1	101-1	Cowpasture Road (N)	Qantas Boulevard (W)	R	223	250	276	64	62	67	E	E	E	2	2	3	8	9	7
	Collarenebri Road	8590	2	101-2		Cowpasture Road (S)	T	1,320	1,298	1,301	26	28	18	B	B	B	3	3	2	13	13	13
	Cowpasture Road	8591	3	101-3		Collarenebri Road (E)	L	26	30	29	29	30	22	B	C	B	0	0	0	3	3	3
	Qantas Boulevard	8588	4	101-4	Collarenebri Road (E)	Cowpasture Road (N)	R	78	75	73	70	69	65	E	E	E	1	1	1	8	7	7
		8589	5	101-5		Qantas Boulevard (W)	T	28	25	27	78	84	75	F	F	F	1	1	1	5	5	5
		8587	6	101-6		Cowpasture Road (S)	L	34	34	34	59	57	60	E	D	E	1	1	1	4	4	4
		8584	7	101-7	Cowpasture Road (S)	Collarenebri Road (E)	R	18	20	21	82	80	83	F	F	F	0	0	0	3	3	3
		8585	8	101-8		Cowpasture Road (N)	T	2,186	2,223	2,246	9	8	10	A	A	A	1	1	1	9	9	10
		8586	9	101-9		Qantas Boulevard (W)	L	171	212	270	7	6	8	A	A	A	0	0	0	4	3	6
		8593	10	101-10	Qantas Boulevard (W)	Cowpasture Road (S)	R	219	301	526	41	41	33	C	C	C	3	3	2	7	5	4
		8594	11	101-11		Collarenebri Road (E)	T	39	37	4	69	87	60	E	F	E	0	0	0	1	1	1
		9953	12	101-12		Cowpasture Road (N)	L	725	640	713	14	13	28	A	A	B	2	2	2	7	7	6
					All			5,067	5,145	5,521	20	21	21	B	B	B	1	1	1	13	13	13
102	Cowpasture Road	8496	1	102-1	Cowpasture Road (N)	Fifteenth Avenue (W)	R	250	252	263	19	20	27	B	B	B	1	1	1	3	2	2
	Hoxton Park Road	8495	2	102-2		Cowpasture Road (S)	T	752	722	739	21	21	21	B	B	B	1	1	1	2	2	2
	Cowpasture Road	9932	3	102-3		Hoxton Park Road (E)	L	566	646	825	9	8	7	A	A	A	1	1	1	4	4	4
	Fifteenth Avenue	8497	4	102-4	Hoxton Park Road (E)	Cowpasture Road (N)	R	541	563	633	33	33	30	C	C	C	2	2	2	5	5	5
		8499	5	102-5		Fifteenth Avenue (W)	T	683	665	702	25	26	25	B	B	B	1	1	1	3	2	3
		9926	6	102-6		Cowpasture Road (S)	L	298	321	313	5	5	4	A	A	A	0	0	0	4	4	4
		8501	7	102-7	Cowpasture Road (S)	Hoxton Park Road (E)	R	583	578	578	39	39	40	C	C	C	3	3	3	4	4	4
		8500	8	102-8		Cowpasture Road (N)	T	1,480	1,492	1,483	22	22	21	B	B	B	3	3	2	4	4	4
		9929	9	102-9		Fifteenth Avenue (W)	L	172	172	157	0	0	0	A	A	A	0	0	0	0	1	1
		8493	10	102-10	Fifteenth Avenue (W)	Cowpasture Road (S)	R	222	232	231	39	39	48	C	C	D	2	2	2	5	6	5
		8492	11	102-11		Hoxton Park Road (E)	T	964	945	859	20	20	25	B	B	B	2	1	2	3	3	3
		9923	12	102-12		Cowpasture Road (N)	L	313	361	375	6	5	12	A	A	A	0	0	1	4	4	4
					All			6,825	6,949	7,159	22	21	22	B	B	B	1	1	1	5	6	5
103	Kingsford Smith Avenue	10012338	1	103-1	Kingsford Smith Avenue (N)	Fifteenth Avenue (W)	R	249	249	256	73	79	81	F	F	F	5	5	5	11	11	12
	Fifteenth Avenue	10012337	2	103-2		Second Avenue (S)	T	196	212	220	74	81	79	F	F	F	4	4	4	9	10	9
	Second Avenue	10012427	3	103-3		Fifteenth Avenue (E)	L	13	11	9	63	72	79	E	F	F	0	0	0	2	1	1
	Fifteenth Avenue	10012330	4	103-4	Fifteenth Avenue (E)	Kingsford Smith Avenue (N)	R	97	92	121	93	93	104	F	F	F	2	2	3	7	6	11
		10012329	5	103-5		Fifteenth Avenue (W)	T	797	792	787	13	13	21	A	A	B	1	1	1	6	6	8
		10012430	6	103-6		Second Avenue (S)	L	181	179	176	10	9	15	A	A	B	0	0	1	5	4	6
		10012333	7	103-7	Second Avenue (S)	Fifteenth Avenue (E)	R	236	240	243	85	87	75	F	F	F	5	5	5	12	11	12
		10012332	8	103-8		Kingsford Smith Avenue (N)	T	132	130	160	88	88	79	F	F	F	3	3	3	8	8	8
		10012429	9	103-9		Fifteenth Avenue (W)	L	184	177	171	73	76	72	F	F	F	3	3	3	10	9	8
		10012334	10	103-10	Fifteenth Avenue (W)	Second Avenue (S)	R	194	200	190	162	171	191	F	F	F	6	6	7	16	18	19
		10012336	11	103-11		Fifteenth Avenue (E)	T	878	892	911	42	46	56	C	D	D	3	3	4	10	10	9
		10012428	12	103-12		Kingsford Smith Avenue (N)	L	128	137	212	24	27	43	B	B	C	1	1	2	6	6	11
					All			3,286	3,311	3,455	52	55	61	D	D	E	3	3	3	16	18	19
104	Kingsford Smith Avenue	10012454	1	104-1	Kingsford Smith Avenue (N)	Flynn Avenue (W)	R	158	136	167	34	54	84	C	D	F	2	2	4	9	10	13
	Flynn Avenue	10012455	2	104-2		Kingsford Smith Avenue (S)	T	424	433	444	22	42	64	B	C	E	2	5	7	14	20	22
	Kingsford Smith Avenue	10012456	3	104-3		Flynn Avenue (E)	L	2	6	5	21	70	72	B	E	F	0	0	0	1	2	2
	Flynn Avenue	10012461	4	104-4	Flynn Avenue (E)	Kingsford Smith Avenue (N)	R	53	53	54	50	64	58	D	E	E	1	1	1	4	7	6
		10012460	5	104-5		Flynn Avenue (W)	T	224	237	216	40	52	50	C	D	D	2	3	3	14	18	15
		10012462	6	104-6		Kingsford Smith Avenue (S)	L	32	53	60	34	56	60	C	D	E	0	1	1	3	5	7
		10012459	7	104-7	Kingsford Smith Avenue (S)	Flynn Avenue (E)	R	77	74	144	33	39	57	C	C	D	1	1	2	5	5	8
		10012458	8	104-8		Kingsford Smith Avenue (N)	T	260	292	299	19	22	31	B	B	C	1	1	1	5	5	5
		10012457	9	104-9		Flynn Avenue (W)	L	147	127	144	18	20	33	B	B	C	1	1	1	6	6	6
		10012452	10	104-10	Flynn Avenue (W)	Kingsford Smith Avenue (S)	R	160	160	166	45	74	64	D	F	E	2	4	3	9	14	13
		10012453	11	104-11		Flynn Avenue (E)	T	214	198	184	31	36	34	C	C	C	2	2	2	10	11	10
		10012451	12	104-12		Kingsford Smith Avenue (N)	L	88	112	118	33	40	35	C	C	C	1	1	1	7	8	7
					All			1,841	1,881	2,001	30	42	52	C	C	D	1	2	2	14	20	22
106	Bravo Avenue	9543	1	106-1	Bravo Avenue (N)	Hall Circuit(W)	R	8	7	7	0	0	1	A	A	A	0	0	0	0	0	0
	Hall Circuit	9544	2	106-2		Bravo Avenue (S)	T	46	44	77	1	1	1	A	A	A	0	0	0	1	1	2
	Bravo Avenue	9542	3	106-3		Hall Circuit(E)	L	0	0	1	1	0	0	A	A	A	0	0	0	0	0	0
	Hall Circuit	9537	4	106-4	Hall Circuit(E)	Bravo Avenue (N)	R	2	4	4	1	1	0	A	A	A	0	0	0	0	0	0
		9536	5	106-5		Hall Circuit(W)	T	7	5	22	0	0	0	A	A	A	0	0	0	0	0	0
		9538	6	106-6		Bravo Avenue (S)	L	0	6	53	0	0	0	A	A	A	0	0	0	0	0	0
		9545	7	106-7	Bravo Avenue (S)	Hall Circuit(E)	R	0	0	0	0	0	0	A	A	A	0	0	0	0	0	0
		9547	8	106-8		Bravo Avenue (N)	T	0	0	0	0	0	0	A	A	A	0	0	0	0	0	0
		9546	9	106-9		Hall Circuit(W)	L	17	9	29	0	1	1	A	A	A	0	0	0	0	0	1
		9541	10	106-10	Hall Circuit(W)	Bravo Avenue (S)	R	199	286	246	1	1	2	A	A	A	0	0	0	3	2	4
		9539	11	106-11		Hall Circuit(E)	T	10	11	8	1	1	1	A	A	A	0	0	0	0	1	1
		9540	12	106-12		Bravo Avenue(N)	L	5	4	3	0	0	0	A	A	A	0	0	0	0	0	0
					All			293	377	450	1	1	2	A	A	A	0	0	0	3	2	4
107	Kingsford Smith Avenue	9644	1	107-1	Kingsford Smith Avenue (N)	Southern Cross Avenue (W)	R	53	57	57	7	7	10	A	A	A	0	0	0	2	2	2
	Southern Cross Avenue	9642	2	107-2		Kingsford Smith Avenue (S)	T	318	304	366	4	5	7	A	A	A	0	0	0	4	5	8
	Kingsford Smith Avenue	9643	3	107-3		Southern Cross Avenue (E)	L	21	26	24	2	3	4	A	A	A	0	0	0	0	1	1
	Southern Cross Avenue	9646	4	107-4	Southern Cross Avenue (E)	Kingsford Smith Avenue (N)	R	8	16	37	11	11	20	A	A	B	0	0	0	1	2	3
		9647	5	107-5		Southern Cross Avenue (W)	T	82	88	76	8	9	16	A	A	B	0	0	0	3	3	4
		9645	6	107-6		Kingsford Smith Avenue (S)	L	3	10	7	4	6	7	A	A	A	0	0	0	1	1	1
		9640	7	107-7	Kingsford Smith Avenue (S)	Southern Cross Avenue (E)	R	13	18	15	7	6	10	A	A	A	0	0	0	1	1	1
		9639	8	107-8		Kingsford Smith Avenue (N)	T	113	108	129	3	3	5	A	A	A	0	0	0	1	2	2
		9641	9	107-9		Southern Cross Avenue (W)	L	179	183	201	3	3	3	A	A	A	0	0	0	1	1	3
		9648	10	107-10	Southern Cross Avenue (W)	Kingsford Smith Avenue (S)	R	64	60	72	10	12	21	A	A	B	0	0	0	3	3	3
		9650	11	107-11		Southern Cross Avenue (E)	T	200	202	212	9	8	18	A	A	B	0	0	1	6	5	9
		9649	12	107-12		Kingsford Smith Avenue (N)	L	29	23	32	5	6	12	A	A	A	0	0	0	1	2	2
					All			1,083	1,095	1,229	5	6	10	A	A	B	0	0	0	6	5	9

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Intersection Results Comparison 2030

AM Peak 0730-0830

								Volume (veh)			Delay (seconds)			Level of Service			Average Queue (veh)			Maximum Queue (veh)		
ID	Intersection	Aimsun Code	Turn Number	Movement Code	From	To	Turn	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development
108	Cowpasture Road	10013498	1	108-1	Cowpasture Road (N)	Mclver Avenue (W)	R	330	322	360	1	1	1	A	A	A	0	0	0	0	0	0
	Bird Walton Avenue	10013497	2	108-2		Middleton Drive (S)	T	52	70	25	1	1	1	A	A	A	0	0	0	0	0	0
	Mclver Avenue	10013496	3	108-3		Bird Walton Avenue (E)	L	84	77	113	0	0	0	A	A	A	0	0	0	0	0	0
		10013499	4	108-4	Bird Walton Avenue (E)	Cowpasture Road (N)	R	12	7	16	1	1	1	A	A	A	0	0	0	0	0	0
		10013502	5	108-5		Mclver Avenue (W)	T	4	4	5	1	1	1	A	A	A	0	0	0	0	0	0
		10013501	6	108-6		Middleton Drive (S)	L	0	0	0	0	0	0	A	A	A	0	0	0	0	0	0
		10013504	7	108-7	Middleton Drive (S)	Bird Walton Avenue (E)	R	0	0	0	0	0	0	A	A	A	0	0	0	0	0	0
		10013503	8	108-8		Cowpasture Road (N)	T	62	28	44	1	1	1	A	A	A	0	0	0	0	0	0
		10013506	9	108-9		Mclver Avenue (W)	L	11	10	30	0	0	0	A	A	A	0	0	0	0	0	0
		10013509	10	108-10	Mclver Avenue (W)	Middleton Drive (S)	R	0	1	1	3	1	1	A	A	A	0	0	0	0	0	0
		10013508	11	108-11		Bird Walton Avenue (E)	T	1	4	3	1	1	1	A	A	A	0	0	0	0	0	0
		10013507	12	108-12		Cowpasture Road (N)	L	149	145	194	0	0	0	A	A	A	0	0	0	0	0	0
					All			483	479	519	1	1	1	A	A	A	0	0	0	0	0	0
109	Cowpasture Road	10338	1	109-1	Cowpasture Road (N)	Westlink M7 (W)	R	235	237	245	45	43	51	D	D	D	1	1	2	6	6	6
	Westlink M7	10336	2	109-2		Cowpasture Road (S)	T	1,227	1,236	1,206	11	11	7	A	A	A	1	1	1	5	5	5
	Cowpasture Road	10312	3	109-3		Westlink M7 (E)	L	293	278	289	1	1	1	A	A	A	0	0	0	1	2	1
	Westlink M7	10334	4	109-4	Westlink M7 (E)	Cowpasture Road (N)	R	297	299	299	57	57	87	D	D	F	2	2	3	8	8	8
		10314	6	109-6		Cowpasture Road (S)	L	99	101	129	5	5	6	A	A	A	0	0	0	3	4	4
		10345	7	109-7	Cowpasture Road (S)	Westlink M7 (E)	R	321	305	342	60	62	61	E	E	E	3	3	3	10	9	9
		10343	8	109-8		Cowpasture Road (N)	T	2,151	2,135	2,150	13	8	8	A	A	A	2	1	1	9	7	7
		10349	9	109-9		Westlink M7 (W)	L	514	507	541	1	2	2	A	A	A	0	0	0	3	5	6
		10339	10	109-10	Westlink M7 (W)	Cowpasture Road (S)	R	277	267	293	57	59	75	E	E	F	2	2	3	8	7	8
		10303	12	109-12		Cowpasture Road (N)	L	33	29	34	11	8	9	A	A	A	0	0	0	2	2	2
					All			5,447	5,395	5,527	19	18	20	B	B	B	1	1	1	10	9	9
110	Cowpasture Road	10381	1	110-1	Cowpasture Road (N)	Airfield Drive (W)	R	11	12	17	90	88	79	F	F	F	0	0	0	3	3	3
	Landmark Shopping Centre Access	10382	2	110-2		Cowpasture Road (S)	T	1,388	1,395	1,358	30	30	19	C	C	B	5	4	3	20	20	16
	Cowpasture Road	10012420	3	110-3		Landmark Shopping Centre Acc	L	23	23	19	35	34	25	C	C	B	0	0	0	2	2	2
	Airfield Drive	10012423	4	110-4	Landmark Shopping Centre Acc	Cowpasture Road (N)	R	19	18	18	66	68	74	E	E	F	0	0	0	3	3	3
		10012421	5	110-5		Airfield Drive (W)	T	90	89	0	65	59	73	E	E	F	2	1	0	4	4	0
		10012485	6	110-6		Cowpasture Road (S)	L	105	100	191	5	5	5	A	A	A	0	0	0	4	3	5
		10012419	7	110-7	Cowpasture Road (S)	Landmark Shopping Centre Acc	R	172	158	161	56	55	54	D	D	D	3	2	2	5	5	5
		10384	8	110-8		Cowpasture Road (N)	T	2,117	2,122	2,123	5	5	3	A	A	A	1	1	1	3	3	3
		10369	9	110-9		Airfield Drive (W)	L	176	195	187	1	1	0	A	A	A	0	0	0	2	2	1
		10380	10	110-10	Airfield Drive (W)	Cowpasture Road (S)	R	264	260	185	53	54	57	D	D	E	2	2	1	3	3	3
		10012504	11	110-11		Landmark Shopping Centre Acc	T	19	21	20	67	73	84	E	F	F	0	0	0	2	2	2
		10376	12	110-12		Cowpasture Road (N)	L	20	22	21	10	11	16	A	A	B	0	0	0	2	2	2
					All			4,403	4,415	4,301	20	19	14	B	B	A	1	1	1	20	20	16
111	Cowpasture Road	10443	1	111-1	Cowpasture Road (N)	Aviation Road (W)	R	196	185	232	84	79	104	F	F	F	4	4	7	16	16	20
	Cowpasture Road	10442	2	111-2		Cowpasture Road (S)	T	1,390	1,402	1,371	2	2	2	A	A	A	0	0	0	7	7	6
	Aviation Road	10440	8	111-8	Cowpasture Road (S)	Cowpasture Road (N)	T	2,155	2,170	2,181	9	7	10	A	A	A	1	1	2	18	18	19
		10441	9	111-9		Aviation Road (W)	L	24	24	26	8	7	8	A	A	A	0	0	0	1	1	1
		10446	10	111-10	Aviation Road (W)	Cowpasture Road (S)	R	19	9	13	57	47	36	E	D	C	0	0	0	1	1	1
		10445	12	111-12		Cowpasture Road (N)	L	227	196	248	22	25	21	B	B	B	1	1	1	2	2	2
					All			4,010	3,986	4,071	11	9	13	A	A	A	1	1	2	18	18	20
112	Qantas Boulevard	9472	1	111-1	Qantas Boulevard (N)	Qantas Boulevard (E)	L	255	359	346	1	9	18	A	A	B	0	1	2	2	8	8
	Qantas Boulevard	10001487	4	111-4	Qantas Boulevard (E)	Qantas Boulevard (N)	R	58	50	155	14	10	17	A	A	B	0	0	1	4	3	7
	Sixteenth Avenue East	9475	5	111-5		Sixteenth Avenue East (W)	T	365	438	419	2	2	2	A	A	A	0	0	0	1	2	2
		9477	11	111-11	Sixteenth Avenue East (W)	Qantas Boulevard (E)	T	739	637	898	1	14	3	A	A	A	0	2	0	5	7	4
		9476	12	111-12		Qantas Boulevard (N)	L	36	27	37	2	11	4	A	A	A	0	0	0	0	2	1
					All			1,453	1,511	1,855	2	9	7	A	A	B	0	1	0	5	8	8
113	Main Street	10011939	1	111-1	Main Street (N)	Flynn Avenue (W)	R	8	60	30	7	48	35	A	D	C	0	0	0	1	2	3
	Flynn Avenue	10011940	3	111-3		Flynn Avenue (E)	L	102	113	88	6	96	34	A	F	C	0	8	1	4	26	6
	Flynn Avenue	10011943	4	111-4	Flynn Avenue (E)	Main Street (N)	R	62	125	101	8	9	15	A	A	A	0	0	0	3	5	5
		10011944	5	111-5		Flynn Avenue (W)	T	321	333	331	3	4	6	A	A	A	0	0	0	7	9	11
		10011942	11	111-11	Flynn Avenue (W)	Flynn Avenue (E)	T	604	577	709	0	10	5	A	A	A	0	1	0	1	5	5
		10011941	12	111-12		Main Street (N)	L	37	40	74	0	9	4	A	A	A	0	0	0	1	2	2
					All			1,135	1,248	1,334	2	18	9	A	B	A	0	2	0	7	26	11
114	Southern Cross Avenue	10001301	5	111-5	Southern Cross Avenue (E)	Southern Cross Avenue (W)	T	26	18	69	0	0	4	A	A	A	0	0	0	0	0	3
	Main Street	10012045	6	111-6		Main Street (S)	L	5	4	1	1	1	1	A	A	A	0	0	0	0	0	0
	Southern Cross Avenue	10012044	7	111-7	Main Street (S)	Southern Cross Avenue (E)	R	5	7	1	4	4	58	A	A	E	0	0	0	1	1	1
		10012043	9	111-9		Southern Cross Avenue (W)	L	70	108	31	0	0	47	A	A	D	0	0	0	1	1	4
		10012046	10	111-10	Southern Cross Avenue (W)	Main Street (S)	R	67	72	25	2	2	6	A	A	A	0	0	0	2	2	1
		10001303	11	111-11		Southern Cross Avenue (E)	T	174	232	207	0	1	4	A	A	A	0	0	0	0	0	5
					All			347	441	335	1	1	8	A	A	A	0	0	0	2	2	5

P4356 60_80 Southern Cross Ave Middleton Grange

AIMS UN Intersection Results Comparison 2030

PMPeak 1645 - 1745

								Volume (veh)			Delay (seconds)			Level of Service			Average Queue (veh)			Maximum Queue (veh)		
ID	Intersection	Aimsun Code	Turn Number	Movement Code	From	To	Turn	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development
101	Cowpasture Road	8592	1	101-1	Cowpasture Road (N)	Qantas Boulevard (W)	R	405	435	529	59	71	55	E	F	D	3	4	4	13	15	14
	Collarenebri Road	8590	2	101-2		Cowpasture Road (S)	T	1,911	1,926	2,084	40	47	19	C	D	B	6	7	3	16	16	11
	Cowpasture Road	8591	3	101-3		Collarenebri Road (E)	L	68	67	68	41	42	24	C	C	B	1	1	0	4	4	3
	Qantas Boulevard	8588	4	101-4	Collarenebri Road (E)	Cowpasture Road (N)	R	39	40	45	58	59	58	E	E	E	1	1	1	5	5	4
		8589	5	101-5		Qantas Boulevard (W)	T	6	5	2	55	48	38	D	D	C	0	0	0	2	2	1
		8587	6	101-6		Cowpasture Road (S)	L	24	34	28	50	44	43	D	D	C	0	0	0	3	5	3
		8584	7	101-7	Cowpasture Road (S)	Collarenebri Road (E)	R	39	46	45	54	52	61	D	D	E	1	1	1	4	5	7
		8585	8	101-8		Cowpasture Road (N)	T	1,280	1,276	1,302	35	36	38	C	C	C	4	4	4	10	10	10
		8586	9	101-9		Qantas Boulevard (W)	L	440	543	640	23	22	19	B	B	B	2	2	2	9	9	10
		8593	10	101-10	Qantas Boulevard (W)	Cowpasture Road (S)	R	141	147	450	64	70	36	E	E	C	2	2	2	6	7	4
		8594	11	101-11		Collarenebri Road (E)	T	54	61	13	60	61	57	E	E	E	0	0	0	1	1	2
		9953	12	101-12		Cowpasture Road (N)	L	562	570	632	8	8	21	A	A	B	1	1	2	6	6	5
					All			4,970	5,152	5,838	36	40	29	C	C	B	2	2	2	16	16	14
102	Cowpasture Road	8496	1	102-1	Cowpasture Road (N)	Fifteenth Avenue (W)	R	317	321	421	19	19	25	B	B	B	1	2	1	3	3	2
	Hoxton Park Road	8495	2	102-2		Cowpasture Road (S)	T	1,325	1,327	1,444	12	12	11	A	A	A	1	1	1	2	2	2
	Cowpasture Road	9932	3	102-3		Hoxton Park Road (E)	L	394	427	699	5	5	5	A	A	A	0	0	1	4	4	4
	Fifteenth Avenue	8497	4	102-4	Hoxton Park Road (E)	Cowpasture Road (N)	R	851	932	1,028	20	20	17	B	B	B	2	2	2	4	4	4
		8499	5	102-5		Fifteenth Avenue (W)	T	684	662	771	23	24	20	B	B	B	1	1	1	2	2	2
		9926	6	102-6		Cowpasture Road (S)	L	543	533	513	8	8	8	A	A	A	1	1	1	4	4	4
		8501	7	102-7	Cowpasture Road (S)	Hoxton Park Road (E)	R	482	465	472	35	37	44	C	C	D	2	2	3	4	4	5
		8500	8	102-8		Cowpasture Road (N)	T	929	957	971	26	26	24	B	B	B	2	2	2	4	4	4
		9929	9	102-9		Fifteenth Avenue (W)	L	167	162	232	0	0	1	A	A	A	0	0	0	1	1	2
		8493	10	102-10	Fifteenth Avenue (W)	Cowpasture Road (S)	R	160	152	150	60	60	81	E	E	F	2	2	2	5	5	5
		8492	11	102-11		Hoxton Park Road (E)	T	527	548	511	30	30	35	C	C	C	1	1	1	3	3	2
		9923	12	102-12		Cowpasture Road (N)	L	22	16	30	7	7	6	A	A	A	0	0	0	1	1	2
					All			6,403	6,502	7,242	20	20	20	B	B	B	1	1	1	5	5	5
103	Kingsford Smith Avenue	10012338	1	103-1	Kingsford Smith Avenue (N)	Fifteenth Avenue (W)	R	141	172	268	67	77	69	E	F	E	3	4	5	13	13	12
	Fifteenth Avenue	10012337	2	103-2		Second Avenue (S)	T	61	81	180	63	68	64	E	E	E	1	1	3	5	6	8
	Second Avenue	10012427	3	103-3		Fifteenth Avenue (E)	L	8	10	12	65	76	68	E	F	E	0	0	0	1	1	1
	Fifteenth Avenue	10012330	4	103-4	Fifteenth Avenue (E)	Kingsford Smith Avenue (N)	R	172	164	278	170	163	100	F	F	F	8	7	7	12	11	11
		10012329	5	103-5		Fifteenth Avenue (W)	T	804	823	853	27	26	57	B	B	D	2	2	4	7	6	8
		10012430	6	103-6		Second Avenue (S)	L	163	153	192	13	12	27	A	A	B	0	0	1	4	5	8
		10012333	7	103-7	Second Avenue (S)	Fifteenth Avenue (E)	R	171	166	192	55	54	76	D	D	F	2	2	4	10	11	11
		10012332	8	103-8		Kingsford Smith Avenue (N)	T	148	163	173	59	57	76	E	D	F	2	2	3	8	8	8
		10012429	9	103-9		Fifteenth Avenue (W)	L	137	138	138	47	46	68	D	D	E	2	2	2	7	7	6
		10012334	10	103-10	Fifteenth Avenue (W)	Second Avenue (S)	R	176	175	174	167	171	71	F	F	F	7	7	3	17	16	12
		10012336	11	103-11		Fifteenth Avenue (E)	T	744	716	720	40	43	78	C	C	F	2	2	5	9	8	9
		10012428	12	103-12		Kingsford Smith Avenue (N)	L	203	250	283	23	26	58	B	B	E	1	1	4	7	10	17
					All			2,928	3,010	3,463	53	53	68	D	D	E	3	3	3	17	16	17
104	Kingsford Smith Avenue	10012454	1	104-1	Kingsford Smith Avenue (N)	Flynn Avenue (W)	R	114	111	103	22	23	46	B	B	D	1	1	1	7	5	7
	Flynn Avenue	10012455	2	104-2		Kingsford Smith Avenue (S)	T	187	230	258	15	16	23	A	B	B	1	1	1	8	9	12
	Kingsford Smith Avenue	10012456	3	104-3		Flynn Avenue (E)	L	2	4	3	12	16	32	A	B	C	0	0	0	1	1	1
	Flynn Avenue	10012461	4	104-4	Flynn Avenue (E)	Kingsford Smith Avenue (N)	R	25	22	18	49	45	51	D	D	D	0	0	0	4	3	2
		10012460	5	104-5		Flynn Avenue (W)	T	118	118	100	30	32	34	C	C	C	1	1	1	7	8	9
		10012462	6	104-6		Kingsford Smith Avenue (S)	L	70	104	186	33	33	41	C	C	C	1	1	2	7	7	8
		10012459	7	104-7	Kingsford Smith Avenue (S)	Flynn Avenue (E)	R	125	203	151	24	30	50	B	C	D	1	2	3	7	9	9
		10012458	8	104-8		Kingsford Smith Avenue (N)	T	182	175	297	16	21	27	B	B	B	0	1	1	4	4	5
		10012457	9	104-9		Flynn Avenue (W)	L	61	56	83	17	18	22	B	B	B	0	0	0	5	4	4
		10012452	10	104-10	Flynn Avenue (W)	Kingsford Smith Avenue (S)	R	153	160	179	32	33	39	C	C	C	1	1	2	8	9	9
		10012453	11	104-11		Flynn Avenue (E)	T	100	82	105	26	24	23	B	B	B	1	0	1	6	5	4
		10012451	12	104-12		Kingsford Smith Avenue (N)	L	150	179	167	26	25	20	B	B	B	1	1	1	8	9	6
					All			1,286	1,446	1,650	24	26	32	B	B	C	1	1	1	8	9	12
106	Bravo Avenue	9543	1	106-1	Bravo Avenue (N)	Hall Circuit(W)	R	4	8	13	0	0	0	A	A	A	0	0	0	0	0	1
	Hall Circuit	9544	2	106-2		Bravo Avenue (S)	T	7	4	21	1	1	2	A	A	A	0	0	0	0	0	1
	Bravo Avenue	9542	3	106-3		Hall Circuit(E)	L	0	0	0	1	0	0	A	A	A	0	0	0	0	0	0
	Hall Circuit	9537	4	106-4	Hall Circuit(E)	Bravo Avenue (N)	R	1	0	2	0	0	0	A	A	A	0	0	0	0	0	0
		9536	5	106-5		Hall Circuit(W)	T	10	21	65	0	0	1	A	A	A	0	0	0	0	0	0
		9538	6	106-6		Bravo Avenue (S)	L	0	17	78	0	0	0	A	A	A	0	0	0	0	0	0
		9545	7	106-7	Bravo Avenue (S)	Hall Circuit(E)	R	0	0	0	0	0	0	A	A	A	0	0	0	0	0	0
		9547	8	106-8		Bravo Avenue (N)	T	1	0	0	0	0	0	A	A	A	0	0	0	0	0	1
		9546	9	106-9		Hall Circuit(W)	L	0	10	67	0	1	2	A	A	A	0	0	0	0	1	3
		9541	10	106-10	Hall Circuit(W)	Bravo Avenue (S)	R	132	109	196	1	1	3	A	A	A	0	0	0	1	2	4
		9539	11	106-11		Hall Circuit(E)	T	7	8	4	1	1	1	A	A	A	0	0	0	0	0	1
		9540	12	106-12		Bravo Avenue (N)	L	4	7	5	1	1	1	A	A	A	0	0	0	0	0	0
					All			165	183	451	1	1	2	A	A	A	0	0	0	1	2	4
107	Kingsford Smith Avenue	9644	1	107-1	Kingsford Smith Avenue (N)	Southern Cross Avenue (W)	R	49	49	50	4	4	7	A	A	A	0	0	0	2	2	3
	Southern Cross Avenue	9642	2	107-2		Kingsford Smith Avenue (S)	T	81	93	81	3	3	4	A	A	A	0	0	0	1	2	2
	Kingsford Smith Avenue	9643	3	107-3		Southern Cross Avenue (E)	L	9	22	26	1	1	3	A	A	A	0	0	0	0	0	1
	Southern Cross Avenue	9646	4	107-4	Southern Cross Avenue (E)	Kingsford Smith Avenue (N)	R	10	4	17	5	6	10	A	A	A	0	0	0	1	1	2
		9647	5	107-5		Southern Cross Avenue (W)	T	127	139	175	5	4	7	A	A	A	0	0	0	4	4	7
		9645	6	107-6		Kingsford Smith Avenue (S)	L	4	19	16	2	2	4	A	A	A	0	0	0	1	1	1
		9640	7	107-7	Kingsford Smith Avenue (S)	Southern Cross Avenue (E)	R	5	5	14	4	5	5	A	A	A	0	0	0	1	1	2
		9639	8	107-8		Kingsford Smith Avenue (N)	T	159	161	252	4	4	4	A	A	A	0	0	0	0	0	2
		9641	9	107-9		Southern Cross Avenue (W)	L	75	66	81	3	3	3	A	A	A	0	0	0	0	0	1
		9648	10	107-10	Southern Cross Avenue (W)	Kingsford Smith Avenue (S)	R	41	52	78	8	8	13	A	A	A	0	0	0	2	2	3
		9650	11	107-11		Southern Cross Avenue (E)	T	126	134	167	4	5	8	A	A	A	0	0	0	3	3	4
		9649	12	107-12		Kingsford Smith Avenue (N)	L	31	31	31	3	3	6	A	A	A	0	0	0	1	2	2
					All			717	772	988	4	4	6	A	A	A	0	0	0	4	4	7

P4356 60_80 Southern Cross Ave Middleton Grange

AIMS UN Intersection Results Comparison 2030

PMPeak 1645 - 1745

								Volume (veh)			Delay (seconds)			Level of Service			Average Queue (veh)			Maximum Queue (veh)		
ID	Intersection	Aimsun Code	Turn Number	Movement Code	From	To	Turn	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development	Do Minimum	LEP Development	Proposed Development
108	Middleton Drive	10013498	1	108-1	Middleton Drive (N)	Mclver Avenue (W)	R	126	144	130	1	1	1	A	A	A	0	0	0	0	0	0
	Bird Walton Avenue	10013497	2	108-2		Middleton Drive (S)	T	51	50	61	1	1	1	A	A	A	0	0	0	0	0	0
	Mclver Avenue	10013496	3	108-3		Bird Walton Avenue (E)	L	9	7	24	0	0	0	A	A	A	0	0	0	0	0	0
		10013499	4	108-4	Bird Walton Avenue (E)	Middleton Drive (N)	R	39	40	80	1	1	1	A	A	A	0	0	0	0	0	0
		10013502	5	108-5		Mclver Avenue (W)	T	3	2	2	1	1	1	A	A	A	0	0	0	0	0	0
		10013501	6	108-6		Middleton Drive (S)	L	0	0	0	0	0	0	A	A	A	0	0	0	0	0	0
		10013504	7	108-7	Middleton Drive (S)	Bird Walton Avenue (E)	R	0	0	0	0	0	0	A	A	A	0	0	0	0	0	0
		10013503	8	108-8		Middleton Drive (N)	T	80	97	26	1	1	1	A	A	A	0	0	0	0	0	0
		10013506	9	108-9		Mclver Avenue (W)	L	5	7	17	0	0	0	A	A	A	0	0	0	0	0	0
		10013509	10	108-10	Mclver Avenue (W)	Middleton Drive (S)	R	0	0	0	0	0	0	A	A	A	0	0	0	0	0	0
		10013508	11	108-11		Bird Walton Avenue (E)	T	0	1	7	1	1	1	A	A	A	0	0	0	0	0	0
		10013507	12	108-12		Middleton Drive (N)	L	181	174	272	1	1	1	A	A	A	0	0	0	0	0	0
					All			228	243	297	1	1	1	A	A	A	0	0	0	0	0	0
109	Cowpasture Road	10338	1	109-1	Cowpasture Road (N)	Westlink M7 (W)	R	90	97	105	53	52	62	D	D	E	1	1	1	4	4	5
	Westlink M7	10336	2	109-2		Cowpasture Road (S)	T	1,785	1,788	1,948	15	17	7	A	B	A	2	2	1	5	5	5
	Cowpasture Road	10312	3	109-3		Westlink M7 (E)	L	299	278	304	1	1	1	A	A	A	0	0	0	1	1	1
	Westlink M7	10334	4	109-4	Westlink M7 (E)	Cowpasture Road (N)	R	298	293	289	51	52	53	D	D	D	2	2	2	7	7	7
		10314	6	109-6		Cowpasture Road (S)	L	191	211	226	20	24	14	B	B	A	1	1	1	6	6	6
		10345	7	109-7	Cowpasture Road (S)	Westlink M7 (E)	R	100	105	162	47	49	51	D	D	D	1	1	1	4	4	5
		10343	8	109-8		Cowpasture Road (N)	T	1,450	1,440	1,485	16	17	15	B	B	B	2	2	2	9	9	9
		10349	9	109-9		Westlink M7 (W)	L	318	330	319	1	1	1	A	A	A	0	0	0	2	2	3
		10339	10	109-10	Westlink M7 (W)	Cowpasture Road (S)	R	472	492	548	57	58	69	E	E	E	3	3	5	7	8	8
		10303	12	109-12		Cowpasture Road (N)	L	51	49	54	2	2	2	A	A	A	0	0	0	2	2	2
					All			5,054	5,083	5,440	21	23	20	B	B	B	1	1	1	9	9	9
110	Cowpasture Road	10381	1	110-1	Cowpasture Road (N)	Airfield Drive (W)	R	3	10	5	129	178	111	F	F	F	0	0	0	3	3	3
	Landmark Shopping Centre Access	10382	2	110-2		Cowpasture Road (S)	T	1,833	1,845	1,978	150	157	55	F	F	D	28	31	12	66	64	54
	Cowpasture Road	10012420	3	110-3		Landmark Shopping Centre Acc	L	25	25	38	165	168	55	F	F	D	1	1	0	4	5	4
	Airfield Drive	10012423	4	110-4	Landmark Shopping Centre Acc	Cowpasture Road (N)	R	33	30	34	63	63	75	E	E	F	1	1	1	3	3	3
		10012421	5	110-5		Airfield Drive (W)	T	105	105	0	85	85	0	F	F	A	2	2	0	4	4	0
		10012485	6	110-6		Cowpasture Road (S)	L	181	169	281	14	13	15	A	A	A	1	1	1	5	5	5
		10012419	7	110-7	Cowpasture Road (S)	Landmark Shopping Centre Acc	R	245	240	249	36	37	40	C	C	C	2	2	2	4	5	6
		10384	8	110-8		Cowpasture Road (N)	T	1,430	1,416	1,464	6	6	4	A	A	A	1	1	1	3	3	3
		10369	9	110-9		Airfield Drive (W)	L	137	127	142	1	1	0	A	A	A	0	0	0	1	1	1
		10380	10	110-10	Airfield Drive (W)	Cowpasture Road (S)	R	187	195	114	39	41	57	C	C	D	1	1	1	3	3	3
		10012504	11	110-11		Landmark Shopping Centre Acc	T	14	14	31	70	64	60	F	E	E	0	0	0	2	2	2
		10376	12	110-12		Cowpasture Road (N)	L	7	8	7	4	6	3	A	A	A	0	0	0	1	1	1
					All			4,200	4,184	4,343	76	80	33	F	F	C	3	3	2	66	64	54
111	Cowpasture Road	10443	1	111-1	Cowpasture Road (N)	Aviation Road (W)	R	127	131	180	47	50	77	D	D	F	2	2	3	8	9	19
	Cowpasture Road	10442	2	111-2		Cowpasture Road (S)	T	2,022	2,043	2,078	3	1	2	A	A	A	1	0	0	12	7	11
	Aviation Road	10440	8	111-8	Cowpasture Road (S)	Cowpasture Road (N)	T	1,488	1,482	1,472	8	8	9	A	A	A	1	1	1	16	16	17
		10441	9	111-9		Aviation Road (W)	L	23	25	36	10	9	11	A	A	A	0	0	0	2	2	3
		10446	10	111-10	Aviation Road (W)	Cowpasture Road (S)	R	0	3	7	76	63	47	F	E	D	0	0	0	0	1	1
		10445	12	111-12		Cowpasture Road (N)	L	129	132	199	30	29	23	C	C	B	1	1	1	2	2	2
					All			3,789	3,816	3,972	7	7	9	A	A	A	1	1	1	16	16	19
112	Qantas Boulevard	9472	1	111-1	Qantas Boulevard (N)	Qantas Boulevard (E)	L	170	135	396	0	0	10	A	A	A	0	0	1	2	2	8
	Qantas Boulevard	10001487	4	111-4	Qantas Boulevard (E)	Qantas Boulevard (N)	R	60	97	263	14	15	20	A	B	B	0	0	1	4	4	9
	Sixteenth Avenue East	9475	5	111-5		Sixteenth Avenue East (W)	T	795	890	907	4	5	14	A	A	A	0	0	2	5	16	20
		9477	11	111-11	Sixteenth Avenue East (W)	Qantas Boulevard (E)	T	587	659	678	0	1	2	A	A	A	0	0	0	1	1	3
		9476	12	111-12		Qantas Boulevard (N)	L	3	2	15	2	4	2	A	A	A	0	0	0	0	0	0
					All			1,614	1,782	2,259	2	4	10	A	B	B	0	0	1	5	16	20
113	Main Street	10011939	1	111-1	Main Street (N)	Flynn Avenue (W)	R	6	18	112	11	24	35	A	B	C	0	0	1	2	3	6
	Flynn Avenue	10011940	3	111-3		Flynn Avenue (E)	L	21	47	128	2	4	30	A	A	C	0	0	1	2	2	10
	Flynn Avenue	10011943	4	111-4	Flynn Avenue (E)	Main Street (N)	R	317	349	298	7	13	14	A	A	A	0	1	1	7	8	7
		10011944	5	111-5		Flynn Avenue (W)	T	451	510	582	4	9	9	A	A	A	0	1	1	7	9	12
		10011942	11	111-11	Flynn Avenue (W)	Flynn Avenue (E)	T	274	373	280	0	1	6	A	A	A	0	0	0	1	2	4
		10011941	12	111-12		Main Street (N)	L	8	56	83	1	2	7	A	A	A	0	0	0	1	1	4
					All			1,076	1,354	1,483	4	7	13	A	A	A	0	0	1	7	9	12
114	Southern Cross Avenue	10001301	5	111-5	Southern Cross Avenue (E)	Southern Cross Avenue (W)	T	11	33	159	0	0	5	A	A	A	0	0	0	0	0	5
	Main Street	10012045	6	111-6		Main Street (S)	L	4	5	0	1	1	0	A	A	A	0	0	0	0	0	1
	Southern Cross Avenue	10012044	7	111-7	Main Street (S)	Southern Cross Avenue (E)	R	1	5	1	1	1	20	A	A	B	0	0	0	0	1	1
		10012043	9	111-9		Southern Cross Avenue (W)	L	245	254	51	1	1	41	A	A	C	0	0	1	3	4	6
		10012046	10	111-10	Southern Cross Avenue (W)	Main Street (S)	R	16	29	47	1	2	5	A	A	A	0	0	0	1	1	2
		10001303	11	111-11		Southern Cross Avenue (E)	T	121	96	163	0	0	5	A	A	A	0	0	0	0	0	5
					All			397	422	421	1	1	9	A	A	A	0	0	0	3	4	6

Appendix E: Travel Time Comparison



P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Travel Time Comparison 2030
AM Peak 0730-0830
Route A

Northbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Cowpasture Road (South)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Fifteenth Avenue	0.48	0.48	0:02:12	0:02:12	0:02:19	0:02:19	0:01:54	0:01:54
Flynn Avenue	0.39	0.87	0:00:36	0:02:48	0:00:33	0:02:51	0:00:37	0:02:31
Westlink M7	0.27	1.14	0:00:37	0:03:24	0:00:27	0:03:18	0:00:26	0:02:57
Airfield Drive	0.20	1.34	0:00:51	0:04:16	0:00:46	0:04:04	0:00:41	0:03:38
Aviation Road	1.32	2.66	0:01:36	0:05:51	0:01:32	0:05:36	0:01:36	0:05:13

Southbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Cowpasture Road (North)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Aviation Road	0.33	0.33	0:00:33	0:00:33	0:00:31	0:00:31	0:00:37	0:00:37
Airfield Drive	1.33	1.66	0:01:48	0:02:21	0:01:47	0:02:18	0:01:37	0:02:14
Westlink M7	0.20	1.86	0:00:30	0:02:51	0:00:30	0:02:48	0:00:28	0:02:42
Flynn Avenue	0.26	2.12	0:00:48	0:03:39	0:00:49	0:03:38	0:00:42	0:03:24
Fifteenth Avenue	0.39	2.51	0:01:37	0:05:16	0:01:36	0:05:14	0:01:22	0:04:46

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Travel Time Comparison 2030
AM Peak 0730-0830
Route B

Eastbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Fifteenth Avenue (West)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Kingsford Smith Avenue	0.31	0.31	0:01:09	0:01:09	0:01:20	0:01:20	0:02:18	0:02:18
Cowpasture Road	0.82	1.13	0:01:39	0:02:48	0:01:37	0:02:58	0:01:51	0:04:10

Westbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Hoxton Park Road (East)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Cowpasture Road	0.59	0.59	0:01:24	0:01:24	0:01:24	0:01:24	0:01:24	0:01:24
Kingsford Smith Avenue	0.81	1.40	0:01:10	0:02:34	0:01:10	0:02:34	0:01:20	0:02:44

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Travel Time Comparison 2030
AM Peak 0730-0830
Route C

Eastbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Kingsford Smith Avenue	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Main Street	0.43	0.43	0:00:43	0:00:43	0:02:07	0:02:07	0:00:47	0:00:47
Bravo Avenue	0.13	0.56	0:00:16	0:00:59	0:00:53	0:03:00	0:00:16	0:01:03
Hall Circuit	0.12	0.68	0:00:17	0:01:17	0:00:47	0:03:47	0:00:18	0:01:21
Cowpasture Road	0.18	0.86	0:02:04	0:03:21	0:03:58	0:07:45	0:02:19	0:03:40

Westbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Cowpasture Road	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Hall Circuit	0.18	0.18	0:00:20	0:00:20	0:00:20	0:00:20	0:00:22	0:00:22
Bravo Avenue	0.12	0.30	0:00:16	0:00:36	0:00:16	0:00:36	0:00:20	0:00:43
Main Street	0.13	0.43	0:00:18	0:00:53	0:00:20	0:00:56	0:00:22	0:01:05
Kingsford Smith Avenue	0.43	0.86	0:01:22	0:02:16	0:01:40	0:02:36	0:01:35	0:02:40

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Travel Time Comparison 2030
PM Peak 1645-1745
Route A

Northbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Cowpasture Road (South)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Fifteenth Avenue	0.48	0.48	0:01:20	0:01:20	0:01:20	0:01:20	0:01:27	0:01:27
Flynn Avenue	0.39	0.87	0:01:16	0:02:36	0:01:20	0:02:40	0:01:26	0:02:53
Westlink M7	0.27	1.14	0:00:36	0:03:11	0:00:36	0:03:16	0:00:34	0:03:27
Airfield Drive	0.20	1.34	0:00:49	0:04:00	0:00:51	0:04:07	0:00:59	0:04:26
Aviation Road	1.32	2.66	0:01:39	0:05:39	0:01:39	0:05:46	0:01:39	0:06:05

Southbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Cowpasture Road (North)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Aviation Road	0.33	0.33	0:00:29	0:00:29	0:00:28	0:00:28	0:00:31	0:00:31
Airfield Drive	1.33	1.66	0:04:08	0:04:37	0:04:10	0:04:38	0:02:23	0:02:54
Westlink M7	0.20	1.86	0:00:49	0:05:26	0:00:59	0:05:37	0:00:24	0:03:18
Flynn Avenue	0.26	2.12	0:01:19	0:06:45	0:01:35	0:07:12	0:00:44	0:04:02
Fifteenth Avenue	0.39	2.51	0:04:00	0:10:46	0:04:02	0:11:14	0:02:03	0:06:04

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Travel Time Comparison 2030
PM Peak 1645-1745
Route B

Eastbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Fifteenth Avenue (West)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Kingsford Smith Avenue	0.31	0.31	0:01:08	0:01:08	0:01:13	0:01:13	0:02:21	0:02:21
Cowpasture Road	0.82	1.13	0:01:56	0:03:04	0:02:06	0:03:19	0:02:51	0:05:11

Westbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Hoxton Park Road (East)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Cowpasture Road	0.59	0.59	0:01:38	0:01:38	0:01:54	0:01:54	0:01:55	0:01:55
Kingsford Smith Avenue	0.81	1.40	0:01:51	0:03:29	0:01:34	0:03:29	0:03:06	0:05:01

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Travel Time Comparison 2030
PM Peak 1645-1745
Route C

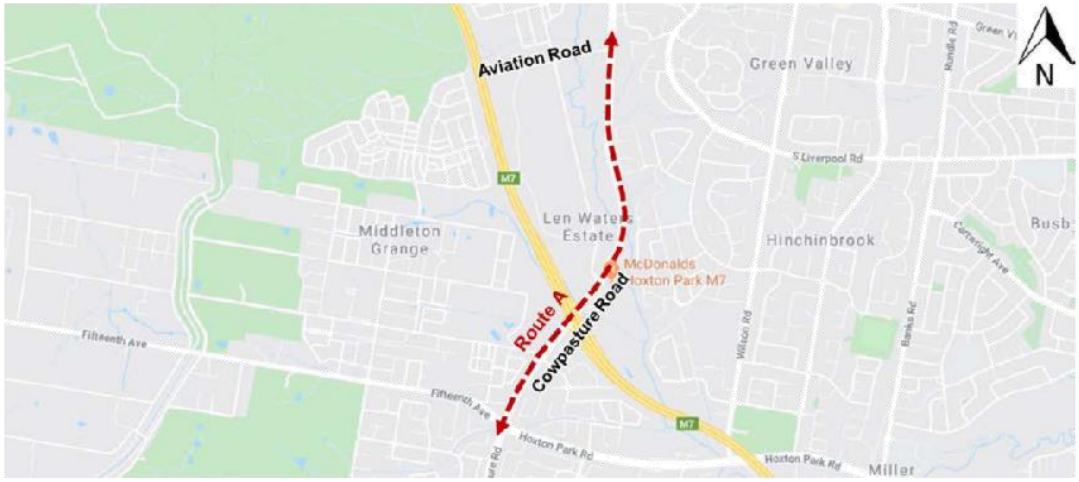
Eastbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Kingsford Smith Avenue	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Main Street	0.43	0.43	0:00:42	0:00:42	0:00:42	0:00:42	0:00:48	0:00:48
Bravo Avenue	0.13	0.56	0:00:16	0:00:58	0:00:20	0:01:02	0:00:20	0:01:08
Hall Circuit	0.12	0.68	0:00:16	0:01:14	0:00:18	0:01:20	0:00:18	0:01:25
Cowpasture Road	0.18	0.86	0:02:09	0:03:24	0:02:49	0:04:09	0:01:56	0:03:21

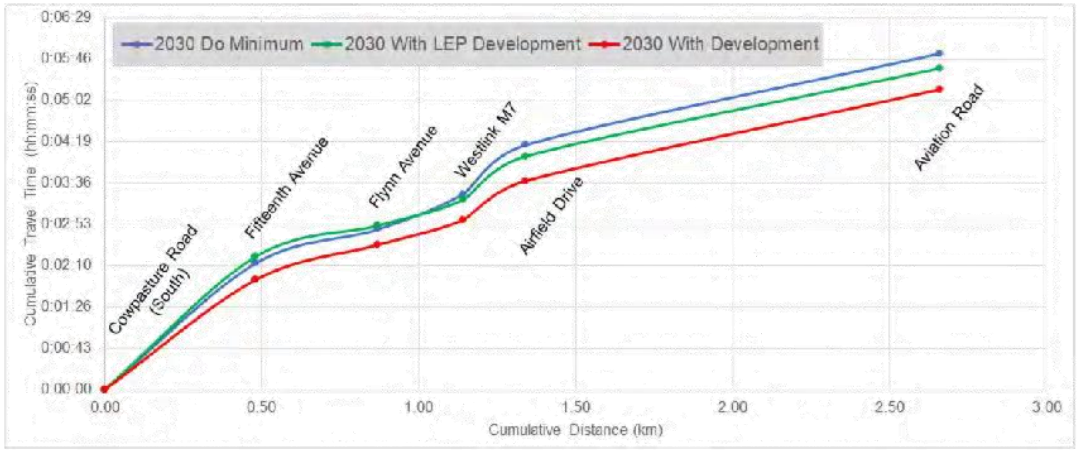
Westbound

Sections	Section Distance (km)	Cumulative Distance (km)	2030 Do Minimum	2030 Do Minimum (Cumulative)	2030 With LEP Development	2030 With LEP Development (Cumulative)	2030 With Development	2030 With Development (Cumulative)
Cowpasture Road	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00
Hall Circuit	0.18	0.18	0:00:23	0:00:23	0:00:25	0:00:25	0:00:36	0:00:36
Bravo Avenue	0.12	0.30	0:00:18	0:00:40	0:00:21	0:00:46	0:00:29	0:01:04
Main Street	0.13	0.43	0:00:21	0:01:01	0:00:27	0:01:13	0:00:26	0:01:31
Kingsford Smith Avenue	0.43	0.86	0:01:12	0:02:13	0:01:12	0:02:25	0:01:17	0:02:48

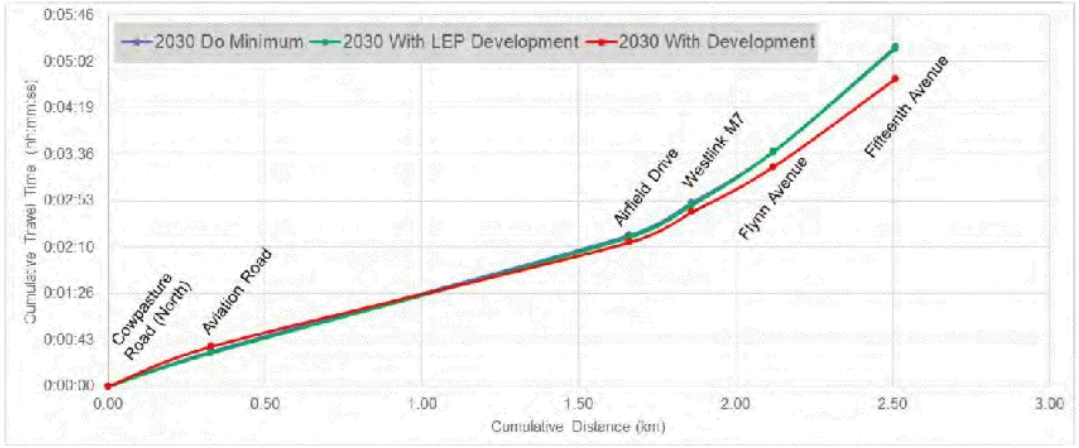
Route A – Cowpasture Road



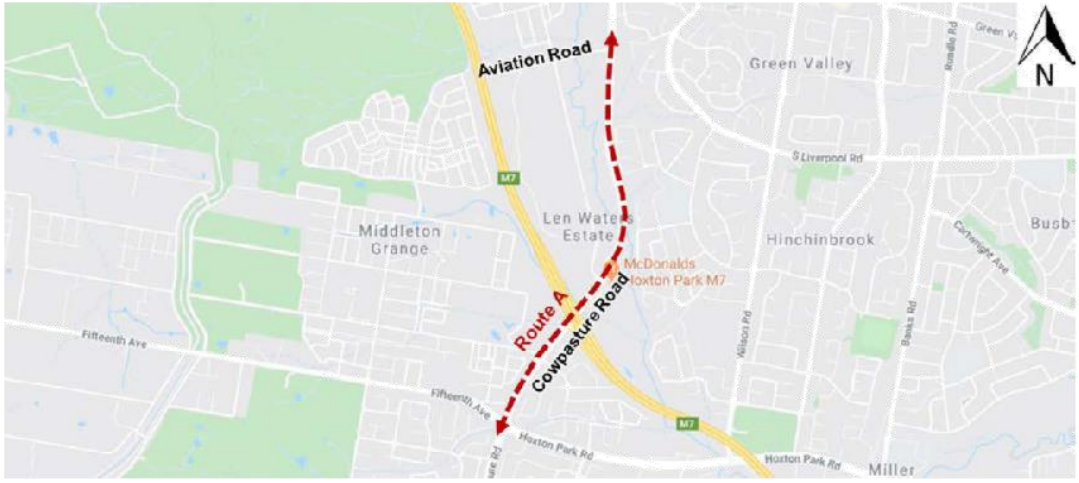
Route A – Northbound – AM Peak



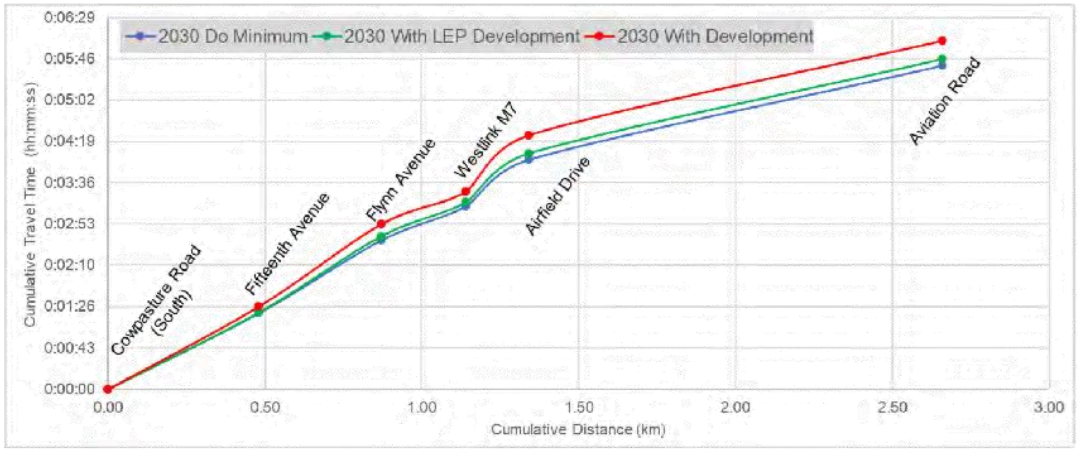
Route A – Southbound – AM Peak



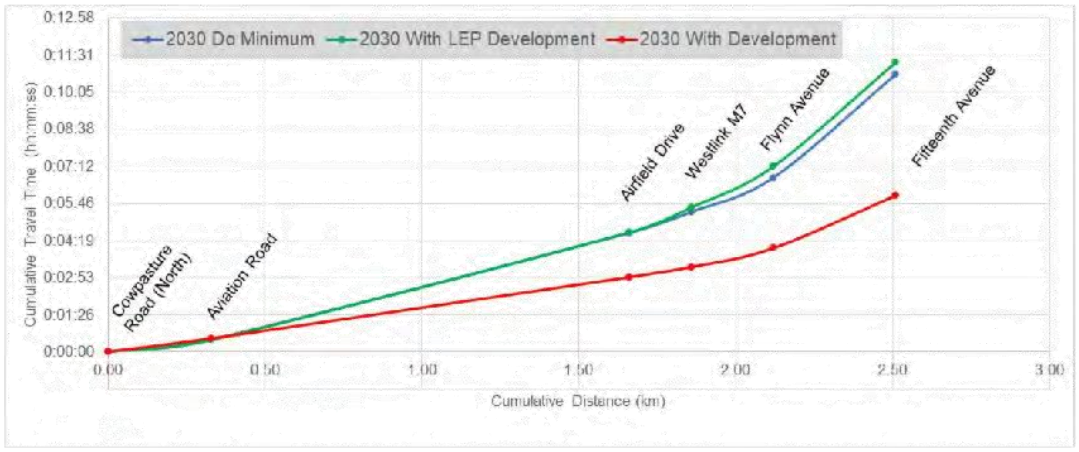
Route A – Cowpasture Road



Route A – Northbound – PM Peak



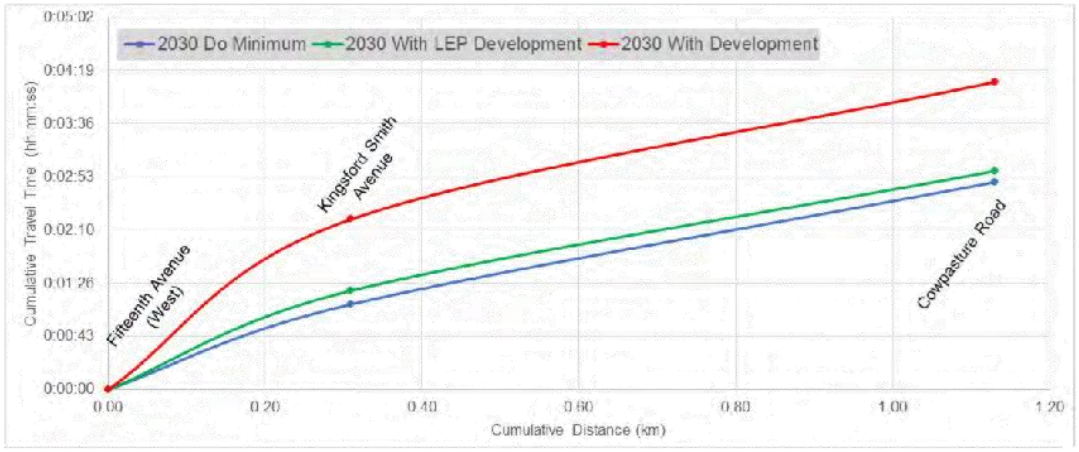
Route A – Southbound – PM Peak



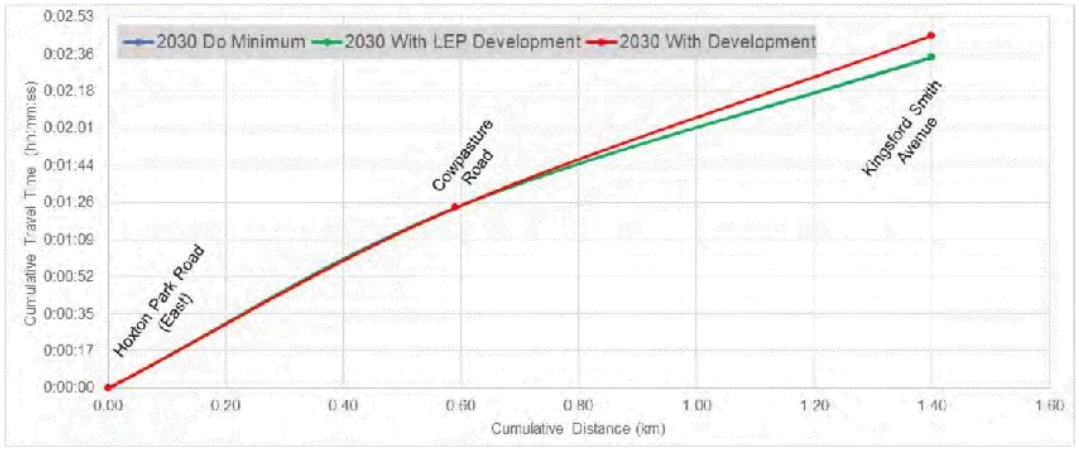
Route B – Fifteenth Avenue



Route B – Eastbound – AM Peak



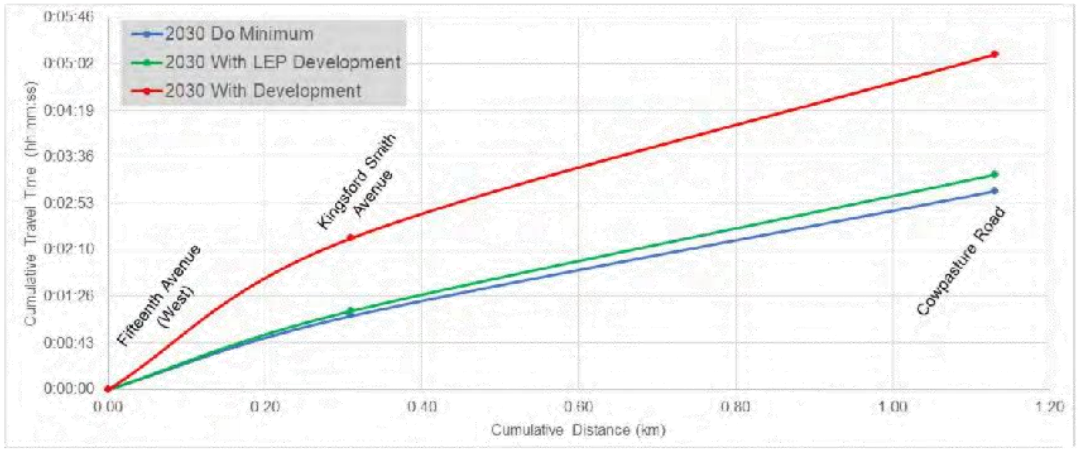
Route B – Westbound – AM Peak



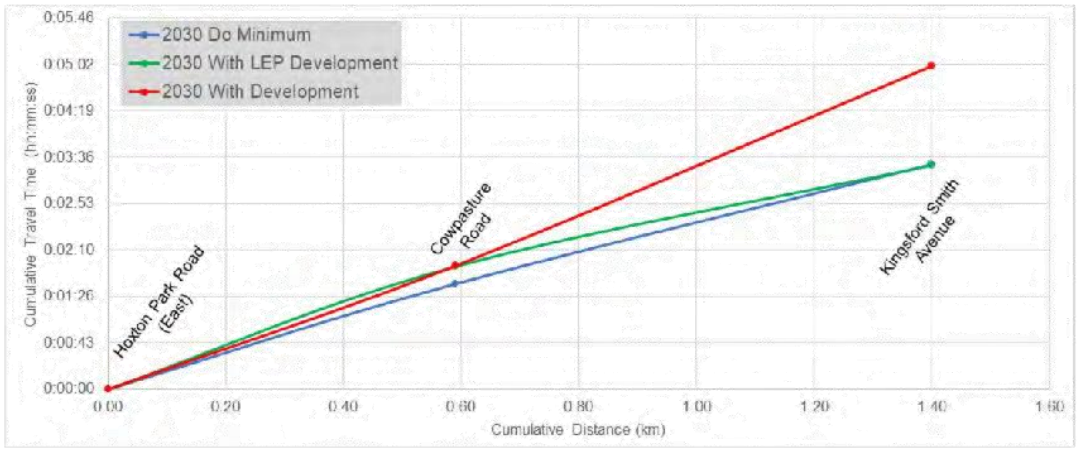
Route B – Fifteenth Avenue



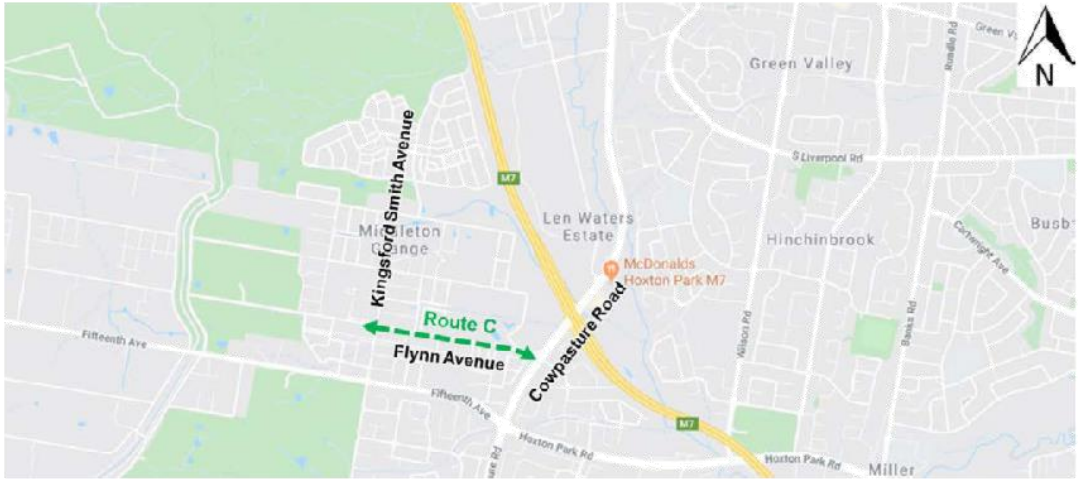
Route B – Eastbound – PM Peak



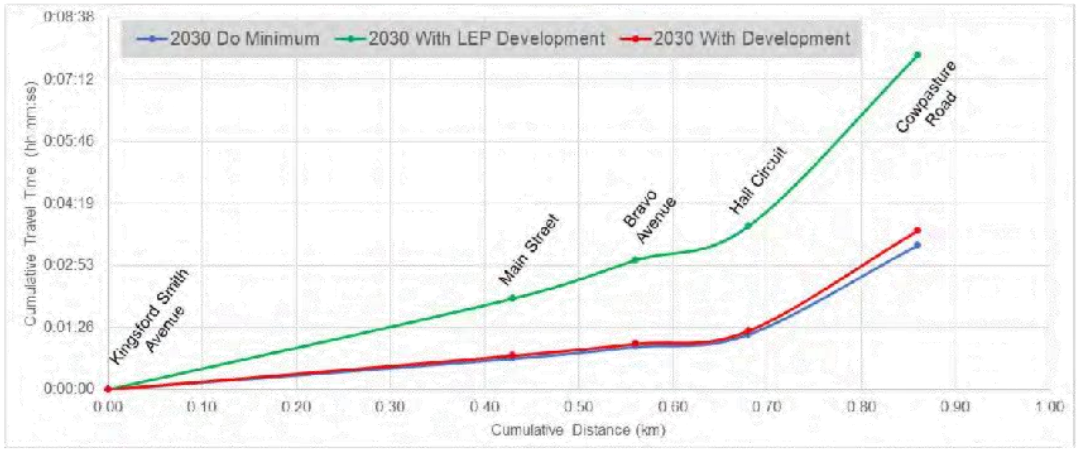
Route B – Westbound – PM Peak



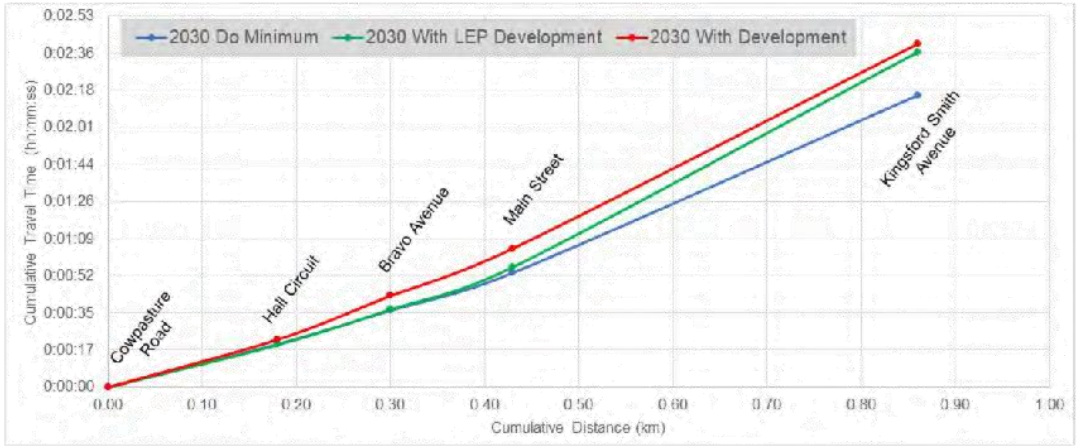
Route C – Flynn Avenue



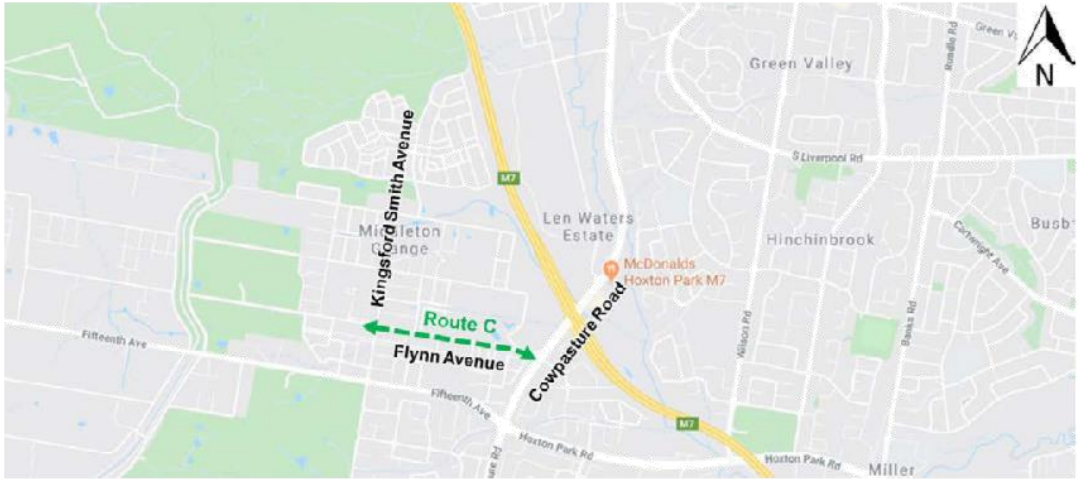
Route C – Eastbound – AM Peak



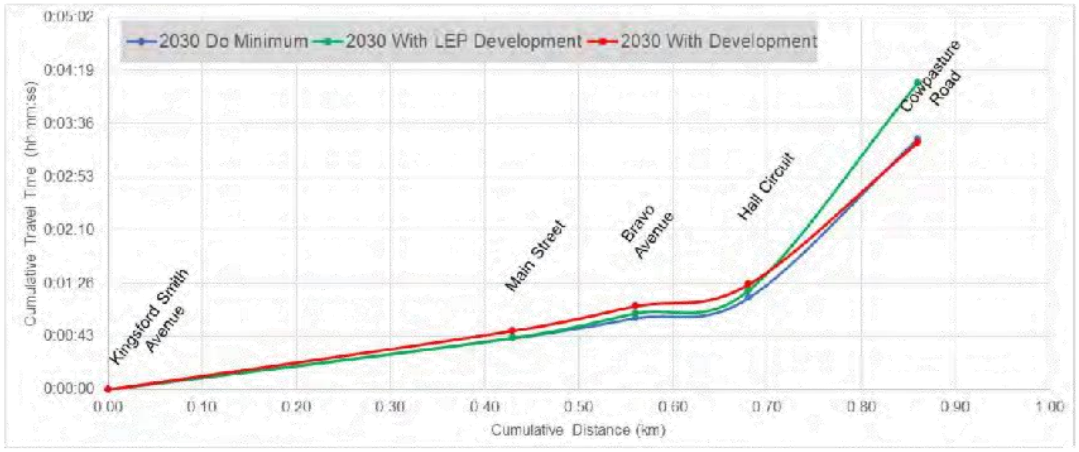
Route C – Westbound – AM Peak



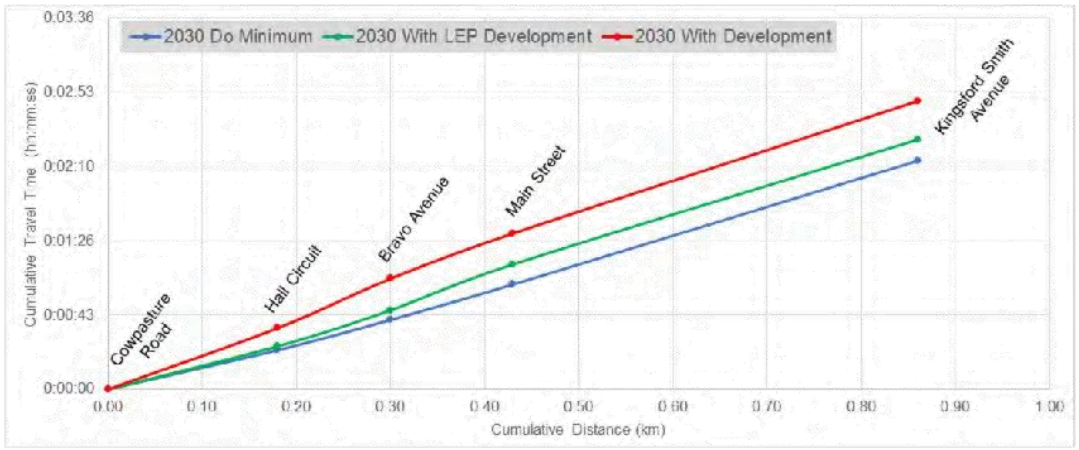
Route C – Flynn Avenue



Route C – Eastbound – PM Peak



Route C – Westbound – PM Peak



Middleton Grange Town Centre Planning Proposal:

Response to Elton Review of SIA



21 October 2019

This report has been prepared for
Pacific Planning Pty Ltd

by

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1 Background

In 2016, Judith Stubbs and Associates (JSA) prepared *Social Impact Assessment: Proposed Planning Changes to Middleton Grange Town Centre* ("the SIA")[1] on behalf of Manta Group to accompany a proposal to vary planning controls for Middleton Grange Town Centre.

The proposal was publicly exhibited in late 2018, and Liverpool City Council withdrew support for the proposal on 12 December 2018. Subsequently the proposal has been revised and a further submission is to be made to Council by the applicant.

As part of that further submission, Judith Stubbs and Associates has been asked by Pacific Planning Pty Ltd to respond to a review of the SIA undertaken by Elton Consulting on behalf of Charter Hall.[2] Charter Hall (via two investment funds) is the owner and operator of Carnes Hill Market Place. The development of Middleton Grange Town Centre is understood to provide competition to Carnes Hill Market Place once retail services are in operation.

This report provides the following:

- Supplementary information in response to substantive matters identified by Elton Consulting in their review of the SIA (Section 2 below);
- A review of the findings and recommendations of the SIA with regard to recent changes to the proposal (Section 3 below); and
- A detailed review and response to the Review undertaken by Elton Consulting (Section 4 below).

In summary, the following is noted.

The **supplementary information** provided in Section 2 below sets out more explicitly the methodology of the SIA, the locality for the purpose of assessment, a review of the crime environment and additional recommendations, and a discussion of relevant policy and case law with regard to consideration of impacts on surrounding businesses. There is nothing in this aspect of our response that calls into question the findings of JSA's SIA.

The review of the **recent changes to the proposal** likewise do not affect the findings or the recommendations of the SIA, although they are likely to result in a decrease in the quantum of social benefits associated with the supply of apartments and employment in the locality, and would likely reduce adverse amenity impacts related to character, density, traffic, parking and the like. The quantum of s94 contributions would also decrease.

Finally, a **detailed response to Elton's review of our SIA** has been set out at Section 4 below. We find nothing in this review to challenge our original findings and recommendations. A range of problems are evident in the Elton review including their understanding and application of

[1] Judith Stubbs and Associates (2016) *Social Impact Assessment: Proposed Planning Changes to Middleton Grange Town Centre*
[2] Elton Consulting (2018) *Social Impact Assessment: Proposed Planning Changes to Middle* [sic] *Grange Town Centre Submission Peer Review*

frameworks for the assessment of social impacts; their misunderstanding and apparent misrepresentation of the methodology, assumptions and findings of the SIA; the fact that they have undertaken no review of the substantive findings of the literature, data and analysis that we provided in the SIA; and that the opinions they express are not supported by appropriate literature or data analysis.

Unfortunately, it is evident that the reviewers lack the experience or qualifications to understand 'what matters' with regard to the framework for assessment or the analysis required. Again, there is nothing in their review that leads us to revised our overall findings and recommendations.

2 Supplementary Information

2.1 Introduction

In 2016, Judith Stubbs and Associates (JSA) prepared the *Social Impact Assessment: Proposed Planning Changes to Middleton Grange Town Centre* (the SIA) on behalf of Manta Group to accompany a proposal to vary planning controls for Middleton Grange Town Centre.

Following a review of the SIA, four areas have been identified where supplementary information is required in response to issues raised by Elton consulting.

These are:

- An outline of methodology;
- A clear statement of the locality with respect to section 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979*;
- Crime and crime context; and
- Impacts on surrounding local businesses from competition with Middleton Grange town centre.

2.2 Outline of methodology

The SIA did not contain an outline of the methodology used to conduct a Comprehensive Social Impact Assessment as required by Section 9.1 of Council's *Social Impact Assessment Policy*.

An outline of the methodology used in the SIA is set out below. The methodology used was as follows:

1. **Understand the project and its strategic and socio-economic context**

- The proposal is described in Section 3
- Set out the locality with regard to section 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979* (omitted and described below)
- The strategic context of the proposal is described in Section 4 of the SIA
- The Socio-economic context of the proposal is described in Section 5 of the SIA

2. **Undertake consultation**

Consultation with the local community and key stakeholders was undertaken to understand current impacts in the locality and to obtain input regarding potential positive and adverse impacts of the proposed development. Consultation with stakeholders and nearby residents is described in Section 8 of the SIA.

For the survey of residents, a stratified cluster sample was undertaken of nearby residents most likely to be impacted by the proposed development. A sampling target of 57 responses was set so that the 95% confidence interval for a variable measured at 50% prevalence would be +/- 10%. Cluster sampling requires intensive sampling of a smaller cluster to avoid sampling biases such as interviewing only those at home in the daytime. Sampling was carried out on the weekend to increase the probability of sampling workers.

3. Scope out potential social impacts

The scoping of potential social impacts is set out in Section 9 of the SIA based on consultation with Liverpool Council officers and other stakeholders; the survey of residents; the Social Impact Comment Initial Assessment Form; and professional expertise of Dr Judith Stubbs of Judith Stubbs and Associates.

4. Consider significant potential social impacts

A prediction of the demography of the proposed development is set out in Section 6 of the SIA.

A Social Comment Initial Assessment Form was completed as required by Council's *Social Impact Assessment Policy*. This is set out in Section 7 of the SIA using Council's pro-forma.

Significant potential social impacts are considered in Sections 10, 11, 12, 13 and 14 of the SIA.

Demand for social services and infrastructure as a result of the development is considered in Section 15 of the SIA.

5. Set out the likely benefits of the proposal and the potential adverse impacts

The executive summary sets out the likely benefits of the proposal and potential adverse impacts.

6. Identify mitigations and opportunities

Section 1 of the SIA sets out an assessment of additional s94[3] contributions and opportunities to address service, facility and open space shortfalls in Middleton Grange.

Section 2 of the SIA sets out recommendations to mitigate existing adverse impacts in the locality and potential adverse impacts arising from the proposed development; and to enhance likely benefits of the proposal.

2.3 The Locality

Section 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979* requires consideration of the likely impacts of the development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality.

"Locality" is a contextual term, in the sense that its specific meaning depends on the context of its usage.[4] The term has been interpreted in the planning sense generally to mean the extent of the

[3] s94 of the Environmental Planning and Assessment Act is now Section 7.11, however the nomenclature used in the SIA has been maintained.

area likely to be impacted upon by the proposed development.[5] In *Milne v Minister for Planning & Anor [No. 2]* [2007] NSWLEC 66 (concerning social impacts), Jagot J observed that "the nature of the development and its impacts will influence the scope of the locality to be considered".[6] In *Randall Pty Ltd v Willoughby City Council* [2005] NSWCA 205 (concerning economic impacts), the NSW Court of Appeal noted that "the concepts of "economic impact" and "locality" will interact", and that,

> Subject to identifiable outer limits of connotation, [section 4.15(1)(b)] should be construed as leaving to the consent authority, or the Commissioner on appeal, the identification of what constitutes a relevant impact in a particular case and what constitutes the appropriate locality within which to consider the impact.[7]

The primary locality was taken as Middleton Grange Suburb for the purposes of the SIA. This is the locality where the majority of the impacts of the development will be experienced, including increases in population, increase in dwelling numbers, impacts on transport and connectivity, increased demand for community and recreation services and facilities, the demands of specific population groups, impacts on health and wellbeing, impacts on crime and safety, amenity impacts and the impact of increased services and facilities.

The secondary locality was taken to be a wider region, using variously West Hoxton – Middleton Grange SA2 or Liverpool LGA as a proxy depending on the availability of data. This is the locality where impacts of the development such as increase in population, increase in dwelling numbers, impacts on transport and connectivity and increased demand for regional community and recreation services and facilities will be experienced. Due to the small proportional increase in population as a result of the proposal (between 0.5% and 0.8%) and in view of expected population growth in Liverpool of around 2.7% each year according to DPE 2014 populational projections, impacts in the secondary locality will be marginal. Other impacts experienced in this locality include local economy and employment opportunities and urban sustainability including commuting.

The wider locality is taken to be Greater Sydney, where impacts such as increased supply of housing and lower cost housing will be experienced.

2.4 Crime and Crime Context

2.4.1 Background

Elton Consulting raised concerns with respect to crime and safety. The Crime and Safety Context was considered in the SIA, but conclusions were not elevated to the Executive summary

[4] *Australian Municipal, Administrative, Clerical and Services Union v The Treasurer of the Commonwealth of Australia & Ors* [1998] 249 FCA.
[5] *Prestige Wholesale P/L v City of Burnside* [2005] SAERDC 12.
[6] at [24].
[7] *Randall Pty Ltd v Willoughby City Council* [2005] NSWCA 205 at par [42] per Basten JA (Giles & Santow JJA agreeing).

or included in the recommendations. We note that the proposed development is located within a low crime environment, as discussed below. Nonetheless, a development of this nature opens up opportunities for increased crime, particularly related to the public domain. As such, we have added a recommendation related to CPTED principles.

2.4.2 Recommendations

The following additional recommendations should be considered:

Recommendation 21

CPTED principles need to be applied to the design of public spaces including the plaza, streets and sidewalks, bus interchange area, parklands and drainage areas. Particular care needs to be given to the drainage areas to the east and west. Council needs to ensure that regular maintenance of the public domain occurs.

Rationale

CPTED principles are stated to lead to crime minimisation. Based on a review of crime maps for Greater Sydney, town centres are often hot spots for various crimes such as assault and malicious damage.

2.4.3 The Crime Context

We have further considered the crime context of the proposal. The table below shows crime statistics for Middleton Grange suburb compared to NSW. It can be seen that, with the exception of 'Theft - Steal from Motor Car', levels of crime in Middleton Grange are lower than averages for NSW, and in some cases much lower.

Table 2-1 BOCSAR NSW – Middleton Grange suburb Crime Rates – Year to June 2019

Crime	Area	Incidents	Rate (per 100,000 population)
Assault – Non Domestic	Middleton Grange	3	52.8
	NSW	31,614	402.1
Assault - Domestic	Middleton Grange	15	264.10
	NSW	30,434	387.1
Malicious Damage	Middleton Grange	15	264.1
	NSW	57,564	732.2
Motor vehicle theft	Middleton Grange	6	105.6
	NSW	13,244	168.5
Theft from motor vehicle	Middleton Grange	29	510.60
	NSW	38,063	484.2
Break and enter non dwelling	Middleton Grange	3	52.8
	NSW	9991	127.1
Break & enter dwelling	Middleton Grange	5	88.0
	NSW	25,508	324.5
Steal from person	Middleton Grange	0	0
	NSW	3892	49.5
Robbery	Middleton Grange	1	17.6
	NSW	2556	32.5
Theft steal from dwelling	Middleton Grange	4	70.4
	NSW	18788	239.0

Source: NSW BoCSAR, NSW Crime Tool, http://crimetool.bocsar.nsw.gov.au/bocsar/, accessed 18/10/2019.

The figures below show crime hotspots for Middleton Grange Suburb (shown by a star) and for Carnes Hill Market Place (shown by a cross), taken as a proxy for a commercial and retail development in the locality.

It can be seen that the immediate locality of the proposed development is in a low crime environment, with the site outside any crime hotspots.

Carnes Hill Market Place is within a hotspot for 'Theft – Break and Enter Non-Dwelling', 'Theft – Motor Vehicle Theft' and 'Theft – Steal from Motor Vehicle'. Similar impacts would be expected to be associated with the proposed town centre.

With regard to the residential component of the development, we were not able to identify a suitable proxy, and there is nothing in the predicted profile of residents to suggest a greater propensity towards crime than the existing residents of Middleton Grange.

Assault Domestic

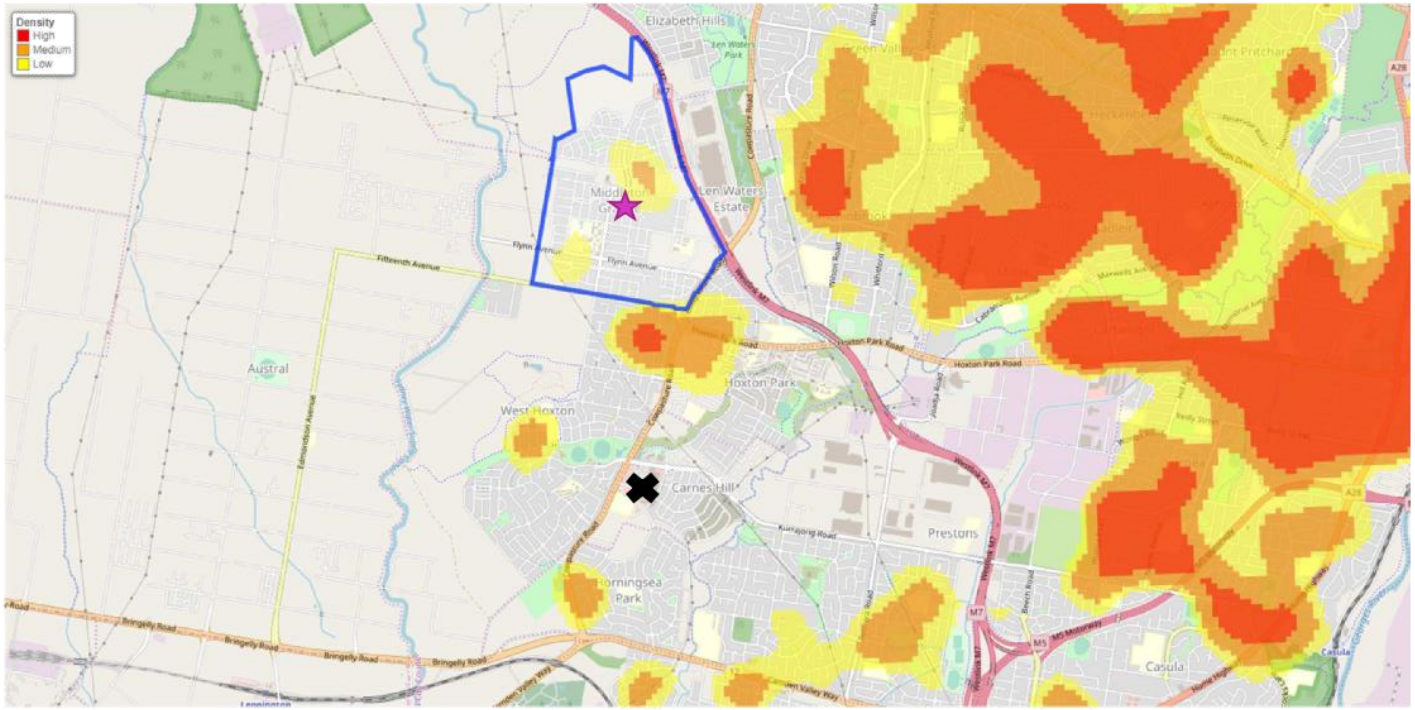


Figure 2-1: Incidents of Assault (Domestic assault) from July 2018 to June 2019, Middleton Grange suburb boundary identified

Source: NSW BoCSAR, NSW Crime Tool, http://crimetool.bocsar.nsw.gov.au/bocsar/, accessed 18/10/2019.

Assault Non-Domestic

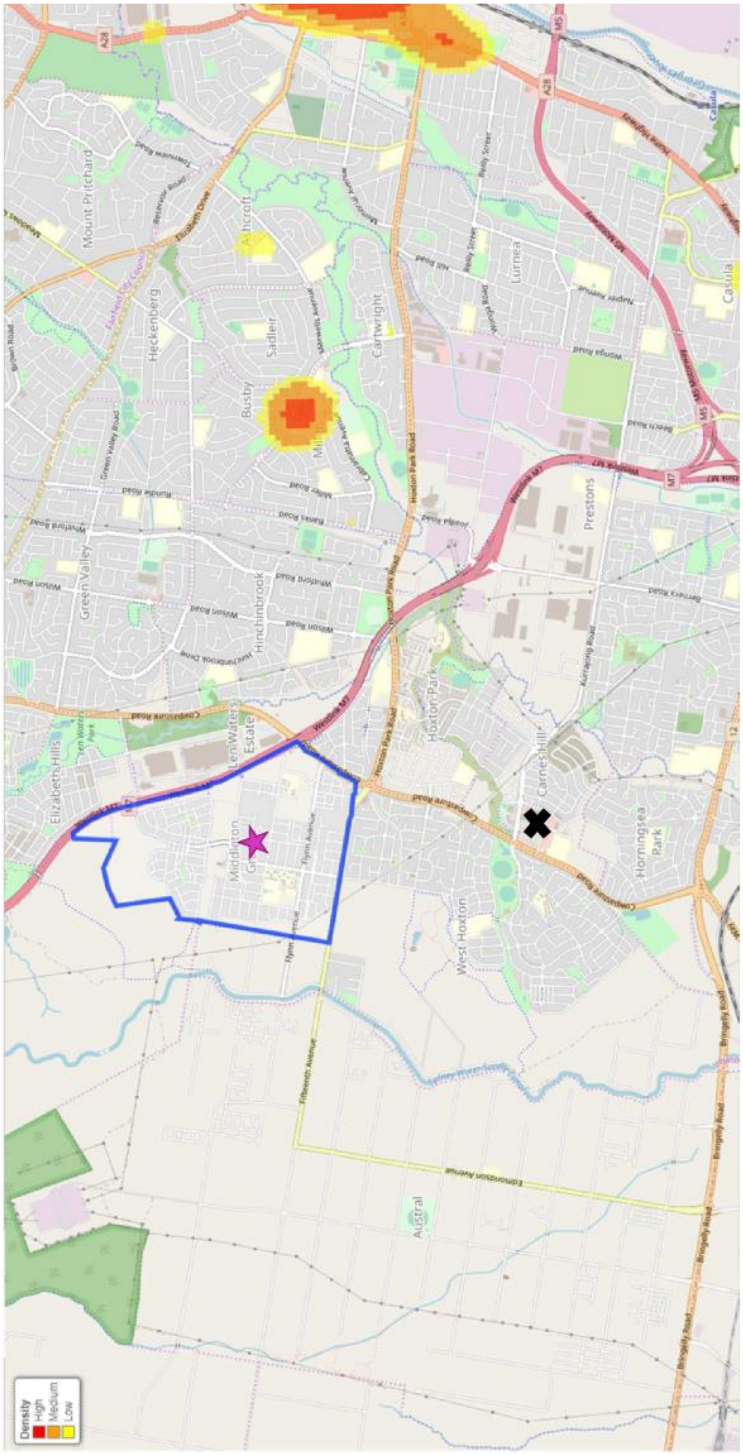


Figure 2-2: Incidents of Assault (Non-domestic assault) from July 2018 to June 2019, Middleton Grange suburb boundary identified,

Source: NSW BoCSAR, NSW Crime Tool, http://crimetool.bocsar.nsw.gov.au/bocsar/, accessed 18/10/2019.

Robbery

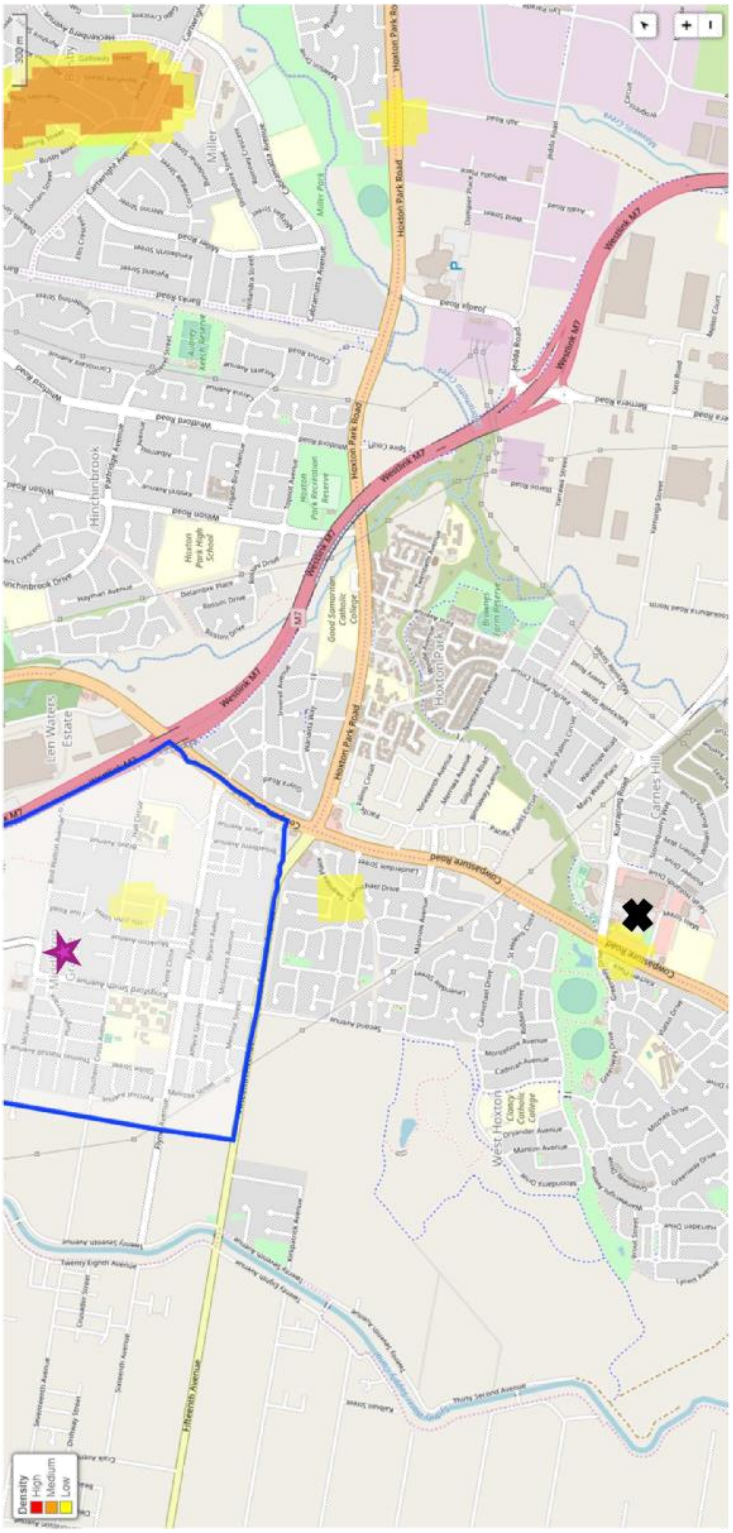


Figure 2-3: Incidents of Robbery from July 2018 to June 2019, Middleton Grange suburb boundary identified

Source: NSW BoCSAR, NSW Crime Tool, http://crimetool.bocsar.nsw.gov.au/bocsar/, accessed 18/10/2019.

Theft - Break and Enter Dwelling

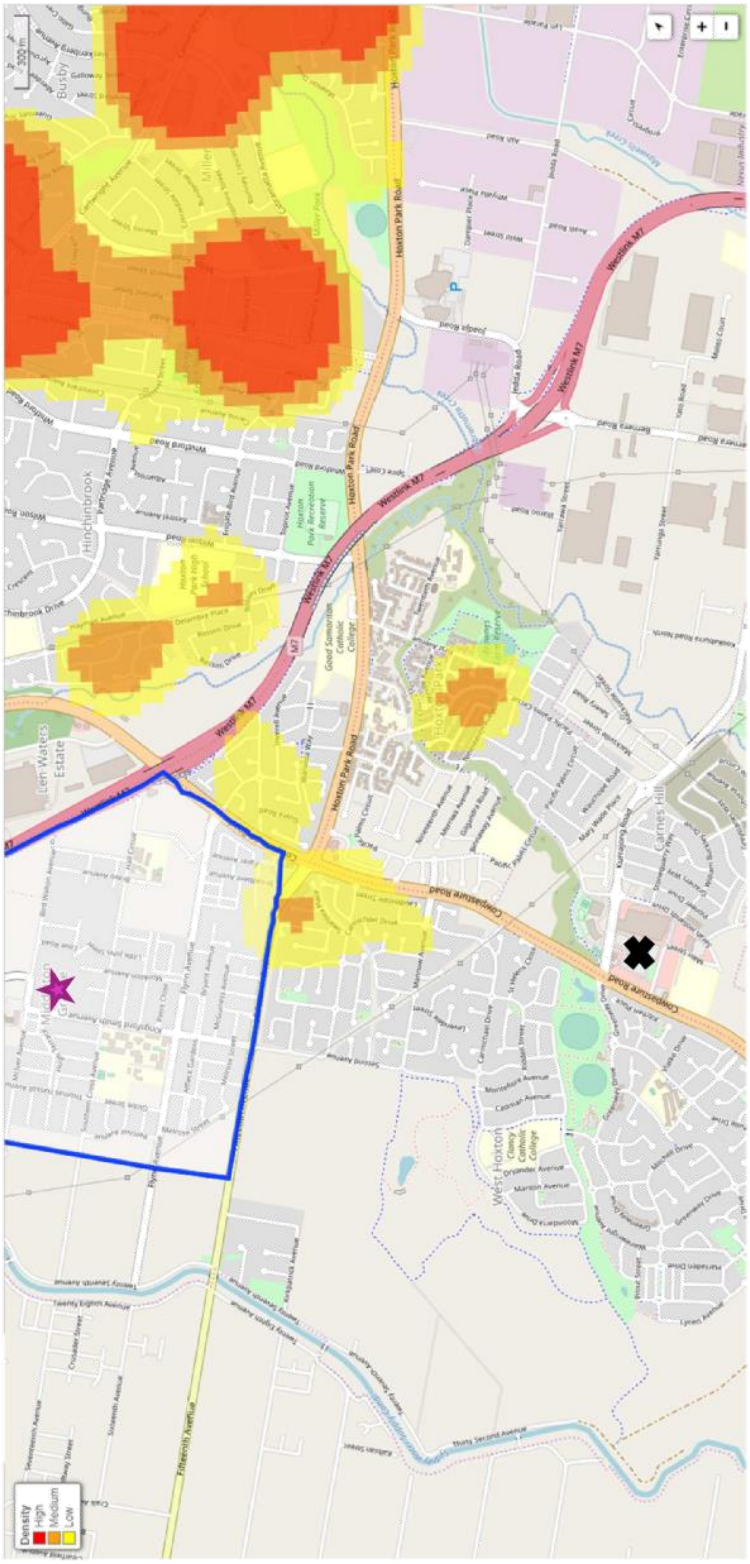


Figure 2-4: Incidents of Theft (Break & enter dwelling) from July 2018 to June 2019, Middleton Grange suburb boundary identified

Source: NSW BoCSAR, NSW Crime Tool, http://crimetool.bocsar.nsw.gov.au/bocsar/, accessed 18/10/2019.

Theft - Break and Enter Non Dwelling

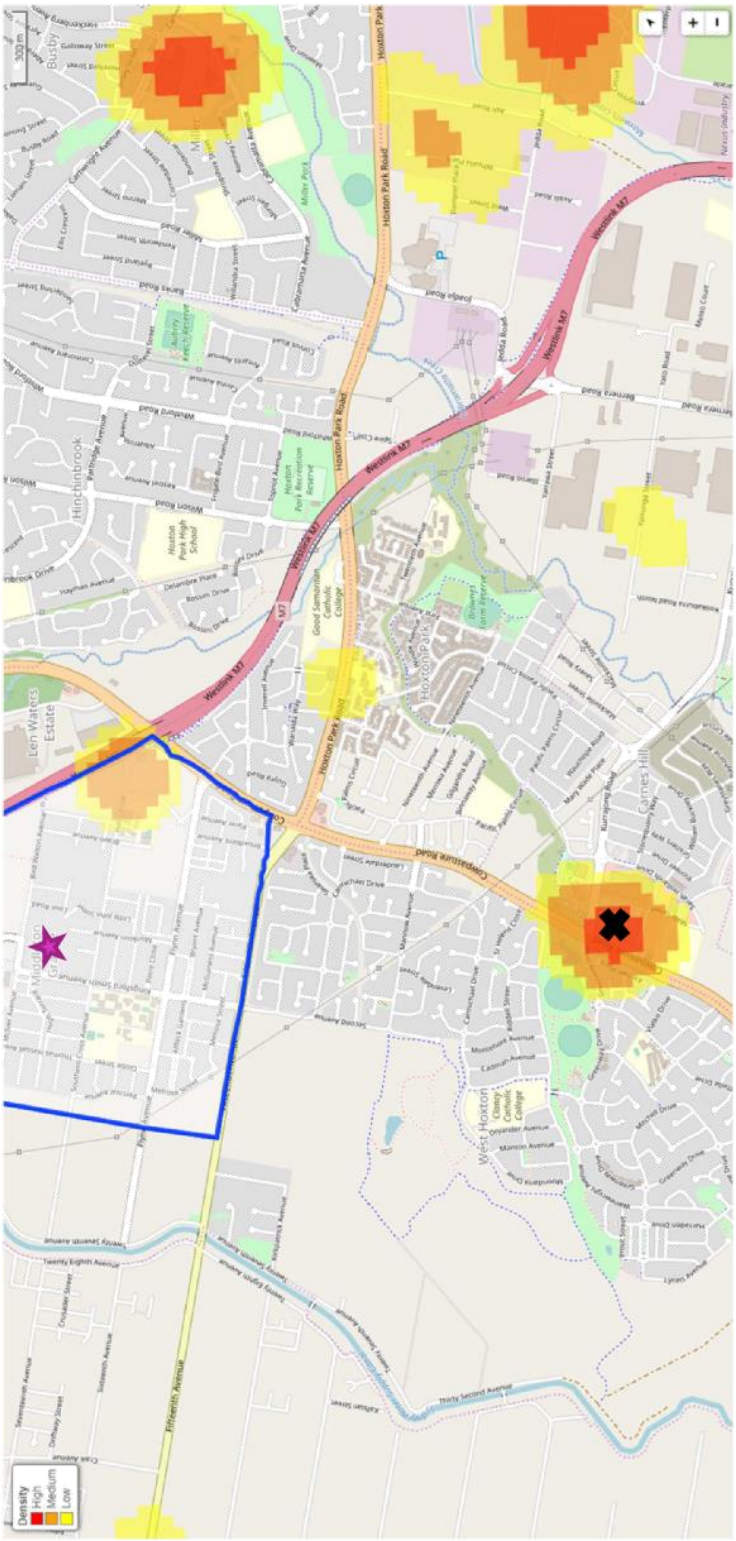
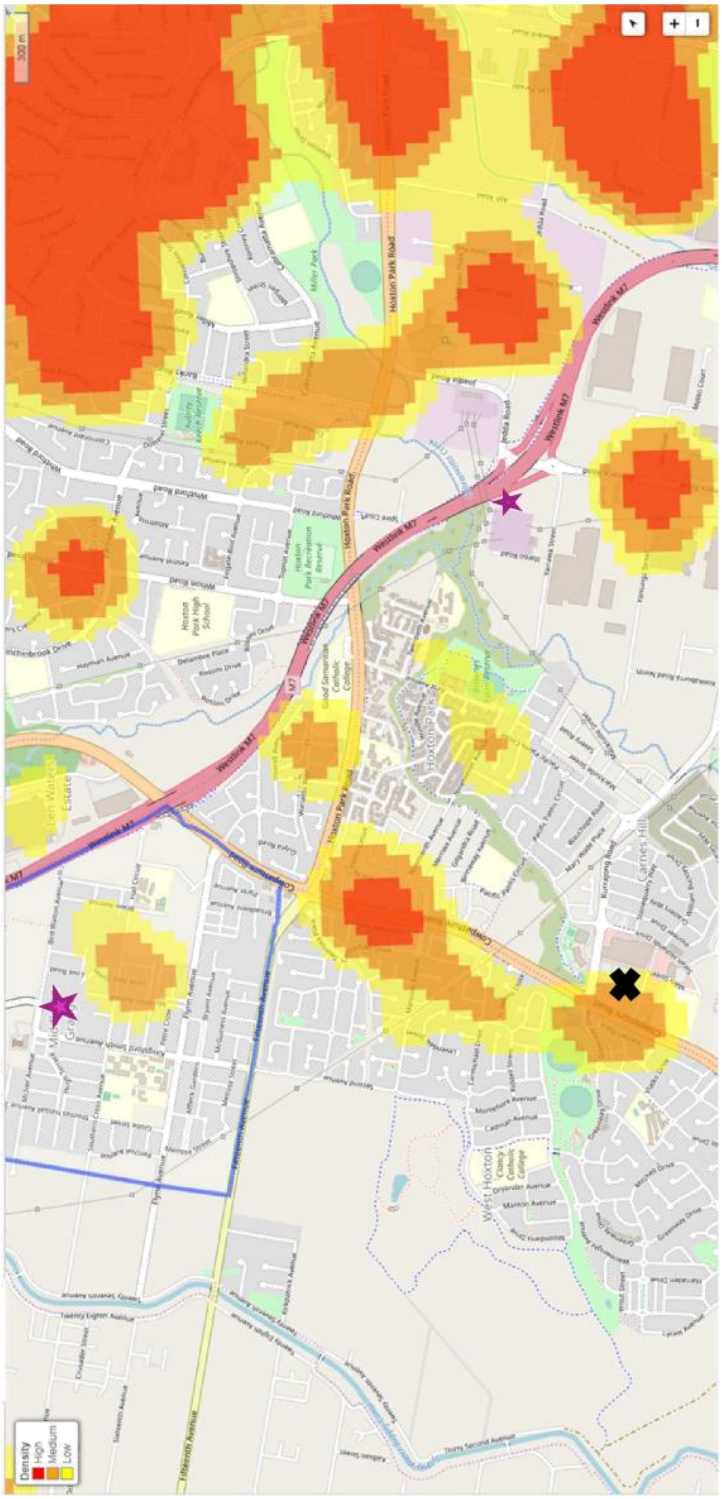


Figure 2-5: Incidents of Theft (Break & enter non dwelling) from July 2018 to June 2019, Middleton Grange suburb boundary identified

Source: NSW BoCSAR, NSW Crime Tool, http://crimetool.bocsar.nsw.gov.au/bocsar/, accessed 18/10/2019.

Theft – Motor Vehicle theft


Density
High
Medium
Low
Hoxton Park Road
Westlink M7
Hoxton Park Road
Hoxton Park Road
Westlink M7
Westlink M7
Westlink M7
Westlink M7
Westlink M7
Westlink M7
Cowpasture Road
Cowpasture Road
Cowpasture Road

Theft – Steal from Motor Vehicle

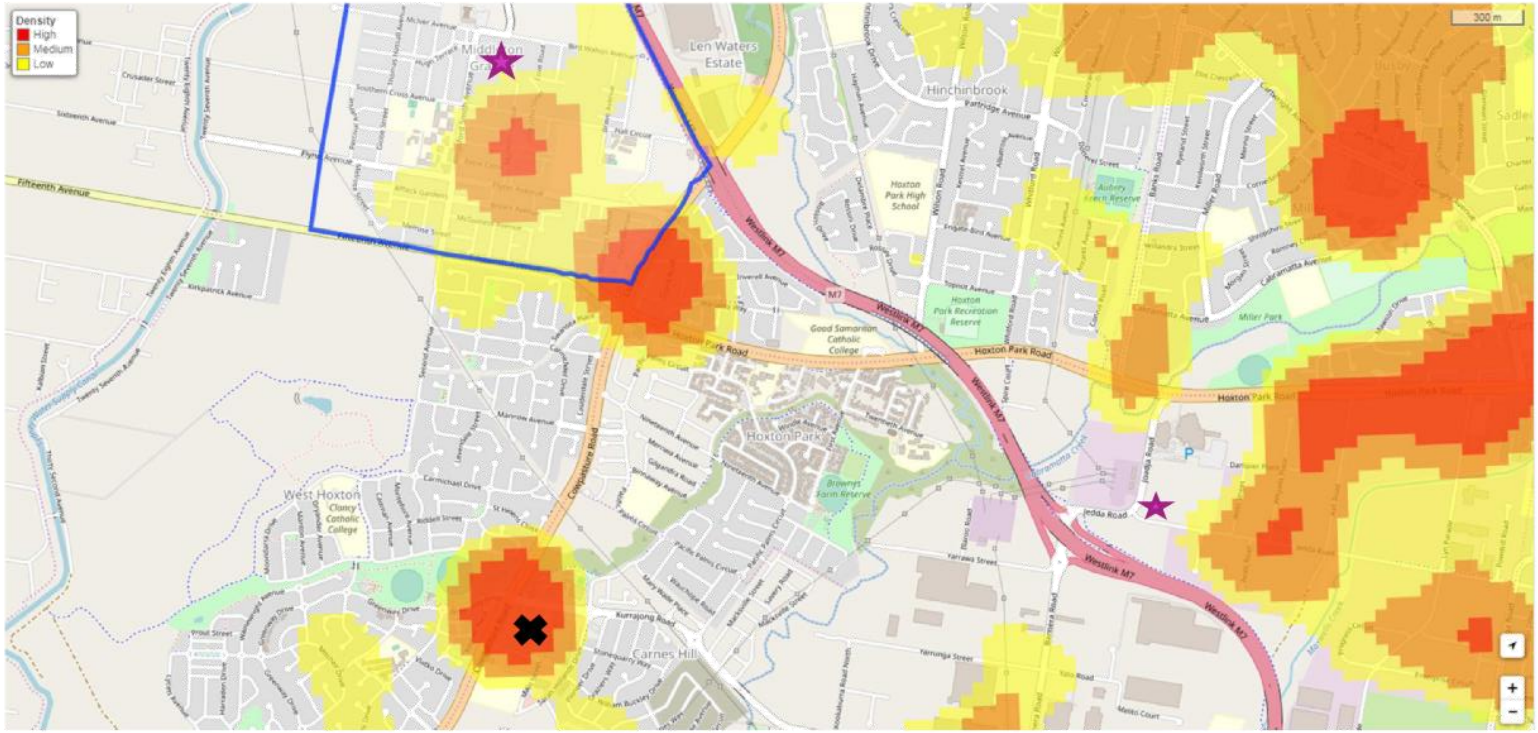


Figure 2-7: Incidents of Theft (Steal from motor vehicle) from July 2018 to June 2019, Middleton Grange suburb boundary identified
Source: NSW BoCSAR, NSW Crime Tool, http://crimetool.bocsar.nsw.gov.au/bocsar/, accessed 18/10/2019.

Theft – Steal from Dwelling

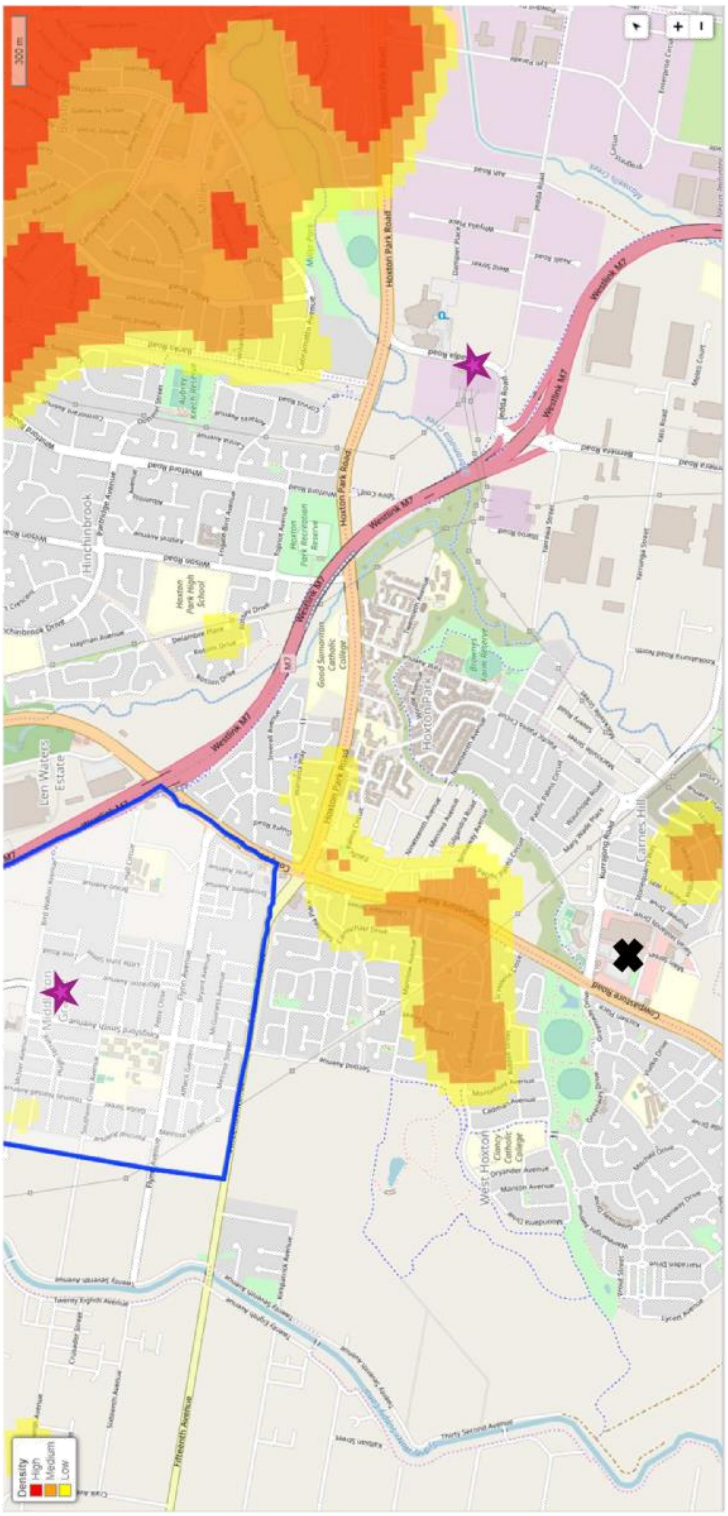


Figure 2-8: Incidents of Theft (Steal from dwelling) from July 2018 to June 2019, Middleton Grange suburb boundary identified

Source: NSW BoCSAR, NSW Crime Tool, http://crimetool.bocsar.nsw.gov.au/bocsar/, accessed 18/10/2019.

Theft – Steal from Person

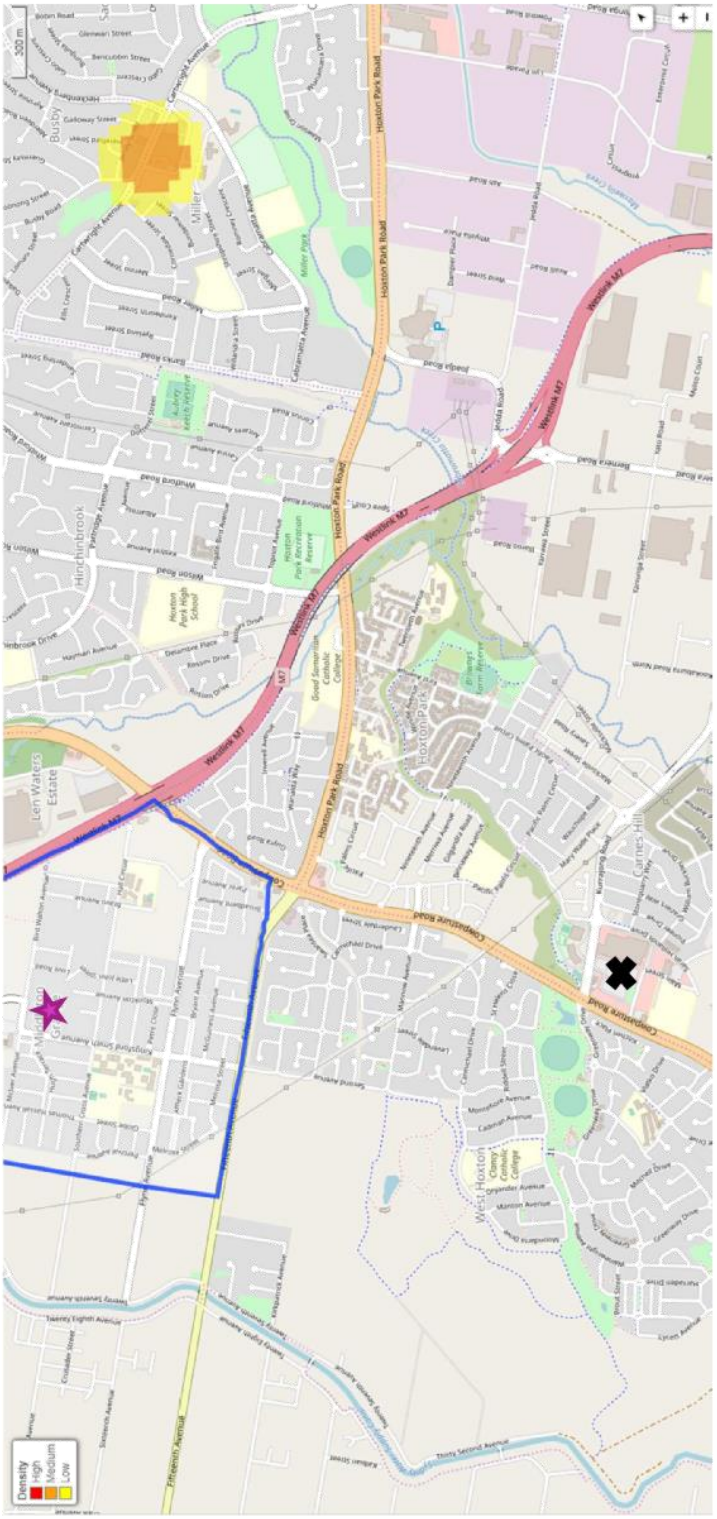


Figure 2-9: Incidents of Theft (Steal from person) from July 2018 to June 2019, Middleton Grange suburb boundary identified
Source: NSW BoCSAR, NSW Crime Tool, http://crimetool.bocsar.nsw.gov.au/bocsar/, accessed 18/10/2019.

Malicious Damage to Property

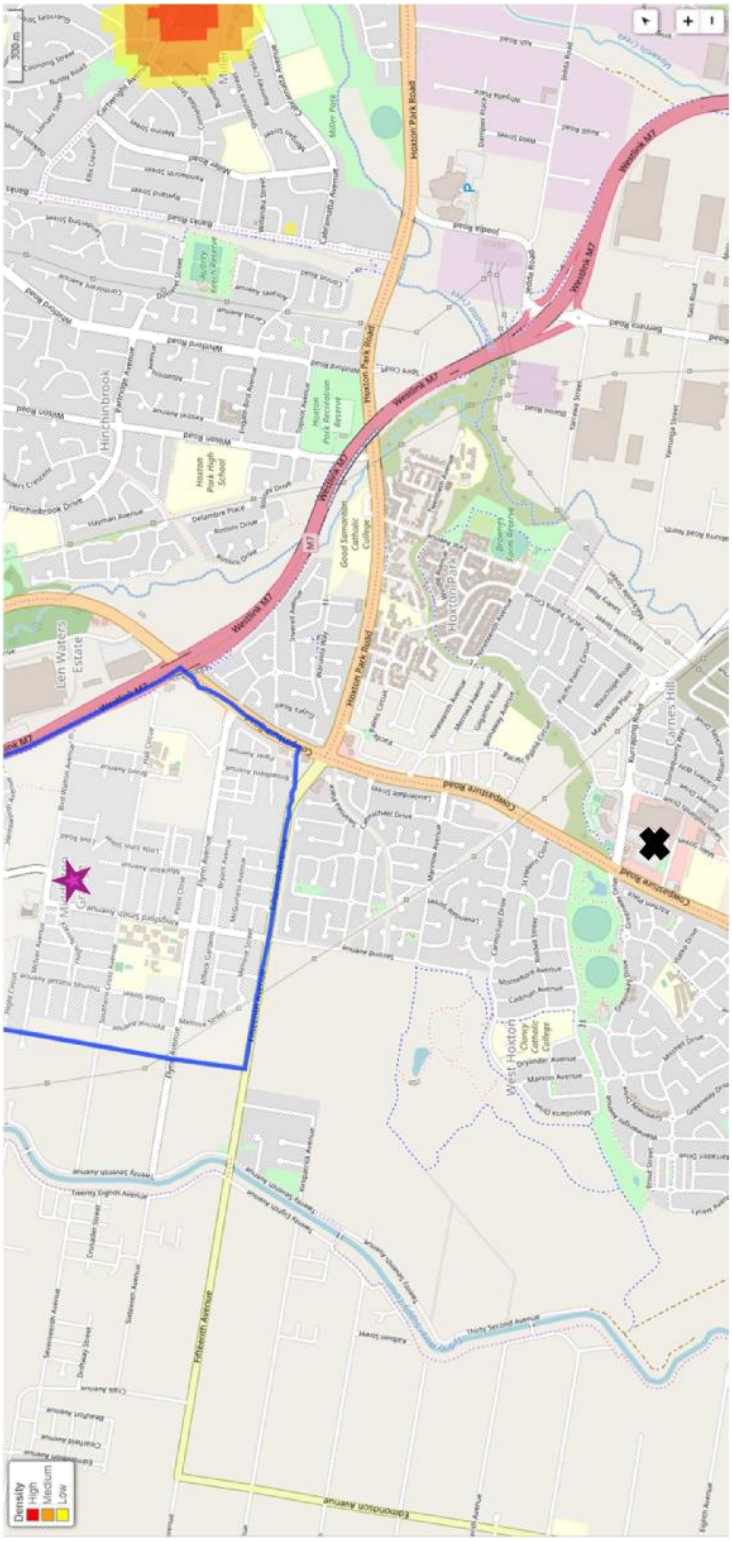


Figure 2-10: Incidents of Malicious Damage to Property from July 2018 to June 2019, Middleton Grange suburb boundary identified

Source: NSW BoCSAR, NSW Crime Tool, http://crimetool.bocsar.nsw.gov.au/bocsar/, accessed 18/10/2019.

2.5 Impact on surrounding local businesses

It is understood that the market for the proposed commercial development will come from population growth and from capturing market share from existing businesses in the secondary locality. It is understood that the development has been modelled to have an impact on Carnes Hill Market Place, by taking market share.

Depending on the degree to which loss of market share at Carnes Hill Market Place is replaced by population growth, it would be expected that reduced taking at Carnes Hill Market Place could lead to closure and downsizing of businesses, with resultant loss of employment.

At the same time, if market share relocates to Middleton Grange, increased employment would be expected there, with the loss of employment in one area likely offset by an increase in employment in another area.

As set out in the SIA at chapter 10, in 2011 Hoxton Park – Horningsea Park SA2 was characterised by high levels of commuting, with 10% of workers in the SA2 working in the SA2. Similarly, 27% of jobs in Hoxton Park – Horningsea Park SA2 were filled by residents of the SA2. At the level of the SA2, the overall social impact would be neutral, with loss of jobs at Carnes Hill Market Place offset by new jobs at Middleton Grange Town Centre.

The analysis of commuting patterns in the SIA suggests that changes in employment will be experienced at a wider regional locality, as shown in Figure 10.7 of the SIA, reproduced below. At the regional scale, the overall social impact would be neutral, with loss of jobs at Carnes Hill Market Place offset by new jobs at Middleton Grange Town Centre.

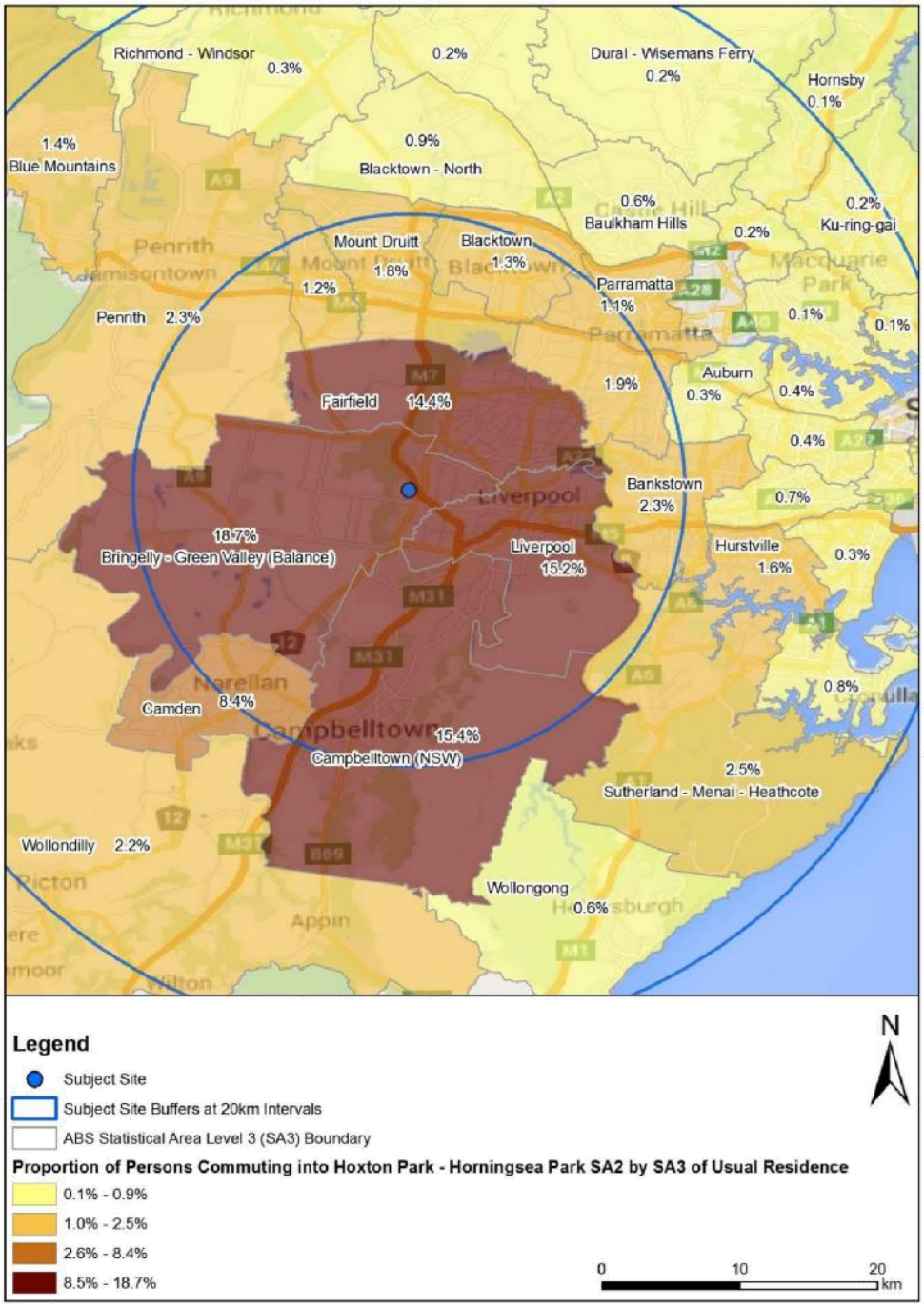


Figure 2.11: Persons Commuting into HP-HP SA2 by Sub-Region (SA3) of Usual Residence (Proportion of In-Commuters)
Source: JSA 2016, based on data from ABS Census of Population and Housing 2011

There is likely to be a **significant social benefit** arising from increased competition due to additional business opportunities in Middleton Grange Town Centre, and increased competition is seen as in the public interest from a public policy perspective.

As an example, the object of the *Commonwealth Competition and Consumer Act 2010* is:

> *…to enhance the welfare of Australians through the* ***promotion of competition*** *and fair trading and provision for consumer protection.* [emphasis added]

There is extensive case law in NSW with regard to the consideration of competition in planning decisions.

It is irrelevant to consider impacts arising from competition with existing businesses or the fact that there is no "need" for a particular development in an area, the rationale being that these are issues to be resolved by market forces rather than the planning system.[8]

In *Milne v Minister for Planning & Anor [No. 2]* [2007] NSWLEC 66 at par [23] Jagot J stated:

> *The fact that all people are members of society and engage in some form of economic activity does not mean that each and every impact of development on a person amounts to a social and economic impact. It is for this reason that, when dealing with the social and economic impacts of development, courts have rejected notions of the profitability of individual businesses and focused on the potential for detriment to the "extent and adequacy of facilities available to the local community if the development be proceeded with" (Kentucky Fried Chicken Proprietary Limited v Gantidis and Another (1979) 140 CLR 675 at 687).*

Focussing on the test of *"extent and adequacy of facilities available to the local community if the development be proceeded with"*, construction of the Middleton Grange Town Centre would lead to an increase to the extent and adequacy of facilities available within the primary locality of Middleton Grange Suburb (from an existing level of no services or above the services that could be delivered under the current planning controls), and so would be a positive social impact.

At the level of the SA2, any closure of a business in Carnes Hill Market Place as a result of competition from Middleton Grange Town Centre would be offset by the availability of a new business in Middleton Grange Town Centre, and consequently no impact on the extent and adequacy of facilities available to the local community of the secondary locality would be expected.

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[8] *Ampol Ltd v Rockdale Municipal Council* (1953) 19 LGRA 64; *Ampol Petroleum Ltd v Warringah Shire Council* (1956) 1 LGRA 276 at 278; *Neptune Oil Pty Ltd v Ku-ring-gai Municipal Council* (1958) 3 LGRA 316 at 321; *Total Oil Products (Aust) Pty Ltd v Sydney City Council* (1962) 8 LGRA 217; *Kentucky Fried Chicken Pty Ltd v Gantidis and Anor* (1979) 140 CLR 675 at 687; *Fabcot Pty Ltd v Hawkesbury City Council* (1997) 93 LGERA 373 at 378.

3 Review of the SIA

It is understood that the proposal assessed in the SIA has been amended in response to matters raised following community exhibition in late 2018. The changes include a reduction in height and FSR, an increase in open space and a proposed medical precinct.

The effect of the amendment has been to decrease the number of dwellings in the proposal from 924 to 671, and reduce the commercial Gross Floor Area (including the medical precinct) from 56,407 m^2 to 49,470 m^2.[9]

The changes to the proposed development do not affect the findings or the recommendations of the SIA, however they will lead to a decrease in the quantum of any social benefits associated with the supply of apartments and employment in the locality, and would likely reduce adverse amenity impacts related to character, density, traffic, parking and the like.

The assessment regarding opportunities from the use of s94 contributions will also decrease in quantum.

[9] Yield analysis table attached to an email to Liverpool City Council from Pacific Planning Pty Ltd dated 22 August 2019

4 Review by Elton Consulting

4.1 Scope of Review

In 2016, Judith Stubbs and Associates (JSA) prepared the *Social Impact Assessment: Proposed Planning Changes to Middleton Grange Town Centre* (the SIA) on behalf of Manta Group to accompany a proposal to vary planning controls for Middleton Grange Town Centre. In 2018, Elton Consulting was commissioned by Charter Hall to undertake a review of the Social Impact Assessment prepared by JSA ("the Review").

Dr Judith Stubbs has extensive experience of peer review, particularly relating to work as an expert witness in Social Impact Assessment for local and State Government authorities in NSW and Victoria. In her experience, review of work by others requires:

- A review and assessment of methodology;
- A review of evidence and analysis, including literature, quantitative data and additional research;
- A statement as to differences in data analysis and relevant literature; and
- A statement as to differences in interpretation of data where both parties are in agreement as to the relevant literature and data to be relied upon.

The Review undertaken by Elton Consulting did not undertake any additional research or undertake a review of evidence and analysis, that is, it did not address any factual matters contained in the SIA, and was largely restricted to a critique of methodological issues.

The Elton Review also contained a number of unsupported matters of opinion, particularly related to the length and layout of the report and to the interpretation of data.

Importantly, the Review does not note the conflict of interest between the client, Charter Hall and the proposed planning changes to Middleton Town Centre. Charter Hall (via two investment funds) is the owner and operator of Carnes Hill Market Place.

Carnes Hill Market Place is 4 kilometres from the proposed Middleton Grange Town Centre, and, depending on the take up of retail space in Middleton Grange Town Centre, is likely to experience competition from Middleton Grange Town Centre. In this regard, it is noted that increased competition is generally considered to be in the public interest, in case law and public policy, as discussed in Section 2.5 above.

4.2 Qualifications of Reviewers

Appendix E of Liverpool City Council *Social Impact Assessment Policy* sets out competency requirements for undertaking social impact assessment. These include:

Does the consultant have qualifications and/or substantial field experience in the relevant technical area?

Dr Judith Stubbs holds a Bachelor of Social Work majoring in Case Work and Community Development from the University of NSW, and an interdisciplinary PhD in housing policy, land economics and planning law from RMIT, and has won State and national awards for research related to affordable and alternative housing and community planning and social research. The Bachelor of Social Work included course work related to quantitative statistical and demographic analysis, social planning and research, to public policy analysis and to community consultation and group work providing a valuable tool kit for social impact assessment and consultation.

She has more than thirty years' experience in social impact assessment, including working as a social planner and community worker for Wollongong, Camden and Walgett Councils. She is a recognised expert in the area of social impacts, and has appeared as an expert witness in the NSW Land and Environment Court, VCAT, the NSW Supreme Court and other jurisdictions on numerous occasions, and was independent advisor to the NSW Independent Liquor and Gaming Authority for eight years including peer review of all Class 2 SIAs Gaming Machine Applications and development of guidelines, legislation and methodology.

The Elton Consulting Review was prepared by Nash Condran and Felicity Richards, and reviewed by Sonia Dalitz.

According to the brief CV published on the Elton Consulting Web Site, Sonia Dalitz is a project manager. She holds a Graduate Diploma in Education from the Australian Catholic University, and a Bachelor of Arts in English Literature from the University of Sydney. She is currently completing a Master of Politics and Policy at Macquarie University and holds a Community Services Certificate from the Western Institute of TAFE.

Felicity Richards is also described as a project manager. She holds a Bachelor of Arts and a Bachelor of International Development from the University of Adelaide, and a Master of International Business (Diplomacy and Trade) from Monash University. She is currently undertaking a Graduate Certificate in Social Impact Assessment at Macquarie University.

According to Mr Condran's LinkedIn profile, he was employed at Elton Consulting for one year and five months as a graduate. He holds an advanced diploma in Hospitality Management from TAFE Illawarra, a Bachelor of Commerce from University of Wollongong and a Masters of International Development from UNSW.

Based on this information, the Review group appears to lack formal qualifications in the area of social impact assessment or in relevant disciplines such as social science, human geography, urban or social planning, and may lack skills in the areas of quantitative analysis and of policy analysis. They appear to rely on practical experience, and their practical experience is not detailed.

4.3 The Elton Review

4.3.1 Background

The Review considers the following aspects of the SIA:

- Methodology and Scope characterised as "depth";
- Methodology;
- Social Impacts;
- Community Consultation;
- Conclusion; and
- s94 Contributions Plan.

A review and response to each of these sections is set out below.

4.3.2 Comments on 'depth'

This section of the Elton Review relies heavily on the Department of Planning and Environment *Draft SIA Guideline*. That Guideline was developed to provide direction on assessing State significant resource projects (that is, State significant mining, petroleum production and extractive industry projects) with regard to both positive and negative social impacts in the context of the environmental impact assessment (EIA) process under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Table 1 of the Review evaluates the SIA with regard to the criteria in Table 2 of the *Draft SIA Guideline*. The final Guideline was issued in final form in September 2017, and Table 2 was extensively revised, presumably as a response to feed back and to clarify the principles in the Table. The current descriptions in Table 2 of the final Guideline are much tighter and better articulated that in the Draft Guideline, and it is not clear why the Elton Review did not rely on them.

Our response below is to Table 1 of the Review, which based on the *Draft SIA Guideline* rather than the final Guideline.

First, it is not clear how Guidelines for the assessment of project such as open cut mines adjacent to urban areas are relevant to a mixed use urban development such as Middleton Grange Town Centre. Notable differences relate to the ongoing monitoring of, for example, open cut coal mining activities with respect to noise, dust and water pollution; health impacts on surrounding populations; issues related to compulsory land acquisition; and remediation environmental works with significant amenity impacts. By comparison, it is not normal practice to require ongoing monitoring of the impacts of residential or retail development during the operational stage or for other developments such as urban expressways, nor to consider or carry out the type of mitigations required under mining projects. This is because the impacts are quite predictable and manageable by appropriate mitigations.

In particular, and of relevance, the Guideline states:

> *SIA is not a one-size-fits-all process. It needs to be proportionate and tailored to suit the project's context and the nature and scale of its impacts.*[10]

This is at odds with the 'tick a box" or "recipe book" approach taken by the Elton Review.

Nonetheless, the approach taken by the reviewers enables them to provide a visual 'prop' at Table 1 with a preponderance of red dots on it, even though the areas shown in Elton's table as "not evident or partially evident" are either misrepresented or not relevant, as discussed below.

Our response to the items noted as "not evident or partially evident" in Table 1 of the Review is set out below under the relevant principle.

Adaptive

Mitigation strategies for extractive processes are typically adaptive, due to the changing nature of impacts, the requirement for ongoing monitoring and the ability to change the nature of the work. By contrast, mitigations for works where council is the consent authority typically are imposed at the time of consent, and impacts are well understood and able to be modelled, consequently this principle is not relevant to the SIA.

Equity Sensitive

Contrary to the Elton Review, the SIA (at pages 1-3) identifies those groups in the locality who will experience the positive and potential adverse impacts of the proposal and so considers the distribution of social impacts. While future generations may be of concern with regard to extractive industries, construction of a mixed used development does not directly consume non-renewable resources, and so this principle is not relevant to the SIA.

Life Cycle Focus

While mixed use developments have a life cycle, that is construction, operation and demolition, the life cycle is quantitatively and qualitatively different to that of mining projects, with the post project legacy of mining projects often a significant impact e.g. visual impacts from extraction, need for restoration, ongoing maintenance of spoil heaps, tailings dams and the like, and possibility of leaching such as heavy metals and consequent ongoing health risks. Consequently, this principle is not relevant to the SIA.

Material

Contrary to the statement by Elton Consulting, the SIA identifies and evaluates potential social impacts at sections 10-15 and identifies those social impacts that matter the likely to be of most significance.

Proportionate

Contrary to the statement by Elton Consulting, the SIA focuses its assessment on those potential social impacts which are expected to have the most impact.

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[10] NSW Planning and Environment (2017) *Social impact assessment guideline For State significant mining, petroleum production and extractive industry development* page 1.

Rigorous

Contrary to the assessment by Elton Consulting, the SIA draws on and relies on a wide range of quantitative data including Census data, housing market data and population projections. It relies on expert advice with respect to traffic impacts, economic impacts and dwelling yield.

Transparent

Contrary to the statement by Elton Consulting, all data and information sources in the SIA are clearly identified, and the methods of analysis used are transparent.

The Section also draws on Liverpool City Council's *Social Impact Assessment Policy*. The Elton Consulting assessment takes a similar "tick a box" approach to that taken with the DPE Guidelines.

Similar to the assessment in Table 1 of the Review, the areas shown as "not evident or partially evident" in the Review are either misrepresented or not relevant.

The baseline (pre-change) situation is adequately researched and documented

Contrary to the statement by Elton Consulting, the demographic baseline is documented extensively in Appendix B of the SIA. At the time of writing, there were no baseline services in Middleton Grange Suburb, the locality used by the SIA for the purposes of Section 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979*. Consequently, listing the baseline services would trivial. Where services such as public transport existed, they are identified, e.g. at Section 7.4.1.

Examples of similar changes are identified, including impacts likely to affect minority groups, different age, income and cultural groups and future generations

Despite assertions in the Elton Review, change is based on examples, e.g. predicted population growth and profile in Chapter 6 of the SIA is based on Mount Druitt, Castle Hill, Hornsby and Liverpool. Recommendations note impacts on minority groups e.g. Recommendation 2 refers to older people and Recommendation 7 refers to children, youths and older people, with recommendations supported by analysis in the body of the SIA.

Direct as well as indirect, long term and short term, positive and negative, passing and accumulating impacts are identified

Elton Consulting appears to assume that the various categories are independent. However they are sub-sets of each other e.g. a positive impact may be direct, short term and accumulating. Contrary to the Elton Review, potential social impacts identified in the SIA include direct impacts, e.g. increase in population, indirect impacts, e.g. increased demand for services as a result of the increase in population, passing impacts, e.g. the piece meal nature of development in Middleton Grange at the time of writing the SIA, and accumulating impacts, e.g. traffic generation.

The relative equity of impacts is identified. It is important to identify how the benefits and losses will be distributed to different sections of the community

Contrary to the Elton Review, distribution of benefits is identified at various points of the SIA, e.g. the Executive Summary identifies benefits to various groups including lower skilled and entry level workers and families.

Impacts over time and location are considered (e.g. local as opposed to state and national benefits and losses)

As noted above, Middleton Grange Suburb was the locality used by the SIA for the purposes of Section 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979*. The identified impacts of the proposal were local and regional, with no potential state or national impacts identified. Regional impacts identified included an increase in employment in the SA2 and an increase in the supply of lower cost housing in Greater Sydney. Impacts were considered over time, that is, post the completion of the development.

Impacts which are not amenable to precise measurement are not excluded from consideration – the assessment is and evaluation not a proof

Contrary to the Elton Review, potential impacts considered in the SIA that are 'not amenable to precise measurement' included amenity impacts and social cohesion and integration. Other impacts considered such as population growth were estimated by recourse to existing statistics, rather than measured precisely.

A review mechanism is included where appropriate

No impacts were identified where inclusion of a review mechanism was appropriate, so this criteria is not relevant for the SIA .

The precautionary principle is applied in making an assessment

The precautionary principle is relevant where scientific certainty does not exist and where impacts are serious and irreversible, for example, the destruction of a community through open cut mining. The outcomes of urban and mixed use development are well understood, so it is difficult to purport that scientific certainty does not exist. Consequently, this criteria is again not relevant to the SIA.

4.3.3 Comments on Methodology

Introduction

In its discussion on methodology, the Elton Review relies on Council's Social Impact Assessment Policy and on two documents described as IAIA SIA Guidance document and The Social Impact Assessment – The state of the art (2012). Neither of these two documents are referenced and it is not evident what relationship they bear to evaluation under clause 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979*, nor is it possible to determine their provenance.

Following the "tick a box" assessment method used previously by Elton Consulting, Table 2 (the second 'Table 2' in the Review) provides another visual 'prop', again with a preponderance of red

dots. Our response to the items noted as "not evident or partially evident" in the second Table 2 of the Review is set out below under the relevant criterion used by Elton Consulting.

Liverpool SIC study requirements (2015)

Under the heading **Liverpool SIC study requirements (2015)**, Elton Consulting considers that the SIA meets the requirements of a Social Impact Comment.

Liverpool CSIA study requirements (2015)

Liverpool CSIA study requirements (2015) are set out. The "study requirements" appear to be a paraphrasing of Section 9.4.2 of Council's Social Impact Assessment Policy. That section is headed up "What type of impacts should be considered?" and has only partial relevance to the articulation of SIA methodology. Elton Consulting takes Section 9.4.2 of the SIA out of context and further misrepresents it, as discussed below. A response to the items noted as "not evident or partially evident" in Table 1 of the Review is set out below under the relevant "study requirement".

'Classify' all direct and indirect impacts

The word classify has been added by Elton Consulting. The wording should be "address". As discussed above, the SIA addressed direct and indirect impacts. There is no requirement to 'classify'.

Temporary and permanent impacts

As discussed above, the SIA addresses temporary and permanent impacts.

The potential for cumulative impacts

As discussed above, the SIA addresses cumulative impacts, to the extent that these are relevant.

The significance of potential impacts

Contrary to the statement by Elton Consulting, a range of potential social impacts are identified in the SIA at Section 9.2. Following review, the most significant and likely of these potential impacts were addressed in the SIA.

IAIA Guiding Document (2015)

Further Elton sets out criteria from an unreferenced document called IAIA Guiding Document (2015). These included:

Consider the indirect impacts

As discussed above, the SIA addressed indirect impacts, to the extent that these are relevant.

Consider cumulative impacts

As discussed above, the SIA addresses cumulative impacts, to the extent that these are relevant.

How will affected groups respond

The SIA considers the response of affected groups e.g. it notes in the Executive Summary that workers will take up jobs in the development and that families and other local residents will use shops, community facilities and open space.

Establish the significance of the predicted changes

Contrary to the statement by Elton Consulting, a range of potential social impacts are identified in the SIA at Section 9.2. Following review, the most significant and likely of these potential impacts are addressed.

4.3.4 Comments on Social Impacts

Introduction

Elton Consulting has misrepresented the SIA Table 9.1 Scoping of Likely Social Impacts, as JSA's identification **and assessment** of likely social impacts, rather than a scoping of likely social impacts to be considered further in the report. As stated in the SIA, "the table below sets out the likely social impacts for consideration, including the likely positive and adverse impacts".[11]

The analysis in the body of the SIA with respect to these potential impacts is ignored by Elton Consulting in their Review. There is a considerable amount of 'hair splitting' in the Elton review as to whether something is an activity or an impact, e.g. an increase in dwelling numbers is portrayed as an activity, but common sense would suggest that an increase in the supply of dwellings will relate to impacts such as giving people more housing choice/diversity or a reduction in prices/increased affordability as a result of increased supply. The point made by Elton Consulting and its relevance is not at all clear or evident.

The comment in the Review that "a robust and comprehensive analysis of each impact is outside the scope of this review as it would require the SIA to be redone"[12] is particularly telling. JSA has carried out numerous peer reviews and typically would revisit the analysis to see whether the conclusions reached are supported by the evidence offered. As noted above, this is a critical part of a proper 'peer review'. Elton Consulting, to the contrary, rely on their own unsupported opinion.

Response to Table 3

The Elton Consulting comments in Table 3 of the Review have been reviewed to identify any substantive issues.

Adverse comments (shown in italics) and JSA response are set out below.

Under Population Change:

Whilst greater densities may support concepts of urban sustainability this does not mean that this will occur as a result of the development[13]

[11] Judith Stubbs and Associates *op cit*, Section 9.2.
[12] Elton Consulting *op cit*, page 10.
[13] *Ibid*, Table 3

The basis of the planning proposal is an increase in densities and it seems very unlikely that these will not be taken up. Developable land within the Greater Sydney region is a finite resource in the context ongoing population growth and demographic change and increasing housing cost. Planning for an increased in higher density development is an efficient use of remaining urban land, and a lower cost option, and contributes to social equity and environmental sustainability.

It is true that that (sic) there may be a pro-rata increased in S94 contributions although the actual impact of those contributions is unknown as the SIA assumes the VPA will go ahead[14]

The statement appears to misunderstand the nature of s S94 contributions and the VPA. Such contributions in Liverpool LGA are assessed on number of dwellings, so an increase in the number of dwelling will lead to increased S94 contributions. Any VPA would be based on the developer providing benefits in lieu of part of all of the cash contribution, and if there was no VPA then the additional contribution would be taken in cash, giving Council the opportunity to provide facilities.

Under Housing:

The opportunity to provide accessible and adaptable dwellings is not a positive social impact unless there is certainty that the developer will commit to this. Further clarification is needed around whether this is something that is proposed as part of development and if so should be labelled as 'likely' to provide context for the reader[15]

The basis of this comment is the misrepresentation by Elton Consulting of a table of potential social impacts as actual and likely social impacts, and a general misreading of the SIA. The SIA does not say that accessible and adaptable apartments will be provided as part of the development, but rather that there is an opportunity to provide a social benefit through their inclusion. Section 2.4 of the SIA provides recommendations that could be implemented in the delivery of the proposal to maximise social benefit through delivering affordable, accessible and adaptable dwellings.

The identification of low quality apartments as a potential negative social impact is contradictory to previous claims in the report that "based on the proposed price point, a high quality of dwelling will be provided". [16]

This is a misrepresentation by Elton Consulting of what the SIA considers as a 'potential' impact as an actual or likely impact. The SIA does not further discuss this impact as it is neither likely or significant.

There is no discussion on the potential impacts of the increased availability of renters in the new development, in terms of the transient nature of the rental market and the impact on social cohesion[17]

Apart from the grammatical inconsistency of the statement ('increased availability of renters') this statement seems to contain a range of unsubstantiated assumptions including that the rental market is 'transient', and that renting impacts adversely on 'social cohesion'. A proper review

[14] *Ibid*, Table 3
[15] *Ibid*, Table 3
[16] *Ibid*, Table 3
[17] *Ibid*, Table 3

would provide evidence around these assertions so that a reader can form a view as to whether the impact will be substantive or not.

Much of the analysis is hypothetical and may not hold much weighting with decision makers[18]

There is no basis provided for this statement, such as references to the SIA, and it is difficult to know on what basis the author purports to see into the minds of decision makers. In any case, it is customary in an SIA to refer to 'likely' impacts, as no one can foretell the future with certainty (if this is in fact what the reviewers are referring to); or to evaluate 'potential' impacts as part of a scoping exercise (the other possible expression to which they may be referring).

Under Transport and Accessibility:

*It is correct that the development of the new town centre may reduce travel for those accessing goods and services that live in Middleton Grange. This is not a **justification** [emphasis added] for providing more retail in the town centre*[19]

The statement shows a misunderstanding of the SIA process. Liverpool Social Impact Assessment Policy states (at section 7.3.1) that "A CSIA is an in-depth **assessment** of the potential social impacts of a development proposal". It is not a **justification** of the proposal.

In any case, we would consider reduced travel time for residents of Middleton Grange to be a likely benefit of the application.

The opportunity to increase walkability and cycling connectivity in Middleton Grange is considered hypothetical. More clarification is needed around whether the development will support this and if so it should be labelled as a [sic] *likely or unlikely and if it is significant*[20]

There is a problem with the use of the word hypothetical. As noted, and in the dictionary sense of the word, all 'potential' impacts are hypothetical as they have not yet occurred, and nothing is absolutely certain. Connectivity is discussed in detail in Section 11.4 of the SIA.

Identification of existing road network at or near capacity as a potential negative impact contradicts, [sic] section 7.4.2 of the report which states that the road network is "already expected to be at capacity" therefore any demand generated by new residents, workers and retail customers at Middleton Grange is a cumulative impact[21]

Cumulative impacts on the road impact are addressed in Section 7.4.2 of the SIA, and mitigations are proposed under Recommendations 1, 2 and 3.

Limited access to public transport – the suggested mitigation for this impact is 'connection of a bus route to Leppington Railway Station and construction of the transit investigation route identified in 'A Plan for Growing Sydney'. This recommendation is out of the control of Manta Group and therefore raises questions of its credibility[22]

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[18] *Ibid*, Table 3
[19] *Ibid*, Table 3
[20] *Ibid*, Table 3
[21] *Ibid*, Table 3
[22] *Ibid*, Table 3

Construction of the transit investigation route is not one of the recommendations put forward in the SIA. Recommendation 3 in the SIA is for Council to advocate for an extension of the 853 bus route to Leppington Railway Station. This is entirely credible and would be in the interests of the population of Middleton Grange Suburb.

Poor connectivity between the town centre and surrounding areas – this impact requires further analysis on the likelihood of the masterplan not delivering its promises of connectivity[23]

Connectivity is discussed in detail in Section 11.4 of the SIA. The SIA was based on Masterplan documentation provided by Manta Group, changes to the Masterplan cannot be foreseen in the SIA process but will be considered by the consent authority.

Identification of poor accessibility within the town centre is contradictory to previous comments made in Section 7.4.1 where JSA states that accessibility would be improved as a result of the development[24]

The statement is an outcome of Elton Consulting conflating potential impacts (as set out in Table 9.1 of the SIA) with likely and substantive impacts.

Under Community and Recreation Services and Facilities:

As highlighted in the Liverpool Contributions Plan 2009 there are no existing local neighbourhood facilities except for a private school and church, as such any mention of existing facilities and their capacity is irrelevant. In regards to proposed services and facilities being insufficient for the increased population this would only be a negative impact as a result of poor planning, the significance and likelihood of this impact should be clearly identified so as not to be misinterpreted[25]

The statement shows a lack of understanding of the SIA process by Elton Consulting and seems to conflate mitigations with impacts. The impact is an increase in population and the potential social impact is insufficient services. The mitigation is to provide the services.

Under Social Cohesion and integration, including needs of specific population groups:

The inclusion/exclusion of older people, families, as a result of the provision of privatised public space is proposed as both a potential positive and negative impact. This is a reasonable assertion if the issues of connectivity to open space, care dependence and access to services are not resolved in the final master plan[26]

The Review author adds in the term privatised, suggesting he is unfamiliar with the extensive literature regarding inclusion and exclusion from public space. The social impacts and matters around inclusion and exclusion from public spaces are discussed in Section 14 of the SIA.

Similarly, Integration of the Town Centre to surrounding residents is presented as both a potential negative and positive. Again no attempt has been made to further clarify each of the impacts and not doing so creates some confusion[27]

The statement is an outcome of the misrepresentation of the Table 9.2 of the SIA by Elton Consulting. Aspects of integration are discussed in Section 11 of the SIA.

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[23] *Ibid*, Table 3
[24] *Ibid*, Table 3
[25] *Ibid*, Table 3
[26] *Ibid*, Table 3
[27] *Ibid*, Table 3

Under Health and wellbeing:

These recommendations are contingent on the master plan adopting JSAs social planning recommendations, including where to allocate funds from S94 contributions. There is no alternative analysis for the scenario where the social planning recommendations are not adopted[28]

It is not clear what recommendations are referred to, as there are no recommendations in Table 9.2 of the SIA. The author does not appear to understand the requirements of Section 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979*. This section requires the consent authority to consider the "likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality", rather than some alternative development. One of the purposes of Social Impact Assessment is to identify potential social impacts associated with the development and recommend appropriate mitigation. The degree to which mitigation is taken up or not is a matter for the consent authority in discharging their duty under Section 4.15(1)(b) of the Act.

More clarification is needed around increasing car dependency. Considering the new town centre would be walkable for a number of residents it needs further commentary around its significance and likelihood[29]

These matters are discussed in sections 15 and 11.4 of the SIA.

Limited opportunities for recreation and leisure activity for apartment dwellers is a current impact not potential as residents are already being affected. More clarification is needed to highlight the significance and likelihood of this impact[30]

At the time of preparation of the SIA, there were no apartment dwellers in Middleton Grange Suburb so it is difficult to understand how this is a current impact. Section 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979* requires an assessment of the likely impacts of the development, not the existing situation. These matters are discussed in Section 11.2 of the SIA.

Under Crime and Safety:

These appear to be generalised recommendations rather than likely social impacts[31]

This seems to be a fine point around classification.

More analysis is needed here to include the potential for anti-social behaviour in specific reference to the proposed development –

This is a substantive comment as the SIA did not consider the crime context of the area or of similar nearby developments, and mitigations related to crime prevention were not elevated into the SIA recommendations. The omission is addressed in Section 2.4 above.

Under local economy and employment opportunities:

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[28] *Ibid*, Table 3
[29] *Ibid*, Table 3
[30] *Ibid*, Table 3
[31] *Ibid*, Table 3

It is reasonable to suggest [sic] will be employment provided for those living in the surrounding residential areas as local employment generated by the total proposal has been estimated at 714 full time equivalent jobs. However, it is unclear if these jobs are counted during the construction or operational phases of the project[32]

The jobs are in the operation phase. Section 10.1 states that most of these will be in retail (83%), with 9% in commercial, 3% in medical and the balance (5%) in community, entertainment and childcare.

Area too expensive to accommodate works – the meaning of this likely adverse impact is unclear[33]

The Review has misread "workers" as "works" hence the confusion.

Omitted potential adverse impact regarding effect of increase in retail and the impact on economic livelihoods of surrounding local businesses from competition with MG town centre[34]

This is a substantive comment as this impact was not identified or considered in the SIA. The omission is addressed in Section 2.5 above.

Under urban sustainability:

It is correct that people who work in the new town centre can also live in the local area, although this [sic] this needs further clarification to provide context and meaning for the reader[35]

Commuting is discussed in Section 10.5 of the SIA.

The claim that residents would be able to obtain their needs with minimal travel is unclear as it does [sic?] indicate what needs those are. Additionally, this also contradicts what has previously been said by JSA, in Section 7.4.2 it states that "it is likely that residents will rely on Liverpool City (and Leppington major Centre when complete) for many of their needs"[36]

This appears to be a fine point and based on a selective reading of Section 7.4.2.

It is unclear as to why the development of a new town centre would increase commuting. This needs more clarification on who and how commuters would be affected[37]

Commuting is discussed in Section 10.5 of the SIA.

Under amenity impacts:

It is correct that public spaces will enhance the amenity of Middleton Grange suburb, although this is not a social impact. A social impact would be how those spaces impact residents in either a positive or negative way[38]

Again, an obscure point regarding classification. Changes in amenity are widely accepted as being a legitimate social impact.

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[32] *Ibid*, Table 3
[33] *Ibid*, Table 3
[34] *Ibid*, Table 3
[35] *Ibid*, Table 3
[36] *Ibid*, Table 3
[37] *Ibid*, Table 3
[38] *Ibid*, Table 3

High rise having an impact on the character and amenity of nearby residential areas is a legitimate potential social impact. Tall buildings have the potential to affect people's perception of overcrowding and overdevelopment but most of all it affects the 'local character' or people's 'way of life'[39]

The relevance of this comment is not clear. It seems to be additional commentary. These impacts are identified in the executive summary of the SIA under the heading "Summary of Potential Adverse Impacts of the Proposal".

Under services and amenities:

Increase in the amenity of the shopping centre including more shops, restaurants and other recreational spaces, and enhanced public space is not a social impact in itself, rather it is the activity that causes the social impact. Further analysis from JSA is required here[40]

Again this is an obscure point regarding classification. Changes in amenity are widely accepted as being a legitimate social impact.

4.3.5 Comments on Community Consultation

The comments on Community Consultation show a fundamental lack of understanding on the part of Elton Consulting as to:

- The purpose of Community Consultation when preparing an SIA to address the requirements of Section 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979*; and
- relevant case law.

The purpose of Community Consultation is to assist in scoping potential social impacts, both positive and adverse, and to understand how people currently perceive their community. As part of the SIA process, it is then important to understand the rational basis of any impacts identified.[41] Contrary to the statements by Elton Consulting, the purpose of community

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[39] *Ibid*, Table 3
[40] *Ibid*, Table 3
[41] The reasonableness and factual basis of community concerns is also important to the proper assessment of social impacts in a given locality, so that the subjective concerns or fears of residents needs to be balanced against the extent to which such fears are reasonably or factually based. I am guided in my assessment of social impacts in this respect by Lloyd J in *New Century Developments Pty Limited v Baulkham Hills Shire Council* [2003] NSWLEC 154 who noted that:

> *The consent authority must not blindly accept the subjective fears and concerns expressed in the public submissions. Whilst such views must be taken into consideration, there must be evidence that can be objectively assessed before a finding can be made of an adverse effect upon the amenity of the area…*
>
> *A fear or concern without rational or justified foundation is not a matter which, by itself, can be considered as an amenity or social impact … Where there is no evidence to support a rational fear it will be irrelevant that members of the community may have modified their behaviour arising from such an unjustified fear.*

consultation is not to determine whether "residents in Middleton Grange actually support the revised PP".[42] This is supported by case law as cited above.

The Liverpool City Council *Social Impact Assessment Policy* states at Section 10.1:

> *After completion of the SIC Initial Assessment Form, a process of community consultation should be undertaken. The information contained in the SIC Initial Assessment Form should be used to help determine what kind of community consultation should be undertaken.* ***The scale of community consultation that needs to be undertaken and the method used to consult depends on a number of factors*** [emphasis added], *including:*
>
> *a) The community who are likely to be most affected*
>
> *b) The significance of the potential social impacts*
>
> *c) The duration of the impact*
>
> *d) The likely beneficiaries of the proposed development*
>
> *e) Those likely to be most negatively affected*

It is evident that the community consultation to be undertaken is a matter of professional judgement based on the circumstances of the proposal.

The discussion in the Review is confusing, referring to a Table 4 identifying the different engagement objectives of various sources. The actual Table 4 in the Review is a table of consultation techniques showing which techniques out of a possible 12 techniques were used by JSA. While providing an impressive visual prop, the inference in the table is that effective community consultation would use all techniques and engage every community. This assumption is at odds with Section 10.1 of the Liverpool City Council *Social Impact Assessment Policy*.

Comments by Elton Consulting around sample size and the number of people who viewed the proposal positively are not supported by sampling theory.[43] For a population of 135 (the households immediately surrounding the proposed development), a sample of 59 means that a

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(New Century Developments Pty Limited v Baulkham Hills Shire Council [2003] NSWLEC 154 revised - 5/09/2003, [61-63]; Citing Dixon & Anor v Burwood Council [2002] NSWLEC 19, Newton v Wyong Shire Council, NSWLEC, McClelland J, 6 September 1983, unreported, Jarasius v Forestry Commission of New South Wales (1990) 71 LGRA 79 at 93 per Hemmings J; Perry Properties Pty Ltd v Ashfield Municipal Council (2000) 110 LGERA 345 at 350 per Cowdroy J.)

This judgment has been recently cited by Moore J in *Mawad Investments Pty Limited v Council of City of Ryde* [2017] NSWLEC 100,

> *…not be taken to be reflecting in any way on the genuineness of the concerns that have been expressed by the residents in the vicinity; however, the position that this Court must take is that, absent credible evidence that such fears, as are genuinely held, are realistically likely to be causing the feared effect on the local community, there is no basis simply on the grounds of fear to refuse a development application*

(Mawad Investments Pty Limited v Council of City of Ryde [2017] NSWLEC 100, [14-15])

[42] Page16 par 1 of the Review.
[43] The analysis uses the normal approximation to the hypergeometric distribution.

variable measured at 45% has a 95% confidence interval of +/-10% i.e. we can be 95% confident that 35% - 55% of households in nearby streets saw the development positively.[44]

At best there is a difference of professional opinion between JSA and Elton Consulting as to the adequacy of the community consultation undertaken. The rationale provided by Elton Consulting is based on a misreading of Section 10.1 of the Liverpool City Council *Social Impact Assessment Policy*, and no other evidence is provided in support of engaging in other forms of community consultation.

4.3.6 Comments on Conclusion

No substantive critique is provided regarding the conclusions drawn in the SIA, and no alternative conclusions, supported or otherwise, are offered by Elton Consulting.

4.3.7 S94 Contributions Scheme

Elton Consulting is in agreement with the assessment of S94 Contributions Scheme by JSA. Elton Consulting notes at a number of points that it disagrees with normative standards used by Liverpool City Council for the sizing of community facilities.

4.3.8 Conclusions of the Assessment

A number of conclusions are reached by Elton Consulting. Of these, one is substantive, as the SIA did not contain an outline of the methodology used to conduct the CSIA as required by Section 9.1 of Council's *Social Impact Assessment Policy*. This omission is addressed in Section 2.2 above.

As discussed above, the balance of the conclusions are not substantiated. They are based on:

- A selective reading and misreading of various documents, some of which are outdated, and some of which are not referenced or have no status or relevance with respect to assessment under Section 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979* or the circumstances of the proposed development;
- A misreading of, the ignoring of substance, and a failure to engage with, or read and understand, the SIA. Many of the statements by Elton Consulting relating to the SIA are incorrect as set out above;
- A focus on fine points without obvious meaning or relevance and a confusion or misunderstanding of technical terms; and
- A "tick a box" approach by Elton Consulting, where any and all concerns are uncritically given equal weight, rather than being *proportionate and tailored to suit the project's context and the nature and scale of its impacts.*[45]

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[44] More precisely, if the survey was carried out 20 times, on one of those times a result outside the range of 35-55% would be expected.
[45] NSW Planning and Environment (2017) *Social impact assessment guideline For State significant mining, petroleum production and extractive industry development* page 1.

Elton Consulting has a fundamental misunderstanding of the SIA process in stating that *the findings within the JSA SIA do not adequately support the development of a much larger town centre than is already proposed.*[46] The author does not appear to understand the requirements of Section 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979*. This section requires the consent authority to consider the "likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality", rather than some alternative development. One of the purposes of Social Impact Assessment is to identify potential social impacts associated with the development and recommend appropriate mitigation. The degree to which mitigation is taken up or not is a matter for the consent authority in discharging their duty under Section 4.15(1)(b) of the Act.

Liverpool Social Impact Assessment Policy states (at section 7.3.1) that "A CSIA is an in-depth assessment of the potential social impacts of a development proposal." Mitigation measures are required under section 9.5. An SIA is not a **justification or a support** of the proposal.

[46] Elton Consulting Review, page 20, par 3.

PPM CONSULTING

Middleton Grange - Response to Objectors' Submissions on Economics

FINAL – Prepared for Pacific Planning by PPM Consulting

Date: 23 October 2019

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Executive Summary

Middleton Grange Town Centre is a proposed mixed-use town centre development at 60-80 Southern Cross Avenue and 45-65 Hall Circuit, Middleton Grange. The site is split over six lots, with a total area of 57,255m^2 available for development. The purpose of this report is to give an economics response to two reports submitted by objectors on the Middleton Grange Town Centre proposal.

Response to Objectors

Objection	Comment	Reference in This Report
Sue Weatherly and Associates Report		
The current controls only allow 5,000m^2 of retail and commercial space and 176 dwellings.	This is not true. The current controls allow for 11,729.3m^2 of commercial/retail space and 583 dwellings. These uses at these densities are available now, without providing community infrastructure such as the large park.	Chapter 2 outlines the current controls, the proposal and the Gateway Determination.
The proposal is to build 86,031m^2 of residential space or 912 dwellings.	The current proposal will facilitate 63,703m^2 of residential space or approximately 671 dwellings.	Chapter 2 outlines the current controls, the proposal and the Gateway Determination.
The proposal is to build 20,240m^2 of retail and 2,533m^2 of commercial uses.	The current proposal is to build 20,320m^2 of retail, 14,973m^2 of commercial and 15,235m^2 of medial/other uses.	Chapter 2 outlines the current controls, the proposal and the Gateway Determination.
Open space areas for parks	This is the only acknowledgement that the additional GFA will provide the opportunity for a park, but does not acknowledge that the size and amenity of the park is dependent on the yield of the development.	Chapter 5 estimates the economic value of the park at approximately $68.5 million over 50 years.
The community's concerns are around infrastructure, with little or no transport and social infrastructure	The following infrastructure is proposed to be provided to the people of Middleton Grange as a result of the development: • a new park of 7,632m^2 • a walkable town centre, with the health and social benefits this creates • new retail allowing people to shop more locally • new restaurants allowing entertainment options more locally • local retail will reduce congestion • the proposed Fifteenth Avenue Rapid Transit will be just 350m from the town centre, providing high-speed access to Liverpool CBD and the Western Sydney Aerotropolis.	Chapter 4 outlines the consequences of restricting retail and commercial space, including its impact on the poor. Chapter 5 estimates the economic value of the park at approximately $68.5 million over 50 years. Chapter 6 outlines the benefits of walkable town centres. Chapter 7 outlines the benefits of the town centre in regards to the Western Sydney Aerotropolis and the proposed Fifteenth Avenue Rapid Transit.

Objection	Comment	Reference in This Report
Middleton Grange is a low density community, located some distance from mass transport service (the nearest station is over 6km away at Leppington).	The proposed Middleton Grange Town Centre is located 350m north of Fifteenth Avenue, where a proposed rapid transit system is proposed to operate from the Liverpool CBD to the new Western Sydney Aerotropolis. This places rapid public transport much closer to Middleton Grange than the current Carnes Hill Marketplace, which is also approximately 4km from Leppington station. On this analysis, Carnes Hill Marketplace should also not have been built.	Chapter 7 outlines the benefits of the proposed Fifteenth Avenue Rapid Transit and the consequences of the new Western Sydney Aerotropolis for the area.
Because of the capacity of the current planning rules for the town centre to deliver local services, retail for daily needs and housing diversity there is no justification to change the planning rules for the site.	The key strategic documents upon which the Weatherly Report makes these claims are: • the Liverpool Retail Centres Hierarchy (2012) • the Business Centres and Corridors Strategy Review (2013). Neither of these documents envisaged the Western Sydney Aerotropolis and are therefore out of date. The Western Sydney Aerotropolis provides the justification for a town centre of the size proposed. The proposal also includes zone boundary adjustments to reflect a more logical and simplified layout across the centre. This has resulted in an increase in the area of B2 Local Centre land and land available for development. This has also resulted in additional town centre floorspace associated with the town centre.	Chapter 7 outlines the benefits of the town centre in regards to the Western Sydney Aerotropolis and the proposed Fifteenth Avenue Rapid Transit.
The proposal does not comply with the Gateway Determination	The proposal does comply with the Gateway determination.	While commentary on compliance with planning instruments is not the role of an economic report, Chapter 2 outlines how the proposal complies.

Objection	Comment	Reference in This Report
Due to the nature of the permissible land uses in the B2 zone, increasing the area zoned B2 would increase the potential commercial or retail floor space without the need to increase heights or floor space ratios. This would enable the market to respond to any increase in demand for retail floor space without changing the FSR controls.	This appears to contradict earlier statements that the maximum retail/commercial space should be 5,000m^2. If retail/commercial GFA is to be capped at 5,000m^2, the amount of land zoned B2 is immaterial and the market can only respond within the envelope of 5,000m^2. This seems like a disingenuous statement. It is likely that the market would work it out, but at rents higher than would otherwise be the case with higher FSRs, and so risking the viability of commercial tenants (and therefore the likelihood of the development happening at all) as well as meaning shoppers at Middleton Grange will pay higher prices as rents are passed through.	Chapter 4 outlines how markets work and what happens to rents and prices when retail and commercial space is restricted, including its impact on the poor.
Much of the economic benefits described in the EIA is about impacts in the broader catchment.	Currently there is no retail or commercial, nor is there any Middleton Grange Town Centre. It is wholly appropriate that a wider catchment, capturing where current residents shop, would be taken.	Chapter 2 outlines the current proposal against the current controls.
The current planning rules also provide for: • housing choice, and affordability (through increase supply) • access to convenience shopping and local facilities • jobs/employment.	While it is true that even an increase in one dwelling provides increased housing choice, the development can be built with much more residential and retail than the Weatherly Report says it can under current controls. It is also appropriate to acknowledge that the proximity of the town centre to the Western Sydney Aerotropolis changes the nature of the demand for commercial and retail space and that the proposed Fifteenth Avenue Rapid Transit changes the economic opportunities along the corridor. The Weatherly Report also fails to acknowledge that the higher densities allow for greater amenity. While it should be acknowledged that 2,000m^2 was slated for open space under the existing controls, and the proposal has been amended since exhibition to include a total of 7,632m^2 of open space that would not have to be provided at current densities, the opportunity for more open space that comes with higher densities should have been acknowledged. The economic benefit of the park is estimated at $68.5 million over 50 years.	Chapter 2 outlines the current proposal against the current controls. Chapter 5 outlines the benefits of the park. Chapter 7 outlines the benefits of the town centre in regards to the Western Sydney Aerotropolis and the proposed Fifteenth Avenue Rapid Transit.

Objection	Comment	Reference in This Report
The argument that "if we build more houses then house prices will fall to a level that is more affordable" is flawed.	This in itself is a flawed, straw-man, take on the consequences of building an adequate supply of dwellings in areas where there is demand. The proposal is to build 88 more apartments than can be built under current controls. While this will have a negligible effect on the state of the overall Sydney market, the increased density will allow for the fixed development to be spread across more apartment purchasers, therefore allowing the apartments to be offered to the market at a lower price than at the lower density. A lower cost allows the development itself to be more viable, and therefore more likely to be built.	Chapter 2 outlines the benefits of increased housing supply.
Urbis Report		
The original masterplan, prepared in 2002, establishes Middleton Grange as a predominantly low density residential place with diverse housing options and walkable neighbourhoods as well as a neighbourhood centre that can provide the community with access to daily shopping requirements, open space and community facilities.	The current controls allow for 11,729.3m^2 of commercial/retail space and 583 dwellings. These uses at these densities are available now, without providing community infrastructure such as the large park. The 2002 plan did not envisage the Western Sydney Aerotropolis and the effect this has on the whole Liverpool LGA. The report on employment generation potential of the new airport by EY suggests that it will create 27,946 jobs by 2031 as a result of airport operations and business park. As there will be some demand for off-site commercial space, Middleton Grange is ideally situated, with space for a potential 749 commercial jobs. The open space and walkability of a predominantly low density neighbourhood would be far lower than the current proposal.	Chapter 2 outlines the current proposal against the current controls. Chapter 5 outlines the benefits of the park. Chapter 7 outlines the benefits of the town centre in regards to the Western Sydney Aerotropolis and the proposed Fifteenth Avenue Rapid Transit.
The Liverpool Business Centres and Corridors Strategy (2013) places Middleton Grange as a village centre and Carnes Hill Marketplace as a town centre. The locational characteristics of Middleton Grange make it inappropriate for retail/commercial space to exceed 5,500m^2.	The current hierarchy of centres for Liverpool does not anticipate the development of the Western Sydney Aerotropolis. At 7.5km from the airport, and connected by a rapid transit system, Middleton Grange is ideally located to provide off-site commercial and retail for airport-related industries and businesses.	Chapter 7 outlines the benefits of the town centre in regards to the Western Sydney Aerotropolis and the proposed Fifteenth Avenue Rapid Transit.

Objection	Comment	Reference in This Report
Carnes Hill is located adjacent to civic and community uses (skate park, Recreation Centre, Library, community facilities).	The Urbis Report does not examine the estimated $68.5 million of benefits of the proposed 7,632m² park, nor does it acknowledge that in providing the higher densities that more community facilities will be available at Middleton Grange.	Chapter 5 outlines the benefits of the park.
The Macroplan Dimasi Report over-estimated the market need for new retail space. The market is of a sufficient size to support one full line supermarket in the not too distant future, but not more.	The current controls allow for 11,729.3m² of commercial/retail space and 583 dwellings. The masterplan was to always include a supermarket at Middleton Grange, so this point is moot. The tenant mix is expected to not compete with Carnes Hill Marketplace, providing a full line supermarket, a smaller supermarket and some specialty retail. Currently shoppers living in Middleton Grange need to travel 2 kilometres or more to access retail; the proposed town centre would allow many to walk to the shops. Woolworths, one of Carnes Hill Marketplace's major tenants, has a position that more retail space should be provided where possible to keep rents, congestion, prices and car use down.	Chapter 1 outlines the position of one of Carnes Hill Marketplace's major tenants, Woolworths, in relation to restricting the amount of retail space. Chapter 4: • points out that restricting retail space lowers total factor productivity, thereby making retail products more expensive across the board. • outlines the draft *Centres Policy: Planning for Retail and Commercial* Development, which states that new town centres should be able to be established and grow. • summarises the Harper Reviews conclusions that restrictions of retail and commercial space lead to slower growth, fewer jobs or higher prices.
The impact on Carnes Hill Marketplace could be as much as a 27 per cent drop in sales	PPM Consulting acknowledges that new retailing could have a short-term impact on current centres. However, the current centres will also be affected by the Western Sydney Aerotropolis from 2026, as well as the developments that are envisaged along Fifteenth Avenue, none of which were anticipated by the LEP or the Macroplan Dimasi Report.	Chapter 7 outlines the vision for Fifteenth Avenue as a medium density, mixed use corridor, achieving densities of 65 to 80 dwellings per hectare.

Objection	Comment	Reference in This Report
The owner of Carnes Hill Marketplace is preparing a DA to expand the shopping centre.	Despite saying that more retail offerings in the area are unviable, the Urbis Report goes on to say that the owner of Carnes Hill Marketplace is looking to expand. This surely would be unviable too, given that the Urbis Report attempts to outline why the Middleton Grange Town Centre should only be 5,500m^2.	Chapter 1 outlines the position of one of Carnes Hill Marketplace's major tenants, Woolworths, in relation to restricting the amount of retail space. Chapter 4 outlines how markets work and what happens to rents and prices when retail and commercial space is restricted, including its impact on the poor.
The PPM Consulting Report is of little substance.	The Urbis Report either intentionally or inadvertently misrepresents the PPM Consulting Report. When the PPM Consulting Report talks about the viability of the development, it does not refer to the viability of the retailers, it refers to the viability of the development itself (the return on investment for the developer, not the retail operator). Therefore, it holds that if the yield is too low, the return will be too low. PPM Consulting acknowledges that 88 additional dwellings above the current controls would not make a material difference to the viability of shops at Middleton Grange, however, the increased density will allow for the fixed development costs to be spread across more apartment purchasers, therefore allowing the apartments to be offered to the market at a lower price than at the lower density. A lower cost allows the development itself to be more viable, and therefore more likely to be built.	Chapter 1 outlines the position of one of Carnes Hill Marketplace's major tenants, Woolworths, in relation to restricting the amount of retail space. Chapter 2 outlines the current proposal against the current controls. Chapter 4 outlines how markets work and what happens to rents and prices when retail and commercial space is restricted, including its impact on the poor.
The average single-supermarket centre is 6,800m^2 of total retail floor space with total property floorspace of 8,570m^2.	Again, the Urbis Report is being misleading, as they see no reason that the town centre should be more than 5,500m^2. On this logic, they are against even a single-supermarket centre, as they say that the average single-supermarket centre is 1,300m^2 more than this. Effectively the Urbis Report is suggesting that the people of Middleton Grange should only have a small supermarket, and get in their cars and drive to Carnes Hill Marketplace for their grocery shopping. Small shops, and restricted retail space, after all, have been shown to lead to lower total factor productivity, higher rents and higher prices.	Chapter 1 outlines the position of one of Carnes Hill Marketplace's major tenants, Woolworths, in relation to restricting the amount of retail space. Chapter 4 outlines how markets work and what happens to rents and prices when retail and commercial space is restricted, including its impact on the poor.

The Proposal and Current Controls

PPM Consulting understands that the current controls allow for the following:

- 583 dwellings
- 11,729.3m^2 of commercial and retail space.

This is contrary to the objectors' submissions that claim that the current controls only allow for 176 dwellings and 5,000-5,500m^2 of commercial and retail space.

The scheme as it is currently proposed has an FSR of 1.98 across all six lots, with a resultant total GFA of 113,351m^2. The retail total GFA would be 20,320m^2, commercial/mixed use would be 14,973m^2 and medical/other uses would occupy 15,235m^2 of GFA. This is shown in Table E-1.

Table E-1: Possible Development Under Liverpool LEP 2008 Versus Proposal

	2008 LEP	2019 Proposal (with medical)	Difference
R1 Area (m^2)	26,189	14,243	-11,946.0
B2 Area (m^2)	31,278	43,013	11,735.0
FSR R1	0.75:1	1.1:1	
FSR B2	1.5:1	2.3:1	
Av FSR Total Site	1.16:1	1.98:1	
Height R1 (m)	8.5	9.5, 14	
Height B2 (m)	18	20, 29	
Open Space (RE1) (m^2)	751	2,569	1,818.0
Open Space (not RE1) (m^2)	1,249	3,126	1,877.0
Dwellings	583	671	88
Residential GFA (m^2)	54,829.5	63,703	8,873.5
Commercial GFA (m^2)	11,729.3	34,235	22,505.7
Medical/Other GFA (m^2)	0	15,235	15,235.0
Total GFA	66,558.8	113,173.0	46,614.2

Source: Pacific Planning, PPM Consulting
These specific areas may adjust slightly during detailed design

It is clear that if an FSR of 1.16:1 were a viable increase in gross floor area, it would have been built in the last 11 years, as it can be built *now* without a planning proposal. However, as it has not been built, it stands to reason that 1.16:1 does not give a return on investment that makes it commercially viable to build.

That said, if development did proceed under the current controls, it would not be likely that any of the proposed amenities, such as parks, community space, a child care centre and other community assets, would feature. The proposed GFA maximises the viability of the town centre as a focal point for the Middleton Grange suburb, and maximises the flexibility for the proponent in accommodating varied uses, as well as providing a return that enables investment in increased amenity.

The retail mix is proposed to include a major supermarket, a minor supermarket, some specialty shops and entertainment uses (such as restaurants, cafes and bars). Apart from the supermarket, it is unlikely that this mix will compete with the Carnes Hill Marketplace, as

the consumer offering will be so different, and geared more to lifestyle amenity as well as a heavy concentration on commercial floorspace. Indeed, nearly 15,000m^2 of the additional floorspace (nearly one-third) is proposed as office space, while a further 14,000m^2 (30 per cent) is proposed as a medical centre.

Gateway Determination

A Gateway determination was issued by the delegate of the Greater Sydney Commission on 15 August 2016. The Gateway in supporting the progression of the Planning Proposal included a number of conditions that would need to be addressed and approved prior to the progression of the proposal to consultation and exhibition.

Conditions 1 and 2 of the Gateway were relevant as follows:

1. *In relation to s117 Direction 4.3 Flood Prone Land, prior to exhibition, Council is required to:*
    a. *Undertake and provide relevant flood studies that demonstrate consistency with this Direction; and*
    b. *Include a Flood Planning Area map in the proposal.*
2. *Prior to public exhibition, Council must revise the planning proposal to include the flooding information and to provide additional information regarding:*
    a. *Transition of proposed heights to existing neighbouring zones and overshadowing impacts,*
    b. *Proposed controls for proposed commercial uses in residential zones, for example, this may include proposed controls to limit, or encourage certain commercial floor areas, or controls to ensure a proportion of residential uses, and*
    c. *Provide the revised planning proposal to the Department for review.*

Subsequently detailed urban design work and economic viability analysis was undertaken to adequately address the matters raised in the Gateway determination, particularly the issue related to transition of height to neighbouring zones and overshadowing impacts. A revised Planning Proposal and Urban Design Report were prepared in June 2018 and was forwarded to the Department of Planning and Environment on 20 June 2018, which included controls of:

- FSR: 1:1 and 2.3:1
- Heights: 9.5m; 14m; 20m; 32m; and 35m

The Department confirmed on 28 June 2018 that the Gateway conditions had been adequately addressed and that the proposal could proceed to public exhibition, on the condition that the proposal was updated to reflect the Greater Sydney Plan and the Western City District Plan. This planning proposal was revised (July 2018) for the purposes of public exhibition.

The Planning Proposal was amended after Gateway to address the conditions. This was exhibited. This further amended Planning Proposal is effectively a response to submissions, taking on board community feedback. The proponent responded to community feedback by reducing the height, reducing the number of apartments, doubling the open space, and including a new medical centre.

It is important to note that the Sue Weatherly Report and the Urbis Report were both responding to the exhibited Planning Proposal, not the one discussed in this report.

Walkability and Proximity to Shopping and Services

At the time of the 2016 Census, there were approximately 5,000 people living in Middleton Grange. The nearest supermarket is Carnes Hill Marketplace, some 2 kilometres away. This journey could not be done on foot, and therefore residents are required to get into their cars and drive. This contributes to sedentary lifestyles and poor health outcomes.

Not only would the proposed Middleton Grange Town Centre be within walking distance of many current and future residents, it is also proposed to have many of the characteristics seen as "walkable". The benefits include more viable retail spaces, less sedentary lifestyles and less time spent in cars and traffic.

The Impact of Restricting Retail Space

British spatial economist Professor Paul Cheshire of the London School of Economics has found that restrictive zoning can lower total factor productivity (and therefore increase prices paid by consumers) by:

- restricting the total availability of land for retail, thereby increasing space costs
- directly limiting store size
- concentrating retail development on specific central locations.

The findings suggest that restricting the size and growth of Middleton Grange Town Centre to a neighbourhood centre, and concentrating growth in developed centres, would likely result in an increase in prices, more cars and trucks on the road and more congestion around the designated centres. This is not only bad for the current and potential residents of Middleton Grange, but also the wider catchment area. It also found that restricting retail space adversely affects the poor, since poorer households spend higher proportions of their incomes on supermarket purchases.

This is similar to what Woolworths (one of Carnes Hill Marketplace's major tenants) said in its evidence to the Productivity Commission's *Performance Benchmarking of Australian Business Regulation: Planning, Zoning and Development Assessments* Inquiry in 2010:

> Overall for Woolworths, by reducing the difficulties associated with developing new stores, we will be able to offer more Australian communities the convenience, choice, low prices and excellent quality products that Woolworths businesses are known for. Woolworths will also be less able to continue to create the many thousands of jobs and training opportunities that come with new store developments. Woolworths is concerned that continued land scarcity combined with protracted development process will lead to diminished retail competition, busier and more inconveniently located stores and shopping centres and more congested carparks and transport facilities.

They go on to say:

> For example, there is a broad policy push across all jurisdictions (including NSW) to centralise future major retail development in

> "activity centres" or centres centred on major transport links / major employment centres with a key objective being to increase public transport use. The practical effect of this policy approach has been to further limit land available for retail development even where there are compelling reasons for allowing retail development away from the transport and major centres.

Middleton Grange has always been recognised as a future town centre. The Department of Planning, Industry and Environment (the Department) has a long-standing policy position when it comes to competition between centres. The *Centres Policy: Planning for Retail and Commercial Development* has been in draft form since 2009 and provides guidance to planning authorities. The (draft) Centres Policy is based on six planning principles:

- retail and commercial activity should be located in centres to ensure the most efficient use of transport and other infrastructure, proximity to labour markets, and to improve the amenity and liveability of those centres.
- the planning system should be flexible enough to enable centres to grow, and new centres to form.
- the market is best placed to determine the need for retail and commercial development. The role of the planning system is to regulate the location and scale of development to accommodate market demand.
- the planning system should ensure that the supply of available floorspace always accommodates the market demand, to help facilitate new entrants into the market and promote competition.
- the planning system should support a wide range of retail and commercial premises in all centres and should contribute to ensuring a competitive retail and commercial market.
- retail and commercial development should be well designed to ensure they contribute to the amenity, accessibility, urban context and sustainability of centres.

Middleton Grange is located in an area that ensures the efficient use of transport, is close to potential workers, residents and customers, and improves the amenity of current and future residents. Furthermore, under these principles, the centre at Middleton Grange should have as much initial GFA as possible to allow for flexible uses, to enable it to grow and to accommodate market demand. Middleton Grange Town Centre is also within 350m of the proposed Fifteenth Avenue Rapid Transit between Liverpool CBD and the new airport at Badgerys Creek, which is likely to be running before the town centre is complete.

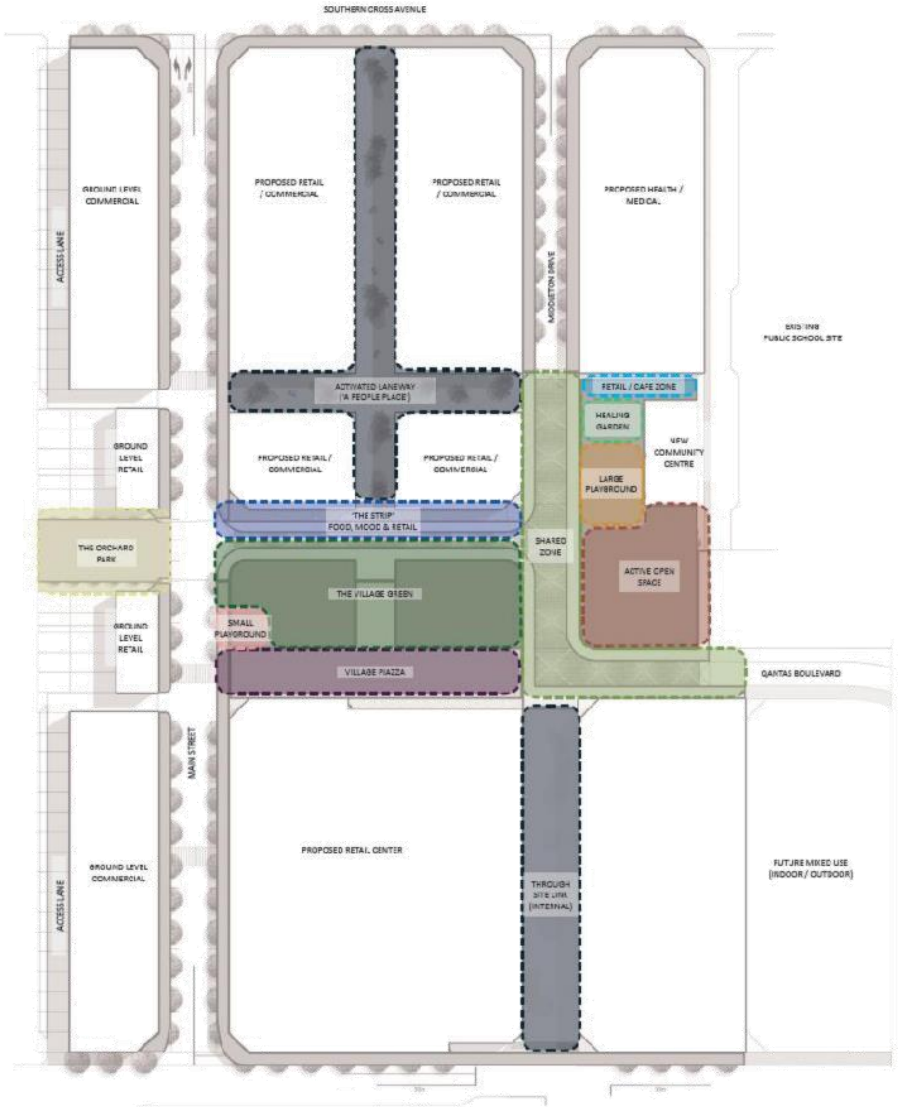
The Middleton Grange Town Centre is designed to ensure the retail and other commercial needs of current and future residents are met. The people of Liverpool already have lower average incomes and higher cost of living than other parts of Sydney; by seeking to lower the GFA of town centres like Middleton Grange, objectors are ensuring the economic scales continue to be tipped against its residents.

Parks and Open Space

The Planning Proposal that was exhibited included 3,126m^2 of public open space. Objectors did not address the public benefit of this in their reports. Following exhibition and feedback from the community, the proponent has increased the amount of open space to 7,632m^2,

increasing this public benefit even further. While 2,000m^2 of land was slated under current controls for public open space, this would not have provided anywhere near the benefit to the community that is being proposed in the current proposal. The new public park areas, due to the development, will create a space in the Middleton Grange area for recreation, as well as providing a walkable commercial centre. The net economic benefit of the proposed parkland is estimated at $68.5 million. The parks are shown in Figure E-1. The parks are linked and include a healing garden, playground, active open space, a village green, plaza and orchard park. The parks provide a link from the east to west, linking the commercial, residential and retail/food areas of the proposed development.

Figure E-1: Proposed Middleton Grange Parks



Source: Middleton Grange Landscape Concept 20-8-2019, Issue A, Habit8

Taking the cost of creating the park and value of visitation, modelling shows that the total economic benefit of the park would be a little under $66 million. The net benefit of the park (including ongoing maintenance and upgrades) would be just under $68.5 million over its assumed 50 year life. It should also be noted that this does not include the value of the land that is being dedicated.

Western Sydney Aerotropolis

Despite what objectors have said in their reports, the current controls did not contemplate the major development in western Sydney today: the construction of a second airport for Sydney at Badgerys Creek. The Badgerys Creek site is approximately 7.5 kilometres from the proposed Middleton Grange Town Centre.

Fifteenth Avenue, which is approximately 350 metres to the south of the Middletown Grange Town Centre, linking the Liverpool CBD to the airport, has the potential to be a major growth corridor, with the proposed Fifteenth Avenue Rapid Transit as a high-frequency link.

The proposed Middleton Grange Town Centre will feature approximately 15,000m^2 of commercial space. This is shown in Table E-2.

Table E-2: Proposed Commercial Gross Floor Area, Middleton Grange

	Lot 2	Lot 3	Lot 4	Lot 5	Lot 6	Lot 7	Totals	% Total Area
Commercial GLA (m^2)	2,975	2,975	0	6,135	2,888	0	14,972.5	13.2%

Source: Pacific Planning, PPM Consulting

With the airport only 7.5km to the west, the commercial space at Middleton Grange will likely attract demand from airport-related businesses looking for commercial and office space within proximity to the airport. Airport-related businesses would be able to have their offices off-site but use the proposed Fifteenth Avenue Rapid Transit, which would likely be available by the time the Middleton Grange development is built.

It should also be noted that Middleton Grange will not be under the flight path. However, the Western Sydney Employment Lands will be to the north and the south of the runway, making them potentially susceptible to aircraft noise. While airport-related businesses might want to be close to the airport, or even based at the airport, the need to ensure occupational health and safety with regards to noise exposure may be a consideration. With nearly 15,000m^2 of office space, Middleton Grange could cater to businesses who:

- cannot afford to set up at the airport (Middleton Grange rents are likely to be lower than at the airport)
- want a presence near the airport before it opens in 2026
- do not want to be affected by the highest levels of noise at the airport
- are looking for adaptable office spaces
- are start-ups who are looking for lower rents than are available at the airport.

The proximity to the airport, and its position between the airport and Liverpool CBD, and its proximity to the proposed Fifteenth Avenue Rapid Transit means that the commercial space at Middleton Grange is not only very well located but also very attractive for potential tenants. The proposed GFA for commercial uses suggests that the potential ongoing

commercial jobs in Middleton Grange would be approximately 750 jobs. This is less than 3 per cent of the total jobs of estimated 27,946 jobs created by the airport in 2031.

Conclusion

The proponent proposes to build a town centre that is walkable, vibrant, diverse and accessible. A neighbourhood/strip shops offering would not be able to provide the same level of amenity to local people.

While shopping centre owners may seek to restrict the emergence and growth of new town centres, it is clear that their tenants, particularly their largest tenants, disagree with these restrictions. It is also clear that it would be a bad outcome for consumers.

Charter Hall objects to the planning proposal and calls for the Middleton Grange Town Centre to be restricted to no more than 5,500m^2 of commercial space. This would be a poor outcome for the people of Middleton Grange as it would:

- increase time spent in cars to get to established shopping centres – local residents of Middleton Grange would instead be able to walk to get their daily needs, as well as have an opportunity for recreation
- increase congestion around existing shopping centres
- likely result in higher prices for groceries
- result in slower-growing, smaller, more risky retail establishments
- result in less walking, and therefore higher health costs associated with sedentary lifestyles
- little public open space
- little or no commercial space.

Middleton Grange is ideally located to take some of the pressure off commercial rents and space at the new Western Sydney Aerotropolis. By catering for around 750 jobs, the commercial development at Middleton Grange could secure tenants who want to be within proximity to the airport but not located at the airport, and be connected by the proposed Fifteenth Avenue Rapid Transit.

Although Charter Hall concludes that any increase in retail floorspace in the area (including at Middleton Grange) would be unviable, it also notes that they are currently preparing a DA to expand and refurbish Carnes Hill Marketplace, suggesting that an expanded retail offering is not only needed in the area but would be viable.

Middleton Grange offers a mixed use development where the retail, commercial and residential spaces complement each other, as well as one that complements nearby developments.

1. Introduction

The purpose of this report is to give an economics response to two reports submitted by objectors on the Middleton Grange Town Centre proposal. These two reports are a report commissioned by Parkbridge Community Association by Sue Weatherly and Associates (the Weatherly Report) and a report commissioned by Charter Hall undertaken by Urbis (the Urbis Report).

The Weatherly Report:

- understates the current controls (5,000m^2 of commercial and 176 dwellings)
- uses the densities in the exhibited proposal (86,031m^2 of residential or 912 dwellings whereas only 63,703m^2 or 671 dwellings are proposed in the current revised proposal in response to community feedback) and does not acknowledge that this could be built now, without the additional amenity provided
- points out that the town centre should have been built between 2011 and 2019 (although it is 2019 and there is no retail centre on the site at all)
- does not acknowledge the large park that a higher density can provide (although a smaller amount of open space was included in the exhibited proposal, which objectors are responding to, objectors did not acknowledge the public benefits that flow from higher densities, such as increased public open space)
- does not acknowledge the social and community infrastructure that will be built as part of the proposal, including:
  - a new park of 7,632m^2
  - a walkable town centre, with the health and social benefits this creates
  - new retail allowing people to shop more locally
  - new restaurants allowing entertainment options more locally
  - local retail will reduce congestion
- acknowledges that the town centre is approximately 6km from the nearest railway line but does not acknowledge that the proposed Fifteenth Avenue Rapid Transit will be just 350m from the town centre, providing high-speed access to Liverpool CBD and the Western Sydney Aerotropolis.
- does not acknowledge that other town centres in the area, for example Carnes Hill Marketplace, are also a long way from high capacity public transport
- does not acknowledge the impact of the Western Sydney Aerotropolis
- puts up a "straw man" economic argument that misconstrues the economics of increasing the supply of housing.

Similarly, Charter Hall commissioned Urbis to undertake an analysis of the viability of the potential retail space, and its potential impact on the shopping centre, Carnes Hill Marketplace (the Urbis Report). The Urbis Report:

- notes that the original masterplan (from 2002) was low density with a neighbourhood centre, even though the current controls allow for a much more dense development
- does not acknowledge the Western Sydney Aerotropolis and its impact on other centres
- does not acknowledge the civic and community space that would be built if the proposal is of a viable density, including the proposed 7,632m^2 park

- refutes the Macroplan Dimasi Report commissioned by the proponent, but does not adequately address issues around the effects of restricting supply of retail space on total factor productivity, rents and prices
- does not take into account the planning for developments along Fifteenth Avenue.
- notes that, despite arguing that an increased retail offering in the area is unviable, Carnes Hill Marketplace is looking to expand suggesting that an expanded retail offering is not only needed in the area but would be viable.

A major criticism of the Middleton Grange proposal in the Weatherly Report is that it is not near a train station or main road. However, the Carnes Hill Marketplace is also not near a train station (approximately 4km from Leppington Station) and is on Cowpasture Road, which is not a major high capacity arterial road. In addition, the Fifteenth Avenue Rapid Transit proposal – to provide rapid transport between the Liverpool CBD and the Western Sydney Aerotropolis – cancels out these objections.

Objectors cannot have it both ways. Either there is not enough retail capacity (in which case an expansion of Carnes Hill Marketplace would be unviable) or there is. Either the location of the Middleton Grange Town Centre is not in an adequate location, or other town centres should also not exist. Cities change over time (as with the airport) and potential land uses are not rigid.

It is clear that the purpose of the Urbis Report is to argue that Middleton Grange should be kept as small as possible while Carnes Hill Marketplace is allowed to expand. However, even Carnes Hill Marketplace's major tenant, Woolworths, has a position that the development of new stores is difficult and that there should be more competition in the retail space, whereas the Urbis Report argues that less retail space results in better outcomes for established operators. In its submission to the Productivity Commission's *Performance Benchmarking of Australian Business Regulation: Planning, Zoning and Development Assessments* Inquiry in 2010, Woolworths stated:

> Overall for Woolworths, by reducing the difficulties associated with developing new stores, we will be able to offer more Australian communities the convenience, choice, low prices and excellent quality products that Woolworths businesses are known for. Woolworths will also be less able to continue to create the many thousands of jobs and training opportunities that come with new store developments. Woolworths is concerned that continued land scarcity combined with protracted development process will lead to diminished retail competition, busier and more inconveniently located stores and shopping centres and more congested carparks and transport facilities.

Furthermore, in relation to competition, Woolworths said:

> Unless appropriately addressed Woolworths expects the existing undersupply to worsen as demand for retail floorspace per person continues to increase (for the reasons discussed in section 3). Woolworths is specifically concerned that, rather than addressing

> this undersupply, current reforms to the NSW Planning will potentially exacerbate and reinforce the current shortage of retail space. For example, as part of this reform process, the NSW Department of Planning has released Draft Sub-Regional Plans which place a limit of one or two supermarkets in Town Centres and one small supermarket in villages. As a result of this, Woolworths estimates that approximately 135 supermarkets that are currently in existence would not be allowed to be developed under these Draft Sub-Regional Plans, let alone any further supermarkets to account for population growth.

They go on to say:

> For example, there is a broad policy push across all jurisdictions (including NSW) to centralise future major retail development in "activity centres" or centres centred on major transport links / major employment centres with a key objective being to increase public transport use. The practical effect of this policy approach has been to further limit land available for retail development even where there are compelling reasons for allowing retail development away from the transport and major centres.

Finally they say:

> The final issue, in terms of restrictions on permitted type of development, arises where planning frameworks do allow retail development but narrowly prescribe the type of store or formats allowed. … Only through enabling the market to determine the appropriate retail format, do local communities and customers get the best levels of price, service and product competition both now and into the future.

Objectors did not address the large amount of public open space that is proposed to be created by the development, which will create a space in the Middleton Grange area for recreation, as well as providing a walkable commercial centre. As shown in this report, the net economic benefit of the proposed parkland is estimated at $68.5million.

Pacific Planning has commissioned PPM Consulting to provide an assessment of the objections, as well as new information, such as studies of the effect of planning restrictions on total factor productivity (TFP) and therefore prices on supermarket in other highly regulated markets, the benefit of new parks, and the effect of the new town centre on competition.

2. The Proposed Development

The development site is at 60-80 Southern Cross Avenue and 45-65 Hall Circuit, Middleton Grange.

The site is split over six lots, with a total area of 57,255m^2 available for development.

The post exhibition scheme as it is currently proposed has an average FSR of 1.98 across all six lots, with a resultant total GFA of 113,173m^2. The retail total GFA would be 20,320m^2, commercial/mixed use would be 14,973m^2 and medical/other uses would occupy 15,235m^2 of GFA. This is shown in Table 1.

Table 1: Site area and Floor Areas

	Lot 2	Lot 3	Lot 4	Lot 5	Lot 6	Lot 7	Totals
RETAIL AREAS (GFA)	373	379	7,157	8,075	3,280	1,057	**20,320**
COMMERCIAL/MIXED USE (GFA)	2,975	2,975	0	6,135	2,888	0	**14,973**
MEDICAL/OTHER (GFA)	0	0	0	0	0	14,178	**15,235**
RESIDENTIAL AREAS (GFA)	3,770	3,770	26,767	22,222	7,352	0	**63,881**
TOTAL GFA	**7,118**	**7,124**	**33,924**	**36,432**	**13,519**	**15,235**	**113,173**
SITE AREA	7,118	7,124	15,490	17,970	5,538	4,015	**57,255**
FSR	1.00	1.00	2.19	2.03	2.44	3.79	**1.98**
Total development site FSR (rounded)							**1.98**

Source: Pacific Planning, PPM Consulting
These specific areas may adjust slightly during detailed design

The proposed GFA maximises the viability of the town centre as a focal point for the Middleton Grange suburb, and maximises the flexibility for the proponent in accommodating varied uses. As the uses are not yet known, it is vital that flexibility exists, particularly when it is likely that a use could be a full-line supermarket.

The gateway determination issued on 15 August 2016 included a number of conditions to be addressed by Council prior to public exhibition of the planning proposal. Among these conditions was for Council to provide additional information regarding:

a) transition of proposed heights to existing neighbouring zones and overshadowing impacts
b) proposed controls for proposed commercial uses in residential zones, for example, this may include proposed controls to limit, or encourage certain commercial floor areas, or control to ensure a proportion of residential use.

Council responded to the proponent, seeking a reduction in heights to allow an appropriate transition of building height to the lower scale residential land uses surrounding the proposed town centre. In response to Council's preferred FSR, the proponent has countered in a way that allows for the transition Council requires in Lots 2 and 3, but maintains maximum flexibility of the original Gateway determination at a GFA of 113,173m^2. The proponent proposes that Lots 2 and 3 have an FSR of 1.0:1 to allow for Council's preferred transition. To ensure that the GFA remains commensurate with the Gateway determination, the proponent is proposing FSRs for lots 6 and 7 of 2.44 and 3.79 respectively, although Lot 7 will have no residential uses.

Analysis of Current Controls Against Proposal

When the Liverpool Local Environmental Plan 2008 was gazetted, the Western Sydney Aerotropolis was contemplated, but in no way was it at that stage thought that it would go ahead. With so many stops and starts since its first announcement by the Hawke government, there is no way that the airport development could have been considered as part of the LEP 11 years ago.

However, in September 2018 work began on building the Western Sydney (Nancy-Bird Walton) Airport at Badgerys Creek, around 7.5 kilometres from the proposed Middleton Grange Town Centre. The airport is expected to be operational by 2026.

In relation to the town centre itself, contrary to the Weatherly and Urbis reports, the LEP allows for the following:

- 583 dwellings
- 11,729m^2 retail/commercial space.

This is shown in Table 2.

Table 2: Possible Development Under Liverpool LEP 2008 Versus Proposal

	2008 LEP	2019 Proposal (with medical)	Difference
R1 Area (m^2)	26,189	14,243	-11,946.0
B2 Area (m^2)	31,278	43,013	11,735.0
FSR R1	0.75:1	1.1:1	
FSR B2	1.5:1	2.3:1	
Av FSR Total Site	1.16:1	1.98:1	
Height R1 (m)	8.5	9.5, 14	
Height B2 (m)	18	20, 29	
Open Space (RE1) (m^2)	751	2,569	1,818.0
Open Space (not RE1) (m^2)	1,249	3,126	1,877.0
Dwellings	583	671	88
Residential GFA (m^2)	54,829.5	63,703	8,873.5
Commercial GFA (m^2)	11,729.3	34,235	22,505.7
Medical GFA (m^2)	0	15,235	15,235.0
Total GFA	66,558.8	113,173.0	46,614.2

Source: Pacific Planning, PPM Consulting
These specific areas may adjust slightly during detailed design

It should be noted that, under the LEP, between 583 and 630 dwellings and 11,729.3m^2 of commercial space could be built now, without a planning proposal (contrary to the assertions that only 176 dwellings and up to 5,500m^2 of commercial space could be developed under the current LEP). However, it should also be noted that if a town centre was built, it would likely lack the amenities that are being afforded by a small increase in FSR, from 1.16:1 to 1.98:1.

The additional amenities include:

- additional 5,632m^2 of open space
- medical centre with a GFA of 15,235m^2

- community centre
- child care centre
- gym
- specialty shops (including restaurants, cafes and bars).

The residential, commercial and retail mix of the additional total increase of 46,614.2m^2 in GFA is designed to complement each other. The proposal will allow entrepreneurs to work and live in the same precinct, allow business incubation and be complementary to the office space at the new airport (both before it opens and post 2026).

The retail mix is proposed to include a major supermarket, a minor supermarket, some specialty shops and entertainment uses (such as restaurants, cafes and bars). Apart from the supermarket, it is unlikely that this mix will compete with the Carnes Hill Marketplace, as the consumer offering will be so different, and geared more to lifestyle amenity as well as a heavy concentration on commercial floorspace Indeed, nearly 15,000m^2 of the additional floorspace (nearly one-third) is proposed as office space, while a further 15,000m^2 (30 per cent) is proposed as a medical centre.

Gateway Determination

A Gateway determination was issued by the delegate of the Greater Sydney Commission on 15 August 2016. The Gateway in supporting the progression of the Planning Proposal included a number of conditions that would need to be addressed and approved prior to the progression of the proposal to consultation and exhibition.

Conditions 1 and 2 of the Gateway were relevant as follows:

1. *In relation to s117 Direction 4.3 Flood Prone Land, prior to exhibition, Council is required to:*
    a. *Undertake and provide relevant flood studies that demonstrate consistency with this Direction; and*
    b. *Include a Flood Planning Area map in the proposal.*
2. *Prior to public exhibition, Council must revise the planning proposal to include the flooding information and to provide additional information regarding:*
    a. *Transition of proposed heights to existing neighbouring zones and overshadowing impacts,*
    b. *Proposed controls for proposed commercial uses in residential zones, for example, this may include proposed controls to limit, or encourage certain commercial floor areas, or controls to ensure a proportion of residential uses, and*
    c. *Provide the revised planning proposal to the Department for review.*

Subsequently detailed urban design work and economic viability analysis was undertaken to adequately address the matters raised in the Gateway determination, particularly the issue related to transition of height to neighbouring zones and overshadowing impacts. A revised Planning Proposal and Urban Design Report were prepared in June 2018 and was forwarded to the Department of Planning and Environment on 20 June 2018, which included controls of:

- FSR: 1:1 and 2.3:1
- Heights: 9.5m; 14m; 20m; 32m; and 35m

The Department confirmed on 28 June 2018 that the Gateway conditions had been adequately addressed and that the proposal could proceed to public exhibition, on the condition that the proposal was updated to reflect the Greater Sydney Plan and the Western City District Plan. This planning proposal was revised (July 2018) for the purposes of public exhibition.

The planning proposal was then publicly exhibited and subsequently amended to reflect the concerns raised by the community. This includes reduced height (29 metres), double the amount of open space, reduction in apartments and the proposed medical centre. The objectors' reports relate to the exhibited proposal, not the current proposal.

The Benefits of Increasing Housing Supply

The Weatherly Report puts up a straw man argument that goes that economists say that building more supply anywhere and always will result in lower house prices. The report goes on to say that this is a flawed argument. Indeed it is a flawed argument because it is not what economists argue.

The simple answer, though, is that the housing market does not work much differently to other markets. Despite housing being heterogenous for many reasons (size, location, proximity to jobs, schools, amenities, etc), all other things being equal, increasing supply will reduce prices.

The market for bananas is similar – constrict supply and prices go up; increase supply and prices go down. But the market for bananas is also influenced by the market for substitutes, so that when the prices of apples goes up, demand for bananas may increase, forcing the price of bananas up without any change to the supply.

The housing market is influenced by the current stock (i.e. an increase in the housing stock of one per cent per year will not impact on the price of the whole stock), the price of money (also known as interest rates), prevailing rents in an area, demand from new household formation, the state of the labour market, demand for increased quality as incomes rise, and other impacts that are external to the supply of housing.

So it follows that more supply everywhere will not necessarily lower prices. However, this is a misleading argument that attempts to discredit economists and make an odd point that somehow the market for housing is different to every other market. In reality, new house prices are about yield, and the more dwellings that a developer's fixed prices can be spread across, the lower the price of the final dwelling sold to the consumer. Therefore, building more houses in a development *does* mean that prices are lower than they would otherwise be if the fixed costs were spread among fewer dwellings.

The proposal at Middleton Grange Town Centre is to build 88 more apartments than can be built under current controls. While this will have a negligible effect on the state of the overall Sydney market, the increased density will allow for the fixed development costs to be spread across more apartment purchasers, therefore allowing the apartments to be offered to the market at a lower price than at the lower density.

That said, those putting forward the argument that increased supply does not lead to lower house prices fail to give a counter-factual. They fail to show what would have happened to prices had supply *not* increased. Most economists would contend that restricting supply leads to higher prices in nearly all markets, including the housing market, but not for reasons implied by the Weatherly Report.

3. Response to Objectors

The two main objections to the proposed development are contained in the Weatherly Report and the Urbis Report. This section comments on each objection from an economic perspective.

Objection	Comment
Sue Weatherly and Associates Report	
The current controls only allow 5,000m^2 of retail and commercial space and 176 dwellings.	This is not true. The current controls allow for 11,729.3m^2 of commercial/retail space and 583 dwellings. These uses at these densities are available now, without providing community infrastructure such as the large park.
The proposal is to build 86,031m^2 of residential space or 912 dwellings.	The current proposal will facilitate 63,703m^2 of residential space or approximately 671 dwellings.
The proposal is to build 20,240m^2 of retail and 2,533m^2 of commercial uses.	The current proposal is to build 20,320m^2 of retail, 14,973m^2 of commercial and 15,235m^2 of medial/other uses.
Open space areas for parks	This is the only acknowledgement that the additional GFA will provide the opportunity for a park, but does not acknowledge that the size and amenity of the park is dependent on the yield of the development.
The community's concerns are around infrastructure, with little or no transport and social infrastructure	The following infrastructure will be provided to the people of Middleton Grange as a result of the development: • a new park of 7,632m^2 • a walkable town centre, with the health and social benefits this creates • new retail allowing people to shop more locally • new restaurants allowing entertainment options more locally • local retail will reduce congestion • the proposed Fifteenth Avenue Rapid Transit will be just 350m from the town centre, providing high-speed access to Liverpool CBD and the Western Sydney Aerotropolis.
Middleton Grange is a low density community, located some distance from mass transport service (the nearest station is over 6km away at Leppington)	The proposed Middleton Grange Town Centre is located 350m north of Fifteenth Avenue, where a proposed rapid transit system is proposed to operate from the Liverpool CBD to the new Western Sydney Aerotropolis. This places rapid public transport much closer to Middleton Grange that the current Carnes Hill Marketplace, which is also approximately 4km from Leppington station. On this analysis, Carnes Hill Marketplace should also not have been built.

Objection	Comment
Because of the capacity of the current planning rules for the town centre to deliver local services, retail for daily needs and housing diversity there is no justification to change the planning rules for the site	The key strategic documents upon which the Weatherly Report makes these claims are: • the Liverpool Retail Centres Hierarchy (2012) • the Business Centres and Corridors Strategy Review (2013). Neither of these documents envisaged the Western Sydney Aerotropolis and are therefore out of date. The Western Sydney Aerotropolis provides the justification for a town centre of the size proposed. The proposal also includes zone boundary adjustments to reflect a more logical and simplified layout across the centre. This has resulted in an increase in the area of B2 Local Centre land and land available for development. This has also resulted in additional town centre floorspace associated with the town centre.
The proposal does not comply with the Gateway Determination	The proposal does comply with the Gateway determination.
Due to the nature of the permissible land uses in the B2 zone, increasing the area zoned B2 would increase the potential commercial or retail floor space without the need to increase heights or floor space ratios. This would enable the market to respond to any increase in demand for retail floor space without changing the FSR controls.	This appears to contradict earlier statements that the maximum retail/commercial space should be 5,000m^2. If retail/commercial GFA is to be capped at 5,000m^2, the amount of land zoned B2 is immaterial and the market can only respond within the envelope of 5,000m^2. This seems like a disingenuous statement. It is likely that the market would work it out, but at rents higher than would otherwise be the case with higher FSRs, and so risking the viability of commercial tenants (and therefore the likelihood of the development happening at all) as well as meaning shoppers at Middleton Grange will pay higher prices as rents are passed through.
Much of the economic benefits described in the EIA is about impacts in the broader catchment.	Currently there is no retail or commercial, nor is there any Middleton Grange Town Centre. It is wholly appropriate that a wider catchment, capturing where current residents shop, would be taken.

Objection	Comment
The current planning rules also provide for: • housing choice, and affordability (through increase supply) • access to convenience shopping and local facilities • jobs/employment	While it is true that even an increase in one dwelling provides increased housing choice, the development can be built with much more residential and retail than the Weatherly Report says it can under current controls. It is also appropriate to acknowledge that the proximity of the town centre to the Western Sydney Aerotropolis changes the nature of the demand for commercial and retail space and that the proposed Fifteenth Avenue Rapid Transit changes the economic opportunities along the corridor. The Weatherly Report also fails to acknowledge that the higher densities allow for greater amenity. While it should be acknowledged that 2,000m^2 was slated for open space under the existing controls, and the proposal has been amended since exhibition to include a total of 7,632m^2 of open space that would not have to be provided at current densities, the opportunity for more open space that comes with higher densities should have been acknowledged. The economic benefit of the park is estimated at $68.5 million over 50 years.
The argument that "if we build more houses then house prices will fall to a level that is more affordable" is flawed.	This in itself is a flawed, straw-man, take on the consequences of building an adequate supply of dwellings in areas where there is demand. The proposal is to build 88 more apartments than can be built under current controls. While this will have a negligible effect on the state of the overall Sydney market, the increased density will allow for the fixed development costs to be spread across more apartment purchasers, therefore allowing the apartments to be offered to the market at a lower price than at the lower density.

Urbis Report

The original masterplan, prepared in 2002, establish Middleton Grange as a predominantly low density residential place with diverse housing options and walkable neighbourhoods as well as a neighbourhood centre that can provide the community with access to daily shopping requirements, open space and community facilities	The current controls allow for 11,729.3m^2 of commercial/retail space and 583 dwellings. These uses at these densities are available now, without providing community infrastructure such as the large park. The 2002 plan did not envisage the Western Sydney Aerotropolis and the effect this has on the whole Liverpool LGA. The report on employment generation potential of the new airport by EY suggests that it will create 27,946 jobs by 2031 as a result of airport operations and business park. As there will be some demand for off-site commercial space, Middleton Grange is ideally situated, with space for a potential 749 commercial jobs. The open space and walkability of a predominantly low density neighbourhood would be far lower than the current proposal.

Objection	Comment
The Liverpool Business Centres and Corridors Strategy (2013) places Middleton Grange as a village centre and Carnes Hill Marketplace as a town centre. The locational characteristics of Middleton Grange make it inappropriate for retail/commercial space to exceed 5,500m^2.	The current hierarchy of centres for Liverpool does not anticipate the development of the Western Sydney Aerotropolis. At 7.5km from the airport, and connected by a repaid transit system, Middleton Grange is ideally located to provide off-site commercial and retail for airport-related industries and businesses.
Carnes Hill is located adjacent to civic and community uses (skate park, Recreation Centre, Library, community facilities)	The Urbis Report does not examine the increased benefits of the park that was exhibited as part of the proposal, nor does it acknowledge that the higher densities allow for greater amenity While it should be acknowledged that 2,000m^2 was slated for open space under the existing controls, and the proposal has been amended since exhibition to include a total of 7,632m^2 of open space that would not have to be provided at current densities, the opportunity for more open space that comes with higher densities should have been acknowledged. The economic benefit of the park is estimated at $68.5 million over 50 years.
The Macroplan Dimasi Report over-estimated the market need for new retail space. The market is of a sufficient size to support one full line supermarket in the not too distant future, but not more.	The tenant mix is expected to not compete with Carnes Hill Marketplace, providing a full line supermarket, a smaller supermarket and some specialty retail. Currently shoppers living in Middleton Grange need to travel 2 kilometres or more to access retail; the proposed town centre would allow many to walk to the shops. Woolworths, one of Carnes Hill Marketplace's major tenants, has a position that more retail space should be provided where possible to keep rents, congestion, prices and car use down.
The impact on Carnes Hill Marketplace could be as much as a 27 per cent drop in sales	PPM Consulting acknowledges that new retailing could have a short-term impact on current centres. However, the current centres will also be affected by the Western Sydney Aerotropolis from 2026, as well as the developments that are envisaged along Fifteenth Avenue, none of which were anticipated by the LEP or the Macroplan Dimasi Report.
The owner of Carnes Hill Marketplace is preparing a DA to expand the shopping centre.	Despite saying that more retail offerings in the area are unviable, the Urbis Report goes on to say that the owner of Carnes Hill Marketplace is looking to expand. This surely would be unviable too, given that the Urbis Report attempts to outline why the Middleton Grange Town Centre should only be 5,500m^2.

Objection	Comment
The PPM Consulting Report is of little substance	The Urbis Report either intentionally or inadvertently misrepresents the PPM Consulting Report. When the PPM Consulting Report talks about the viability of the development, it does not refer to the viability of the retailers, it refers to the viability of the development itself (the return on investment for the developer, not the retail operator). Therefore, it holds that if the yield is too low, the return will be too low. PPM Consulting acknowledges that 88 additional dwellings above the current controls would not make a material difference to the viability of shops at Middleton Grange, however, the increased density will allow for the fixed development costs to be spread across more apartment purchasers, therefore allowing the apartments to be offered to the market at a lower price than at the lower density. A lower cost allows the development itself to be more viable, and therefore more likely to be built.
The average single-supermarket centre is 6,800m^2 of total retail floor space with total property floorspace of 8,570m^2.	Again, the Urbis Report is being misleading, as they see no reason that the town centre should be more than 5,500m^2. On this logic, they are against even a single-supermarket centre, as the average single-supermarket centre is 1,300m^2 more than this. Effectively the Urbis Report is suggesting that the people of Middleton Grange should only have a small supermarket, and get in their cars and drive to Carnes Hill Marketplace for their grocery shopping. Small shops, and restricted retail space, after all, have been shown to lead to lower total factor productivity, higher rents and higher prices.

4. The Impact on Consumers of Reducing Commercial/Retail Space

The Weatherly Report and the Urbis Report object to the proposed town centre on the mistaken basis of the current controls. They do not reference the Western Sydney Aerotropolis nor do they acknowledge the increased amenity provided by increased density. They also fail to adequately address the growing amount of economic empirical and theoretical evidence that restrictions on commercial and retail floor space impact harshly on consumers by increasing rents which is passed through in the form of higher prices. This chapter looks at this evidence, refuting the argument that only one centre should be able to grow at the expense of the consumer.

Major British Study of Restrictions of Commercial Space

Cheshire, Hilber and Kaplanis in *Evaluating the effects of planning policies on the retail sector: or do town centre first policies deliver the goods?* (Spatial Economics Research Centre, London School of Economics, 2011) found that British land use policies may lower total factor productivity (TFP) in the retailing industry by:

- restricting the total availability of land for retail, thereby increasing space costs
- directly limiting store size
- concentrating retail development on specific central locations.

The researchers used unique store-specific data to estimate the impact of space on retail productivity and the specific effects of planning restrictiveness and micromanagement of store locations.

The research found that total factor productivity (TFP) rises with store size and that planning policy directly reduces productivity both by reducing store sizes and forcing retail onto less productive sites. The results suggest that since the late 1980s British planning policies have imposed a loss of TFP of at least 20 per cent.

Planning policies in NSW are similarly restrictive, establishing town centre hierarchies, restricting new town centres, restricting the size of town centres and curtailing growth.

The research found that these restrictive "town centre first" policies should be removed, especially:

- eliminating the 'needs' and 'sequential' tests and allowing supermarket development on larger sites close to major highways would produce major efficiency gains in the sector.
- "town centre first" policies are unlikely to deliver on the two explicit goals of improving access to shops for poorer households and encouraging the use of public transport for sustainability.
    - By reducing productivity and raising prices in shops – notably supermarkets – these policies will adversely affect the poor, since poorer households spend higher proportions of their incomes on supermarket purchases.
    - Since warehouses are located close to major roads, these policies push retail logistics to more and longer journeys in smaller lorries in more congested conditions. They also push the majority of shoppers using cars to more frequent and time-consuming trips in more congested conditions.

The implications of this research for NSW, and indeed for the Middleton Grange Town Centre, are profound. The findings suggest that restricting the size and growth of Middleton Grange Town Centre to a neighbourhood centre, and concentrating growth in current centres, would likely result in an increase in prices, more cars and trucks on the road and more congestion around the designated centres. This is not only bad for the current and potential residents of Middleton Grange, but also the wider catchment area.

Competing Town Centres

The main objection has come from Charter Hall, owner of Carnes Hill Marketplace, some two kilometres from the proposed Middleton Grange Town Centre. The Department of Planning, Industry and Environment (the Department) has a long-standing policy position when it comes to competition between centres.

The *Centres Policy: Planning for Retail and Commercial Development* has been in draft form since 2009 and provides guidance to planning authorities. The (draft) Centres Policy is based on six planning principles:

- Retail and commercial activity should be located in centres to ensure the most efficient use of transport and other infrastructure, proximity to labour markets, and to improve the amenity and liveability of those centres.
- The planning system should be flexible enough to enable centres to grow, and new centres to form.
- The market is best placed to determine the need for retail and commercial development. The role of the planning system is to regulate the location and scale of development to accommodate market demand.
- The planning system should ensure that the supply of available floorspace always accommodates the market demand, to help facilitate new entrants into the market and promote competition.
- The planning system should support a wide range of retail and commercial premises in all centres and should contribute to ensuring a competitive retail and commercial market.
- Retail and commercial development should be well designed to ensure they contribute to the amenity, accessibility, urban context and sustainability of centres.

Middleton Grange is located in an area that ensures the efficient use of transport, is close to potential workers, residents and customers, and improves the amenity of current and future residents. Furthermore, under these principles, the centre at Middleton Grange should have as much initial GFA as possible to allow for flexible uses, to enable it to grow and to accommodate market demand. Middleton Grange Town Centre is also within 350m of the proposed Fifteenth Avenue Rapid Transit between Liverpool CBD and the new airport at Badgerys Creek, which is likely to be running before the town centre is complete.

Recent residential development in the area has resulted in a population explosion without a commensurate increase in the amount of retail space and other amenities. The Middleton Grange town centre would bring the much-needed retail and other commercial services that are needed today by current residents of the area. Even without the new residents that would move into the town centre as a result of this development, current residents are

under-served and currently need to travel up to two kilometres to purchase their daily needs. The Middleton Grange Town Centre is designed to ensure the retail and other commercial needs of current and future residents are met. Indeed, with population growing as fast as it is, there may need to be even more retail space in the area – in addition to Middleton Grange – in the next five to ten years.

A Note on The Harper Review

The Commonwealth government's Competition Policy Review (Harper Review) released its final report on 31 March 2015. The key focus of the report, with regards to planning and land use controls, is on the constraints to land use and its impact on competition.

At page 44, the Harper Review states:

> Land is an important input to the production of goods and services and a source of amenity for consumers. Even small policy improvements in this area could yield large benefits to the economy.
>
> Planning systems by their nature create barriers to entry, diversification or expansion, including through limiting the number, size, operating model and mix of businesses. This can reduce the responsiveness of suppliers to the needs of consumers.
>
> Planning regulations should work in the long-term interests of consumers. They should not restrict competition unless the benefits of the restriction to the community as a whole outweigh the costs, and the objectives of the regulations can only be achieved by restricting competition. Subjecting planning regulations to the public interest test will ensure they do not inappropriately limit entry to markets.

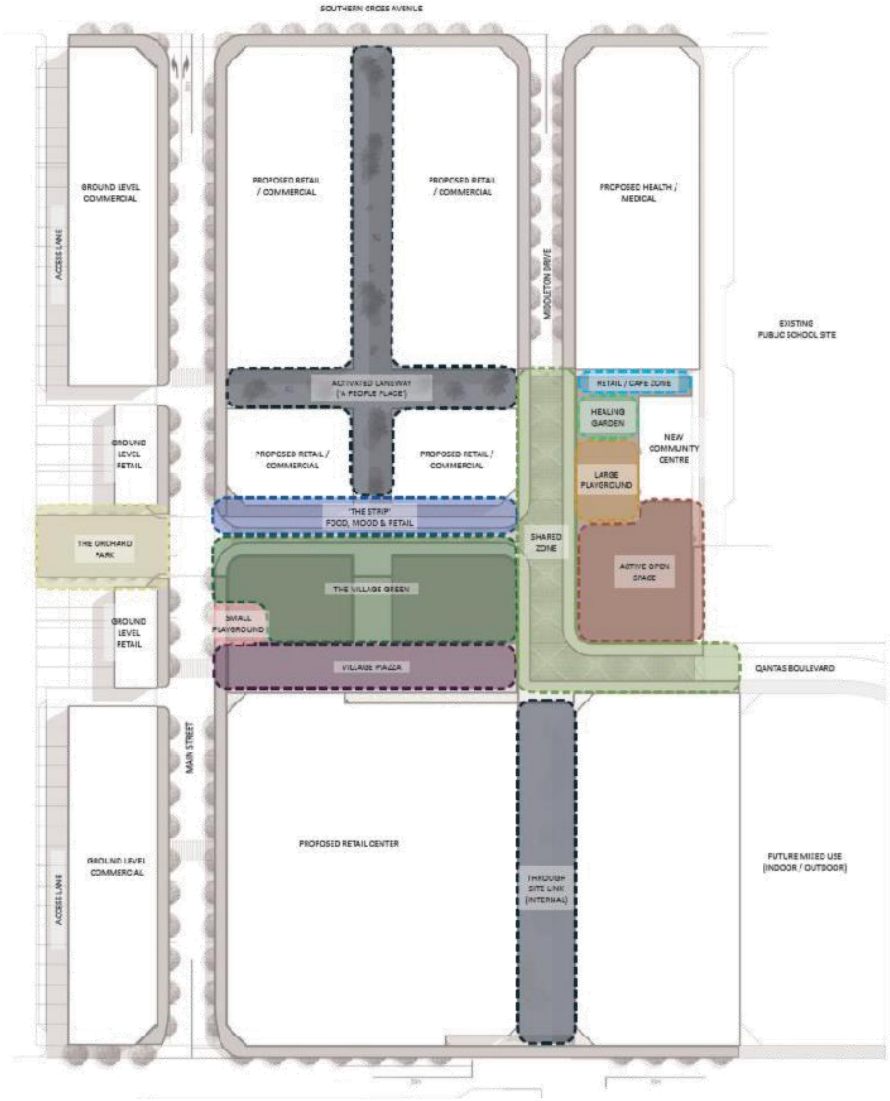
It is clear that restricting the amount of space available at Middleton Grange would not just have an effect on the potential viability of the town centre, it would have real effects for consumers too. Restricting the amount of floor space available in the town centre will lower the supply of that floor space, making it more scarce for any given level of demand. As such, the price per square metre of floor space will be higher than it would otherwise be at any level of demand. This means higher rents for tenants across all centres in proximity to Middleton Grange than would otherwise be prevalent.

Tenants can mitigate this by growing more slowly and employing fewer staff, or by selling their goods and services at prices higher than they would otherwise be. If the floor space is too expensive, it might mean that tenants are not attracted at all to the town centre, further risking its viability. The people of Liverpool already have lower average incomes and higher cost of living than other parts of Sydney; by seeking to lower the GFA of town centres like Middleton Grange, objectors are ensuring the economic scales continue to be tipped against its residents.

5. Dedication of Public Park

The proponent intends on dedicating a substantial proportion of the site as new public park areas. The proposal is for 7,632m^2 of the site to be dedicated as public open space (either dedicated to the Council or not) (see Appendix 1 for details of park areas). While it should be acknowledged that 2,000m^2 was slated for open space under the existing controls, a park that size is considered too small to play any meaningful role in creating community benefit. The parks are shown in Figure 1. The parks are linked and include a healing garden, playground, active open space, a village green, plaza and orchard park. The parks provide a link from the east to west, linking the commercial, residential and retail/food areas of the proposed development.

Figure 1: Proposed Middleton Grange Parks



Source: Middleton Grange Landscape Concept 20-8-2019, Issue A, Habit8

The large park area is not required under the current controls. Without the density that improves the viability of the development, the parks would not be built.

The parks will be embellished with landscaping, trees, places to picnic, barbecues and the like. It is likely that the fitout of the park will cost around $3.3 million. This is shown in Table 3.

Table 3 – Costs of Park Creation

	Cost	Quantity	Total
Levelling (/m^2) ($)	200	7,632	1,526,400
Landscaping (/m^2) ($)	200	7,632	1,526,400
Equipment ($)			250,000
Creation Cost ($)			**3,302,800**

Source: Pacific Planning, PPM Consulting

In addition to the dedication of the park, which the community will receive at no cost, the park will benefit the wider community (current residents from around the area and new residents in the proposed apartments).

The benefit is derived from the price that the average person places on leisure time, the amount of visitation, the travel time to the park, and the time spent in the park.

The estimated visitation to the park is based on the Zanon model[1], which estimates the number of visitors to a public park based on four attributes – standard of service, catchment population, area of the park and public awareness of the park. The model has been shown to provide good forecasts for visits to major parks and like spaces in Melbourne. It is assumed that park visitation is similar in Sydney and Melbourne.

Recently, Mr Marcus Spiller of SGS Economics and Planning[2], used the Zanon model to estimate visitation to estimate the visitation to a proposed public square as part of the redevelopment of the Queen Victoria Market in Melbourne.

The Zanon model uses the following formula:

$$Visits = 27 \times Standard\ of\ Service^{1.04} \times Catchment\ Population^{0.19} \times Area^{0.11} \times Public\ Awareness^{0.47}$$

where:

- Standard of Service is a figure between 0 and 100 indicating the "quality" of the park, judged by reference to amenities provided, including seating, shelters, barbecues, landscaping, etc
- Catchment Population is the population within a local catchment
- Area is the area of the proposed park in hectares
- Public awareness is the percentage of a random population that would be aware that the park exists.

[1] A Model for Estimating Urban Park Visitation –Parks Victoria Occasional Paper Series, Dino Zanon, 1998
[2] Melbourne Am C245 Queen Victoria Market Precinct Renewal Evidence report of Marcus Spiller April 2016, SGS Economics and Planning

Table 4 details the assumptions made for the variables in the Zanon model.

Table 4 – Estimated Park Visitation

	Park Estimates
Standard	90
Population*	16,177
Area (ha)	0.7632
Public Awareness	90
Visits	144,953

* Population of Middleton Grange Census Collector District, 2016 (5,100) plus the estimated final population of the town centre under the current proposal (11,000)

Source: Pacific Planning, ABS Census 2016, PPM Consulting

As detailed in Table 3, the Zanon model calculates that there would be an estimated total of 144,821 visit per year (not necessarily unique visits) to the park each year.

Table 5 details the economic benefit of the use of the park. The furthest part of Middleton Grange from the town centre is 1.5 kilometres. It is likely that the average distance would therefore be around 500 metres. Therefore, it is assumed that the median return travel distance would be 1 kilometre. At a walking travel speed of 5 km/h, the median return travel time would be 12 minutes (0.2 hours). It is further assumed that, once there, the median time spent at the park would be an hour. According to Transport for NSW, the price of non-business time is $16.89 per hour. Therefore, the value of journeys to and from the park would be a little under $489,207 per year, and the value of time spent at the park would be approximately $2.9 million. The capitalised value of the park, over 50 years, would be a little over $64.2 million.

Table 5 – Economic Benefit of Park Dedication

	Total
Estimated annual visitation (no.)	147,588
Assumed median travel distance return (km)	1
Travel speed (walking) (km/h)	5
Median travel time to and from (hrs)	0.2
Time spent at open space (hrs)	1
Value of leisure time ($)[3]	16.89
Value of journey ($)	498,552
Value of Time Spent ($)	2,492,760
Value of visits/ year ($)	2,991,312
Capitalised value (50 Years) ($)	**64,259,913**

Source: Pacific Planning, ABS Census 2016, PPM Consulting

Costs

Including fitout, the park is estimated to produce $67.6 million worth of total economic benefit to the community over 50 years. The proponent is proposing that the owners of the development (via an owners corporation or similar arrangement) would be responsible for

[3] *Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives*, June 2018, Transport for NSW

the maintenance of the parks and gardens. This has an additional benefit to the Council and people of Liverpool, as they will not be required to maintain the asset, but will benefit from it being fully open and accessible to the public. This benefit of park maintenance and upgrades would add up to nearly $900,000 over the 50 year life of the park. The proponent would maintain and upgrade the park. Ongoing maintenance includes mowing, rubbish collection and removal, landscaping and amenities cleaning (e.g. barbecues, etc). In the absence of definitive cost data, a number of assumptions have been made for ongoing maintenance of the park. Table 6 outlines these assumptions.

Table 6 – Ongoing Maintenance of Dedicated Park – Cost Assumptions

Ongoing	Times	Hours	Cost	Annual Cost (2019 Dollars)
Mowing	26	4	50	5,200
Rubbish Removal	52	1	50	2,600
Landscape Maintenance	26	4	50	5,200
Amenities Cleaning	52	3	50	7,800
Total				**20,800**

Source: PPM Consulting

It is also likely that every 15 years, the park will need upgrading, facilities will need replacing and landscaping will need renewal. It is assumed that Council will spend $150,000 (in 2019 dollars) to upgrade the park in Years 16, 31 and 45. Therefore, at an annual inflation rate of 2 per cent, it is assumed that Council will spend $201,880 in Year 16, $271,704 in Year 31 and $365,678 in Year 46.

Under the forgoing assumptions, the net present value of the ongoing and capital costs (which are a benefit to the community) would be $894,641 over 50 years.

Total Benefit and Net Benefit

Taking the cost of creating the park and value of visitation, the total economic benefit of the park would be a little under $67.6 million. As detailed in Table 7, the net benefit of the park (including ongoing maintenance and upgrades) would be just under $68.5 million over its assumed 50 year life. It should also be noted that this does not include the value of the land that is being dedicated.

Table 7 – Total Economic Benefit of Park Dedication

	Total
Creation Cost ($)	3,302,800
Visitor Benefit ($)	64,259,913
Total Benefit ($)	67,562,713
Maintenance Benefit ($)	894,641
Net Benefit ($)	**68,457,353**

Source: PPM Consulting

6. Benefits of Walkable Town Centres

According to the proponents, the goal of the Middleton Grange Town Centre is for it to be a walkable centre with ample parks and places to relax and recreate.

As pointed out in *Business Performance in Walkable Shopping Areas* (Robert Wood Johnson Foundation, 2011), "Defining a commercial area as 'walkable' requires distinctions to be made beyond how shoppers arrived at their destination and what they do once they arrive." For an area to be considered "walkable", it "usually means that it is possible for a significant fraction of patrons to arrive by some other mode than driving, and that they are in a welcome environment for strolling, meeting others and resting for a few moments. In short, they do not have to get in their car to visit store after store."

According to Dan Burden of Walkable Communities, Inc, (reported in *Let's Talk Business*, *Economic Benefits of A Walkable Community*, Summarized by Bill Ryan, July 2003) characteristics of a walkable town include:

- intact town centre with a quiet, pleasant main street containing a hearty, healthy set of stores
- residential densities including mixed income and mixed uses near the town centre
- many public places for people to assemble, play and associate with others within their neighbourhood
- universal design that respects and accommodates people of all abilities
- traffic on main street and in neighbourhoods that move at safe, pleasant and courteous speeds
- streets and trails that are well linked, often in a grid or other highly connected pattern
- design that is properly scaled allowing most residents to get to most services in 400m (walking distance)
- town is designed for people first, cars second
- town thinks small with caps on parking and store size
- the town has a vision and decision makers are visionary, communicative, and forward thinking.

In relation to Middleton Grange Town Centre, at the moment residents are required to get into their cars and drive to their nearest shopping centre (up to 2 kilometres away). The town centre is proposed to have many of the characteristics seen as "walkable". The benefits include more viable retail spaces, less sedentary lifestyles and less time spent in cars and traffic.

7. Western Sydney Aerotropolis

The proposed Middleton Grange Town Centre is approximately 350m north of Fifteenth Avenue. From this point, the new Badgerys Creek Airport (Western Sydney Aerotropolis) is only approximately 7.5km to the west. Neither the Weatherly Report nor the Charter Hall report adequately address the impact on the catchment of the Western Sydney Aerotropolis, including the positive aspects of increased jobs and new public transport initiatives.

Fifteenth Avenue

The 2018 Department of Planning and Environment report *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts* heavily featured Fifteenth Avenue as a major link between the Liverpool CBD and the new airport. This report noted that:

> Fifteenth Avenue has the potential to increase access into the area through dedicated public transport links to enable efficient and reliable services. It is included in the Future Transport Strategy 2056 as a route for city shaping services for investigation in the first 10 years. The link connecting the Airport, Aerotropolis Core and Liverpool could potentially include an extension of the Liverpool–Parramatta T-way, and upgrades along Fifteenth Avenue. Development along this corridor will be designed to integrate transport and land use outcomes.[4]

Furthermore, the plan envisages the precinct along Fifteenth Avenue to grow into a large mixed use development:

> According to the Key features Situated on the eastern side of South Creek in the south of the Aerotropolis, Rossmore Precinct will be the largest concentration of mixed living communities. Development on Fifteenth Avenue will typically be up to six storeys along the corridor, stepping up to a maximum of eight storeys, achieving densities of 65 to 80 dwellings per hectare, recognising a centre serving transport network. A variety of local centres along the route will provide small supermarkets, essential retail and community services. Further investigation is to be undertaken regarding the role of Fifteenth Ave as a transit corridor which may led to further opportunities for higher density centres. To capitalise on the amenity of the waterways, residential development of 45 to 65 dwellings per hectare, in two to four-storey articulated buildings will fringe the creeks, along with other community uses such as schools and community facilities. Local centres will be positioned to maximise the riparian lands, encouraging activity and providing surveillance and public safety.[5]

It is clear that Fifteenth Avenue will be a major connector between the Liverpool CBD and the Western Sydney Aerotropolis.

[4] *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts*, p22
[5] *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts*, p61

Proposed Commercial Space at Middleton Grange

The proposed Middleton Grange Town Centre will feature approximately 15,000m^2 of commercial space. This is shown in Table 8.

Table 8: Proposed Commercial Gross Floor Area, Middleton Grange

	Lot 2	Lot 3	Lot 4	Lot 5	Lot 6	Lot 7	Totals	% Total Area
Commercial GLA (m^2)	2,975	2,975	0	6,135	2,888	0	14,972.5	13.2%

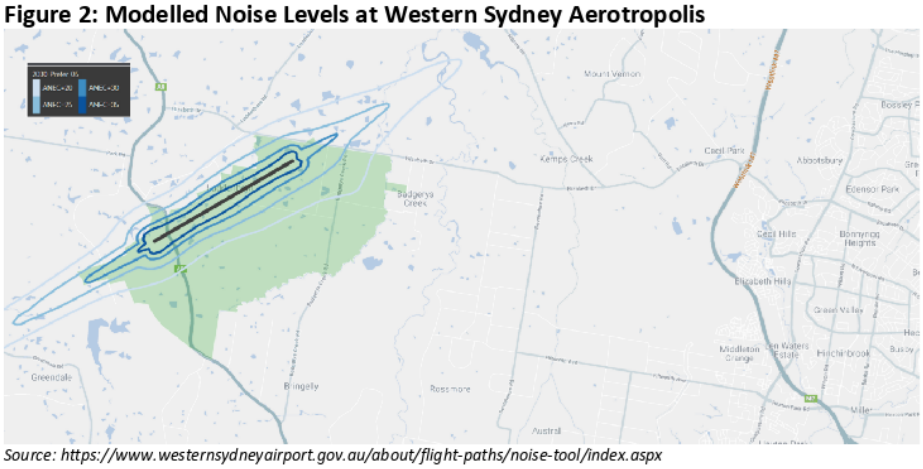
Source: Pacific Planning, PPM Consulting
These specific areas may adjust slightly during detailed design

With the airport only 7.5km to the west, the commercial space at Middleton Grange will likely attract demand from airport-related businesses looking for commercial and office space within proximity to the airport. Airport-related businesses would be able to have their offices off-site but use the proposed Fifteenth Avenue Rapid Transit, which would likely be available by the time the Middleton Grange development is built.

It should also be noted that Middleton Grange will not be under the flight path. However, the Western Sydney Employment lands will be to the north and the south of the runway, making them potentially susceptible to aircraft noise. Figure 2[6] shows the noise levels likely to be associated with the operation of the airport. While airport-related businesses might want to be close to the airport, or even based at the airport, the need to ensure occupational health and safety with regards to noise exposure may be a consideration. With nearly 15,000m^2 of office space, Middleton Grange could cater to businesses who:

- cannot afford to set up at the airport (Middleton Grange rents are likely to be lower than at the airport)
- want a presence near the airport before it opens in 2026
- do not want to be affected by the highest levels of noise at the airport
- are looking for adaptable office spaces
- are start-ups who are looking for lower rents than are available at the airport.

Figure 2: Modelled Noise Levels at Western Sydney Aerotropolis



Source: https://www.westernsydneyairport.gov.au/about/flight-paths/noise-tool/index.aspx

The proximity to the airport, and its position between the airport and Liverpool CBD, and its proximity to the proposed Fifteenth Avenue Rapid Transit means that the commercial space

[6] https://www.westernsydneyairport.gov.au/about/flight-paths/noise-tool/index.aspx

at Middleton Grange is not only very well located but also very attractive for potential tenants.
According to ABS Retail Trade figures, every square metre of commercial space is estimated to be able to sustain 20 commercial jobs.

Table 8 shows the potential ongoing employment impact of the proposed commercial floorspace.

Table 8: Potential Ongoing Commercial Jobs, Middleton Grange

	Proposed Commercial GFA (m^2)	Commercial m^2 per job	Commercial Jobs/m^2	Commercial Jobs (no.)
Proposal	14,972.5	20	0.05	749

Source: ABS Retail Trade Cat. No. 8501.0, PPM Consulting

A report by EY in August 2017, *Western Sydney Airport Labour Market Analysis*[7], showed that, in 2031, the Western Sydney Aerotropolis would create an employment footprint of approximately 27,946 jobs in airport operations and related business park (airport operations, airport retail, business park uses including industrial, office, hotels, etc). This will rise further to 47,473 by 2041. This is shown in Table 9.

Table 9: Western Sydney Airport Job Support

	Construction Phase (2018-2026)	Airport Operations and Business Park – 2031	Airport Operations and Business Park – 2041
Total Jobs	11,346	27,946	47,473

Source: Western Sydney Airport Labour Market Analysis, *EY, August 2017*

It is clear that the spin-off of jobs created by the Western Sydney Aerotropolis will be vast. It is also likely that many of these jobs will be created outside of the airport precinct but in reasonable proximity to it. Supporting 2.7 per cent of the total potential jobs created by the airport in 2031, Middleton Grange would make an ideal location for airport-related businesses.

[7] *Western Sydney Airport Labour Market Analysis*, EY, August 2017

8. Conclusion

The proponent proposes to build a town centre that is walkable, vibrant, diverse and accessible. A neighbourhood/strip shops offering would not be able to provide the same level of amenity to local people.

While shopping centre owners may seek to restrict the emergence and growth of new town centres, it is clear that their tenants, particularly their largest tenants, disagree with these restrictions. It is also clear that it would be a bad outcome for consumers.

Charter Hall objects to the planning proposal and calls for the Middleton Grange Town Centre to be restricted to no more than 5,500m^2 of commercial space. This would be a poor outcome for the people of Middleton Grange as it would:

- increase time spent in cars to get to established shopping centres – local residents of Middleton Grange would instead be able to walk to get their daily needs, as well as have an opportunity for recreation
- increase congestion around existing shopping centres
- likely result in higher prices for groceries
- result in slower-growing, smaller, more risky retail establishments
- result in less walking, and therefore higher health costs associated with sedentary lifestyles
- little public open space
- little or no commercial space.

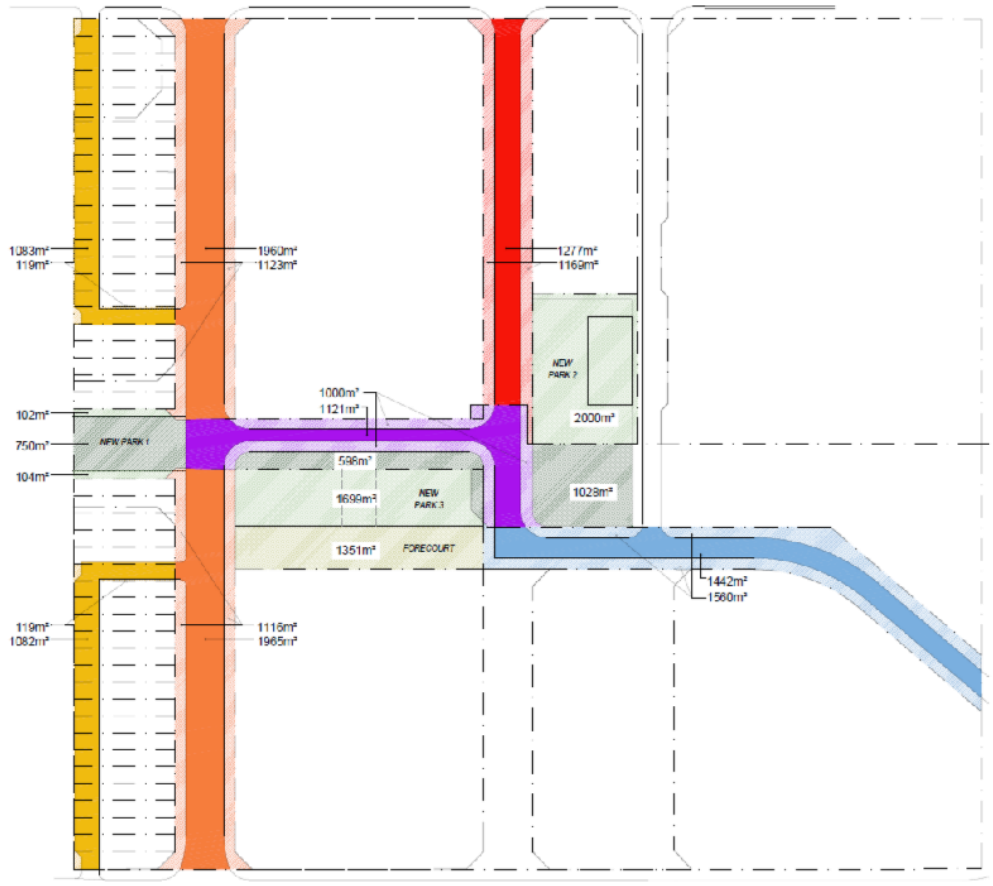
As part of the town centre, the proponent is also proposing to build a large park area (over 6,000m^2), which will have a benefit to the public of around $67 million over 50 years. It is likely that a neighbourhood/strip shops offering would not include such park areas, which would likely be covered in low density housing instead. The parks and walkability of the proposed town centre would increase the sense of community and create a place for residents to go, meet and play.

Walkability would be a major asset of the proposed town centre. Neighbourhood/strip shops tend to discourage walking, while town centres similar to that proposed at Middleton Grange are more likely to promote walking. That, along with the proposed Fifteenth Avenue Rapid Transit (which will likely to operating before the town centre is complete), would result in a vibrant, community-based town centre that is attractive and viable.

Middleton Grange is ideally located to take some of the pressure off commercial rents and space at the new Western Sydney Aerotropolis. By catering for around 750 jobs, the commercial development at Middleton Grange could secure tenants who want to be within proximity to the airport but not located at the airport, and be connected by the proposed Fifteenth Avenue Rapid Transit.

Middleton Grange offers a mixed use development where the retail, commercial and residential spaces complement each other, as well as one that complements nearby developments.

APPENDIX 1 – PARK AREAS



LEGEND & AREAS

ROADS

DESCRIPTION	AREA (m²)
LANE WAY CARRIAGEWAYS	2165
RESIDUAL ROAD RESERVE	238
SUB-TOTAL	2403
MAINSTREET CARRIAGEWAYS	3925
RESIDUAL ROAD RESERVE	2239
SUB-TOTAL	6164
MIDDLETON DR CARRIAGEWAYS	1277
RESIDUAL ROAD RESERVE	1169
SUB TOTAL	2446
QUANTAS DLV CARRIAGE WAYS	1442
RESIDUAL ROAD RESERVE	1560
SUB-TOTAL	3002
ROAD ON COUNCIL LAND	1121
RESIDUAL ROAD RESERVE	1000
SUB-TOTAL	2121
TOTAL	16136

LEGEND & AREAS

OPEN SPACE

DESCRIPTION	AREA (m²)
NEW PARK 01 ON PROPOSED SITE	206
NEW PARK 02 ON PROPOSED SITE	2000
NEW PARK 03 ON PROPOSED SITE	1600
NEW PUBLIC FORECOURT	1351
SUB-TOTAL	5256
NEW PARK 01 ON COUNCIL LAND	750
NEW PARK 02 ON COUNCIL LAND	1020
NEW PARK 03 ON COUNCIL LAND	598
SUB TOTAL	2376
TOTAL	7632

Source: Christian Obrien Architects, P1, 17 October 2019

About PPM Consulting

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The Director and Principal, Martin Musgrave, holds an honours degree in economics with 20 years of experience in government across a wide range of sectors in a number of jurisdictions. Martin is a highly experienced public policy professional, specialising in economic analysis, policy development and leadership, advocacy, and government relations. He is considered a highly skilled economist and policy professional who always acts with integrity.

Martin Musgrave has been a valued senior contributor in the following organisations:

- the Department of Planning and Environment
- the Urban Development Institute of Australia (National and Victorian Division)
- the Property Council of Australia (Residential Development Council)
- the Large Format Retail Association
- the Department of Premier and Cabinet (Victoria)
- the Department of the Prime Minister and Cabinet
- the Roads and Traffic Authority (NSW) (now known as RMS)
- the Hunter Valley Research Foundation (now known as the Hunter Research Foundation)

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MIDDLETON GRANGE

LANDSCAPE CONCEPT
20.08.2019
ISSUE A

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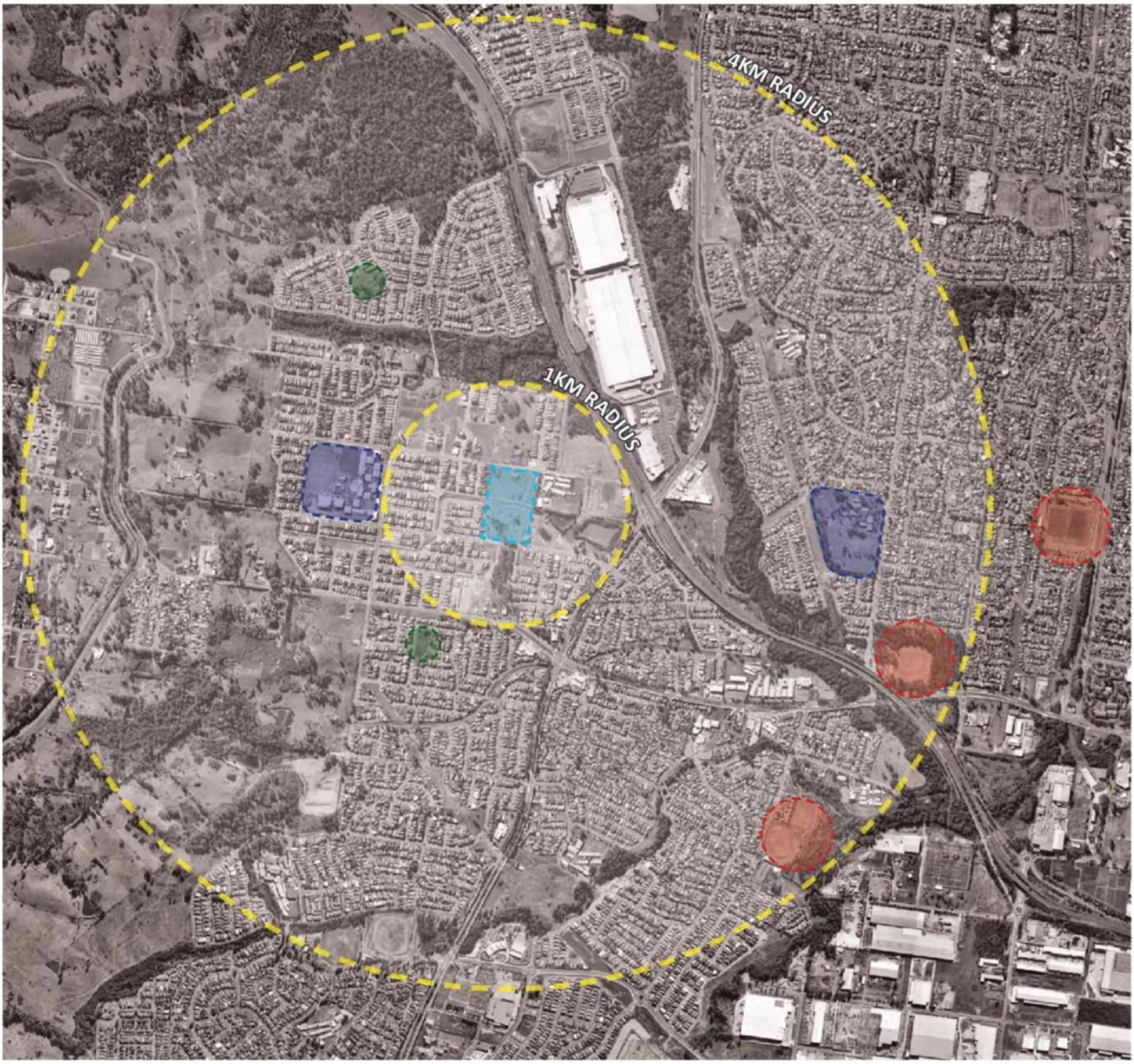
PUBLIC OPEN SPACE & CONTEXT PLAN



KEY LEGEND

- SUBJECT SITE
- PARK WITH PLAYGROUND
- SPORTGROUND ONLY
- EDUCATIONAL

NORTH

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REGIONAL VEGETATION COVER PLAN



KEY LEGEND

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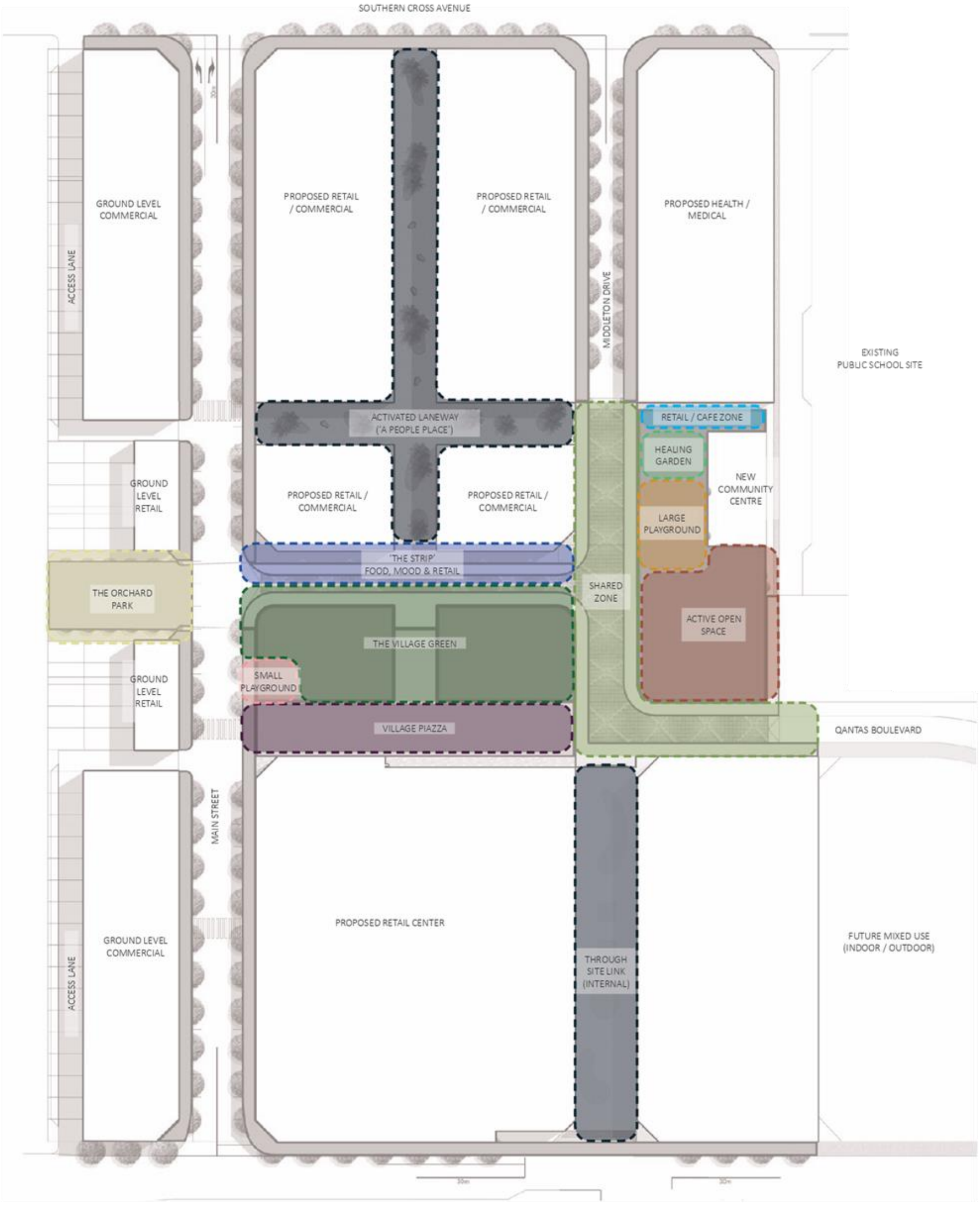

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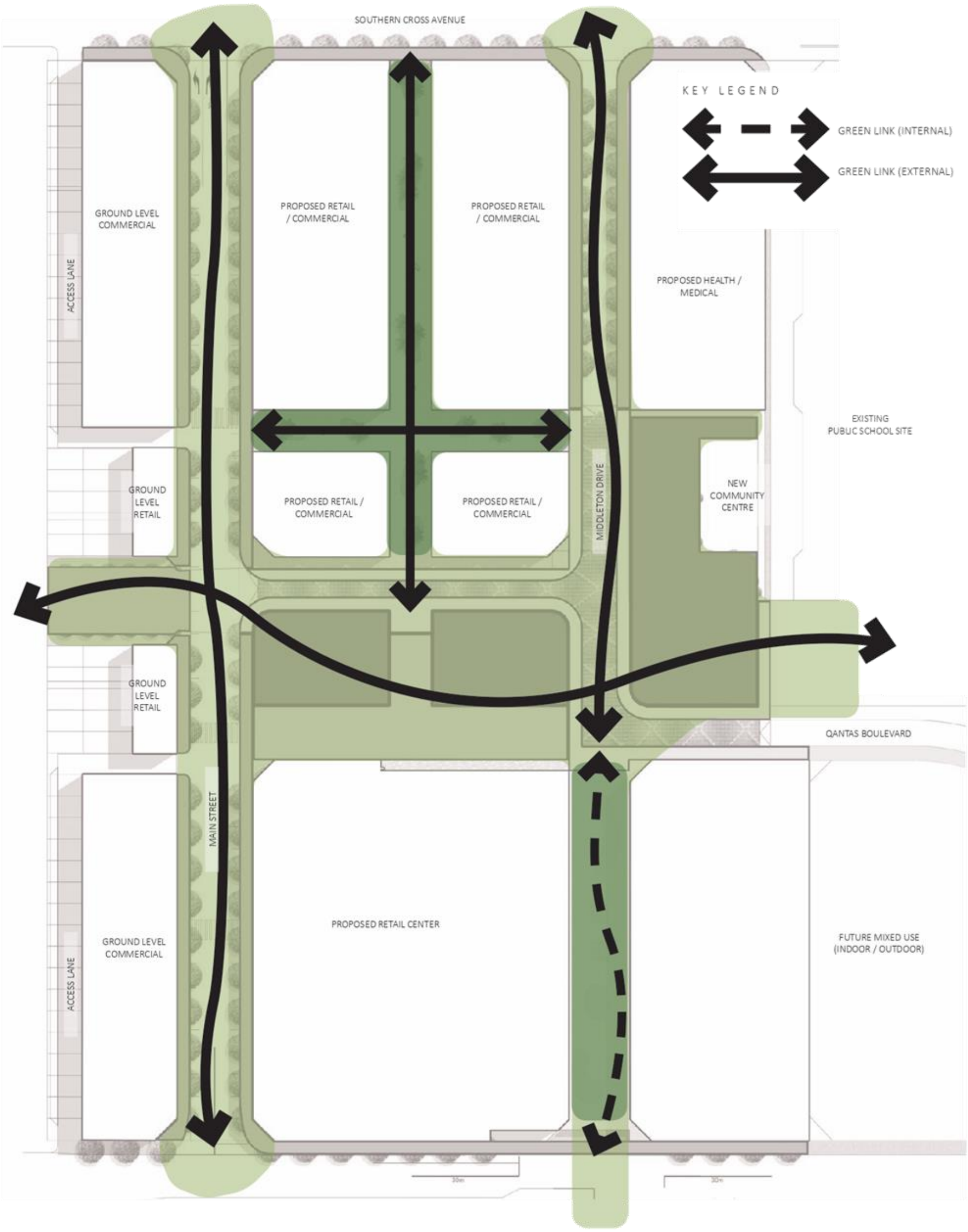
THROUGH SITE GREEN LINKS



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LANDSCAPE MASTERPLAN



KEY LEGEND

1. PLAYGROUND (LARGE)
2. PLAYGROUND (SMALL)
3. STAGE
4. GROUND FLOOR RETAIL & OUTDOOR DINNING/CAFE
5. FRUIT TREE ORCHARD POCKET PARK
6. THROUGH SITE LINK LANDSCAPE (OUTDOOR)
7. THE VILLAGE GREEN
8. THROUGH SITE LINK (INTERNAL)
9. PUBLIC ART
10. WATER FEATURE
11. CENTRAL FOUNTAIN AND WATER FEATURE
12. 'THE STRIP' (RETAIL, DINNING ACTIVATION ZONE)
13. VILLAGE PIAZZA (ACTIVATION ZONE)
14. BUS INTERCHANGE
15. PICNIC SHELTER AREA
16. FEATURE GLASS CANOPY STRUCTURE
17. HEALING GARDEN

SHARED ROAD TREES (DECIDUOUS) >10m HEIGHT

PLAZA TREES (EVERGREEN) <10m HEIGHT

STREET TREES (NATIVE EVERGREEN) 8m HEIGHT

ORCHARD FRUIT TREES

PALM PLANTING

CATENARY LIGHTING

SHARED ROAD

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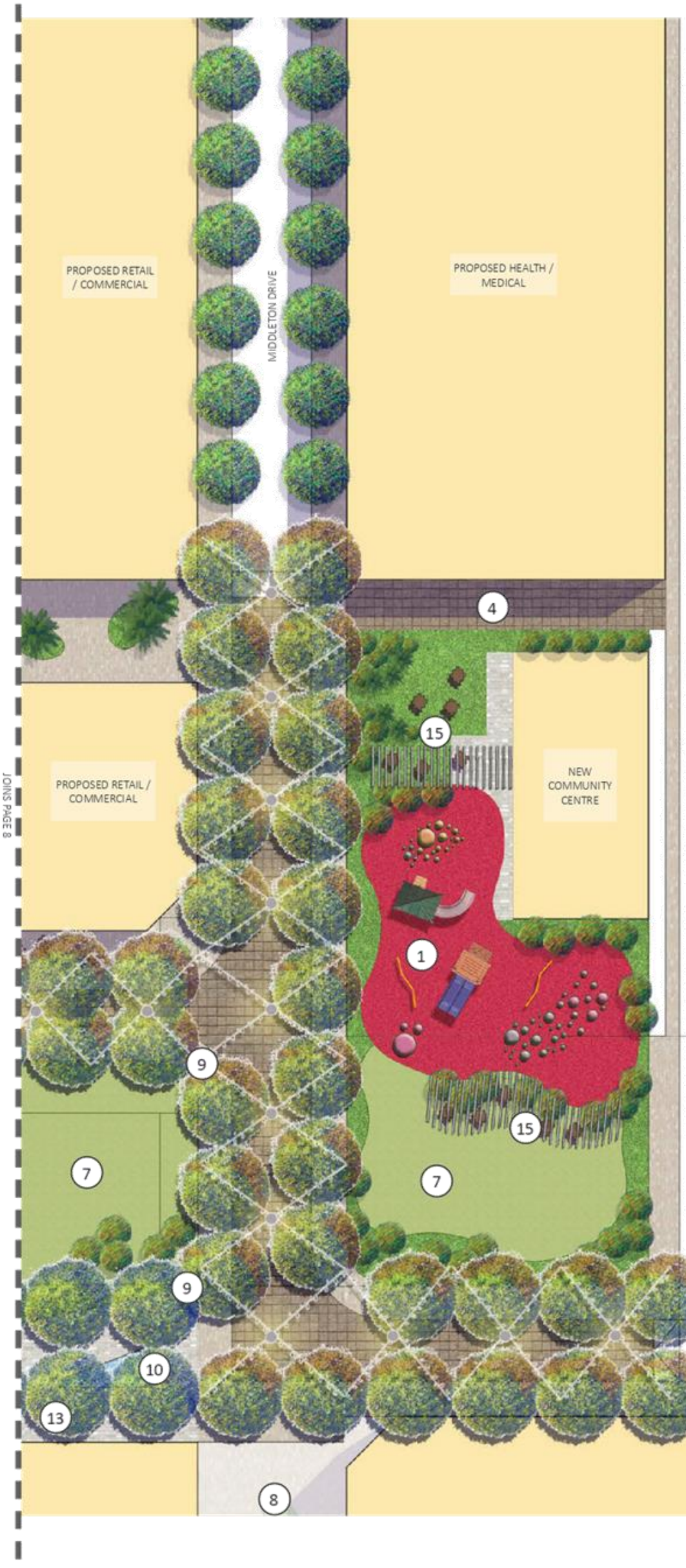

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LANDSCAPE CHARACTER IMAGES


PLAYGROUND


PLAYGROUND


THE VILLAGE GREEN / PIAZZA


THE VILLAGE GREEN / CENTRAL SPINE


THE VILLAGE GREEN


PIAZZA


RETAIL / CAFE ZONE


PLAYGROUND

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PIAZZA


PIAZZA


RETAIL / CAFE ZONE


PIAZZA


SHARED ZONES


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MIDDLETON GRANGE TOWN CENTRE

STORMWATER MANAGEMENT STRATEGY

Manta Group Pty Ltd

August 2017

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

J. Wyndham Prince
Consulting Civil Infrastructure Engineers & Project Managers

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GLOSSARY OF TERMS

12D Model is a powerful terrain modelling, surveying and civil engineering software package used to develop the underlying surface for the 2D modelling.

Airborne Laser Survey (ALS) is a technique for obtaining a definition of the surface elevation (ground, buildings, power lines, trees, etc.) by pulsing a laser beam at the ground from an airborne vehicle (generally a plane) and measuring the time taken for the laser beam to return to a scanning device fixed to the plane. The time taken is a measure of the distance which, when ground truthed, is generally accurate to + 150mm.

Annual Exceedance Probability (AEP) is the chance or probability of a natural hazard event (usually a rainfall or flooding event) occurring annually and is usually expressed as a percentage.

Average Recurrence Interval (ARI) means the average statistical interval (in years) between occurrences of floods, storms and flows of a particular magnitude.

Australian Rainfall and Runoff (AR&R) refers to the current edition of Australian Rainfall and Runoff published by the Institution of Engineers, Australia.

CatchmentSIM is a 3D-GIS application specifically tailored to hydrology based applications. CatchmentSIM is used to delineate a catchment, break it up into sub catchments, determine their areas and spatial topographic attributes and analyse each sub catchment's hydrologic characteristics to provide insight into the rainfall response of various catchments and the resultant assignment of hydrologic modelling parameters.

Dam Safety Committee (DSC) is a NSW statutory body aligned with Department of Primary Industries. Its function is to ensure the safety of dams within the state.

Digital Terrain Model (DTM) is a spatially referenced three-dimensional (3D) representation of the ground surface represented as discrete point elevations where each cell in the grid represents an elevation above an established datum.

DRAINS is a Stormwater Drainage System design and analysis program. The RAFTS runoff routing model was used within the DRAINS software package. It has been widely used for urban stormwater system design and analysis in Australia and New Zealand.

Exceedances per Year (EY) is the number of times a year that statistically a storm flow will be exceeded.

Floodplain Development Manual (FDM) and Guidelines (April 2005), the FDM is a document issued by DECCW that provides a strategic approach to floodplain management. The guidelines have been issued by the NSW DoP to clarify issues regarding the setting of FPL's.

Hyetograph is the distribution of rainfall over time.

Hydrograph is a graph that shows how the stormwater discharge changes with time at any particular location.

Hydrology The term given to the study of the rainfall and runoff process as it relates to the derivation of hydrographs for given floods.

J. Wyndham Prince Pty Ltd (JWP) Consultant Civil Infrastructure Engineers and Project Managers undertaking these investigations

MUSIC is a modelling package designed to help urban stormwater professionals visualise possible strategies to tackle urban stormwater hydrology and pollution impacts. MUSIC stands for Model for Urban Stormwater Improvement Conceptualisation and has been developed by Cooperative Research Centre (CRC),

Peak Discharge is the maximum stormwater runoff that occurs during a flood event

Probable Maximum Flood (PMF) is the greatest depth of precipitation for a given duration meteorologically possible for a given size storm area at a particular location at a particular time of the year, with no allowance made for long-term climatic trends." largest flood that could be

Triangular Irregular Network (TIN) is a technique used in the created DTM by developing a mass of interconnected triangles. For each triangle, the ground level is defined at each of the three vertices, thereby defining a plane surface over the area of the triangle

TUFLOW is a computer program that provides two-dimensional (2D) and one dimensional (1D) solutions of the free surface flow equations to simulate flood and tidal wave propagation. It is specifically beneficial where the hydrodynamic behaviour, estuaries, rivers, floodplains and urban drainage environments have complex 2D flow patterns that would be awkward to represent using traditional 1D network models.

XP-RAFTS runoff routing model that uses the Laurenson non-linear runoff routing procedure to develop a sub catchment stormwater runoff hydrograph from either an actual event (recorded rainfall time series) or a design storm utilising Intensity-Frequency-Duration data together with dimensionless storm temporal patterns as well as standard AR&R 1987 data.

1 INTRODUCTION

J. Wyndham Prince has been engaged by The Manta Group to further assess the flood impacts of a section of the Southern Creek within Middleton Grange.

As part of the original masterplan the section drainage reserve that drains through the Town Centre was to be an open channel with a series of road crossings. As part of the current gateway proposal being considered by Liverpool City Council, this section through the Town Centre is proposed to be "piped". The piping of this channel will allow approximately 2900 m² of additional land to be used, enhancing the urban outcome of the Middleton Grange Residential Precinct.

The main purpose of this report is to gain Council's 'in principle' support to alter the proposed S7 trunk drainage element from a channel to a box culvert. This in turn will satisfy the requirements of the Gateway Determination and allow for exhibition of the Precinct.

J. Wyndham Prince previously completed a simplified, one dimensional flow analysis in May 2017. The assessment in this has to be a more sophisticated, two dimensional (TUFLOW) model in order to address a series of concerns raised by Liverpool City Council with previous assessments.

This Assessment has been completed using best industry practice and provides the necessary flood constraint information and a water treatment solution to support the current planning proposal submission to Liverpool City Council.

2 PREVIOUS STUDIES

2.1 Hydrological and Hydraulic Study Southern Hoxton Park Aerodrome Precinct Report, (J. Wyndham Prince 2004)

A Hydrological and Hydraulic Study for the Southern Hoxton Park Aerodrome Precinct, which includes the subject site, was prepared by J. Wyndham Prince Pty Ltd in 2004. The study made key recommendations relevant to this report, outlined below:

- Detention basins be sized to restrict post development discharges for storms up to the 1% AEP design event to pre-development levels to ensure no impact on surrounding properties and properties further downstream. As documented in the *Cabramatta Creek Flood Study and Basin Strategy Review* (Bewsher, September 2011), these detention basins have since been constructed.

Therefore, development within the study area will not result in significant flood impacts to other properties, as appropriate mitigation measures have already been considered as part of a broader regional strategy.

The southern creek has been modified and realigned in the past with little original riparian vegetation currently present. While it was proposed in the *Hydrological and Hydraulic Study Southern Hoxton Park Aerodrome Precinct Report* that this watercourse be reconstructed as a natural channel, the piping of this section will not affect any existing riparian areas.

2.2 Southern Creek Hydraulic Study – Southern Hoxton Park Aerodrome Precinct (J. Wyndham Prince Pty Ltd , 2004)

This report details the procedures used and presents the results of investigations undertaken by J. Wyndham Prince Pty Ltd in determining existing flood levels on the Southern Creek Watercourse.

2.3 Water Cycle Management Facilities Design Report: Middleton Grange, (J. Wyndham Prince, 2005)

This report detailed the procedures used and presents the results of an assessment of a hydrological and hydraulic analysis of the proposed detention basins Central Creek and Southern Creek riparian corridors. It was prepared in support of an application for a Construction Certificate that was made to Liverpool City Council. (Plan reference 7576/E1 to 7576/E35).

The hydraulic assessment for this report was undertaken in HEC-RAS and the hydrologic assessment was undertaken in XP-RAFTS.

These models were used as the basis for the models in this report.

2.4 "Piped Option for Southern Creek Section S7" (J. Wyndham Prince, May 2017)

In 2017, J. Wyndham Prince wrote a letter addressed to Liverpool City Council outlining the advantages of piping 'Section 7' of the channel, the portion the divides the town centre.

This letter used 1D modelling originally undertaken as part of the *Hydrological and Hydraulic Study Southern Hoxton Park Aerodrome Precinct Report* (J. Wyndham Prince, 2004) to support the assessment. While this modelling showed that there were no additional adverse impacts in the town centre as a result of the piping of Section 7, Council required an assessment of large stormwater events to be undertaken.

This report identified that the site is located well clear of regional flooding and based on contours in the area, evacuation could easily occur towards a higher area with a rising grade. On this basis, this report noted that many of SES's comments in their letter to Liverpool City Council, dated 10th February 2017, were not applicable to the site and are therefore satisfied.

3 BACKGROUND

The Southern Creek drains to Hinchinbrook Creek, which forms part of the greater Cabramatta Creek system and runs through the southern section of Middleton Grange. The original plan for its construction was as a bio-engineered natural channel along its entire length. It is now proposed that Section S7, approximately 170m of the southern creek adjacent to the proposed town centre is piped.

Section S7 is described in the Hydrological and Hydraulic Study Southern Hoxton Park Aerodrome Precinct Report as an 18 m wide landscaped open channel. Plate 3.1 shows the Section S7 provides an overview of S7 within the Middleton Grange Precinct, while Plate 3.2 shows its existing LEP zoning.

In August 2016, The Manta Group received advice from the Gateway Determination (issued by the Department of Planning and Environment), that the culvert arrangement was acceptable, so long as the outcome 'facilitates better design outcomes'.

Subsequent advice from Liverpool City Council indicated that if Manta Group intends to proceed with channel modifications, full details of the proposed modification works with justification would be required including:

1. Hydraulic impact assessment assessing the impact of the proposed update on final Developed Conditions (full range of design flood events up to the probable maximum flood (PMF)).
2. Water quality management strategy using MUSIC model, under full catchment development conditions.

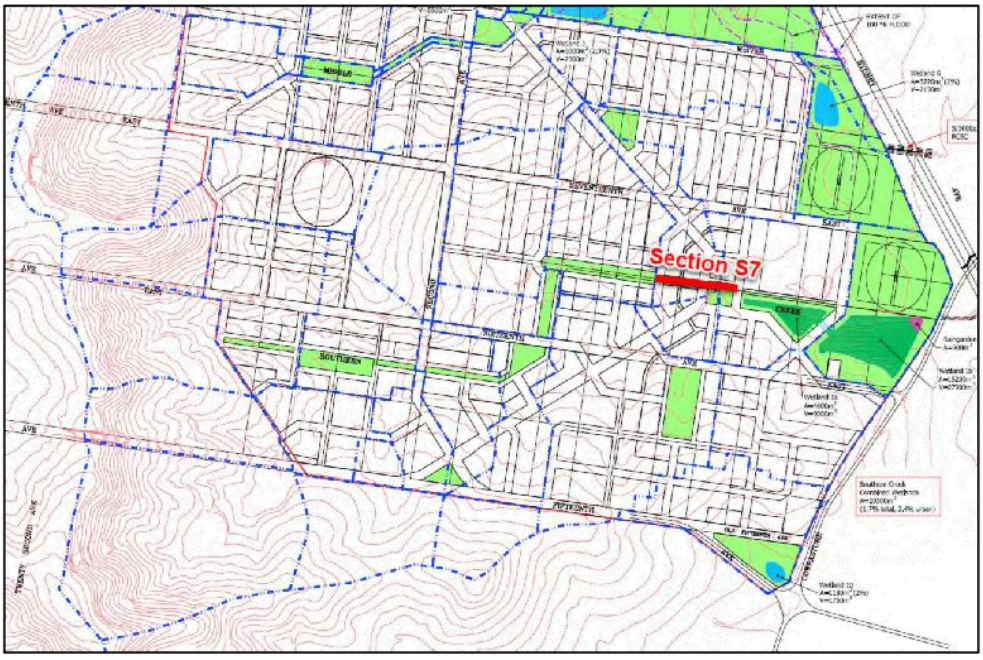


Plate 3.1 – Site Locality

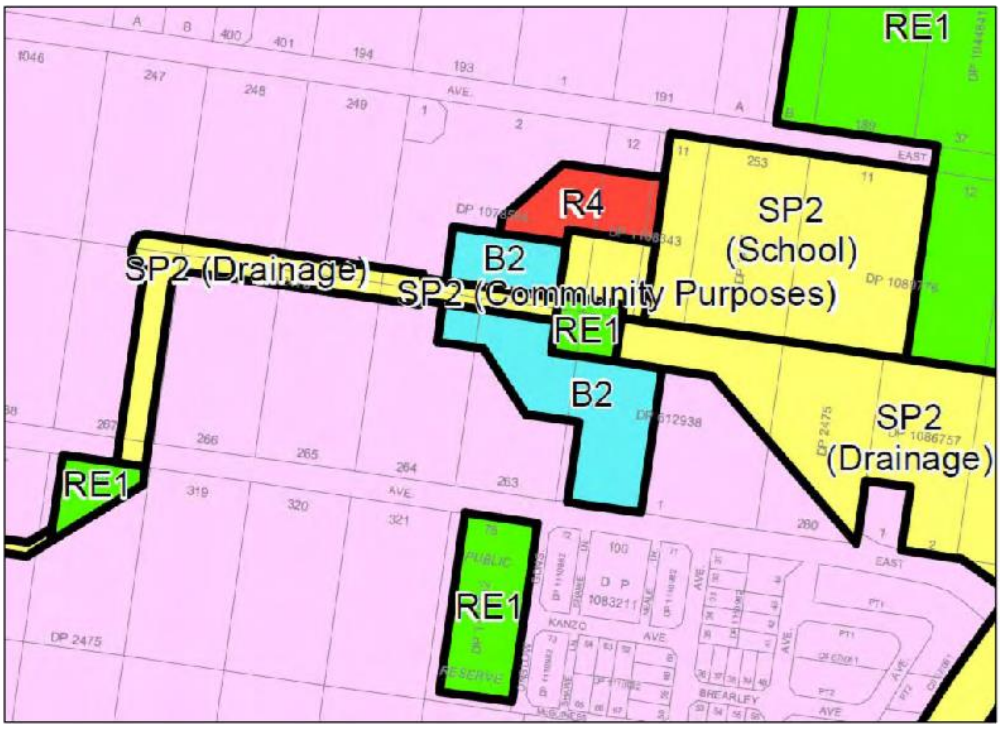


Plate 3.2 – Liverpool City Council Zoning Map Extract

3.1 Middleton Grange Town Centre

The proposed Middleton Grange Town Centre will be located on either side of the trunk drainage element. The planning proposal anticipates approximately 912 dwellings, 20,240 m² of retail floor space and 2,533 m² of other commercial uses. Plate 3.3 shows the proposed Town Centre Masterplan.

On 11 July 2008, Construction Certificate (CC) plans were submitted to Council (in relation to DA 9014/DA02) and sought approval for road works, excavation, drainage and sewer construction. Council subsequently reviewed and approved the CC plans. The design included culvert sized to accommodate the 1% AEP event flood scenario including all drainage downstream. Part of these works was completed in 2009.

It is noted that the existing stormwater system downstream of Section 7 was designed to accommodate future 1% AEP development flows regardless of whether the channel is "open" or "piped". Therefore, the piping of this section would not result in any adverse impacts on any property in terms of flooding in the future development scenario. The existing stormwater system on site has been approved as part of a previous DA.

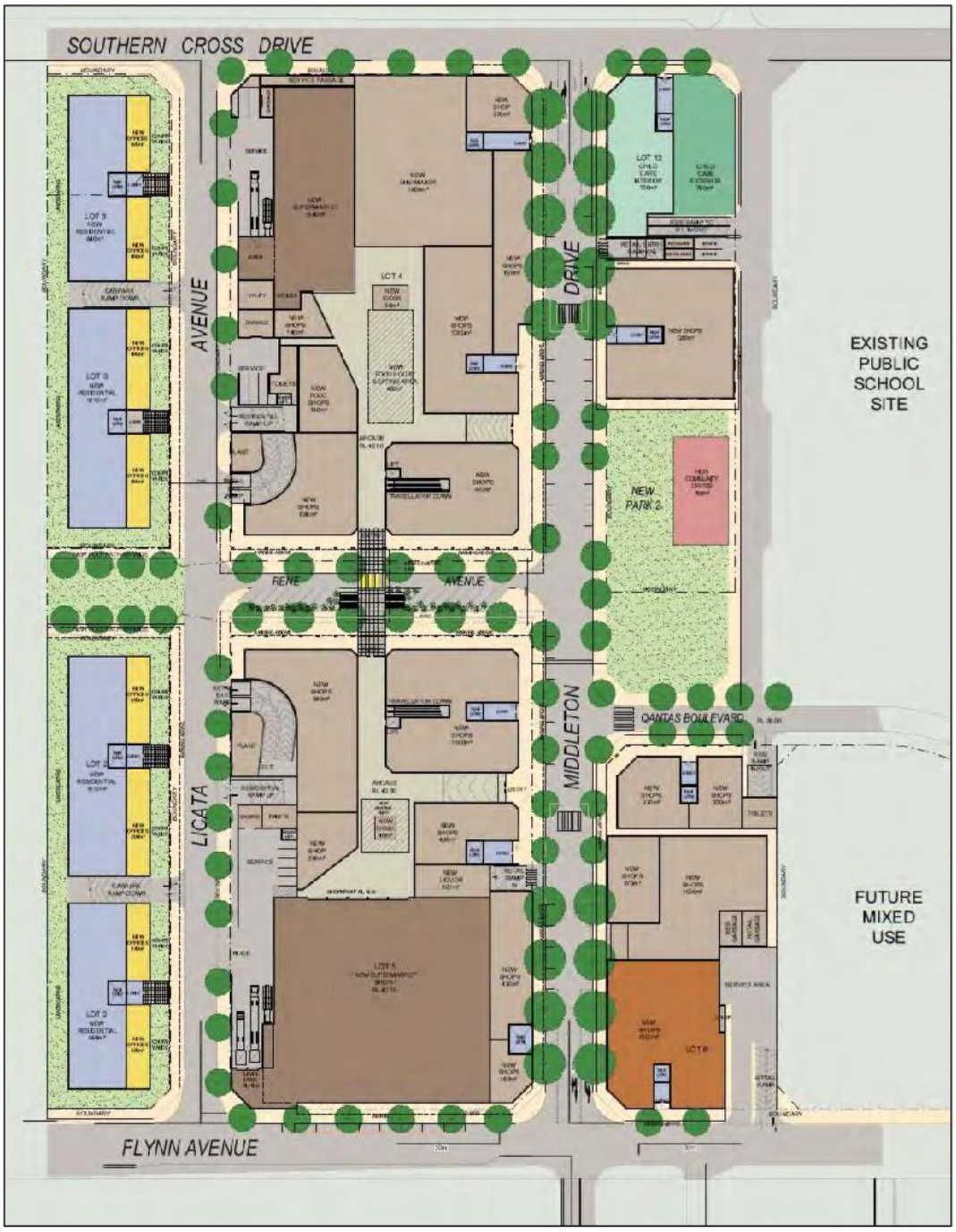


Plate 3.3 – Proposed Middleton Grange Town Centre

4 PROPOSED CULVERT ARRANGEMENT

The system has been designed to manage the 1% AEP event. The system captures (via an inlet structure on the upstream side of Road No.7) the 1% AEP flow of 15 m³/s. Flows are conveyed via three (3) 3600 x 900 mm reinforced concrete box culverts (RCBC's) at a grade of 0.5% to the future wetland and discharge at a level, RL of 37.3. Further 1% AEP flows of 9.73 m³/s enter the box culverts via a special inlet structure upstream of road No10. Refer to Plate 4.1. The Details of the proposed arrangement are provided in Appendix C.

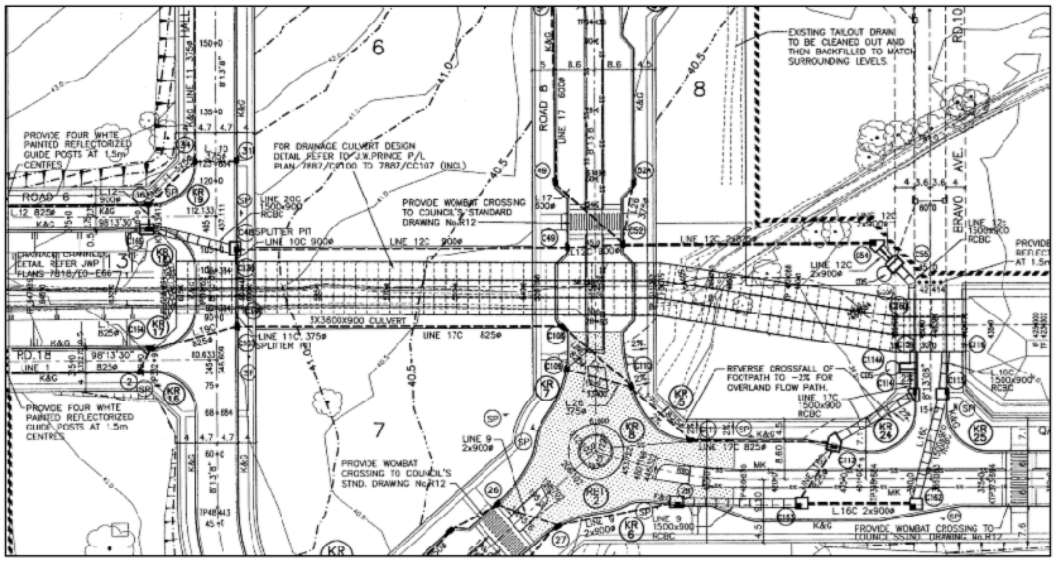


Plate 4.1 Proposed Piped Arrangement

Flows in excess of the 1% AEP event will be conveyed overland. Detailed results are provided in Appendix B.

5 HYDROLOGIC ANALYSIS

The hydrologic analysis for the local catchments was undertaken using the rainfall - runoff flood routing model XP-RAFTS (Runoff and Flow Training Simulation with XP Graphical Interface) (Willing, 1996 & 1994). The hydrologic analysis was undertaken to determine flow hydrographs for the local catchments in the Southern Creek.

For the purposes of the assessment, the 1% AEP and the PMF events have both been assessed, each with a range of storm durations analysed to determine the critical storm duration for each sub-catchment.

5.1 Modelling Inputs and Assumptions

Sub-catchment areas contributing to this drainage system were adopted from the Water Cycle Management Facilities Design Report (J. Wyndham Prince, 2005). These subcatchments were established through site investigations, detail survey, and generally consistent with the approved CC plan for the culvert option. Details of the area, slopes and assumed percentage impervious are provided below in Table 5.1 from the original 2005 assessment. Refer to Figure 5.1 for the XP-RAFTS model layout.

Table 5.1 –Catchment Description

Catchment Name	Area (Ha)	Slope	Percentage Impervious
1	15.38	8%	10%
1.15	2.91	1%	38%
7	3.1	1%	80%
6.01	1.23	1%	87%
1.14	9.1	2%	70%
1.09	3.431	3%	80%
2.01	1.551	3%	80%
6	12.98	3%	80%
1.06	7.55	3%	80%
8	7.45	3%	80%
1.02	1.131	4%	80%
1.04	3.23	4%	80%
2	5.15	4%	30%
1.12	3.67	4%	86%
1.11	6.44	4%	80%
4	4.885	4%	96%
4.01	6.766	4%	97%
3.02	6.514	5%	80%
3.03	4.78	5%	96%
1.01	4.59	8%	10%
5	2.46	8%	80%
3	3.39	10%	10%
3.01	6.01	12%	10%

A review of these subcatchments was undertaken to determine if they were fit for use in the TUFLOW model. The original catchments were largely kept consistent with the original catchments with the following minor adjustments:

- The impervious percentage of each subcatchments was then adjusted to reflect the most current LEP land use.

Where land use changes occur within individual subcatchments, the percentage impervious was average.

Table 5.2 –Percentage Impervious Area

Land Use	Percentage Impervious
Open Space	5%
Residential	80%
Commercial/industrial	90-100% (varies)

- Minor adjustments of the catchments boundaries were undertaken to ensure that they were suitable for use in the TUFLOW model.

XP-RAFTS modelling was undertaken using a standard initial and continuing loss rate model. The values adopted for XP-RAFTS modelling are as follows:

Table 5.3 –Loss Values

	Initial Loss (mm)	Continuing Loss (mm/hr)
Pervious areas	10	2.5
impervious areas	1.5	0

Standard PMP parameters for the Sydney Basin were used in a Generalised Short Duration Method (GSDM).

Table 5.4 –PMP parameters

PMP Parameters	
Moisture adjustment factor	0.7
Elevation adjustment factor	1
Percentage defined as 'rough'	0

5.2 Hydrologic Model Calibration

It is normal practice for flood routing models such as XP-RAFTS to be calibrated with historical rainfall and stream flow data for the catchment being investigated in order to produce the most reliable results. The model parameter values are adjusted so that the model adequately reproduces observed hydrographs. As no streamflow records are available for this location, calibration was previously undertaken in the 2005 *"Watercycle management facilities Design Report"* by comparing the results from a number of recognised flow estimation techniques and adjusting the XP-RAFTS model to provide similar results. The (Bx) value determined by this calibration process was 1.5. The Storage Non-linearity exponent (n) was set at the default value of -0.285. Our assessment has kept the hydrological model consistent with the original assessment, so these values have been maintained.

The results of the hydrologic XP- RAFTS model do vary from the original model. Software updates within XP-RAFTS, the refined catchment boundaries and the increase in impervious area are attributed to account for this difference.

6 FLOOD MODELLING

The flood modelling undertaken to assess both mainstream and major overland flooding within the southern creek catchment has been completed using TUFLOW. TUFLOW is a computational engine that provides two-dimensional (2D) and one-dimensional (1D) solutions of the free surface flow equations to simulate flood and tidal wave propagation (TUFLOW 2016). TUFLOW is specifically beneficial where the hydrodynamic behaviour in coastal waters, estuaries, rivers, floodplains and urban drainage environments have complex 2D flow patterns that would be difficult to represent using traditional 1D network models.

Most flows within the southern creek catchment were modelled as 2D flows with the channel also represented in the 2D domain. A 2D model provides a better estimation of the effects of momentum transfer between in-bank and overbank flows and the energy losses due to meanders or bends in creeks. ID connections were used to represent the culverts within the model. MapInfo, a GIS based software tool, was used for interrogating and plotting the results as well as creating the flood extents maps and the flood level difference maps.

The TUFLOW Analysis was undertaken to determine flood extents within Middleton Grange Town Centre for post developed conditions, both with the piped option and the open channel option. The assessment has analysed the 1% AEP and PMF flood events, with a range of storm durations assessed to determine a “peak of peaks” for flooding within the catchment.

6.1 TUFLOW Model Development

The TUFLOW model used in the assessment was adopted from the existing HEC-RAS model. Refer to Figure 7.1 for the TUFLOW model layout. For the purposes of this assessment, a number of assumptions were made to the model the catchment. These assumptions are outlined below:

6.1.1 Terrain

A grid size of 2 m was adopted to provide an accurate definition of the area. The underlying digital terrain model (DTM) was based on survey information and a design surface of the southern creek.

The “channel” option assessed is based on the originally arrangement of a channel through the Proposed Middleton Grange Town Centre with three (3) road crossings based on the originally proposed design surface.

The “culvert” option is consistent with the current masterplan which includes a revised road layout. This layer is typically at a higher RL than the originally proposed culvert layout.

Refer to Figure 6.1 and 6.2 for a surface comparison between the two events.

6.1.2 Flows and Upstream Boundary Conditions

Flow hydrographs were applied to represent flows entering the model from both upstream and local catchments within the southern creek catchment. Flow hydrographs were applied either as a “Source Area” (SA) input or a one dimensional boundary condition in situations where flows will be captured and conveyed to the culvert by an appropriately designed street drainage network. Flow hydrographs from the XP-RAFTS model were used for the flood modelling.

6.1.3 Downstream Boundary Conditions

The downstream boundary condition for the southern creek was set as a “HT” (Height versus Time) relationship. The selected water level at the downstream boundary of the model was determined from the flood information in the *Water Cycle Management Facilities Design Report (J. Wyndham Prince)* and set to the tailwater level in the downstream basin of RL 35.6 mAHD.

6.1.4 *Material Roughness*

Various material were defined within the model based on review of aerial imagery and the Masterplan for the Middleton Grange Town Centre development. Material roughness was consistent between the channel and piped options with the exception of the area directly above the culvert. Refer to Figure 6.3 for further details.

6.1.5 *Initial Water Level*

To account for antecedent rainfall in the catchment, the downstream basin was filled to the outlet level. This conservatively fills the basin reservoir to the spillway level prior to storm flows occurring in the catchment, and is likely to be the catchment conditions prior to both a 1% AEP and a PMF event.

6.1.6 *Culvert Blockage*

To account for any debris that may block the culverts, all events were modelled with all culverts at 50% blockage in addition to being modelled with no blockages.

6.2 Discussion of Flood Modelling Results

Flood depth and level mapping has been completed for the 1% AEP and PMF flood events under both "channel" and "piped" conditions. The flood depth, level and extent mapping for the southern creek is shown in Figure 6.4 to 6.19. Results indicate the following:

Under "Channel" conditions:

During the 1% AEP event, flows break out of the channel at the final culvert crossing in the town centre, while this was not reported in the previous HEC-RAS model. This is for two (2) reasons:

The impervious area percentage in this assessment has been increased, which has increased peak flows through the channel by X%.

The last culvert crossing is permanently submerged as a result of the 38.7mAHD weir in the basin. The HEC RAS model freely discharges into the basin with no downstream condition.

During the PMF event, much of the town centre is flooded as expected.

Under "Channel" conditions with 50% blockage:

A blockage scenario of the originally proposed channel has been provided for comparison. As the culverts become blocked, there is a greater proportion of flow breaching the banks of the channel through the town centre.

During the PMF event, much of the town centre is flooded and there is little difference between the unblocked and blocked conditions for this event.

Under "Piped" conditions:

During the 1% AEP event, results demonstrate that flows are fully contained within the culvert, and do not overtop the road or flow into the town centre. The outlet of the proposed culvert is higher than the weir that divides the basin, therefore the downstream end of the pipe is not initially in submerged conditions. This allows a higher peak flow of water through the culverts. Additionally, there is no impact on the flow upstream of the channel location. The development housing typography will ensure that a minimum of 0.5m freeboard will be incorporated in to housing design.

Under "Piped" conditions with 50% blockage:

During the 1% AEP event, flows break out of the channel, but are contained within the future road networks. There is less flooding during a blocked event using a piped configuration than there would be during channel conditions.

7 URBAN OUTCOME

The piping of this channel will provide both Liverpool City Council and the local community with an active, useable space.

The proposed design, which has a one-way street with parking, has evolved from discussions with RMS & the Liverpool Council traffic department. Typically, town squares without shorter roads, around 80m to 120m in length, tend to have lower interaction between the public and nearby cafes & restaurants. The additional off-street parking for shoppers and increased mobility of traffic will provide a better outcome for the town centre.

There is no intention to use the allocated SP2 land for anything other than the public interest. The main intent of piping this channel is to provide a better urban outcome for Liverpool City Council and the local residents.

The proposed piping of this channel will not only provide the required drainage solution, but will also provide additional space for use by local residents of Middleton Grange.

8 WATER QUALITY ASSESSMENT

As the pollutant loads for an open channel are comparable to the proposed an open space area, there will be no additional pollutants generated this alternate arrangement. Therefore, the existing water quality solution will be sufficient to cater for the new culvert arrangement.

9 FLOOD EVACUATION

Following a review of the *Liverpool City Local Flood Plan EMPLAN (2012)*, we note that the plan does not list Middleton Grange as a flood prone area and does not include a specific evacuation plan for this locality. The Cabramatta Creek Flood Study and Basin Strategy Review shows all flood extents within the Cabramatta Creek Catchment but does not include the southern creek tributary, presumably since it does not significantly impact flooding in Hinchinbrook Creek. There also does not appear to be existing flood evacuation plan for the SES in this area.

Based on a review of these documents, we understand that there is currently no evacuation plan for this locality. We also note that the site is located well clear of regional flooding and based on contours in the area, evacuation could easily occur towards a higher area with a rising grade. On this basis, we note that many of SES's comments in their letter to Liverpool City Council, dated 10th February 2017, are not applicable to the site and are therefore satisfied.

10 SUMMARY/CONCLUSION

This report details the investigation completed in order to gain Council's 'in principle' support to alter the configuration of Section S7 of southern creek from a landscaped channel to a box culvert arrangement.

The XP-RAFTS hydrologic modelling adopted has remained consistent with the original approach, with minor updates to better reflect current conditions. The assessment indicates that proposed arrangement of three (3) 3600 x 900 mm RCBC's will be sufficient to convey flows for Section S7. Detailed design of trunk drainage element S7 are provided in Appendix C

TUFLOW modelling results show that the proposed piping of the channel will result in an improved outcome for the town centre, as the proposed open channel no longer provides an appropriate means of conveying flows through the Town Centre due to a modification in the assumed catchment conditions. The allocated land will be used in the public interest, and will be a better use of the space for the community than the open channel.

As discussed in Section 9, the concerns raised by the SES have been addressed since the development is well clear of Cabramatta Creek and there is no current SES strategy in the area. The site is not located in flood prone land from Cabramatta Creek (Bewsher 2011) and therefore does not affect flood storage nor require compensatory works. Consequently, an emergency response is not required due to proximity of the site, absence of an SES plan in the area and rising grade from the site.

It is noted that no mitigation works are required to support this development since there is no impact on surrounding areas.

We trust that this provides Council with the necessary confidence that piping section S7 is a feasible option that provides a number of benefits over an open channel arrangement.

Should there be any queries regarding this matter please do not hesitate to contact David Crompton on 4720 3340 or dcrompton@jwprince.com.au

Yours faithfully
J. WYNDHAM PRINCE



DAVID CROMPTON
Manager – Stormwater & Environment

11 REFERENCES

1. Bewsher Consulting, (2011), *"Cabramatta Creek Flood Study and Basin Strategy Review"*
2. J. Wyndham Prince, (2004), *"Hydrological and Hydraulic Study: Southern Hoxton Park Aerodrome Precinct."*
3. J. Wyndham Prince, (2004), *"Southern Creek Hydraulic Study – Southern Hoxton Park Aerodrome Precinct."*
4. J Wyndham Prince, (2005), *"Water Cycle Management Facilities Design Report: Middleton Grange."*
5. J. Wyndham Prince, (2006), *"Middleton Grange – Town Centre: Construction Certificate Set (CC100-CC107)"*
6. State Emergency Service, (2015), *"Liverpool Local Emergency Management Plan"*

APPENDIX A

Appendix A – XP-RAFTS Model Layout

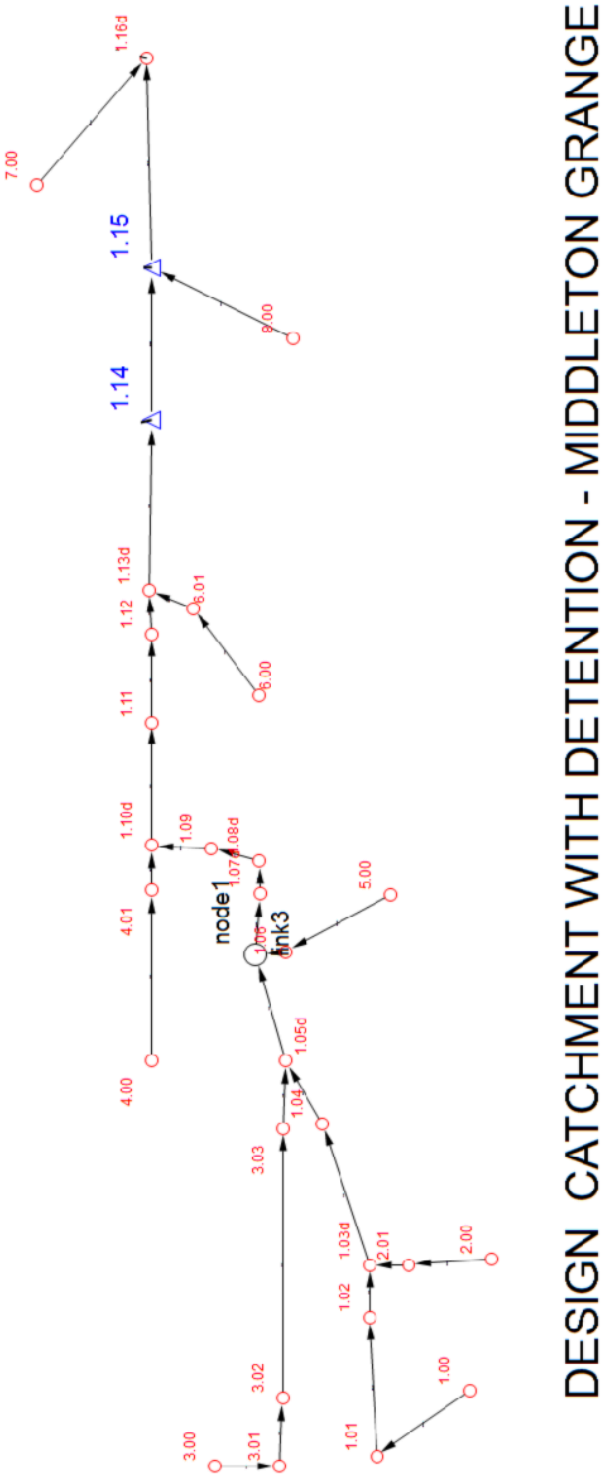
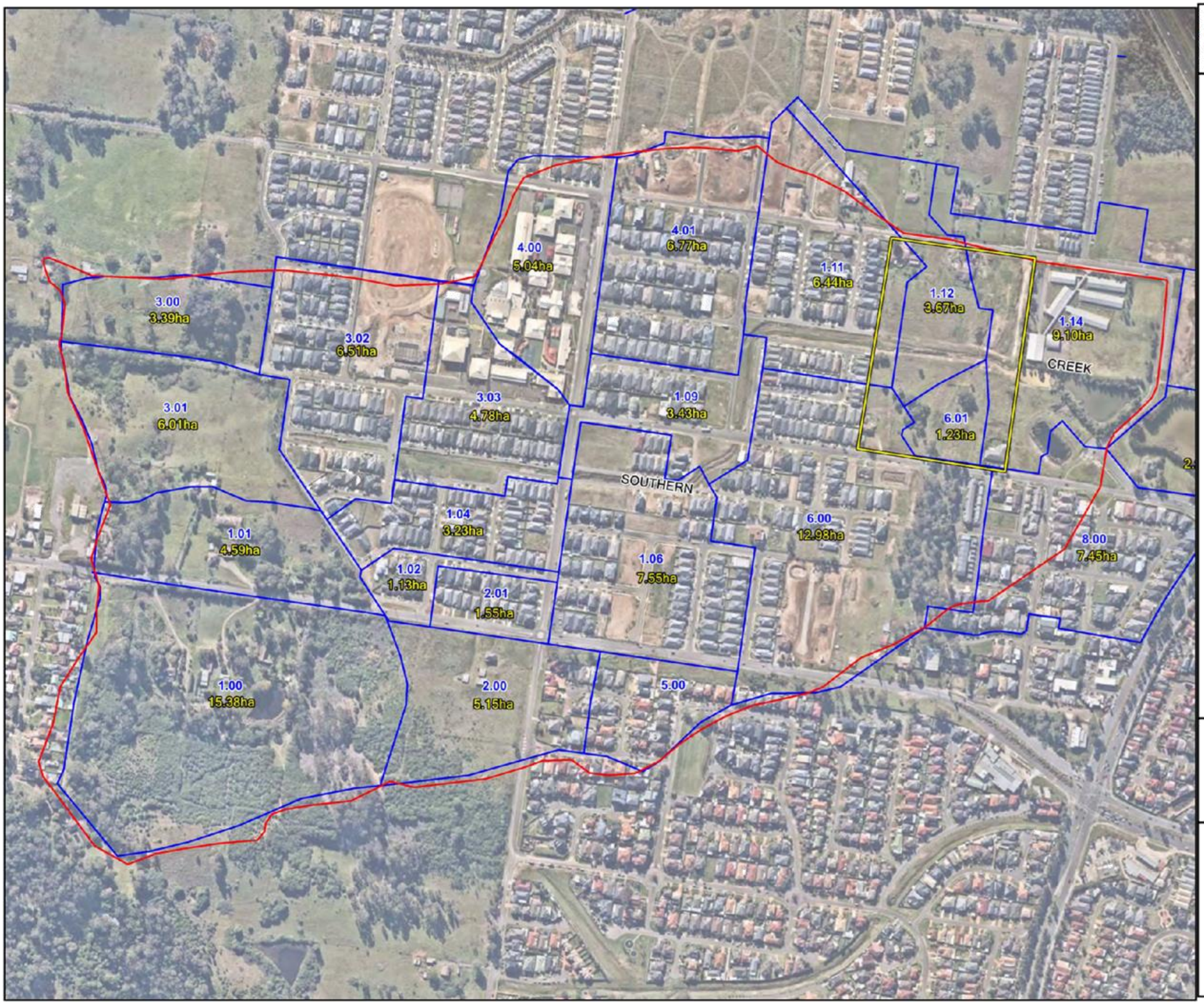


Plate A.1 – DRAINS Model Layout – Pre Developed Conditions

(ref: 109979RA05_imperv_updated.xp)

APPENDIX B

Appendix B – Figures



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LEGEND

- Site Boundary
- TUFLOW Model Boundary
- XP-Rafts Catchments
- 4.01 XP-Rafts Node ID
- 3.43ha Catchment Area

N

0 200
meters
Scale 1:5,000 @ A3

Projection: GDA 1994 MGA Zone 56

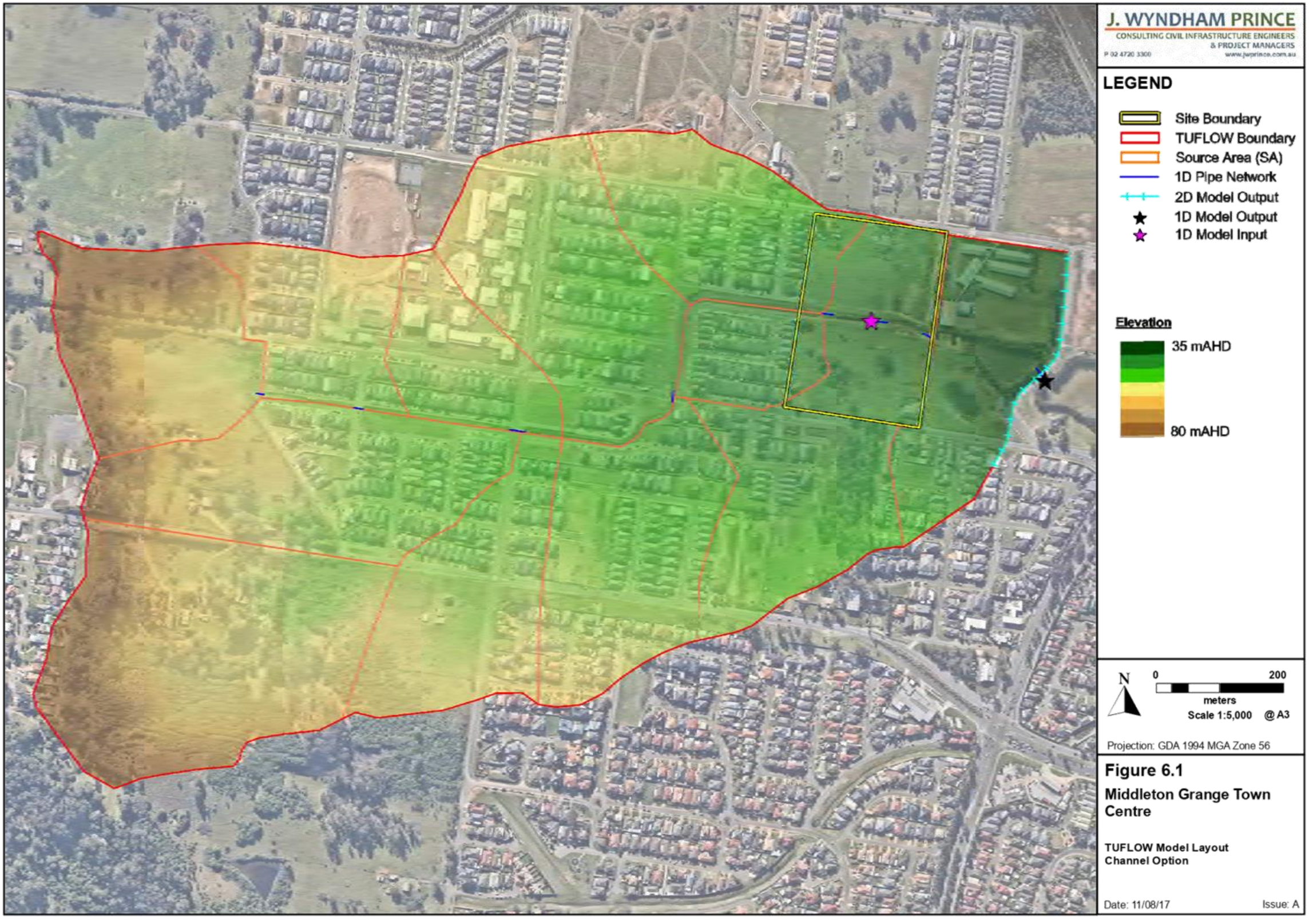
Figure 5.1

Middleton Grange Town Centre

XP-Rafts Model Layout

Date: 11/08/17 Issue: A

File Name: Fig_5.1_XP-Rafts Layout.WOR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LEGEND
Site Boundary
TUFLOW Boundary
Source Area (SA)
1D Pipe Network
2D Model Output
1D Model Output
1D Model Input
Elevation
35 mAHD
80 mAHD
N
0
200
meters
Scale 1:5,000 @ A3
Projection: GDA 1994 MGA Zone 56
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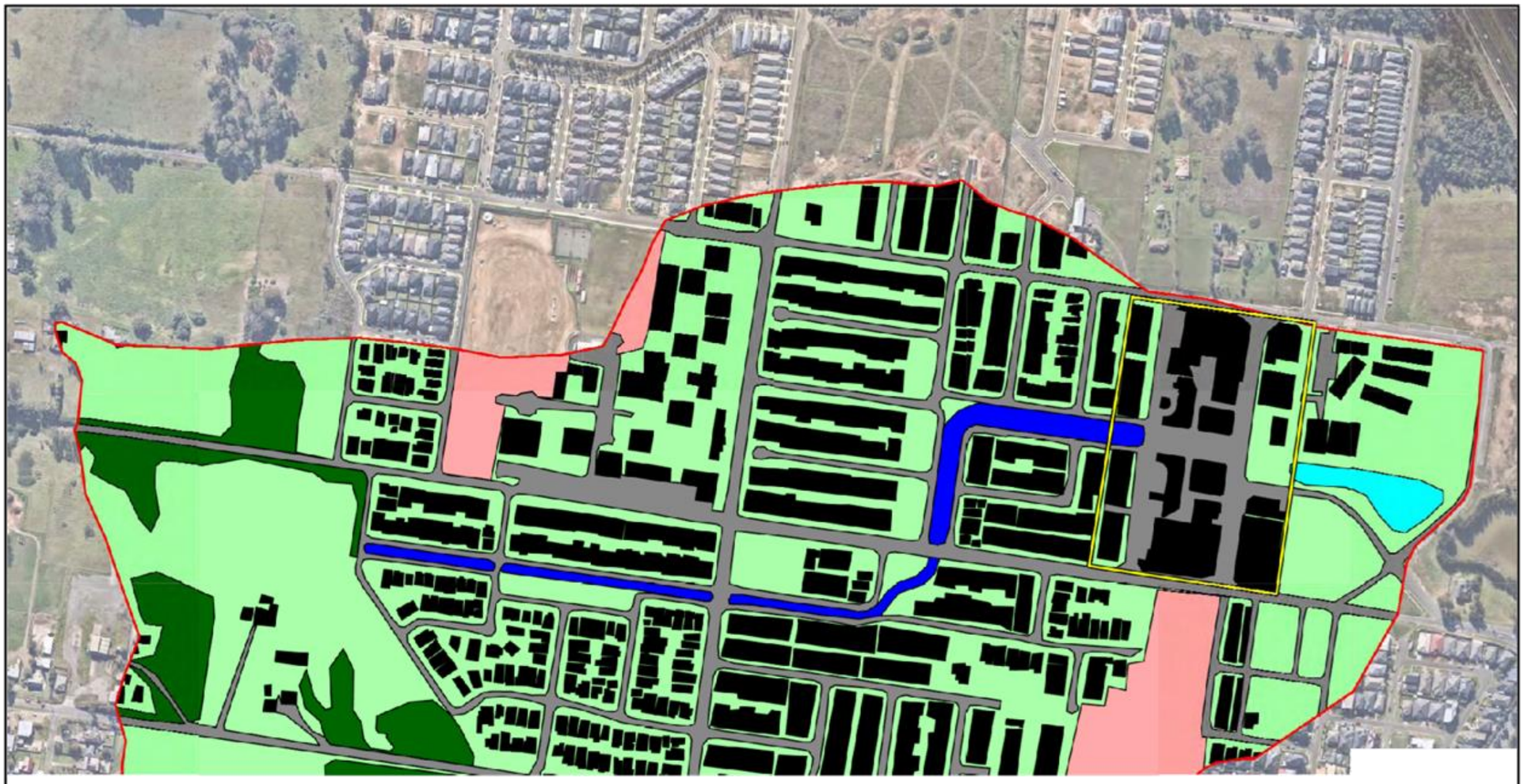
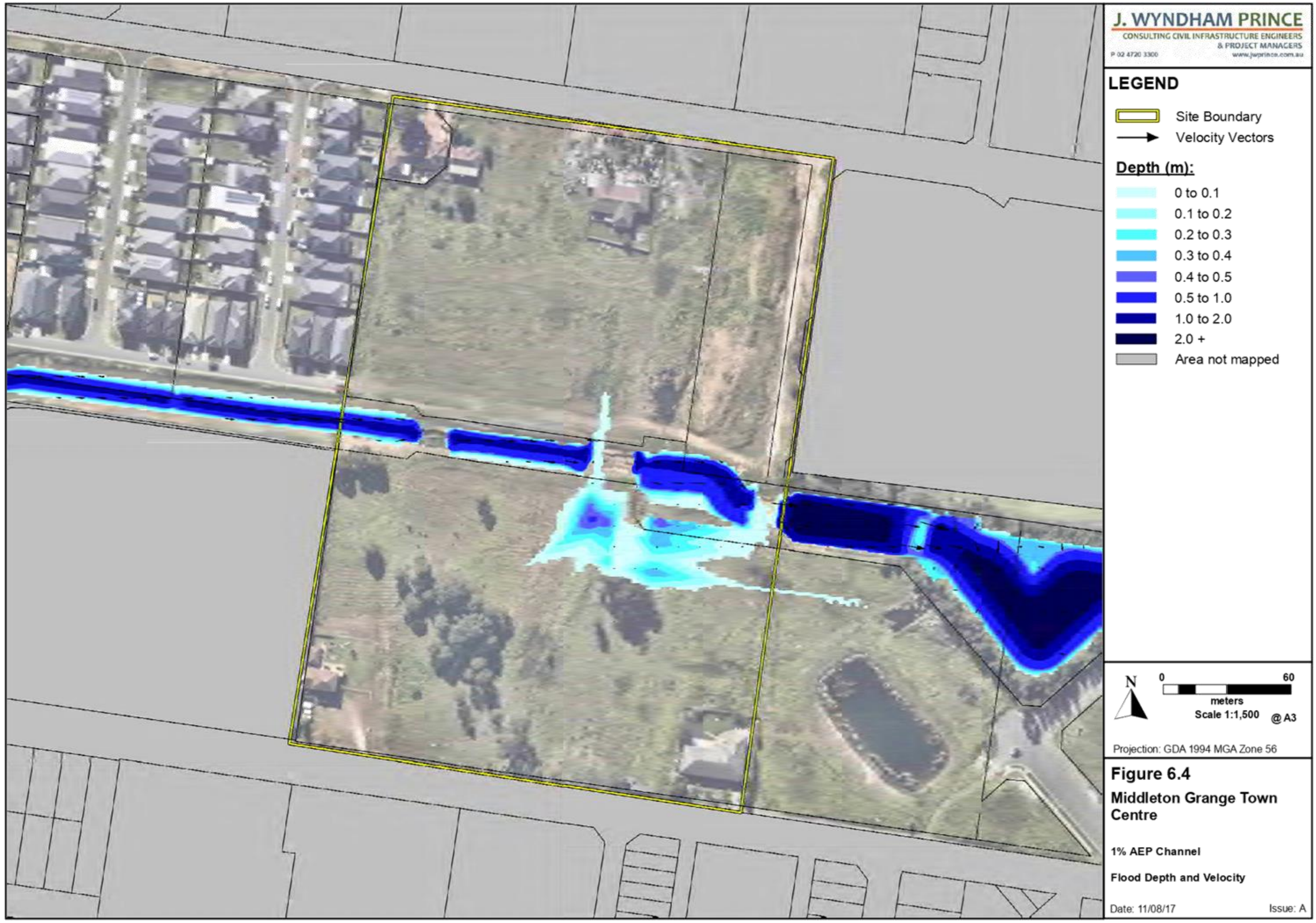
Middleton Grange Town Centre
TUFLOW Model Layout
Channel Option
Date: 11/08/17
Issue: A
File Name: Fig_6.1_TUFLOW Surface Channel

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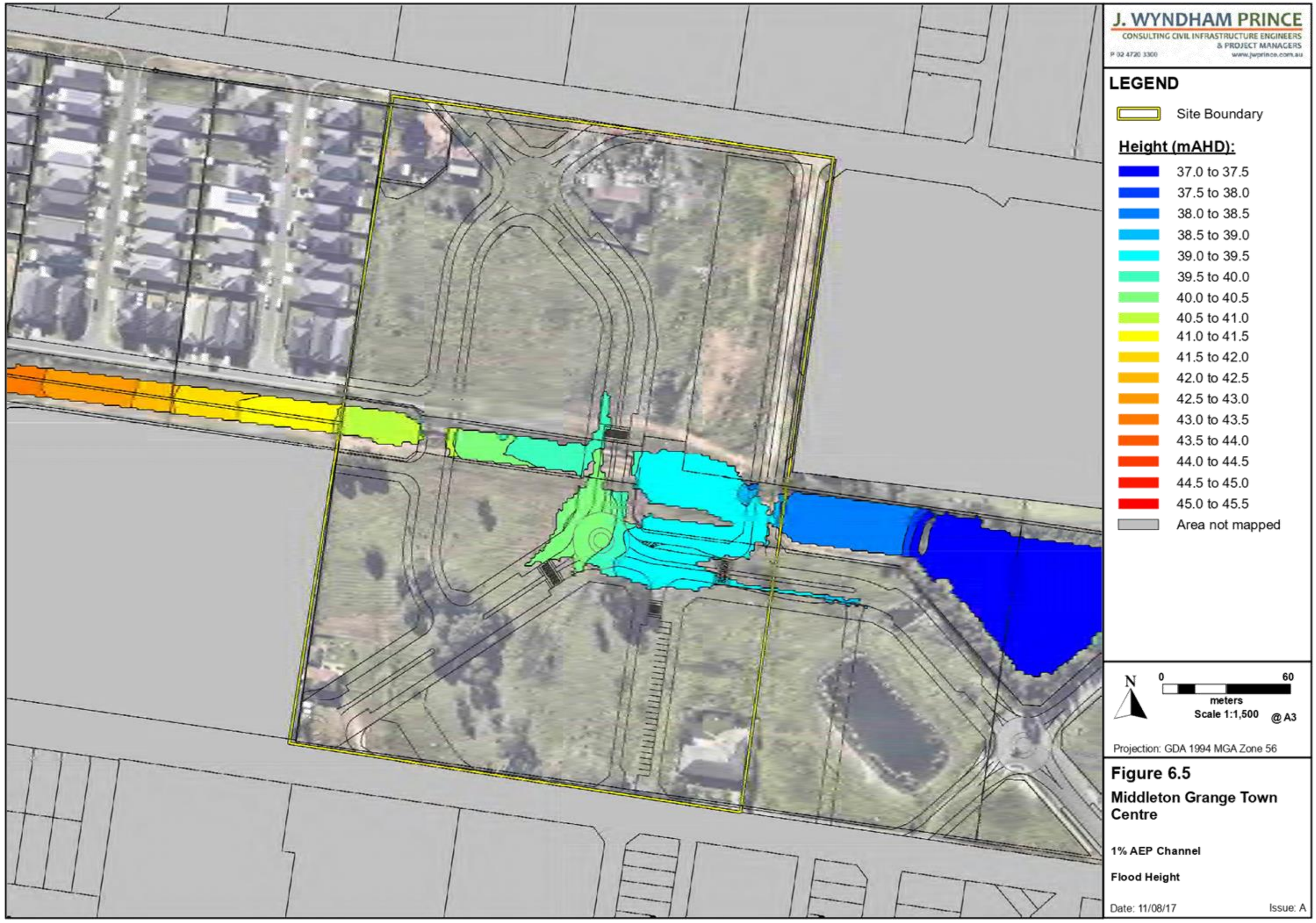
LEGEND
Site Boundary
Velocity Vectors
Depth (m):
0 to 0.1
0.1 to 0.2
0.2 to 0.3
0.3 to 0.4
0.4 to 0.5
0.5 to 1.0
1.0 to 2.0
2.0 +
Area not mapped
N
0
60
meters
Scale 1:1,500 @ A3
Projection: GDA 1994 MGA Zone 56
Figure 6.4
Middleton Grange Town Centre
1% AEP Channel
Flood Depth and Velocity
Date: 11/08/17
Issue: A
File Name: Fig_6.4_100_Channel_DepVel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LEGEND
Site Boundary
Height (mAHD):
37.0 to 37.5
37.5 to 38.0
38.0 to 38.5
38.5 to 39.0
39.0 to 39.5
39.5 to 40.0
40.0 to 40.5
40.5 to 41.0
41.0 to 41.5
41.5 to 42.0
42.0 to 42.5
42.5 to 43.0
43.0 to 43.5
43.5 to 44.0
44.0 to 44.5
44.5 to 45.0
45.0 to 45.5
Area not mapped
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60
meters
Scale 1:1,500 @ A3
Projection: GDA 1994 MGA Zone 56
Figure 6.5
Middleton Grange Town Centre
1% AEP Channel
Flood Height
Date: 11/08/17
Issue: A
File Name: Fig_6.5_100_Channel_Height



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LEGEND

- Site Boundary
- Velocity Vectors

Depth (m):

- 0 to 0.1
- 0.1 to 0.2
- 0.2 to 0.3
- 0.3 to 0.4
- 0.4 to 0.5
- 0.5 to 1.0
- 1.0 to 2.0
- 2.0 +
- Area not mapped

N

0 60
meters
Scale 1:1,500 @ A3

Projection: GDA 1994 MGA Zone 56

Figure 6.6

Middleton Grange Town Centre

1% AEP Culvert

Flood Depth and Velocity

Date: 11/08/17 Issue: A

File Name: Fig_6.6_100_Culvert_DepVel



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LEGEND

Site Boundary

Height (mAHD):

- 37.0 to 37.5
- 37.5 to 38.0
- 38.0 to 38.5
- 38.5 to 39.0
- 39.0 to 39.5
- 39.5 to 40.0
- 40.0 to 40.5
- 40.5 to 41.0
- 41.0 to 41.5
- 41.5 to 42.0
- 42.0 to 42.5
- 42.5 to 43.0
- 43.0 to 43.5
- 43.5 to 44.0
- 44.0 to 44.5
- 44.5 to 45.0
- 45.0 to 45.5
- Area not mapped

N

0 60
meters
Scale 1:1,500 @ A3

Projection: GDA 1994 MGA Zone 56

Figure 6.7

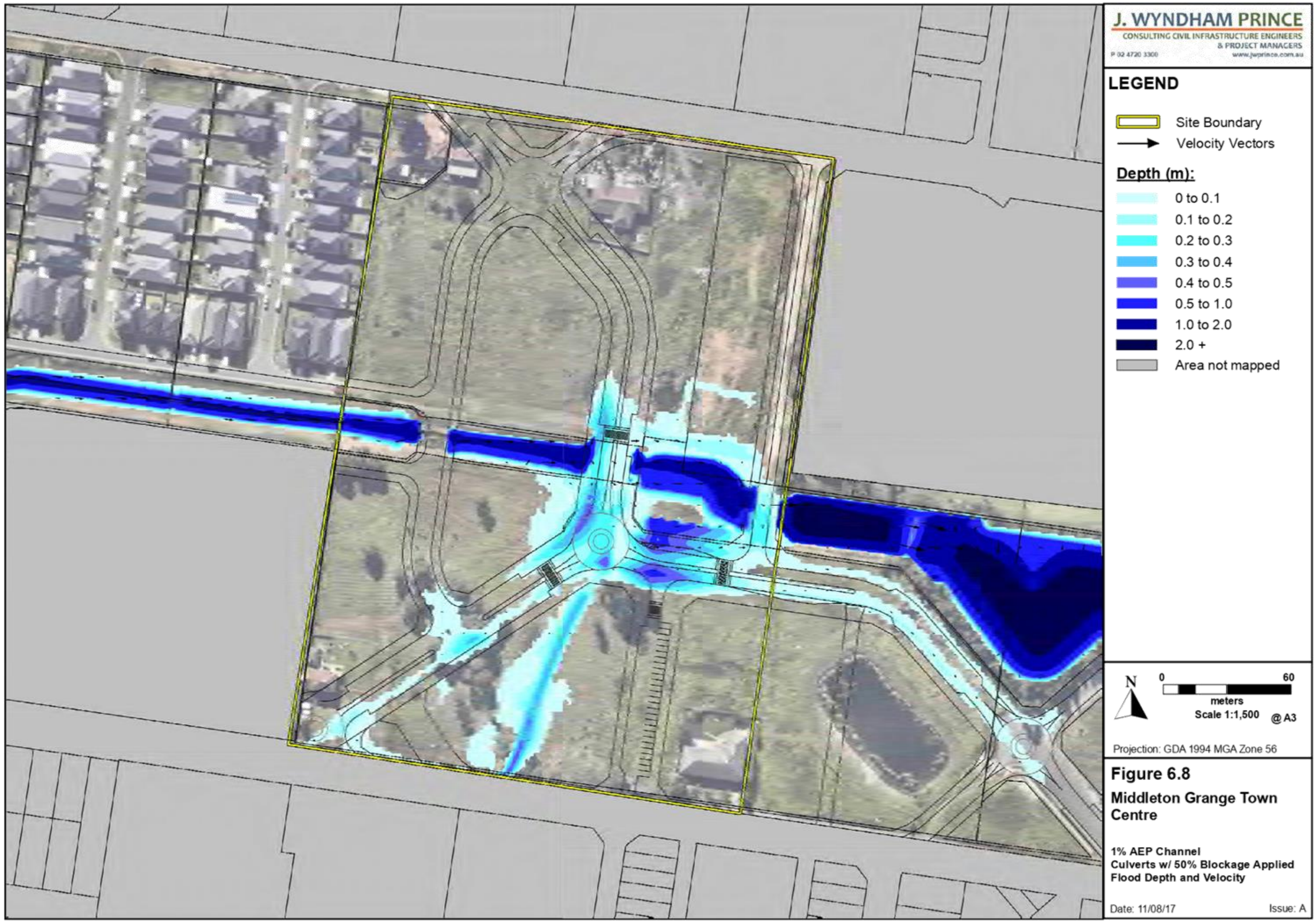
Middleton Grange Town Centre

1% AEP Culvert

Flood Height

Date: 11/08/17 Issue: A

File Name: Fig_6.7_100_Culvert_Height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LEGEND
Site Boundary
Velocity Vectors
Depth (m):
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0.2 to 0.3
0.3 to 0.4
0.4 to 0.5
0.5 to 1.0
1.0 to 2.0
2.0 +
Area not mapped
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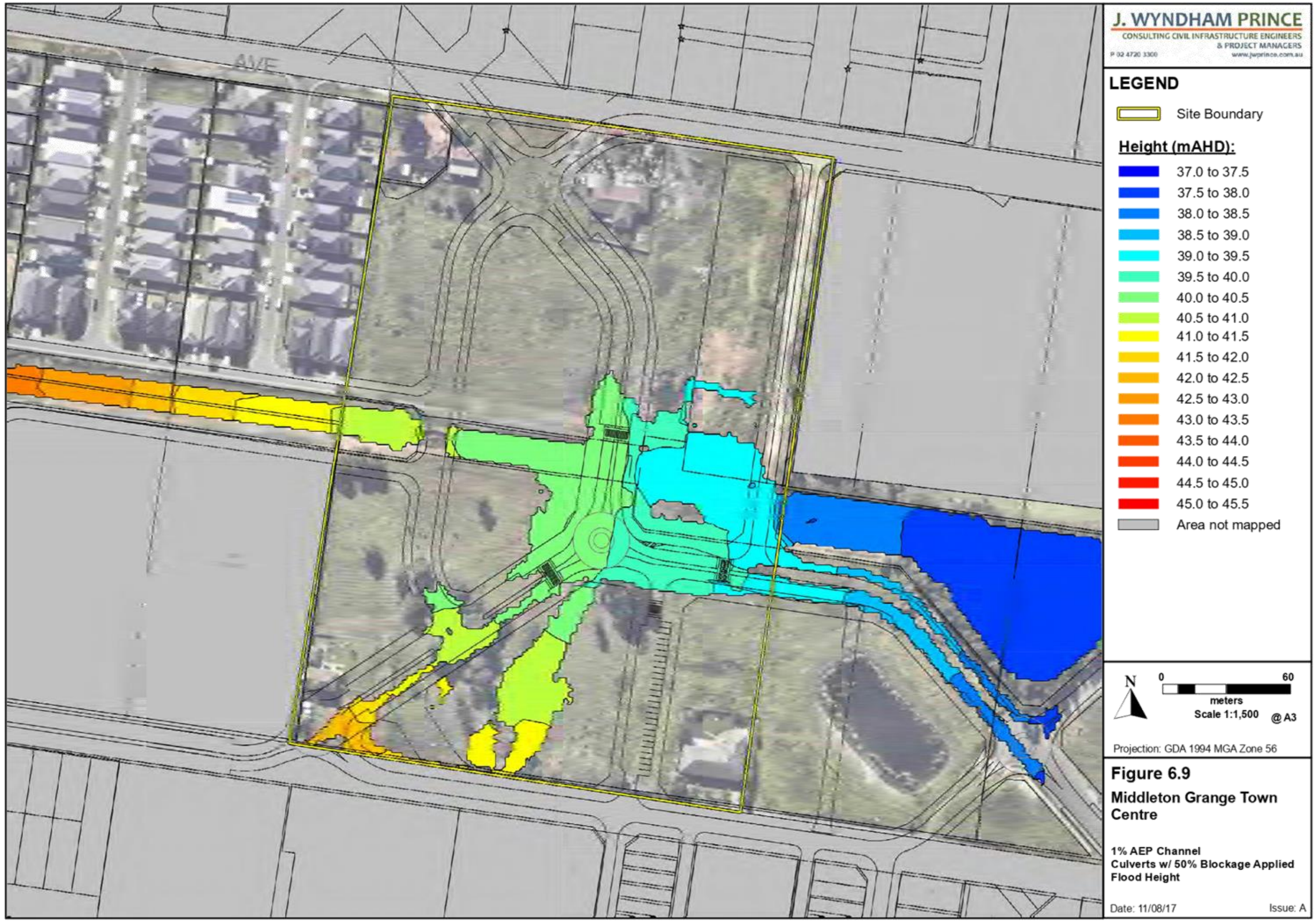
0
60
meters
Scale 1:1,500 @ A3
Projection: GDA 1994 MGA Zone 56
Figure 6.8
Middleton Grange Town Centre
1% AEP Channel
Culverts w/ 50% Blockage Applied
Flood Depth and Velocity
Date: 11/08/17
Issue: A
File Name: Fig_6.8_100_Channel_Block_DepVel


AVE
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LEGEND
Site Boundary
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41.0 to 41.5
41.5 to 42.0
42.0 to 42.5
42.5 to 43.0
43.0 to 43.5
43.5 to 44.0
44.0 to 44.5
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45.0 to 45.5
Area not mapped
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60
meters
Scale 1:1,500 @ A3
Projection: GDA 1994 MGA Zone 56
Figure 6.9
Middleton Grange Town Centre
1% AEP Channel
Culverts w/ 50% Blockage Applied
Flood Height
Date: 11/08/17
Issue: A
File Name: Fig_6.9_100_Channel_Block_Height



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LEGEND

- Site Boundary
- Velocity Vectors

Depth (m):

- 0 to 0.1
- 0.1 to 0.2
- 0.2 to 0.3
- 0.3 to 0.4
- 0.4 to 0.5
- 0.5 to 1.0
- 1.0 to 2.0
- 2.0 +
- Area not mapped

N

0 60
meters
Scale 1:1,500 @ A3

Projection: GDA 1994 MGA Zone 56

Figure 6.10

Middleton Grange Town Centre

1% AEP Culvert
Culvert with 50% blockage applied
Flood Depth and Velocity

Date: 11/08/17 Issue: A

File Name: Fig_6.10_100_Culvert_Block_DepVel



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LEGEND

Site Boundary

Height (mAHD):

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- 40.5 to 41.0
- 41.0 to 41.5
- 41.5 to 42.0
- 42.0 to 42.5
- 42.5 to 43.0
- 43.0 to 43.5
- 43.5 to 44.0
- 44.0 to 44.5
- 44.5 to 45.0
- 45.0 to 45.5
- Area not mapped

N

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meters
Scale 1:1,500 @ A3

Projection: GDA 1994 MGA Zone 56

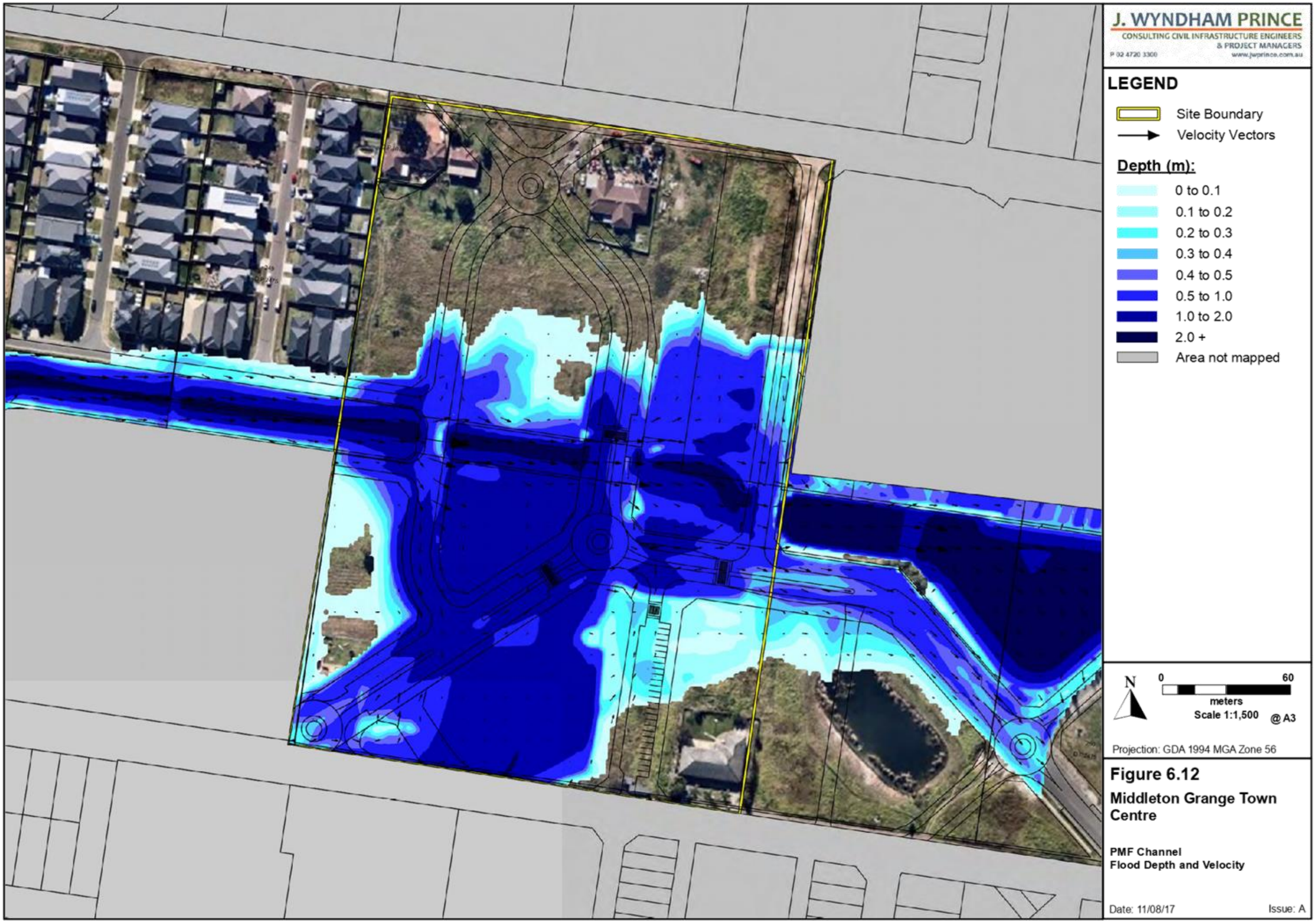
Figure 6.11

Middleton Grange Town Centre

1% AEP Culvert
Culvert with 50% blockage applied
Flood Height

Date: 11/08/17 Issue: A

File Name: Fig_6.11_100_Block_Culvert_Height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LEGEND
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Velocity Vectors
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2.0 +
Area not mapped
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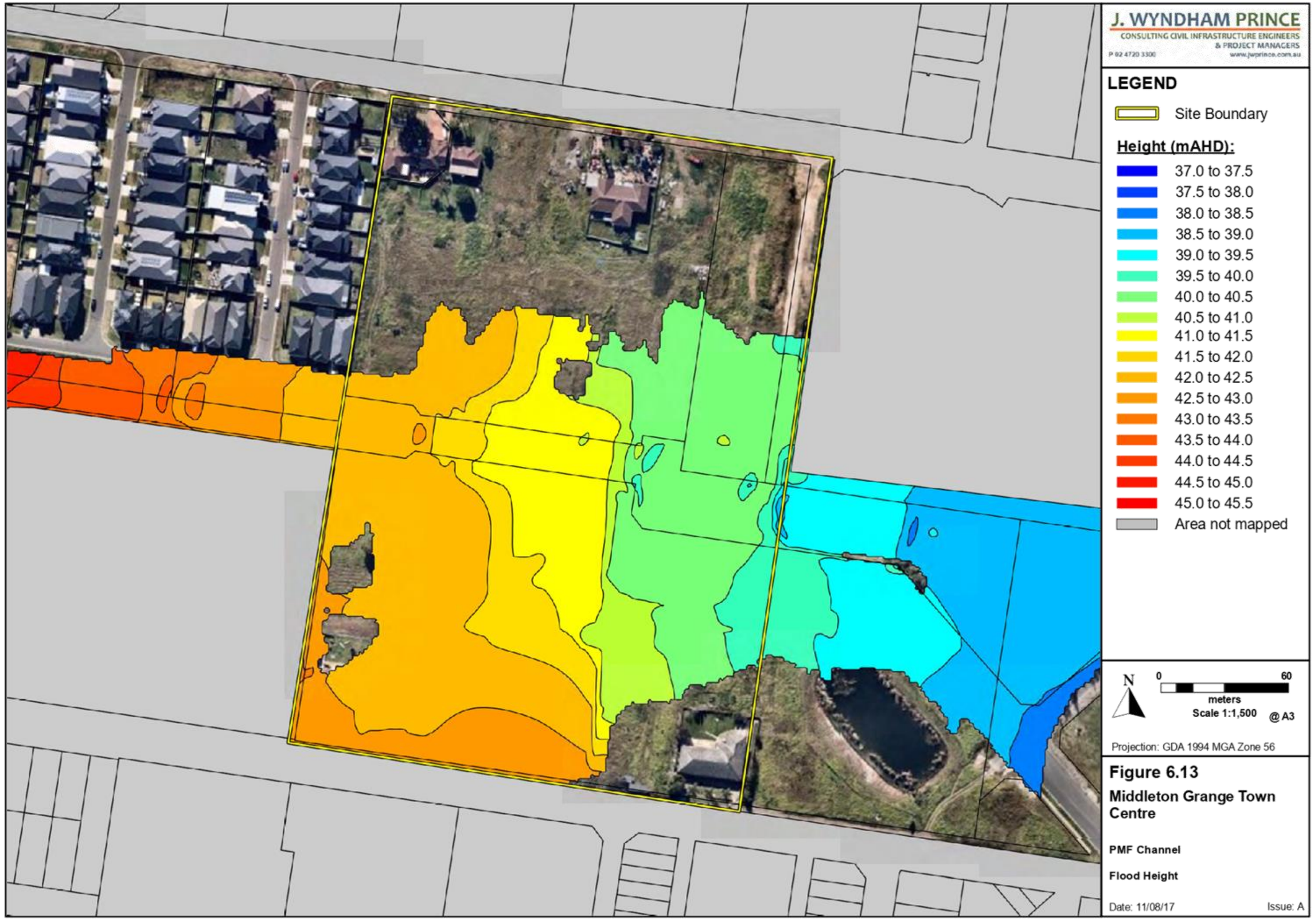
meters
Scale 1:1,500 @ A3
Projection: GDA 1994 MGA Zone 56
Figure 6.12
Middleton Grange Town Centre
PMF Channel
Flood Depth and Velocity
Date: 11/08/17
Issue: A
File Name: Fig_6.12_PMF_Channel_DepVel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LEGEND
Site Boundary
Height (mAHD):
37.0 to 37.5
37.5 to 38.0
38.0 to 38.5
38.5 to 39.0
39.0 to 39.5
39.5 to 40.0
40.0 to 40.5
40.5 to 41.0
41.0 to 41.5
41.5 to 42.0
42.0 to 42.5
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44.5 to 45.0
45.0 to 45.5
Area not mapped
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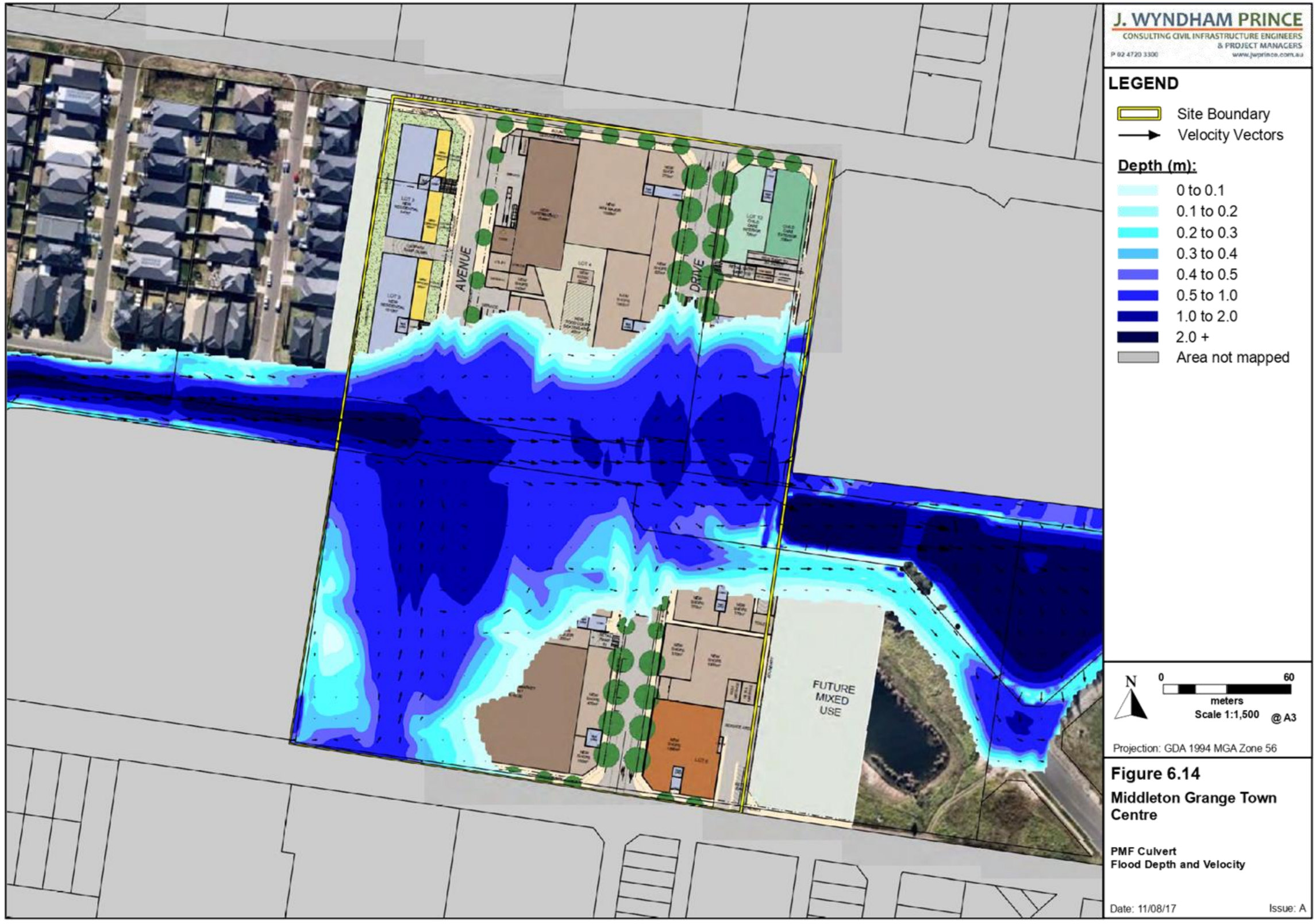
0
60
meters
Scale 1:1,500 @ A3
Projection: GDA 1994 MGA Zone 56
Figure 6.13
Middleton Grange Town Centre
PMF Channel
Flood Height
Date: 11/08/17
Issue: A
File Name: Fig_6.13_PMF_Channel_Height



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LEGEND

- Site Boundary
- Velocity Vectors

Depth (m):

- 0 to 0.1
- 0.1 to 0.2
- 0.2 to 0.3
- 0.3 to 0.4
- 0.4 to 0.5
- 0.5 to 1.0
- 1.0 to 2.0
- 2.0 +
- Area not mapped

N

0 60
meters
Scale 1:1,500 @ A3

Projection: GDA 1994 MGA Zone 56

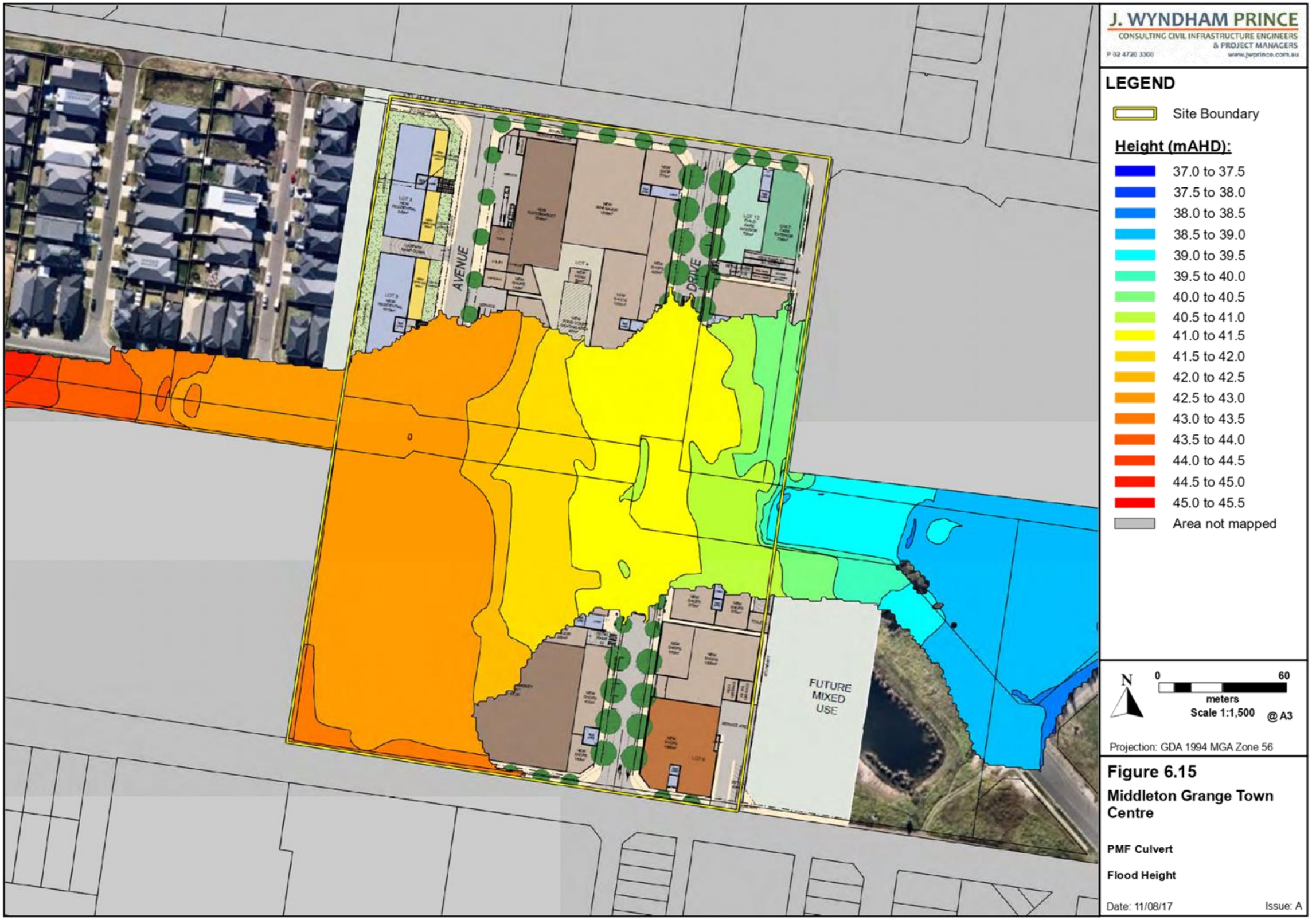
Figure 6.14

Middleton Grange Town Centre

PMF Culvert
Flood Depth and Velocity

Date: 11/08/17 Issue: A

File Name: Fig_6.14_PMF_Culvert_DepVel



J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
P 02 4720 3300
www.jwprince.com.au

LEGEND

Site Boundary

Height (mAHD):

- 37.0 to 37.5
- 37.5 to 38.0
- 38.0 to 38.5
- 38.5 to 39.0
- 39.0 to 39.5
- 39.5 to 40.0
- 40.0 to 40.5
- 40.5 to 41.0
- 41.0 to 41.5
- 41.5 to 42.0
- 42.0 to 42.5
- 42.5 to 43.0
- 43.0 to 43.5
- 43.5 to 44.0
- 44.0 to 44.5
- 44.5 to 45.0
- 45.0 to 45.5
- Area not mapped

N

0 60
meters
Scale 1:1,500 @ A3

Projection: GDA 1994 MGA Zone 56

Figure 6.15

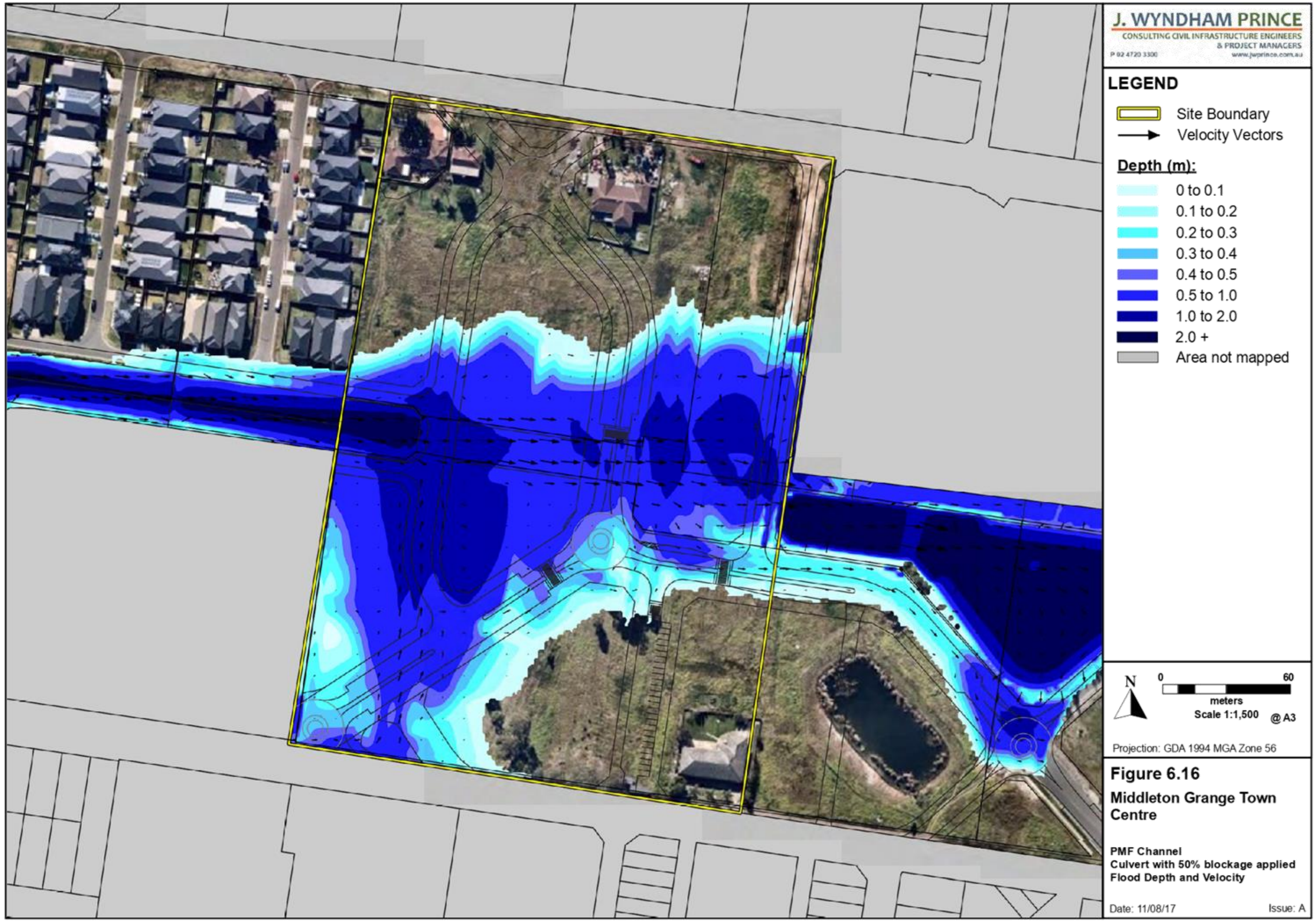
Middleton Grange Town Centre

PMF Culvert

Flood Height

Date: 11/08/17 Issue: A

File Name: Fig_6.15_PMF_Culvert_Height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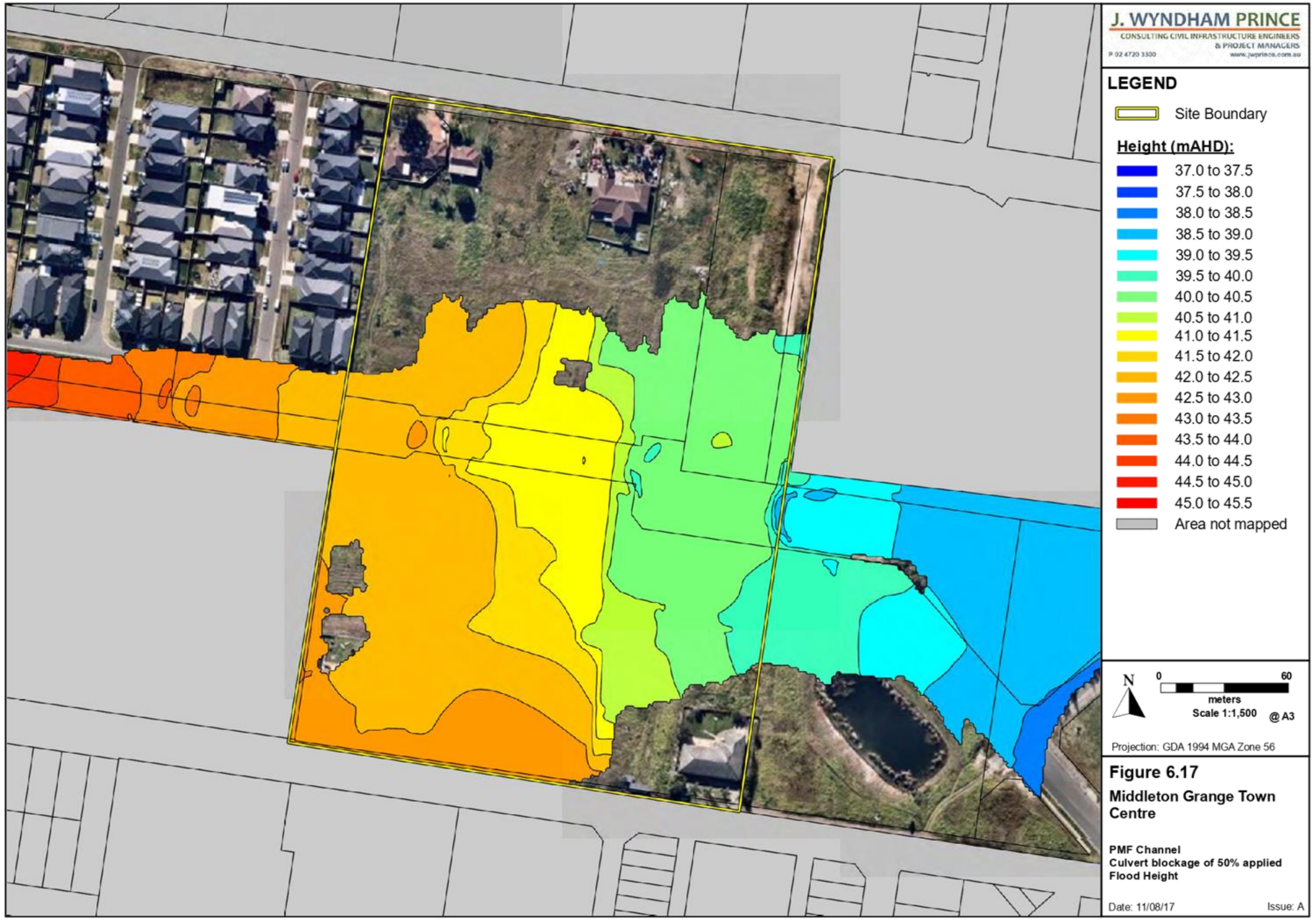
LEGEND
Site Boundary
Velocity Vectors
Depth (m):
0 to 0.1
0.1 to 0.2
0.2 to 0.3
0.3 to 0.4
0.4 to 0.5
0.5 to 1.0
1.0 to 2.0
2.0 +
Area not mapped
N
0
60
meters
Scale 1:1,500 @ A3
Projection: GDA 1994 MGA Zone 56
Figure 6.16
Middleton Grange Town Centre
PMF Channel
Culvert with 50% blockage applied
Flood Depth and Velocity
Date: 11/08/17
Issue: A
File Name: Fig_6.16_PMF_Block_Channel_DepVel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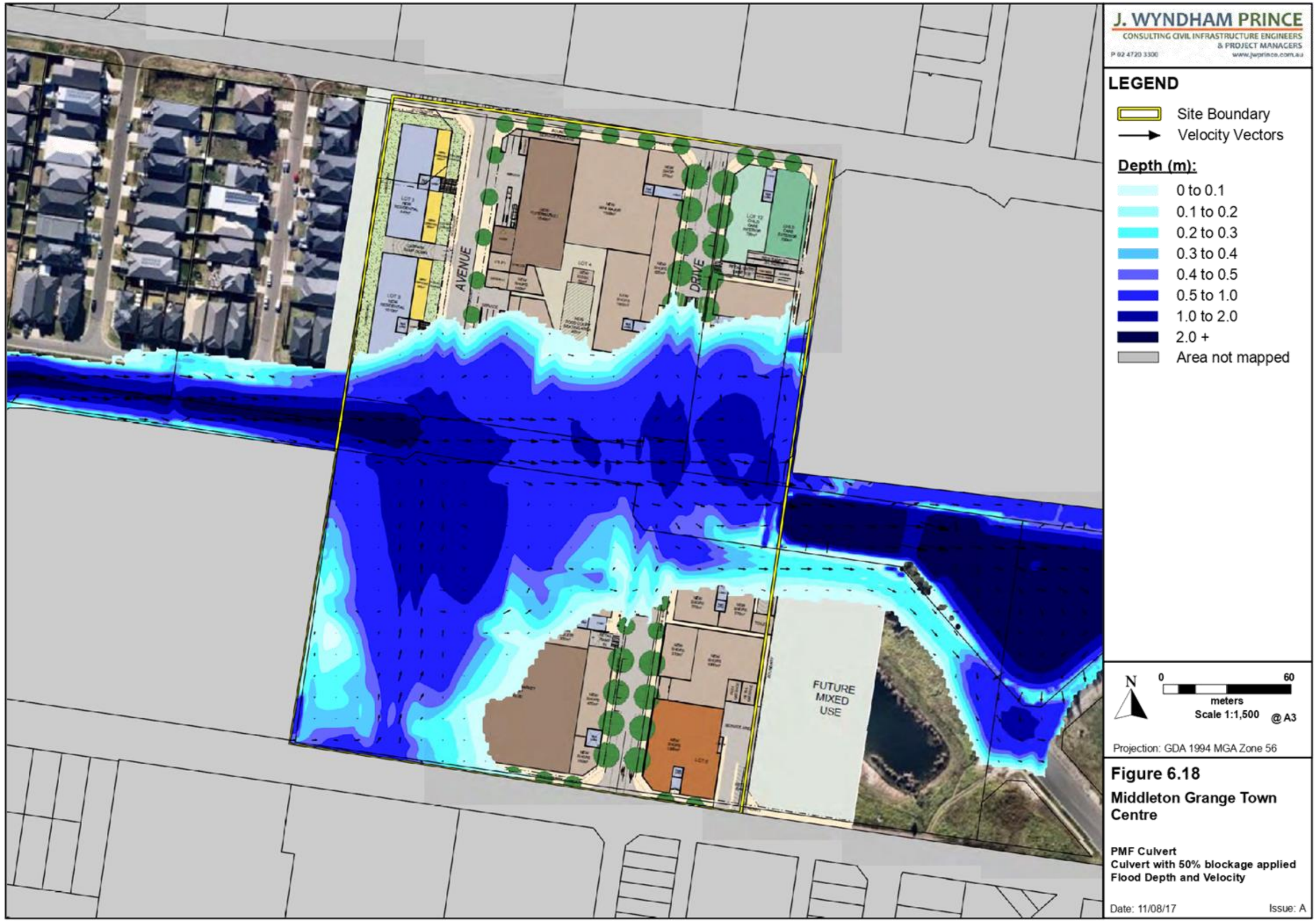
P 02 4720 3300
www.jwprince.com.au
LEGEND
Site Boundary
Height (mAHD):
37.0 to 37.5
37.5 to 38.0
38.0 to 38.5
38.5 to 39.0
39.0 to 39.5
39.5 to 40.0
40.0 to 40.5
40.5 to 41.0
41.0 to 41.5
41.5 to 42.0
42.0 to 42.5
42.5 to 43.0
43.0 to 43.5
43.5 to 44.0
44.0 to 44.5
44.5 to 45.0
45.0 to 45.5
Area not mapped
N
0
60
meters
Scale 1:1,500 @ A3
Projection: GDA 1994 MGA Zone 56
Figure 6.17
Middleton Grange Town Centre
PMF Channel
Culvert blockage of 50% applied
Flood Height
Date: 11/08/17
Issue: A
File Name: Fig_6.17_PMF_Block_Channel_Height



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LEGEND

- Site Boundary
- Velocity Vectors

Depth (m):

- 0 to 0.1
- 0.1 to 0.2
- 0.2 to 0.3
- 0.3 to 0.4
- 0.4 to 0.5
- 0.5 to 1.0
- 1.0 to 2.0
- 2.0 +
- Area not mapped

N

0 60
meters
Scale 1:1,500 @ A3

Projection: GDA 1994 MGA Zone 56

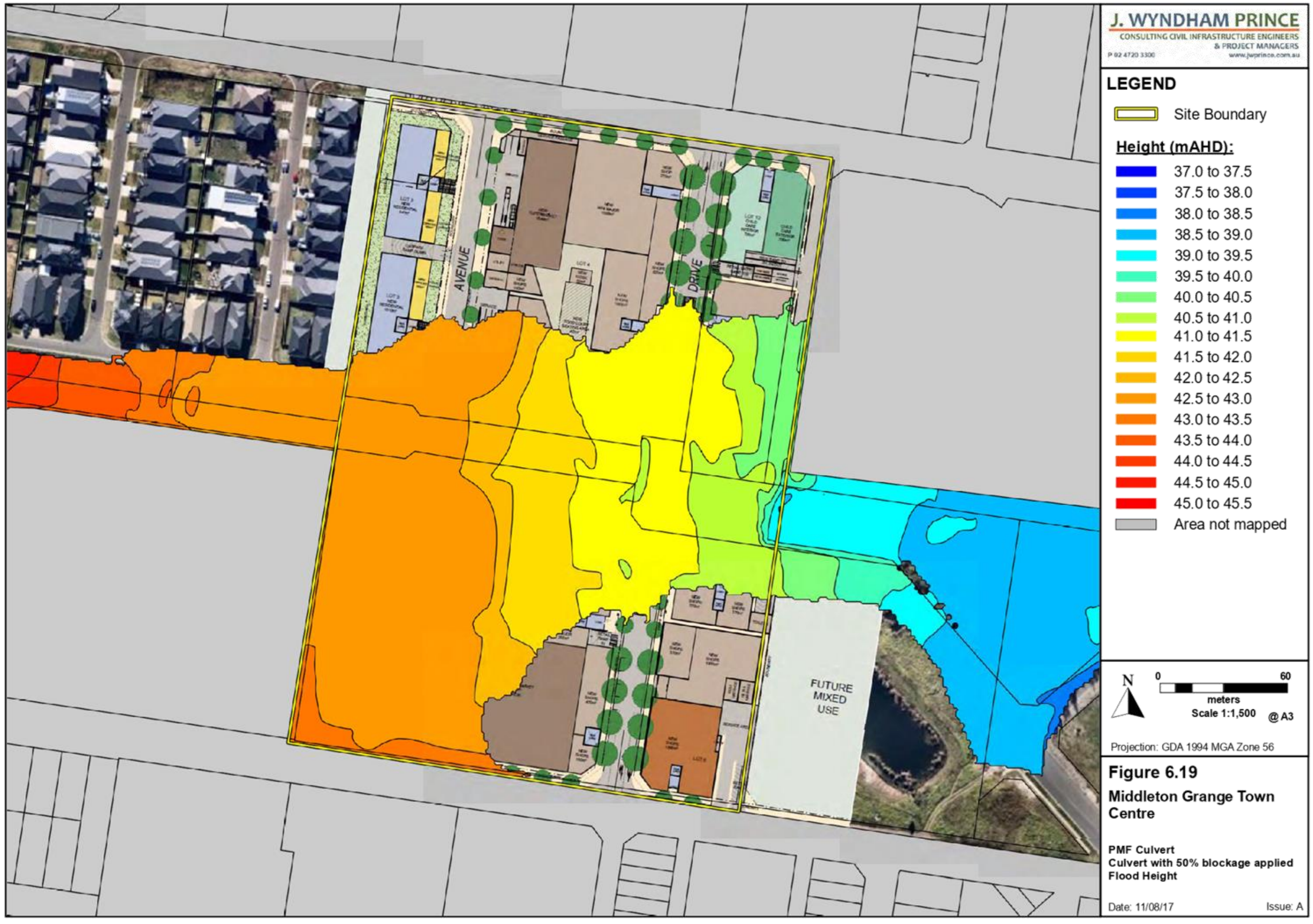
Figure 6.18

Middleton Grange Town Centre

PMF Culvert
Culvert with 50% blockage applied
Flood Depth and Velocity

Date: 11/08/17 Issue: A

File Name: Fig_6.18_PMF_Block_Culvert_DepVel



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P 02 4720 3300
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LEGEND

Site Boundary

Height (mAHD):

- 37.0 to 37.5
- 37.5 to 38.0
- 38.0 to 38.5
- 38.5 to 39.0
- 39.0 to 39.5
- 39.5 to 40.0
- 40.0 to 40.5
- 40.5 to 41.0
- 41.0 to 41.5
- 41.5 to 42.0
- 42.0 to 42.5
- 42.5 to 43.0
- 43.0 to 43.5
- 43.5 to 44.0
- 44.0 to 44.5
- 44.5 to 45.0
- 45.0 to 45.5
- Area not mapped

N

0 60
meters
Scale 1:1,500 @ A3

Projection: GDA 1994 MGA Zone 56

Figure 6.19

Middleton Grange Town Centre

PMF Culvert
Culvert with 50% blockage applied
Flood Height

Date: 11/08/17 Issue: A

File Name: Fig_6.19_PMF_Block_Culvert_Height

APPENDIX B

Appendix C– Trunk Drainage Design Plans

LIVERPOOL CITY COUNCIL

STATELAND DEVELOPMENTS

MIDDLETON GRANGE - PRECINCT 2
TOWN CENTRE
TRUNK DRAINAGE CULVERT PLANS

COUNCIL REF: DA64/2007

SUBDIVISION OF LOTS 263 & 264 DP. 2475
LOTS 1 D.P.612938 & LOT 2 D.P. 1078564



LOCALITY SKETCH

Prepared By:
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CONSULTING CIVIL ENGINEERS & PROJECT MANAGERS
P.O. Box 4366, Penrith Westfields. 2750
Ph. (02) 4732 3366 Fax (02) 47217638 DX 8032
REF No: 7887/CC100

CC 31/2008.
LIVERPOOL CITY COUNCIL
CERTIFIED APPROVED COPY
K.
ENGINEER
11 JUL 2008
DATE

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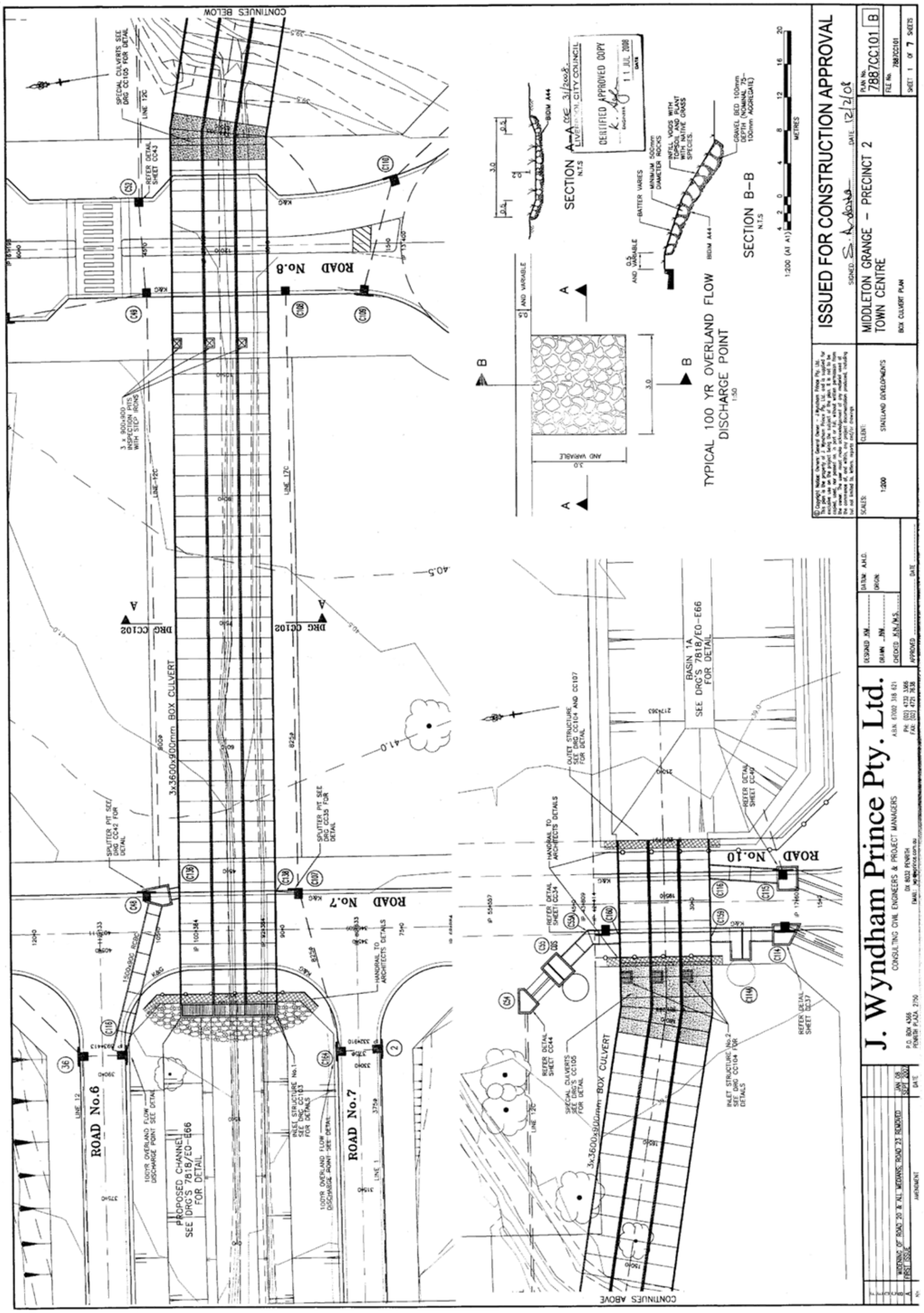
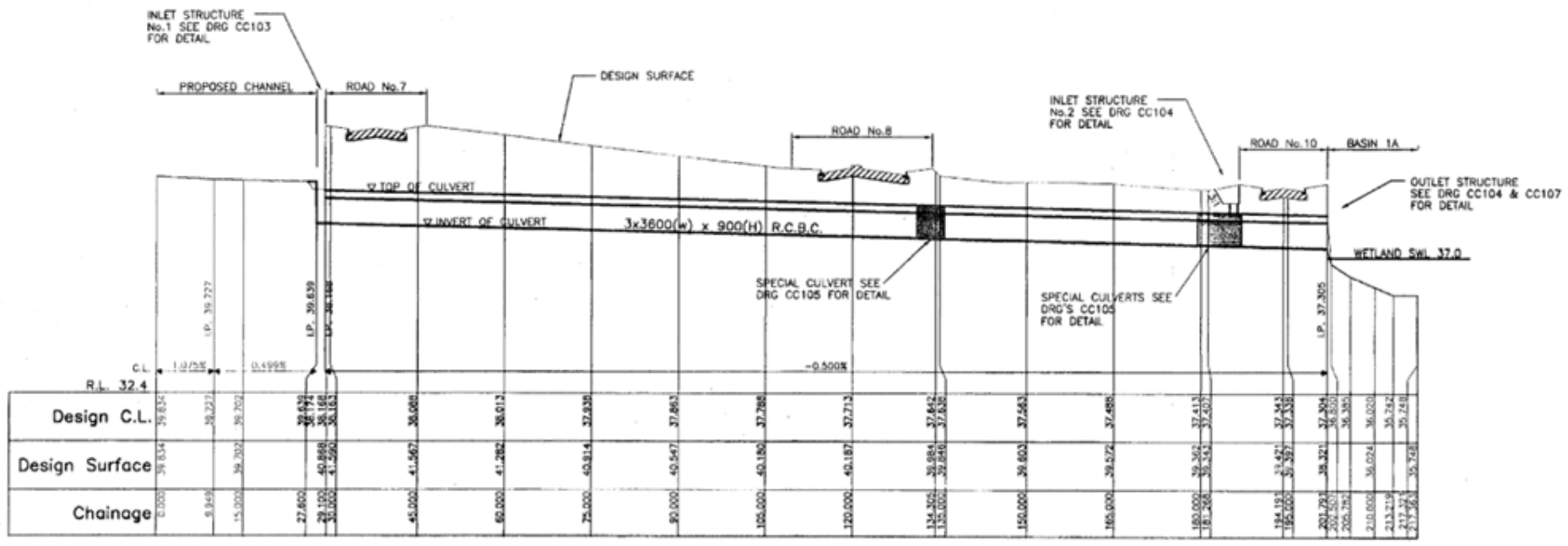
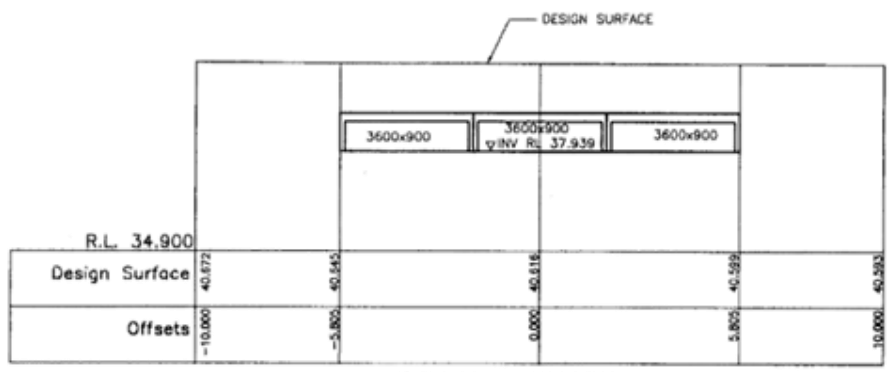
SIGNED S. Anderton DATE 12/2/08


ISSUED FOR CONSTRUCTION APPROVAL
MIDDLETON GRANGE – PRECINCT 2
TOWN CENTRE
BOX CULVERT PLAN
PLAN No. 7887CC101 B
FILE No. 7887CC101
SHEET 1 OF 7 SHEETS
CERTIFIED APPROVED COPY
11 JUL 2008
SECTION A–A
SECTION B–B
TYPICAL 100 YR OVERLAND FLOW DISCHARGE POINT
ROAD No.8
ROAD No.7
ROAD No.6
ROAD No.10
3x3600x900mm BOX CULVERT
PROPOSED CHANNEL SEE DRG'S 7818/E0–E66 FOR DETAIL
BASIN 1A SEE DRG'S 7818/E0–E66 FOR DETAIL
DRG CC102
J. Wyndham Prince Pty. Ltd.
CONSULTING CIVIL ENGINEERS & PROJECT MANAGERS
CLIENT: STATELAND DEVELOPMENTS
SCALES: 1:200
WIDENING OF ROAD 20 & ALL MEDIANS, ROAD 23 REMOVED
FIRST ISSUE
JAN 08
SEPT 2007



CULVERT LONGITUDINAL SECTION
SCALES: HORIZ 1: 500
VERT 1: 100



TYPICAL SECTION A–A
SCALE 1:100 NATURAL

LIVERPOOL CITY COUNCIL
CERTIFIED APPROVED COPY
K. Taylor
ENGINEER
11 JUL 2008
DATE

1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES
1:500 (AT A1) 10 0 10 20 30 40 50 METRES

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SIGNED S Anderson DATE 12/2/08

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C		
B	WIDENING OF ROAD 20 & ALL MEDIANS; ROAD 23 REMOVED	JAN 08
A	FIRST ISSUE	SEPT 2007

J. Wyndham Prince Pty. Ltd.
CONSULTING CIVIL ENGINEERS & PROJECT MANAGERS
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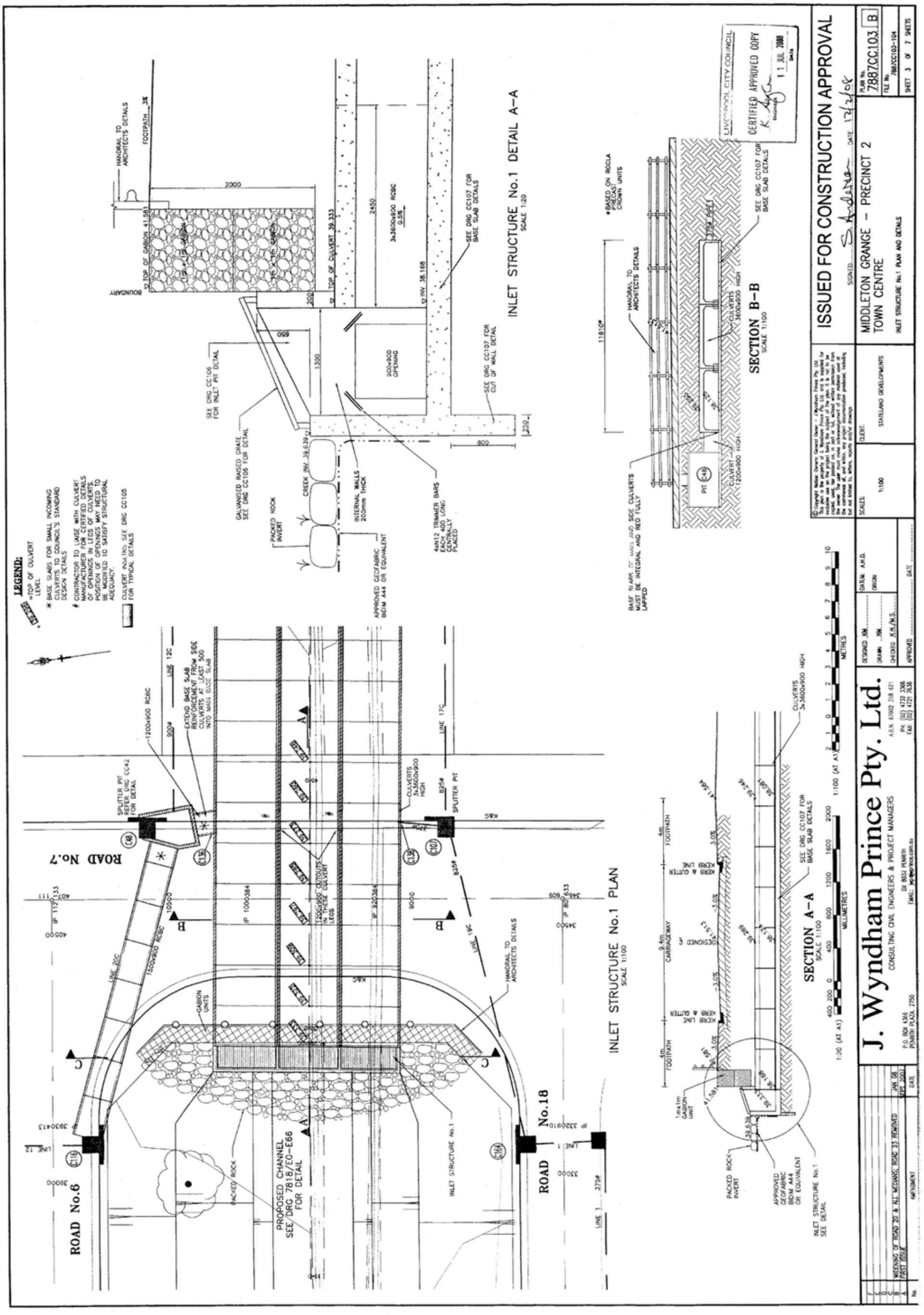
DX 8032 PENRITH
EMAIL: jwp@jwprince.com.au
PH: (02) 4732 3366
FAX: (02) 4721 7638

DESIGNED JSM
DRAWN JSM
CHECKED K.N./M.S.
APPROVED ____ DATE ____
DATUM: A.H.D.
ORIGIN:

SCALES: 1:500 (H) 1:100 (V)
CLIENT: STATELAND DEVELOPMENTS

MIDDLETON GRANGE – PRECINCT 2
TOWN CENTRE
CULVERT LONGITUDINAL SECTION AND TYPICAL SECTION

PLAN No. 7887CC102 B
FILE No. 7887CC102
SHEET 2 OF 7 SHEETS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SCALE 1:20
SECTION B–B
SCALE 1:100
LIVERPOOL CITY COUNCIL
CERTIFIED APPROVED COPY
11 JUL 2008
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MIDDLETON GRANGE – PRECINCT 2
TOWN CENTRE
INLET STRUCTURE No.1 PLAN AND DETAILS
PLAN No. 7887CC103 B
FILE No. 7887CC103-104
SHEET 3 OF 7 SHEETS
LEGEND:
=TOP OF CULVERT LEVEL
* BASE SLABS FOR SMALL INCOMING CULVERTS TO COUNCIL'S STANDARD DESIGN DETAILS
# CONTRACTOR TO LIAISE WITH CULVERT MANUFACTURER FOR CERTIFIED DETAILS OF OPENINGS IN LEGS OF CULVERTS. POSITION OF OPENINGS MAY NEED TO BE MODIFIED TO SATISFY STRUCTURAL ADEQUACY.
CULVERT INSERTS SEE DRG CC105 FOR TYPICAL DETAILS
INLET STRUCTURE No.1 PLAN
SCALE 1:100
ROAD No.7
ROAD No.6
ROAD No.18
PROPOSED CHANNEL SEE DRG 7818/E0–E66 FOR DETAIL
SECTION A–A
SCALE 1:100
J. Wyndham Prince Pty. Ltd.
CONSULTING CIVIL ENGINEERS & PROJECT MANAGERS
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PH (02) 4732 3366
FAX (02) 4721 7638
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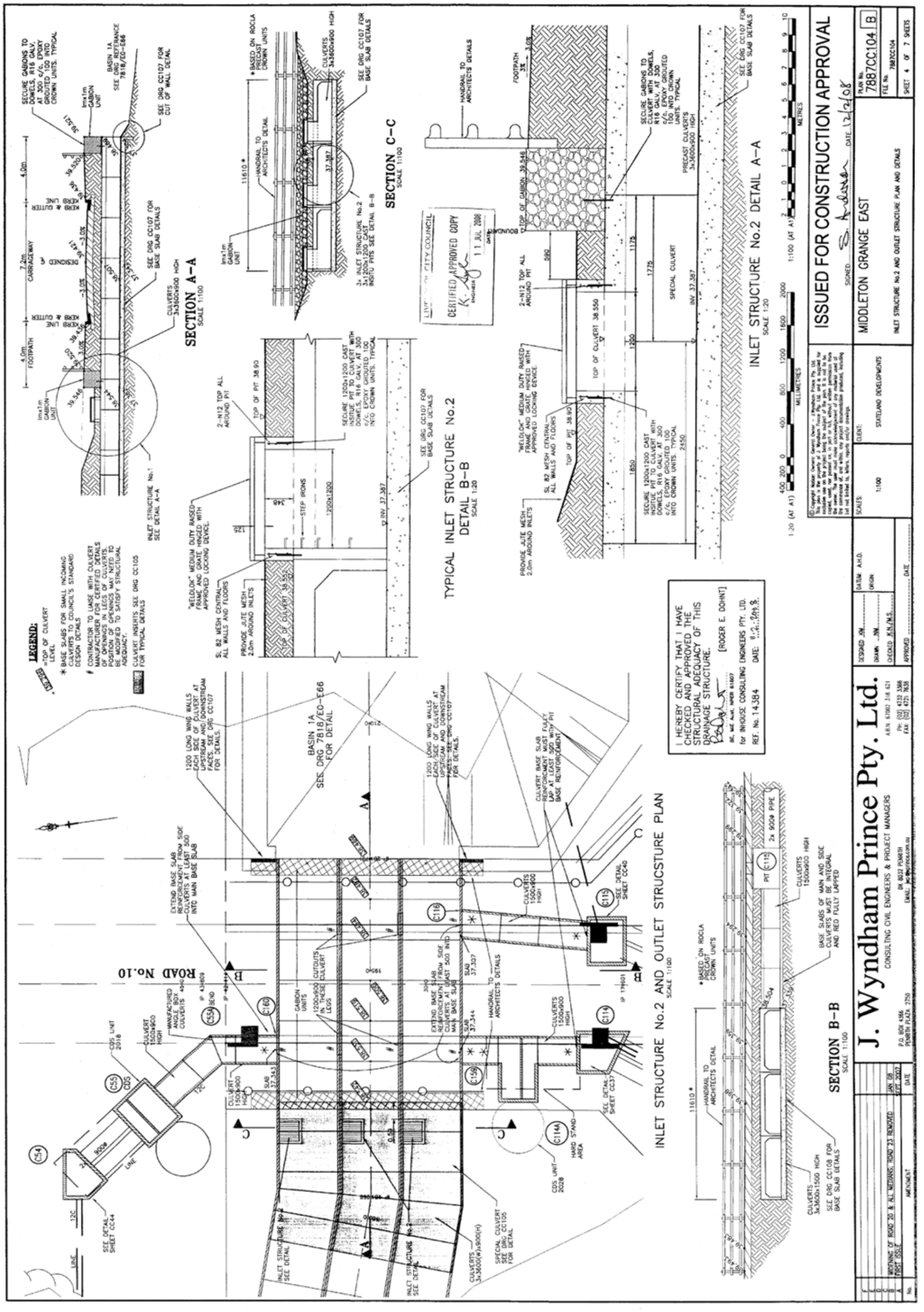
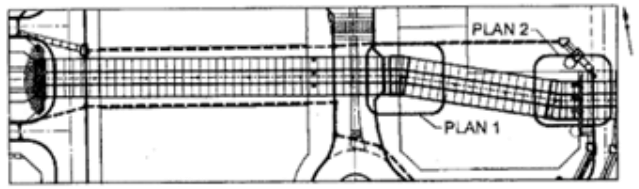
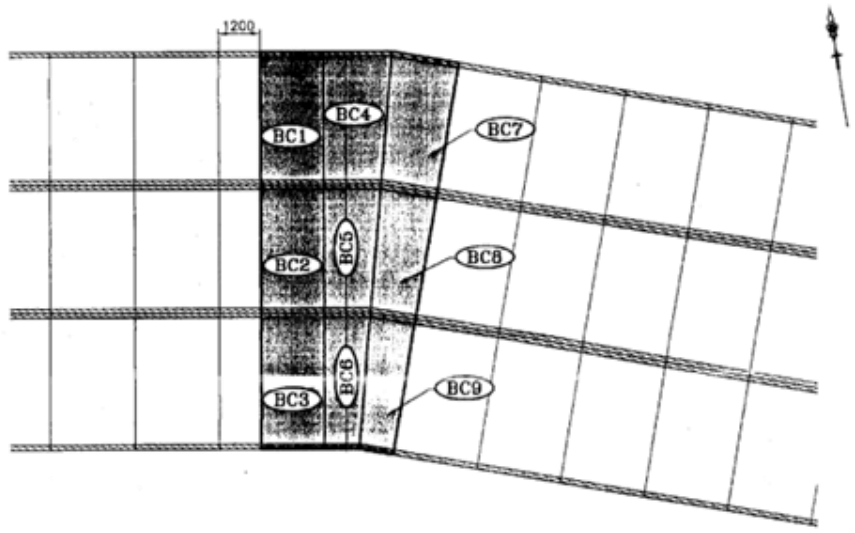
FIRST ISSUE
JAN 06
SEPT 2007
SCALES: 1:100
DESIGNED JKM
DRAWN JKM
CHECKED JKM/MS
APPROVED
DATE
AMENDMENT
DATUM: A.H.D.


SECTION A–A
SCALE 1:100
SECTION C–C
SCALE 1:100
INLET STRUCTURE No.2 DETAIL A–A
SCALE 1:20
TYPICAL INLET STRUCTURE No.2 DETAIL B–B
SCALE 1:20
INLET STRUCTURE No.2 AND OUTLET STRUCTURE PLAN
SCALE 1:100
SECTION B–B
SCALE 1:100
LEGEND:
BASE SLABS FOR SMALL INCOMING CULVERTS TO COUNCIL'S STANDARD DESIGN DETAILS
CONTRACTOR TO LIAISE WITH CULVERT MANUFACTURER FOR CERTIFIED DETAILS OF OPENINGS IN LEGS OF CULVERTS. POSITION OF OPENINGS MAY NEED TO BE MODIFIED TO SATISFY STRUCTURAL ADEQUACY.
CULVERT INSERTS SEE DRG CC105 FOR TYPICAL DETAILS
ISSUED FOR CONSTRUCTION APPROVAL
CERTIFIED APPROVED COPY
I HEREBY CERTIFY THAT I HAVE CHECKED AND APPROVED THE STRUCTURAL ADEQUACY OF THIS DRAINAGE STRUCTURE.
[ROGER E. DOHNT]
for WHOUSE CONSULTING ENGINEERS PTY. LTD.
REF. No. 14384
MIDDLETON GRANGE EAST
INLET STRUCTURE No.2 AND OUTLET STRUCTURE PLAN AND DETAILS
PLAN No. 7887CC104 B
FILE No. 7887CC104
SHEET 4 OF 7 SHEETS
CLIENT: STATELAND DEVELOPMENTS
SCALES: 1:100
J. Wyndham Prince Pty. Ltd.
CONSULTING CIVIL ENGINEERS & PROJECT MANAGERS
P.O. BOX 4386 PENRITH PLAZA 2750
ABN 67803 318 621
Ph: (02) 4732 3366
FAX: (02) 4721 7638
DESIGNED JW
DRAWN JW
CHECKED JW/MJS
APPROVED
DATUM: A.H.D.
ORIGIN
DATE
WIDENING OF ROAD 20 & ALL MEDIANS; ROAD 23 REMOVED JAN 08
FIRST ISSUE SEPT 2007
No. AMENDMENT DATE
ROAD No.10
BASIN 1A SEE DRG 7818/EO–E66 FOR DETAIL
INLET STRUCTURE No.1 SEE DETAIL A–A
INLET STRUCTURE No.2 SEE DETAIL B–B
SEE DETAIL SHEET CC44
SEE DETAIL SHEET CC40
SEE DETAIL SHEET CC37
SEE DRG CC107 FOR BASE SLAB DETAILS
SEE DRG CC107 FOR CUT OF WALL DETAIL
SEE DRG CC108 FOR BASE SLAB DETAILS
SPECIAL CULVERT SEE DRG CC105 FOR DETAIL
CDS UNIT 2018
CDS UNIT 2028
HARD STAND AREA
HANDRAIL TO ARCHITECTS DETAILS
FOOTPATH
CARRIAGEWAY
KERB & GUTTER
DESIGNED
SECURE GABIONS TO DOWELS, R16 GALV, AT 300 c/c, EPOXY GROUTED 100 INTO CROWN UNITS. TYPICAL
1m x 1m GABION UNIT
CULVERTS 3x3600x900 HIGH
PRECAST CULVERTS 3x3600x900 HIGH
SECURE GABIONS TO CULVERT WITH DOWELS, R16 GALV, AT 300 c/c, EPOXY GROUTED 100 INTO CROWN UNITS. TYPICAL
TOP OF GABION 39.546
TOP OF CULVERT 38.550
INV 37.387
SPECIAL CULVERT
2–N12 TOP ALL AROUND PIT
TOP OF PIT 38.90
SECURE 1200x1200 CAST INSITUE PIT TO CULVERT WITH DOWELS, R16 GALV, AT 300 c/c, EPOXY GROUTED 100 INTO CROWN UNITS. TYPICAL
"WELDLOK" MEDIUM DUTY RAISED FRAME AND GRATE HINGED WITH APPROVED LOCKING DEVICE.
SL 82 MESH CENTRAL ALL WALLS AND FLOORS
PROVIDE JUTE MESH 2.0m AROUND INLETS
STEP IRONS
1200x1200
2450
1850
1775
1175
1200
590
11610 *
* BASED ON ROCLA PRECAST CROWN UNITS
3x INLET STRUCTURE No.2 3x1200x1200 CAST INSITU PITS SEE DETAIL B–B
1200 LONG WING WALLS EACH SIDE OF CULVERT AT UPSTREAM AND/DOWNSTREAM FACES. SEE DRG CC107 FOR DETAILS.
CULVERT BASE SLAB REINFORCEMENT MUST FULLY LAP AT LEAST 590 WITH PIT BASE REINFORCEMENT
EXTEND BASE SLAB REINFORCEMENT FROM SIDE CULVERTS AT LEAST 500 INTO MAIN BASE SLAB
CUTOUTS IN SIDE OF CULVERT
GABION UNITS
1200x900 CULVERTS IN THESE LEGS
MANUFACTURED ANGLE BOX CULVERTS 4946
CULVERT 1500x900 HIGH
CULVERTS 1500x900 HIGH
CULVERTS 3x3600(w)x900(H)
2x 900ø PIPE
BASE SLABS OF MAIN AND SIDE CULVERTS MUST BE INTEGRAL AND REO FULLY LAPPED
CULVERTS 3x3600x1500 HIGH
SEE DRG CC108 FOR BASE SLAB DETAILS
SLAB 37.307
SLAB 37.344
SLAB 37.343
SLAB 37.387
12C
900ø
2%
LINE
KERB LINE
1:100 (AT A1)
1:20 (AT A1)
METRES
MILLIMETRES

LOCALITY





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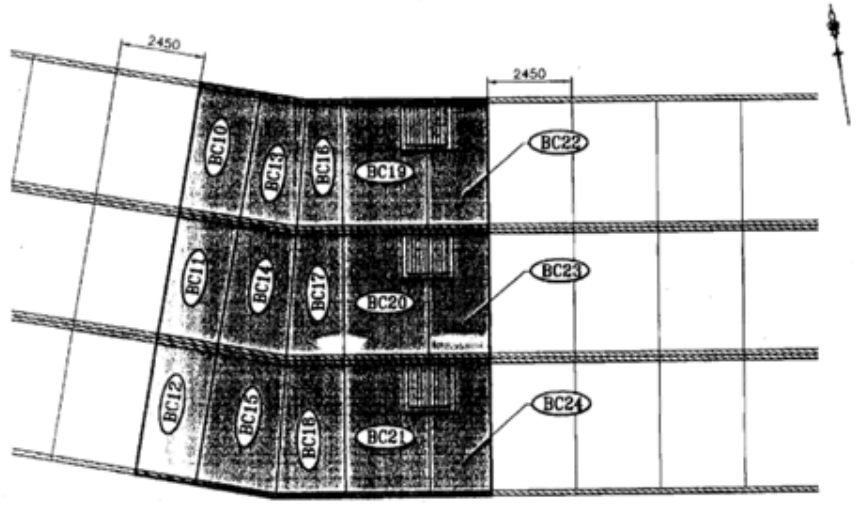
SCALE 1:100



PLAN 2
SCALE 1:100

LIVERPOOL CITY COUNCIL
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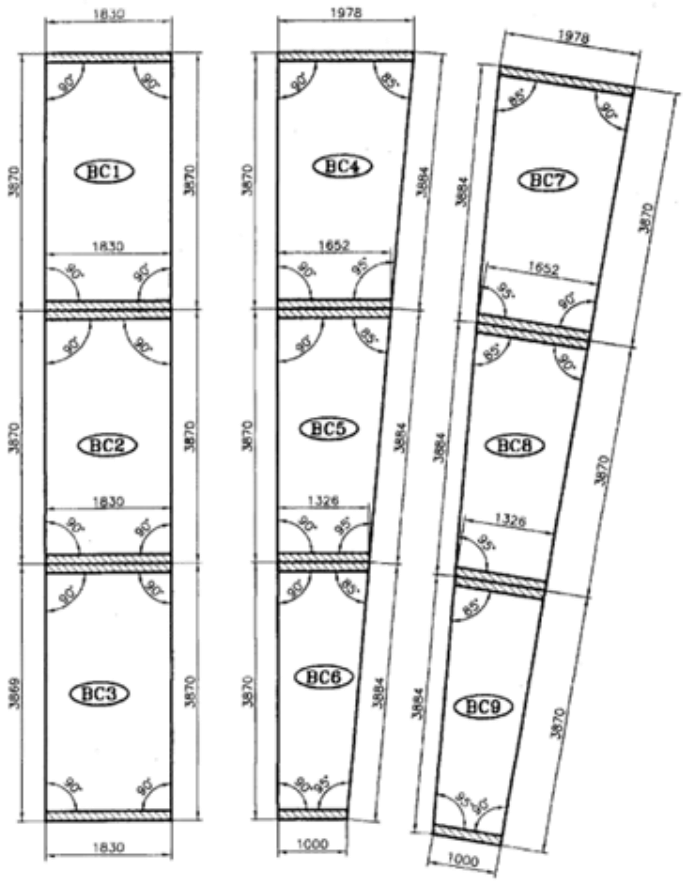
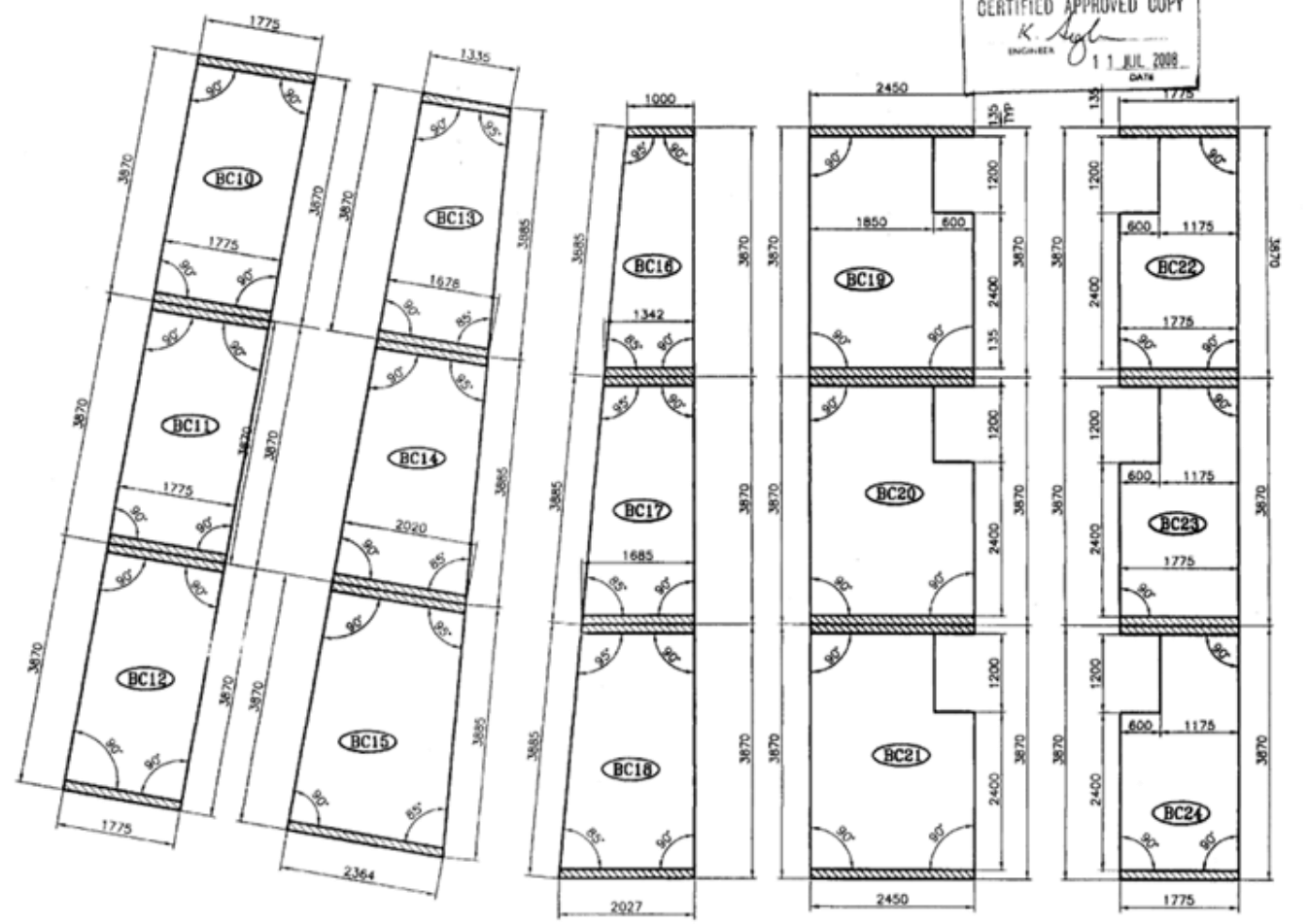
11 JUL 2008
DATE



PLAN 1
DETAILS
SCALE 1:50



PLAN 2
DETAILS
SCALE 1:50

1:50 (AT A1) 100 0 100 200 300 400 500 MILLIMETRES

1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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ISSUED FOR CONSTRUCTION APPROVAL
SIGNED S. Anderson DATE 12/2/08

No.	AMENDMENT	DATE
B	WIDENING OF ROAD 20 & ALL MEDIANS; ROAD 23 REMOVED	JAN. 08
A	FIRST ISSUE	SEPT. 2007

J. Wyndham Prince Pty. Ltd.
CONSULTING CIVIL ENGINEERS & PROJECT MANAGERS
A.B.N. 67002 318 621
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DX 8032 PENRITH
EMAIL: jwp@wpprince.com.au
PH: (02) 4732 3366
FAX: (02) 4721 7638

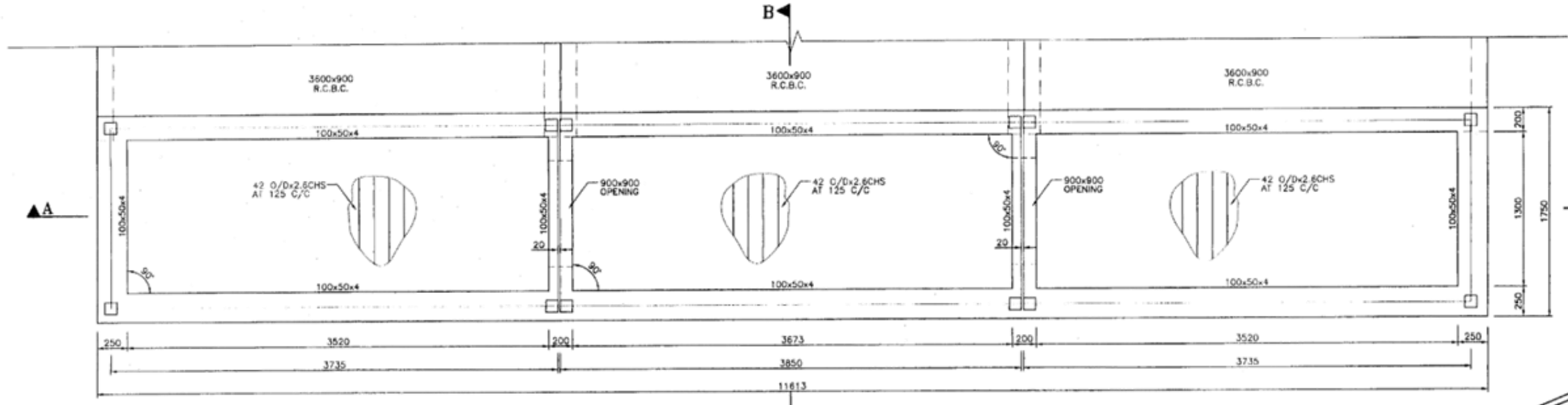
DESIGNED KM
DRAWN NM
CHECKED K.N./M.S.
APPROVED DATE
DATUM: A.H.D.
ORIGIN:

SCALES: 1:100
CLIENT: STATELAND DEVELOPMENTS

MIDDLETON GRANGE EAST
SPECIAL CULVERT DETAILS

PLAN No. 7887CC105 B
FILE No. 7887CC105
SHEET 5 OF 7 SHEETS

I HEREBY CERTIFY THAT I HAVE CHECKED AND APPROVED THE STRUCTURAL ADEQUACY OF THIS DRAINAGE STRUCTURE.
[ROGER E. DOHNT]
BE, MIE Aust, NPER 81807
for INHOUSE CONSULTING ENGINEERS PTY. LTD.
REF. No. 14384 DATE: 11-2-2008



PLAN INLET STRUCTURE No.1 AND GRATES
SCALE 1:50

STRUCTURAL NOTES

GENERAL

1.1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AUSTRALIAN STANDARD AS 3600 AND OTHER RELEVANT CODES.
1.2 ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

CONCRETE

2.1 CONCRETE QUALITY

ELEMENT	CONCRETE STRENGTH F'c	MAX. AGGREGATE SIZE	MAX. SLUMP	CEMENT TYPE
SLABS	40MPa	20mm	75mm	GB
WALLS	40MPa	20mm	75mm	GB
BLINDING SLABS	5MPa	20mm	75mm	GB

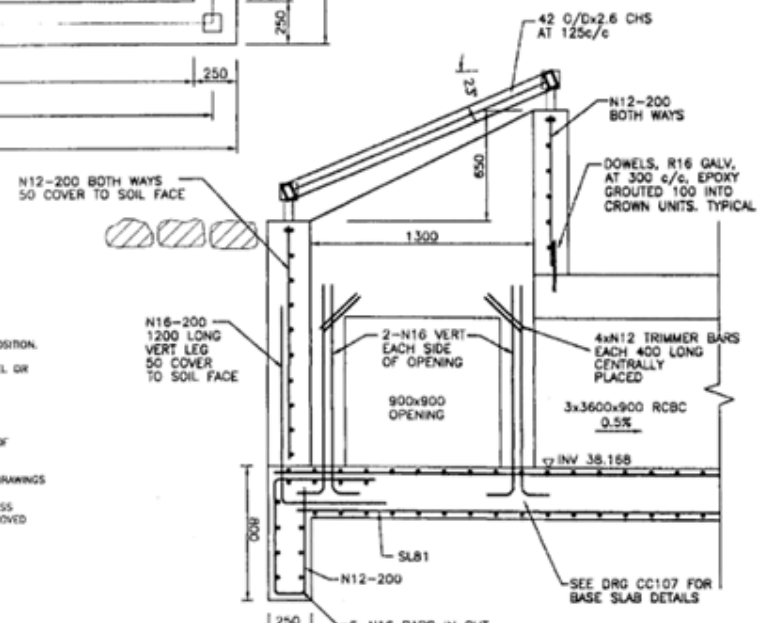
2.2 NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING BY COUNCIL'S ENGINEER.
2.3 CLEAR CONCRETE COVER TO REINFORCEMENT SHALL BE 40mm TO ALL SURFACES UNLESS NOTED OTHERWISE.
2.4 CONSTRUCTION JOINTS NOT INDICATED SHALL BE LOCATED AND FORMED TO THE APPROVAL OF COUNCIL'S ENGINEER.
2.5 A BOND BREAKING MATERIAL IS TO BE PLACED BETWEEN CONTACTING SURFACES AT CONSTRUCTION JOINTS.
2.6 NO PENETRATIONS, RECESSES OR CHASES OTHER THAN THOSE INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS UNLESS APPROVED IN WRITING BY COUNCIL'S ENGINEER.
2.7 UNLESS SHOWN OTHERWISE ALL EXTERNAL AND RE-ENTRANT CORNERS SHALL BE CHAMFERED 25mm.
2.8 SLABS TO BE CURED AND KEPT MOIST FOR 7 DAYS MINIMUM.
2.9 NO CONCRETE TO BE POURED WHEN SITE TEMPERATURE EXCEEDS 35 DEGREES CELSIUS OR FALLS BELOW 5 DEGREES CELSIUS.

REINFORCEMENT

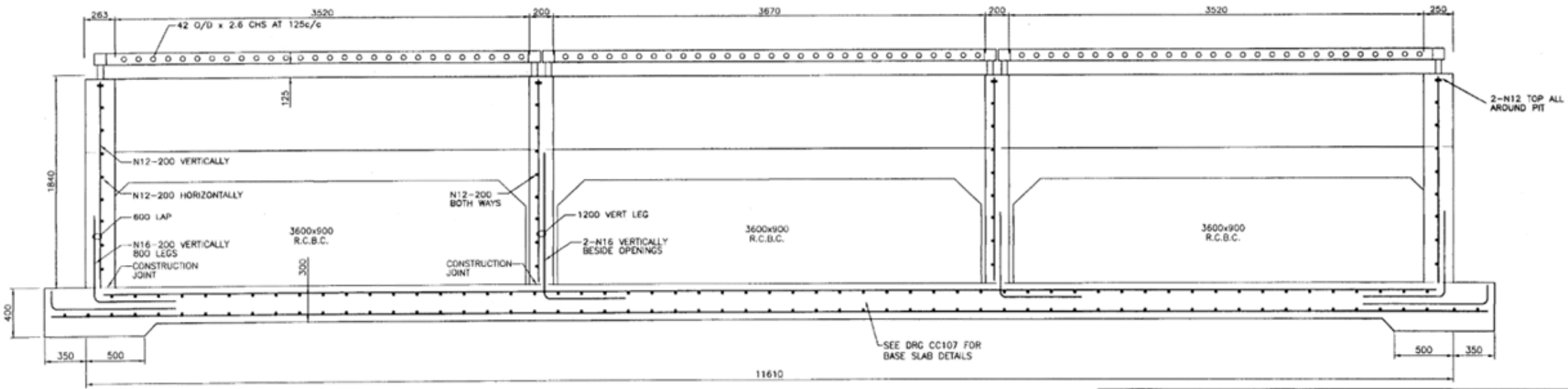
3.1 REINFORCEMENT STEEL QUALITY:

REINFORCEMENT TYPE	GRADE	SAA CODE	SYMBOL
WELDING GRADE DEFORMED	500	AS 4671	N
PLAIN ROUND	230	AS 1302	R
FABRIC	500	AS 4671	SL, RL, L

3.2 REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY. IT IS NOT NECESSARILY SHOWN IN TRUE POSITION.
3.3 ALL REINFORCEMENT SHALL BE SECURELY TIED AND POSITIONED ACCURATELY BY MEANS OF STEEL OR PLASTIC CHAIRS OR OTHER APPROVED ACCESSORIES. MASONRY BLOCKS WILL NOT BE PERMITTED.
3.4 PROVIDE COUNCIL'S ENGINEER WITH 24 HOURS NOTICE OF REINFORCEMENT BEING READY FOR INSPECTION. NO CONCRETE IS TO BE POURED WITHOUT APPROVAL OF COUNCIL'S ENGINEER.
3.5 SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITION INDICATED. THE APPROVAL OF COUNCIL'S ENGINEER SHALL BE OBTAINED FOR ANY OTHER SPLICE.
3.6 WELDING OF REINFORCEMENT WILL NOT BE PERMITTED UNLESS INDICATED ON THE STRUCTURAL DRAWINGS OR WITH WRITTEN APPROVAL OF COUNCIL'S ENGINEER.
3.7 MINIMUM LAP OF REINFORCEMENT SHALL BE AS SHOWN IN TABLE 13.1.2.2(A) OF AS 3600 UNLESS SHOWN OTHERWISE. LAPS FOR MESH SHALL BE 1.5 TIMES THE NOMINAL WIRE SPACING OR APPROVED EQUIVALENT.
3.8 REINFORCEMENT MUST NOT BE CONTINUOUS THROUGH CONTRACTION JOINTS.
3.9 MINIMUM RADIUS FOR BENDS IN REINFORCEMENT TO BE 4 BAR DIAMETERS (D8) UNLESS NOTED OTHERWISE.



SECTION B–B
SCALE 1:20



SECTION A–A
SCALE 1:20

LIVERPOOL CITY COUNCIL
CERTIFIED APPROVED COPY
K. Nolan
ENGINEER
11 JUL 2008
DATE

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ISSUED FOR CONSTRUCTION APPROVAL
SIGNED S. Andelea DATE 12/2/08

No.	AMENDMENT	DATE
A	FIRST ISSUE	SEPT. 2007
B	WIDENING OF RAOD 20 & ALL MEDIANS; ROAD 23 REMOVED	JAN. 08

J. Wyndham Prince Pty. Ltd.
CONSULTING CIVIL ENGINEERS & PROJECT MANAGERS
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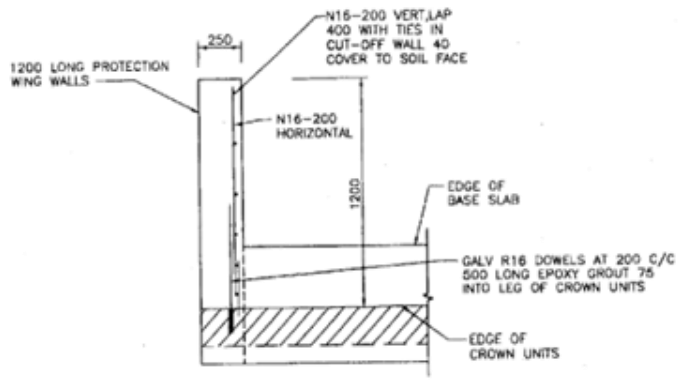
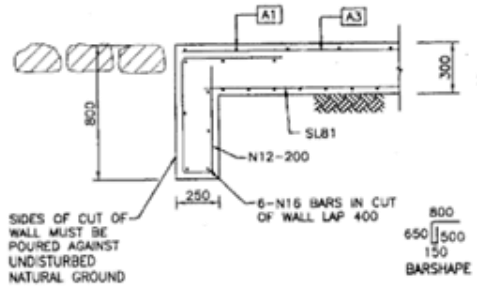
DESIGNED KN
DRAWN NN
CHECKED K.N./M.S.
APPROVED
DATUM: A.H.D.
ORGN:
SCALES: 1:100
CLIENT: STATELAND DEVELOPMENTS

MIDDLETON GRANGE – PRECINCT 2 TOWN CENTRE
INLET STRUCTURE No.1 PLAN AND DETAILS

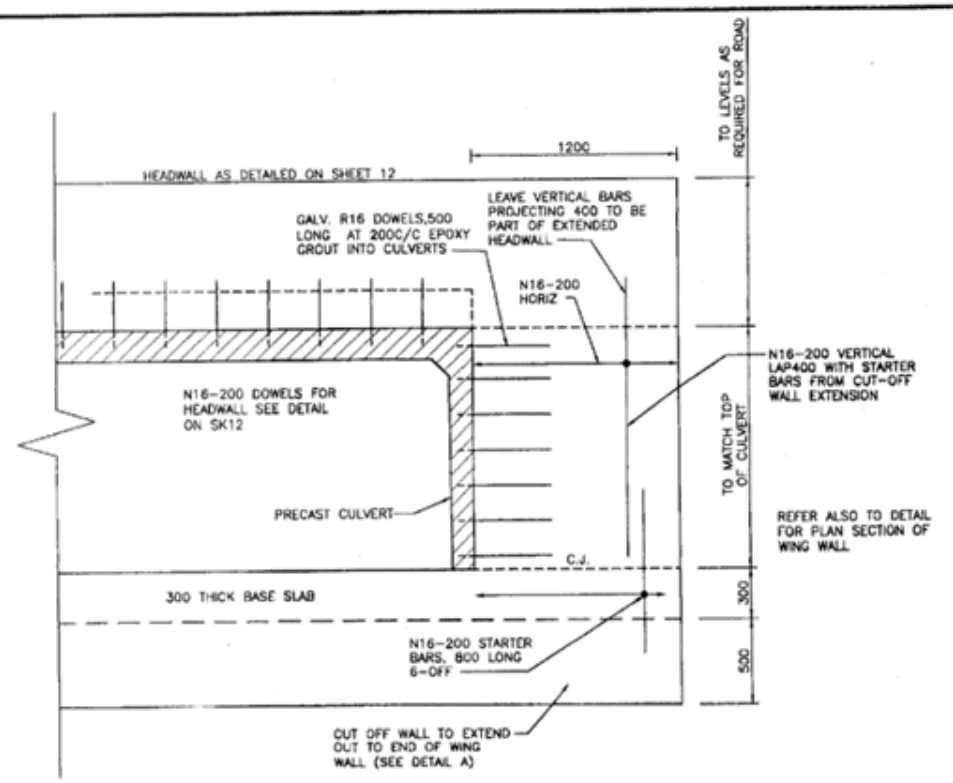
PLAN No. 7887CC106 B
FILE No. 7887CC106
SHEET 6 OF 7 SHEETS



PLAN – WEIR TO WING WALL JUNCTION
SCALE 1:20



DETAIL 1:CUT OF WALLS
(PROVIDE CUT–OFF WALL AT BOTH ENDS OF ALL CULVERTS)
SCALE 1:20



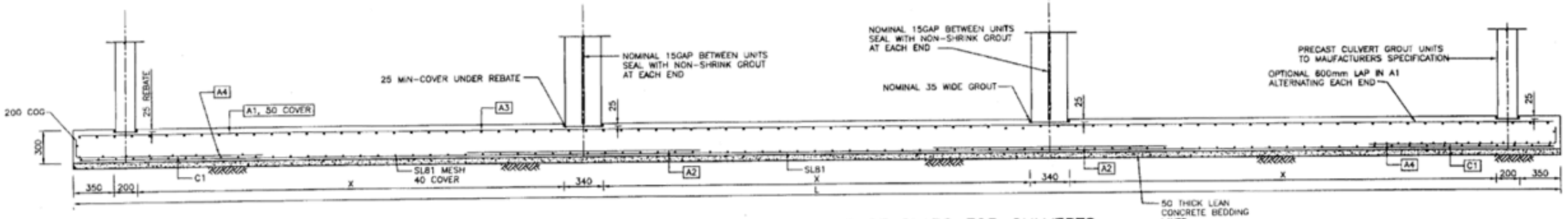
ELEVATION – WING WALLS
SCALE 1:20

✱ CULVERT SIZES ARE BASED ON 'ROCLA' PRECAST CROWN UNITS

NOTE

* DIMENSIONS BASED IN STANDARD BOX CULVERTS WITH STRAIGHT LEGS, HUMES/ROCLA OR EQUIVALENT TO AS1597.2 (NON RTA SPECIFIED PROJECTS)

1. CONCRETE TO BE N32 MPa FOR EXPOSURE CLASSIFICATION B1
2. SUBBASE OF CULVERT TO BE TRIMMED TO EXPOSE UNDISTURBED NATURAL GROUND HAVING AT LEAST 200 KPA BEARING CAPACITY.



TYPICAL SECTION – BASE SLABS FOR CULVERTS

DIMENSION SCHEDULE			REINFORCEMENT SCHEDULE				
CULVERT	DIM 'X'	DIM 'L'	A1	A2	A3	A4	C1
3x3600x900	3660	12760	N20–150	N24–150, 2000 LONG	N16–200, LAP 400	6–N12–150, LAP 300	N16–100, 1600 O/A LONG

LIVERPOOL CITY COUNCIL
CERTIFIED APPROVED COPY
K. Taylor
ENGINEER
11 JUL 2008
DATE

I HEREBY CERTIFY THAT I HAVE CHECKED AND APPROVED THE STRUCTURAL ADEQUACY OF THIS DRAINAGE STRUCTURE.
[ROGER E. DOHNT]
BE, ME Aust, NPER 61807
for INHOUSE CONSULTING ENGINEERS PTY. LTD.
REF. No. 14384 DATE: 1.2.2008

1:20 (AT A1) 400 200 0 400 800 1200 1600 2000 MILLIMETRES

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ISSUED FOR CONSTRUCTION APPROVAL
SIGNED S. Anderton DATE 12/2/08

No.	AMENDMENT	DATE
F		
E		
D		
C		
B	WIDENING OF ROAD 20 & ALL MEDIANS; ROAD 23 REMOVED	JAN 08
A	FIRST ISSUE	SEPT 2007

J. Wyndham Prince Pty. Ltd.
CONSULTING CIVIL ENGINEERS & PROJECT MANAGERS
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DESIGNED KW
DRAWN JW
CHECKED K.N./M.S.
APPROVED DATE
DATUM: A.H.D.
ORIGIN:
SCALES: 1:100
CLIENT: STATELAND DEVELOPMENTS

MIDDLETON GRANGE EAST
OUTLET STRUCTURE DETAILS

PLAN No. 7887CC107 B
FILE No. 7887CC107
SHEET 7 OF 7 SHEETS

Summary of Submissions

#	Support Object Mixed	Issues raised in submission
1	M	-Support reduction in dwelling numbers -Oppose increasing commercial space -Oppose hospital/medical area - Advocate for smaller shopping centre, scale befitting Middleton Grange - Traffic is already frustrating. Would be made worse by the proposal.
2	O	To preserve and sustain the natural set up of the area and maintain the overall health of the environment in its pristine state. Request the council to join lower end of Middleton Grange to Cowpasture Road via Elizabeth Hills
3	S	Ensure that the right infrastructure is in place
4	O	-Extensive feedback already provided. -Oppose hospital/medical area - Advocate for smaller shopping centre, scale befitting Middleton Grange - Traffic would be made worse by the proposal.
5	O	-Does not support more dwellings than currently permitted. -Don't want psychiatric services, but welcome other medical.
6	O	This is not appropriate for our area, as traffic congestion will be exacerbated.
7	O	Number of units is too many. More than 360 is “madness”. - Congestion on the roads at peak hour - height limit of 29 m would make the area ugly to people living in MG
8	O	-I do not support the proposal. Please keep the current controls. -Happy to have more open space. -The community spoke loudly last year, why do we have to say no again? -Our original thoughts stand. -Just a small shopping centre with coffee. -We do not want a medical facility
9	S	Road expansion
10	S	More shops, food store, apartments
11	S	I think it's a great addition to our suburb, as the nearest shopping centre is a different suburb. I'm looking forward to having some shops close by and some restaurants nearby.

12	**S**	More shops, food store, apartments
13	**S**	More stores, apartments
14	**S**	No comment
15	**S**	Would like to see a sneaker store — footlockers and food court — Korean food
16	**S**	More stores, apartments
17	**S**	Would like to see leisure/pool centre restaurants shopping centre
18	**S**	Wants to see a leisure centre within the neighbourhood
19	**S**	No comment
20	**S**	Would like to see leisure/pool centre restaurant area (similar to kitchen Lane Wetherill Park) shopping centre
21	**O**	Proposal is an overdevelopment. Shopping centre is needed and should be built in accordance with current controls
22	**S**	Wants to see road expansion, Coles, Woolworths
23	**O**	Been waiting too long, looking for better life
24	**O**	-I vote NO to the rezoning -I do not want 670+ units in this suburb with the high chance that that number will increase and could even reach 1000+ a 5 story hospital - type of hospital is unknown. I do not want the increase in traffic that our roads will not handle. -Over 850 residents voted against the rezoning of the site just 12 months ago but the developer is trying again -I am happy to have a town centre as per the original approved plan that is a smaller. -The site will consist mainly of high rise buildings and a hospital and probably little room for actual shops!
25	**O**	-I vote NO to the rezoning. Not take account of community feedback. No reduction in scale of project. -School already at capacity. Proposed road upgrades insufficient for additional traffic. -Over 850 residents voted against the rezoning of the site just 12 months ago but the developer is trying again -I am happy to have a town centre as per the original approved plan that is a smaller. -A large medical centre is all that is needed in our suburb, not a privately run hospital that most can't afford.
26	**O**	Support town centre but with less apartments (preferably none)
27	**S**	Shops, food stores, apartments
28	**S**	More stores, food stores, apartments

29	**O**	The proposal is not helping the community and will create more chaos.
30	**S**	More shops, food stores, apartments
31	**O**	Proposal is too large and constrained by inadequate roads (i.e. traffic problems as a result of one exit/entry into the suburb)
32	**S**	More shops, apartments, food stores
33	**S**	More food stores
34	**O**	Proposal is an overdevelopment. A smaller town centre developed under the current controls is desperately needed.
35	**O**	-Scale of proposed development is too large. -Shopping needs are already being met via Carnes Hill shopping centre. -Traffic is currently terrible and will only get worse.
36	**S**	More food stores
37	**O**	Scale of the proposal is inconsistent with adjacent school and will result in adverse traffic impacts. Prefer a small local supermarket and assorted speciality stores instead.
38	**M**	- Could you please expand the road between Middleton Grange and Elizabeth Hills as the traffic is bad in the morning. It takes 15 min to get off Flynn Ave to Cowpasture Rd. - Extend left lane to M7 as a separate way to ease traffic.
39	**S**	No additional comment
40	**S**	More food stores
41	**S**	More food stores
42	**S**	More food stores, shops, apartments
43	**O**	Shops and medical centres are acceptable, however high density residential dwellings would be out of character. The proposal will exacerbate existing traffic, waste management, noise, and infrastructure maintenance issues.
44	**S**	More shops, food stores, apartments
45	**O**	Number of dwellings and commercial floor space is too much. Proposal will result in adverse traffic impacts
46	**S**	No further comment
47	**S**	Woolworths, fashion, barbershop
48	**S**	More shops, food stores, apartments
49	**S**	Shops within walking distance are supported
50	**S**	More food stores

51	**S**	No further comment
52	**S**	No further comment
53	**S**	It would be nice to have something within the neighbourhood for both entertaining and shopping purposes. This will bring about good as you wouldn't need to travel as far for the needs and wants. Would like to see leisure centre.
54	**S**	First, will be the best idea to have it. Would like to see medical centre.
55	**O**	Proposal is still too large. Although dwelling numbers have been reduced, the retail/commercial floor space has been increased significantly (by 30%). Adverse amenity and traffic impacts as a result of hospital and additional retaliers, deliveries, parking etc.
56	**S**	Ease to access to shop
57	**S**	No further comment
58	**S**	No further comment
59	**O**	-I vote NO to the rezoning -I do not want 670+ units in this suburb with the high chance that that number will increase and could even reach 1000+ -a 5 story hospital Looming over Middleton grange public school is not what this suburb needs. I do not want the increase in traffic that our roads will not handle.Increased chance of an accident happening. -Over 850 residents voted against the rezoning of the site just 12 months ago. I still say no. -I am happy to have a town centre as per the original approved plan that is a smaller. -Support the increase in open space to 7500 m² and the grid type road layout.Please listen to the residents of Middleton Grange and Parkbridge. We want a town centre but something that is going to enhance our suburb and will add to the suburban community feel not issues development belongs in Liverpool and Edmondson Park.
60	**S**	No further comment.
61	**S**	When does council have to make a decision by? How long will the build take?
62	**S**	No further comment.
63	**O**	Proposal will be out of character with surrounding development and result in adverse impacts on traffic, parking and amenity. Particularly there will be overlooking of existing low scale development and additional traffic/parking congestion within Flynn Avenue
64	**S**	Likes the fact the development is "near our house" Would like to see a playground
65	**S**	No further comment.

66	**O**	There should be no further adjustments from the initial proposal.
67	**S**	No further comment.
68	**O**	No further comment
69	**S**	No further comment.
70	**O**	Proposal is too large and constrained by inadequate roads and poor traffic management
71	**S**	No further comment
72	**O**	New proposal is even larger than the previous proposal
73	**S**	Objected before, however now agree that the devlopment will bring life to the area
74	**S**	No further comment
75	**S**	No further comment
76	**S**	No further comment
77	**S**	No further comment
78	**S**	No further comment
79	**S**	No further comment
80	**S**	Need shops in the area
81	**O**	-Proposal is an overdevelopment which will cause traffic issues and would be better along Fifteenth Avenue, Austral. Town centre should be built in accordance with current controls. -There will be adverse amenity impacts upon the nearby school during the construction phase (incl. traffic, noise , dust etc.)
82	**S**	Will be very handy. Top idea. Would like to see shopping.
83	**S**	No further comment
84	**S**	Likes the fact the development is "near our house" Would like to see a playground
85	**S**	No further comment
86	**S**	No further comment
87	**S**	No further comment
88	**S**	The roads need to be upgraded and better access provided for the town centre. As it is the current roads are not sufficient will not cope with the extra traffic that will result once the town centre is constructed.
89	**O**	The number of units is too high. Public school is already getting to capacity. Roads are terrible.
90	**S**	Would like a leisure centre within the neighbourhood

91	**O**	No to 671 units
92	**M**	Please consider the amount of dwellings and traffic. Please extend Middleton Drive soon.
93	**S**	Facilities close to home.Would like to see groceries (Woolworths Coles et cetera), sports stores, café's and restaurants
94	**S**	No additional comment
95	**O**	Proposal is likely to pose traffic and safety risks as additional vehicles will utilise the single entry/exit into the suburb.
96	**O**	-Prefer shopping centre on similar scale as Cecil Hills. -300 dwellings would be acceptable. -A medical facility is not required in Middleton Grange especially if it is a private facility and not really servicing the local residents. -Traffic during peak times is already terrible and will only get worse when remaining developments are completed e.g. Southern Cross Avenue.
97	**O**	Proposal is an overdevelopment. A smaller shopping centre with community facilities is desperately needed.
98	**S**	I think it is very good project. I like everything about it.
99	**S**	Easy access to the centre. The site will be nicer. More job opportunities. Hospital will be very handy.
100	**O**	Existing traffic issues will be excaerabted due to increased dwellings
101	**S**	It would be nice to have something in the neighbourhood for both entertaining and shopping purposes i.e. skate park, pool, restaurants and grocery stores. This would be good as you would need to travel so far for your needs and wants. Would like to see a leisure centre within the neighbourhood.
102	**S**	It is very convenient for us and a short distance to travel. Like the stadium and the hospital. Would like to see the pond on site retained and have a walkway around it.
103	**S**	More shops, food stores, apartments
104	**O**	No need for more dwellings or a hospital. Already in close proximity to hospitals
105	**S**	We pay for a property 9-10 years ago and were promised it!
106	**S**	More shops, food store, apartments
107	**S**	Good for groceries and easy for me as a mother as it is close to home
108	**O**	Previous objections have not been resolved. We do not need 29m buildings, 671 apartments or 50,000sqm of commercial floor space. We need a shopping centre and open space. There is no infrastructure to support the proposal.There will never be enough to transport to

		facilitate what's proposed. We can't even get out of the suburb in the mornings on Qantas blvd to Cowpasture road.Please put major restrictions and contracts in place to control planning amendments. We are a small suburb and for this development to go forward it would need to be at half the scale.
109	**O**	-I vote NO to the rezoning -I do not want 670+ units in this suburb with the high chance that that number will increase and could even reach 1000+ -a 5 story hospital looming over Middleton grange public school is not what this suburb needs. I do not want the increase in traffic that our roads will not handle (even if they "upgrade" our roads) and I know our suburb can not handle the high number of extra people that the new proposed development will bring.Hospital next to the public school will simply add to congestion and lead to a higher chance of accidents. -Over 850 residents voted against the rezoning of the site just 12 months ago. I still say no. -I am happy to have a town centre as per the original approved plan that is a smaller. -Support the increase in open space to 7500 m² and the grid type road layout.Please listen to the residents of Middleton Grange and Parkbridge. We want a town centre but something that is going to enhance our suburb and will add to the suburban community feel not issues development belongs in Liverpool and Edmondson Park.
110	**S**	More shops, takeaway stores, apartments
111	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big world destroy our local community and suburb. -Urgent need a small shopping centre.
112	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big world destroy our local community and suburb. -Urgent need a small shopping centre.
113	**S**	The amendment can only better the proposed mixed used development. - 7500 mtr2 of proposed open space and some 150 new tree planting. -This proposed development will be a massive benefit to the Liverpool area , the development will attract from neighbouring areas such as a Fairfield, Camden, Austral, Leppington and many other area from in and outside the - Liverpool has a once off opportunity to support a unique 80,000.00 mt2 mixed development comprising of Medical facility, quality unit style development, and a café, restaurant life style with plenty onsite parking and I note creating an other exit into Cowpastures rd. - Will become a Landmark for Council and for the community, this

		development will be something that will attract and retain our young, middle age and elderly people to our area - Proposed development can be an Icon for Liverpool its people and for its future children
114	**O**	No further comment
115	**O**	- Stick with current planning controls. -Road network will not be able to handle increased density (regardless of any road upgrades). - Affordable housing is not desirable. - GP preferred instead of hospital/specialist centre. - Convenience stores, tavern and cafes prefferred instead of shopping centre
116	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. -Urgent need a small shopping centre.
117	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big world destroy our local community and suburb. -Urgent need a small shopping centre.
118	**O**	Proposal is an overdevelopment. Existing traffic issues will be exacerbated. A smaller shopping centre in line with current controls is desperately needed.
119	**O**	Proposed size is far too large for the suburb of MG.
120	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. -Urgent need a small shopping centre.
121	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. -Urgent need a small shopping centre.
122	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. -Urgent need a small shopping centre.
123	**O**	Strongly disagree with proposed number of units. Approx. 170 units would be more appropriate. Traffic is already a major concern due to

		congestion around the M7, and will only get worse (even with planned road upgrades).
124	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. -Urgent need a small shopping centre.
125	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. -Urgent need a small shopping centre.
126	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. -Urgent need a small shopping centre.
127	**O**	Proposal is an overdevelopment. Already approved proposal is more appropriate.
128	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. -Urgent need a small shopping centre.
129	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. -Urgent need a small shopping centre.
130	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. -Urgent need a small shopping centre.
131	**O**	-Existing traffic issues will be exacerbated -Scale of developemnt will be out of character. A smaller centre is more appropriate
132	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb.
133	**O**	Even though unit numbers reduced, retail/commercial space has been increased along with a new addition of a five-storey hospital meaning that the overall size of the development remains the same.

		-Object to having a development this big to clog up our suburb -We do need a small shopping centre but we wish the zoning to stay exactly the same -If the zoning were to be changed, there is nothing to stop him from lodging a DA for much higher apartment numbers that are currently proposed
134	**O**	Scale of the proposal is inappropriate and there will be adverse traffic impacts as the site will not be well serviced by adequate roads or public transport.
135	**O**	Overdevelopment and overshadowing - Not in keeping with the character of the locality. Does not respect aesthetic quality of the area. - High-rise development, not a train station. Sets a dangerous precedent for overdevelopment. - Need a buffer between the proposed development and Low Density Residential to the west - Proposed Lane may encourage loitering. No indication of proposed vehicle numbers. - Liverpool LGA will meet its housing targets (without this development) - Residents of Middleton Grange want a small shopping centre - Spillover parking problems into adjacent streets - Increased traffic particularly during peak/school times - Increased congestion at intersections with Cowpasture road - Middleton Grange primary already capacity - Overshadowing of the primary school, particularly the playground - Inadequate public transport - Undesirable precedent - Excessive height. Inappropriate in a suburban setting
136	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. A smaller shopping centre is desperately needed.
137	**O**	Oppose the development of 650 units and a hospital. -Do not require a large shopping centre. - Traffic, overcrowding of school. -Do not want towers of units next door to the public school. -Devalue existing properties. -Units belong in city centres or new train stations but would be out of place in Middleton Grange. -Over 850 residents objected 12 months ago. Why do we have to voice our opinions again?
138	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb. Roads and infrastructure not equipped.

139	**S**	Ensure that roads are adjusted to cater for the new propsal
140	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb.
141	**O**	Even though unit numbers reduced, retail/commercial space has been increased along with a new addition of a five-storey hospital meaning that the overall size of the development remains the same. -Object to having a development this big to clog up our suburb -We do need a small shopping centre but we wish the zoning to stay exactly the same.
142	**O**	Proposed scale of developmnet is unacceptable. Current controls are satisfactory. Developers should be encouraged to build town centre within a predetermined timeframe as residents need it.
143	**O**	Even though unit numbers reduced, retail/commercial space has been increased along with a new addition of a five-storey hospital meaning that the overall size of the development remains the same. -Object to having a development this big to clog up our suburb -We do need a small shopping centre but we wish the zoning to stay exactly the same -If the zoning were to be changed, there is nothing to stop him from lodging a DA for much higher apartment numbers that are currently proposed
144	**O**	Even though unit numbers reduced, retail/commercial space has been increased along with a new addition of a five-storey hospital meaning that the overall size of the development remains the same. -Object to having a development this big to clog up our suburb -We do need a small shopping centre but we wish the zoning to stay exactly the same -If the zoning were to be changed, there is nothing to stop him from lodging a DA for much higher apartment numbers that are currently proposed
145	**O**	I do not support any increase in size of the development as I believe this will have a negative impact on the suburb and on me as a resident.
146	**S**	I, as member of the Liverpool council community hereby declare my full support to the Middleton Grange town centre planning proposal
147	**O**	I do not support any increase in size of the development as I believe this will have a negative impact on the suburb and on me as a resident.
148	**O**	No further comment
149	**S**	I support the Middleton Grange town centre. The facilities planned will benefit everyone.

150	**S**	I support the Middleton Grange town centre. The facilities planned will benefit my family.
151	**S**	Would be perfect for my family as it will provide grocery and shopping within walking distance. Easier and more accessible facilities for the community.
152	**S**	Support the construction of the town centre in Middleton Grange. Will be perfect for my family and the community as it will bring amazing facilities.
153	**S**	Support the construction of the town centre. Proposed facilities would be great for the community.
154	**O**	-No consideration of previous feedback from community. Proposal indicates increased open space areas and a medical centre, however it largely caters for more dwellings. - Adverse traffic and parking imapcts due to lack of public transport and likelihood of poor parking provision (1 car space per unit!?) . -Road network will be congested during construction phase -Prefer smaller scale town centre like Willowdale and Emerald Hills (i.e. one supermarket, a café and a couple of other general stores). -Prefer that no apartments are built in the town centre. However, could accept 200 units with approx. 4-5 storeys and 2 car spaces per unit. -It would be good to see if Council can pursue some restrictions on the land as was briefly discussed at the forum.
155	**S**	Support the construction of the town centre. Proposed facilities would be great for the community.
156	**O**	Maintain local character and stick to original proposal. Only a small shopping centre is needed(similar to Willowdale and Cecil Hills), especially since the Landmark Shopping Village on the corner of M7 and Cowpasture Road opened. We already have cafes, restaurants, medical centres, Aldi and a service station there, so it's completely unnecessary for this proposal to proceed. Stick with the original proposal and no changes should be considered.
157	**S**	Support the construction of the town centre. Proposed facilities would be great for the community.
158	**O**	Current controsl are more than adequate to support the needs of the community.
159	**S**	Development will bring entertainment, great food and nightlife and make grocery shopping easier
160	**O**	The development is too large. Support a town centre under the current zoning. The proposal has too many apartments creating congestion and devaluing house prices. Support a town centre with nill apartments and nil community space; retail space only.

161	**S**	Access to food restaurants and entertainment. Facilities will bring to the community will help hugely
162	**O**	Current controls are satisfactory. Proposal will result in adverse traffic impacts
163	**S**	The development would be great and perfect for the community.
164	**S**	The centre would bring entertainments and food and easy options for groceries.
165	**S**	Looking forward to the proposed town centre being built. It will strengthen the community of Middleton Grange
166	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb.
167	**S**	Happy for the works to proceed
168	**O**	No further comment
169	**S**	Happy for the works to proceed
170	**S**	Utilities and facilities that are going to be at hand and be amazing
171	**O**	Do not negotiate a compromise with developers to push the development forward. Residents are currently being serviced by the Landmark Shopping Village (approx. 1km from the development site) and are happy to wait and not be sold off with an excessive development that will cripple Middleton Grange and our community.
172	**S**	Grocery local and facilities that come with it
173	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big would destroy our local community and suburb.
174	**S**	Supports more café's and bars. Sad to see the land not been developed to its full potential as this would benefit everyone in the area.
175	**O**	Even though unit numbers reduced, retail/commercial space has been increased along with a new addition of a five-storey hospital meaning that the overall size of the development remains the same. -Object to having a development this big to clog up our suburb -We do need a small shopping centre but we wish the zoning to stay exactly the same.
176	**S**	My family would love a more accessible facility for groceries
177	**S**	This is probably something we need an area that will provide everything we'd in our daily lives

178	**S**	Town centres create a sense of community. Why should owners in Middleton Grange be forced to travel to other areas to shop and for employment?
179	**O**	-Road infrastructure insufficient to accommodate the proposed increased density; - High density will be out of character with the locality; - traffic congestion will also have a negative economic impact to current residents of the area.
180	**S**	This is probably something we need an area that will provide everything we'd in our daily lives
181	**O**	No further comment
182	**S**	Expansion of infrastructure facilities will ensure sustained growth of employment over a lengthy time. The area needs a "facelift".
183	**S**	A developing area needs infrastructure to remain competitive. New young families will generate more small business.
184	**S**	Supports the ample provision of public areas and parks to be included in the development.
185	**O**	Middleton Grange cannot accomodate the proposed development due to narrow roads and limited exit/entry into the suburb
186	**S**	Owns property in Middleton Grange. This development is needed.
187	**S**	Would give local community greater choice toward entertainment and general shopping needs.
188	**S**	I could walk to shops, café's and medical centre
189	**S**	Thinks the town centre should go ahead to make MG a community
190	**S**	Hoping for imminent completion of town centre. It will be beneficial for the community and will increase property values
191	**S**	Proposal will provide much-needed retail and commercial floor space.It will catered to the demand for housing and provide jobs for the local area. The proposed private hospital will provide additional support to Liverpool public hospital at times it struggles to cope to provide services to the community.
192	**S**	A town centre will be a huge plus for the local area. Middleton Grange is the only recently completed suburb without a town centre.
193	**S**	The proposed development will not only lift Mddleton Grange but also surrounding suburbs. Will provide additional jobs and a boost to the property market for the suburb.
194	**O**	Likely to excaerbate existing traffic issues. Particularly, all roads would need to be upgraded before considering the town centre.

195	**S**	It will encourage community living for the ageing population and for first home buyers.Close to the new airport.It would encourage more work for locals and allow people to work closer to home.
196	**O**	Too many apartments. Height limit should remain at 18m. Also need more enterances and exits into Middleton Grange.
197	**S**	The development will provide numerous jobs and convenience.The development will support local businesses, increase the attraction of the area and provide for all ages access to shopping including those that not drive and require the necessities of life.
198	**O**	Proposal is still too large. Although dwelling numbers have been reduced, the retail/commercial floor space has been increased significantly
199	**S**	The development would add value to the area.
200	**O**	-Low density character must remain as there isn't enough infrastructure to cater for increased population. -No room to build/upgarde addtional roads, drainage etc. as the suburb is constrained by boundaries to the Western Sydney Parklands and the M7 corridor. -A small shopping centre surrounded by low density housing would be appropriate -Alternatively, residents are happy to go to existing shops within in a few kms radius.
201	**S**	With a growing and ageing population the additional services will provide for growth and great convenience.The suburb currently lacks facilities in the development will assist with growth in the area.
202	**S**	Will create jobs for young people not going on to senior school. Will provide facilities involving daycare and shops for parents of younger children.
203	**S**	Abundance of restaurants.
204	**S**	Will have a positive impact for all involved including residents, business owners, market value within the area and individuals provided ongoing job opportunities. Proposed development will provide great convenience especially for the older generation.
205	**O**	New town centre will cause amenity impacts in immediate vicinity. Therefore, I prefer to travel to other nearby centres for shopping.
206	**S**	Can't wait for somewhere to enjoy time with friends and family.
207	**O**	Likely to excaerbate existing traffic, parking and amenity issues. Particularly, surrounding roads and parks need to be upgraded or constructed before considering the town centre.
208	**O**	No further comment
209	**S**	Facilities would be great for my family and the community

210	**S**	Middleton Grange should have a town Centre with adequate facilities to residents. Aware of infrastructure issues, but Council must provide. In the long-term, project will be beneficial for local residents and surrounding suburbs.
211	**S**	The proposal would create ample opportunities in a booming area and fantastic investment opportunities. It would be a central community hub that will attract tourism and consumer confidence. The bigger the better, so long as the infrastructure is provided.
212	**S**	Great to have a shopping centre nearby. Will benefit parking.
213	**S**	Support the development of a shopping centre nearby to buy clothes.
214	**S**	Great to have a shopping centre nearby. Create more jobs.
215	**S**	Supports more apartments, as this will generate more supermarket options. Wants more supermarket options nearby.
216	**S**	Need affordable housing for kids to be able to stay in the area. We need supermarkets and restaurants.
217	**S**	Support a nearby medical Centre and hospital. Support nearby supermarkets and playgrounds and parks for children to play.
218	**S**	Supported town centre for better job opportunities and local convenience.
219	**S**	Support a private hospital/medical facility. Would also like to see a shopping centre for groceries.
220	**S**	Supports more Cafes and restaurants to socialise with friends and family.
221	**S**	Supports hospital that would benefit our community. Supports more apartments as this would be more affordable for first home owners to purchase a property. Supports the development of a shopping centre making everything more accessible.
222	**S**	Suburb need more services, restaurants shopping mall and cafes. Need more affordable housing for the upcoming generation to stay in our community. Having a hospital and medical services complete the suburb. Supports more parklands and child friendly, and leisure areas.
223	**S**	Supports a shopping centre and supermarket. A nice place to spend leisure time, cafes and restaurant in addition to parks for kids. Convenient to have our own supermarket and medical centre in the centre of our suburb
224	**S**	Job opportunities, convenience and attracting others to the area.
225	**S**	Convenience and quick trips. Support a childcare centre and medical centre.
226	**S**	Would walk to a shopping centre in Middleton Grange. Support apartments and tavern.

227	**O**	-Proposed size is far too large. Support development under the current controls, not increase. -Development this big world destroy our local community and suburb. -Urgent need a small shopping centre.
228	**S**	No further comments
229	**O**	Even though unit numbers reduced, retail/commercial space has been increased along with a new addition of a five-storey hospital meaning that the overall size of the development remains the same. -Object to having a development this big to clog up our suburb -We do need a small shopping centre but we wish the zoning to stay exactly the same -If the zoning were to be changed, there is nothing to stop him from lodging a DA for much higher apartment numbers that are currently proposed
230	**O**	Even though unit numbers reduced, retail/commercial space has been increased along with a new addition of a five-storey hospital meaning that the overall size of the development remains the same. -Object to having a development this big to clog up our suburb -We do need a small shopping centre but we wish the zoning to stay exactly the same -If the zoning were to be changed, there is nothing to stop him from lodging a DA for much higher apartment numbers that are currently proposed
231	**O**	Oppose the development of 650 units and a hospital. -Do not require a large shopping centre. - Traffic, overcrowding of school. -Do not want towers of units next door to the public school. -Devalue existing properties. -Units belong in city centres or new train stations but would be out of place in Middleton Grange. -Over 850 residents objected 12 months ago. Why do we have to voice our opinions again?
232	**S**	Local area is growing and need to facilitate housing growth. Provide job opportunities and opportunities for business.
233	**O**	Stronlgy object as road network needs significant improvements before consideration of additional dwellings/people
234	**O**	The infrastructure currently struggles to handle the current population road network will not be able to handle the increased traffic that this new proposal will bring.
235	**O**	-Scale of propsed development is too large. -Traffic is currently terrible and will only get worse.

236	**O**	The suburb does not have the infrastructure to support the commuters into and out of the area. A big number of additional visitors and residents at the main "entrance" of the suburb will make things worse.
237	**O**	Proposal is too large. Current controls are satisfactory.
238	**O**	Nothing in this planning proposal meets the needs of the Middleton Grange community. Strong consideration should be given to previous objections. Middleton Grange doesn't need a"Town Centre", at most it needs a small local "mall" with necessary retail space and some commercial space (e.g. Greenway Wetherill Park).
239	**O**	Current controls are satisfactory. Proposal will result in adverse traffic impacts
240	**O**	1000 units is too many, 300 would be reasonable. Poor access onto the arterial road.

HillPDA CONSULTING

MIDDLETON GRANGE TOWN CENTRE

Planning Proposal Assessment



Prepared for Liverpool City Council

November 2020

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This document is for discussion purposes only unless signed and dated by a Principal of HillPDA.

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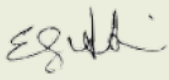
Signature		Dated	23/11/20

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EXECUTIVE SUMMARY

HillPDA has undertaken an independent assessment of the Middleton Grange Town Centre Planning Proposal, dated October 2019, prepared by Pacific Planning on behalf of Manta Group Pty Ltd (applicant), on behalf of Liverpool City Council (Council). Council's reference number for the planning proposal is RZ-9/2015.

The assessment has been informed by discussions with the applicant and Council staff as well as submissions from public authorities, and the community. In addition, HillPDA has undertaken a peer review of the applicant's economic reporting.

This assessment has been made having regard for the requirements of Division 3.4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the Department of Planning, Industry and Environment's (DPIE) *A Guide to Preparing Planning Proposals* (2019).

The planning proposal

The planning proposal relates to land known as 60-80 Southern Cross Avenue and 45-65 Hall Circuit Middleton Grange (the site), which has an area of approximately 69,000 sqm. The site comprises:

- Lots 2, 3, 4, 5 and 6 DP 1207518
- Lot 1 DP 1078564
- Lot 12 DP 1108343
- Lot 102 DP 1128111.

The planning proposal seeks to:

- Amend land use zoning to:
  - Reduce the area of R1 General Residential
  - Increase the areas of B2 Local Centre Zone, RE1 Public Recreation and SP2 Infrastructure
- Increase height limits from 8.5 m and 18 m to a mix of 9.5 m to 14 m (three to four storeys) and 20 m to 29 m (six to eight or nine storeys)
- Increase floor space ratio limits from 0.75:1 and 1.5:1 to a mix of 1:1 and 2.3:1
- Adjust land acquisition mapping to include new RE1 Public Recreation land
- Add an additional permitted use of "restaurant or café" to land to be zoned R1 General Residential.

The planning proposal has been revised from previous versions that have been considered by Council in 2015 and 2018.

In December 2015, Council resolved to forward the planning proposal to the (then) Department of Planning and Environment for a Gateway Determination. The planning proposal received a positive determination, requiring, in part, additional information to support the heights and densities proposed. Following provision of a modified proposal and urban design information, the Department of Planning and Environment concluded that the conditions of the determination had been met and the planning proposal could be placed on public exhibition.

In December 2018, after considering additional reporting and the outcomes of community consultation, Council resolved to withdraw support for the planning proposal. The basis for withdrawing support was, in part, due to concern for potential overdevelopment and impacts on the surrounding area, including the road network and neighbourhood character.

In July 2019, Council reconsidered its December 2018 resolution and instead resolved to, in part, support the exhibition of a revised planning proposal, if provided by the applicant. Subsequently, a revised planning proposal

was prepared by the applicant, as described above and submitted to Council in October 2019.This planning proposal is now before Council and is the subject of this assessment by HillPDA.

Assessment

HillPDA's assessment has been based on the supporting documentation provided by the applicant and considered the strategic and site specific merit of the planning proposal. Based on this review, HillPDA has identified that the planning proposal has demonstrated a degree of strategic planning merit. However, several significant issues have been identified.

Overall, HillPDA does not support the planning proposal in its current form for the following reasons:

- The proposed planning controls do not provide certainty and could create opportunities for a significantly different form of development from that which is described in the concept plan
- The proposed building controls permit a scale of development that is inconsistent with the LSPS and has not been demonstrated to be appropriate for the site
- The described commercial floorspace, while broadly consistent with the LSPS, has not been justified by the applicant as being supported by market conditions and may result in poor ground level activation
- The proposed planning framework does not provide assurance that the proposed open space provision will be achieved on the site and potentially relies on a planning agreement to deliver the space
- The proposed planning controls could result in a scale of development that is not adequately serviced by infrastructure.

It is suggested that the above issues could be resolved by revising the planning proposal as set out below:

Table 1: Summary of suggested amendments

Suggested amendment	Reasoning
Cap residential floorspace to 65,000 sqm	Enforce the stated reduced residential yield in the revised planning proposal (Section 3.2.2)
Cap the average FSR for the site to 1.6:1, or set blanket FSR of 1.6:1 across the site, with corresponding reductions in height	Align dwelling and job delivery with the LSPS (Section 3.2.2)
Amend site-specific development control plan to require future staged development application reflect LSPS employment targets and justify the amount employment floorspace in a peer reviewed economic impact assessment, in line with Clause 4.15(1)(b) of the EP&A Act	Align ground floor non-residential uses with likely demand and reduce likelihood of poor activation at the ground level (e.g. vacant shops). (Section 3.2.2)
Maintain area proposed to have height limit of 9.5 m at current level of 8.5 m	Ensure two storey development proposed by applicant is delivered, aligning with transition to surrounding area. (Section 3.4.1)
Reduce northern and southern interface height limits from 20 m to 14 m and reduce maximum FSR to accommodate the change in height limits.	Allow for four storey podiums, stepping down to the two storey built form of the surrounding area. (Section 3.4.1)
Map parts of the proposed B2 Local Centre zoning identified as plaza or open space on Council's Key Site Map, with controls requiring delivery of open space/limited supporting uses. Remove the mapped areas from the FSR and building height map.to	Ensure the area identified for public open space in the B2 Local Centre zone would be delivered for that purpose, with allowance for a small kiosk or similar. (Section 3.4.1)
Remove proposed additional permitted use of 'restaurant or café' from R1 General Residential area	Reduce likelihood of amenity impacts for the surrounding area, ensure alignment with objectives of the zone and reduce likelihood of oversupply of non-residential uses. (Section 3.4.1)

Suggested amendment	Reasoning
Request DPIE/Transport for NSW to finalise State level planning agreement for road upgrades prior to finalisation of planning proposal	Ensure delivery of non-Council road upgrades required to support the planning proposal, in line with Transport for NSW comments. (Section 3.4.2)
Refine development contributions plans to consider demand for infrastructure associated with the planning proposal	Ensure equitable contributions across the local community for infrastructure.

The suggested amendments to the planning proposal outlined above would:

- Generally achieve the development outcomes described by the planning proposal
- Ensure that the development outcomes are consistent with Council's vision for Middleton Grange as identified in the LSPS
- Minimise the risk of negative impacts to established retail centres and the retail hierarchy across the Liverpool LGA, or oversupply of underutilised commercial floorspace in Middleton Grange
- Ensure that the proposed community benefits, including the delivery of open space, are achieved.

The changes required to the planning controls to implement the recommendations are minor in nature, not overly prescriptive and would help ensure that the development outcome described by the applicant would be achieved. These recommendations can be made in accordance with Section 3.35 of the EP&A Act, which allows for Council to vary planning proposals.

Recommendation

It is recommended that Council:

1. Not support the planning proposal in its current form
2. Prepare an amended planning proposal which includes:
   a) A cap residential floorspace to 65,000 sqm GFA
   b) An the average FSR across the site to 1.6:1, with corresponding reductions in height across the site, to Council's satisfaction
   c) Reduction of the proposed height limit of 9.5 m to 8.5 m, consistent with the current planning controls, to limit development in the relevant area to two storeys
   d) Reduction of the northern and southern interface height limits from 20 m to 14 m and reduce maximum FSR accordingly to accommodate the change in height limits
   e) Remove that part of the B2 Local Centre zoning which is to be used for public open space from the height and FSR mapping and include it on Key Site mapping, to ensure that development cannot occur in this location, other than for a kiosk or similar, to protect the area for outdoor community use
   f) Removal of proposed additional permitted use of 'restaurant or café' from R1 General Residential area to align with the objectives of the zone and reduce the potential for oversaturation of ground level commercial floorspace.
3. Prepare an amended site specific development control plan that requires a staged development application that demonstrates alignment with Council's Local Strategic Planning Statement employment goals for Middleton Grange and is supported by a peer reviewed economic impact assessment that also demonstrates demand for the quantum of employment floorspace to be provided.

INTRODUCTION

1.0 INTRODUCTION

This report considers a planning proposal submitted to Liverpool City Council (Council) prepared by Pacific Planning on behalf of Manta Group Pty Ltd (the applicant). The planning proposal relates to land known as 60-80 Southern Cross Avenue and 45-65 Hall Circuit Middleton Grange (the site), as shown in Figure 1.

The site consists of:

- Lots 2, 3, 4, 5 and 6 DP 1207518
- Lot 1 DP 1078564
- Lot 12 DP 1108343
- Lot 102 DP 1128111.

The site is irregular in shape and has an area of approximately 69,000 sqm. It has a 200 m northern frontage to Southern Cross Avenue and a 220 m southern frontage to Flynn Avenue. Bravo Avenue bounds part of the site along the eastern side while residential blocks adjoin to the west.

Figure 1: Site and surrounding context



Source: Planning proposal 60-80 Southern Cross Avenue & 45-65 Hall Circuit, Middleton Grange (Pacific Planning, October 2019)

The planning proposal seeks to amend *Liverpool Local Environmental Plan 2008* (LLEP) mapping to:

- Adjust zone boundaries as they apply to the site with the result of:
  - R1 General Residential: Reduction from 26,189 sqm to 14,243 sqm (approximately 11,946 sqm)
  - B2 Local Centre: Increase from 31,278 sqm to 43,013 sqm (approximately 11,735 sqm)
  - RE1 Public Recreation: Reduction from 2,340 sqm to 2,000 sqm (approximately 340 sqm)
  - SP2: Increase from 9,200 sqm to 9,800 sqm (approximately 600 sqm)
- Amend the Land Reservation Acquisition Map to identify land for acquisition by Council for the purposes of public recreation
- Increase height limits:
  - New R1 General Residential: From 8.5 m to 9.5-14 m (three to four storeys
  - New B2 Local Centre: From 8.5-18 m to 20 m-29 m (six to eight or nine storeys)
- Increase FSR limits:
  - New R1 General Residential: From 0.75:1 to 1:1
  - New B2 Local Centre: From 0.75:1 and 1.5:1 to 2.3:1.

The planning proposal also seeks to allow an additional permitted use of 'restaurant or café' on the part of the land to be zoned R1 General Residential to enable the establishment of restaurants.

Maps are provided on the next page, with larger maps provided in Appendix A.

The stated intent of the planning proposal is to facilitate a new town centre comprising a range of mixed use buildings up to 29 m in height (stated as eight storeys). A letter from the applicant dated 8 October 2020 (Appendix B), indicates that planning proposal would enable a total development Gross Floor Area (GFA) of 113,173 sqm comprising:

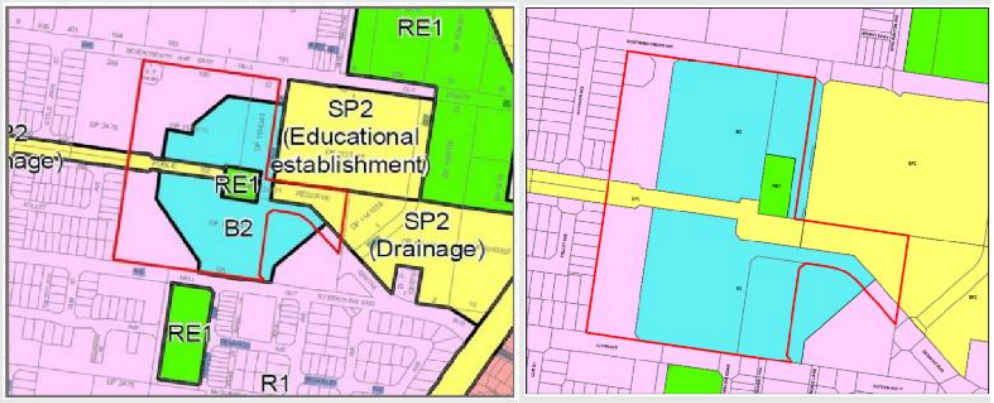
- 63,703 sqm GFA of residential space and 671 new dwellings
- 48,248 sqm GFA of non-residential uses including:
  - 12,529 sqm GFA of medical centre space
  - 8,223 sqm of Office/SOHO (e.g. home office) space
  - 500 sqm GFA of community centre
  - 26,996 sqm GFA of other commercial space (supermarkets, shops, cafes, gyms, entertainment, and childcare).

This report assesses the merits of the planning proposal having regard for the potential site specific outcomes that may arise from the planning proposal and the consistency of the planning proposal with State and Council strategic priorities.

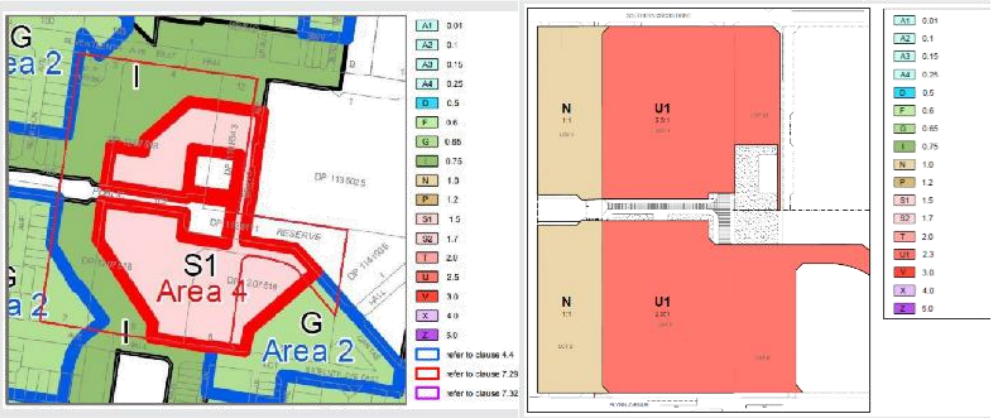
Figure 2: Current and proposed LLEP 2008 maps (site identified in red)

Current	Proposed

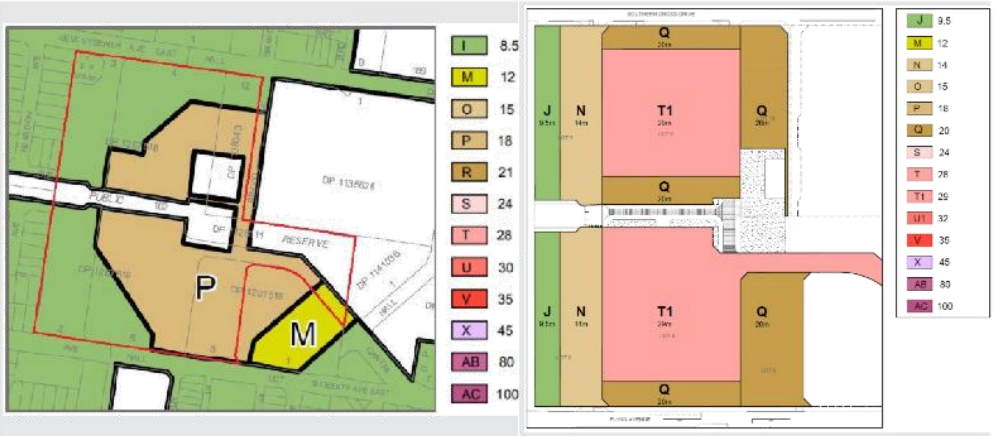
Land use zone map



Floor space ratio map



Height of buildings map



BACKGROUND

2.0 BACKGROUND

The Middleton Grange Planning Proposal was originally lodged with Council in June 2015. An overview of its assessment history is provided below, with a summarised timeline provided in Table 3. For additional detail regarding the history of the planning proposal, it is recommended that the following Council reports and associated minutes be reviewed:

- **16 December 2015 – DPG 08:** Original pre-Gateway assessment by Council
- **29 March 2017 – DPG 08:** Consideration of applicant's insufficient response to Gateway Determination conditions for additional supporting reports
- **18 December 2018 – EGROW 04:** Post exhibition report recommending withdrawal of support
- **31 July 2019 – NOMR 01:** Council reaffirms opposition of increased density in heights as identified in the planning proposal and commits to exhibition of a revised planning proposal, should amendments be made by the applicant
- **25 September 2019 – EGROW 04:** Council review of potential development yield associated with applicant's proposed revisions to planning controls.

2.1 Original planning proposal

On 25 June 2015, the applicant lodged a planning proposal application with Council for the site. The planning proposal is largely consistent with the planning proposal currently being considered by Council, with the following notable exceptions:

- An FSR across the site of 2.5:1
- Heights ranging from 14 m to 35 m
- An altered concept design that aligns with the above controls.

The planning proposal was considered at the 16 December 2015 Council meeting. Council's report expressed in principle support for the planning proposal. Council's report acknowledged inconsistency with the *Liverpool Retail Centres Hierarchy Review 2012*, Council's then relevant retail centre strategy. Council's report expressed that the intensification, while inconsistent with the strategy, had merit as it would create a viable and vibrant town centre.

Council's report sought in principle support in the form of a resolution to finalise the planning proposal with the applicant and forward it to the (then) Department of Planning and Environment seeking a Gateway determination. Council's resolution supported the recommendation.

2.2 Gateway Determination

The (then) Department of Planning and Environment issued a Gateway Determination for the 2015 version the planning proposal in August 2016, following finalisation of planning proposal with the applicant. Conditions, in part, required the applicant to submit additional detail regarding:

- Potential flooding impacts
- Height and overshadowing impacts
- Commercial uses in residential zones.

Following additional reporting and amendments to the planning proposal submitted by the applicant dated June 2018, the Department confirmed in its letter dated 28 June 2018 that the Gateway Determination conditions had been satisfied and the planning proposal should be placed on public exhibition. The matters of the Gateway Determination conditions are discussed in detail in the Council report dated 12 December 2018.

The Gateway Determination conditions relate to matters triggered by the bulk and scale of the changes sought by the planning proposal. Consultation with State authorities since the lodgement of the October 2019 planning proposal are discussed in Section 3.4.2. That consultation has not identified flooding impacts as a concern. As the revised planning proposal has reduced bulk and scale, the impacts relating to height and overshadowing would not increase.

As such, Council's finding in its 12 December 2018 report that the Gateway Determination conditions have been met remains valid.

2.3 December 2018 Council Report

2.3.1 Previous consultation

Previous consultation undertaken in 2016 and 2018 is discussed in detail in Council's report dated 12 December 2018, with key findings summarised below.

2.3.1.1 Public authorities

Council initiated consultation with public authorities in mid-2016 in accordance with the Gateway Determination. A summary of responses is provided in Table 2.

Table 2: 2016 public authority consultation outcomes

Public authority	Issues raised
Office of Environment and Heritage (2016)	• Proposal would increase population living on a floodplain • Education and awareness program should be considered in consultation with SES
Roads and Maritime Services (2016 and 2018)	• 2016: Transport study is preliminary and has not considered cumulative impacts • 2018: Updated traffic impact assessment has not tested impacts into the future sufficiently and has assumed road upgrades would take place that would be funded and constructed by others (e.g. NSW Government) but are not in the NSW Government works program. Necessary road upgrades should be identified at no cost to State Government.
Transport for NSW (2016)	• Transport impact assessment does not provide enough information to assess the impact of the proposed development on the regional and classified road network
Sydney Water (2016)	• No objection noted. Issues may be resolved as part of a development application
Department of Education (2016)	• Build design should minimise the impact of height on the neighbouring school
State Emergency Services (2018)	• Majority of site is not impacted by the 1% Annual Exceedance Probability (AEP) flood level • Significant flooding through the site is expected at the Probable Maximum Flood (PMF) flood level • Recommends evacuation assessment undertaken prior to a development application

In its 12 December 2018 report, Council noted that the Floodplain Development Manual requires evacuation assessments as part of a development application and that flooding information was sufficient.

Comments regarding traffic and transport are discussed further in Sections 3.3.2, 3.4.1 and 3.4.2 as they relate to strategic and site specific merit.

2.3.1.2 Community consultation

Council placed the revised planning proposal on public exhibition from 29 August 2018 to 26 October 2018 (59 days). Methods of consultation and detailed outcomes are discussed in Council's 12 December 2018 report (including the sources of submissions). In summary:

- 867 submissions were received:
- 813 submissions objected to the planning proposal

As per Council's report, concerns largely related to alignment with the strategic framework, assumptions and methods used for supporting reports, impacts associated with bulk and scale, public transport access, traffic impacts and lack of social infrastructure. A detailed assessment of the submissions is provided in the 12 December 2018 report.

2.3.2 Council recommendation and resolution

In its 12 December 2018 report, Council staff recommended that the planning proposal no longer be supported for the following reasons.

> *Following a review of all technical studies and agency and community comments, Council officers do not support the planning proposal for the following reasons:*
>
> - *the proposal does not adequately address why the current controls are not appropriate and how the proposal aligns with the strategic planning framework (i.e. the regional and district plans);*
> - *a town centre of an appropriate size and scale may be achieved with the current zoning and development standards;*
> - *the site-specific constraints do not support the density of built form and land used proposed;*
> - *the increase in the amount of housing and retail in the town centre will have impacts on the residential and regional road network;*
> - *there is insufficient public transport to support the proposed development;*
> - *the proposed built form is inappropriate within an outer suburban location largely characterised by one and two storey dwellings on the boundary of the site;*
> - *existing infrastructure is insufficient to support the increased population and there has not been any commitment to address this through agreements for public benefits and contributions to infrastructure; and*
> - *the proposed increase in residential density is not required for Liverpool to meet its housing targets in the Western City District Plan.*
>
> *The proposal would result in significant change to a low density outer suburban area, a change which is not supported by the majority of the residents of Middleton Grange.*
>
> *The current zoning and planning controls allow for an appropriately scaled town centre to develop in Middleton Grange to serve the day to day needs of the community, and which is consistent with the planned hierarchy of retail centres under the Retail Centres Strategy.*

The Council report also noted that the December 2015 in principle support of the planning proposal to be assessed for a Gateway Determination was the first step to understanding the impacts of planning proposal, and that final decisions would consider comments from public authorities and the community.

In response, Council made the following resolution:

> *1.Notes the gateway determination issued by the Department of Planning & Environment;*
>
> *2.Notes the submissions received during the public exhibition of the planning proposal, including public agency comments;*
>
> *3.Notes that significant infrastructure upgrades will likely be required to support the planning proposal, including regional road upgrades;*
>
> *4.Notes that no funding mechanism for infrastructure and public benefits has been advanced by the proponent to date;*
>
> *5.Notes the issues identified in the assessment report in relation to the proposed built form, environmental impacts and density and the area not serviced with regular and reliable public transport services;*

6.Withdraws support for the planning proposal pursuant to Section 3.35 of the Environmental Planning & Assessment Act 1979;

7.Writes to the Minister of Planning and the Greater Sydney Commission to request that the planning proposal not proceed pursuant to Section 3.35(4) of the Environmental Planning & Assessment Act 1979;

8.Writes to the proponent and all those who made a public submission to advise of Council's decision;

9.Notes that the current zoning and land use controls enable the development of a local shopping centre for the Middleton Grange community which is consistent with the Liverpool Retail Centres Strategy; and

10.Work with the applicant to explore the option of some form of temporary retail on the site.

2.4 October 2019 Planning Proposal

A July 2019 Council resolution (Item NOMR 01) in part, reaffirmed Council's opposition to density and height as outlined in the December 2018 resolution and committed Council to putting an amended planning proposal on public exhibition, if provided by the applicant.

A revised planning proposal was lodged in October 2019, which is the basis for this assessment. The revised planning proposal includes the following changes in response to public submissions and Council concerns:

- Reducing the maximum heights, including:
  - Limiting the eight storey portion to the central part of the site
  - Transitioning heights on the western interface with low density residential areas (8.5 m) to two and four storey development (9.5 to 14 m)
- Reducing floor space ratios and associated assumptions regarding the dwelling yield (from 924 to 671 dwellings)
- Includes an additional 3,000 sqm of open space in the central portion of the centre (subject to a planning agreement or similar)
- Introduction of a 15,000 sqm medical centre use (currently subject to preparation and approval of a major project application)
- Changes to the road layout to accommodate larger retailer requirements, active frontages and through site links.

The revised planning proposal is supported by the following reporting:

- Urban design report
- Visualisation report
- Development control plan (DCP)
- Traffic impact assessment
- Social impact response
- Economic impact response
- Landscape plan
- Flood impact assessment.

Since that time, the applicant has provided additional information, attached at Appendix B. This includes:

- On 6 August 2020, in response to public exhibition and consultation with Council:
  - A covering letter
  - An economic report
  - A traffic impact assessment

- On 9 October 2020, in response to a HillPDA request for information/clarification:
  - A covering letter
  - Two economic reports considering retail and general economic impacts
  - A traffic impact assessment.

The planning proposal was placed on public exhibition from 13 November to 11 December 2019. The outcomes of the consultation are provided in Chapter 4.

Table 3: Planning proposal timeline

Date	Event
June 2015	Applicant lodges planning proposal for the site
December 2015	Council resolves to provide in principle support to finalise a planning proposal and submit it to the Department for Gateway Determination
August 2016	Department issues Gateway Determination with conditions
March 2017	Report presented to Council that, in part, identifies that the applicant has not provided the assessments required by Gateway Determination. Council resolves to defer a decision until a full report can be provided
Late 2017	Applicant provides updated traffic and flood report
June 2018	Applicant provides updated planning proposal. Planning proposal did not include revised VPA offer for traffic works, instead relying on development contributions (Contributions would not address upgrades to State owned roads, which were previously raised as issues by Roads and Maritime Services) Revised planning proposal and supporting documentation sent to Department for review, as per Gateway Determination Department confirms planning proposal meets Gateway Determination conditions
December 2018	Report presented to Council that considered the revised planning proposal and public exhibition and recommends Council resolve to withdraw support due to concerns regarding, in part: • Significant Council and State infrastructure upgrades required, with lack of funding mechanism • Issues related to excessive built form, environmental impacts and density Council resolves to withdraw support and notifies applicant of decision,
July 2019	Council resolves through a notice of motion to in part, commit Council to publicly exhibiting an amended planning proposal, if provided by the applicant.
September 2019	Report presented to Council provided additional information regarding potential development yields associated with applicant's potential development controls.
October 2019	**Applicant lodges revised planning proposal**
Late 2019	Revised planning proposal placed on public exhibition from 13 November to 11 December, with 240 submissions received.
March 2020	Council endorses its Local Strategic Planning Statement that, in part, identifies Middleton Grange as a 'town centre' having an additional 500 to 1,000 jobs and 500 to 1,000 dwellings.
6 August 2020	Applicant provides additional economic and traffic reporting to Council.
26 August 2020	Council adopts its Centres and Corridor Strategy that, in part: • Identifies Middleton Grange as a local centre, • Defines local centres as 'Smaller retail centres which meet convenience retailing needs as well as acting as a community gathering place' which could have 'a large supermarket or large grocery store' 'some other retail facilities' and 'co-location with social infrastructure.' • States that there is not a large enough retail floorspace gap in the surrounding area to reclassify Middleton Grange as a 'town centre' and that road access is constrained.
September 2020	HillPDA prepares letter to the applicant's planner that: • Notes inconsistencies between the planning proposal, economic reports and traffic reporting that describes the development intent of the planning proposal (e.g. retail floorspace) • Requests updated economic reporting and planning proposal to clarify intent, and a planning mechanism to ensure specific development outcomes
October 2020	Applicant lodges additional transport and economic reporting with covering letter explaining development intent.

ASSESSMENT

3.0 ASSESSMENT

3.1 Previous concerns of Council

The June 2018 version of the planning proposal was considered by Council at its December 2018 meeting. The report considered various planning issues related to the proposal and recommended that Council withdraw support for the planning proposal. In response, Council resolved to withdraw support for the planning proposal. The reasons for withdrawing support are summarised in Table 4, along with the applicant response.

Table 4: Concerns of Council and applicant response

Council reason for withdrawing support	Applicant response
The proposal does not adequately address why the current controls are not appropriate and how the proposal aligns with the strategic planning framework (i.e. the regional and district plans);	The planning proposal includes an assessment against that objectives of the Regional Plan, District Plan and Council's LSPS. HillPDA's review and response is provided in Section 3.3.2.
A town centre of an appropriate size and scale may be achieved with the current zoning and development standards;	The applicant has provided potential development floorspace areas to align with the goal of 500 to 1,000 additional jobs and dwellings in Middleton Grange, as per the LSPS.
The site-specific constraints do not support the density of built form and land used proposed;	The applicant has provided additional urban design reporting and resubmitted environmental reporting. Site merit is discussed in Section 3.4.1. Broadly, site specific environmental constraints do not appear to be a significant issue for the planning proposal.
The increase in the amount of housing and retail in the town centre will have impacts on the residential and regional road network;	The applicant has provided updated traffic modelling based on the new proposal. This identifies upgrades to the local and regional road network require to support the proposal. Traffic and transport are discussed in Section 3.4.1. Council staff have broadly agreed with the conclusions of the reporting, with the requirements that upgrades be provided at no cost to Council.
There is insufficient public transport to support the proposed development;	The applicant has suggested that a new bus service be provided to link the site to another transport node. The site's lack of public transport remains a concern and is discussed in Sections 3.3.2, 3.4.1 and 3.4.2.
The proposed built form is inappropriate within an outer suburban location largely characterised by one and two storey dwellings on the boundary of the site;	The applicant has provided additional urban design reporting that identifies the potential overshadowing impacts of the proposed height controls and suggests that the reduced height would align with the surrounding character. Council maintains concerns regarding the impact of the proposed height and density on the site. NSW Department of Education has also expressed concern regarding the potential for overdevelopment adjacent to the neighbouring school. Built form and urban design issues are discussed in Section 3.3.2, 3.4.1, 3.4.2.
Existing infrastructure is insufficient to support the increased population and there has not been any commitment to address this through agreements for public benefits and contributions to infrastructure; and	The applicant has suggested that the planning proposal would result in additional open space, though that open space would be subject to Council acquisitions and/or a separate planning agreement. Council staff have suggested that the amount of space that could be provided would be inadequate for the future population (roughly half).
The proposed increase in residential density is not required for Liverpool to meet its housing targets in the Western City District Plan.	Since the resolution, Council has adopted its LSPS, which seeks to deliver 500 to 1,000 additional dwellings in Middleton Grange from 2016 to 2036. The planning proposal states it would deliver around

Council reason for withdrawing support	Applicant response
	670 dwellings, which would broadly fall in line with this estimate. However, existing controls could deliver a similar result. HillPDA has identified the potential for the planning proposal to result in over 900 dwellings, due to the planning proposal not restricting residential floorspace, discussed in detail in Section 3.3.2and 3.4.1.
The proposal would result in significant change to a low density outer suburban area, a change which is not supported by the majority of the residents of Middleton Grange.	The planning proposal has not directly addressed this concern, though it is noted that Council's July 2019 resolution broadly supported the FSR, height and residential development outcome proposed.
The current zoning and planning controls allow for an appropriately scaled town centre to develop in Middleton Grange to serve the day to day needs of the community, and which is consistent with the planned hierarchy of retail centres under the Retail Centres Strategy.	The planning proposal suggests that current controls would not meet the requirements of the community. HillPDA has provided a peer review of economic reporting, discussed in detail in Section 3.4.1. That peer review suggests that the applicant has not demonstrated demand for the quantum of commercial floorspace described.

3.2 Critical issues

HillPDA's review of the planning proposal, Council responses, agency responses and community submissions has identified several significant issues with the planning proposal, which are discussed in detail in Sections 3.3and 3.4 and summarised below. These are largely divided into two categories:

- A lack of certainty that the described outcomes of the planning proposal would be delivered
- A lack of evidence that the substantial commercial floorspace identified in the planning proposal would be supported by the market (i.e. insufficient demand).

3.2.1 The planning proposal does not offer certainty

The applicant has made several claims regarding the development outcome that would be delivered if LLEP were to be amended. These claims have been made in the October 2019 planning proposal and subsequent communications.

A summary of the inconsistencies between the applicant's claims and potential outcomes are identified in Table 5.

Table 5: Summary of inconsistencies in described outcomes

Described in planning proposal	Potential outcome of the planning proposal
Non-residential/commercial GFA of 48,248 sqm including: • 12,529 sqm GFA of medical centre space • 8,223 sqm of Office/SOHO (e.g. home office) space • 500 sqm GFA of community centre • 26,996 sqm GFA of other commercial space (supermarkets, shops, cafes, gyms, entertainment, and childcare).	• Planning controls would only require ground level floorspace in the new B2 Local Centre area to be used for these uses. The applicant has indicated that the ground level GFA would be approximately 20,000 to 22,000 sqm. • Medical centre use is subject to a future development application that is in the initial stages of preparation and cannot be guaranteed. Proposed planning controls do not ensure delivery of this outcome. • Sufficient evidence has not been provided to support the demand for office and ground level commercial/retail space at the level suggested by the applicant. HillPDA's assessment suggests 10,000 sqm of retail floorspace is a more reasonable assumption for foreseeable demand • Mandatory delivery of non-residential ground floor uses (eg commercial uses) beyond demand could result in oversaturation ground level commercial floor space and associated poor activation, amenity and viability issues. • The applicant has indicated that the B2 Local Centre ground floor GFA would be approximately 20,000 to 22,000 sqm, depending on detail design. This ground level area would be the only requirement for non-residential GFA under current controls.
Residential floorspace of 63,703 sqm, resulting in approximately 671 dwellings	• Planning controls would only require the delivery of non-residential/commercial floorspace beyond of approximately 22,000 sqm (or the final ground floor area in B2 Local Centre zoned lands) • The remaining above ground floor GFA (91,173 sqm) would most likely be used for residential uses • This could result in approximately 960 dwellings, using the applicant's average of 95 sqm per dwelling
The western R1 General Residential area would provide a mix of restaurants, as permitted by the additional permitted use	• As noted above, evidence has not been provided that supports the demand for the office and retail space suggested by the applicant. As such, it is more likely that the R1 General Residential land would be used for residential development
The western proposed height limits of 9.5 m to 14 m would promote two and four storey development	• The R1 General Residential land use permits residential flat building development. A height limit of 9.5 m would potentially be capable of supporting three storey flat buildings adjacent to the one to two storey dwellings to the west of the site.
The planning proposal would result in approximately 7,500 sqm of public open space.	• The RE1 Public Recreation area would be approximately 2,000 sqm. These lands are not all owned by Council and would be subject to acquisition from the applicant in the future. • A further 1,750 sqm of SP2 Infrastructure, partially identified as flood affected identified in concept drawings as being part of future parks. • The mechanism for Delivery of this land as proposed is delivery of the park in RE1 Public Recreation and SP2 Infrastructure is not identified in the planning proposal. It would be likely that Council would deliver this outcome, not the applicant, unless subject to a planning agreement. Development value of the land is unclear, noting a portion of the land is flood affected. • Approximately 3,000 sqm of land has been identified in concept drawings to be zoned B2 Local Centre for a plaza and open space grassed areas. This land is proposed to have height and FSR controls that would permit eight to nine storey buildings. As proposed, it would be possible for a future developer to seek consent for commercial development on land identified as being open space in concept plans. • It is understood that the planning agreement currently before Council only relates to embellishment and maintenance of the B2 Local Centre land. This planning agreement could potentially be revised to acknowledge and resolve these issues but is separate to the planning proposal assessment process.

The applicant has highlighted that the current version of the planning proposal accommodates a reduction in unit development to 671 dwellings. This reduction assumes that large amounts of above ground floor space will be used for non-residential/commercial uses. However, the applicant has not demonstrated that there is demand to support the amount of commercial floorspace that is now being proposed.

HillPDA is concerned that the applicant may seek, at a later time, to again increase the residential component by reducing the proposed commercial floorspace. Ultimately, delivery of these uses would be determined by future development assessments and market conditions. It is not recommended that the above ground commercial uses be required through an Additional Local Provision, as it may make development of the site unviable if there is not adequate demand for these uses.

This issue and options are discussed in Section 3.3.2 and 3.4.1. In summary, HillPDA recommends that residential floorspace be capped at 65,000 sqm (around 685 dwellings) across the entire site, with remaining GFA used for non-residential purposes, as viable. However, viability of the non-residential uses is also a concern, as discussed below.

3.2.2 Economic impacts

HillPDA has prepared a peer review of the economic reporting by the applicant, as summarised in Section 3.4.1. The peer review has identified that the applicant has failed to demonstrate demand for the quantum of commercial floorspace that the applicant has suggested would be delivered across the site.

The applicant has also suggested that approximately 22,000 sqm GFA would be provided in the new B2 Local Centre zoned area. LLEP 2008 requires that the ground floor of B2 Local Centre development be non-residential (e.g. commercial or similar). The applicant has not demonstrated that there is sufficient demand for uses that would be provided in this floor area.

Failure for demand to be generated may result in undesirable outcomes, such as vacant shopfronts. This will be a key issue for the assessment of a future development application and the EP&A Act's requirement under Section 4.15(1)(b) that economic and social impacts of development be considered. H

HillPDA agrees that there is likely to be demand for the 10,000 sqm retail offering that has been described in the applicant's most recent economic reporting:

- *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (EIA) (PPM Consulting, 2020)
- *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* (Retail EIA) (PPM Consulting, 2020).

While it would be preferable to restrict the area of B2 Local Centre zone and associated requirements for future retail/non-residential ground level floorspace, this is not practical due to the existing subdivision pattern and potential issues with split-zone lots.

Instead, it is recommended that Council amend *Liverpool Development Control Plan 2008 Part 2.5: Land Subdivision and Development in Middleton Grange* with the goal of ensuring positive economic and activation outcomes. Amendments should make it explicit that a staged development application is required for the site and that that application is to be supported by an economic impact assessment that considers retail demand and market analysis that is peer reviewed. This builds on existing controls in Section 4 that suggest that Council may require such analysis, but do not reflect the scale of development put forward by the applicant.

If an economic impact assessment shows that the quantum of ground floor uses to be supplied exceeds demand, this would suggest that a portion of the site remain undeveloped (such as the medical centre portion) until demand is clearly demonstrated.

The desired outcome is that ground floor uses remain active to the level described by the applicant and would also allow for delivery of office and other commercial uses above the ground floor if the market for those uses is viable.

In response. HillPDA recommends that:

- The FSR across the site be reduced to align non-residential uses with the job generation sought in the LSPS by either:
  - Averaging the FSR across the site to 1.6:1,
  - Implementing a blanket FSR of 1.6:1 across the site
- Heights be reduced to align with the reduced FSR and promote positive built form outcomes
- Amend the development control plan to require a peer reviewed economic impact assessment as part of a staged development application, specifically demonstrating alignment with the LSPS goals and justifying demand for the quantum of employment floorspace proposed.

These recommendations would allow for an uplift in commercial floor area that aligns with the LSPS vision while also reducing the risks associated with oversupply of commercial floor area.

3.3 Strategic merit

This section considers the strategic merit of the planning proposal, as defined by *A Guide to Preparing Planning Proposals*.

3.3.1 Section A – Need for the planning proposal

This section addresses DPIE Guideline question No.1: Is the planning proposal a result of an endorsed strategic planning statement, strategic study or report?

The planning proposal is not the result of an endorsed strategic study or report. However, the LSPS does indicate that a town centre is to be provided in Middleton Grange. As per the LSPS, Middleton Grange is to provide in the order of:

- 500 to 1,000 jobs
- 500 to 1,000 dwellings.

The original and revised planning proposals were lodged prior to the LSPS being endorsed by Council.

Dwelling and employment yields associated with the planning proposal and their alignment with the LSPS are discussed further in Section 3.3.2. That section raises issues with potential oversupply of floorspace.

Based on previous Council and applicant reporting, existing planning controls would result in a yield of approximately 563 and 650 dwellings and 153 to 359 jobs. While controls are generally consistent with the low/mid-range of dwellings, amendments would likely be required to meet employment goals of the LSPS.

This section addresses DPIE Guideline question No.2: Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way

Current planning controls permit establishment of the centre, with reduced floorspace, height and required ground level non-residential/commercial uses.

The planning proposal seeks to change the boundaries of zones and increase heights and densities on the site. Given the scale of the change, a planning proposal and amendment of the LLEP 2008 is required to achieve the intended outcomes.

3.3.2 Section B – Relationship to the strategic planning framework

This section addresses DPIE Guideline question No.3: Will the planning proposal give effect to the objectives and actions of the applicable regional or district plan or strategy (including any exhibited draft plans or strategies)?

The relevant strategies are discussed in turn below.

A Metropolis of Three Cities

The *Greater Sydney Regional Plan – A Metropolis of Three Cities* (Greater Sydney Commission, 2018) (Regional Plan) is the relevant regional plan for the site. The Regional Plan outlines the vision for Greater Sydney, with objectives provided for a range of issues relating to the social, built and natural environments. The Liverpool LGA is within the Western Parkland City, as identified in the Regional Plan.

The table below identifies the relevant objectives of the Regional Plan and the planning proposal's consistency with those objectives.

Table 6: Regional Plan consistency

Objective	Comment
Objective 6 **Services and infrastructure meet communities changing needs**	The objective relates to the delivery of social infrastructure and accessible places. The planning proposal suggests that 15,000 sqm GFA will be used for a medical centre and supporting ancillary uses. This is a very substantial commitment and one of the largest independent medical centres in the area. If delivered, the medical would assist in meeting the medical needs of the Middleton Grange and surrounding populations. At a local level, the urban design documentation suggests multiple through site links and public open space will be available for pedestrians, increasing accessibility. Pending finalisation of planning agreements, it could also result in the delivery of a community centre for the surrounding community.
Objective 7 **Communities are healthy, resilient and socially connected**	The objective relates to delivery of walkable and public transport accessible places near social infrastructure. The Middleton Grange area is currently capable of accommodating a mixed use town centre under existing controls. The planning proposal would allow for additional ground level non-residential uses, such as shops, supermarkets and cafes, in addition to the medical centre use above. Assuming these elements are delivered, the planning proposal would assist in delivery of services that would reduce the need for private vehicle transportation for shopping and services, as well as for workers who live in the local area. However, the site is poorly serviced by public transportation, meaning that local residents would likely be required to drive to their place of employment. Retail/place attractors would also generate private vehicle movements.
Objective 10 **Greater housing supply**	The site is currently capable of delivering approximately 40,000 to 60,000 sqm of residential GFA, or approximately 400 to 650 dwellings, depending on non-residential yield.[1] The planning proposal suggests that site is capable of delivery of approximately 55,000 sqm of residential GFA, or 583 dwellings. The planning proposal suggests that it would allow for approximately 63,703 sqm of residential GFA, or approximately 671 dwellings. As such, the planning proposal, if delivering the residential yield described, would likely result in increased housing supply, with a marginal increase in capacity to meet Liverpool's housing needs.
Objective 11 **Housing is more diverse and affordable**	The planning proposal will expand B2 Local Centre land, which only allows residential uses above the ground floor (eg apartments). While the R1 General Residential zone also allows residential flat buildings, these uses have not been delivered in the R1 General Residential areas of Middleton Grange. As such, the planning proposal would increase housing diversity in the area by essentially requiring apartment development. While not mentioned in the planning proposal, apartment development can assist with housing affordability either through direction action on Council's part (e.g. adopting an affordable housing scheme or seeking a contribution of units as part of a future planning agreement), or through market mechanisms, such as build-to-rent housing. No information has been provided about the potential for the site to deliver the 5 to 10 per cent of affordable housing recommended by the GSC.
Objective 12 **Great places that bring people together**	The planning proposal would provide approximately 2,000 sqm of RE1 Public Recreation land and suggests that a total of approximately 7,500 sqm of public open space would be provided across the site. Provision of these lands are subject to a planning agreement and development control plan.

[1] Council report dated 25 September 2019

Objective	Comment
	It is noted that the area identified by the planning proposal for a 'forecourt' and 'new park 3' is proposed to be mapped as B2 Local Centre with heights and FSR that would allow for approximately eight storeys of development. Design documentation provided with the planning proposal also suggests a subdivision pattern and local road network that is pedestrian friendly. However, this is not required by the planning proposal and would be subject to future development applications and adoption of a site specific development control plan. Unless a mechanism is introduced that ensures that the ground level public open space is delivered, it unclear if the planning proposal would provide a significant contribution to this objective.
Objective 14 **A well connected city**	The objective relates to planning development within a 30 minute public transport travel time. The site is approximately 400 to 600 m from bus stops that are serviced by the 853 bus route. While outside of the standard 400 m radius for bus routes, these are within walking distance. The bus travels to Liverpool Station, generally within 30 to 40 minutes (not including walking time). The first bus arrives at 4.40am and the last bus arrives at 9.15pm. Buses arrive every 10 to 20 minutes during morning and evening commute hours and hourly during off-peak hours. While the planning proposal would not promote development strictly within the 30 minute public transport travel time, it would connect to a strategic centre generally within the timeframe. The bus service also connects to Carnes Hill. Overall, given the limited nature of public transport destination, distance to bus stops and travel time to centres, public transportation accessibility is considered to be low.
Objective 22 Investment and business activity in centres	The objective relates to development of centres within a retail hierarchy with the goal of providing retail, services and jobs to service local populations. Middleton Grange is best described is a local centre, in the context of the objective. As per the land use expectations provided in the planning proposal, future development would likely be anchored by a supermarket which would assist with local employment and provide goods and services in the local walkable catchment. Finalisation of the design in a place-based manner will be part of the development application process, as guided by an adopted development control plan. As such, pending adoption of the development control plan, the planning proposal is broadly consistent with the objective.
Objective 30 **Urban tree canopy cover is increased**	The objective relates to extension of the urban tree canopy with the goal of reducing temperatures and improving amenity. The planning proposal includes an indicative landscaping plan that includes trees planted throughout the public spaces of the centre. Comments above relating to the steps required to secure public open space also apply to landscaping arrangements. Pending adoption of a development control plan that requires urban tree canopy (including provisions regarding tree planning sizes), the planning proposal is broadly consistent with the objective.
Objective 31 **Public open space is accessible, protected and enhanced**	The objective relates to provision of accessible open spaces that meet the needs of the community. As above, pending adoption of a development control plan and/or planning agreement, the public open space commitments of the planning proposal broadly align with the objective.

Source: A Metropolis of Three Cities, HillPDA

The applicant has identified being within 700 m of the M7 Motorway and 350 m from the future Fifteenth Avenue rapid transit route and being consistent with the infrastructure related objectives of the Regional Plan. Stops along this route have not been determined, and as such, is not a reasonable assumption to infer that the development could leverage this route effectively. Proximity to the M7 Motorway makes the site broadly accessible to the region but is not a strategic benefit.

Overall, the planning proposal is broadly consistent with the objectives of the Regional Plan.

Western City District Plan

The *Western Sydney District Plan* (Greater Sydney Commission, 2018) (District Plan) is the relevant district plan for the site. The District Plan outlines the vision for the Western Parkland City, building upon the broad vision of the Regional Plan. The District Plan provides more specific planning priorities and actions for development outcomes and strategic goals. The table below identifies the relevant objectives of the District Plan and the planning proposal's consistency with those objectives.

Table 7: District Plan consistency

Planning priority	Comment
Planning Priority W1 **Planning for a city supported by infrastructure**	The site is not well served by existing infrastructure and is marginally within walking distance to a bus route to the Liverpool Strategic Centre. While there are strategically important infrastructure investments in the broader area (Western Sydney Airport), the site is not particularly well positioned to leverage those investments any more than other developable sites. The planning proposal would enable development that would result in capturing development contributions that would be used for developing infrastructure in the Middleton Grange area. Pending finalisation of a planning agreement, it would also assist in upgrading local roads and supply of public open space. As such, the planning proposal demonstrates marginal consistency with the planning priority
Planning Priority W3 **Providing services and social infrastructure to meet people's changing needs**	The planning proposal would enable the development of a town centre, which would provide services and infrastructure to meet the needs of the Middleton Grange population. Existing controls enable a similar, if somewhat smaller, town centre. Additional social infrastructure associated with the planning proposal is contingent on finalisation of a planning agreement. As the planning proposal is not reducing the capability of delivery of a town centre, is marginally consistent with the planning priority.
Planning Priority W4 **Fostering healthy, creative, culturally rich and socially connected communities**	The urban design documentation provided with the planning proposal indicates that the planning proposal would enable a significantly embellished public domain that would be walkable and enable social interactions. Pending adoption of a development control plan and planning agreement that ensures these uses are provided as part a development application, the planning proposal is consistent with the planning priority.
Planning Priority W5 **Providing housing supply, choice and affordability, with access to jobs services and public transport**	As discussed above, the planning proposal would result in marginally more dwellings than currently permissible. This would assist in meeting housing targets, as well as dwelling diversity in the Middleton Grange area. As such, the planning proposal is consistent with the planning priority.
Planning Priority W6 **Creating and renewing great places and local centres and respecting the District's heritage**	Finalisation of the urban design associated with the town centre is to be undertaken at the development application stage. Adopting of a site specific development control plan would assist in delivering a positive outcome in line with the planning priority.

Planning priority	Comment
Planning Priority W7 **Establishing the land use and transport structure to deliver a liveable productive and sustainable Western Parkland City**	The site is not very well connected to surrounding centres, with a single bus route that is borderline within walking distance of the site. While it is unlikely that future residents will be reliability within a 30 minute travel time of the Liverpool Strategic Centre, travel times would be around 30 minutes, when not including walking time. As such, the planning proposal demonstrates marginal consistency with the planning priority

Source: Western Sydney District Plan, HillPDA

Given the reliance on factors outside of changes to LLEP 2008 (including the development control plan, planning agreements and reliability of a single public transport route), overall alignment with the District Plan's Planning Priorities is marginal. Finalisation of these matters, including potential future improvements to public transport, would improve alignment with the planning priorities.

This section addresses DPIE Guideline question No.4: Will the planning proposal give effect to council's endorsed local strategic planning statement or another endorsed local strategy or strategic plan

Connected Liverpool 2040 - Local Strategic Planning Statement

Council's LSPS, adopted in March 2020, provides the strategic vision for Liverpool's growth from 2016 to 2036. Middleton Grange is specifically identified as a town centre which is to provide 500 to 1,000 jobs and 500 to 1,000 dwellings during that period.

As discussed in more detail in Chapter 1, it is anticipated that the planning proposal would allow for the development of 113,173 sqm GFA. However, as detailed in Section 3.4.1, LLEP 2008 planning controls only require the ground floor of the B2 Local Centre to be developed for the purposes of non-residential/commercial uses.

The applicant has indicated that that future development would result in a ground floor area of approximately 20,000 to 22,000 sqm. This would mean that the remaining 91,000 to 93,000 sqm would be developable for residential uses. Using the applicant's estimate of 95 sqm per dwelling, this would result in approximately 950 dwellings. Assuming the 20,000 to 22,000 sqm of ground floor uses support employment, HillPDA estimates that employment generation would be approximately 473 jobs (See Section 3.4.1).

Difficulties in determining a future mix of uses is discussed in detail in Council's September 2019 report. In order to help inform the potential outcomes of existing controls, the planning proposal and alternative outcomes, HillPDA has prepared scenarios in Table 8 based on Council and applicant reporting and HillPDA's views on the requirements of controls associated with the planning proposal. HillPDA has also prepared scenarios that would potentially align with the LSPS.

Assumptions for the analysis are:

- Council and applicant findings accurately represent dwelling/commercial GFA potential of current controls on the site
- Residential dwelling density is 95 sqm/dwelling[2]
- Retail floorspace maximum of 10,000 sqm[3]
- Retail employment density of 36 sqm/job[4]
- Commercial offices/services/entertainment employment density of 70 sqm/job.[5]

[2] Middleton Grange Planning proposal
[3] Economic Impact Assessment, PPM October 2020
[4] Assumes 40% supermarket at 30 sqm/job and 60% other retail at 40 sqm/job
[5] Assumes 50% offices/services at 40 sqm/job and 50% entertainment/recreation uses at 100 sqm/job

Table 8: Potential development outcome scenarios

#	Scenario	Dwelling GFA (sqm)	Dwellings	Retail GFA (sqm)	Other Employment GFA (sqm)	Jobs	Effective GFA[6]
1	Current (Residential Focus)[7]	61,059	650	5,500	0	153	1.16
2	Current (Commercial Focus)[8]	52,884	563	10,000	3,675	330	1.16
3	Planning Proposal (As described)[9]	63,703	678	10,000	39,470	842	1.98
4	Planning Proposal (As per Cl 7.16)[10]	91,173	970	10,000	12,000	449	1.98
5	LSPS Compliant (Low jobs)	65,000[11]	691	10,000	16,000	506	1.59
6	LSPS Compliant (High jobs)	65,000	691	10,000	50,500	999	2.19

As shown above, existing controls fall short in LSPS expectations for job generation, but may meet dwelling expectations, considering the level of residential development that has or could take place in the remainder of Middleton Grange.

As shown in Scenario 3, the planning proposal as described could meet the LSPS requirements for Middleton Grange. However, three significant factors raise doubts regarding this outcome:

- LLEP 2008 Clause 7.16 only requires ground floor development in B2 Local Centre zoned areas to be non-residential (e.g. employment)
- The applicant is only planning for ground floor uses of around 22,000 sqm, meaning the remaining 91,173 sqm of GFA enabled by the proposed FSR could be used for residential purposes
- The applicant has not provided sufficient evidence to demonstrate the demand for the nearly 50,000 sqm of employment uses that described that would support the claims that they will be delivered.

Therefore, it is highly unlikely Scenario 3, the applicant's description of the results of the planning proposal, would occur. Scenario 4 describes an outcome that would be compliant with LLEP 2008 Clause 7.6. Given the level of background development that has occurred in Middleton Grange since 2016, and the development that is possible on remaining undeveloped sites, the dwelling outcome is consistent with the LSPS. Further, the employment outcome would likely be inconsistent with the LSPS, unless retail were provided beyond the stated intent of the applicant.

Scenarios 5 and 6 describe outcomes that broadly meet the stated dwelling intent of the applicant (rounded up to allow for flexibility in residential design) and would also meet LSPS goals for employment. In HillPDA's opinion, in the absence of evidence provided by the applicant, Scenario 5 is a more likely development outcome (noting that the 16,000 sqm of 'other employment floorspace' is not supported by the applicant's demand analysis and may not be delivered).

[6] Based on R1 General Residential and B2 Local Centre site areas (Current: 57,467 sqm, Planning Proposal: 57,256 sqm) as described in Council's email dated 21 October 2018
[7] Based on scenario (i) on Table 1, Page 129 of 25 September 2019 Council agenda
[8] An Analysis of Lower Floor Space Ratios at Middleton Grange, PPM Consulting 2017, pg. 9 (1.5:1 FSR Scenario)
[9] Letter from Pacific Planning dated 8 October 2020
[10] Email from Pacific Planning dated 28 October 2020 identifying ground floor GFA in B2 Local Centre
[11] Residential GFA rounded up to allow for flexibility in design

In order to balance the LSPS vision, the applicant's stated intent to modestly increase dwelling yield and increase employment floorspace, and the potentially low demand for that floorspace, the following controls would be more suitable:

- Capping residential floorspace to 65,000 sqm
- Limiting the average FSR across the site of, or implementing a blank FSR of, 1.6:1
- Reducing heights to reflect lower FSRs and promote positive design outcomes.

Further for reasons discussed in more detail in Section 3.4.1, it is recommended that Council's development control plan be amended to require a staged development application for the site, supported by a peer reviewed economic impact assessment. This would help ensure an active ground level by requiring justification of the future commercial outcomes that would be required at the ground level, which have not been demonstrated as having demand by the applicant. This would build on existing requirements in Part 2.5, Section 4 of the DCP. That section suggests that Council may request such information but does not necessarily require it or outline quality controls, which are justified given the potential gaps in proposed supply and demand.

Should the analysis not demonstrate that the quantum of floorspace provided either reflects the demand generated by the market or meets the employment goals of the LSPS, that would suggest that a portion of the site be quarantined from development until such floorspace is in demand and viable.

In order to deliver these changes, the applicant should prepare, to Council's satisfaction a new FSR map and height of building map that adequately addresses employment, residential and urban design issues. Further, the residential floorspace cap could be implemented through an Additional Local Provision.

This section addresses DPIE Guideline question No.5: Is the planning proposal consistent with the applicable State Environmental Planning Policies?

The State Environmental Planning Policies (SEPP) of particular relevance to the planning proposal are discussed below.

Table 9: SEPP consistency

SEPP	Comment
SEPP No 55 – Remediation of Land	The planning proposal has not provided an assessment of contamination risk, and Council staff have not identified the site as being at risk of contamination. The applicant has identified that the risk for contamination cross the site is low, and that further assessment would be undertaken as part of a development application. As the planning proposal is not introducing a new sensitive land use (i.e. the site is already capable of residential development), and Council has not identified particular risk of contamination, this is an appropriate response.
State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development	The planning proposal would enable the development of additional and taller apartments, which would be subject to application of the Apartment Design Guide, or the relevant guide at the time of a future development application. The applicant has stated that the design documentation provided with the planning proposal complies with the principles and objectives set out in the guide. Compliance will be a matter for assessment as part of a future development application.

This section addresses DPIE Guideline question No.6: Is the planning proposal consistent with applicable Ministerial Directions (s.9.1 directions)?

The applicable Ministerial Directions are discussed below. A full extract of the directions, including the requirements for planning authorities, is provided in Appendix C.

Table 10: Ministerial Direction consistency

Ministerial Direction	Objective	Comment
1.1 – Business and Industrial Zones	(1) The objectives of this direction are to: (a) encourage employment growth in suitable locations, (b) protect employment land in business and industrial zones, and (c) support the viability of identified centres.	• The planning proposal will not reduce the total potential floorspace associated with any employment areas. • The planning proposal applies to an employment area (Middleton Grange) that has been identified as a town centre for growth in the LSPS, which has been endorsed by Council and is currently being maintained by DPIE. • The planning proposal is consistent with this direction.
3.1 – Residential Zones	(1) The objectives of this direction are: (a) to encourage a variety and choice of housing types to provide for existing and future housing needs, (b) to make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services, and (c) to minimise the impact of residential development on the environment and resource lands	• The planning proposal is anticipated to promote the development of additional housing that expands upon the types of housing available in Middleton Grange. • The planning proposal would encourage a town centre development that will improve access to services in the Middleton Grange area, both for current and future residents. • While current infrastructure, in the form of public transport, is limited, the planning proposal would also reduce the requirement for some public transport use associated with current residents. • Future development would be required to comply with Council development control plans and the Apartment Design Guide or relevant guideline. • The land associated with planning proposal is serviced by infrastructure. However, State and Council roads have been identified to not be suitable for anticipated traffic. • Subject to provisions to improve road access, the planning proposal is consistent with this direction.
3.4 – Integrating Land Use and Transport	(1) The objective of this direction is to ensure that urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve the following planning objectives: (a) improving access to housing, jobs and services by walking, cycling and public transport, and (b) increasing the choice of available transport and reducing dependence on cars, and (c) reducing travel demand including the number of trips generated by development and the distances travelled, especially by car, and (d) supporting the efficient and viable operation of public transport services, and (e) providing for the efficient movement of freight.	• The planning proposal would promote development of a town centre that would provide housing, jobs and services in an established urban area, reducing the need for private vehicle trips in the immediate area. • The site is not well serviced by public transportation but could potentially trigger a State investment in public transportation or otherwise make the current service more viable.

Ministerial Direction	Objective	Comment
4.3 - Flood Prone Land	(1) The objectives of this direction are: (a) to ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005, and (b) to ensure that the provisions of an LEP on flood prone land is commensurate with flood hazard and includes consideration of the potential flood impacts both on and off the subject land.	• Flooding issues are discussed in Section 3.4.2 • A response to flooding concerns has been provided in the 12 December 2018 Council report. As per that report, Council has identified that the planning proposal and associated reporting has satisfactorily met the requirements of this direction, as outlined in the Gateway Determination conditions. • Additional flood assessments will be required as part of the development application process.
6.2 - Reserving Land for Public Purposes	(1) The objectives of this direction are: (a) to facilitate the provision of public services and facilities by reserving land for public purposes, and (b) to facilitate the removal of reservations of land for public purposes where the land is no longer required for acquisition.	• The planning proposal will zone approximately 2,000 sqm land as RE1 Public Recreation • The planning proposal will facilitate acquisition of the land in order to provide community benefit (public open space) • The planning proposal is consistent with this direction.
6.3 - Site Specific Provisions	(1) The objective of this direction is to discourage unnecessarily restrictive site specific planning controls.	• The planning proposal does not currently include any restrictive site specific provisions. • Potential site specific planning controls have been recommended to ensure delivery of the development outcome proposed by the applicant. • Recommended controls are minor in nature and align with the description of the proposed development enabled by the planning proposal, while allowing for flexibility in design.
7.1 – Implementation of a Plan for Growing Sydney	(1) The objective of this direction is to give legal effect to the planning principles; directions; and priorities for subregions, strategic centres and transport gateways contained in A Plan for Growing Sydney.	• Alignment with the objectives of the Regional Plan and District Plan is discussed in Table 6 and Table 7. • The planning proposal is broadly consistent with the strategies and this direction.

3.3.3 Conclusion

The planning proposal is broadly consistent with the relevant strategic priorities relevant to Middleton Grange, with the exception of potential over delivery of residential uses that would be inconsistent with the LSPS and marginal public transport access. It is recommended the planning proposal be amended to cap residential floorspace, reduce overall FSR (and associated reductions in height) and implement DCP controls to ensure future applications demonstrate alignment with the LSPS. Longer term public transport access should be led by Council as part of a strategy for improving services to the centre to achieve the goals of the LSPS.

3.4 Site specific merit

This section considers the site specific merit of the planning proposal, as defined by *A Guide to Preparing Planning Proposals*. It considers the potential impact of the planning proposal to the natural, built, social and economic environment, as informed by the applicant's and Council's reporting, and HillPDA's review of economic reporting.

3.4.1 Section C – Environmental, social and economic impact

This section addresses DPIE Guideline question No.7: Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats will be adversely affected as a result of the proposal?

The site is largely cleared and maintained, with a small number of dwelling houses present.

Neither the applicant nor Council have identified any critical habitat for threatened species, populations or significant ecological communities.

This section addresses DPIE Guideline question No.8: Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

Potential environmental effects are discussed below.

Potential residential component

In correspondence dated 9 October 2020, the applicant has put forward that the planning proposal would result in a total floor area of 113,173 sqm split between:

- 63,703 sqm GFA of residential space and 671 new dwellings
- 48,248 sqm GFA of non-residential uses including:
  - 12,529 sqm GFA of medical centre space
  - 8,223 sqm of Office/SOHO (e.g. home office) space
  - 500 sqm GFA of community centre
  - 26,996 sqm GFA of other commercial space (supermarkets, shops, cafes, gyms, entertainment, and childcare).

The planning proposal does not provide a guarantee of this outcome. These figures should be considered indicative only of the concept design. The current controls in LLEP 2008 are relevant:

- R1 General Residential (proposed for the western portion of the site) allows for a wide range of residential uses, including apartment buildings
- B2 Local Centre only requires non-residential development on the ground floor, with residential flat building/shop top housing permitted above the ground floor level (Clause 7.16).

Potential development outcomes are discussed in detail in Section 3.3.2. In summary, the proposed planning controls could result in approximately 91,000 to 93,000 sqm of residential uses. This is approximately 30,000 sqm more than identified in the planning proposal. Using the applicant's calculation of 95 sqm per unit, this would result in approximately 950 dwellings, or approximately 279 dwellings beyond the 671 dwellings estimated by the applicant.

As discussed in Section 3.3.2, the delivery of 950 dwellings is well in exceedance of the vision of the LSPS and would not have strategic merit.

This residential component would be reduced if the medical centre use were approved and delivered. However, that application is in very early stages and there is no guarantee it would be provided. There is also no guarantee that commercial uses would be provided in R1 General Residential zoned land (a potential location for SOHO units), or offices/businesses would be provided above the ground floor in the B2 Local Centre zoned land.

Recommendation:

The calculations above represent a significant departure from the explained intent of the planning proposal. As described by the planning proposal, and outlined above, reduced residential yield was a significant consideration for the revision of the planning proposal.

Council has options to ensure the effects described by the planning proposal is delivered. Council may amend the planning proposal to include a new Additional Local Provision that would require a future staged development application to have a maximum residential GFA of 65,000 sqm. This exceeds the planning proposal's estimates but would allow for a level of flexibility. Such provisions are common in mixed use planning proposals for centres.

It is not recommended that minimum/maximum floor spaces be set for non-residential uses (medical centre or commercial), given that demand for these elements may change over time. Economic considerations are discussed further below.

Flooding

Flood risk for the site is considered in the *Middleton Grange Town Centre Stormwater Management Strategy* (J. Wyndham Prince, 2017), a supporting report for the earlier version of the planning proposal, which included an increased residential on the site. The report considers the flood impacts to the site, assuming installation of a box culvert under the central portion of the site as part of future development.

That report concludes that the site is partially flood prone at the 1% Annual Exceedance Probably (AEP). This area is at the western portion of the site, adjacent to the existing open drain. Previous consultation with the SES and (then) OEH identified concerns with increasing residential density on the site due to potential flood risks and requested additional flood reporting up to the Probable Maximum Flood (PMF) level. These requests were considered in Council's 12 January 2018 report, where it determined it was "generally satisfied with the flood impact assessment report and flood mapping."

The planning proposal has since reduced overall density on the site, reducing the potential future property, workers, visitors and residents at risk from a flood event. As explain in Council 12 January 2018 report, the applicant will be required to provide a detailed flood assessment as part of a development application that considers the specific built form of that development. Information has not been provided that would change this view. As such, flood risk has been shown to be able to be mitigated effectively.

As the box culvert (or any future flood management and mitigation works) would be to enable development on the site, including ensuring the development would not increase risk on surrounding sites, it should be provided at no cost to Council. It should not be considered as a public benefit or used as justification for future development contributions.

Traffic and transport

The applicant has lodged the following traffic and transport studies in support of the application. The reporting is specific to the current reduced densities sought in the October 2019 planning proposal:

- *Traffic Impact Assessment Report for 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue Middleton Grange Rev G* (Revised TIA) (Lyle Marshall & partners Pty Ltd, 2020)
- *Response to Liverpool Council letter dated 28th September 2020 Reference R2-9/2015 Transport Strategy – Middleton Grange Town Centre.*

An earlier version of the Revised TIA was provided with the October 2019 planning proposal. The Revised TIA was prepared following input from Transport for NSW and Council's traffic management experts. This included revising assumptions the earlier TIA made regarding the delivery of upgraded State roads.

The Revised TIA has identified significant issues with the planning proposal's potential congestion impacts on the traffic network on local and regional roads. In response, the following improvements to the road network are proposed:

- Additional capacity at the Cowpasture Road / Hoxton Park Road / Fifteenth Avenue intersection (additional right turn lanes)
- Additional capacity at the Cowpasture Road / Qantas Blvd / Collarenebri Road intersection (additional lane through traffic lane)
- One additional traffic lane in the Cowpasture Road northbound direction between Hoxton Park Road and the M7 interchange.

Council's review of the Revised TIA dated 28 September 2020 has identified the following issues:

- The applicant's modelling has assumed Cowpasture Road would be widened, but Transport for NSW has no plans to undertake that work. It is Council's view that a funding mechanism must be identified for the applicant to make a contribution for the road widening
- The applicant has identified local road upgrades that are required to accommodate the planning proposal. It is Council's view that these are to be carried out at full cost to the developer, and not funded by local development contributions.
- The applicant has assumed a shuttle bus service would be provided that would link the site to regional public transportation. It is Council's view that this service should be provided by Transport for NSW or funded by the applicant for a period of three years.
- The applicant has offered to provide cycling paths around and within the site. It is Council's view that these locations be included in a DCP and approved by Council prior to construction.
- The applicant's revised DCP identifies road network improvements that would require the approval of Transport for NSW, land acquisition for adjacent landowners and further investigation by Council's Traffic Committee.
- The planning proposal would generate the need for passenger bus service improvements, such as extension of local routes. It is Council's view that these services and their funding are to be discussed and agreed to by Transport for NSW.

As confirmed by Council, traffic network improvements are capable of addressing the traffic issues identified in the revised TIA.

In its submission dated 4 November 2020, Transport for NSW has stated that:

- Some additional analysis is required by the applicant to identify impacts on the regional road network
- A funding mechanism for development contributions to off-set traffic impacts on the regional road network should be finalised prior to any amendment
- Future local road intersection signalisation would need to be reviewed and approved by Transport for NSW
- Transport for NSW does not have current plans to enhance local bus services, which are currently at low volumes, though they may be provided in the future for social equity.

The planning proposal itself does not currently include a mechanism to ensure delivery of the road upgrades or active transport components identified in the urban design and draft DCP. Further, Transport for NSW has previously raised issues regarding the suitability of the assumptions regarding the State timeline for upgrading roads, the cost of those upgrades, and the applicant's responsibility to contribute to those upgrades.

The applicant has also assumed that Council would contribute a portion of development contributions towards road upgrades in the Middleton Grange area. Redirection of development contributions would not be consistent with Council's current development contribution framework and should not be considered as an assumption. While Council could potentially reconsider the works to be delivered in its development contribution framework

for Middleton Grange, this should be part of wider consideration of community needs and not to enable a single development outcome.

In its current state, the transport and traffic infrastructure of Middleton Grange is not capable of accommodating the uplift associated with the planning proposal. While Council may require upgrades as part of a planning agreement associated with the planning proposal or a future development application, these will only apply to Council owned roads. As noted above, upgrades to State infrastructure would require a separate agreement with/requirement of State asset owners (e.g. Transport for NSW). These arrangements should be finalised prior to LLEP 2008 being amended in order to ensure road network upgrades would be delivered prior to development of the site.

Recommendation:

- As per Transport for NSW's submission, request that DPIE and Transport for NSW finalise planning agreements (or similar) with the applicant to ensure delivery of required traffic upgrades to accommodate the uplift associated with the planning proposal, as deemed acceptable by DPIE and Transport for NSW.

Urban design

Urban design has been an outstanding issue associated with the planning proposal, as outlined in Council's previous reporting (Council reports in December 2015 and December 2018), the Gateway Determination and the community's response to public exhibition in 2018.

In its response to the June 2018 revision to the planning proposal and the associated urban design report, DPIE confirmed that it was satisfied that its concerns regarding transitions in height and overshadowing were resolved.

In the December 2018 post-exhibition report to Council staff and community concerns regarding overdevelopment were identified. In response to that report, Council resolved to withdraw support for the planning proposal.

In its July 2019 notice of motion, Council reaffirmed its concerns regarding the density and height as outlined in its December 2018 resolution. It also committed to public exhibition of an amended planning proposal, if provided by the applicant.

In response, the planning proposal has reduced the proposed height and density on the site. The applicant has lodged the following documentation describing the urban design outcome of the planning proposal for the site:

- *Urban Design Report* (Chistian Obrien Architects, 2019)
- *Middleton Grange Town Centre Visualisations* (Habit8, 2019)
- *Middleton Grange Landscape Concept* (Habit8, 2019).

In its response to the planning proposal, Council staff have identified the following remaining issues with the planning proposal, as described in Table 11 and Table 12.

Table 11: Urban Design comments

Council comment	HillPDA response
Context	
The proposed town centre development is predominantly surrounded by low rise residential houses on three sides, which needs to be acknowledged & addressed by further stepping down of the built form.	• The Department of Education's concerns regarding integration with the school to the west of the site are addressed in Section 3.4.2. • As described in the urban design document, the planning proposal would enable eight storey development, stepping down to four (14 m) and two (9.5 m) storey development to the west. • The planning proposal would step down to 20 m (about six storeys) to the north and south

Council comment	HillPDA response
	• These character and urban design outcomes are discussed below.
The creek and associated linear open space corridor that runs through the site, is part of a broader hydrological and open space network. The former creek should be reinterpreted through design gestures as part of the overall landscape proposal within further stages of detailed design.	• Design and delivery of the central creek/drainage area is a subject for the DCP and development application.
The design of the public domain needs to integrate the water retention basins on the eastern side of the project site and establish the desired connections across Qantas Boulevard.	• Design of the public domain is a subject for the DCP and development application. • Public domain improvements and maintenance may be negotiated via the planning agreement.
Access and Connectivity	
The shared zone connecting Middleton Drive and Main Street (i.e. referred to as 'The Strip') should be converted into pedestrian friendly zone with wider footpaths and a reduced width carriageway for vehicular access. The traffic speed should be reduced to 40km/hr to ensure pedestrian safety.	• Design and delivery of the internal road network is a subject for the DCP and development application.
Pedestrian priority crossings need to be included along the intersections on Main Street and Qantas Boulevard, to support the east-west active transport corridor (See 1.2 above).	• Design delivery of the active transport network, including integration with the surrounding area is a subject for the DCP and development application. • Delivery of upgrades to the surrounding road network (including active transport) may be addressed in a planning agreement, or as a potential condition of consent.
Built form and scale	
The proposed built form needs to incorporate further modulation of height, by stepping down of building heights, to achieve a more gradual transition with surrounding built form.	• The design of the residential component of the site would be subject to compliance with the Apartment Design Guide. • A development application would likely be referred to Council's Design Excellence Panel, which would provide expert advice regarding the design of the buildings. • Height transitions, as required by the proposed controls, are discussed below.
Density	
The proposed development is high density, given its context (See 1.1 above). The built volume should be reduced and/or redistributed on the site, in order to better relate to the surrounding development, and support a larger sized Village Green (See 2.1 above).	• Distribution of density across the site would be determined through the DCP and development application. • Distribution of density would likely be informed by the Apartment Design Guide, which has requirements for privacy, overshadowing and building separation. • The potential consequences of the proposed FSR controls on residential and non-residential space are discussed in Section 3.3.2 and above.
Sustainability	
Incorporate best practice sustainability measures, within further detailed design stages, including consideration to photovoltaic technology for lighting and electricity on site.	• Sustainability measures is a subject for the DCP and development application.
Amenity	

Council comment	HillPDA response
Provide inviting outdoor spaces for communal use. These areas must consider adjacent building uses and ensure the best indoor/outdoor relationship.	• Delivery of outdoor communal areas is a subject for the DCP and development application.
Ensure the public domain has places for sitting, viewing and quiet contemplation, as well as large group gathering spaces.	• Public domain embellishment is a subject for the DCP and development application. • Public domain embellishment and maintenance may be a subject for a planning agreement

Table 12: Development assessment comments

Council comment	HillPDA response
The planning proposal does not suitably separate the town centre from existing R1 General Residential zoned land	• The planning proposal steps down height over a distance of approximately 40 m between the tallest elements of the town centre and existing dwellings to the west of the site
Four storey buildings along the western edge of the town centre would create conflict/amenity impacts associated with the town centre. This should instead be restricted to two to three storey terrace housing instead.	• R1 General Residential currently allows for residential flat buildings. It is not possible to restrict housing to terrace houses. As such, residential flat buildings should be assumed to be an acceptable land use on the site, with two storey apartments a potential land use in surrounding areas. • It is unclear how a four storey apartment building (the potential built form outcome in the area proposed to be 14 m) results in significantly higher amenity impacts than a three storey apartment building, when set back as proposed • It is agreed that 9.5 m could result in poor amenity outcomes adjacent to detached dwellings when considering the potential for three storey apartment buildings to be built directly along long side/rear boundaries of detached dwellings.
Heights along the permitter of the site (Flynn Avenue and Southern Cross Avenue frontage) to be lowered to four storeys to allow for a gradual transition to surrounding low density land	• The planning proposal would allow for 20 m buildings (approximately six storeys) along Flynn Avenue and Southern Cross Avenue. • It is agreed that this is a severe transition to surrounding two storey development.
The existing 18 m height limit should be maintained in the centre of the site. Other neighbourhood centres allow for 21 metres, which may be acceptable, pending impacts and compatibility. The proposed 2.3:1 FSR exceeds other neighbourhood town centres, which have a maximum FSR of 1.7:1. This FSR should be used instead.	• This contradicts Council's earlier reporting (December 2015) that suggested that increased heights around 28 to 35 m, with FSRs of 2.5:1 could be acceptable on the site. It also contradicts Council's resolution that it supports an FSR of up to 2.3:1 on a portion of the site. • The revised height of 29 m at the centre of the site is generally in keeping with the planning proposal that was approved for Gateway review. Evidence has not been provided that suggests that this is an unacceptable outcome on the site. • As detailed in Section 3.3.2, HillPDA recommends reducing the average FSR on the site (or a flat FSR across the site), with a corresponding reduction in height, to align development outcomes with the LSPS objectives.
The proposed height of 29 m is indicative of nine storey development, not eight storeys (as described in the planning proposal)	• It is agreed that 29 m is likely more reflective of nine storey development. • DCP provisions could require minimum floor to ceiling heights allow for high quality ground floor areas with high floor to ceiling heights. They may also cap the number of storeys. Otherwise, additional height allows for some flexibility in design, such as flooding considerations.
The concept plan only identifies 5,256 sqm of new park.	• This is discussed in the open space considerations.

Council comment	HillPDA response
Commercial uses are not supported in the R1 General Residential zone. Residential uses as proposed contravene the objectives of the zone.	• The objectives of the R1 General Residential zone allow for 'other land uses that provide facilities or services to meet the day to day needs of residents' • Permitted uses include neighbourhood shops, child care and recreational facilities, as well as home businesses. • The planning proposal seeks to add an additional permitted use to the R1 General Residential zoned land for 'restaurant or café' • The planning proposal does not provide evidence supporting the additional permitted use of restaurant or café, aside from a statement that it would activate the street edge. • Permitting the use in the R1 General Residential area, if such uses were developed, would likely result in noise impacts for residents to the west.
Proposed amendments to the road layout are considered to have planning merit.	• Road layouts should be considered indicative and may be changed, pending future development applications.

The delivery of many of the detailed aspects of urban design would be provided as part of a future development application and informed by a development control plan for the site. That development control plan is currently being considered by Council and not part of this planning proposal.

Future development applications would also be required to align with the Apartment Design Guide (or relevant guideline at the time of lodgement), which provides clear guidance for the design expectations for apartment development. As per Council's current referral requirements, it is likely a development application would be required to be reviewed by the Design Excellence Panel, which would provide guidance to the assessment officer regarding the merits of the design.

While the planning proposal includes road layouts and concept designs, these are indicative only. This includes the park and forecourt in the central portion of the site to be rezoned B2 Local Centre. There is no guarantee that the final design outcome would be similar in terms of quality, materiality, setbacks, open space or streetscape. It is highly recommended that Council finalise any planning agreement or development control plan for the site prior to finalising the planning proposal.

Context and integration with the surrounding neighbourhood is a subject of the planning proposal. The planning proposal suggests that the western portion of the site, which transitions from 29 m to 14 m and 9.5 m over a distance of approximately 40 m would result in two to four storey development that would be a suitable transition to the lower density residential in the surrounding area. This would also be buffered by laneways between the site and the houses to the west. On this matter, HillPDA notes:

- The current built form of Middleton Grange is predominantly one to two storeys detached dwellings, with occasional dual occupancies, on 400 to 600 sqm lots
- Planning controls allow for a range of medium density housing, including low rise apartment buildings, within the 8.5 m height limit
- Smaller two storey dwellings on 250 sqm lots are being constructed immediately to the north of the site, representing low/medium density housing types.
- The proposed planning controls for the western portion of the site could potentially allow 3 storey residential flat buildings on lands with a 9.5 m height limit, which would be in line with the 1:1 proposed FSR
- There is no guarantee that the rear laneway at the western portion of the site would provide a buffer between these uses and the detached dwellings to the west.
- No design justification is provided for the 9.5 m height limit instead of the current 8.5 m height limit
- Shadow diagrams appear to be acceptable.

The northern and southern boundaries of the site have proposed heights of 20 m, fronting onto lands with an 8.5 m height limit. This could result in six storey development across the street from two storey development, which is a more severe transition. There is no guarantee that the development would result in a more 'human scale' tower and podium development. This interface is a lower risk than the western boundary, given the road currently exists and buffers the site from the surrounding area.

Recommendations:

- It is not recommended that the restaurant or café additional permitted use in the R1 General Residential, for the reasons described by Council and the lack of evidence of demand provided by the applicant (discussed further below)
- It is recommended that the following options be considered in order to provide height transitions to surrounding areas that are less severe:

  Option A: Introduce maximum storey limits along residential interfaces

  Council may prepare maps that identify the maximum number of storeys permissible along the boundary of the site, with the goal of easing transitions to surrounding lands. These could ensure two storey development is provided along the western boundary and four storey podiums are provided on the north and south boundaries.

  This is not recommended, as it would increase the complexity of LLEP 2008. However, consideration could be given to DCP provisions that give similar effect.

  Option B: Reduce height along residential interfaces

  Council may amend the planning proposal maps to

  - Retain the current 8.5 m height along the western portion of the site instead of 9.5 m
  - Reduce the proposed 20 m height along the northern and southern interfaces to 14 m, allowing for 4 m podiums to be built, with setbacks to the larger 8 storey elements

  This option is recommended as it would preserve the intended transition from two to four and eight storey development from the western residential areas. As shown by the surrounding built form, there are many options for delivering two storey development reliably within 8.5 m height controls. The reduction of the western portion of the site from 9.5 m to 8.5 m could potentially impact the development of commercial ground uses (e.g. cafes) that would benefit from high ground to ceilings. In those instances, a Clause 4.6 variation could allow for minor exceedances.

  The reduction in the northern and southern interface to 14 m would allow for four storey podiums that are complementary to the four storey western components. These podiums would step down to the street and surrounding areas. It is acknowledged that this would technically reduce the height limit from 18 m to 14 m at the southern portion of the site. This is justifiable give the overall increase in height and the use of periphery areas as a transition to soften that overall increase.

  DCP provisions may also be introduced that provide additional guidance for above ground level setbacks and design treatments to enhance the design of the interface with the surrounding area.

  - It recommended that the FSR identified in the maps be reduced to reflect the loss of floorspace at the northern and southern interface. The reduction is best determined by the applicant and their urban design team.

Public open space

The planning proposal suggest that a portion of land in the central area of the site would be provided as public open space. This is identified in Figure 31 on page 78 of the planning proposal. Embellishment and maintenance

of the open space the subject of a planning agreement currently being considered by Council. The open space features prominently on concept design drawings and associated reporting. It is also factored into open space provision associated with the planning proposal.

The planning proposal also suggests that the open space have a height limit of 29 m with and FSR of 2.3:1.

HillPDA notes that:

- The planning proposal does not contain a mechanism that requires development of the open space or public access to the open space
- If delivered, this open space, which is largely within the site, may also be considered as a benefit for the marketing of future development on the site
- No argument has been provided for why the lands should be zoned B2 Local Centre rather than RE1 Public Recreation (like the other park area to the east which is also owned by the applicant).

Council's staff have also identified that the planning proposal could result in an additional population of approximately 534 residents, beyond current controls. However, it is noted that this assumes 3.45 people per dwelling. Actual occupancy is likely to be lower given the apartment-focused construction and would be subject to assessment as part of a future development application. Using Council's benchmark of 2.83 hectares per 1,000 persons, 534 residents would require approximately 1.51 hectares of land. The planning proposal would only result in 7,632 sqm of open space (private and public held). This deficit could either be met by increasing open space at ground level, or as private open space on rooftops.

Exact methods of contributions would be determined at the time of applications, though these calculations show that the space identified in the planning proposal is key to approaching actual demand.

Recommendation:

Given the planning proposal's reliance on the public open space as a benefit, it is recommended the Council consider making the following changes:

- Removing the public open space area from the height of building and floor space ratio maps.
- Mapping B2 Local Centre areas proposed to be used for plazas and open space accessible by the community on Council's Key Sites Map, requiring delivery of those and supporting uses, such as a kiosk.

This would help ensure delivery of the portion of the open space as described by the planning proposal. This would allow for some development (such as a kiosk) as long as the objectives are met. The Key Site mapping is necessary, as removal of FSR and height mapping would allow for interpretation of the objectives of the controls, not necessarily set those controls to zero, potentially resulting in built form that is out of step with the plaza concept.

Council may also consider zoning the land RE1 Public Recreation to ensure the long term delivery of the portion of the site as public open space. However, this may conflict with Council's intent to not purchase the land and should be considered in consultation with DPIE.

This section addresses DPIE Guideline question No.9: How has the planning proposal adequately addressed any social and economic effects?

Social impacts

Social impacts associated with the project are discussed in

- *Social Impact Assessment: Proposed Planning Changes to Middleton Grange Town Centre* (SIA) (Judith Stubbs and Associates, 2016)
- *Middleton Grange Town Centre Planning Proposal: Response to Elton Review of SIA* (Supplementary SIA) (Judith Stubbs and Associates, 2019).

The Supplementary SIA builds upon the SIA, providing supplementary information and commentary regarding a review of the 2016 SIA prepared by Elton on behalf of Charter Hall, the owner and operator of Carnes Hill Market Place.

The Elton review has not been considered, as it is a submission to an earlier planning proposal. As such, the Supplementary SIA's comments regarding the Elton Review have not been considered, except where additional information is provided.

The SIA identifies multiple social benefits and adverse impacts, including:

- Social benefits are associated with the planning proposal include increased housing diversity, local employment opportunity, sustainability associated with walkable uses, public domain amenity and availability of supporting services for the local community
- Social adverse impacts associated with the planning proposal include increased traffic generation, amenity impacts associated with a different urban form, the potential for poor urban integration, the potential for residential development to not be affordable, potential for poor amenity of public areas associated with solar access and the potential for parking impacts on the surrounding areas

The Supplementary SIA identifies additional impacts:

- Social impacts associated with employment would be neutral, with job losses in surrounding centres being met by additional jobs on the site
- Social benefits associated with increased commercial competition associated with development of the site as a new centre

On balance, the SIA and supplementary SIA conclude that the planning proposal would result in social benefits, and that adverse impacts have the potential to be mitigated through planning controls.

The SIA proposes twenty recommendations considering themes such as traffic and transport, amenity and urban design, community and cultural services, housing affordability and open space.

The Supplementary SIA also proposes crime protection through environmental design principles need to be applied to public spaces, particularly the drainage areas to the east and west of the site.

As detailed in the SIA and Supplementary SIA, the recommendations do not necessarily reflect the intent of the applicant or what a future development application would deliver. They are only potential mitigations for the potential impacts associated with a possible future development application. However, they do demonstrate that it is possible for social impacts associated with the planning proposal to be mitigated. Exactly how they are mitigated would be subject to a future SIA for a development application, commitment to mitigation measures and conditions of consent as mandated by Council.

As such, the SIA and Supplementary SIA appear to adequately address potential social effects.

Council has provided a review of the SIA and Supplementary SIA, focusing on community facilities. Council's review notes that the planning proposal includes a reference to a community centre, which is required to meet the relevant infrastructure benchmark of one centre per 5,000 people. HillPDA has not identified a requirement in the planning proposal to deliver that facility.

Council has also noted a shortfall in accessible public open space, the planning proposal's potential additional population creating demand for additional space beyond that identified across the public and private open space portions identified by the applicant. As such, a future development application would need to increase the quantum of open space to around 1.5Ha and/or provide private recreation and green open space on rooftops to reduce pressure on public spaces.

Economic impacts

Economic effects associated with the planning proposal are discussed in:

- *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (EIA) (PPM Consulting, 2020)
- *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* (Retail EIA) (PPM Consulting, 2020).

These documents were prepared following a request from HillPDA to the applicant to prepare a stand-alone economic assessment. HillPDA identified that economic assessment provided with the 2019 planning proposal, with further reporting provided, with additional reporting in August 2020 relied too heavily on economic reporting for the 2016 planning proposal are were not suitable for assessment. As the EIA and Retail EIA were requested to be stand-alone documents, previous reporting is not considered for this assessment.

HillPDA has undertaken a peer review of the EIA and Retail EIA, attached at Appendix D.

The EIA and Retail EIA conclude that:

- In total, 38,626 sqm of uses are proposed for:
  - Medical centres
  - Offices
  - Community centres
  - Child care centres
  - Gyms
  - Neighbourhood shops
  - Small home offices
  - Commercial Entertainment
  - Cafes and restaurants
- The proposed retail component for the site is 10,000 sqm including:
  - 3,800 sqm for a major supermarket
  - 3,224 sqm for a mini major (e.g. green grocer)
  - 1,363 sqm for cafes, restaurants and bars
  - 1,114 sqm for specialty shops
  - 200 sqm for a liquor shop
- The centre associated with the planning proposal would:
  - Not threaten surrounding centres from being able to provide a level of service equivalent to what is presently being provided
  - Result in more affordable and sustainable outcomes for Middleton Grange residents, compared to a smaller 'neighbourhood' centre associated with current zoning
  - Help meet demand for office space associated with the Western Sydney Airport or local office alternatives for firms that seek to provide office space near where workers live
  - Support 2,550 direct jobs in the construction industry and 2,100 indirect jobs during development
  - Support a total of 1,420 jobs associated with retail, office and other commercial uses once developed
  - Represent economic contributions associated with public open space.

Based on its peer review, HillPDA has identified inconsistencies in the EIA's and Retail EIA's representation of the proposed non-residential component of future development, trade area definitions, estimated population growth, growth in retail expenditure and demand for supermarket/retail space. The net effect of this is an overrepresentation of demand for retail and other non-residential floorspace and an underrepresentation of economic impacts on surrounding centres. HillPDA's views on potential impacts are discussed below.

Retail impacts

HillPDA has prepared a revised assessment of potential impacts on surrounding centres, which suggests that a 10,000 sqm retail offering would not result in unacceptable outcomes for surrounding centres. A larger centre would either struggle and/or would result in significant adverse impacts on existing centres.

Office floorspace demand

The EIA is very optimistic about demand for office space in Middleton Grange and the potential to offset a decline in demand for office space in the CBD. HillPDA has not identified an increase in the demand for suburban office buildings. Further, the location is not considered to be remarkably attractive for airport related development, even as an affordable alternative. Overall, the effect of COVID-19 has been a short term, and possibly longer term reduction in demand for office development. This would continue a trend in a weak market for suburb office space outside of Parramatta and Macquarie Park.

Overall, this means it is likely that residential development would out-price office development on the site.

Supporting retail and medical centre demand

No evidence is provided for the demand for the proposed 10,500 sqm of neighbourhood shop and restaurant uses described in the EIA (noting these areas are smaller in the Retail EIA). Further, no evidence is provided for the demand for the 12,529 sqm medical centre use in the EIA. As such, the EIA does not sufficiently support these uses or provide confidence that the jobs associated with the uses would be delivered

Employment impacts

Based on HillPDA's experience, it is more likely that the construction employment for the site would be around 1,200 job-years (representing temporary employment).

Based on an assumption that a 8,638 sqm of retail centre uses (Table 7 of EIA) would be delivered, with a further 12,000 sqm of other supporting non-residential uses (making up the remainder of the ground floor uses), it is estimated that the planning proposal would result in approximately 473 jobs.

Employment impacts

HillPDA notes that the applicant has provided *An Analysis of Lower Floor Spate Ratios at Middleton Grange* (PPM Consulting, 2017) as information to Council regarding the earlier iteration of the planning proposal. The analysis notes that the planning proposal that received a Gateway 'approval' had an average FSR of 2.5:1 (part 1.5:1 and part 2.5:1). The analysis provides some comparisons of land use distribution on the site at lower FSRs and suggests that there would be significant impacts on the viability of the development. It also suggests that the Gateway 'approval' is a signal for investment, and that a change to a planning proposal would put that investment at risk. It also suggests that if the planning proposal is changed, it may delay development of the site, including outcomes associated with planning agreements, due to feasibility issues.

One of the considered scenarios is an FSR 2.0:1, which is denser than the current proposal.

HillPDA notes the following:

- Gateway approvals are not issued. Gateway determinations assess if a planning proposal can proceed under certain conditions, such as amendments, additional studies and consultation. It does not provide any guarantee that the proposed amendments will be achieved. Investment based on a Gateway determination should be considered highly speculative.
- The analysis does not include feasibility testing, nor has analysis provided to HillPDA to date. The analysis provides broad conceptual impacts of the reduction of FSRs (i.e. reduced development outcomes) but provides no information regarding the comparative feasibility of those outcomes. As such, there is no evidence to test the feasibility of the development schemes put forward by the applicant

- Analysis provided by the applicant to date has not demonstrated sufficient demand for the offering provided and the planning proposal does not include a mechanism to guarantee delivery of that land. As such, it is unclear if future development would deliver the employment uses that are described
- The applicant has put forward a revised planning proposal with an FSR that the previous analysis suggested was unviable and would potentially be delayed for ten years. This raises questions regarding the development intent and feasibility, generally.

As such, the analysis is not considered a reliable source of information regarding signals to the development community related to changes in proposed controls, development feasibility generally or development outcomes associated with the proposed controls. It is also important to consider that Council has many considerations beyond development feasibility

Conclusion

There is potential for demand for around 10,000 sqm of retail uses, as described by the EIA and Retail EIA. This demand is largely associated with two mid-size supermarkets and specialty retail. The impact of this demand on local centres is likely to be acceptable.

This would leave around 12,000 sqm of ground floor space to be occupied by other types of non-residential uses, such as cafes, neighbourhood shops, gyms, medical uses and child care. The applicant has not demonstrated demand for these additional uses. Further, the applicant has not demonstrated demand for above ground floor uses, particularly office and medical centre uses. The economic effect of a lack of demand for the non-residential floorspace would be partly borne by a future developer by reduced leasing value and partly on the community in the form of vacant shopfronts.

Overall, it is unclear if there is sufficient demand for the quantum of ground floor non-residential uses associated with the expanded B2 Local Centre zone. However, the ground floor non-residential uses, if developed, would contribute significantly to the LSPS's goal of 500 to 1,000 jobs in Middleton Grange.

Recommendation

The B2 Local Centre are proposed is likely too large to support non-residential ground floor uses to the extent described in the planning proposal. However, due to the subdivision pattern of the land, it is not practical to restrict the area proposed to be zoned to a small footprint. Instead, it is recommended that Council's DCP be amended to require a staged development application for the site that meets the LSPS's employment targets and would be supported by a peer reviewed economic impact assessment.

The economic impact assessment would consider if the application would meet the employment targets of the LSPS and if there was market demand for that floorspace (e.g. demand for ground level uses suitable to promote occupation and activation). If demand were not demonstrated to be suitable, that would be justification to quarantine a portion of the site until there was demand for the uses. This would be important to ensure that the site was not only built to accommodate the residential floorspace without land to develop the applicant's identified employment uses.

It is not recommended that a cap be placed on non-residential uses above ground level. If the market exists for office uses and medical centre uses above ground floor level, those are valid outcomes for the B2 Local Centre. Instead, it is recommended that the average FSR across the site be reduced to allow for employment uses that would align the job generation objectives of the LSPS for Middleton Grange. As detailed in Section 3.3.2, the recommended average FSR is 1.6:1. An alternative would be a flat FSR of 1.6:1 across the site, with height and DCP controls providing guidance on the urban design outcomes.

Similarly, it is not recommended that a provision be put in place requiring the 12,529 sqm medical centre use, unless associated with bonus residential yield beyond the proposed 671 dwellings.

3.4.2 Section D – State and Commonwealth Interests

This section addresses DPIE Guideline question No.10: Is there adequate public infrastructure for the planning proposal?

Public transport infrastructure

Public transport infrastructure is considered in question 8. Overall, public transport infrastructure is limited, but does provide a roughly 30 minute commute to the Liverpool centre. While the planning proposal suggests that there would be additional access via the Fifteenth Avenue rapid transit route, there is no plan to provide a local stop.

Traffic infrastructure

Traffic infrastructure is considered in question 8. The existing road network is not suitable for the demand modelled by the applicant. As such, upgrades will be required to Council and State road assets. Council road upgrades can be mandated as part of a condition of consent for a future development application. While the applicant has identified the potential for existing development contributions to be used for upgrades, this is not a valid use of funds.

Contributions for upgrades to State roads should be settled prior to finalisation of the planning proposal, as per the above recommendation.

Social infrastructure

Council owned social infrastructure surrounding the site is limited. Development contributions are currently being collected to deliver a community facility in the area. The planning proposal would assist in delivery of this facility by contributing towards those funds or otherwise

The planning proposal would also increase public open space associated with the RE1 Public Recreation zone, though it is noted that the current structure of the planning proposal may require Council to purchase the land from the applicant, rather than have it dedicated. The equity of this outcome should be considered further as part a development application, particularly given the demand for open space associated with the uplift of the site.

Further, it is recommended that Council reconsider its development contributions and works schedule, factoring in demand associated with the planning proposal.

This section addresses DPIE Guideline question No.11: What are the views of state and Commonwealth public authorities consulted in accordance with the Gateway determination?

Following receipt of the October 2019 planning proposal, it was referred to the following agencies for further comment:

- State Emergency Services
- Transport for NSW
- NSW Environment Energy and Science (previously Office and Environment and Heritage)
- NSW Department of Education

Responses are discussed in Table 13. Full submissions can be found at Appendix E.

Table 13: Summary of public authority responses

Authority	Comment
Transport for NSW	Initial comment was received 16 November 2019. The submission identified several issues regarding assumptions for traffic generation and the proposed upgrading of State roads. This resulted in further consultation and revision of traffic reporting, as discussed as part of Question 8. Further comment was received from Transport for NSW on 4 November 2020. That submission identified the following: • Some additional analysis is required by the applicant to identify impacts on the regional road network • A funding mechanism for development contributions to off-set traffic impacts on the regional road network should be finalised prior to any amendment • Future local road intersection signalisation would need to be reviewed and approved by Transport for NSW • Transport for NSW does not have current plans to enhance local bus services, which are currently at low volumes, though they may be provided in the future for social equity.
NSW Environment Energy and Science (EES)	The EES submission raised the following issues: • Existing floor risks within the site are low to medium, reflecting that they do not pose high hydraulic hazards or significant evacuation difficulties • The applicant's stormwater management strategy does not include a sensitivity analysis under projected climate change scenarios, as requested by previous OEH submissions.
NSW Department of Education	The NSW Department of Education submission raised the following issues: • Potential uncontrolled surveillance of the school indoor and outdoor spaces • Potential for overshadowing during winter months • Potential amenity impacts associated with construction • Potential traffic impacts associated with construction and operation. These issues may be addressed as part of a future development application once the land uses and urban design interfaces are finalised.

CONSULTATION

4.0 CONSULTATION

Following receipt of the revised October 2019 planning proposal Council placed it on public exhibition from 13 November to 11 December 2019 (29 days).

The planning proposal was advertised via:

- Council's website
- Notice in the local newspaper
- Email to people who made submissions during the 2018 public exhibition.

The outcomes of the public exhibition are discussed below.

For reference, the 2018 public consultation period resulted in 867 submissions, of which 813 (93.7 per cent) were objections.

4.1 Public exhibition

During the consultation period, a total of 240 verified submissions were received by Council. Submissions were collated and summarised by Council staff. HillPDA was provided with a spreadsheet identifying:

- The submission number
- If the submission objected, supported or was mixed
- A summary of issues raised in each submission
- A tally of how many times each general issue type was raised.

Of the 240 verified submissions:

- 100 clearly objected to the planning proposal
- 136 clearly supported to the proposal
- Three were mixed.

Common reasons for objecting and supporting the planning proposal are outlined below, along with a count of the times the issue was raised, and HillPDA's response based on the information provided by the applicant, Council's internal referrals and responses from public agencies.

Counts are provided for a broad understanding of the community's perception of issues and benefits and should not be considered as a validation or statement of importance of the issue. Further, submissions commonly raised multiple issues, including positive and negative issues, and as such should not be added together to determine an overall community view.

Table 14: Opposition submissions and responses

Item	Matter	Comment	Count
1	Need smaller centre (or existing controls)	Current planning provisions do not cap commercial floorspace, only require non-residential uses at the ground floor of B2 Local Centre zoned land. As such, ultimate provision beyond the minimum ground-floor allotment is highly variable and largely determined by market forces. As discussed in HillPDA's economic review at Appendix D, approximately 473 jobs are anticipated to be generated by the site if developed with the minimum amount of commercial floorspace. This is broadly in line with the LSPS's employment target of 500 to 1,000 jobs. However, the applicant has not demonstrated demand for the non-residential/commercial floorspace identified in the planning proposal. As such, a smaller centre with an average FSR of 1.6:1, with associated reductions in height would be more in line with demand while meeting the strategic vision of the LSPS.	59
2	Planning proposal would result in overdevelopment of the site	Recommendations have been made to cap the residential yield of the site to what has been described as the outcome of planning proposal by the applicant. Recommendations have also been made to reduce height to better transition to the surrounding area. The recommendation to require a peer reviewed economic impact assessment as part of a staged development application would help ensure that ground level non-residential/commercial development aligns with market demand, while also allowing for the development of the medical centre, should there be demand. Traffic reporting suggests that, pending upgrades, the traffic network is capable of accommodating the development associated with the planning proposal. Pending adoption of the recommendation, the planning proposal's potential development is within the capacity of Middleton Grange to accommodate and would assist in the stated position of Council to enable development of a centre at the site.	41
3	Traffic, congestion and parking	Traffic reporting suggests that the local road network will be capable of supporting the potential development of the site, pending contributions from the developer to upgrade local roads and intersections. Upgrades to surrounding State roads would be required to be arranged with Transport for NSW. Public transport access to the site is poor, and there are no plans from public transport service providers to increase provision. As such, it is likely that the new residents would be highly reliant on private vehicle transportation for non-local trips. Parking provision would be subject to a future development application, as required by the relevant development control plan.	41
5	Too many dwellings	Recommendations have been made to cap the residential yield of the site to align with the planning proposal's description of the development outcomes and LSPS vision for approximately 500 to 1,000 additional dwellings to be provided in Middleton Grange by 2036.	21
6	Height of buildings, urban form, character, overshadowing and privacy	Existing reporting suggests that the built form enabled by the proposed controls would not result in unreasonable impacts to the built environment. However, recommendations have been made that would help ensure that the development of the site would better transition to surrounding uses. Future applications will be required to demonstrate alignment with design controls, including ensuring that overshadowing, privacy and character impacts are reasonable and justified. In particular, the Apartment Design Guide (or relevant guidelines of the day) would provide clear guidance on overshadowing, height transitions and building separations from surrounding areas.	12
7	Lack of infrastructure	The Department of Education has not raised any concerns regarding the planning proposal's impact on the capacity of the neighbouring school. Traffic and transport matters are discussed above. The proposed development would make contributions to Council's development contributions fund. The relevant development contributions plan may be revisited at any time prior to approval of a development application to capture contributions for new infrastructure.	12

Item	Matter	Comment	Count
8	Previous opposition	Noted.	10
9	Opposition to hospital use	The proposed medical centre use is subject to a separate planning pathway, which is determined by DPIE and the relevant minister/delegate. The uses are already permitted on the site. The outstanding matter is the bulk and scale of the medical centre uses. While local controls are to be considered as part of the major project application process, they can be exceeded if justified.	10
10	Other areas are more appropriate	As discussed above, the proposed land uses are generally in line with Council and State strategic priorities. However, the applicant has not demonstrated that there is sufficient demand to cater to the floorspace proposed.	6
11	Noise and amenity	The site is already envisioned to be a centre use, which would result in additional noise. However, noise and amenity impacts would likely arise from additional traffic associated with the planning proposal. These matters would be required to be addressed as part of future development applications.	6
12	Reduction in property values	The centre use is already permissible under existing controls. Evidence has not been provided that suggests that the planning proposal would result in changes to property values.	4
13	Other issues	Issues included preservation of the natural environment and potential antisocial behaviour resulting from road design. Current zoning and strategic frameworks do not envision the site to be set aside for environmental protection as a major priority. Potential for antisocial behaviour can be examined as part of a future development application.	2

Source: Liverpool City Council, HillPDA

Table 15: Supporting submissions and responses

Item	Matter	Comment	Count
1	More convenient shops/restaurants et cetera	The planning proposal would not necessarily result in additional shops and restaurants beyond what is currently permissible. However, it may encourage development of the site and provision of those uses that do not currently exist.	75
2	Will stimulate economic growth and generate activity	The planning proposal may encourage redevelopment of the site with these potential outcomes.	22
3	Increases supply of housing/greater affordability	The planning proposal would increase residential capacity, which may result in approximately 671 additional dwellings, pending adoption of the recommended residential yield cap.	18
4	Will generate employment	The planning proposal may encourage redevelopment of the site with these potential outcomes.	12
5	Support medical Centre/hospital	Delivery of the medical centre is largely a market-driven exercise. The planning proposal may assist with the approval of the application (once lodged) but does not necessitate its delivery.	12
6	Support increased green space	The planning proposal delivery of public open space is subject to a separate planning agreement, as well as agreement for Council to purchase land proposed to be RE1 Public Recreation.	8
7	Will increase property values	The centre use is already permissible under existing controls. Evidence has not been provided that suggests that the planning proposal would result in changes to property values	6
8	Wants local Centre	The planning proposal may encourage redevelopment of the site with these potential outcomes.	5

Source: Liverpool City Council, HillPDA

4.2 Institutional submissions

One institutional submission was received that objected to the planning proposal: *Submission on the revised Middleton Grange Town Centre Planning Proposal* (Design+Planning, 2019), prepared on behalf of Charter Hall.

Institutional submissions hold no more weight than the submissions received from the general public. However, they provide additional context to support reasons for objection. The submissions are highly detailed and have not been assessed for accuracy. Issues raised include:

- Middleton Grange is not suitable for more than a neighbourhood centre
- Proposal is not demonstrated to be viable
- Community centre in RE1 Public Recreation is an effective reduction in public open space
- Minimal change in height controls do not explain how dwellings have reduced from 912 to 671 apartments
- Analysis is required to justify the proposed zone and height amendments, considering the increase in B2 Local Centre zoned land of approximately 13,000 sqm
- Proposed 50,000 sqm of non-residential GFA is not supported by the planning proposal or supporting reports
- Previous applicant economic analysis has indicated that reduced dwelling yield, similar to the current 671 dwellings, would result in a non-viable centre
- Urbis reporting suggests significant errors regarding market need, demand and impact
- Supplementary SIA has largely responded to previous concerns, but has not fully addressed relevant social impacts
- Issues associated with the TIA likely under estimate traffic impacts.
- Urban design outcomes are bulky and not representative of the vision of the site as a neighbourhood centre
- Reduced height has not significantly altered the built form outcome of the site
- Proposed height exceeds that found in similar centres that are more accessible by public and private transport (generally 21 m to 24 m).

These concerns are largely addressed by HillPDA's recommendations, including residential yield, urban design and traffic. It is noted that land zoned B2 Local Centre is generally capable of full utilisation of GFA for commercial/retail purposes unless specific provisions are included to limit such floorspace.

HillPDA's recommendations regarding a DCP requirement for a peer reviewed economic impact assessment as part of a staged development application would help ensure that the applicant would align commercial floorspace with demand. This would reduce the likelihood of overprovisioning, which would otherwise be detrimental to the community. Commercial uses would continue to be permissible above ground level, with the DCP requiring a staged development application enable the delivery of the LSPS vision for Middleton Grange. Provision of above ground level floorspace, such as a multi-level shopping centre, would be a matter for future development applications to demonstrate viability and demand. HillPDA has recommended a lower average FSR of 1.6:1 across the site to reduce the likelihood of oversupply and associated negative impacts, while also aligning with the LSPS.

CONCLUSION

5.0 CONCLUSION

The planning proposal's intent to increase density on the site is, on balance, is consistent with the broad strategic vision for Middleton Grange Town Centre, as outlined in the LSPS, District Plan and Regional Plans. However, significant issues have been identified regarding the quantum of residential and commercial floorspace that the planning proposal could enable, which would be inconsistent with the LSPS.

The planning proposal largely demonstrates site specific merit by allowing for development of a commercial centre to meet the local retail and services needs of the growing Middleton Grange population. However, the planning proposal may result in significant oversupply of commercial floorspace, which the applicant has not demonstrated demand for. HillPDA's peer review of the applicant's economic reporting indicates that the market demand for retailing and office floorspace is likely to be significantly less than that envisioned by the applicant.

The planning proposal does not include any mechanism that would:

- Limit the delivery of residential floorspace to the levels described in the planning proposal
- Ensure the viability or delivery of the commercial floor space as described in the planning proposal.
- Ensure the delivery of the public realm benefits identified in urban design reporting and the draft DCP
- Ensure the delivery of the medical centre use.

Ultimately, delivery of the centre will be dependent on future development applications, including the major project application for the medical centre use. For this reason, it is suggested that Council strengthen the proposed amendments to LLEP 2008 to ensure that the potential benefits of the planning proposal for the community and job creation are captured.

It is recommended that Council require the following prior to submitting the planning proposal to DPIE for finalisation:

- A site-specific development control plan to be endorsed by Council (recommended outcomes discussed below)
- Any outstanding planning agreements be finalised.

HillPDA also suggests that the risk of the planning proposal resulting in unsatisfactory development outcomes could be minimised by:

- Capping overall residential floorspace to 65,000 sqm GFA
- Limit the average FSR across the site to 1.6:1 (including the potential for a flat 1.6:1 FSR across the site) to limit the potential for oversupply of commercial uses
- Make amendments to Part 2.5 of Council's DCP that would:
  - Require a staged development application for the site that is supporting by a peer reviewed economic impact assessment that demonstrates alignment with LSPS employment goals.
  - Require the economic impact assessment justify the quantum of employment floorspace provided (e.g. not oversupplying ground floor uses), as per the requirements of Section 4.15(1)(b) of the EP&A Act.
  - Should demand not be suitable, quarantine stages of the development until demand be demonstrated, ensuring the LSPS vision and future development outcome identified by the applicant can be achieved over time.
- Maintain the current 8.5m height limit on the area proposed to have height limit of 9.5 m
- Reduce the proposed maximum building height at the northern and southern interface from 20 m to 14 m
- Remove the area of the proposed B2 Local Centre public open space from the height and FSR maps and instead map on the Key Sites Map for open space and supporting uses.

- Remove the proposed additional permitted use of 'restaurant or café' from the proposed R1 General Residential zoned area.

HillPDA also notes that Clause 7.29 of the LLEP 2008 restricts the area of business premises on B2 Local Centre land in Middleton Grange to no more than 25 per cent of the GFA of all buildings. While the applicant has not identified that clause as an issue, Council may consider removing that clause and associated mapping as part of the planning proposal. The clause would limit business premises floorspace, a prescriptive outcome that HillPDA has not been provided with evidence to support as part of this assessment.

HillPDA is satisfied that with the above recommendations implemented, the planning proposal can deliver community benefit and preservation the established retail hierarchy while allow a level of flexibility to respond to market conditions.

APPENDIX A : PLANNING PROPOSAL MAPS (AS PROVIDED BY APPLICANT)

Part 4 – Mapping

Maps illustrating the current Liverpool LEP 2008 controls, including the land zoning, maximum height of buildings and floor space ratio maps are located in the Introduction to this Planning Proposal.

The maps for the proposed amendments to the Liverpool LEP 2008 are included below:

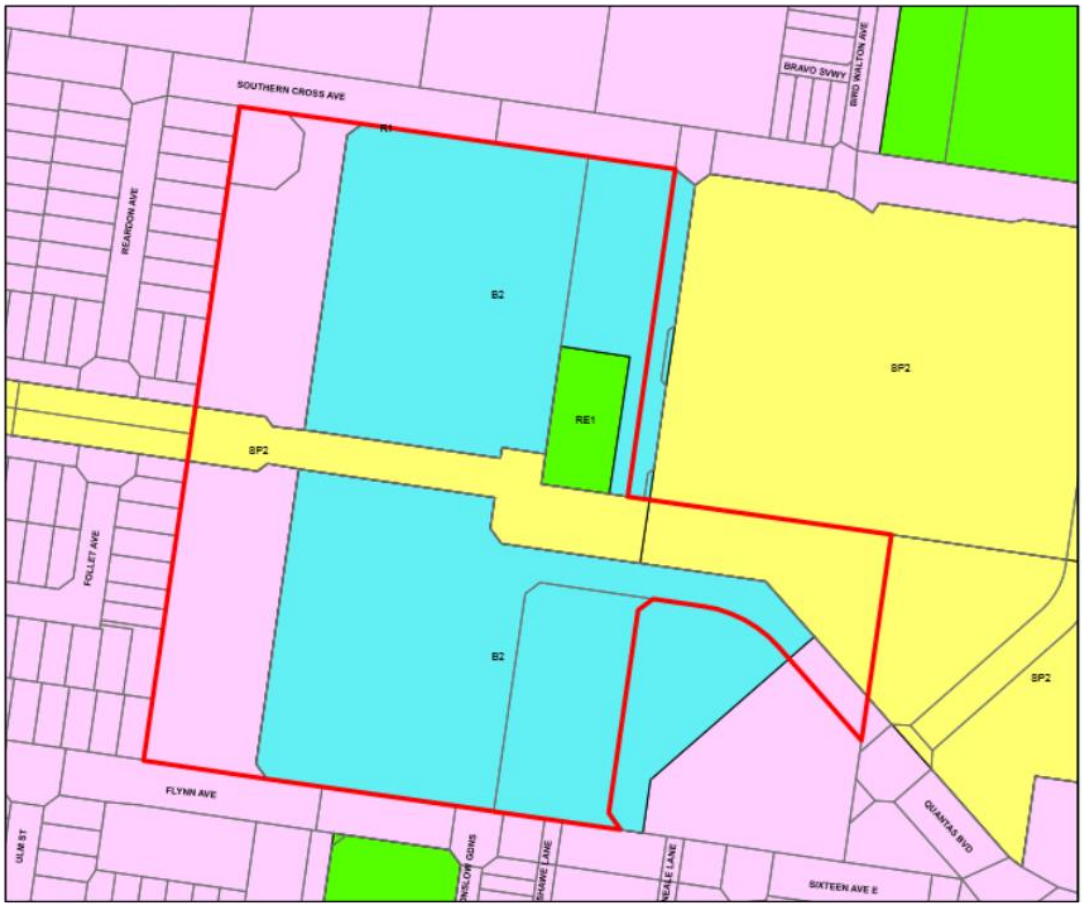


Figure 32: Proposed Land Zoning Map

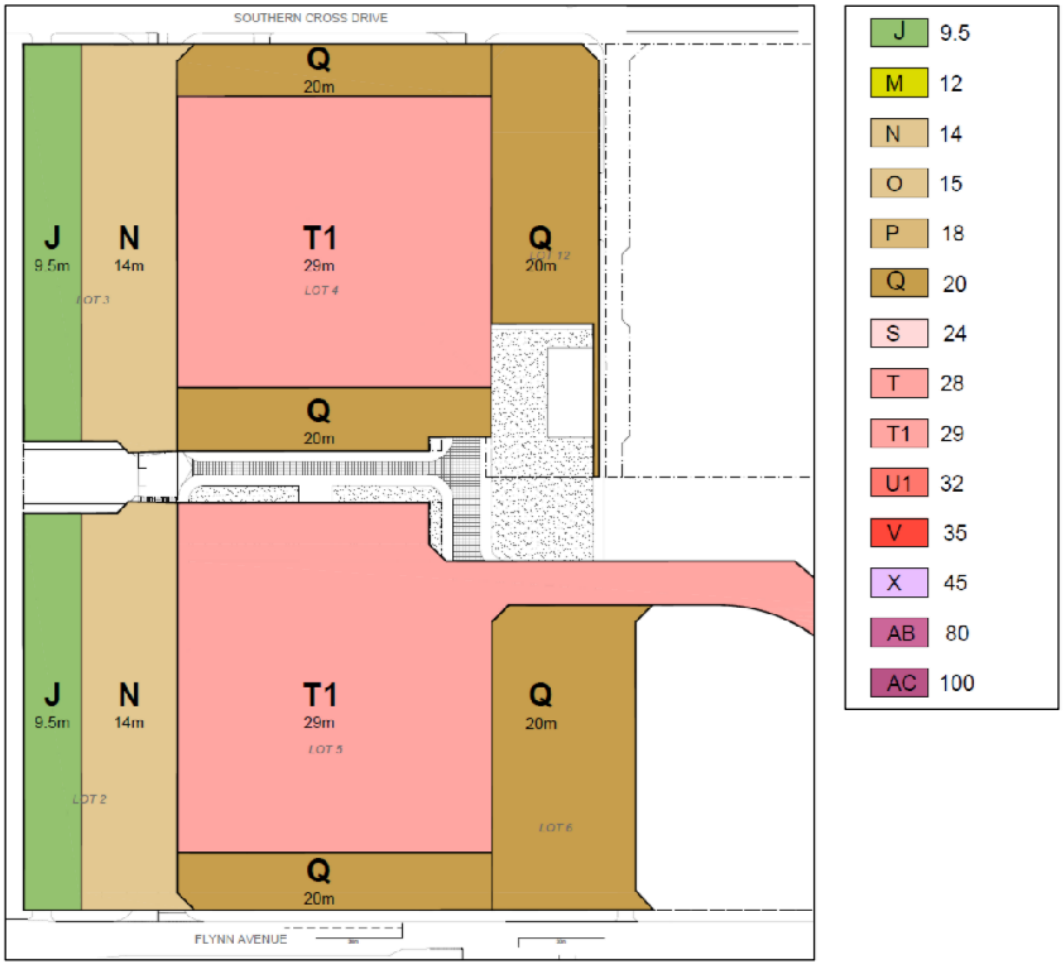


Figure 33: Proposed Maximum Height of Buildings Map

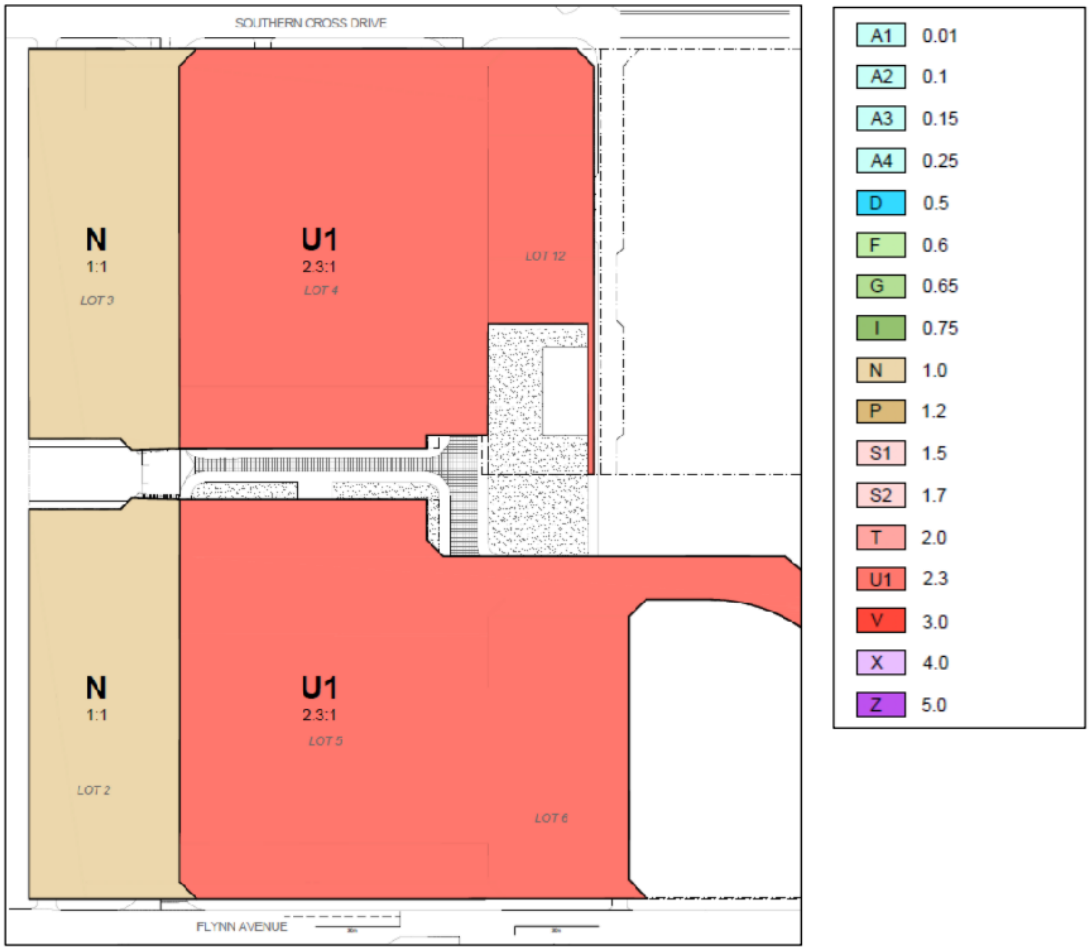


Figure 34: Proposed Maximum Floor Space Ratio Map

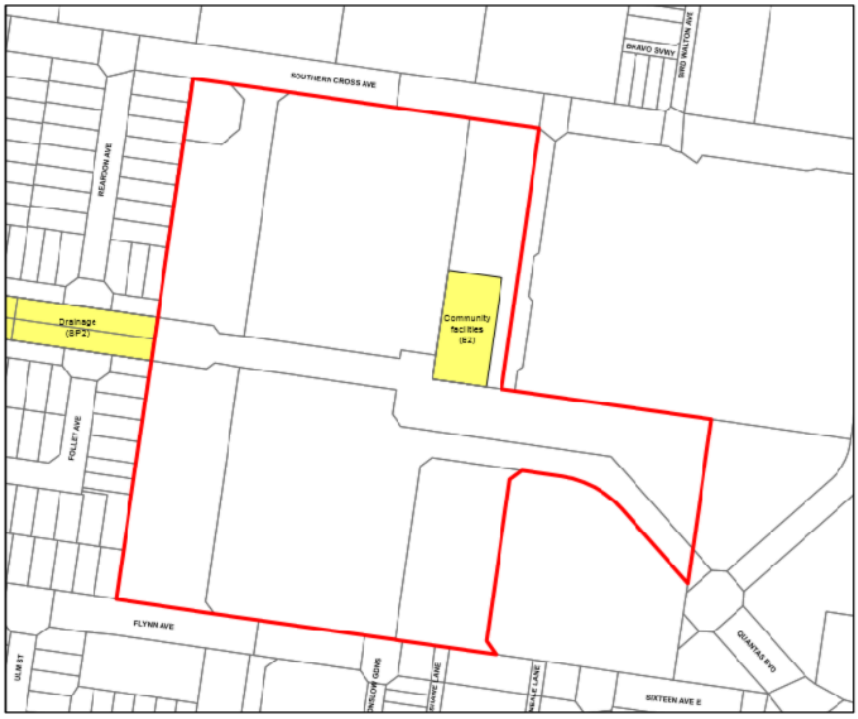


Figure 35: Proposed Land Reservation and Acquisition Map



Figure 36: Proposed Flood Mapping Map

APPENDIX B : ADDITIONAL INFORMATION PROVIDED BY APPLICANT

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Middleton Grange Town Centre
Response to Submissions



Submitted to Liverpool City Council
August 2020

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1. Introduction

This report provides a comprehensive response to the submissions and matters raised during the exhibition period of the Planning Proposal to amend the zone and principle development controls for the Middleton Grange Town Centre.

Of particular focus, the report and attachments respond to matters raised by public authorities, including the RMS and capacity of existing and future road capacity. Further, the report considers in detail the matters raised by the Charter Hall submission with a detailed consideration of matters related to traffic, social, economic and urban design impact.

Many issues raised have been responded to previously through the planning proposal process, with the subsequent feedback from the community shifting, with objections reducing from 94% to 41% and submission in support increasing from close to 6% to 57%.

1.1 Revised Planning Proposal

A Planning Proposal was originally lodged with Liverpool City Council in June 2015. The matter was considered by Council at its meeting of 16 December 2015, where Council supported the progression of the Planning Proposal to the next stage in the Part 3 Plan Making process. A Gateway determination was issued by the delegate of the Greater Sydney Commission on 15 August 2016. The Gateway endorsed the Planning Proposal subject to conditions that would need to be addressed and approved prior to the progression of the proposal to the next stage being consultation and exhibition.

A revised traffic assessment was submitted to Council in October 2017, an updated flood impact assessment in December 2017 and revised Planning Proposal in July 2018. The revised planning proposal was endorsed by the Department of Planning and Environment in accordance with the Gateway conditions and the planning proposal was publicly exhibited from 29 August to 26 October 2018.

A total of **867 submissions** were received during public exhibition that consisted of:

- 813 objections (94%);
- 649 unique and verifiable submissions;
- 178 form letters objecting to the proposal (of which 53 were accompanied by further comments);
- 3 institutional submissions, one each from Parkbridge Community Association, Charter Hall (owners of Carnes Hill Shopping Centre), and the Serbian Cultural Club St Sava;
- One petition in support with 73 signatures;
- One petition in objection with 830 signatures; and
- Overall, 608 (94%) of the 649 verifiable submissions received objected to the planning proposal.

As previously discussed, a number of concerns were raised by the community during the public exhibition period. Some practical concerns were raised, of particular interest was:

1. The maximum heights being proposed (i.e. 12 storeys);
2. The amount of apartments;
3. The amount of open space;
4. The lack of investment in public infrastructure over a number of years in the suburb of Middleton Grange and the impact that the development of the town centre may have on the road network.
5. The erroneous claim that the proposal was to be mainly a social housing development.

In response to the concerns raised by residents and constituents the development concept was refined, and an amended planning proposal was subsequently prepared and submitted.

Key amendments to address the community's concerns included:

- The maximum height within the town centre was amended from a maximum of 12 storeys to a maximum of 8 storeys, which was also only for part of the central portion of the development.
- The area of public open space within the town centre has been doubled through the provision of an additional 3,000sq.m of open space within the centre of the site.
- The creation of new laneways and through site links reducing building bulk and long street frontages and supporting connectivity and legibility.
- A reduction in the town centre gross floor area (GFA) from that endorsed by Council in 2015, and a further reduction in apartments from the planning proposal exhibited. The exhibited planning proposal contemplated up to 912 apartments within the town centre; the number of apartments within the town centre has contemplated by the revised planning proposal is reduced to approximately 671.

1.2 Exhibition Period

The revised planning proposal was publicly exhibited from Wednesday 13 November 2019 until Wednesday 11 December 2019.

There were a total of **240 verifiable submissions** received from the public during the exhibition period, and one petition in support of the proposal. The submissions consisted of:

- 137 in support of the proposal (57%);
- 100 objections (41%);
- 2 mixed submissions and 1 indeterminate;
- A submission from Charter Hall (the owners of the Carnes Hill shopping centre);
- A submission from Education NSW; and
- An informal submission from Transport for NSW, that resulted in a number of meetings and additional assessment through a collaborative process between the agencies and proponent.

Importantly, the percentage of objections between the first exhibition of the planning proposal in 2018 and the revised planning proposal in 2019 has fallen from 94% to 41%. Correspondingly, the number of submissions in support of the proposal has risen from close to 6% to 57%. This is a remarkable change in attitude from submitters, and demonstrates (as per the submissions):

- The need and desire for a town centre providing goods and services, entertainment, employment, and medical facilities;
- The need and desire for open space, and playground facilities for children;
- Support a focal point for the community, providing life and vibrancy;
- The need for walkable neighbourhoods and infrastructure upgrades;
- The development of a town centre, on land identified for this use for over a decade and still vacant;
- The provision of jobs, capturing a local workforce that currently travel to seek employment; and
- And provide housing that people can afford, allowing children to stay in the area.

2 Response to Charter Hall Submission

During the public exhibition period the council received a detailed submission to the planning proposal from design+Planning on behalf of Charter Hall, the owners of the Carnes Hill Shopping centre, founded on the basis that the proposal was an overdevelopment of the site and would create competition with other centres in the LGA, such as Carnes Hill.

The submission included responses to a number of reports that supported the planning proposal, with consultants engaged to undertaken this work. This included:

- Middleton Grange review of economic impact, undertaken by Urbis;
- Response statement in relation to Middleton Grange Town Centre Planning Proposal SIA Review, undertaken by Elton Consulting; and
- High Level Transport Engineering Peer Review, undertaken by GTA Consulting.

The authors of the reports that supported the planning proposal have considered the submitters review and prepared a response to the items raised. These responses are considered and summarised below, and attached as follows:

Attachment 1 – Economic Impact Analysis prepared by PPM Consulting
Attachment 2 – Social Impact Response prepared by Judith Stubbs & Associates
Attachment 3 – Traffic Impact Assessment Report prepared by Lyle Marshall & Partners

2.1 Retail and Economic Impact Response

PPM Consulting has prepared a response to the latest report by Urbis and the design+planning submission.

It is noted that Urbis states that the MacroPlan Dimasi report is unreliable and that an alternative trade area should have been used for the analysis. While we agree that the inputs are from 2015, their magnitudes remain relevant. While Urbis provides assertions that floorspace productivity levels should be higher, it does not give any updated population forecasts for either the main trade area used by MacroPlan Dimasi, nor for what Urbis believes the main trade area should be. Therefore, the Urbis report merely deals with one side of the equation.

In the absence of a full report – with full workings – countering the MacroPlan Dimasi report, the conclusions made by Urbis are merely assertions. The key items raised by Urbis in the Urbis December 2019 report and the submitter are considered by PPM Consulting in the attached report (Attachment 1) and extracted as follows:

Matters raised by Urbis/planning+design	PPM Response
1. The report prepared by PPM Consulting titled: *'Middleton Grange – Response to Objectors' Submissions on Economics'* does not adequately	The PPM October 2019 report does address the analysis and opinions (it should be noted Urbis's opinions are highly subjective) and provides a large amount of evidence that should give pause to anyone reading their 2018 report.

	address or change any of the analysis and opinions presented in our October 2018 report. The proposed development is highly speculative and ill-founded.	The fact that a consultant can produce a UDR which states *"The increase in density will provide an uplift of new dwelling supply in the area and an increase in the potential residential population which will result in creating an active Town Centre that promotes a sense of place that is safe, vibrant and attractive,"* and then five years later consult for the objectors, calling the proposed development *"highly speculative and ill-founded"* places both the proponent and Urbis in an awkward position. If the Urbis reports of 2019 in favour of the objectors is given any weight, it has the potential to undermine confidence in the entire NSW planning system and undermine investment. (Note Urbis prepared the urban design report that supported the original planning proposal application by the proponent). The attached report presents updated analysis of the estimated effect of a new Middleton Grange Town Centre on Carnes Hill Marketplace.
2.	The Macroplan report effectively demonstrates that the proposal is an over-development, as market demand is insufficient to support a centre of the scale proposed and the impacts are high.	The MacroPlan Dimasi report was used as a basis for the planning proposal from 2017. This is the planning proposal based on the Urbis 2015 UDR. In 2017, the planning proposal did not characterise the proposal as an over-development and concluded that demand was sufficient to support a centre of the scale proposed. The conclusion was that the impacts were not high. This is confirmed by the current analysis. This highlights the conflict between the Urbis 2015 UDR and the Urbis reports for objectors from 2019.
3.	The trade area defined for the proposed Town Centre at Middleton Grange is insufficient to support a centre of the scale proposed and a tighter trade area, typical for a local centre, would be appropriate.	If Urbis believes that this is the case, it should have undertaken its own full trade area analysis, which is open for any competent consultant to undertake. The fact that this assertion is made without full evidence, and in the face of earlier support for the development, suggests that this statement is highly speculative and partisan. This report presents such an updated trade area analysis and shows that the impacts are not expected to be high, especially by 2031. The main trade area estimated to be served by the proposed Middleton Grange Town Centre has been defined taking into consideration all of the factors listed under section 4.1 of the

	PPM Consulting Report (Attachment 1). in particular the following were considered: • the fact that the retail contains only the following competing centres: o Carnes Hill Marketplace, 2.8km from the proposed Town Centre o The Valley Plaza, 4.8km from the proposed Town Centre o Hoxton Park Aldi, 1km from the proposed Town Centre • the Liverpool CBD (comprising Westfield Liverpool and other specialty shops, cafes, bars and restaurants and other services, is 7km to the east, which limits the extent of the trade area to the east. • the central position of the subject site within the Middleton Grange current and future suburb, which provides excellent access to a growing local population. • the M7 to the north-east.
4. The impact assessment provided by Macroplan Dimasi, even at low trading levels, indicates high impacts on the planned network of centres. Usually, competitive developments that are warranted result in relatively low impacts and consequences, simply because the market is large enough to support an expanded network. In this case it isn't.	While it rejected the MacroPlan Dimasi report in its earlier report, Urbis appears to rely on it to make its highly selective point. The MacroPlan Dimasi report showed that there is a likely deficit of retail floorspace in the main trade area by 2031, even with expansion of other current centres. This report confirms this. While Urbis makes claims that the modelling should be different, leading to different conclusions, it does not provide a full report that contradicts the MacroPlan Dimasi report, and therefore can only be regarded as assertion. This report presents such an updated trade area analysis and shows that the impacts are not expected to be high, especially by 2031. That said, this report has shown that, while there may be some short-term effects on Carnes Hill Marketplace, by 2031, it is estimated that it will be trading well above its 2019 levels, even with the development at Middleton Grange.
5. The Western Sydney Aerotropolis undoubtedly represents a significant investment and change to Western Sydney. The applicant has not provided an updated EIA or any analysis of the need and demand for additional floorspace due to the	Urbis does not provide any evidence that the narrative in the PPM October 2019 report draws conclusions that are in any way false.

	Aerotropolis, other than the narrative provide in PPMs Response Report.	
6.	The location of Middleton Grange between the future airport may result in it being a beneficiary of the Aerotropolis to some degree, which may improve residential take-up rates, but it is highly unlikely to change the extent of the trade area of a Town Centre at Middleton Grange, or the market potential for further retail development, due to the planned retail/commercial facilities which will be part of the airport development.	The Urbis report completely misses the point that the PPM October 2019 report was making about the proximity of Middleton Grange to the Aerotropolis. The fact is that airports require a large range of commercial and retail development with varying distance from them. Some commercial tenants may be able to afford to rent premises at the airport itself, or on airport land. However, there will be many potential tenants who either cannot afford the high rents that proximity to the airport will attract, and will be looking for somewhere that is close – within a short drive or bus ride – but not at the airport itself. To suggest that the airport will not create a demand for commercial and industrial land that overflows the airport itself in a significant way is wrong. In this, Urbis misses the point about Middleton Grange's location near the airport and near the main access road, Fifteenth Avenue. It is not about attracting residents, but rather attracting commercial tenants. In any case, the number of residential apartments is significantly lower than the was proposed in the Urbis 2015 UDR.
7.	The updated Liverpool Business Centres and Corridors Strategy will include an updated retail catchment analysis with consideration to recent growth forecasts, Strategy and Local Centre hierarchies and the implications of the Western Sydney Airport and surrounds. This is yet to run its course, and in this respect the Middleton Grange application is premature.	Urbis should not be speaking for the Council. In any event, Urbis did not think Middleton Grange was premature when it wrote the Urbis 2015 UDR. Five years on from that, this study shows that there is a significant supermarket gap currently and ongoing. Further, the Council was clear in its views on the role and hierarchical status of Middleton Grange when it resolved at its meeting of 29 April 2020, when considering the draft Centres and Corridors Strategy, to classify Middleton Grange as a town centre. Therefore to claim the application is premature, when it complies with the adopted and emerging strategic planning framework is simply to true.
8.	Even with consideration of the Western Sydney Aerotropolis, the recommended hierarchy and supportable floorspace for Middleton Grange is reliant on the catchment's resident population and their spending habits. The new airport will likely result	This statement is highly speculative and is not supported by evidence. It is just an assertion that Urbis makes and is based on highly speculative opinion. Middleton Grange Town Centre has been part of the retail hierarchy for over a decade. In the 2006 census, the

	in greater passing traffic, however it is highly unlikely to result in retail/commercial floorspace of the scale proposed in the most recent application for the Middleton Grange Town Centre. It is important to note that retail/commercial facilities will be part of the airport development and these will be of a significant scale. Middleton Grange's position in the hierarchy, post Aerotropolis, will, in our view, remain as currently planned.	population of Middleton Grange was 283. The population grew to 515 at the 2011 census. By the 2016 census, the population had grown to 5,177 – 10 times the population in 2011, with more and faster growth forecast. The MacroPlan Dimasi report, which was part of the planning proposal based on the Urbis 2015 UDR states that, "Middleton Grange Town Centre is a designated B2 – Local Centre, with the same zoning as the existing Carnes Hill Town Centre, and future Town Centres such as Austral and Edmondson Park. Middleton Grange is therefore already part of the established/approved centres hierarchy defined by Liverpool Council." While the Urbis October 2019 report rejects the MacroPlan Dimasi Report (which is cited in the planning proposal and which is in turn based on the Urbis 2015 UDR), Urbis does not give a full alternative analysis, other than assertion, to show that MacroPlan Dimasi's conclusions are wrong. However, this report shows that, even with Middleton Grange coming on in 2021 there is a supermarket gap of 3,594m2 by 2031. This is even with an allowance for an additional supermarket of around 4,000m2 in the main trade area by 2031. The Aerotropolis is likely to increase demand for retail and commercial space at Middleton Grange and in the trade area. This is not refuted by the Urbis December 2019 report. It is true that Middleton Grange will retain its position in the retail hierarchy as currently planned, as a B2 zoned neighbourhood centre with 10,000m2 of retail and commercial space – lower than the original planning proposal which is based on the Urbis 2015 UDR.
9.	The Urbis review is focused on the retail sustainability of the proposed Middleton Grange Town Centre and concludes, in no uncertain terms, that the proposed development is ill-founded, highly speculative and risky. Any potential spin off benefits from increased open space and community facilities, whilst relevant, are very much at the margin.	The Urbis 2015 UDR, upon which the proposal is based and has been refined, supported the Middleton Grange Town Centre at retail and residential densities higher than are being proposed now. At that time, in 2015, Urbis therefore must have been of the opinion that the proposed development was worthwhile, sound, reasonable and safe, or otherwise it would not have allowed it to go forward in the planning proposal. There is no evidence that Urbis believed that the Urbis 2015 UDR was "ill-founded, highly speculative and risky." Indeed, the Urbis 2015 UDR states: "The increase in density will provide an uplift of new dwelling supply in the area and an increase in the potential residential population

	which will result in creating an active Town Centre that promotes a sense of place that is safe, vibrant and attractive." The increase in open space is of high value to the community, and therefore is not a marginal issue for the development. It may be of marginal relevance to objectors, as it provides a valuable community asset that is difficult to find objectionable, but it is of high importance in the context of the proposal as a whole.
10. The recent assertion that '*the tenant mix is not expected to compete with Carnes Hill*' is completely without foundation and indeed is not reflected in any economic analysis provided in any of the expert reports. The MarcroPlan report, for example, clearly shows that there will be high impacts on Carnes Hill Marketplace, which is of course due to direct competition in overlapping catchments as shown in Map 3.1.	Urbis claims that the PPM October 2019 report says "the tenant mix is not expected to compete with Carnes Hill." This is very misleading and a complete misconstruction of the point made by PPM, which actually says, "Apart from the supermarket, it is unlikely that this mix will compete with Carnes Hill Marketplace…" While Urbis dismisses the MacroPlan Dimasi report, they use it here selectively to make the argument that there will be an impact on Carnes Hill, which is also acknowledged by PPM Consulting in its reports, including this report. There is no dispute that Middleton Grange will have an effect on trade at Carnes Hill. However, it is also true that Middleton Grange Town Centre was meant to be operational by 2021. As a result of the delay, Carnes Hill will have the benefit of the time between 2021 and when the Middleton Grange Town Centre is built to grow the loyalty of their customer base, thereby mitigating against some of the competitive effects. In any case, Carnes Hill Marketplace has a DA in place to expand. An expanded Carnes Hill Marketplace will no doubt increase the retail offering and thereby attract more customers from the main trade area than they would without the expansion. Shopping centres do not, and should not, exist in a vacuum. For consumers to get the best prices, amenity and services, it is important for there to be competition in the marketplace. Without competition, current retailers get stale, rents rise and prices rise as a result. At the time of the 2016 Census, there were approximately 5,000 people living in Middleton Grange. The nearest supermarket is Carnes Hill Marketplace, some 2 kilometres away. This journey could not be done on foot, and therefore residents are required to get into their cars and drive. This contributes to sedentary lifestyles and poor health outcomes.

	The Middleton Grange Town Centre will actually be of benefit to consumers by providing groceries at prices lower than would otherwise prevail. This point is not disputed in the Urbis December 2019 report. Not only would the proposed Middleton Grange Town Centre be within walking distance of many current and future residents, it is also proposed to have many of the characteristics seen as "walkable". The benefits include more viable retail spaces, less sedentary lifestyles and less time spent in cars and traffic. Urbis states that it is not aware of the comments attributed to Woolworths; these comments are in a publicly available submission to a public Productivity Commission report. The comments made by Woolworths are highly relevant and are not addressed by the Urbis December 2019 report.
11. The fact that existing centres will be impacted by new centres such as Middleton Grange and commercial facilities in the Western Sydney Aerotropolis, as well as along Fifteenth Avenue, is understood and anticipated to the extent that planning entitlements exist. A considerable short-term impact on Carnes Hill Marketplace, over and above these short- and long-term influences, has not been anticipated and can be expected to influence investment decisions by the owners of Carnes Hill Marketplace as well as other centres in the area.	This should not be used as a reason to exclude Middleton Grange Town Centre from a retail hierarchy that has been settled for over a decade. Just like Carnes Hill Marketplace, Middleton Grange has always been part of the retail hierarchy. That said, Carnes Hill Marketplace has clearly anticipated the size and scope of the Middleton Grange Town Centre because (a) it has always been part of the retail hierarchy at retail densities not much higher than allowed under the LEP, and (b) Carnes Hill are looking to expand, which is a natural competitive response to a potential new entrant.
12. It is also noted that the Aerotropolis will take some time to come to fruition and the period between 2019 and 2026 provides ample time to investigate and plan for change, including the degree to which both designated and new centres in Liverpool will be affected and/or could benefit.	It should be noted that Middleton Grange Town Centre is not a new centre. PPM Consulting maintains that the Aeroptropolis will increase demand for retail and commercial space in the area, as logistics and other airport-related companies move to the area to take advantage of proximity to the airport. Many companies, particularly newer companies, will not be in a position to pay the rents that will likely prevail in the airport precinct, so will look to modern facilities close by. Middleton Grange Town Centre is ideally located along the Fifteenth Avenue spine to attract these businesses. New residential along Fifteenth Avenue will also add to the demand for retail space, partially negating some of the

	impact of the Middleton Grange Town Centre on Carnes Hill Marketplace.
13. The need for additional retail floorspace at Carnes Hill Marketplace should be considered quite separately as it is a designated Town Centre and serves a broader trade area than would be the case at Middleton Grange.	Middleton Grange and Carnes Hill are both in the retail hierarchy of the Liverpool LGA. There is no reason why expansion of Carnes Hill while opposing Middleton Grange Town Centre should not be looked upon as hypocrisy.
14. It is our view that an additional supermarket could be supported at Carnes Hill Marketplace, as well as Middleton Grange, but that a larger centre at Middleton Grange would curtail further development of Carnes Hill and create considerable planning uncertainty.	The planning uncertainty comes from not allowing Middleton Grange to develop according to the planning proposal which was based upon the Urbis 2015 UDR. Middleton Grange Town Centre has always been part of the hierarchy of centres in the Liverpool LGA. While it is likely that it will take some trade from Carnes Hill, they have already anticipated this with a response of proposing to increase their retail floor space. In addition, there is a deficit of floorspace even when making allowances for an additional new supermarket to come into the main trade area over the period up to 2031.
15. The purpose of a planned network and/or hierarchy of centres is to maintain the sustainability of higher order, middle order and local centres that serve catchments of various sizes and provide for a range of needs.	As shown in the PPM October 2019 report, restrictive zoning can lower total factor productivity (and therefore increase prices paid by consumers) by: • restricting the total availability of land for retail, thereby increasing space costs • directly limiting store size • concentrating retail development on specific central locations. These points are not disputed in the Urbis December 2019 report. The findings suggest that restricting the size and growth of Middleton Grange Town Centre, and concentrating growth in developed centres, would likely result in an increase in prices, more cars and trucks on the road and more congestion around the designated centres. This is not only bad for the current and potential residents of Middleton Grange, but also the wider catchment area. In addition, restricting retail space adversely affects the poor, since poorer households spend higher proportions of their incomes on supermarket purchases.
16. In Liverpool, the Central Business Area is the primary centre for higher order needs. Centres such as Carnes Hill Marketplace fulfil a middle order role, often referred to as sub-regional.	We agree that the planning proposal, based on the Urbis 2015 UDR, remains appropriate.

	Middleton Grange is intended to house a local centre, anchored by a major supermarket, orientated to serving local needs. This remains appropriate.	

Table 1: Summary of PPM Consulting Response

Urbis uses the phrase "planning uncertainty" as a justification of its position that a centre no bigger than 5,500m^2 should go ahead on the Middleton Grange Town Centre site. Very much to the contrary, planning uncertainty would be created by the development not going ahead, at least at the size it was given Gateway approval for in 2017. The proponent has been led to believe that the proposal will be assessed in a fair manner, and that if the Gateway conditions can be satisfied (as, from an economic perspective they have) then the plan will be made. Leading a proponent down the path to this point, only to reject it – when it has Gateway approval and the proponent has been working with council on the conditions – definitely creates investment risk.

Indeed, it sets a very poor example of the investment climate in New South Wales and increases the risk premium on all developments in Sydney and the state. To effectively repudiate both the 2008 LEP and the Gateway approval of 2017 increases planning risk and increases the risk for all future investment in Liverpool and beyond.

In conclusion, the PPM report concludes that "many of the claims by Urbis on behalf of Carnes Hill Marketplace cannot be substantiated, on the evidence provided in this report" and that "the impact analysis shows that there is no prospect that any existing centre will suffer any impact which will threaten its ability to provide a level of service at least equivalent to that which each is providing at present."

2.2 Social Impacts

Judith Stubbs & Associates have prepared a response to the latest report by Elton and the design+planning submission.

Judith Stubbs concludes that *"the Elton response does not raise any substantive matter that would lead to the conclusion that the adverse social impacts of the proposal warrant refusal, and the conclusion to the Elton response is carefully worded so that it does not state this or state that additional analysis is required".*

Further, the author of the deign+planning submission appears to misrepresent the conclusions of the Elton submission. In this regard, one could form the view that the last paragraph is the opinion of the author of the submission, but is presented in such a way that a reader would infer that it is in fact the opinion of Elton Consulting. The general tone of the submission does appear to draw a negative conclusion from the report, which is disappointing. The Judith Stubbs response concludes *"I would direct the consent authority to a careful reading of the Elton response, rather than relying on the submission".*

Notwithstanding, the key items raised are considered by Judith Stubbs and extracted as follows:

Matters raised by Elton/design+planning	Judith Stubbs Response
Substantive Matters Elton's review notes that the JSA Response Report acknowledges that four substantive matters contained in the Elton review required further consideration. This contradicts the revised Planning proposal, which states that the JSA response Report only found one of Elton's conclusions to be substantive.	There is some confusion regarding my identification of substantive matters in the Elton review. My point was that while there was only one substantive matter identified in the conclusions of the Elton review, the review raised four matters in the body of the report which I considered substantive and meriting further response. This appears to have been misunderstood by the author of the Design+Planning report (as referenced by the third paragraph on page 12 of the submission) but is correctly stated at page 2, paragraph 6 of the Elton response.
Broader Social Impacts Elton notes that there are direct and indirect social impacts of the Planning Proposal beyond the loss of profitability of Carnes Hill Market Place and that the broader social impacts of the Planning Proposal have not been fully considered in JSA's Review, and have not been addressed in the revised Planning Proposal. In addition, Elton believes that the local social impacts have not been fully addressed.	At Section 2, the Elton response acknowledges and generally agrees with the analysis and conclusions set out in my response, however the opinion of the author is that the local social impacts have not been fully addressed.
Potential for anti-social behaviour Elton's original commentary noted that more analysis was required to understand the potential for anti-social behaviour in specific reference to the proposed development. The Response Report provides supplementary information that includes additional data in relation to crime and anti-social behaviour and recommendations in relation to CPTED principles. The JSA Response Report notes that Middleton Grange is currently within a low crime environment outside any hotspots, while the Carnes Hill Market Place is within hotspots for various forms of theft. However, the JSA Response Report Anticipates that "similar impacts would be expected to be associated with the proposed town centre".	In Section 3 the author sets out potential social impacts of the proposal at Table 1. Five potential positive impacts are identified along with one potential negative impact related to increased antisocial behaviour. All these impacts were considered either in the SIA or in my response, albeit they may be considered under another rubric. Section 2.4 of the Response to Elton Review of SIA, October 2019 addressed the crime and safety context and made appropriate recommendations that are being further considered and refinements made as part of the development assessment process. This included: *"CPTED principles need to be applied to the design of public spaces including the plaza, streets and sidewalks, bus interchange area, parklands and drainage areas. Particular care needs to be given to the drainage areas to the east and west. Council needs to ensure that regular maintenance of the public domain occurs."* In relation to the crime context, the report found that "*with the exception of 'Theft - Steal from Motor Car', levels of crime in Middleton Grange are lower*

	than averages for NSW, and in some cases much lower."
Impact on Surrounding Businesses The JSA Response Report recognises "*that the development has been modelled to have an impact on Carnes Hill Market Place, by taking market share*". This contradicts the statement in the Revised Planning Proposal that "local centres serve local residents. This ensures that no significant impact will occur on other local shops nearby".	This is a misleading statement from the author and simplifies a complex issue. In isolation, the JSA report is correct as in the short term there are likely to be impacts to the centre, "including a 12.8 per cent impact in 2026 between the "no development" and "with development". However, compared with 2019, retail sales at Carnes Hill Marketplace are expected to grow by 26.4 per cent to 2031. In fact, by 2031, it is estimated that all centres within the main trade area will be trading well above 2019 levels. Further, and importantly, the author omits to consider the conclusion that followed the JSA statement quoted, that "*the overall social impact would be neutral, with loss of jobs at Carnes Hill Market Place offset by new jobs at Middleton Grange Town Centre*". The scope of the Social Impact Assessment prepared by Judith Stubbs was to consider the social impact of development, not the economic impact of development and competition to surrounding centres.
Additional Analysis Elton's review recognises that the JSA Response Report has addressed many aspects raised in the review of the original JSA report. However, additional analysis is required to understand the social impacts, beyond the economic impact on Carnes Hill, that still needs to be addressed. In this regard, further analysis by JSA is required and should be undertaken prior to any decision on the Planning Proposal.	The author of the submission misrepresents the Elton response in his last paragraph on page 12 and I was unable to find or draw the statements and conclusions in his last paragraph from the Elton response. I think that the last paragraph is the opinion of the author of the submission, but is presented in such a way that a reader would infer that it is in fact the opinion of Elton Consulting. I would direct the consent authority to a careful reading of the Elton response, rather than relying on the submission.

Table 2: Summary of Judith Stubbs response

2.3 Traffic & Transport Impacts

A revised traffic impact assessment has been prepared by Lyle Marshall & Partners supported by a detailed investigative Modelling report prepared using AIMSUN, and prepared by Bitzios Consulting.

The traffic impact assessment concludes:

- *The "2026 Do Minimum plus development" with limited improvements demonstrates that most intersections within the network operate with spare capacity except for the intersection of Cowpasture Road/Hoxton Park Road and Collarenebri Road which is already operating at capacity under "2026 Do Minimum scenario". The Cowpasture Road/Airfield Drive has been identified as a network pinch point in the PM Peak Hour.*
- *The "2026 Do Minimum with development model plus Ultimate Upgrades" model shows that the proposed development and upgrades will operate with spare capacity across the network.*
- *The improvements shown in the "2026 Do Minimum plus development" ultimate model demonstrates an improvement in travel time and an improvement in level of service for the key intersections across the network.*
- *There are significant public benefit infrastructure items such as the proposed on and off-road bicycle paths, public open park spaces, and shared pedestrian public areas for cross site linkages. The provision of the first on demand bus service can also be provided to enable workers and elderly residents to travel to the town centre. Alternative access to other transport modes will promote an active lifestyle and reduce car dependent trips.*

Matters raised by GTA Consutants/design+planning	**Lyle Marshall & Partners Response**
Traffic Generation Rates	
Lower than realistic land use traffic generation rates have been adopted and applied to the proposal. These lower rates will under-estimate the collective peak hour traffic demand levels anticipated for the proposal with significant flow on effects for AIMSUN analysis.	Traffic generation rates were determined in consultation with TfNSW and Council. We refer to meetings held on 3/2/2020 at Liverpool City Council and 18/2/2020 at TfNSW offices.
It is evident that the TIA makes no allowance for any analysis on a weekend day. Given the proportion and scale of retail land use contained in the proposal, this is a major shortfall of the evaluation prepared on behalf of the applicant. In the absence of this assessment, the review is considered to be manifestly incomplete.	The weekend traffic generation will not be higher than weekday peak hour traffic generation of key gateway intersections around the development. Again, consultation with TfNSW has occurred to confirm this.
On the Application of Link Trip and Multi-Purpose Trips Discounts:	
On any balanced review, the submitted TIA over-estimates the likely level of linked trips by a meaningful margin. Correspondingly, the adopted approach under-estimates the likely level of traffic demand during road network peak periods.	Linked trips and the percentages of these trips was confirmed in consultation with Council and TfNSW.
On the Accuracy of Traffic Generation Estimates, GTA Consultants has sought to undertake an independent assessment and apply the selected traffic generation rates identified in the revised TIA	
The GTA spreadsheet review indicates that there are numerous errors in the compilation of the spreadsheet analysis with the misapplication of	All rates used were determined and subsequently revised in consultation with TfNSW.

some individual land use rates and in other cases the omission of land use traffic generation.	
The assessment prepared by GTA Consultants raises serious concerns around the robustness and veracity of the traffic generation inputs subsequently relied upon by Bitzios Consulting in their AIMSUN evaluation of impacts estimated for the planning proposal.	The TIA has undergone several amendments since it was reviewed by GTA Consultants. Rates were accepted by Council and TfNSW.
On the Sensibility Assessment:	
The land use traffic generation estimates prepared by Lyall Marshall & Partners are erroneous and materially underestimate the likely traffic generation for the planning proposal.	The rates have been simplified in consultation with Council and TfNSW.
The Bitzios network assessment is reliant on inputs and assumptions, particularly land use traffic generation rates prepared by Lyall Marshall & Partners Pty Ltd. Until such time as appropriate inputs are verified, it would be premature and inappropriate for any agency to make a determination of the acceptability of conclusions established in the Bitzios Analysis.	The Aimsum Report has been updated with update traffic generation rates from the TIA Report.
Further evidence be provided which demonstrates the need or otherwise to undertake a network review for the Saturday Midday peak hour, particularly given the scale of the retail land use proposed as part of the proposal and its potential to generate a high level of traffic demand for each unit area of floor space. A Saturday analysis has not yet been completed.	The Saturday Midday peak hour traffic generation on key network intersections is not modelled as the volumes informed from the base Aimsum model are not as high as weekday traffic generation. Saturday traffic generation will not be as high as weekday traffic generation. The rates have been updated and confirmed with TfNSW.
On the Traffic Works Package	
Given the significant doubt around the dependability and acceptability of those traffic generation estimates, the Bitzios analysis cannot be relied upon to determine whether the proposed suite of transport works sufficiently manage the impacts of the project	The rates have been updated and confirmed with TfNSW.
Concluding comments from design+planning	
In undertaking their review, GTA has considered the context of the proposal and thoroughness of the traffic impact assessment submitted with the Planning Proposal. GTA highlight that the Proposal is a significant departure from the planned neighbourhood centre for Middleton Grange and reinforce the Proposal will re-characterise the place. GTA considers that the technical documentation provided in support of the proposal does not	The TIA and Aimsum modelling reports have been updated in consultation with Council and TfNSW over a period of months.

adequately demonstrate how such a re-characterisation can be supported given identified precinct street typologies and the positional nature of the activity centre. As GTA Consulting surmises, based on the detail and adequacy of the work completed date for the proposal, it would be premature for any agency to make a determination on the ability for the transport network to accommodate the proposal.	

Table 3: Summary of Lyle Marshall & Partners Response

- lower than realistic land use traffic generation rates have been adopted and applied to the proposal
- the submitted TIA over-estimates the likely level of linked trips by a meaningful margin. Correspondingly, the adopted approach under-estimates the likely level of traffic demand during road network peak periods.
- GTA Consultants raises serious concerns around the robustness and veracity of the traffic generation inputs subsequently relied upon by Bitzios Consulting in their AIMSUN evaluation of impacts estimated for the planning proposal.
- land use traffic generation estimates prepared by Lyall Marshall & Partners are erroneous and materially underestimate the likely traffic generation for the planning proposal.

2.4 Urban Design Impacts

Planning+Design (the submitter), in predicating a response to the urban design impacts of the proposal, remarks that *"the revised Planning Proposal does not propose any substantial changes from the previously exhibited documentation and is such, still represents a major departure from this vision at a point in time where the locality has been substantially developed and established in accordance with the existing planning controls*".

In fact the reductions in height are significant in the context of the application and the existing and previously proposed heights. The maximum height is restricted to the core of the development scheme with transitions on all sides to surrounding areas.

The submitter makes no reference to the doubling of open space for the benefit of the community. Under the existing controls, 751sq.m is zoned for public recreation with a further 1,249sq.m of area owned by Council or was to be acquired. The exhibited Planning Proposal (August – October 2018) refined the location of open space, creating approximately 2,500sq.m of public open space and space for a community centre facility within it. While this reflected a significant increase in the amount of open space, the concept plan was reviewed to ascertain whether even more open space could be provided. Subsequently, 7,632sq.m of land, including the large park areas, the public forecourt and the community facility was achieved, in addition to new laneways and through links, opened to the sky to create more public spaces and connections. The submitter remains silent on these benefits.

Further, the submitter is silent on the introduction of a medical facility, to achieve the removal of residential apartments from the eastern boundary that directly interfaces with the school.

In addition to this and to address the concerns raised by the community, there has been a reduction in the town centre gross floor area (GFA) from that endorsed by Council in 2015, and a further reduction in apartments from the planning proposal exhibited. The exhibited planning proposal contemplated up to 912 apartments within the town centre. However, with the introduction of the medical centre and ancillary medical commercial uses, the larger footprint of the shopping centre, and the reduction in height (which is effectively the removal of upper level apartments, the number of apartments within the town centre has reduced to approximately 671.

The average FSR across the site is 1.98:1, reduced from 2.5:1 from that initially endorsed by Council. This constitutes only an overall increase across the town centre from 1.16:1/1.3:1 to 1.98:1, but provides for significant public benefits for the broader community including double the amount of open space for regional road upgrades, and local contributions of approximately $21.5m.

The submitter elects to ignore the benefits and substantial changes that have been made to the planning proposal and design concept.

Other Planning+Design comments related to urban design are addressed further in the table below:

Urban Design matters raised by Planning+Design	**Response**
Building Heights	
The updated Urban Design Report primarily responds to the submissions received during the 2018 exhibition. The main focus of the Report is a set of design principles, which primarily with street hierarchy and site links. ….little consideration is given to the local context and how the proposed development would sit within the local low scale character of adjoining low-density residential development. Furthermore, no analysis has been undertaken that challenges the initial master plan for the neighbourhood centre, particularly in relation to bulk and scale.	The report primarily addresses submissions because the proposal had advanced through Council; through the Gateway; and had been publicly exhibited. The submitter's point suggests that the application and updated reports are starting from the beginning, but the revised planning proposal is specifically a response to the comments of the community as that's where the project is up to in the process. Further, as will be discussed below, the submitter holds a warped view of the existing controls suggesting that the desire for the town centre is 2 to 3 storey development despite an 18 metre height limit. Further, the town centre has been specifically designed to fit in to its context. Since the 2015 scheme, the heights have been amended to introduce height transitions on the edges of the site, including 9.5 metres along the western edge, and 20 metres along the northern and southern edges.
In response to submissions during the 2018 exhibition period, the building height of the central area has been reduced from 32m and 35m to 29m, representing a reduction of only	Contrary to the claims of the submitter, the reductions in height are significant in the context of the scheme and the locations of those heights.

three to six metres. With no other changes in height controls proposed, the revised proposal remains a significant departure from the neighbourhood like mixed use neighbourhood centre envisioned for Middleton Grange, which was intended to only provide residents with their daily shopping needs and a two to three storey built form environment.	The 29 metres constitutes only a 11 metre increase to a small part of the scheme. These 8 storey sections are complemented by lesser heights specifically designed to transition height to more sensitive edges, maximise solar access to open spaces, and maximise northern exposure to apartments. It is a very misleading and disappointing statement by the submitter to suggest that *"the revised proposal remains a significant departure from the neighbourhood like mixed use neighbourhood centre envisioned for Middleton Grange"*. The existing controls allow for 5 to 6 storey development; so to state that the centre is intended to be two to three stories is deceptive and undermines the argument of the submitter. Further, since these controls were introduced for the town centre circa 2005, the context of Middleton Grange and the town centre has changed. A new airport and Aerotropolis is just a short distance away; and new transit way connecting Liverpool to the aerotropolis is proposed for Fifteenth Avenue; and the Council was clear in its views on the role and hierarchical status of Middleton Grange when it resolved at its meeting of 29 April 2020, when considering the draft Centres and Corridors Strategy, to classify Middleton Grange as a town centre. Unfortunately, the submitter is seeking to undermine the existing controls, the emerging and existing strategic planning framework and the role of the Middleton Grange town centre in an attempt to minimise development and competition.
The contrast in scale from is highlighted in the sections provided as Figure 1. The revised Proposal still seeks to establish an inappropriate height within the neighbourhood centre that does not reflect the vision for Middleton Grange or the neighbourhood centre's place in the retail hierarchy, as established by the Liverpool Business Centres & Corridors Strategy	The Design+Planning figure has been hand drawn, has been limited to four storeys, and has been presented in a manner that exaggerates the contrasting heights. Secondly, the centre is a town centre; not a neighbourhood centre as per the retail hierarchy in the Liverpool Business Centres & Corridors Strategy. The amendments to the scheme are a genuine response to the communities concerns, including the provision of an additional 3,000sq.m of land for the benefit of the community, which the submitter remains completely silent on.
Centre Hierarchy Characteristics & Comparison	
The comparison highlighted that the proposal for Middleton Grange is out of character, not	As discussed, Council has resolved to classify Middleton Grange as a town centre in its Centres and Corridors Strategy.

only in the local context, but also with the broader centres compared.	Further, when comparing to similar town centres within the LGS, the maximum height is not too dissimilar, with 29 metres only within the central core, and ranging from 9.5 metres to 20 metres elsewhere. The commentary from the submitter makes the built form and height sound out of character and context for a town centre, when in reality it is not too dissimilar.
Further, as highlighted previously, new centres that include the building heights and residential densities similar to those proposed are typically transit orientated developments that will provide the infrastructure required to support larger scale employment hubs and destination shopping centres.	The Fifteenth Avenue Smart Transit Corridor is identified to travel through Middleton Grange connecting Liverpool City to the Western Sydney Aerotropolis. The town centre is less than 350 metres from the new Fifteenth Avenue rapid transit route that will connect Liverpool City Centre to the new Western Sydney Aerotropolis. This transit route was not identified when the site was originally zoned in 2005 for up to 630 dwellings. The context for the site has therefore changed and will connect future residents to opportunities in Liverpool and the Aerotropolis, while also providing opportunities from elsewhere within Middleton Grange. The proposed controls establish a centre for the existing and emerging strategic context.
PPM Consulting, has suggested that the success or failure of the proposal will be determined by the increase in population associated with the increased HOB limit and increased FSR controls. However, we contend that the existing FSR and HOB controls under Liverpool LEP 2008 do not hinder the opportunity for diversity of services and housing, with an existing 18m HOB limit and FSR controls accommodating sufficient opportunity for a vibrant mixed use neighbourhood centre, shop-top housing and medium density residential flat buildings to be delivered, which could accommodate only 45 dwellings less than the 671 dwelling outlined in the Proposal.	This is not true. That would be without the medical, shopping, social infrastructure, new employment opportunities, and open space. Coles has seen the scheme they have progressed formally to enter in to an agreement to locate within the new vibrant town centre.

Table 4: Response to Urban Design comments

4 Response to Public Authorities

4.1 Education NSW

In December 2019, a submission to the exhibition of the planning proposal was received by council from Education NSW. It is noted that Education NSW raise a number of concerns, and it is agreed that these concerns need to be addressed through the planning and construction process, given the sensitivity of the school use.

The items raised are considered in the table below:

Matters raised by Education NSW	Response
Impacts of multi-storey development	
Multi-storey development adjacent to the school boundary will result in significant overshadowing and overlooking of internal and external spaces within the school. The proposal for buildings up to 20 metres high at the western boundary of the school will increase shade during winter months and may create potential for uncontrolled surveillance of school indoor and outdoor spaces. This is a serious concern for the School community.	It is agreed that the interface to the school and its ground is an important and sensitive interface. Firstly, the town centre and school benefit from the separation facilitated by Bravo Avenue. This includes a 5 metre carriageway, 2.5 metres of parking and a 2.5 metre verge (10 metres separation between boundaries). It is noted that the school buildings are then further setback with the school grounds open space located further to the east. Secondly, it is noted that the building that directly interfaces the school has been altered from residential/mixed use, to a medical facility. This ensures a degree of privacy with no residential units overlooking the school grounds. The building is located towards the northern interface, with the southern section the open space/park area. This was a key amendment to the town centre scheme to locate this use at this interface. The location of the park also ensures a compatible interface to the school that also complements the role of the town centre to support the school and use for children and families. It is also important to note that the increase in height for part of this area is actually only from 18 metres to 20 metres, which is a 5 storey building, which would be permissible without the planning proposal. Finally, detailed shadow analysis has been undertaken, which was included as part of the urban design report that supported the planning proposal. As can be seen, the shadows cast by the proposed

	heights within the town centre do not impact the school grounds open space (as studied between 9am and 3pm). Minor parts of buildings are only impacted after 2pm, and this is very minor. Therefore, Education NSW can be reassured that there will be no increase in shade during the winter months that will have an impact on the school.  Shadow cast on school grounds at 3pm
Construction impacts	
The town centre development has the potential for significant impacts from construction activity over an extended period as it is likely that the development will be constructed in a number of stages over a number of years. This has the potential for long-term impacts on school activities and on the safety of students, staff and visitors to the school. Should Council proceed with the rezoning and future development proposal, consideration needs to be given to enforcement of a Construction Environmental Management Plan to address the construction impacts of the development adjacent to the school. This Plan should include ongoing notification of key construction activities and consultation with Middleton Grange Public School before different types of construction activities commence. A communication protocol involving the School will help avoid activities such as loud construction practices, dust emissions and other potential construction impacts during key school activities.	It is agreed that any development of the town centre will have construction impacts regardless of the controls sought by the planning proposal. As the site is already identified and zoned for a town centre, it is logical to expect at some point a town centre will be built. In this regard, a detailed construction management plan, that addresses noise, dust and vehicle impacts will have to be prepared to council's satisfaction. This will likely be during the construction phase or as a condition of consent, but Education NSW can be reassured that this is a matter that will be addressed.

Traffic	
The potential traffic impact of the development needs to be assessed together with other approved and proposed developments that impact on road capacity and road safety in streets adjoining the School. The traffic impacts of the development may be reduced if a Construction Traffic Plan and Traffic Safety Plan is developed and implemented by the proponent in conjunction with the School Infrastructure NSW, the Roads and Maritime Services, and Council.	It is agreed the potential traffic impacts need to be carefully considered. The proponent's traffic consultant has been working closely with councils traffic engineers and the RMS to address concerns with traffic impacts, modelling and infrastructure upgrades. It is also agreed that a Construction Traffic Plan (at DA/CC stage) and Traffic Safety Plan will need to be prepared to ensure the safety of children and other pedestrians within the vicinity of the site. It should be noted that a principle objective of the project is to create walkable, safe and accessible town centre, with an upgraded pedestrian and cycle network. The town centre itself has a focus on pedestrians, with traffic calming measures, pedestrian open spaces, and play areas for children. The safety of children, families and the elderly is a key objective for the project.
Conclusion and further contact	
The School community has long held concerns for the proposed large scale development at its western boundary. The proposed rezoning, and associated development plan now before Council, although of a reduced scale, continues to raise those concerns related to overshadowing, privacy and construction impacts. We request that the matters raised are carefully considered in Council's assessment of the rezoning application and determination of any associated development application.	As discussed above, the previous concerns of the school and Education NSW have been taken seriously in the preparation of the revised planning proposal. The following amendments/observations are made: • The shadow cast by the development facilitated by the controls has no impact on the school grounds open space, and has minimal impact on buildings after 2pm. • The built interface to the school is very similar to that under the current controls. The difference is negligible. • In order to maximise privacy and minimise uncontrolled surveillance, no residential uses are proposed on the eastern boundary of the town centre as it interfaces with the school. This building is proposed to be a medical centre. • The southern half of the interface with the school is a park and community facility. This ensure a complementary relationship to the school fostering safe and active spaces for children and families.

Table 5: Response to Education NSW Comments

4.2 RMS and Transport NSW

The revised planning proposal was provided to RMS and TfNSW in November 2019 for comment. At that time the RMS raised concerns regarding the revised proposal and suggested that a meeting be arranged to resolve these matters.

Subsequently, an initial meeting was held between the proponent, council staff and RMS on Monday 3 February 2020 and subsequent meeting on 18 February 2020 at TfNSW offices.. A number of iterative meetings and discussions have continued to take place since this time as revised modelling and assessment has occurred.

The initial matters raised by the RMS are addressed in the table below:

RMS Response	TIA and Modelling Response
The base model Aimsum has been approved by TfNSW, however TfNSW has not endorsed the future year models	Future Year 2026 was confirmed in meetings with Transport for NSW
The traffic models are to test the impacts of the planning proposal on the existing state road network for 2026 as there are no current government commitments/funding for road network improvements along this particular section of Cowpasture Road	Upgrades to Cowpasture Road have been determined in consultation with Transport For NSW. These include "Do minimum" works to include Right turn lane extension from Fifteenth Avenue to Cowpasture Road southbound and right turn bay extension from Cowpasture Road (North) to Fifteenth Avenue westbound.
The methodology for demand capping would need to be agreed with TfNSW;	There is no demand capping made. The volumes are taken from STM for the base model.
The methodology for demand capping would need to be agreed with TfNSW;	Traffic generation rates were agreed in meetings with Transport for NSW and Council.
The derivation of the PM peak matrices. More information would need to be provided.	The base model was provided to Transport for NSW to review prior to developing the "Do Minimum Model" as confirmed in the meeting held with Transport on 18/2/2020

Table 6: Response to initial RMS Comments

As a consequence of the discussions and meetings with RMS and in response to council's comments, a revised traffic impact assessment has been prepared by Lyle Marshall & Partners supported by a detailed investigative Modelling report prepared using AIMSUN prepared by Bitzios Consulting. The modelling report is included at Appendix E to the Traffic Impact Assessment and is submitted for review and endorsement by RMS.

4.3 Road Upgrades and public benefits

As part of the traffic and impact assessment prepared by Lyle Marshall & Partners and Bitzios consulting, and in conjunction with future development in the area and the new airport, TfNSW and Council are committing to a number of upgrades to the surrounding road network. For the purpose of 2026 modelling, these upgrades include the following:

- Smart Transit Corridor
- Signalised intersection at Second Avenue / Kingsford Smith Avenue / Fifteenth Avenue
- Interim realignment works to Qantas Drive / Fifteenth Avenue
- Signalised intersection at Flynn Avenue / Kingsford Smith Avenue
- Road re-alignment works Middleton Drive / Seventeenth Avenue
- Middleton Drive / Aviation Road connection under M7
- Roundabout at Bird Walton Avenue / Middleton Drive
- Right turn lane extension from Fifteenth Avenue to Cowpasture Road southbound
- Right turn bay extension from Cowpasture Road (N) to Fifteenth Avenue westbound.

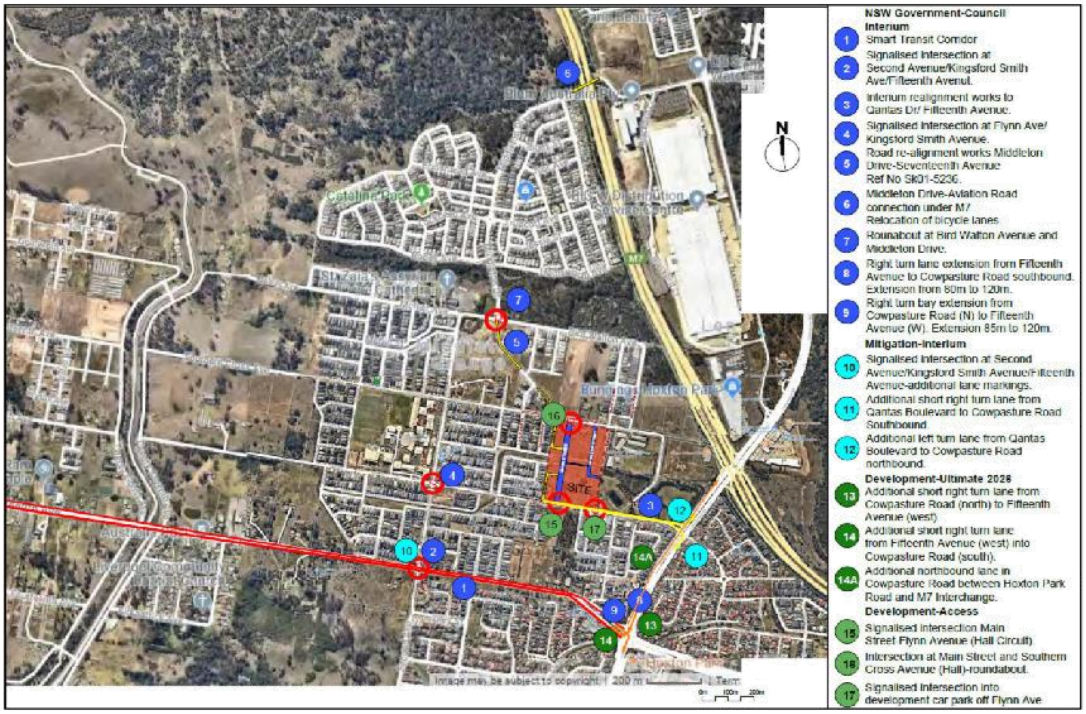

Figure 1: Infrastructure Upgrade Map

All the proposed infrastructure improvements are detailed in Section 5 Future Network Upgrades of the attached traffic modelling assessment prepared by Bitzios Consulting and Appendix B and C of that report.

Further, a suite of improvements measures has been developed to address the 2026 traffic issues. The improvement measures aim to improve the congestion issues on Cowpasture Road and includes the following improvements:

- Additional capacity at the Cowpasture Road / Hoxton Park Road / Fifteenth Avenue intersection
- Additional capacity at the Cowpasture Road / Qantas Blvd / Collarenebri Road intersection
- One additional traffic lane in the Cowpasture Road northbound direction between Hoxton Park Road and the M7 interchange.

The additional capacity is provided to improve intersection performance and northbound traffic flow due to background traffic growth and adjoining development sites. This is not as a direct result of development traffic. The assessment suggests that all the key intersections will provide acceptable traffic performance.

The analysis of overall network performance suggests that the implementation of the proposed upgrade measures will generally achieve no worsening to existing traffic performance due to growths in background traffic and the addition of development traffic within the study area.

It is also noted in relation to the Middleton Drive / Aviation Road connection under M7, which involves construction of a missing road section to connect Middleton Grange and Elizabeth Hills including TfNSW and M7 Motorway requirement to grade separate the section of the Motorway Cycleway, Council has engaged consultants to carry out detailed designs of the road works and prepare the required REF for approval. The design is scheduled to be completed in late 2020.

5. Conclusion

This report has provided a comprehensive response to the submissions and matters raised during the exhibition period of the Planning Proposal to amend the zone and principle development controls for the Middleton Grange Town Centre.

Of particular focus, the report and attachments respond to matters raised by public authorities, including the RMS and capacity of existing and future road capacity. Further, the report considers in detail the matters raised by the Charter Hall submission with a detailed consideration of matters related to traffic, social, economic and urban design impact.

Importantly, the percentage of objections between the first exhibition of the planning proposal in 2018 and the revised planning proposal in 2019 has fallen from 94% to 41%. Correspondingly, the number of submissions in support of the proposal has risen from close to 6% to 57%. This is a remarkable change in attitude from submitters, and demonstrates (as per the submissions):

- The need and desire for a town centre providing goods and services, entertainment, employment, and medical facilities;
- The need and desire for open space, and playground facilities for children;
- Support a focal point for the community, providing life and vibrancy;
- The need for walkable neighbourhoods and infrastructure upgrades;
- The development of a town centre, on land identified for this use for over a decade and still vacant;
- The provision of jobs, capturing a local workforce that currently travel to seek employment; and
- And provide housing that people can afford, allowing children to stay in the area.

Key concerns relating to impact on the road network have been studied and addressed in great detailed through a collaborative process with council traffic engineers and RMS. As part of the traffic and impact assessment prepared by Lyle Marshall & Partners and Bitzios consulting, and in conjunction with future development in the area and the new airport, TfNSW and Council are committing to a number of upgrades to the surrounding road network.

As part of this response a revised traffic impact assessment has been prepared by Lyle Marshall & Partners supported by a detailed investigative Modelling report prepared using AIMSUN, and prepared by Bitzios Consulting, which concludes:

- The "2026 Do Minimum with development model plus Ultimate Upgrades" model shows that the proposed development and upgrades will operate with spare capacity across the network.
- The improvements shown in the "2026 Do Minimum plus development" ultimate model demonstrates an improvement in travel time and an improvement in level of service for the key intersections across the network.

PPM CONSULTING

Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis

DRAFT 2.0 – Prepared for Pacific Planning by PPM Consulting

Date: 10 July 2020

COMMERCIAL – IN – CONFIDENCE

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Executive Summary

- The purpose of this report is to provide an economic impact assessment of the proposed Town Centre at Middleton Grange in the Liverpool Local Government Area (LGA) in New South Wales.
- Currently there is no shopping centre in Middleton Grange. The 5,000 residents of the suburb need to travel at least two kilometres to their nearest supermarket in order to fulfil their daily needs.
- The Town Centre would consist of 10,000m^2 of gross leasable area (GLA), comprising:
  - 3,800m^2 for a major supermarket
  - 3,224m^2 for a mini major
  - 1,362m^2 of cafes, restaurants and bars
  - 1,114m^2 of specialty shops
  - 200m^2 liquor shop.

Proposed Development

- The Middleton Grange Town Centre is located approximately 40km west of the Sydney Central Business District (CBD) and 7km west of the Liverpool CBD. The Middleton Grange precinct is bounded by Cowpasture Road, Fifteenth Avenue, Hoxton Park Road and the M7 Motorway. Accessibility to and for the suburb are excellent.
- The proposed Town Centre is a proposed new development. Currently the closest shopping centre to Middleton Grange is Carnes Hill Marketplace, 2.8 kilometres from the proposed Town Centre and up to 4 kilometres from some current and future residents of the suburb.
- Middleton Grange is a proposed masterplanned community that could accommodate in excess of 1,000 persons once built out. The Middleton Grange Town Centre will be the epicentre of the community and is proposed to accommodate at least 670 dwellings within the Town Centre itself.

Strategic Context

- The key controls for the Middleton Grange Town Centre are contained in the Liverpool LEP 2008 (LLEP 2008) and the Middleton Grange Development Control Plan (DCP).
- The Middleton Grange Town Centre is zoned B2 – Local Centre in the LLEP 2008.
- The Local Strategic Planning Statement (LSPS) for Liverpool (published in March 2020) projects that employment will increase in Middleton Grange by 500-1,000 jobs to 2036. In order to achieve this jobs growth, Middleton Grange will need to be a centre larger than that of a Village Centre.
- Liverpool City Council commissioned a Centres and Corridors study in April 2020. The draft study found that most residents of the LGA have access by road to a supermarket within 2km of their home. However, Middleton Grange was a suburb that was noted as an exception to this accessibility standard. The study goes on to say that "The creation of planned centres in Middleton Grange… address this problem," and that "It is also important for the timely development of new centres to occur in greenfield areas to provide access to retail facilities for newly developed suburbs."

Main Trade Area

- To analyse the impact of the proposed new Town Centre, a main trade area needs to be defined. The main trade area estimated to be served by the proposed Middleton Grange Town Centre has been defined taking into consideration:
  - the fact that the retail contains only the following competing centres:
    - Carnes Hill Marketplace, 2.8km from the proposed Town Centre
    - The Valley Plaza, 4.8km from the proposed Town Centre
    - Hoxton Park Aldi, 1km from the proposed Town Centre.
  - the Liverpool CBD (comprising Westfield Liverpool and other specialty shops, cafes, bars and restaurants and other services), is 7km to the east, which limits the extent of the trade area to the east.
  - the central position of the subject site within the Middleton Grange current and future suburb, which provides excellent access to a growing local population.
  - the M7 to the north-east.
- The trade area is defined to include one primary and one secondary sectors, described as:
  - the primary sector is generally the distance that a person can walk from the Middleton Grange Town Centre in 10 minutes. It is bounded Fifteenth Avenue to the south, the M7 to the north-east, the small catchment east of Cowpasture Road, Kingsford Smith Drive to the West and just north of Southern Cross Drive to the north.
  - the main trade area is bounded by Bringelly Road, Cabramatta Creek and Banks Road/Rundle Road to the east, North Liverpool Road/Frederick Road to the north and includes the whole suburb of West Hoxton and part of Austral to the west.
  - the secondary trade area is the main trade area minus the primary trade area that sits wholly within it.
- The main trade area population is estimated at 56,939 as at June 2019, including 2,036 in the key primary sector. The main trade area population is expected to reach 70,609 by 2031, reflecting average annual growth of 2.2 per cent between 2016 and 2031, or 1,238 persons per year. The primary sector population is estimated to grow at an average annual rate of 5.96 per cent between 2016 and 2031, and to reach 3,660 by 2031.
- The primary trade area includes the Middleton Grange Town Centre, which is expected to include a population in excess of 1,000 once fully built out. It is likely that the population projections are therefore an under-estimate of the total population expected to live in the area by 2031.
- The retail expenditure market is expected to grow from around $577.3 million in 2016 to $926.4 billion in 2031, an increase of 60 per cent at an average annual growth rate of 3.2 per cent.
- Food, liquor and grocery (FLG) expenditure (take home food and groceries, including packaged alcohol) is estimated at $265 million in 2016 and accounts for 62 per cent of all retail expenditure in the main trade area. FLG expenditure is projected to increase to $425 million by 2031, reflecting average annual growth of 3.2 per cent.

Competition

- Middleton Grange Town Centre is a designated B2 – Local Centre, with the same zoning as the existing Carnes Hill Town Centre, and future Town Centres such as Austral and Edmondson Park. Middleton Grange is therefore already part of the established/approved centres hierarchy defined by Liverpool City Council.
- There are currently no shopping centres in the Middleton Grange suburb. Within the main trade areas, the following centres currently exist:
  - Carnes Hill Marketplace, 2.8km from the proposed Town Centre
  - The Valley Plaza, 4.8km from the proposed Town Centre
  - Hoxton Park Aldi, 1km from the proposed Town Centre.

Supermarket Gap

- To assess the market demand for the potential redevelopment and addition of new retail facilities at the subject site, the current and future demand for supermarket floorspace generated by the main trade area population needs to be assessed. This is then compared with the existing and proposed supply of floorspace to come to a conclusion about the over- or under-supply of supermarket floor space in the area, and therefore whether the expenditure in the area can justify an increase in supermarket space.
- The estimated supermarket floorspace demand generated by the main trade area population is 18,530m^2 in 2016, and is projected to increase to around 27,594m^2 by 2031, an increase of over 8,000m^2.
- The supermarket supply is assumed to increase by 4,000m^2 in 2021 as the Middleton Grange supermarket comes online. It is unlikely that there will be two full-line supermarkets in the Middleton Grange Town Centre, however in 2031 it is assumed a further full-line supermarket will be established in the main trade area, taking supermarket supply in the main trade area to 24,000m^2.
- The supermarket gap is projected to fall to 1,160m^2 as Middleton Grange comes online, although this does not include population increases over and above projected increases from new residents of the Middleton Grange Town Centre and other new release areas in the main trade area. Therefore it is likely that this is an under-estimate of the supermarket gap that would be experienced in 2026 and beyond. Even with an additional supermarket established in the main trade area by 2031, the undersupply of supermarket floorspace remains high at 3,594m^2.

Economic Impacts

- It is estimated that the proposed development will achieve a sales volume in the order of $86 million in 2026, expressed in constant 2019 dollar terms, including estimated supermarket sales of $55.6 million (at approximately $13,910 per square metre).
- The total projected main trade area retail expenditure for 2026 is estimated at $791 million. Assuming escape expenditure of 10 per cent, the share of total main trade area expenditure that the Middleton Grange Town Centre would be expected to achieve would be 12.1 per cent.
- This means that nearly 90 per cent of all retail expenditure in the main trade area would still be expected to occur in the current centres.

- The other major centres in the main trade area are projected to account for 41.5 per cent of retail spending in 2026.
- There are likely to be impacts on Carnes Hill Marketplace in the short term, including a 12.8 per cent impact in 2026 between the "no development" and "with development" scenarios, and an 11.3 per cent impact in 2031. However, it should be noted that compared with 2019, retail sales at Carnes Hill Marketplace are expected to grow by 26.4 per cent to 2031.

Employment and Other Community Impacts

- The estimated net increase in direct on-site retail employment that could potentially be created if the proposed development at the subject site were to proceed. An estimated 249 jobs could be created on site once the Middleton Grange Town Centre is fully operational.
- Allowing for some minor impacts on employment across other retail centres in the hierarchy, estimated to be in the order of 5 per cent, the overall net employment that could potentially be created is estimated to be in the order of 230 ongoing jobs.
- This is on top of the 171 jobs that are estimated to be created in the construction phase.

1. Introduction

The purpose of this report is to provide an economic impact assessment of the proposed Town Centre at Middleton Grange in the Liverpool Local Government Area (LGA) in New South Wales.

Currently there is no shopping centre in Middleton Grange. The 5,000 residents of the suburb need to travel at least two kilometres to their nearest supermarket in order to fulfil their daily needs.

The Town Centre would consist of 10,000m^2 of gross leasable area (GLA), comprising:

- 3,800m^2 for a major supermarket
- 3,224m^2 for a mini major
- 1,362m^2 of cafes, restaurants and bars
- 1,114m^2 of specialty shops
- 200m^2 liquor shop.

Under current planning regulations, the proponent could build a Town Centre with a GLA of 11,729m^2. This analysis will look at both the absolute impact that the new Town Centre could be expected to have on the surrounding retail hierarchy, as well as the incremental impact the proposal could be expected to have above what is currently allowed.

The site area is around 58,000m^2. The proposed gross floor area for the Town Centre is 113,351m^2,which gives a floor space ratio of 1.98:1.

This report has been prepared under instruction from Pacific Planning.

This report is presented as follows:

- Chapter 2 provides an overview of the proposal, including the local and regional context of the subject site.
- Chapter 3 a brief review of the planning context, including the recently adopted Local Strategic Planning Statement and the draft Centres and Corridors Strategy. This Chapter also reviews the surrounding centres hierarchy and the competitive environment within which the Town Centre will operate, taking into account both existing and proposed developments in the immediate region.
- Chapter 4 introduces the main trade area, and outlines the key demographic and employment data for the area, along with the retail expenditure capacity of the area.
- Chapter 5 provides an analysis of the existing retail hierarchy and proposed and planned retail developments.
- Chapter 6 assesses supermarket supply and demand, and makes an estimate of the market gap.
- Chapter 7 looks at the potential impacts on the surrounding retail hierarchy from the proposed development and discusses the implications of these impacts. This chapter also includes commentary about the nature of competition and the consequences of restricting competition in cities such as Liverpool.

- Chapter 8 assesses the economic and consumer benefits which are likely to flow from the proposed development, in particular employment creation.
- Chapter 9 makes a response to objectors to the proposed Town Centre.
- Chapter 10 makes some concluding remarks about the proposal and its impact on the Middleton Grange and Liverpool economies.

2. The Proposed Development

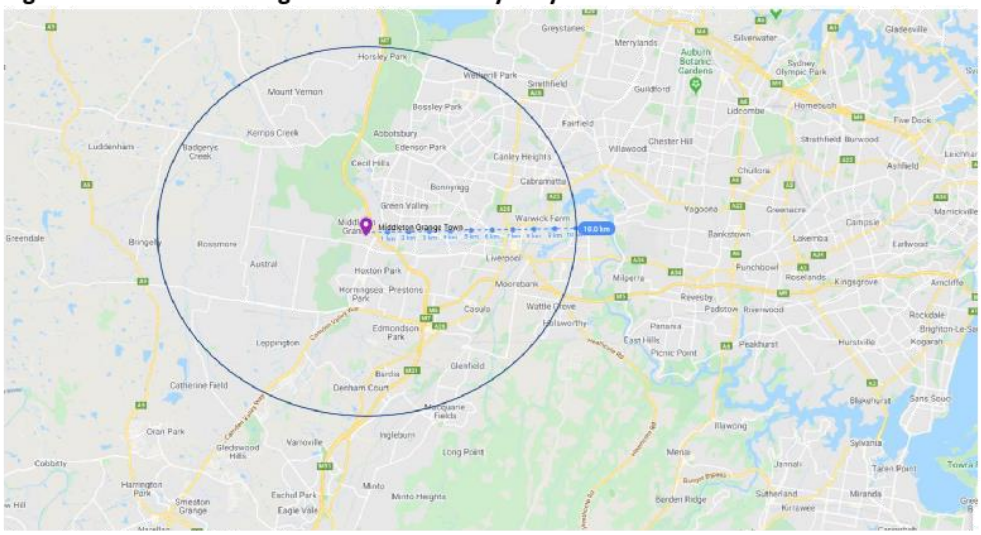
2.1 Regional and Local Context

The proposed Town Centre is a proposed new development. Currently the closest shopping centre to Middleton Grange is Carnes Hill Marketplace, 2.8 kilometres from the proposed Town Centre and up to 4 kilometres from some current and future residents of the suburb.

The Middleton Grange Town Centre is located approximately 40km west of the Sydney Central Business District (CBD) and 7km west of the Liverpool CBD. The Middleton Grange precinct is bounded by Cowpasture Road, Fifteenth Avenue, Hoxton Park Road and the M7 Motorway. Accessibility to and for the suburb are excellent.

Figure 1 shows the location of the Middleton Grange Town Centre within the Greater Sydney area.

Figure 1: Middleton Grange Within Greater Sydney

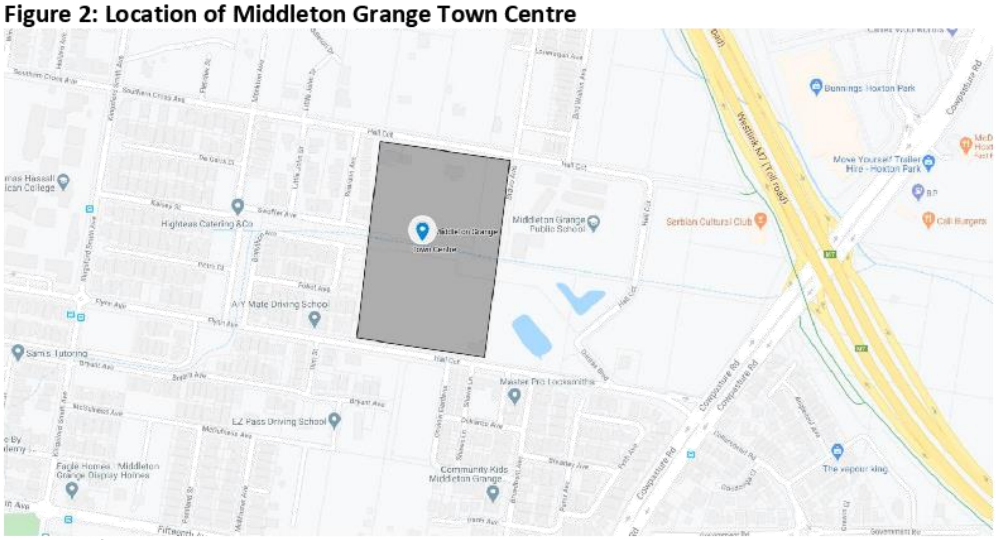


Source: Google My Maps, PPM Consulting

Middleton Grange is a proposed masterplanned community that could accommodate in excess of 1,000 persons once built out. The Middleton Grange Town Centre will be the epicentre of the community and is proposed to accommodate at least 670 dwellings within the Town Centre itself.

The Middleton Grange Town Centre is bounded by Southern Cross Avenue to the north, Middleton Grange Public School to the east, Flynn Avenue to the south and Hall Circuit to the west. Figure 2 shows the location of Middleton Grange in its local area.

Figure 2: Location of Middleton Grange Town Centre



Source: Google My Maps

2.2 The Proposed Development

The Middleton Grange Town Centre subject site under consideration in this report incorporates a total area of 58 hectares, around 3.7 hectares is currently zoned B2 – Local Centre in the Liverpool Local Environmental Plan 2008.

Table 1 shows the proposed floorspace of the proposal.

Table 1: Development Proposal Details

Site Area (m^2)	15,595.86
Current GLA (m^2)	2,815
Proposed GFA (m^2)	9,469
Proposed GLA (m^2)	7,965
Proposed FSR (m^2)	0.60:1

Source:

Figure 3 shows the proposed floor layout for the Town Centre. As can be seen, it is proposed to turn the greenfields site into a mixed use Town Centre providing residential, retail and commercial uses. It is proposed to build a major supermarket, specialty retail, food premises and office space.

Figure 3: Middleton Grange Town Centre Concept - Proposed Ground Floor Uses



Source: Christiansen Obrien Architects, 24 September 2019

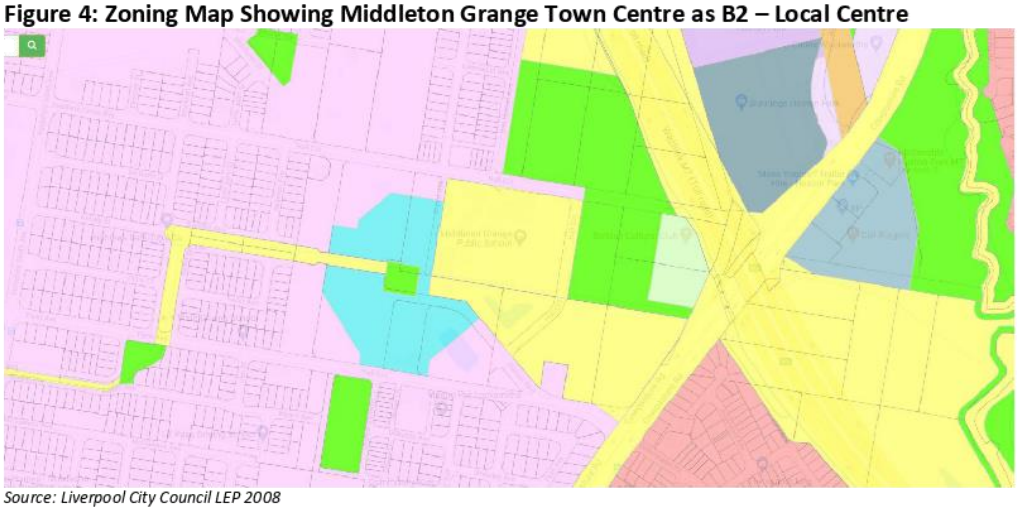
3. Strategic Context

3.1 Strategic Planning Overview

The key controls for the Middleton Grange Town Centre are contained in the Liverpool LEP 2008 and the Middleton Grange Development Control Plan (DCP).

The Middleton Grange Town Centre is zoned B2 – Local Centre in the LLEP 2008, as shown in Figure 4.

Figure 4: Zoning Map Showing Middleton Grange Town Centre as B2 – Local Centre



Source: Liverpool City Council LEP 2008

The Middleton Grange DCP 2015 contains the following planning principles:

1. encourage community and stakeholder collaboration in development decisions
2. take advantage of compact building design that is also sensitive to the environment
3. ensure that land use is appropriate and that any development uses the development site to its best advantage
4. relate the density of development to access to transport and services
5. create a range of housing opportunities and choices
6. create workable neighbourhoods –ensure a civic focus
7. foster distinctive, vibrant communities with a strong sense of place
8. preserve and enhance open space, natural features and critical environmental areas
9. strengthen existing communities –consider employment options and issues such as safety and recreational facilities for the wider community
10. provide a variety of transportation choices –accessibility is the key
11. make development decisions predictable, fair and cost-effective.

3.2 Local Strategic Planning Statement

The Local Strategic Planning Statement (LSPS) for Liverpool (published in March 2020) projects that employment will increase in Middleton Grange by 500-1,000 jobs to 2036. In order to achieve this jobs growth, Middleton Grange will need to be a centre larger than that of a Village Centre.

Page 55 of the LSPS says:

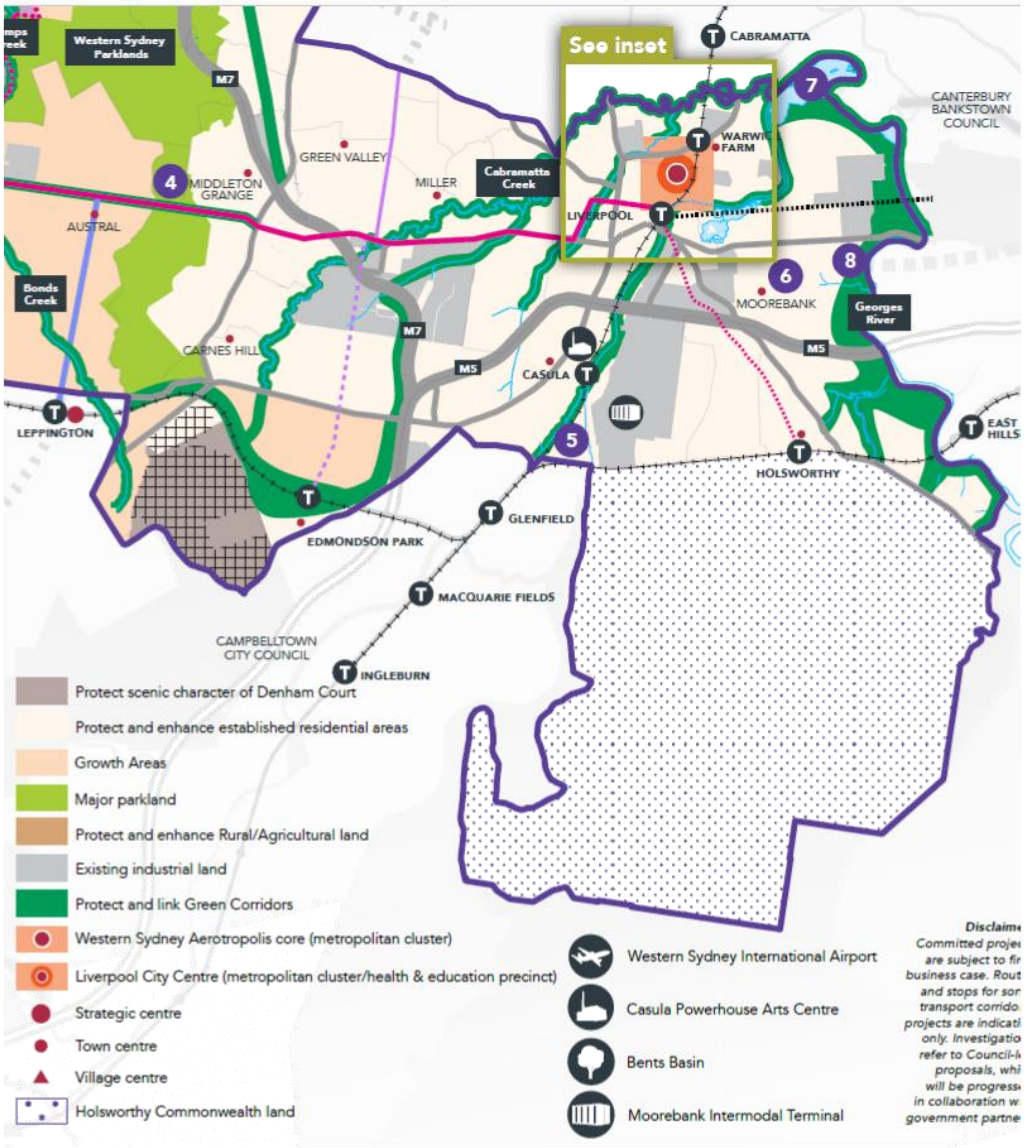
> The LGA has a number of centres differing in size and function. The concentration of retail within centres plays an important role, yet the function of centres extends beyond providing for the day-to-day and specialised retail needs. Centres act as important focal points for the local community, especially when co-located and well integrated with gathering places such as cafes, restaurants and social infrastructure. In turn, the increase in foot traffic from these other uses contributes to the vibrancy of the centre and supports retail uses. Centres also provide opportunities for local employment and are an important part of establishing the 30-minute city when co-located with high quality public transport.
>
> The Liverpool LGA also has 'stand-alone centres' that contain either a supermarket or another large retail role, such as bulky goods retailing. Whilst these stand-alone centres meet the retail needs of the community, they do not provide multi-function community gathering places. As there is limited demand for new centres within the LGA, Council will prioritise the future expansion of retail within local or Town Centres rather than stand-alone centres.

Page 15 of the LSPS says:

> Council's flagship project – the Fifteenth Avenue Smart Transit Corridor – will provide our residents with a rapid public transit connection from Liverpool city centre to the many opportunities provided by Western Sydney Airport, including new high-value jobs. It will also link existing suburbs such as Miller and Middleton Grange, redressing past public transport disadvantage.

The map on Page 21 (Figure 5) shows Middleton Grange as a Town Centre. Figure 5 shows an extract from this map, clearly showing that Middleton Grange is designated as a Town Centre and not a Village Centre.

Figure 5:Liverpool LSPS Showing Middleton Grange as a Town Centre



Source: Connected Liverpool, *Liverpool City Council LSPS, March 2020*

3.3 Liverpool Retail Centres Hierarchy Review 2012 (HillPDA)

In 2012, Liverpool City Council commissioned a review of the retail centres hierarchy in the LGA, based largely on existing and imminent centres. It included potential centres in the South West Growth Centre (SWGC) given that, at the time of the review, and use configuration within the SWGC was unclear. The review is particularly out of date now, as it did not contemplate the Western Sydney Aerotropolis.

The subject Middleton Grange Town Centre was acknowledged as an imminent centre (despite the study being completed in 2012).

At the time of the review, HillPDA estimated a catchment area for retail centres within the Liverpool LGA to contain around 398,000 residents, increasing to around 526,000 in 2031.

The review determined existing demand for retail floorspace across Liverpool LGA of approximately 397,000m^2 in 2012, increasing to 511,000m^2 by 2031, which is equivalent to an increase of around 6,000m2 per year to 2031. This does not include the demand for retail floorspace in the SWGC. In this context, the proposed Middleton Grange Town Centre would only account for around two years of required retail demand across the Liverpool LGA.

3.4 Draft Centres and Corridors Strategy

Liverpool City Council commissioned a Centres and Corridors study to determine the retail hierarchy of the city into the future. The first draft presented to Council was rejected in April 2020 as it named Middleton Grange as a "Village Centre", despite the LSPS clearly denoting it as a Town Centre.

Strategic planning documents and retail planning guidelines produced by the Department of Planning, Industry and Environment ("the Department") provide the following directions for the planning of retail facilities and local centres:

- local centres should be viewed as high-quality places and as important social connectors at the heart of the local community. They should contain a variety of uses to support this role, similar to those in traditional Town Centres
- Concentration of retail provision in centres is necessary to bolster their local roles and to permit multipurpose shopping. Significant out-of-centre development risks limiting the retail spending and vibrancy in local centres
- Where possible, higher-density residential development, community facilities, social infrastructure and open space should be co-located with local centres which have good public transport accessibility and other attributes required to support higher density development
- New centres may be needed in the future to increase retail provision to the growing population in both greenfield and established areas, but the potential impacts of these developments on the economic viability of existing centres should *be considered* (our emphasis).
- There are limited cases in which centres may expand into industrial areas, but this should not compromise the function of those industrial areas

- Bulky goods clusters should be regarded as part of the centres framework, and planning for new clusters should be conducted in the same was as planning for other new centres
- Flexible zoning provisions are required to allow transitions in retail functions.

The draft study found that most residents of the LGA have access by road to a supermarket within 2km of their home. However, Middleton Grange was a suburb that was noted as an exception to this accessibility standard. The study goes on to say that "The creation of planned centres in Middleton Grange… address this problem," and that "It is also important for the timely development of new centres to occur in greenfield areas to provide access to retail facilities for newly developed suburbs."

The draft study is internally inconsistent. At Page ix, the report says that "The New Release District could accommodate an additional supermarket at Carnes Hill or larger than expected supermarkets in greenfield centres in Austral or Middleton Grange," but goes on to name Middleton Grange as a "village centre". There is no concept of "village centre" in the 2008 LEP. Middleton Grange is zoned B2 – Local Centre, a zoning that has the following objectives:

- To provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work in and visit the local area.
- To encourage employment opportunities in accessible locations.
- To maximise public transport patronage and encourage walking and cycling.
- To allow for residential and other accommodation while maintaining active retail, business or other non-residential uses at street level.
- To facilitate a high standard of urban design and a unique character that contributes to achieving a sense of place for the local community.

If a "village centre" is synonymous with a B1 – Neighbourhood Centre, then this would effectively mean that the draft Centres and Corridors Study is calling for Middleton Grange Town Centre to be down-zoned, without compensation.

The draft study identifies 7,000m^2 of retail floorspace for the proposed Middleton Grange Town Centre, which differs from the 5,500m^2 identified in the Liverpool Retail Centres Hierarchy, although is less than could be built under the LEP, which is 11,000m^2.

It should be noted that Table 13, despite listing Middleton Grange as a "Village Centre", suggests that retail floorspace demand would be 11,068m^2 in 2026 and 11,306m^2 in 2036.

As is noted, "Centres are proposed and zoned for development in Middleton Grange, Holsworthy and Edmonson Park. Each of these would be expected to contain at least one major supermarket. If these were to be developed, access to major supermarkets would be improved for Middleton Grange…"

Table 6 of the draft study shows the proposed centre developments for the LGA. Table 2 provides an extract of this section relevant to the Middleton Grange Town Centre.

Table 2: Proposed Centre Developments in Liverpool LGA

Development	Completion Year	Supermarket	Other Food	Clothing	Hospitality	Household Goods	Other Retail	Department Store	Total
Fashion Spree Expansion	2016-21	0	3	301	1,497	1,499	1,483	7	4,790
Edmonson Park Town Centre Stage 1	2016-21	8,000	1,801	2,251	3,154	0	1,801	7,005	24,012
Liverpool CBD Mixed Use Developments	2021-26	0	1,741	2,175	3,050	0	1,741	1	8,707
Edmonson Park Neighbourhood Centres	2021-26	800	0	800	0	0	400	0	2,000
Middleton Grange Town Centre	2021-26	2,000	506	506	506	506	506	2,470	7,000
Austral Major Centre	2026-31	5,000	2,001	3,001	3,004	5,004	100	6,005	25,015
Austral (2 neighbourhood centres)	2026-31	7,000	1,801	2,250	3,154	0	1,801	0	16,006
Austral (neighbourhood centre)	2026-31	3,500	901	1,125	1,577	0	900	0	8,003
Austral Bulky Goods	2026-31	0	0	0	0	45,756	0	0	45,756
Austral Bulky Goods	2031-36	0	0	0	0	58,824	0	0	58,824

Source: Centres and Corridors Study, SGS Economic and Planning

The draft study (Table 13 of the draft study) goes on to find that the retail floorspace demand for Middleton Grange Town Centre will be 11,306 m^2 by 2036, over 4,000m^2 more than the study says the Town Centre should have.

Page 76 of the draft study says:

> Middleton Grange was previously classified as a Village Centre and has not yet been built. The floorspace of the Middleton Grange centre anticipated in current planning controls is consistent with a local centre role. There is not a large enough retail floorspace gap in the New Release District or a large enough catchment around the Middleton Grange Centre to reclassify it as a Town Centre. In addition, road access to the Middleton Grange Centre is more constrained that road access to most Town Centres.
>
> The centre site is co-located with proposed parkland and with the local school. Planning controls intend to facilitate a mixed-use Town Centre. These attributes make Middleton Grange suitable to be developed as a local centre with strong design integration with the surrounding area.

However, if the road network is poor to access Middleton Grange, then it must also hold that the road access for residents of Middleton Grange is difficult for them to access other centres outside of the suburb.

4. Trade Area Analysis

4.1 Trade area definition

The extent of the trade area, or catchment that is served by any shopping centre or retail facility is shaped by the interplay of a number of critical factors:

- the relative attraction of the centre in comparison with alternative competing retail centres. The factors that determine the attraction of a centre, and the strength of that attraction, include its size and composition (for example, its anchor tenants and other specialty stores), its layout, its ambience, car parking, access and ease of use. In addition, if a shopper needs to go to more than one centre to obtain their needs, the centre with more variety will likely be the more attractive.
- the proximity and attractiveness of competing centres. The location, composition, quality and scale of competing centres serve to define the extent of the trade area which a shopping centre is effectively able to serve.
- the available road network and public transport infrastructure which determine how easy it is to access a shopping centre. If there are any physical barriers, this will also affect the trade area, particularly any possible foot traffic.

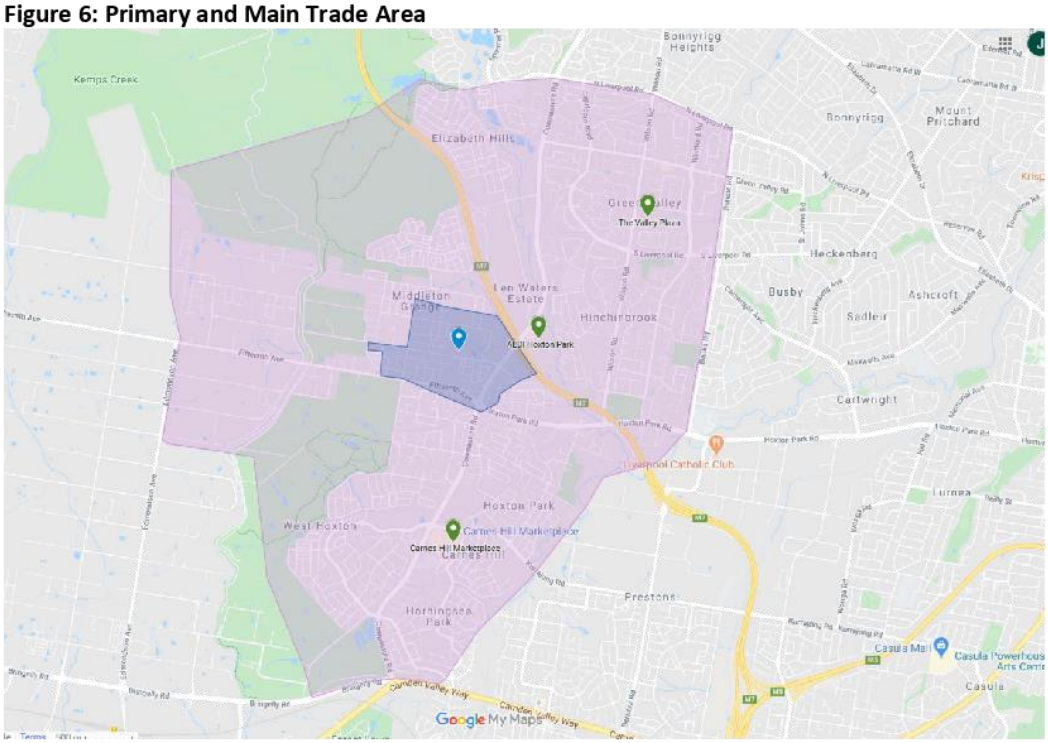
The main trade area estimated to be served by the proposed Middleton Grange Town Centre has been defined taking into consideration all of these factors, in particular the following:

- the fact that the retail contains only the following competing centres:
    - Carnes Hill Marketplace, 2.8km from the proposed Town Centre
    - The Valley Plaza, 4.8km from the proposed Town Centre
    - Hoxton Park Aldi, 1km from the proposed Town Centre
- the Liverpool CBD (comprising Westfield Liverpool and other specialty shops, cafes, bars and restaurants and other services, is 7km to the east, which limits the extent of the trade area to the east.
- the central position of the subject site within the Middleton Grange current and future suburb, which provides excellent access to a growing local population.
- the M7 to the north-east.

The main trade area is defined to include one primary and one secondary sectors (Figure 6), described as:

- the primary sector is generally distance that a person can walk from the Middleton Grange Town Centre in 10 minutes. It is bounded Fifteenth Avenue to the south, the M7 to the north-east, the small catchment east of Cowpasture Road, Kingsford Smith Drive to the West and just north of Southern Cross Drive to the north.
- the main trade area is bounded by Bringelly Road, Cabramatta Creek and Banks Road/Rundle Road to the east, North Liverpool Road/Frederick Road to the north and includes the whole suburb of West Hoxton and part of Austral to the west.
- the secondary trade area is the main trade area minus the primary trade area that sits wholly within it.

Figure 6: Primary and Main Trade Area



Source: Google My Maps

4.2 Trade Area Population

Table 3 shows the current and projected population within the main trade area. This information has been collected from GapMaps, which sources their information and projections from:

- the Australian Bureau of Statistics (ABS) Census of Population and Housing
- NSW Department of Planning, Industry and Environment (DoPIE)
- Liverpool City Council
- information on the Middleton Grange Town Centre
- other investigations of future residential development undertaken during the course of this study.

The main trade area population is estimated at 56,939 as at June 2019, including 2,036 in the key primary sector. The main trade area population is expected to reach 70,609 by 2031, reflecting average annual growth of 2.2 per cent between 2016 and 2031, or 1,238 persons per year. The primary sector population is estimated to grow at an average annual rate of 5.96 per cent between 2016 and 2031, and to reach 3,660 by 2031.

The primary trade area includes the Middleton Grange Town Centre, which is expected to include a population in excess of 1,000 once fully built out. It is likely that the population projections are therefore an under-estimate of the total population expected to live in the area by 2031.

Table 3: Middleton Grange Trade Area Estimated Population 2016-2031

	2016	2018	2021	2026	2031
Primary	1,628	2,036	2,615	3,648	3,660
Secondary	50,411	54,903	57,658	64,669	66,949
Main Trade Area	52,039	56,939	60,273	68,317	70,609
Average Annual Growth (no.)					
	2016-19	2019-21	2021-26	2021-31	
Primary	408	579	1,033	12	
Secondary	4,492	2,755	7,011	2,280	
Main Trade Area	4,900	3,334	8,044	2,292	
Average Annual Growth (%)					
	2016-18	2018-21	2021-26	2020-31	2016-31
Primary	5.75	6.46	8.68	0.08	5.96
Secondary	2.16	1.23	2.91	0.87	2.05
Main Trade Area	2.28	1.43	3.18	0.83	2.20

Source: GapMaps

4.3 Key Demographics

Table 4 shows the socio-demographic profile of the main trade area population, compared to benchmarks for NSW and Australia as a whole, based on data from the 2016 census.

As can be seen in Table 3, the primary trade sector has a relatively low per capita income, with an average per capital income of $31,489. This may be a function of the average age, which is around 10 years younger than the NSW and Australian averages. However, the average household income at $116,281 is higher than the NSW and Australian averages, reflecting larger household sizes.

The unemployment rate for the primary trade area is 4.5 per cent, which is nearly 2.5 percentage points lower than the Australian average.

In the primary trade area, nearly 75 per cent of households are either owned or mortgaged, compared to 67 per cent for NSW and Australia as a whole.

Nearly half of the population was born overseas.

The main trade area also has a lower per capita income but higher average household income than NSW and Australia as a whole. The average age for the main trade area is 32.29. 79 per cent of households are owned or mortgaged and the unemployment rate is 6.8 per cent (slightly higher than the primary trade area).

The main trade area can be characterised as relatively well off, with high home ownership levels and low unemployment.

Table 4: Main Trade Area Demographics, 2016

	Primary Sector	Main Trade Area	NSW Average	Aus Average
Per Capita Income	31,489	32,100.00	40,431.00	39,620.00
Average Household Income	116,281	115,165.00	107,453.00	103,664.00
Average Household Size	3.8	3.67	2.66	2.6
Number of Households	384.0	13,715	2604293	8285829
Age Distribution (% of population)				
Population Aged 0-4	12.4%	7.7%	6.3%	6.4%
Population Aged 65+	3.5%	6.1%	15.8%	15.2%
Average Age	28.9	32.29	38.8	38.4
Housing Status (% of households)				
Owner/Buyer (total)	74.8	79.0	66.96	66.73
Renter	24.4	20.8	32.29	31.42
Other	0.8	0.2	0.8	1.8
Average Weekly Mortgage Payment ($)	2,625	2,380	2,317	2,071
Average Weekly Rental Payment ($)	455	458	415	358
Birthplace (% of population)				
Australian born	53.4%	51.7%	66.5	66.7
Overseas Born				
China	0.6%	0.9%	3.11	2.15
India	2.0%	1.0%	1.88	1.92
Asia Balance	15.0%	17.5%	6.72	5.33
Europe	5.0%	5.2%	5.76	6.72
Other	23.9%	23.7%	17.02	17.16
Labour Force Status (% of persons)				
White Collar Employed	67.6%	63.1%	71.9%	70.2%
Blue Collar Employed	32.4%	36.9%	28.1%	29.8%
Unemployment Rate	4.5%	6.8%	6.2%	6.9%

Source: GapMaps

4.4 Retail Expenditure Capacity

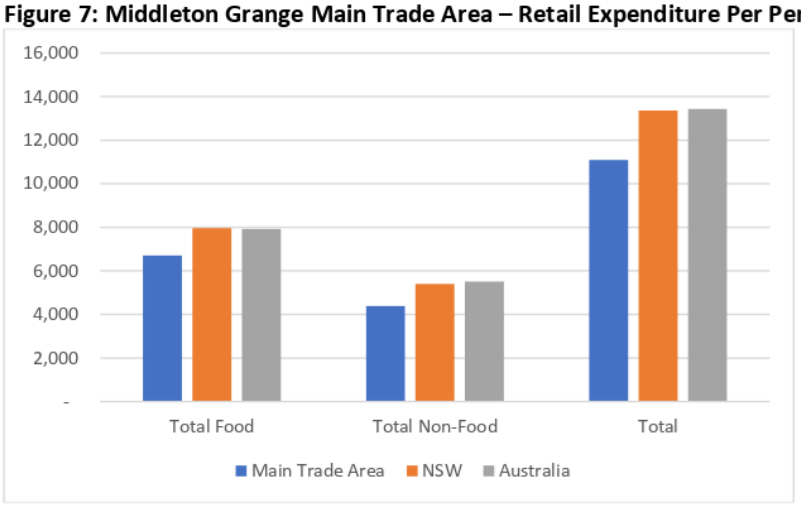
The retail expenditure capacity of the main trade area is generated from information sourced from Market Data Systems (MDS), which uses a detailed micro simulation model of household expenditure behaviour for all residents in Australia. The model takes into account information from a wide variety of sources, including the regular ABS Household Expenditure Surveys, national accounts data, census data and other information.

Total retail expenditure comprises the following categories:

- Take-home food and groceries – goods typically sold in supermarkets and speciality fresh food stores
- Packaged liquor – packaged beer, wine and spirits such as those purchased in bottle shops and liquor outlets
- Food catering – cafes, take-aways and restaurants, including alcohol consumed on these premises
- Apparel – clothing, footwear, fashion and accessories
- Household goods – giftware, electrical, computers, furniture, homewares and hardware goods
- Leisure – sporting goods, music, DVDs, games, books, newsagents, photo printing, etc
- General retail – pharmaceutical goods, cosmetics, toys, florists, mobile phones
- Retail services – retail services such as key cutting, shoe repairs, hair and beauty.

Figure 7 shows the estimated retail expenditure capacity per person for the residents of the main trade area for the year 2018-19 and compares these estimates with the average for NSW and Australia. Spending estimates are presented inclusive of GST.

Figure 7: Middleton Grange Main Trade Area – Retail Expenditure Per Person 2018-19







Source: GapMaps

Table 5 presents estimates of total retail spending generated by the main trade area population, by trade area sector, over the period from 2016 to 2031. Spending forecasts are presented inclusive of GST and in constant 2018-19 dollars.

The retail expenditure market is expected to grow from around $577.3 million in 2016 to $926.4 billion in 2031, an increase of 60 per cent at an average annual growth rate of 3.2 per cent. The average annual growth rate of 3.2 per cent comprises two components:

- residential population growth, which is expected to average 2.2 per cent
- real growth per capital retail expenditure, which is expected to average 1.0 per cent per annum over the forecast period.

The total retail expenditure capacity of the primary sector is expected to grow at 6.96 per cent per annum, from $18 million to $49 million by 2031, an increase of 174 per cent.

Table 5: Middleton Grange Main Trade Area Retail Expenditure ($), 2016 to 2031

	Primary Sector	Secondary Sector	Main Trade Area
2016	17,977,869	559,281,933	577,259,802
2017	19,228,625	576,524,699	595,753,325
2018	20,566,400	594,272,920	614,839,320
2019	21,997,245	612,539,522	634,536,768
2020	23,527,638	631,337,620	654,865,258
2021	25,164,503	650,680,504	675,845,007
2022	26,915,248	670,581,630	697,496,878
2023	28,787,796	691,054,609	719,842,405
2024	30,790,621	712,113,189	742,903,810
2025	32,932,786	733,771,240	766,704,027
2026	35,223,986	756,042,738	791,266,725
2027	37,674,590	778,941,742	816,616,332
2028	40,295,687	802,482,371	842,778,058
2029	43,099,139	826,678,781	869,777,920
2030	46,097,633	851,545,138	897,642,770
2031	49,304,738	877,095,582	926,400,319

Source: GapMaps, PPM Consulting

Table 6 shows projections of spending for the main trade area by retail category. Food, liquor and grocery (FLG) expenditure (take home food and groceries, including packaged alcohol) is estimated at $265 million in 2016 and accounts for 62 per cent of all retail expenditure in the main trade area. FLG expenditure is forecast to increase to $425 million by 2031, reflecting average annual growth of 3.2 per cent.

Table 6: Middleton Grange Main Trade Area Retail Expenditure by Category ($), 2016 to 2031

	265,060,397	83,829,190	59,949,190	103,778,525	21,926,326	29,639,790	13,075,630	577,261,064
2017	273,552,068	86,514,804	61,869,767	107,103,251	22,628,774	30,589,352	13,494,531	595,754,627
2018	282,315,785	89,286,456	63,851,872	110,534,490	23,353,726	31,569,335	13,926,851	614,840,664
2019	291,360,263	92,146,904	65,897,478	114,075,655	24,101,903	32,580,714	14,373,022	634,538,155
2020	300,694,496	95,098,990	68,008,619	117,730,267	24,874,050	33,624,494	14,833,487	654,866,690
2021	310,327,768	98,145,652	70,187,393	121,501,961	25,670,933	34,701,713	15,308,704	675,846,484
2022	320,269,658	101,289,919	72,435,969	125,394,488	26,493,346	35,813,443	15,799,145	697,498,403
2023	330,530,054	104,534,917	74,756,581	129,411,719	27,342,107	36,960,789	16,305,298	719,843,979
2024	341,119,160	107,883,875	77,151,538	133,557,648	28,218,059	38,144,892	16,827,666	742,905,434
2025	352,047,506	111,340,123	79,623,222	137,836,400	29,122,074	39,366,930	17,366,770	766,705,703
2026	363,325,961	114,907,098	82,174,091	142,252,229	30,055,050	40,628,118	17,923,145	791,268,455
2027	374,965,741	118,588,347	84,806,681	146,809,527	31,017,916	41,929,711	18,497,344	816,618,117
2028	386,978,421	122,387,531	87,523,610	151,512,826	32,011,629	43,273,002	19,089,938	842,779,900
2029	399,375,948	126,308,429	90,327,581	156,366,803	33,037,177	44,659,328	19,701,518	869,779,822
2030	412,170,652	130,354,939	93,221,383	161,376,286	34,095,580	46,090,067	20,332,690	897,644,733
2031	425,375,257	134,531,087	96,207,892	166,546,256	35,187,892	47,566,643	20,984,083	926,402,345
	0.62							
Average Annual Growth ($)								
2016-31	10,019,678.73	3,168,868.53	2,266,168.88	3,922,983.18	828,847.86	1,120,428.31	494,278.34	21,821,330.04

Source: GapMaps, PPM Consulting

5.Competition

5.1 Existing Retail Hierarchy

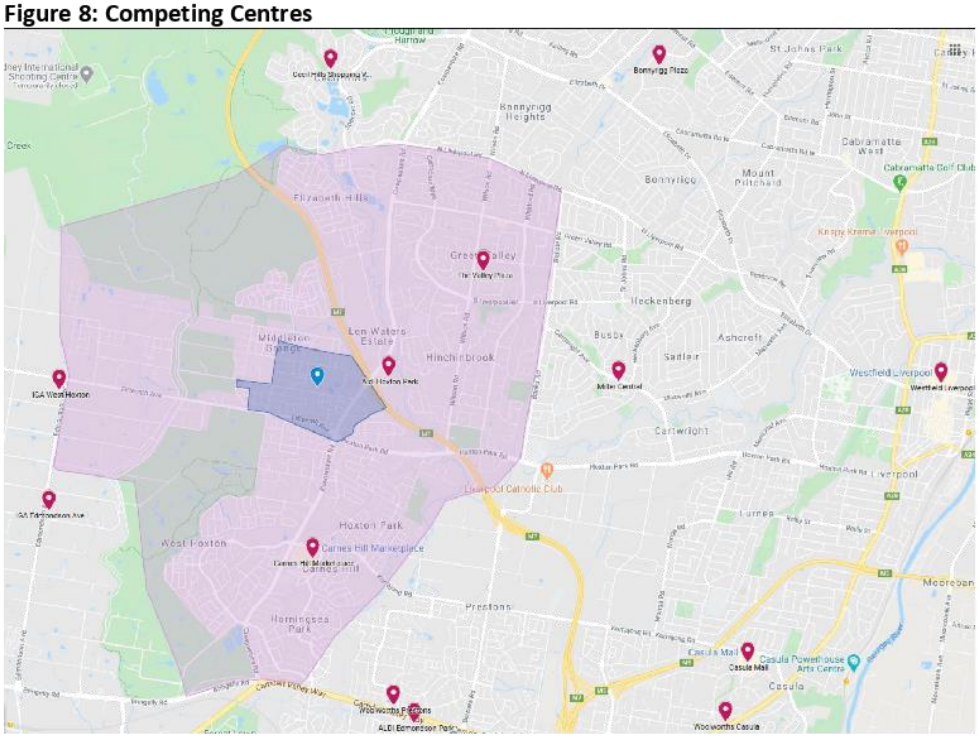
Middleton Grange Town Centre is a designated B2 – Local Centre, with the same zoning as the existing Carnes Hill Town Centre, and future Town Centres such as Austral and Edmondson Park. Middleton Grange is therefore already part of the established/approved centres hierarchy defined by Liverpool City Council.

There are currently no shopping centres in the Middleton Grange suburb. Within the main trade areas, the following centres currently exist:

- Carnes Hill Marketplace, 2.8km from the proposed Town Centre
- The Valley Plaza, 4.8km from the proposed Town Centre
- Hoxton Park Aldi, 1km from the proposed Town Centre.

Figure 8 shows the surrounding network of retail centres of relevance to the proposed development.

Figure 8: Competing Centres



Source: Google My Maps, PPM Consulting

Table 7 shows the competing centres.

Table 7: Competing Centres

	Retail GLA (est)	Major Traders	Distance by Road from Middleton Grange
Within Trade Area			
Carnes Hill Marketplace	17,233	Woolworths, Big W, Aldi*	2.8
The Valley Plaza	12,737	Woolworths, Coles	4.8
Hoxton Park	2,000	ALDI	1.0
Total	31,970		
Outside of Trade Area			
Westfield Liverpool	83,538	Woolworths	9.1
Bonnyrigg Plaza	22,388	Woolworths, Big W	7.6
Casula Mall	20,165	Coles, Aldi, Kmart	7.1
Austral	2,500	IGA	4.7
WeHoxton Shopping Centre	2,800	IGA	3.3
Prestons	3,000	Woolworths	5.6
Edmondson Park	1,032	ALDI	6.2
Miller Central		Woolworths, ALDI	5.1
Cecil Hills Shopping Village	2,000	Woolworths	5.4
Casula	3,942	Woolworths	

* Aldi is not located within the Carnes Hill Marketplace
Source: GapMaps, PPM Consulting

Within The Main Trade Area

Carnes Hill Town Centre

The Carnes Hill Town Centre is located 2.8 kilometres to the south of Middleton Grange Town Centre. The key component of the Carnes Hill Town Centre is the 17,208m^2 Carnes Hill Marketplace, anchored by a Big W discount department store and a Woolworths supermarket and includes a Dan Murphy's large format liquor store. According to the most recent statistics, the centre recorded total Moving Annual Turnover (MAT) of around $163.5 million. The Town Centre also accommodates a stand-alone Aldi supermarket, with its own parking as well as surrounding pad-sites, including a medical centre, McDonalds, Pizza Hut and a service station. There is around 18,700m^2 of retail floorspace at this centre.

The Valley Plaza

The Valley Plaza predominantly consists of the double supermarket anchored Green Valley Plaza shopping centre located in the suburb of Green Valley, about 4.5 km north-east of Middleton Grange. There are also several pad sites around this centre including a service station, a McDonalds 24 hour restaurant, an Autobarn and a Carlovers car-wash.

Hoxton Park Aldi

There is an Aldi around 1km from the Middleton Grange Town Centre. This site also has a service station and fast food outlets.

Beyond the Main Trade Area

Beyond the main trade area are the following:

- Liverpool CBD and Westfield Liverpool - which is the highest order retail and commercial centre in the LGA, located about 8 km east of Middleton Grange Town Centre. Liverpool. This centre provides around 125,000m^2 of retail floorspace, including an extensive street/strip retail offer and the 75,000m^2 (retail GLA) Westfield Liverpool shopping centre, a highly successful regional centre than achieved annual sales of $498.8million in 2019. The centre also includes the Liverpool Hospital, a major tertiary hospital serving outer western Sydney, a sizeable office market, street/strip shopfront commercial/business users and community facilities, and is a key bus and rail interchange for outer Western Sydney.
- Casula Mall - consists of the 20,000m^2 Casula Mall sub-regional shopping centre located about 7.8 km south-west of Middleton Grange. The centre is anchored by a Kmart and Coles and Supa IGA supermarkets.
- WeHoxton Shopping Centre - The Austral Town Centre is located about 4.2 km to the west of the subject site along Fifteenth Avenue, at the intersection of Edmondson Avenue. The WeHoxton Shopping Village currently occupies the north-west corner of the centre and supports around 2,800m^2 of traditional retail floorspace, including an IGA supermarket of 1,090m^2, 15 – 20 specialty shops, medical centre and allied health facilities.
- Austral Town Centre is planned to accommodate higher order retail and supporting ancillary non-retail uses, and is earmarked to support up to 30,000m^2 of retail floorspace according to the Austral and Leppington North precinct planning report. We expect that the centre will evolve in stages, and could accommodate one or more full-scale supermarkets as an initial stage, followed by sub-regionally oriented retail and commercial uses in subsequent stages.
- There is a stand alone Woolworths at Prestons with approximately 3,000m^2 of GLA.
- Miller Central - is located about 5.0 km to the east of Middleton Grange and contains the newly redeveloped Miller Central shopping centre, which includes a large Woolworths supermarket and an Aldi supermarket. This centre sits within a precinct that includes a medical centre, convenience retail and business services, a tavern and a child care centre.
- Other centres include Cecil Hills Shopping Village, Edmondson Park and an IGA at Austral.

5.2 Proposed and Planned Retail Developments

The Draft Centres and Corridors Study 2020 identifies 256,447m^{2}of new retail floorspace anticipated to come online by 2036 across the Liverpool LGA. Table 8 provides a snapshot of the proposed new centres and large centre expansions in the LGA. There are several smaller proposed developments within existing centres. The Study applies an average mix of retail floorspace types to greenfield centres as the final mix is unknown.

Table 8: Proposed Centre Developments, Liverpool LGA

Development	Completion Year	Supermarket GFA (m^2)	Other Food and Retail GFA (m^2)	Hospitality GFA (m^2)	Department Store GFA (m^2)	Total GFA (m^2)
Fashion Spree Expansion	2016-2021	0	1,810	1,499	7	4,790
Edmondson Park Town Centre Stage 1	2016-2021	8,000	12,858	3,154	7,005	24,012
Edmondson Park Town Centre Stage 2	2021-2026	0	1,200	3,050	1	8,707
Liverpool CBD Mixed Use Developments	2021-2026	1,645	5,658	8,838	2,191	9,956
Edmondson Park Neighbourhood Centres	2021-2026	800	5,292	0	0	2,000
Austral Major Centre	2016-2021	5,000	11,006	3,004	6,005	25,015
Austral (2 Neighbourhood Centres)	2021-2026	7,000	4,051	3,154	0	16,006
Austral (Neighbourhood Centre)	2021-2026	3,500	2,926	1,577	0	8,003
Austral Bulky Goods	2021-2026	0	45,756	0	0	45,756
Austral Bulky Goods	2031-2036	0	58,824	0	0	58,824

Source: Liverpool Centres and Corridors Strategy, Draft, April 2020, SGS

Note that there are no known additional supermarkets in the main trade area in the development pipeline up to 2036.

6. Supermarket Market Gap

6.1 Supermarket Floorspace Provision: Main Trade Area

To assess the market demand for the potential redevelopment and addition of new retail facilities at the subject site, the current and future demand for supermarket floorspace generated by the main trade area population needs to be assessed. This is then compared with the existing and proposed supply of floorspace to come to a conclusion about the over- or under-supply of supermarket floor space in the area, and therefore whether the expenditure in the area can justify an increase in supermarket space.

To estimate the supermarket floorspace demand generated by the main trade area population, the available supermarket related expenditure is translated into an estimate of supportable or required supermarket floorspace. Floorspace estimates are generated by applying appropriate thresholds of turnover per square metre of floorspace, referred to as "retail turnover densities" (RTDs), to the available expenditure volume.

Table 9 compares the demand for supermarket floorspace generated by residents of the main trade area with the existing, and proposed, supply of supermarket floorspace, outlining the estimated current and future market gap for supermarket floorspace within the main trade area. For the purposes of calculating the estimated gap, the following steps have been taken:

- the current and future population within the main trade area has been estimated
- the per capital expenditure on take-home food, packaged liquor and groceries (FLG) has been estimated using MarketInfo data
- 75 per cent of FLG expenditure has been directed to supermarkets. This estimate is consistent with national benchmarks for comparable areas (i.e. regional and non-metropolitan areas throughout Australia), and allows for the remaining 25 per cent to be allocated to smaller foodstores (e.g. Foodworks), food specialty stores and other general retail stores.
- the per capita FLG expenditure directed to supermarkets has been multiplied by the trade area population, to determine the total available FLG expenditure pool directed to supermarkets.
- 6 per cent of supermarket sales turnover has been allowed for to comprise of general merchandise (i.e. non-food), which is typical across national supermarkets.
- the likely retention of available expenditure for each trade area sector has been estimated. To do so, an outflow of 10 per cent of total supermarket expenditure has been allowed for, i.e. 90 per cent of supermarket expenditure generated by main trade area residents is estimated to be retained within the trade area.
- the inflow from customers who live beyond the main trade area has been allowed for, which is estimated at around 10 per cent. The consequential outcome of these assumptions is that there is a net outflow of 10 per cent (i.e. a net retention rate of 90 per cent). This is considered reasonable, if not conservative.
- applied an RTD for supermarkets of $13,500 per square metre in 2016, which represents a successful and profitable average trading level for supermarket retailers.
- real growth of 0.5 per cent per annum in this RTD has been allowed for from 2016.

Table 9: Middleton Grange Main Trade Area–Estimated Supermarket Floorspace Market Gap 2016-2031

Population and Supermarket Expenditure	2016	2018	2021	2026	2031
Main Trade Area Population	52,039	56,939	60,273	68,317	70,609
FLG Spend Per Capita ($)	5,093	4,958	5,149	5,318	6,024
Total FLG Exp ($)	265,060,397	282,315,785	310,327,768	363,325,961	425,375,257
FLG expenditure to supermarkets at 75% ($)	238,554,357	254,084,207	279,294,991	326,993,365	382,837,731
6% of supermarket sales from GM ($)	11,602,050	12,357,342	13,583,464	15,903,266	18,619,247
Total supermarket expenditure MTA residents ($)	250,156,408	266,441,548	292,878,455	342,896,631	401,456,978
MTA containment ratio	90	90	90	90	90
Beyond trade area capture rate	10	10	10	10	10
Total available supermarket expenditure ($)	250,156,408	266,441,548	292,878,455	342,896,631	401,456,978
Supermarket Floorspace Demand and Market Gap					
RTD @ $13,500 increasing at 0.5% p.a.	13,500	13,635	13,841	14,190	14,549
Supportable supermarket floorspace (m^2)	18,530	19,541	21,160	24,164	27,594
Supermarket Supply(m^2)	16,000	16,000	20,000	20,000	24,000
Total super market gap(m^2)	2,530	3,541	1,160	4,164	3,594

Source: GapMaps, PPM Consulting

Table 9 shows that the estimated supermarket floorspace demand generated by the main trade area population, based on the above methodology, is 18,530m^2 in 2016, and is projected to increase to around 27,594m^2 by 2031, an increase of over 8,000m^2.

The supermarket supply is assumed to increase by 4,000m^2 in 2021 as the Middleton Grange supermarket comes online. It is unlikely that there will be two full-line supermarkets in the Middleton Grange Town Centre, however in 2031 it is assumed a further full-line supermarket will be established in the main trade area, taking supermarket supply in the main trade area to 24,000m^2.

6.2 Supermarket Floorspace Provision: Liverpool LGA

The supermarket gap (under-supply of supermarket floor space) as of today is estimated at around 3,541m^2, the equivalent of around a full-line supermarket. It should be stressed that this is with the population and spending in the main trade area as of today.

The supermarket gap is projected to fall to 1,160m^2 as Middleton Grange comes online, although this does not include population increases over and above projected increases from new residents of the Middleton Grange Town Centre and other new release areas in the main trade area. Therefore it is likely that this is an under-estimate of the supermarket gap that would be experienced in 2026 and beyond. Even with an additional supermarket established in the main trade area by 2031, the undersupply of supermarket floorspace remains high at 3,594m^2. As noted in Chapter 5, there are no new supermarkets planned for the main trade area out to 2036, so the addition of a supermarket in this analysis is a very conservative assumption; if no further supermarkets (other than the Middleton Grange Town Centre) went ahead in the main trade area, the supermarket gap would be larger.

6.3 Escape Expenditure

It is not suggested that all of the supermarket demand generated by main trade area residents will or necessarily should be retained within the main trade area. There are inevitably outflows of expenditure from any trade area, just as there are inflows from tourists/passers-by/residents of other areas (including those who will work in the commercial centre in the Town Centre).

Assessing the market gap provides a broad indication as to whether a community has convenient access to a sufficient quantum and range of supermarket facilities.

The estimation of the market gap is also useful in enabling reasonable conclusions to be drawn as to the likely impact of any particular new development.

7.Economic Impacts

7.1 Recommended Scale and Mix

The analysis contained in this report indicates that a supermarket of at least 3,800m^2 could be supported at the subject site by 2026.

Across Australia single supermarket anchored shopping centres typically support around 1,300 – 1,500m^2 of specialty retail floorspace and around 500 – 600m^2 of mini-major floorspace, in addition to a supermarket anchor. Typical single supermarket centres tend to also support an additional 500 – 1,000 m^2 of other uses, which could include travel agents, post offices, gyms, childcare, medical uses, professional suites, banks etc.

In some locations, with high volumes of surrounding activity, and limited competition, the provision of specialty retail could be significantly larger than this. This applies to the Middleton Grange Town Centre. In other locations a supermarket centre may only support a handful of specialty tenants.

The Valley Plaza is a good example of the type of local centre that could be envisaged at the subject site, although there are two supermarkets and a larger amount of retail GLA than is currently proposed at Middleton Grange.

In this context, and given the centre's proposed central location within the Middleton Grange, the distance to other full-line supermarkets and the need for complimentary retail around the anchor, it is recommended that a centre of a size around that proposed could be supported at the subject site, with a strong focus on convenience and lifetsyle.

7.2 Estimated Sales Potential

Table 10 summarises the retail sales potential and required market shares of the proposed Middleton Grange Town Centre, assuming a centre of around 10,000m^2 of retail floorspace is provided.

The analysis in Chapter 6 of this report showed that a supermarket could be supported at the subject site today. In order to estimate the potential trading impacts on the surrounding retail hierarchy, it has been assumed that the proposed development would have its first full year of trade in the year 2021-22 (i.e. built by June 2021). Future sales estimates are presented in constant 2019 dollar terms and include GST.

The sales potential for the proposed redevelopment comes from the information provided throughout this report, and in particular the following:

- the existing provision and estimated trading levels of supermarkets across the surrounding region.
- the current and future population within the main trade area, and in particular, the FLG expenditure capacity generated by this population.

As shown in Table 10, it is estimated that the proposed development will achieve a sales volume in the order of $86 million in 2026, expressed in constant 2019 dollar terms, including estimated supermarket sales of $55.6 million (at approximately $13,910 per square metre).

Table 10: Middleton Grange Town Centre – Estimated Retail Sales Potential by Store Type, 2026

	GLA (m^2)	Est Sales ($)	$/$m^2$
Supermarket	4,000	55,640,386	13,910
Min-Major	3,224	24,914,528	7,728
Specialty Retail	707	5,463,577	7,728
Total Retail	7,931	86,018,490	10,846

Source: Architects, PPM Consulting

The total projected main trade area retail expenditure for 2026 is estimated at $791 million. Assuming escape expenditure of 10 per cent, the share of total main trade area expenditure that the Middleton Grange Town Centre would be expected to achieve would be 12.1 per cent. This is shown in Table 11. This means that nearly 90 per cent of all retail expenditure in the main trade area would still be expected to occur in the current centres. It is estimated that beyond trade area expenditure (including tourists/visitors/workers and other non-trade area residents in the region) would contribute to around 10 per cent of total sales for the centre.

Table 11: Middleton Grange Estimated Share of Total Retail Expenditure of Main Trade Area

Main Trade Area Expenditure ($m)	791.3
Est Share from Beyond Area (%)	10.0
Est Main Trade Area Share ($)	12.1

Source: PPM Consulting

The other major centres in the main trade area are projected to account for 41.5 per cent of retail spending in 2026, as shown in Table 12, which shows moving average turnover (MAT) for selected centres in 2019 and inflated for 2026.

Table 12: Moving Annual Total Expenditure – Selected Main Trade Area Centres

	MAT 2019 ($m)	MAT 2026 ($m)	Estimated Share Total MTA Expenditure (%)
Carnes Hill Marketplace	163.5	168.5	23.7
The Valley Plaza	96.4	99.4	14.0
Hoxton Park	27.0	27.8	3.9
Total Main Trade Area Expenditure	634.5	791.3	41.5

Source: GapMaps, PPM Consulting

7.3 Purpose of Assessing Trade Impacts

The purpose of an impact assessment is to provide guidance as to whether or not there is likely to be a net community benefit or disbenefit from any proposed development. In particular, if there is a real possibility of some existing facilities potentially being impacted to such a degree that they may be lost to the community and if the service or services provided by those facilities are not at the very least replaced by the proposed new facilities, then a community disbenefit could result.

In order to understand whether any particular centre may be impacted to the extent that its continued viability may be in question, a scenario for the expected retail impacts on the surrounding competitive network if the proposed Town Centre were to proceed as planned has been modelled.

The estimates from this scenario provide indications as to whether the scale of the proposed retail development is reasonable and whether any surrounding centres are likely to be at risk to the extent that the community would suffer a net disbenefit, attributable to the proposed retail development.

In considering likely trading impacts on any individual centre or individual retailer, it must first be acknowledged that such estimates can only realistically be expected to provide a broad indication of likely outcomes, since there are many factors which can change in response to any new retail development, and which will have a bearing on the consequent outcomes. The competitive response of each relevant centre or trader is one such factor, as are further redevelopments or improvements which one or more of the competitive network of centres might implement.

7.4 Impacts Methodology

The following factors are typically considered when assessing the potential impacts of a new supermarket based development on each existing facility or centre:

- the distance of the (impacted) centre, or retail precinct, by road, from the proposed development.
- the size of the centre or precinct, in terms of total retail floorspace.
- the amount of supermarket floorspace, and brands of these supermarkets.
- the role and function of the centre or precinct.
- relative accessibility and relative convenience compared with the proposed retail development.
- the estimated performance of the centre/precinct (in current sales) and future performance (in the impact year), accounting for any future developments in the region that may also impact on the future sales of existing centres.
- the share of available expenditure which the centre/precinct attracts from the identified main trade area of the proposed development. A centre may not be situated in the identified trade area of the proposed development but its main trade area may extend to include parts, or all, of the trade area. For example, the trade area for large regional shopping centre typically includes several hundred thousand persons. Such a trade area is likely to include (partially or completely) trade areas for smaller convenience based centres, sub-regional centres, neighbourhood centres, retail strips and stand-alone supermarkets.

The following key principles are then relied on when assessing the dollar (and percentage) impacts that are likely to be absorbed by existing facilities/centres:

- the greatest impacts are typically absorbed by the closest comparable centres. For example, a new Woolworths supermarket is generally likely to impact the closest nearby Woolworths supermarket to the greatest extent, followed by impacts on other comparable large supermarkets (e.g. Coles), and at the lower end of the spectrum, by smaller scale supermarkets/food stores, which serve much more limited roles.
- impacts on small scale, local supermarkets/food stores, tend to be relatively smaller in scale, as these stores normally attract a small market share of available main trade area expenditure and perform a different role and function in the hierarchy, often serving the local walkable catchments surrounding them, and/or serving more specialised needs (e.g. specialty food stores).

The trading impacts on the three main trade area centres has been estimated using the following methodology, as laid out in Table 13. The table comprises the following:

- Column (1) shows the total GLA of each centre
- Column (2) presents the estimated sales performance of the centre within the surrounding competitive supply network at 2019, based on available datasets.
- Column (3) details the estimated sales for the surrounding competitive supply network as at 2026 under a "No Development" scenario. This estimated sales performance has regard for the planned developments in the region (i.e. accounts for cumulative impacts). It also inflates the retail sales by 1 per cent per annum to take account of inflation.
- Column (4) presents an estimated sales performance of the surrounding competitive supply network as at 2026, assuming the proposed development proceeds. It is assumed that 50 per cent of expenditure at the new centre would come at the expense of the three top listed centres in the table; 50 per cent is assumed to be "escape expenditure" to other centres outside of the main trade area.
- Columns (5) and (6) detail the estimated trading impact (in dollar and percentage terms) of the proposed development, which is determined by comparing the estimated sales for each competitive centre with and without the proposed development.
- Column (7) details the estimated sales for the surrounding competitive supply network as at 2031 under a "No Development" scenario.
- Column (8) presents an estimate of sales performance in 2031 given the proposed development goes ahead
- Column (9) presents the impact on sales in 2031 with the development going ahead, in percentage terms.
- Column (10) compares the 2031 scenario with the development going ahead and compares it with the 2019 sales performance.

It should be noted that this is only one likely scenario. The actual impact on specific centres may be higher or lower than presented in the scenario outlined in Table 13.

Table 13: Middleton Grange - Estimated Sales Transfer on Specific Centres – 2026 and 2031

	Total GLA (m2)	Estimated Centre Sales 2019 ($m)	Est Sales No Dev 2026 ($)	Est Sales With Dev 2026 ($)	Estimated Impact ($)	Estimated Impact (%)	Est Sales No Dev 2031 ($)	Est Sales With Dev 2031 ($)	Estimated Impact (%)	Estimated Impact With Development 2019-2031
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Carnes Hill Marketplace	17,233	163,529,777	201,120,999	175,315,451.82	25,805,547.13	-12.8%	233,154,360	206,697,190	-11.3%	26.4%
The Valley Plaza	12,737	96,429,370	118,595,962	105,693,188.46	12,902,773.56	-10.9%	137,485,224	124,256,639	-9.6	28.9%
Hoxton Park	2,000	27,000,000	33,206,594	28,905,669.85	4,300,924.52	-13.0%	38,495,544	34,086,016	-11.5	26.2%

Source: PPM Consulting

7.5 Implications

There is a significant market gap for supermarket facilities in the main trade area. The impact of the Middleton Grange Town Centre will offset this gap, but only partially, with scope for more supermarkets in the main trade area to 2031.

There are likely to be impacts on Carnes Hill Marketplace in the short term, including a 12.8 per cent impact in 2026 between the "no development" and "with development" scenarios, and an 11.3 per cent impact in 2031. However, it should be noted that compared with 2019, retail sales at Carnes Hill Marketplace are expected to grow by 26.4 per cent to 2031.

Even if 90 per cent of total projected sales for Middleton Grange were displaced from Carnes Hill Marketplace (a very unlikely scenario), the impact would be a 6 per cent drop between 2019 and 2031.

The competitive environment is also dynamic, and the impact analysis only presents a static analysis. Upon Middleton Grange entering the marketplace, the other centres will likely react by providing more and better services to ensure that they do not lose customers to the new centre. This would benefit all customers of Carnes Hill Marketplace, and would likely offset some of the impacts Middleton Grange might have.

In summary, the impact analysis shows that there is no prospect that any existing centre will suffer any impact which will threaten its ability to provide a level of service at least equivalent to that which each is providing at present.

Indeed, by 2031, it is estimated that all centres within the main trade area will be trading well above 2019 levels.

Sales in the three centres only represent 41 per cent of sales of the total $791 million of estimated retail expenditure made by residents of the main trade area in 2026. Therefore, there is a large amount of sales that are still to be captured by the centres operating within the main trade area.

It should also be noted that the population of Middleton Grange is likely an underestimate because of the new residents of Middleton Grange Town Centre and surrounding new developments. To the extent that the population increases are underestimated, the amount of retail expenditure in total, and therefore the amount of retail space demanded, will increase.

7.6 A Comment on Competition

Major British Study of Restrictions of Commercial Space

Cheshire, Hilber and Kaplanis in *Evaluating the effects of planning policies on the retail sector: or do Town Centre first policies deliver the goods?* (Spatial Economics Research Centre, London School of Economics, 2011) found that British land use policies may lower total factor productivity (TFP) in the retailing industry by:

- restricting the total availability of land for retail, thereby increasing space costs
- directly limiting store size
- concentrating retail development on specific central locations.

The researchers used unique store-specific data to estimate the impact of space on retail productivity and the specific effects of planning restrictiveness and micromanagement of store locations.

The research found that total factor productivity (TFP) rises with store size and that planning policy directly reduces productivity both by reducing store sizes and forcing retail onto less productive sites. The results suggest that since the late 1980s British planning policies have imposed a loss of TFP of at least 20 per cent.

Planning policies in NSW are similarly restrictive, establishing Town Centre hierarchies, restricting new Town Centres, restricting the size of Town Centres, restricting what can go into Town Centres and curtailing growth.

The research found that these restrictive "Town Centre first" policies should be removed, especially:

- eliminating the 'needs' and 'sequential' tests and allowing supermarket development on larger sites close to major highways as it would produce major efficiency gains in the sector.
- "Town Centre first" policies are unlikely to deliver on the two explicit goals of improving access to shops for poorer households and encouraging the use of public transport for sustainability.
    - By reducing productivity and raising prices in shops – notably supermarkets – these policies adversely affect the poor, since poorer households spend higher proportions of their incomes on supermarket purchases.
    - Since warehouses are located close to major roads, these policies push retail logistics to more and longer journeys in smaller trucks in more congested conditions. They also push the majority of shoppers using cars to more frequent and time-consuming trips in more congested conditions.

The implications of this research for NSW, and indeed for the proposed Town Centre at Middleton Grange, are profound. The findings suggest that restricting the size and growth of centres, and concentrating growth in current centres (such as CBDs), would likely result in an increase in prices, more cars and trucks on the road and more congestion around the designated centres. Restrictions of this nature, if they were imposed, would not only be bad for the current and potential residents of Middleton Grange, but also the wider catchment area.

Competing Town Centres

The Department of Planning, Industry and Environment (DoPIE) has a long-standing (albeit in draft) policy position when it comes to competition between centres.

The *Centres Policy: Planning for Retail and Commercial Development* has been in draft form since 2009 and provides guidance to planning authorities. The (draft) Centres Policy is based on six planning principles:

- Retail and commercial activity should be located in centres to ensure the most efficient use of transport and other infrastructure, proximity to labour markets, and to improve the amenity and liveability of those centres.
- The planning system should be flexible enough to enable centres to grow, and new centres to form.
- The market is best placed to determine the need for retail and commercial development. The role of the planning system is to regulate the location and scale of development to accommodate market demand.
- The planning system should ensure that the supply of available floorspace always accommodates the market demand, to help facilitate new entrants into the market and promote competition.
- The planning system should support a wide range of retail and commercial premises in all centres and should contribute to ensuring a competitive retail and commercial market.
- Retail and commercial development should be well designed to ensure they contribute to the amenity, accessibility, urban context and sustainability of centres.

Recent residential development in the area has resulted in an increase in population without a commensurate increase in the amount of retail space and other amenities. The proposed neighbourhood centre will bring the retail and other commercial services that are needed today by current residents of the area.

A Note on The Harper Review

The Commonwealth Government's Competition Policy Review (Harper Review) released its final report on 31 March 2015. The key focus of the report, with regards to planning and land use controls, is on the constraints to land use and its impact on competition.

At page 44, the Harper Review states:

> Land is an important input to the production of goods and services and a source of amenity for consumers. Even small policy improvements in this area could yield large benefits to the economy.
>
> Planning systems by their nature create barriers to entry, diversification or expansion, including through limiting the number, size, operating model and mix of businesses. This can reduce the responsiveness of suppliers to the needs of consumers.
>
> Planning regulations should work in the long-term interests of consumers. They should not restrict competition unless the benefits of the restriction to the community as a whole outweigh the costs,

> and the objectives of the regulations can only be achieved by restricting competition. Subjecting planning regulations to the public interest test will ensure they do not inappropriately limit entry to markets.

Comment

It is clear that, even if a new or redeveloped larger commercial or retail development is expected to have an effect on current businesses, this is no reason to prevent the new venture from coming to fruition. Competition is a good thing, and would be welcomed by consumers, as additional choice is offered. Competition could result in better products, better and more innovative service delivery and cheaper goods and services for consumers. For current businesses, competition can be both a threat and an opportunity, but it is not up to planners to protect current businesses from competition (and thereby preventing the benefits of competition flowing to consumers). Current businesses competing with new businesses can find cheaper and better ways to do business, new offerings to consumers and can innovate in both products and service delivery. Stymying competition leads to higher prices for consumers, lower levels of service, further drive times, more congestion and less choice. Therefore, competition should be welcomed by planners, rather than looking for it to be managed.

8.Employment and Other Community Impacts

8.1 Estimated Employment Impacts

The proposed Middleton Grange Town Centre will result in additional on-going employment on site, as well as further jobs throughout the supply chain, including those in industries servicing the retail tenants at the site, such as transport workers, wholesalers and the like.

Furthermore, the construction phase of the project will support temporary construction related employment, and additional temporary jobs through the broader economic supply chain (i.e. multiplier impacts).

In estimating the various employment benefits, various data sources have been relied upon, including information from supermarket operators, the ABS, state and local government agencies, as well as 20 years of experience in preparing assessments of this nature.

Table 14 illustrates the estimated net increase in direct on-site retail employment that could potentially be created if the proposed development at the subject site were to proceed. An estimated 249 jobs could be created on site once the Middleton Grange Town Centre is fully operational.

Allowing for some minor impacts on employment across other retail centres in the hierarchy, estimated to be in the order of 5 per cent, the overall net employment that could potentially be created is estimated to be in the order of 230 ongoing jobs.

Table 14: Middleton Grange – Estimated Employment Levels

	Estimated employment per '000 m^2	GLA (m^2)	Employment (persons)
Supermarket	30	4,000	133
Mini-Major	40	3,224	81
Specialty Retailer	40	1,414	35
Total Development		8,638	249

Source: ABS Retail Sales, PPM Consulting

Table 15 provides an estimate of the total additional employment that could be created as a result of the proposed development, including both direct and indirect (multiplier induced) employment from the construction phase of the project. According to the National Housing Finance and Investment Corporation (NHFIC) study *Building Jobs: How Residential Construction Drives the Economy*, every million dollars worth of construction activity results in 9 direct and indirect full-time equivalent jobs. The capital investment value of the redevelopment has been estimated at $19 million. Table 15 shows that 171 full-time equivalent jobs would be expected to be created directly and indirectly during the construction phase of the proposed development.

Table 15: Employment Effect of Construction Phase

	Direct Effect ($m)	Employment Multiplier (no.)	Total Employment (no.)
Impact	19.013	9	171

Source: Building Jobs: How Residential Construction Drives the Economy, *National Housing Finance and Investment Corporation, 2020, PPM Consulting*

Note that the multiplier effects are for Australia as a whole, and may not necessarily translate to the Liverpool economy specifically. Care should be taken when interpreting multiplier effects, as they can overstate the output and employment impacts. However, the estimates show that construction activity has a high impact on the economy, and would likely have a project of this nature would have a significant effect on the Liverpool economy.

8.2 Other Economic and Social Impacts

The proposed development would generate a range of additional economic benefits, including:

- increased choice and amenity for the population of the area.
- increased competition, potentially resulting in an improvement in offerings from all centres in the area.
- increased competition, potentially leading to innovations in service delivery.
- more convenient access to groceries and other retail offerings those living in the Middleton Grange suburb
- reduced travel time for the those who currently use Carnes Hill Marketplace, The Valley and other shopping centres, and the potential increase in walking. This may have the benefit of reducing fuel expenses as well as helping to combat health issues through increased walking
- an opportunity for the creation of new local businesses, which will likely reinvest in the local area
- providing jobs within the Middleton Grange area, which may be taken up by local residents.

9. Response to Objectors

Urbis states that the MacroPlan Dimasi report is unreliable and that an alternative trade area should have been used for the analysis. While we agree that the inputs are from 2015, their magnitudes remain relevant. While Urbis provides assertions that floorspace productivity levels should be higher, it does not give any updated population forecasts for either the main trade area used by MacroPlan Dimasi, nor for what Urbis believes the main trade area should be. Therefore, the Urbis report merely deals with one side of the equation. In the absence of a full report – with full workings – countering the MacroPlan Dimasi report, the conclusions made by Urbis are merely assertions.

The response to each point made by Urbis in the Urbis December 2019 report is provided below.

Urbis Statement	**PPM Response**
The report prepared by PPM Consulting titled: *'Middleton Grange – Response to Objectors' Submissions on Economics'* does not adequately address or change any of the analysis and opinions presented in our October 2018 report. The proposed development is highly speculative and ill-founded.	The PPM October 2019 report does address the analysis and opinions (it should be noted Urbis's opinions are highly subjective) and provides a large amount of evidence that should give pause to anyone reading their 2018 report. The fact that a consultant can produce a UDR which states "*The increase in density will provide an uplift of new dwelling supply in the area and an increase in the potential residential population which will result in creating an active Town Centre that promotes a sense of place that is safe, vibrant and attractive,*" and then five years later consult for the objectors, calling the proposal development *"highly speculative and ill-founded"* places both the proponent and Urbis in an awkward position. If the Urbis reports of 2019 in favour of the objectors is given any weight, it has the potential to undermine confidence in the entire NSW planning system and undermine investment. This report presents updated analysis of the estimated effect of a new Middleton Grange Town Centre on Carnes Hill Marketplace.
The Macroplan report effectively demonstrates that the proposal is an over-development, as market demand is insufficient to support a centre of the scale proposed and the impacts are high.	The MacroPlan Dimasi report was used as a basis for the planning proposal from 2017. This is the planning proposal based on the Urbis 2015 UDR. In 2017, the planning proposal did not characterise the proposal as an over-development and concluded that demand was sufficient to support a centre of the scale proposed. The conclusion was that the impacts were not high. This is confirmed by the current analysis. This highlights the conflict between the Urbis 2015 UDR and the Urbis reports for objectors from 2019.

Urbis Statement	PPM Response
The trade area defined for the proposed Town Centre at Middleton Grange is insufficient to support a centre of the scale proposed and a tighter trade area, typical for a local centre, would be appropriate.	If Urbis believes that this is the case, it should have undertaken its own full trade area analysis, which is open for any competent consultant to undertake. The fact that this assertion is made without full evidence, and in the face of earlier support for the development, suggests that this statement is highly speculative and partisan. This report presents such an updated trade area analysis and shows that the impacts are not expected to be high, especially by 2031.
The impact assessment provided by Macroplan Dimasi, even at low trading levels, indicates high impacts on the planned network of centres. Usually, competitive developments that are warranted result in relatively low impacts and consequences, simply because the market is large enough to support an expanded network. In this case it isn't.	While it rejected the MacroPlan Dimasi report in its earlier report, Urbis appears to rely on it to make its highly selective point. The MacroPlan Dimasi report showed that there is a likely deficit of retail floorspace in the main trade area by 2031, even with expansion of other current centres. This report confirms this. While Urbis makes claims that the modelling should be different, leading to different conclusions, it does not provide a full report that contradicts the MacroPlan Dimasi report, and therefore can only be regarded as assertion. This report presents such an updated trade area analysis and shows that the impacts are not expected to be high, especially by 2031. That said, this report has shown that, while there may be some short-term effects on Carnes Hill Marketplace, by 2031, it is estimated that it will be trading well above its 2019 levels, even with the development at Middleton Grange.
The Western Sydney Aerotropolis undoubtedly represents a significant investment and change to Western Sydney. The applicant has not provided an updated EIA or any analysis of the need and demand for additional floorspace due to the Aerotropolis, other than the narrative provide in PPMs Response Report.	Urbis does not provide any evidence that the narrative in the PPM October 2019 report draws conclusions that are in any way false.

Urbis Statement	PPM Response
The location of Middleton Grange between the future airport may result in it being a beneficiary of the Aerotropolis to some degree, which may improve residential take-up rates, but it is highly unlikely to change the extent of the trade area of a Town Centre at Middleton Grange, or the market potential for further retail development, due to the planned retail/commercial facilities which will be part of the airport development.	The Urbis report completely misses the point that the PPM October 2019 report was making about the proximity of Middleton Grange to the Aerotropolis. The fact is that airports require a large range of commercial and retail development with varying distance from them. Some commercial tenants may be able to afford to rent premises at the airport itself, or on airport land. However, there will be many potential tenants who either cannot afford the high rents that proximity to the airport will attract, and will be looking for somewhere that is close – within a short drive or bus ride – but not at the airport itself. To suggest that the airport will not create a demand for commercial and industrial land that overflows the airport itself in a significant way is wrong. In this, Urbis misses the point about Middleton Grange's location near the airport and near the main access road, Fifteenth Avenue. It is not about attracting residents, but rather attracting commercial tenants. In any case, the number of residential apartments is significantly lower than the was proposed in the Urbis 2015 UDR.
The updated Liverpool Business Centres and Corridors Strategy will include an updated retail catchment analysis with consideration to recent growth forecasts, Strategy and Local Centre hierarchies and the implications of the Western Sydney Airport and surrounds. This is yet to run its course, and in this respect the Middleton Grange application is premature.	Urbis should not be speaking for the Council. In any event, Urbis did not think Middleton Grange was premature when it wrote the Urbis 2015 UDR. Five years on from that, this study shows that there is a significant supermarket gap currently and ongoing.

Urbis Statement	PPM Response
Even with consideration of the Western Sydney Aerotropolis, the recommended hierarchy and supportable floorspace for Middleton Grange is reliant on the catchment's resident population and their spending habits. The new airport will likely result in greater passing traffic, however it is highly unlikely to result in retail/commercial floorspace of the scale proposed in the most recent application for the Middleton Grange Town Centre. It is important to note that retail/commercial facilities will be part of the airport development and these will be of a significant scale. Middleton Grange's position in the hierarchy, post Aerotropolis, will, in our view, remain as currently planned.	This statement is highly speculative and is not supported by evidence. It is just an assertion that Urbis makes and is based on highly speculative opinion. Middleton Grange Town Centre has been part of the retail hierarchy for over a decade. In the 2006 census, the population of Middleton Grange was 283. The population grew to 515 at the 2011 census. By the 2016 census, the population had grown to 5,177 – 10 times the population in 2011, with more and faster growth forecast. The MacroPlan Dimasi report, which was part of the planning proposal based on the Urbis 2015 UDR states that, "Middleton Grange Town Centre is a designated B2 – Local Centre, with the same zoning as the existing Carnes Hill Town Centre, and future Town Centres such as Austral and Edmondson Park. Middleton Grange is therefore already part of the established/approved centres hierarchy defined by Liverpool Council." While the Urbis October 2019 report rejects the MacroPlan Dimasi Report (which is cited in the planning proposal and which is in turn based on the Urbis 2015 UDR), Urbis does not give a full alternative analysis, other than assertion, to show that MacroPlan Dimasi's conclusions are wrong. However, this report shows that, even with Middleton Grange coming on in 2021 there is a supermarket gap of 3,594m^2 by 2031. This is even with an allowance for an additional supermarket of around 4,000m^2 in the main trade area by 2031. The Aerotropolis is likely to *increase* demand for retail and commercial space at Middleton Grange and in the trade area. This is not refuted by the Urbis December 2019 report. It is true that Middleton Grange will retain its position in the retail hierarchy as currently planned, as a B2 zoned neighbourhood centre with 10,000m^2 of retail and commercial space – lower than the original planning proposal which is based on the Urbis 2015 UDR.

Urbis Statement	PPM Response
The Urbis review is focused on the retail sustainability of the proposed Middleton Grange Town Centre and concludes, in no uncertain terms, that the proposed development is ill-founded, highly speculative and risky. Any potential spin off benefits from increased open space and community facilities, whilst relevant, are very much at the margin.	The Urbis 2015 UDR, upon which the proposal is based and has been refined, supported the Middleton Grange Town Centre at retail and residential densities higher than are being proposed now. At that time, in 2015, Urbis therefore must have been of the opinion that the proposed development was worthwhile, sound, reasonable and safe, or otherwise it would not have allowed it to go forward in the planning proposal. There is no evidence that Urbis believed that the Urbis 2015 UDR was "ill-founded, highly speculative and risky." Indeed, the Urbis 2015 UDR states: "*The increase in density will provide an uplift of new dwelling supply in the area and an increase in the potential residential population which will result in creating an active Town Centre that promotes a sense of place that is safe, vibrant and attractive.*" The increase in open space is of high value to the community, and therefore is not a marginal issue for the development. It may be of marginal relevance to objectors, as it provides a valuable community asset that is difficult to find objectionable, but it is of high importance in the context of the proposal as a whole.

The recent assertion that '*the tenant mix is not expected to compete with Carnes Hill*' is completely without foundation and indeed is not reflected in any economic analysis provided in any of the expert reports. The MacroPlan report, for example, clearly shows that there will be high impacts on Carnes Hill Marketplace, which is of course due to direct competition in overlapping catchments as shown in Map 3.1.	Urbis claims that the PPM October 2019 report says *"the tenant mix is not expected to compete with Carnes Hill."* This is very misleading and a complete misconstruction of the point made by PPM, which actually says, *"Apart from the supermarket, it is unlikely that this mix will compete with Carnes Hill Marketplace…"* While Urbis dismisses the MacroPlan Dimasi report, they use it here selectively to make the argument that there will be an impact on Carnes Hill, which is also acknowledged by PPM Consulting in its reports, including this report. There is no dispute that Middleton Grange will have an effect on trade at Carnes Hill. However, it is also true that Middleton Grange Town Centre was meant to be operational by 2021. As a result of the delay, Carnes Hill will have the benefit of the time between 2021 and when the Middleton Grange Town Centre is built to grow the loyalty of their customer base, thereby mitigating against some of the competitive effects. In any case, Carnes Hill Marketplace has a DA in place to expand. An expanded Carnes Hill Marketplace will no doubt increase the retail offering and thereby attract more customers from the main trade area than they would without the expansion. Shopping centres do not, and should not, exist in a vacuum. For consumers to get the best prices, amenity and services, it is important for there to be competition in the marketplace. Without competition, current retailers get stale, rents rise and prices rise as a result. At the time of the 2016 Census, there were approximately 5,000 people living in Middleton Grange. The nearest supermarket is Carnes Hill Marketplace, some 2 kilometres away. This journey could not be done on foot, and therefore residents are required to get into their cars and drive. This contributes to sedentary lifestyles and poor health outcomes. The Middleton Grange Town Centre will actually be of benefit to consumers by providing groceries at prices lower than would otherwise prevail. This point is not disputed in the Urbis December 2019 report. Not only would the proposed Middleton Grange Town Centre be within walking distance of many current and future residents, it is also proposed to have many of the characteristics seen as "walkable". The benefits include more viable retail spaces, less sedentary lifestyles and less time spent in cars and traffic. Urbis states that it is not aware of the comments attributed to Woolworths; these comments are in a publicly available submission to a public Productivity Commission report. The comments made by Woolworths are highly relevant and are not addressed by the Urbis December 2019 report.

Urbis Statement	PPM Response
The fact that existing centres will be impacted by new centres such as Middleton Grange and commercial facilities in the Western Sydney Aerotropolis, as well as along Fifteenth Avenue, is understood and anticipated to the extent that planning entitlements exist. A considerable short-term impact on Carnes Hill Marketplace, over and above these short- and long-term influences, has not been anticipated and can be expected to influence investment decisions by the owners of Carnes Hill Marketplace as well as other centres in the area.	This should not be used as a reason to exclude Middleton Grange Town Centre from a retail hierarchy that has been settled for over a decade. Just like Carnes Hill Marketplace, Middleton Grange has always been part of the retail hierarchy. That said, Carnes Hill Marketplace has clearly anticipated the size and scope of the Middleton Grange Town Centre because (a) it has always been part of the retail hierarchy at retail densities not much higher than allowed under the LEP, and (b) Carnes Hill are looking to expand, which is a natural competitive response to a potential new entrant.
It is also noted that the Aerotropolis will take some time to come to fruition and the period between 2019 and 2026 provides ample time to investigate and plan for change, including the degree to which both designated and new centres in Liverpool will be affected and/or could benefit.	It should be noted that Middleton Grange Town Centre is not a *new* centre. PPM Consulting maintains that the Aeroptropolis will *increase* demand for retail and commercial space in the area, as logistics and other airport-related companies move to the area to take advantage of proximity to the airport. Many companies, particularly newer companies, will not be in a position to pay the rents that will likely prevail in the airport precinct, so will look to modern facilities close by. Middleton Grange Town Centre is ideally located along the Fifteenth Avenue spine to attract these businesses. New residential along Fifteenth Avenue will also add to the demand for retail space, partially negating some of the impact of the Middleton Grange Town Centre on Carnes Hill Marketplace.

Urbis Statement	PPM Response
The need for additional retail floorspace at Carnes Hill Marketplace should be considered quite separately as it is a designated Town Centre and serves a broader trade area than would be the case at Middleton Grange.	Middleton Grange and Carnes Hill are both in the retail hierarchy of the Liverpool LGA. There is no reason why expansion of Carnes Hill while opposing Middleton Grange Town Centre should not be looked upon as hypocrisy.
It is our view that an additional supermarket could be supported at Carnes Hill Marketplace, as well as Middleton Grange, but that a larger centre at Middleton Grange would curtail further development of Carnes Hill and create considerable planning uncertainty.	The planning uncertainty comes from not allowing Middleton Grange to develop according to the planning proposal which was based upon the Urbis 2015 UDR. Middleton Grange Town Centre has always been part of the hierarchy of centres in the Liverpool LGA. While it is likely that it will take some trade from Carnes Hill, they have already anticipated this with a response of proposing to increase their retail floor space. In addition, there is a deficit of floorspace even when making allowances for an additional new supermarket to come into the main trade area over the period up to 2031.
The purpose of a planned network and/or hierarchy of centres is to maintain the sustainability of higher order, middle order and local centres that serve catchments of various sizes and provide for a range of needs.	As shown in the PPM October 2019 report, restrictive zoning can lower total factor productivity (and therefore increase prices paid by consumers) by: • restricting the total availability of land for retail, thereby increasing space costs • directly limiting store size • concentrating retail development on specific central locations. These points are not disputed in the Urbis December 2019 report. The findings suggest that restricting the size and growth of Middleton Grange Town Centre, and concentrating growth in developed centres, would likely result in an increase in prices, more cars and trucks on the road and more congestion around the designated centres. This is not only bad for the current and potential residents of Middleton Grange, but also the wider catchment area. In addition, restricting retail space adversely affects the poor, since poorer households spend higher proportions of their incomes on supermarket purchases.

Urbis Statement	PPM Response
In Liverpool, the Central Business Area is the primary centre for higher order needs. Centres such as Carnes Hill Marketplace fulfil a middle order role, often referred to as sub-regional. Middleton Grange is intended to house a local centre, anchored by a major supermarket, orientated to serving local needs. This remains appropriate.	We agree that the planning proposal, based on the Urbis 2015 UDR, remains appropriate.

Finally, Urbis uses the phrase "planning uncertainty" as a justification of its position that a centre no bigger than 5,500m^2 should go ahead on the Middleton Grange Town Centre site. Very much to the contrary, planning uncertainty would be created by the development not going ahead, at least at the size it was given Gateway approval for in 2017. The proponent has been led to believe that the proposal will be assessed in a fair manner, and that if the Gateway conditions can be satisfied (as, from an economic perspective they have) then the plan will be made. Leading a proponent down the path to this point, only to reject it – when it has Gateway approval and the proponent has been working with council on the conditions – definitely creates investment risk. Indeed, it sets a very poor example of the investment climate in New South Wales and increases the risk premium on all developments in Sydney and the state. To effectively repudiate both the 2008 LEP and the Gateway approval of 2017 increases planning risk and increases the risk for all future investment in Liverpool and beyond.

10. Conclusion

Liverpool is undergoing significant growth, and it is likely that many new supermarkets and Town Centres will be required over the next 10 to 20 years.

Middleton Grange has been part of the contemplated retail hierarchy for nearly 10 years.

There is a significant supermarket gap for the main trade area around Middleton Grange, leaving the current and future residents under-served by retail floorspace. The inclusion of two new supermarkets in the analysis presented in this report still results in a supermarket gap large enough to nearly support another full line supermarket in 2031.

There are likely to be impacts on Carnes Hill Marketplace in the short term, including a 12.8 per cent impact in 2026 between the "no development" and "with development" scenarios, and an 11.3 per cent impact in 2031. However, it should be noted that compared with 2019, retail sales at Carnes Hill Marketplace are expected to grow by 26.4 per cent to 2031. By 2031, it is estimated that all centres within the main trade area will be trading well above 2019 levels.

In summary, the impact analysis shows that there is no prospect that any existing centre will suffer any impact which will threaten its ability to provide a level of service at least equivalent to that which each is providing at present.

Many of the claims by Urbis on behalf of Carnes Hill Marketplace cannot be substantiated, on the evidence provided in this report.

The proposed Middleton Grange Town Centre has been holistically planned, including the way it would fit into the existing area (parks, new cycle ways, sensible road network, social floorspace etc). At the same time, Carnes Hill has grown in such a way that it has created a traffic bottleneck and has not benefited from good place making principles.

The Urbis Urban Design Report of 2015 has been improved upon by the proponent. The already good design has been refined and enhanced.

If Council decides not to allow the proposed Middleton Grange Town Centre to go ahead, it will result in the current and future residents of Middleton Grange needing to travel for their daily needs, and could result in prices for all residents in the area being higher than they would otherwise be, with fewer and lesser retail offerings.

The proposed Middleton Grange Town Centre will also allow some airport-associated businesses to establish in close proximity to the new airport without them needing to pay for an airport location.

The potential benefits of the proposed Middleton Grange Town Centre are many, with few potential downsides.

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PPM Consulting is a highly experienced and skilled economics and government relations consultancy.

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- providing analysis of retail and commercial development
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- providing advice on Voluntary Planning Agreements (for example, reporting on the "public benefits" provided by a developer as part of a planning proposal or permit/DA)
- uplift reports (for example, comparing FSR and height uplift scenarios and their effect on viability)
- viability reports
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The Director and Principal, Martin Musgrave, holds an honours degree in economics with 25 years of experience in across a wide range of sectors in a number of jurisdictions in both the public and private sectors. Martin is a highly experienced public policy professional, specialising in economic analysis, policy development and leadership, advocacy, and government relations. He is considered a highly skilled economist and policy professional who always acts with integrity.

Martin Musgrave has been a valued senior contributor in the following organisations:

- the Department of Planning and Environment
- the Urban Development Institute of Australia (National and Victorian Division)
- the Property Council of Australia (Residential Development Council)
- the Large Format Retail Association
- the Department of Premier and Cabinet (Victoria)
- the Department of the Prime Minister and Cabinet
- the Roads and Traffic Authority (NSW) (now known as RMS)
- the Hunter Valley Research Foundation (now known as the Hunter Research Foundation)

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PACIFIC PLANNING PTY LTD

TRAFFIC IMPACT ASSESSMENT REPORT FOR 60-80 SOUTHERN CROSS AVENUE AND 45-65 (HALL CIRCUIT) FLYNN AVENUE MIDDLETON GRANGE

REV G

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1.0 EXECUTIVE SUMMARY

The proposal adopts the transport planning objectives first identified in the report *Integrating Land Use - Improving Transport Choice* prepared by NSW Department of Urban Affairs and Planning and now incorporated into the Transport for NSW - Future Transport Strategy 2056. These objectives include reducing (VKT) vehicle kilometres travelled by car, promoting active and sustainable transport and promoting active lifestyle choices. These objectives are delivered in this proposal by reducing car dependent travel for local trips by having good bicycle and pedestrian accessible travel paths and by providing parklands and green spaces within the development. The inclusion of social and employment services within this local centre will reduce car dependent trips and promotive active lifestyle choice for all user types. A new Smart Transit Corridor along Fifteenth Avenue as shown in Liverpool Council's *Draft Strategic Planning Statement - A Land Use Vision 2050* will provide better public transport access for this centre.

The proposal provides more employment opportunities with proposed office space, restaurants, a medical centre and ancillary medical office suites as well as Soho housing for smaller business operations. A smaller supermarket and mini-minor market and associated food and eateries will provide employment opportunities surrounding the new parklands. The new parklands will provide social and recreational infrastructure as well as supporting an active travel lifestyle. These parklands will provide flora and fauna connections to the green parklands north of the subject site.

The revised scheme has reduced the amount of residential density on the site from 912 units to 670 residential dwellings and provides a greater mix of employment and social uses. The proposed FSR on the site ranges from 1:1 (R1 zone) to 2.3:1 (B2 zone) and enables a total maximum 1.98:1 density for the scheme. This density is not considered high in its context and can sustainably enable the desired urban objectives the scheme promotes.

Middleton Grange will be a key local centre between the new Western Sydney International (Nancy-Bird Walton) Airport and Liverpool CBD and this proposal will provide a catchment population of workers and residents along the new Smart Transit corridor.

This report is provided in support of a Planning Proposal. Initial discussions have been held with Liverpool Council to ascertain the road and public transport infrastructure considerations after a draft traffic study was provided for comment. A detailed investigative Modelling report prepared using AIMSUN has been prepared by Bitzios Consulting and is located in Appendix E of this report. The modelling report reflects all proposed road infrastructure changes and the influence of future public transport infrastructure and the projected land use changes to the year 2026. We support the planning proposal on traffic and parking grounds.

(1.0 Continued)

We received Liverpool Council's request to our TIA report dated 24/12/2019. We have reviewed the traffic generation rates and have adopted the advice from Council and Transport for NSW. As requested by Council, the Infrastructure Developments, interim and future have been detailed in Section 7.0 of this report.

2.0 INTRODUCTION

2.1 Background

We have been engaged to review the traffic and parking requirements in support of a proposed Town Centre at 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue Middleton Grange. The development is located within the Liverpool Council Local Government Area and has been planned with consideration to Councils Planning Policy Framework.

The site is shown in **Figure 1 Location Plan.**

2.2 Scope of Report

This application relates to the planning proposal for the site for a Town Centre comprising 670 residential units in addition to the following components and associated gross floor areas (GFA) stated in **Table 2.2.**

Table 2.2 Summary of Uses and Areas

	Uses	Area M^2	No of Units
Summary	Neighbourhood Shops	4060	
	Retail Shops	5822	
	Café Restaurant	6447	
	Office	7023	
	Commercial-Entertainment	2862	
	Childcare	505	
	Gymnasium	3500	
	Medical Centre	1175	
	Imaging Diagnostic	1189	
	Ancillary Health Offices	1964	
	Medical Suites	7012	
	Outpatients	1189	
	Major Supermarket	2600	
	Mini Major	1200	
	Soho Ground Floor	1200	
	Residential Units		670
	Community Centre	500	
	Total	**48248**	

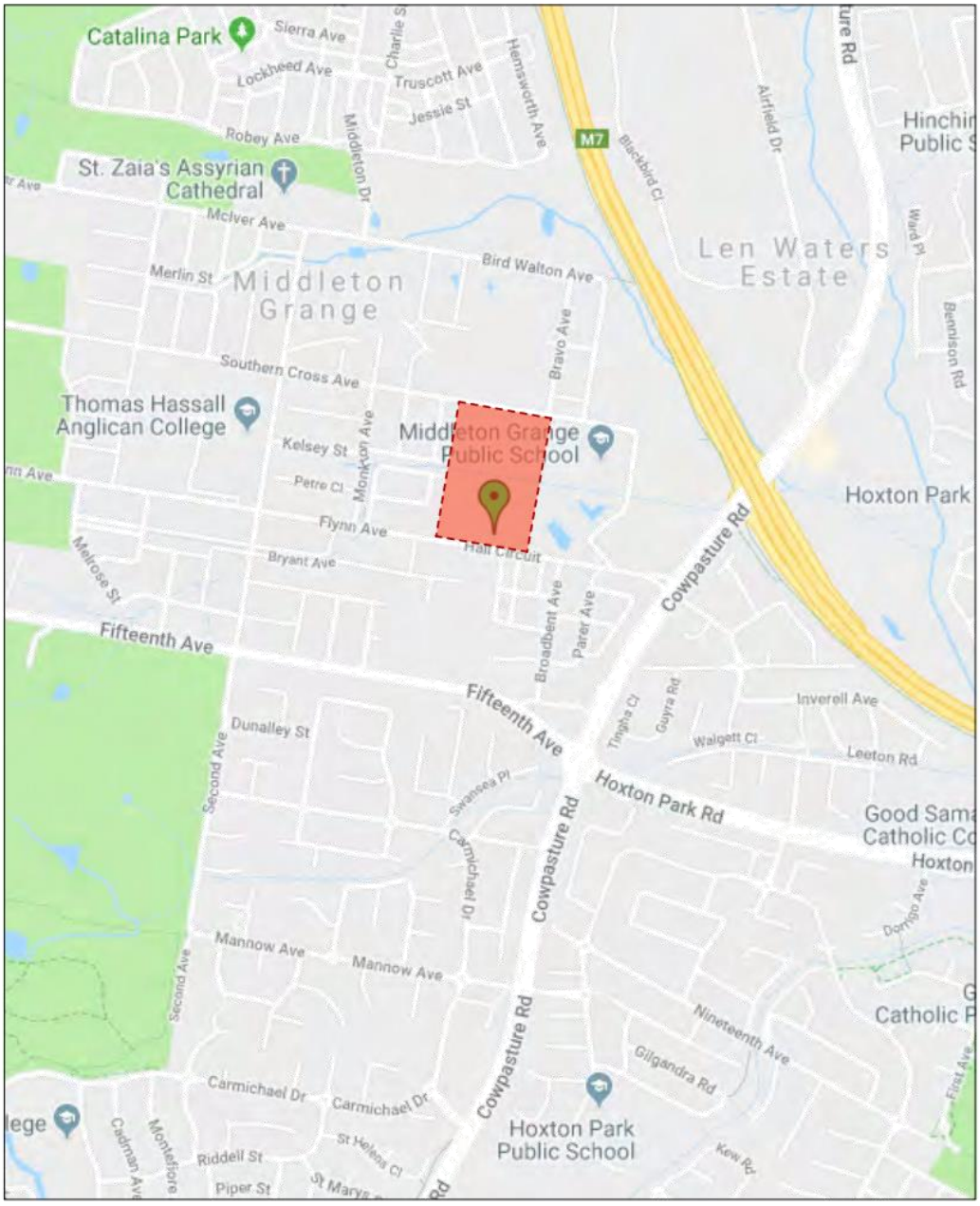


FIGURE 1: LOCATION PLAN

(2.2 Continued)

Each area per precinct is identified in **Table 2.2b.**

Table 2.2b proposed Summary of Uses and Area

SUMMARY

Location	Uses	Area M²	No of Units
Precinct Lot 2	Neighbourhood shops	2030	
	Café Restaurant	718	
	Ground Floor Soho	600	
	Residential Terrace		17
	Residential Shop Top		12
	Total	**3348**	
Precinct Lot 3	Neighbourhood shops	2030	
	Café Restaurant	724	
	Ground Floor Soho	600	
	Residential Soho		
	Residential Terrace		17
	Residential Shop Top		12
	Total	**3354**	
Precinct Lot 4	Retail Shops	1790	
	Café Restaurant	2000	
	Commercial/Entertainment	2862	
	Childcare Centre	505	
	Residential		292
	Total	**7157**	
Precinct Lot 5	Major Supermarket	2600	
	Liquor Store	300	
	Retail Shops	2600	
	Café Restaurant	1000	
	Gymnasium	3500	
	Office	4135	
	Residential		241
Total GFA	**Total**	**14135**	
Precinct Lot 6	Mini Major	1200	
	Café-Retail	1500	
	Retail Shops	580	
	Office	2888	
	Residential		79
Total GFA	**Total**	**6168**	
Precinct Lot 7	Medical Centre **	1175	
	Retail	552	
	Café Restaurant	505	
	Imaging Diagnostic	1189	
	Ancillary Health Offices	1964	
	Medical Suites-offices	7012	
	Outpatients	1189	
	Total	**13586**	
Parkland*	Community Centre	500	
		48248	**670**

(2.2 Continued)

In preparation of this traffic report, we also refer the following Statutory Controls and Reports.

- Liverpool Council DCP - 2008 Part 2.5 - Middleton Grange.
- Liverpool Council DCP - 2008 Part 1 - General Controls For All Development.
- Liverpool Council Local Environmental Plan 2008.
- Connected Liverpool 2050 – Draft Local Strategic Planning Statement a Land Use vision to 2050 – Liverpool City Council.
- Future Transport Strategy 2056 – NSW Government.
- Middleton Grange Town Centre Public Transport Options Paper prepared by Transit Systems Next Generation Transport.
- Base Model Development Report 60-80 Southern Cross Avenue & 45-65 Hall Circuit Middleton Grange Reference 16.068r01v02 September 2017 prepared by Traffix.
- Traffic Impact Assessment 60-80 Southern Cross Avenue & 45-65 Hall Circuit Middleton Grange Reference 16.068r04v01September 2017 prepared by Traffix.
- Letter Report prepared by Traffix Traffic and Transport Planners dated September 18, 2019.

We have been provided with a revised summary of the retail and commercial areas of the development from Pacific Planning. We have also referred to the SEARS Application drawings for Lot 7 Precinct and to the Proposed Concept Plans Option 12 for the Development.

We have investigated the traffic generation for each Precinct/ Lot Area. We refer to the summary traffic generation shown in **Table 4.3b** which states the areas for each Precinct Lot and summary of residential units.

2.3 Definitions

The following definitions and abbreviations are used in this report: -

GFLA	**Gross Floor Lettable Area**
GFA	**Gross Floor Area**
TfNSW	**Transport NSW**
RMS	**Roads and Maritime Services**

3.0 EXISTING TRAFFIC CONDITIONS

3.1 Existing Site

As each precinct has its own unique characteristics and this is reflected in the way that the traffic generation yield is calculated in our analysis.

The subject site is located approximately 7.0 kilometres west of Liverpool CBD and 600 metres travel distance (450 metres Radial distance) west of the Westlink M7 Motorway Interchange with Cowpasture Road. The site is located approximately 12.5km to the proposed Western Sydney Airport.

The site is irregular in configuration and has a total site area of 6.27 hectares. It has a northern frontage to Southern Cross Avenue and a southern frontage to Flynn Avenue of approximately 200 and 220 metres, respectively. The eastern boundary of approximately 310 metres is shared with the existing public school and vacant land, with the remaining western boundary of approximately 300 metres shared with neighbouring residential dwellings.

The site currently accommodates four (4) residential dwellings, comprising two (2) dwellings in the northern section and two (2) in the southern section. Vehicular access is currently provided to each existing residential dwelling from Southern Cross Avenue and Flynn Avenue, respectively. A Location Plan is presented in **Figure 1.** The connection of the site to M7, future M9 Orbital and Western Sydney Airport is shown in **Figure 2A Overall Site Connection Plan**. The Site is shown in **Figure 2B Site Plan.**

3.2 Road Inventory

The road hierarchy in the vicinity of the site is shown in **Figure 3** with the following roads of particular interest: -

M7 Motorway (Westlink):	A privately operated toll-way also known as the 'Western Sydney Orbital' that generally traverses north-south between Baulkham Hills in the north and Prestons in the south. It is subject to 100km/h speed zoning and accommodates two (2) lanes of traffic in each direction along a divided carriageway.

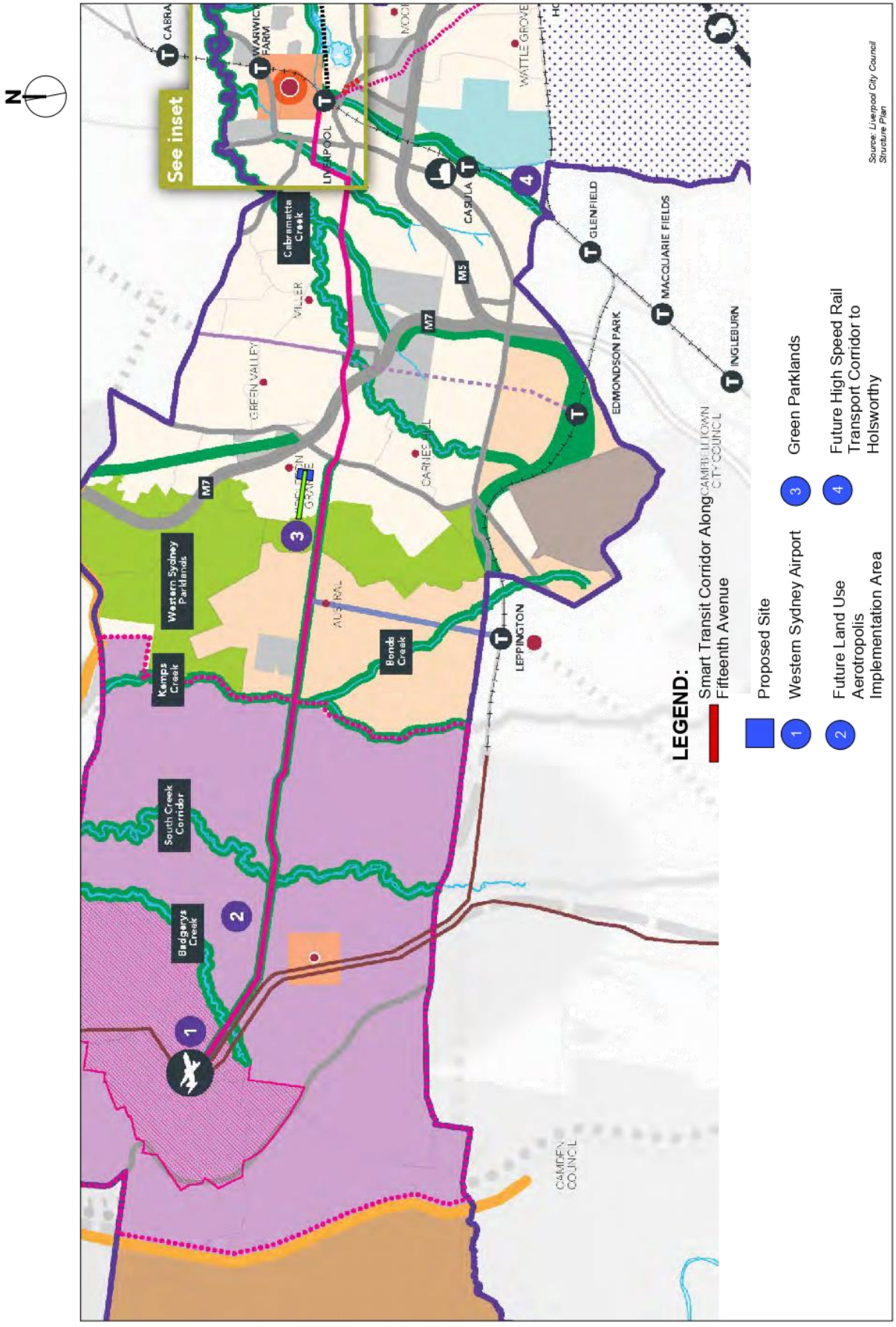


FIGURE 2A: OVERALL SITE CONNECTION PLAN

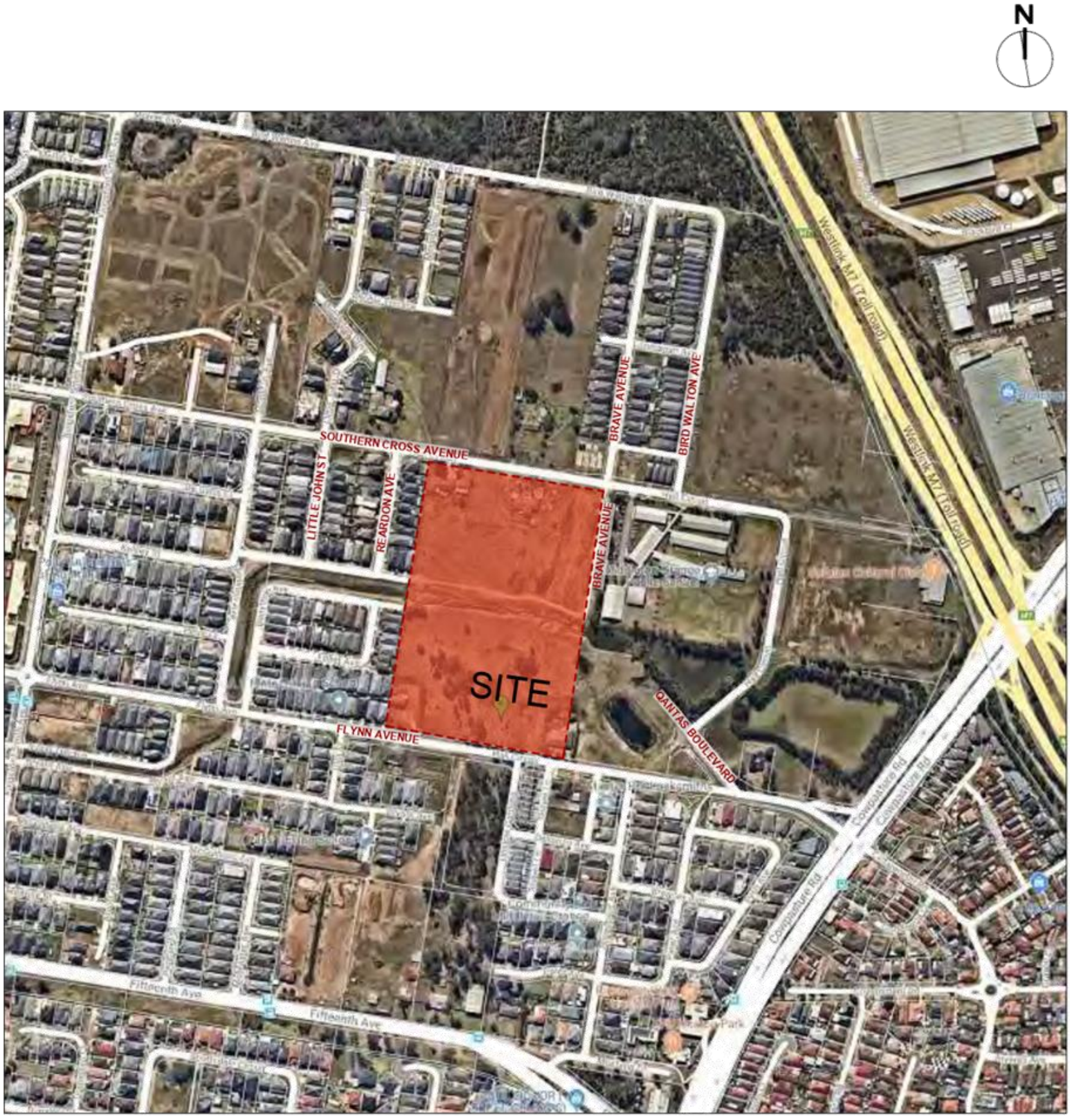


FIGURE 2B: SITE PLAN

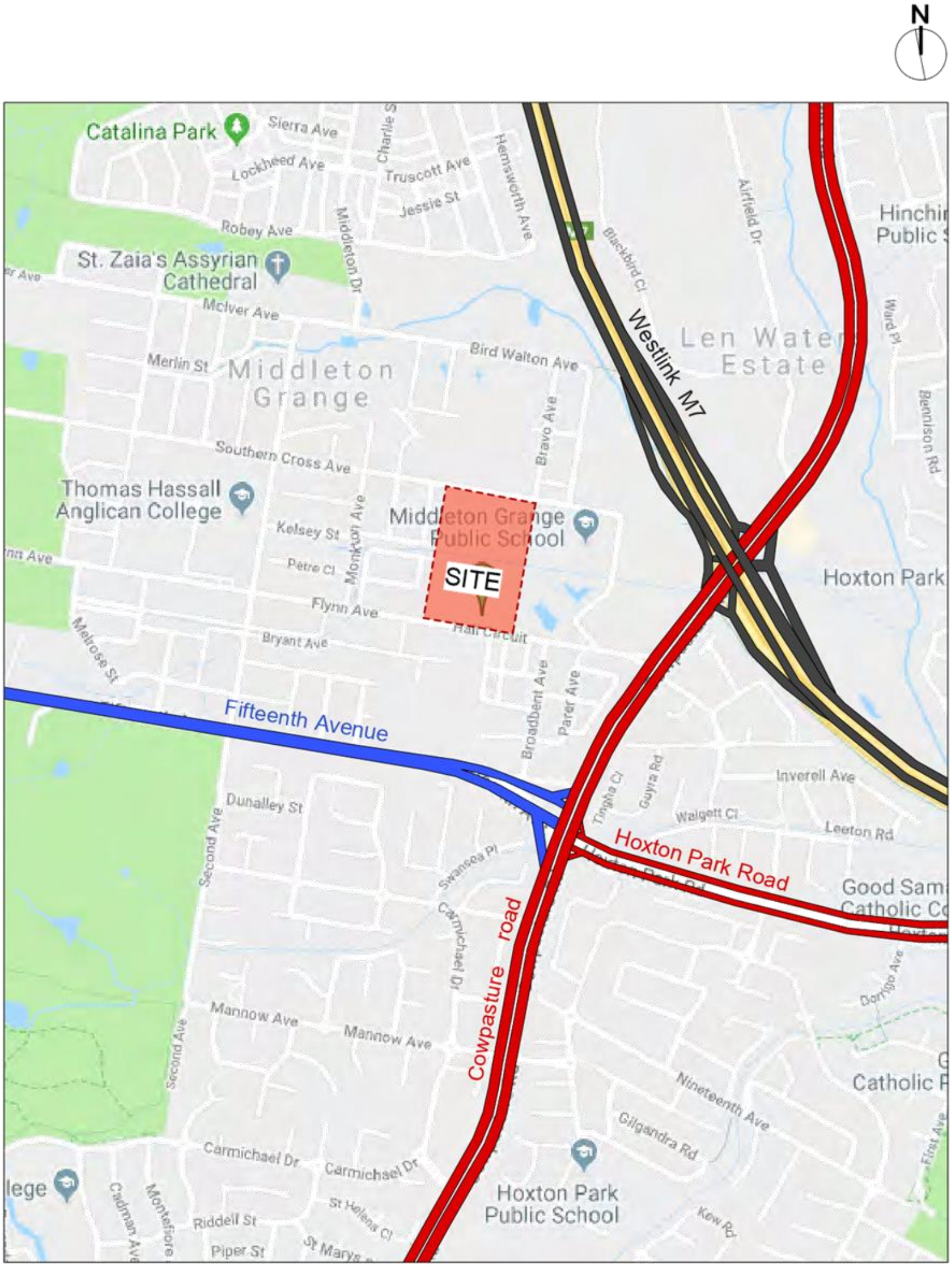


FIGURE 3: ROAD HIERARCHY

(3.2 Continued)

Hall Circuit: A local road that generally traverses east-west between Qantas Boulevard in the east and Southern Cross Avenue in the west, noting that there is an alternate Hall Circuit in the south between Flynn Avenue and Sixteenth Avenue East. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction, with unrestricted on-street parking permitted along both sides of the road.

Flynn Avenue: A local road that traverses east-west between Hall Circuit in the east and Twenty Seventh Avenue in the west. Within the vicinity of the site, it is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction, with unrestricted on-street parking permitted along both sides of the road.

Bravo Avenue: A local road that traverses north-south between Bird Walton Avenue in the north and Southern Cross Avenue in the south. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction, with unrestricted on-street parking permitted along both sides of the road. In relation to the site, Bravo Avenue is proposed to extend southbound and connect onto Qantas Boulevard.

It can be seen from **Figure 3** that the site is conveniently located with respect to the arterial (Westlink M7 Motorway) and sub-arterial (Cowpasture Road) roads serving the region. As such, the local road network is able to distribute traffic and provide connections onto the wider road network.

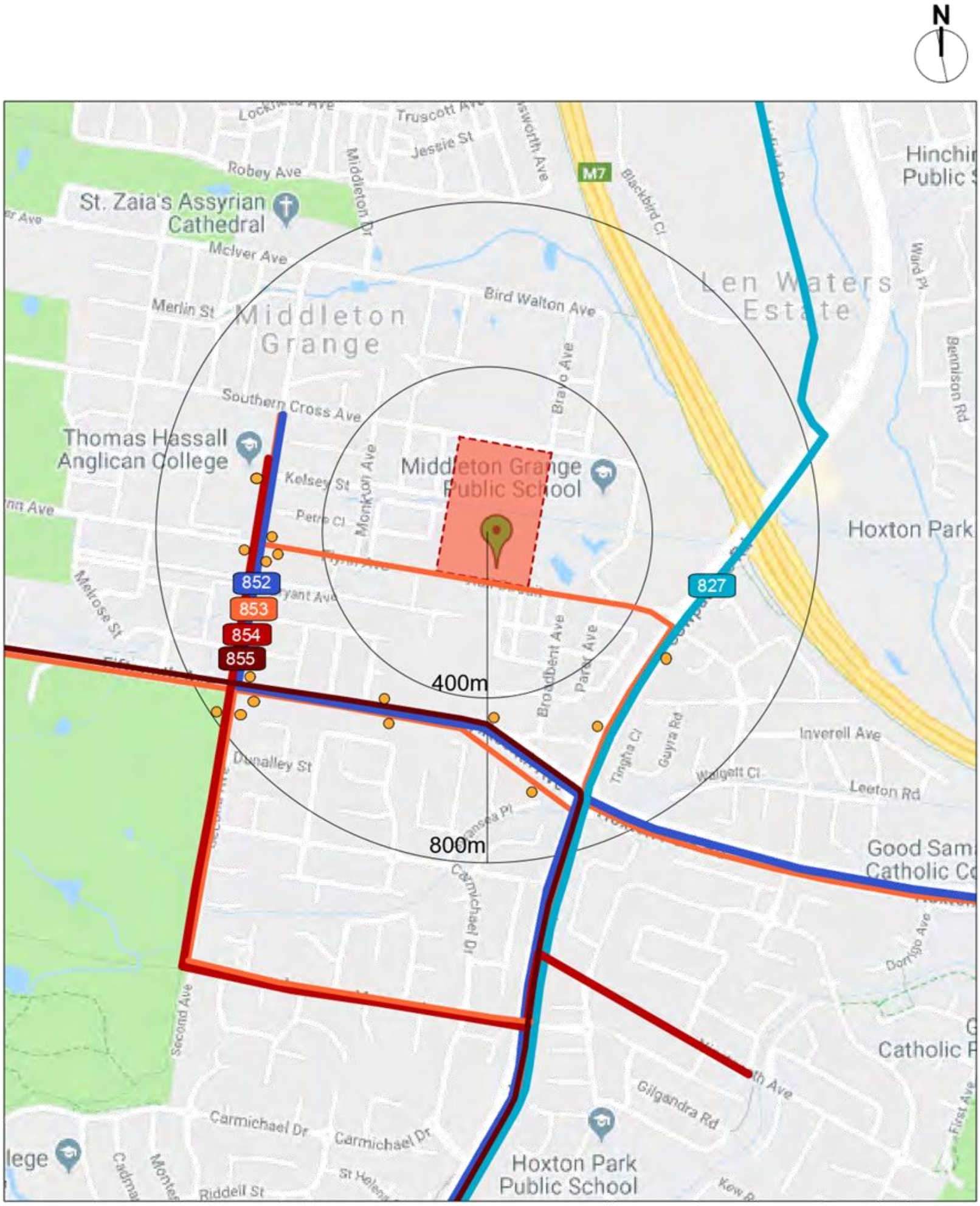
3.3 Public Transport

The existing bus services that operate in the locality are shown in **Figure 4**. It is evident that the development has limited access to public transport services with bus stops along Cowpasture Road and Kingsford Smith Avenue. These bus stops provide services to the following routes: -

- 827 – Carnes Hill Marketplace to Liverpool via Bonnyrigg Heights.
- 852 – Carnes Hill Marketplace to Liverpool via Greenway Drive and Cowpasture Road.
- 853 - Carnes Hill to Liverpool via Hoxton Park Road.
- 854 - Carnes Hill to Liverpool via Greenway Drive and Hoxton Park Road.
- 855 – Rutleigh Park to Liverpool via Austral and Leppington Station.

Furthermore, the above bus routes provide regular services to Liverpool Railway Station, thereby providing commuters' access along the following lines: -

- T2 – Inner West and South Line.
- T3 – Bankstown Line.
- T5 – Cumberland Line.



LEGEND:

- Bus Stop
- 827 Carnes Hill Marketplace to Liverpool
- 852 Carnes Hill Marketplace to Liverpool
- 853 Carnes Hill to Liverpool
- 854 Carnes Hill to Liverpool
- 855 Rutleigh Park to Liverpool

FIGURE 4: PUBLIC TRANSPORT

0m 100m 200m

4.0 TRAFFIC EFFECTS OF PROPOSED DEVELOPMENT

4.1 Proposed Development

A detailed description of the proposed development is provided in the SEE Report prepared separately. The overall development seeks to provide a wide range of uses and this is detailed in the design of the 6 precinct areas.

The design is centred on active transport links and parklands and creates a community and central social hub.

Reference is made to the Urban Design Report prepared by Christensen Obrien Architects. A site Plan is located in **Appendix A** showing the street layout and precinct locations

4.2 Internal Roads

The proposed internal road network comprises of two (2) primary roads and associated access lanes and service vehicle access lanes. The indicative roads and access lanes are shown in **Figure 5.**

Main Street	A local road that traverses north-south and provides the primary link between Southern Cross Avenue in the north and Flynn Avenue to the south. This road also provides connections to the rear access lanes of Lots 2 and 3 with an additional "shared zone" between Main Street and Middleton Drive.
Middleton Drive	A local road that traverses north-east and provides connection between Southern Cross Drive in the north and Qantas Boulevard in the east. This road also provides a connection to Main Street in the west. The majority of this road is to be designated as a "shared zone" which will promote active transport links within the site.
Access Lanes	There are various laneways proposed for the subdivision with access lanes located to the west of Lots 2 and 3 and service lanes located for Lots 5 and 6 to the west.

The streets have followed the sectional design properties of *Liverpool DCP Part 2.5 – Middleton Grange*. Street Sections showing the cross-sectional properties of the streets is located in **Appendix A** of this report.



FIGURE 5: INTERNAL ROAD NETWORK

4.3 Traffic Generation

As each precinct has its own unique characteristics and this is reflected in the way that the traffic generation yield is calculated in our analysis.

A thorough preliminary investigation into the appropriate planning uses for each precinct was undertaken by the planners and the traffic generation was calculated according to each precinct (Lot).

For the purposes of comparison, the previous traffic generation prepared by Traffix (Reference No 16.068r04v01) dated September 2017 is summarised below: -

Table 4.3a Proposed Traffic Generation in Traffix Report No 16.08r04v01

Uses	Total Units	Area M^2	Traffic Generation		Total	
			IN	OUT		
Residential Units	912		73	292	365	AM
			292	73	365	PM
Commercial		2533	41	10	51	AM
			8	32	41	PM
Retail		20240	81	20	101	AM
			607	607	1214	PM
		TOTAL	195	322	**517**	AM
			907	712	**1620**	PM

4.3.1 Traffic Generation Rates

The traffic generation rates outlined in the RMS Guide to Traffic Generating Developments 2002, RMS Technical Direction TDT 2013/04a and Council's recommendations have been adopted for the purpose of this development.

These applicable rates are summarised in **Table 4.3b**.

(4.3.1 Continued)

Table 4.3b Proposed Traffic Generation Rates

	Traffic Rate	Rate	AM Peak Period Rate		Traffic Rate	Rate	PM Peak Period	
Land Use			**IN**	**OUT**			**IN**	**OUT**
Residential	Council Advice	0.4 trips per dwelling	0.25	0.75	Council Advice	0.4 trips per dwelling	0.66	0.33
Retail	RMS/TfNSW	2.88 trips per 100m^2 GLFA	0.255	0.255	RMS/TfNSW	4.96 trips per 100m^2 GLFA	0.5	0.5
Retail Supermarket/Mimi Major	RMS/TfNSW	2.88 trips per 100m^2 GLFA	0.225	0.225	RMS/TfNSW	4.96 trips per 100m^2 GLFA	0.5	0.5
Commercial	RMS/TfNSW	2.88 trips per 100m^2 GLFA	0.80	0.20	RMS/TfNSW	4.96trips per 100m^2 GLFA	0.2	0.8
Restaurant	RMS/TfNSW	2.88 trips per 100m^2 GLFA	0	0	RMS/TfNSW	4.96 trips per 100m2 GLFA	0.5	0.5
Medical Centre	RMS/TfNSW	2.88 trips per 100m^2 GLFA	0.225	0.225	RMS/TfNSW	4.96 trips per 100m^2 GLFA	0.5	0.5
Childcare Centre	RMS/TfNSW	2.88 trips per 100m^2 GLFA	0.225	0.225	RMS/TfNSW	4.96 trips per 100m^2 GLFA	0.5	0.5
Gymnasium**	RMS/TfNSW	.	0	0	RMS/TfNSW	4.96 trips per 100m^2 GLFA PM Only after 6pm 50% assignment	0.25	0.25

GLFA is lettable floor area

The generation rates given are based on (GFLA) which provides a better indication of trip generation than gross floor area. As a general guide, 100 m2 gross floor area equals 75 m2 gross leasable floor area.

Rates expressed as % in the report tables in Appendix B of the TIA.

Notes:
Retail rates adopted from TDT2013/04a Appendix F3 for Prairiewood.

The following assumptions have been made in the calculation of the traffic generation for this site namely: -

- The retail rate of 2.88/100m^2 for AM trips has been provided by Council and TfNSW.
- The rate for the medical centre and ancillary uses is also provided by Council at the same rate as retail.
- We have assumed the rate for residential units of 0.4 which has been determined in consultation with our meetings with Council and TfNSW.

(4.3.1 Continued)

- The childcare centre rates are 2.88 trips/100m^2 GLFA in consultation with council and TfNSW.

- A reduction of 15% for multipurpose trips from retail to other retail given the amount of retail on the site and a supermarket and mini major such as Aldi and other uses in accordance with the *RMS Guide to Traffic Generating Developments Section 3.6 Retail*. A 15% reduction for medical use only is also provided. All other uses such as residential and office uses are not reduced.

- We refer to the *Connected Liverpool Strategy 2050* and which states a proposed smart transit corridor along Fifteenth Avenue. The smart transit corridor will not be operational until 2024-2025.This will provide future travel mode choice and assist in the future reduction of traffic generation as well as increase active transport trips.

- Active transport by way of bicycle path and shared paths will help to reduce car dependency within the development.

- Precinct 7 uses are stated in the SEARs application and traffic generation has been calculated accordingly. It is noted that further selection of uses will be subject to the major project application process.

- Precinct 5 has the retail areas broken into retail, a major supermarket, café/restaurant and on the first-floor entertainment/Commercial spaces and gymnasium and childcare centre.

- The car driver rate from the JTW data should also be used in the calculations for office and medical office use.

- A general retail rate of 2.88 trips per 100 m^2/GLFA for the AM peak hour and 4.96 trips per 100 m^2/GLFA for the PM has been assigned to Retail Use, Medical and other Commercial uses as advised by Council and Transport NSW. These rates were adopted from RMS TDT 2013/04a- Appendix F3 – Prairewood.

- We have assumed the rate for residential units of 0.4 which we understand has been provided by Council and documented in Council's meeting minutes dated 27th February 2017.

(4.3.1 Continued)

The summary calculations show an AM Peak Hour Traffic Generation of **579** vehicles in the AM and **1697** vehicles in the PM Peak Hour. Each Precinct has been calculated and is included in **Appendix A.**

Table 4.3c Proposed Traffic Generation for 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue Middleton Grange

Use	Area M^2	No of Units	Generation Rate	TOTAL	Reduction for multipurpose trips 15% for retail/commercial uses
Precinct Lot 2	3348	29	TOTAL AM	37.2	32
		29	TOTAL PM	136.1	112
Precinct Lot 3	3354		TOTAL AM	37.2	33
			TOTAL PM	136.4	118
Precinct Lot 4	7157	292	TOTAL AM	166.9	159
			TOTAL PM	383	343
Precinct Lot 5	14135	241	TOTAL AM	190.1	176
			TOTAL PM	548.3	481
Precinct Lot 6	6168	79	TOTAL AM	77	70
			TOTAL PM	256.7	223
Precinct Lot 7	13586	0	TOTAL AM	127	108
			TOTAL PM	495	421
		670	AM	635	579
			PM	1955	1697

Note: Retail Rates applied across the board to all commercial uses

The Traffic Generation from each precinct has been shown for the AM and PM Peak Hours in **Figure 6A** and **Figure 6B** Respectively.

4.4 Vehicular Access To and From The site

All heavy rigid and articulated vehicles up to 19 metres long vehicle will access the site via Qantas Boulevarde as confirmed by Liverpool Council.

Each precinct ingress and egress points are identified in **Figure 7A**.

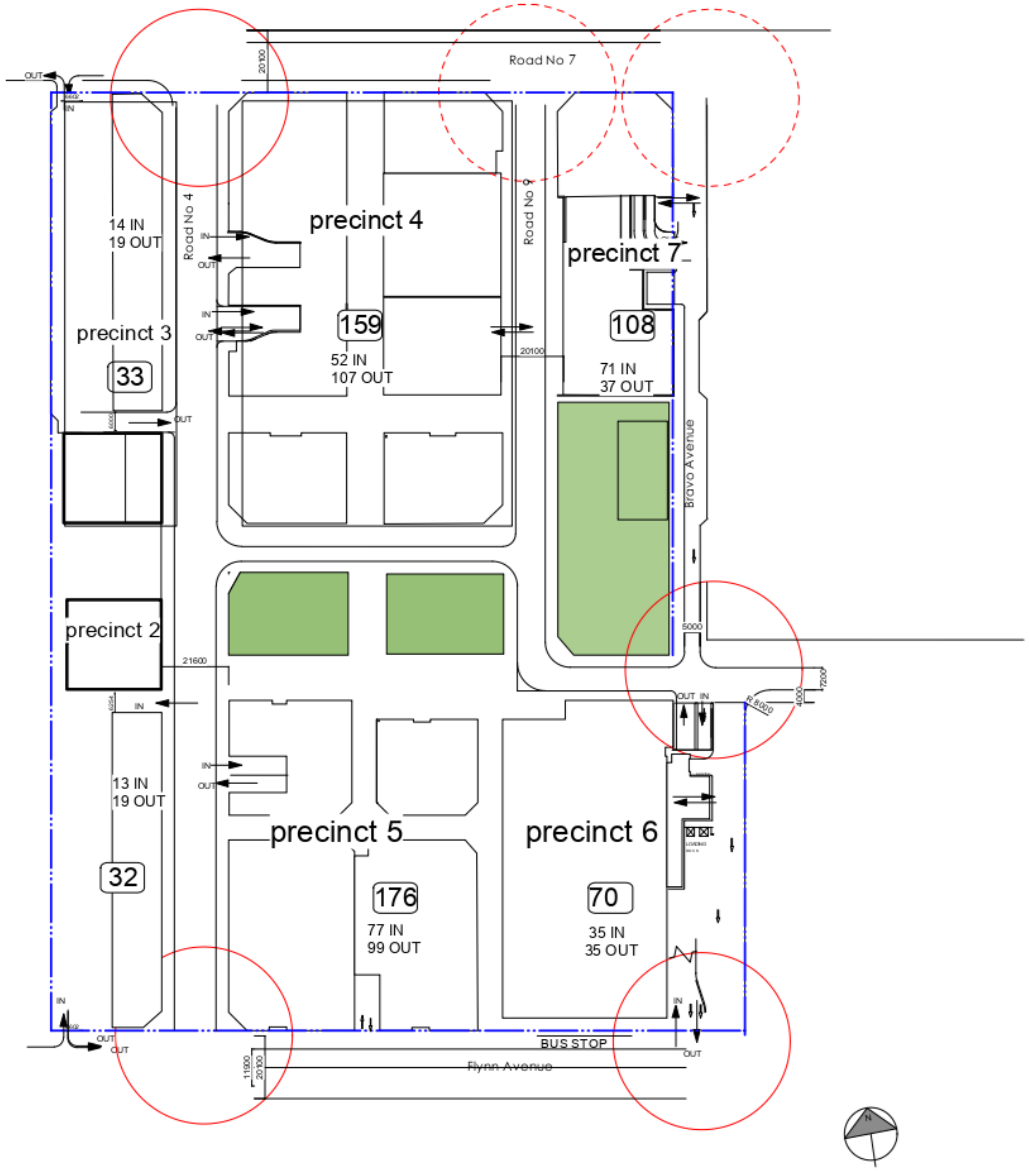


Figure 6A Traffic Generation
Future Development Traffic
AM Peak Hour

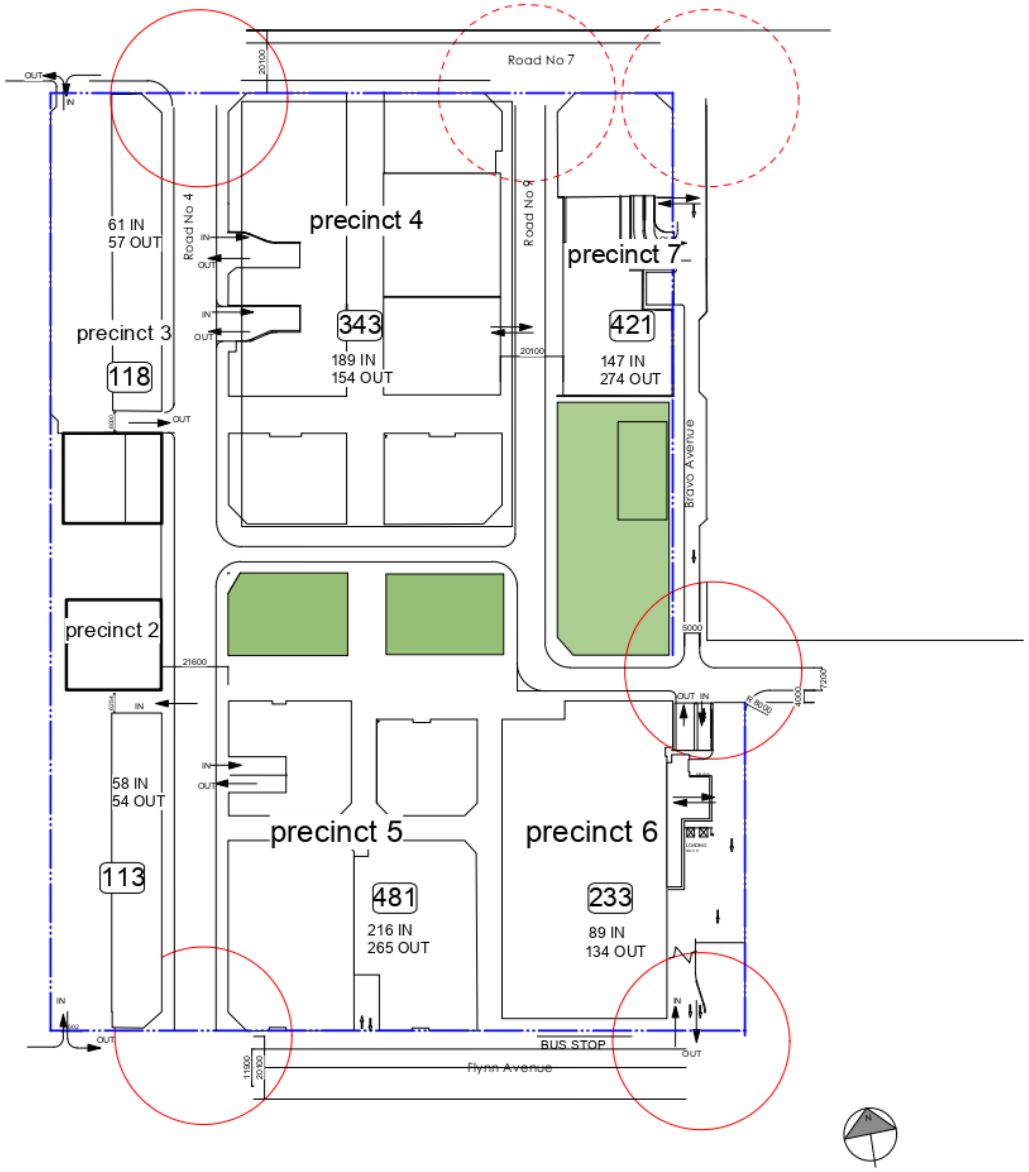


Figure 6B Traffic Generation
Future Development Traffic
PM Peak Hour

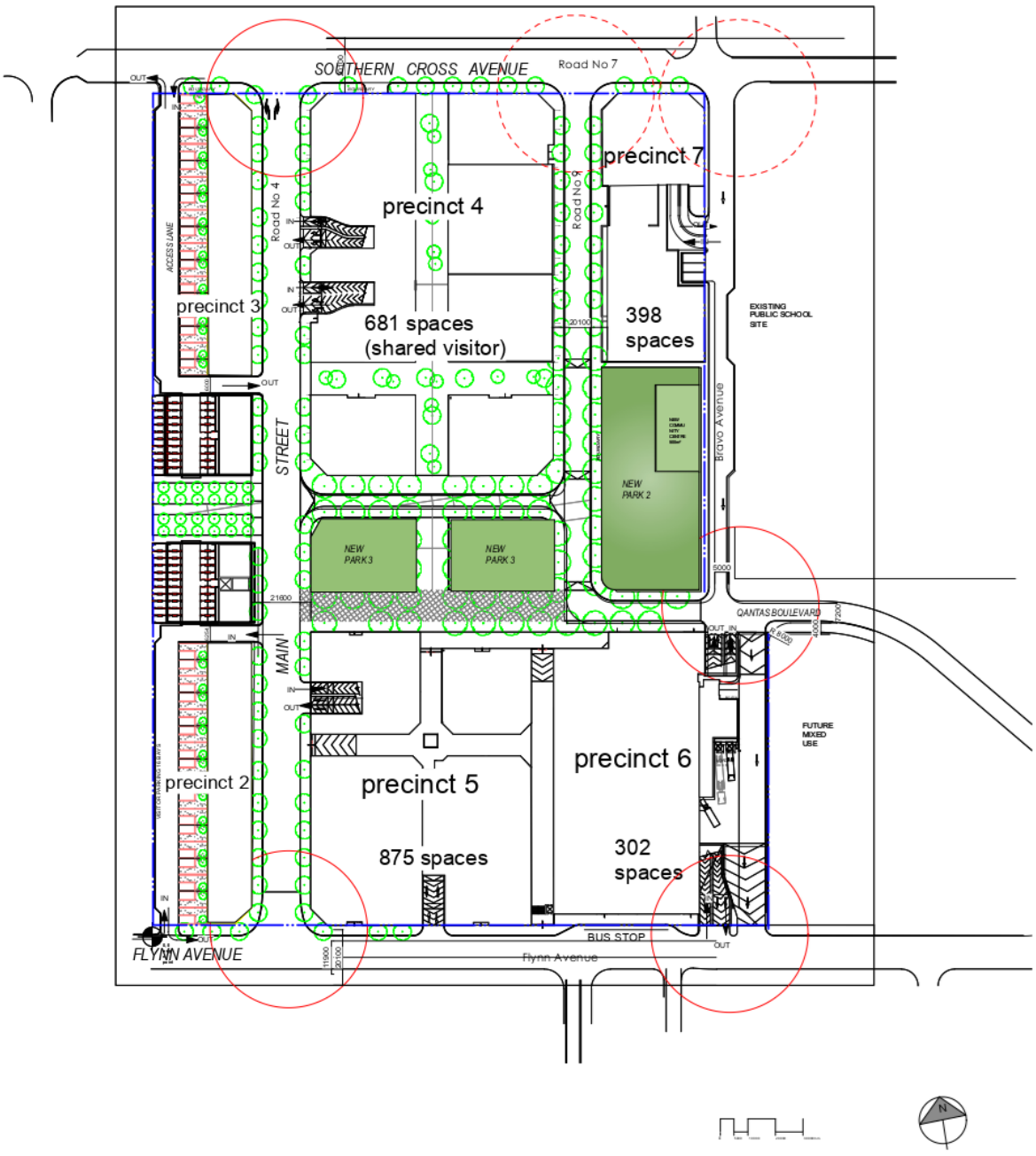


Figure 7A Precinct Parking

5.0 PARKING REQUIREMENTS

5.1 Car Parking

The Liverpool Development Control Plan 2008(DCP) provides the car parking rates and provisions for various components of the proposal. Typically, developments located outside the Liverpool City Centre would attract the following recommended rates based on the associated leasable floor areas (LFA) and Gross Floor Areas (GFA).

Table 5.1 Proposed Parking Rates

	Parking Rate	Rate (See Table 13 LDCP)
Land Use		
Residential	1 Bedroom	1 space per on bedroom dwelling
	2 Bedroom	1.5 spaces per 2 bedroom dwelling
	3 Bedroom	2 spaces per 3 bedroom dwelling
	Visitor	1 visitor space per 4 bedroom dwelling
Commercial	Offices	1 space per 35m2 LFA (Business Zones)
	Childcare	1 space per 35m2 LFA (Business Zones)
	Medical Suites	1 space per 35m^2 LFA
	Medical Centre	1 space per 25m^2 LFA
	Restaurant	1 space per 20m2 LFA (Business Zones)
	Gymnasium	1 space per 22m^2 LFA
Retail	Shops	1 space per 25m^2 LFA
	Entertainment-Commercial	1 space per 25m^2 LFA

5.2 Accessible Parking

The Liverpool Development Control Plan 2008(DCP) specifies the accessible parking rates for developments with over 20 car parking spaces. These rates are associated with land uses and are listed below: -

1 per 100 car parking spaces (Retail, Commercial, Industry, and Transport)
2 per 100 car parking spaces (Community, Recreation, Accommodation or Education)
3 per 100 car parking spaces (Entertainment or Health)

5.3 Motorbike Parking

The Liverpool Development Control Plan 2008(DCP) recommends a motorcycle parking rate of 1 space per 20 car parking spaces for developments within the Liverpool City Centre. We note that there is not a rate suggested for areas outside of the City Centre.

All Residential-Mixed Use developments should provide motorbike parking as suggested by the Architectural Design Guide (ADG) for residential use.

5.4 Bicycle Parking

The Liverpool Development Control Plan 2008(DCP) outlines bicycle parking provision at the following recommended rates presented in **Table 5.2**.

Table 5.2 Proposed Bicycle Parking Rates

	DCP Bicycle Parking Rates	
Land Use	**Residential/Staff**	**Visitor/Customer**
Residential	Greater of the following: - 1 space per 2 dwellings or 1 space per 4 bedrooms	1 space per 10 dwellings
Commercial Offices	1 space per 200m2 GFA	1 space per 750m2 GFA
Shopping Centres	1 space per 300m2 GFA	1 space per 750m2 LFA
Medical Centres and Health Consulting Rooms	1 space per 10 staff	2 spaces per centres. Plus 1 space per 5 consulting room.
Indoor Facilities (Gym)	1 space per 10 staff	2 spaces Plus 1 space per 100m2 GFA

5.4 Servicing

The Liverpool Development Control Plan 2008(DCP) outlines the service vehicle provision and the following rates are stated in **Table 5.3**.

Table 5.3 Servicing Requirements

	DCP Parking Rates	
Land Use	**Zoning**	**Service and Loading**
Multi Dwelling Housing and Residential Flat Buildings	Residential and Business Zones	Service areas for removalists and garbage servicing
Office Premises	Business Zones	LFA> 2000m2 require waste collection vehicle
Retail Premises	Business Zones	LFA> 4000m2 require waste collection vehicle
Restaurants	Residential Zones	Waste Collection Vehicle Service Requirements
Medical Centres and Health Consulting Rooms	N/A	LFA> 2000m2 require waste collection vehicle Servicing for small van
Indoor Facilities (Gym)	Business Zones	Service Access for a small rigid vehicle

A detailed summary of the parking provision in **Table 4.4** is provided in **Appendix C** of this report.

A summary of each precinct area parking supply is shown in **Figure 7A.**

6.0 PUBLIC BENEFIT RECOMMENDATIONS

The following transport infrastructure benefits have been identified as shown in the Planning Proposal Envelope Plan located in **Appendix A**.

These key actions include: -

Land Uses - *Employment and mixed use focus along Southern Cross Avenue, Flynn Avenue and Eastern Side of Main Street.*
Transport and Movement - *Capitalise on development around transport modes. Reduce car dependency by improving access to public and active transport infrastructure.*
Place-making - *Break up large blocks with laneways and through site linkages. Facilitate site amalgamation to provide opportunities for master-planned redevelopment which delivers good public open space outcomes.*
Open space, linkages and connections - *Reinforce the cycle link as a connection to the cycle links for Middleton Grange Network. Leverage new development to provide new open space, high quality and active public domains and new through-site links.*

6.1 Bicycle Travel Path and Facilities

The shared access laneways will provide cycle links and active transport links through the north-south connections and east to west connections through the development. On street cycle way paths can be provided in Main Street.

We have prepared a Matrix table of the locations for the proposed cycleway paths for both on road and off road surrounding the proposed site. Refer to **Table 6.1.**

The paths have been prepared with reference to Austroads Part 6A Pedestrian and Cyclist Paths Figure A2. The Bicycle Network is shown in **Figure 7B**.



	Location	Facility Type	Direction	Width	Linear Length in metres		
					Direction		
1	Main Street between Southern Cross and Flynn Avenue	On Road	One way by direction adjacent to kerbside parking lane	1 metre	248	248	
					West	East	
2	Southern Cross Avenue, Site frontage between Bland Avenue and West to Reardon Avenue	Off Street Road Reserve - Shared bicycle/pedestrian path	Two way - southern side of Southern Cross Drive (refer to part 5A Austroads section 7.5.3 Shared Paths and Figure A2)	3- 4.5 metres	131		
3	Southern Cross Avenue, Reardon to Globe Street west of Thomas Hassall College	Off Street Road Reserve - Shared bicycle/pedestrian path	One way each direction - linked with pedestrian refuge west of Reardon Avenue	2 metres (min)	330	740	395
					North	South	Globe St
4	Flynn Avenue	Off Street - between Quinns Boulevarde and Globe Street	Two way -northern side of Flynn Avenue (refer to part 5A Austroads section 7.5.3 Shared Paths and Figure A2)	3- 4.5 metres	780		
5	Hall Circuit between Flynn Avenue and Southern Cross Avenue to Hall Circus-M7 Link	Off Road	Two way - southern side of Southern Cross Drive (refer to part 5A Austroads section 7.5.3 Shared Paths and Figure A2)	3- 4.5 metres	330		
6	Future Link to Fifteen Avenue	Off Street between Flynn Avenue and Fifteenth Avenue	Two way	3 - 4.5 metres	310		
Subtotal					2136	988	395
Total Length Metres							3519

Note* Linear length is subject to final geometric design indicative only

FIGURE 7B

PROPOSED CYCLE PATHS
MIDDLETON GRANGE TOWN CENTRE

SCALE 1:4000

(6.1 Continued)

Table 6.1 Bicycle Infrastructure Summary

	Location	Facility Type	Direction	Width	Linear Length in metres		
					Direction		
1	Main Street between Southern Cross and Flynn Avenue	On Road	One way by direction adjacent to kerbside parking lane	1 metre	245	245	
					West	East	
2	Southern Cross Avenue. Site frontage between Bravo Avenue and West to Reardon Avenue	Off Street - Road Reserve - Shared bicycle/pedestrian path	Two way - southern side of Southern Cross Drive (refer to part 6A Austroads section 7.5.3 Shared Paths and Figure A2)	3- 4.5 metres	131		
3	Southern Cross Avenue. Reardon to Globe Street west of Thomas Hassall College	Off Street - Road Reserve - Shared bicycle/pedestrian path	One way each direction - linked with pedestrian refuge west of Reardon Avenue	2 metres (min)	330	740	305
					North	South	Globe St
4	Flynn Avenue	Off Street - between Qantas Boulevarde and Globe Street	Two way -northern side of Flynn Avenue (refer to part 6A Austroads section 7.5.3 Shared Paths and Figure A2)	3- 4.5 metres	780		
5	Hall Circuit between Flynn Avenue and Southern Cross Avenue to Hall Circuit-M7 Link	Off Road	Two way - southern side of Southern Cross Drive (refer to part 6A Austroads section 7.5.3 Shared Paths and Figure A2)	3- 4.5 metres	390		
6	Future Link to Fifteen Avenue	Off Street between Flynn Avenue and Fifteenth Avenue	Two way	3 - 4.5 metres	310		
	Subtotal				2186	985	305
	Total Linear Metres						**3476**

Note* Linear length is subject to final geometric design indicative only

(6.1 Continued)

The indicative paths follow the concept outline prepared by Habit 8 Landscape Architects.

Further detailed concept design of these bicycle paths near the development access points has been developed by the road designers and are included in **Appendix F** of this report.

6.2 On Street Parking Bays

Main Street will provide on street parking for local neighbourhood shops on both east and western sides of the street. It is anticipated that ½ hour parking between 8am and 6pm will allow for customer parking to the retail use for Precinct Lots 2 and 3 and for Lot 4.

6.3 Pedestrian Pathways

Pedestrian pathways have been provided to all streets in accordance with the Street Sections Layouts in the DCP.
Internal Shared paths will have landscape planting to further enhance internal active spaces.

6.4 Bus Shelter Upgrade in Flynn Avenue

A new bus shelter could be incorporated into the site frontage along Flynn Avenue which is connected to the new north-south pedestrian link through the site.

6.5 New Parks 1, 2 and 3

A new public open space parks will promote social and active lifestyle opportunities. New Park 1 has access off Main Street between Precincts 2 and 3. New Park 3 runs east to west between Main Street and Middleton Drive. New Park 2 provides a large parkland facility between Middleton Drive and Bravo Avenue.

6.6 On Demand Bus Service

On Demand Servicing – Shuttle Option 1

It is intended that there could be a passenger on demand service for the residents and workers within Middleton Grange. The shuttle service encompasses a 6.5 kilometre service route. This service could initially operate as an on demand service. In the future this service could be designed for automated vehicles. An automated trial is currently being carried out in Olympic Park for Automated vehicles by Transport For NSW.

(6.6 Continued)

The smart shuttle service operates as described in the Fact Sheet for the Olympic Park Trial by TfNSW: -

- *The Smart Shuttle is built by French company Navya and has the capacity to carry up to 15 passengers.*
- *It is fully electric and is self-guiding by an onboard computer, LIDAR and Radar and can read a top speed of 45 kilometres per hour.*
- *For this trial the shuttle will typically operate at around 20km/h. A key part of the initial stage of the trial in Newington Armory will be to work on the safety aspects of the vehicle including what a safe and practical operating speed will be.*
- *There are five levels of vehicle automation recognized internationally, they rage from technology in most modern vehicles which are level one and have features like electronic stability control to level five automated vehicles where all vehicle functions are completely automated.*
- *The Navya shuttle is considered a level four, highly autonomous vehicle which means that it can drive itself by a passenger can intervene and stop the vehicle if needed.*
- *The vehicle is also guided by a 3-D map of the route that is travelling on so it has been effectively 'trained' to drive the route.*

(source Transport for NSW)

On Demand Servicing – Home to Town Centre – Option 2

Supplemented by this service there could be a passenger on demand service to the Middleton Grange Town Centre from the suburban areas of Middleton Grange, Elizabeth Hills and Hoxton Park. The servicing would encompass a 13.2 Kilometre area.

On demand bus services are currently being trialed in areas of Sydney such as Edmonson Park and Carnes Hill.

An indicative route showing Option 1 and Option 2 service areas is shown in **Figure 7C.**

Examples of current on demand services operating in Sydney are shown in **Table 6.2**.

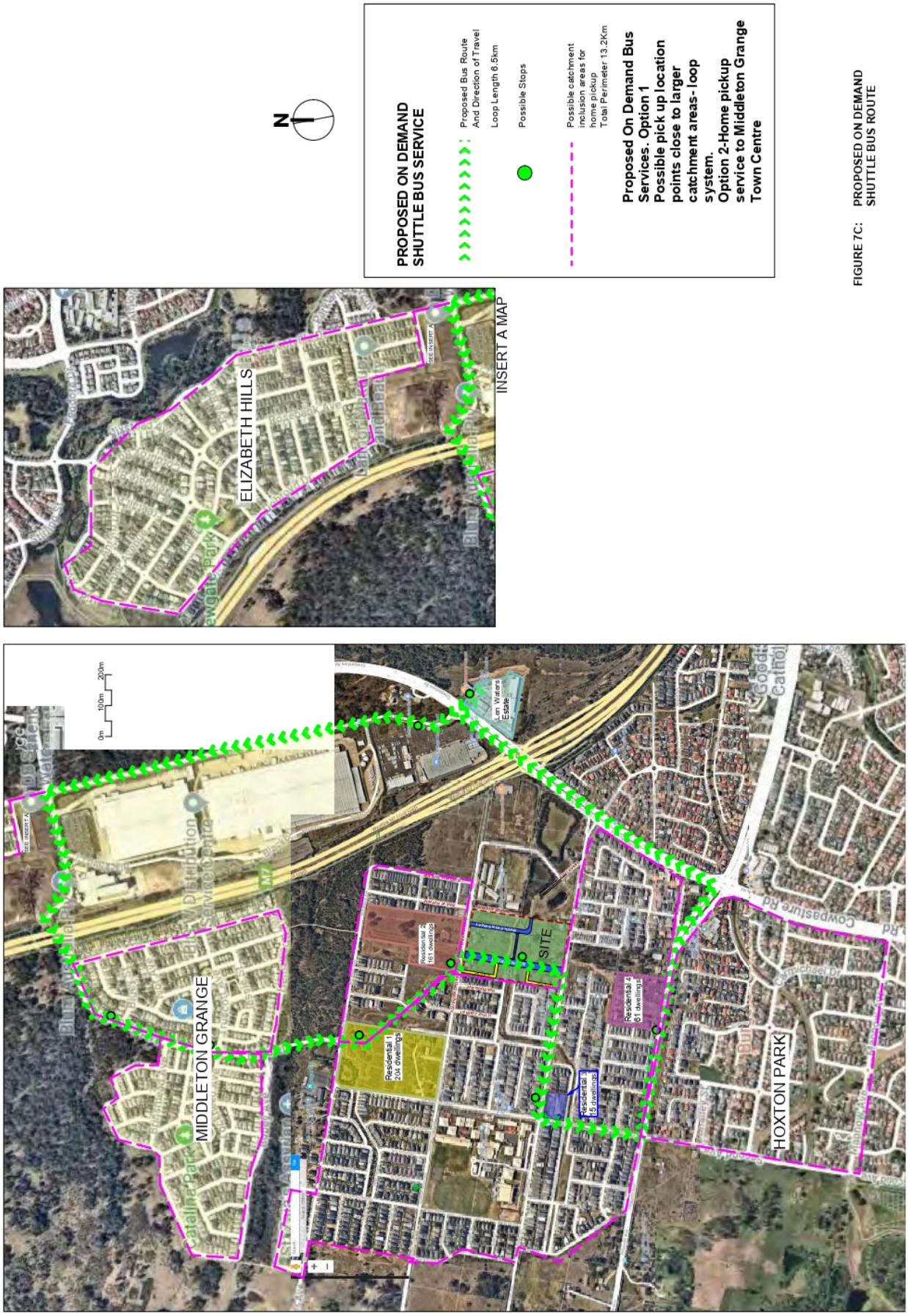


FIGURE 7C: PROPOSED ON DEMAND SHUTTLE BUS ROUTE

(6.6 Continued)

Table 6.2 On Demand Bus Services in Sydney

Type	Location	Provider	Services	Service Times		Service Area
	Norwest	Norwest are run by CDC Hillbus' MetroConnect.	Monday - Friday	6-10am	4-9pm	The Norwest On Demand service area covers Glenwood, Kellyville and Bella Vista, including Bella Vista, Norwest and Hill Showground Metro Stations.
	The Ponds	Cooee Busways	Monday - Friday	5am to 9pm		On Demand services in The Ponds can pick you up from an agreed point near home and drop you off at Schofields, Tallawong or Rouse Hill station, making it easier to connect with the Sydney Metro and Sydney Trains services.
Trial	Edmondson Park	Interline Bus Services	Monday - Friday	6am to 9am	4-8pm	Interline Connect runs from various locations within Edmondson Park to Edmondson Park train station.
	Inner West Newington to Lidcombe	Transit Systems' BRIDJ	Monday - Friday	6:20am-7pm		On Demand buses run across the Inner West, including Rhodes Waterside Shopping Centre, Concord General Hospital, Mortlake, Breakfast Point, Cabarita, Canada Bay, Burwood and Strathfield.
			Saturday	9am to 5pm		
	Inner West Rest of Zone	Transit Systems' BRIDJ	Monday-Friday	6am to 11:30pm		
			Saturdays	8am-8:30pm		
			Service operates Public Holidays			
Trial	Northern Beaches	Keolis Downer	Monday-Wednesday	6am-10pm		Keoride services run from Palm Beach, south to North Narrabeen and west to Chiltern Road to nearby transport hubs, including select B-Line bus stops in Warriewood and Mona Vale.
			Thursday-Friday	6am-11:30pm		
			Saturday	7am-11:30pm		
			Sunday	7am-9pm		

7.0 PROPOSED INFRASTRUCTURE

We have revised the future infrastructure upgrades for development into Interim and Future (5+) years categories. The revised list as follows. This is subject to confirmation.

7.1 Proposed Infrastructure Council and NSW Government Initiatives

A number of future planned infrastructure upgrades are proposed by Liverpool Council and approved developments and Transport for NSW. These are shown diagrammatically in **Figure 8A** in this report and listed below.

For reference the following infrastructure has been modelled in the Bitzios modelling report and included in the TIA report and is stated below.

2026-Do Minimum

Council and Government Infrastructure Committed Upgrades

1. Smart Transit Corridor. Additional lanes east and westbound. Separated Bus Lane eastbound and westbound.
2. Signalised intersection at Second Avenue/Kingsford Smith Avenue/Fifteenth Avenue.
3. Interim re-alignment works to Qantas Dr/Fifteenth Ave. (Refer to Ref DS 2018/013-301A prepared by Liverpool City Council).
4. Signalised intersection at Flynn Ave/Kingsford Smith Avenue.
5. Road re-alignment works Middleton Drive-Seventeenth Ave Ref No Sk01-5236 prepared by Mepstead & Associates dated 8.8.19.
6. Middleton Drive-Aviation Road connection under M7. Relocation of bicycle lanes.
7. Roundabout at Bird Walton Avenue and Middleton Drive.
8. Right turn lane extension from Fifteenth Avenue to Cowpasture Road southbound. Extension from 80m to 120m.
9. Right turn bay extension from Cowpasture Road (N) to Fifteenth Avenue westbound. Extension 85m to 120m.

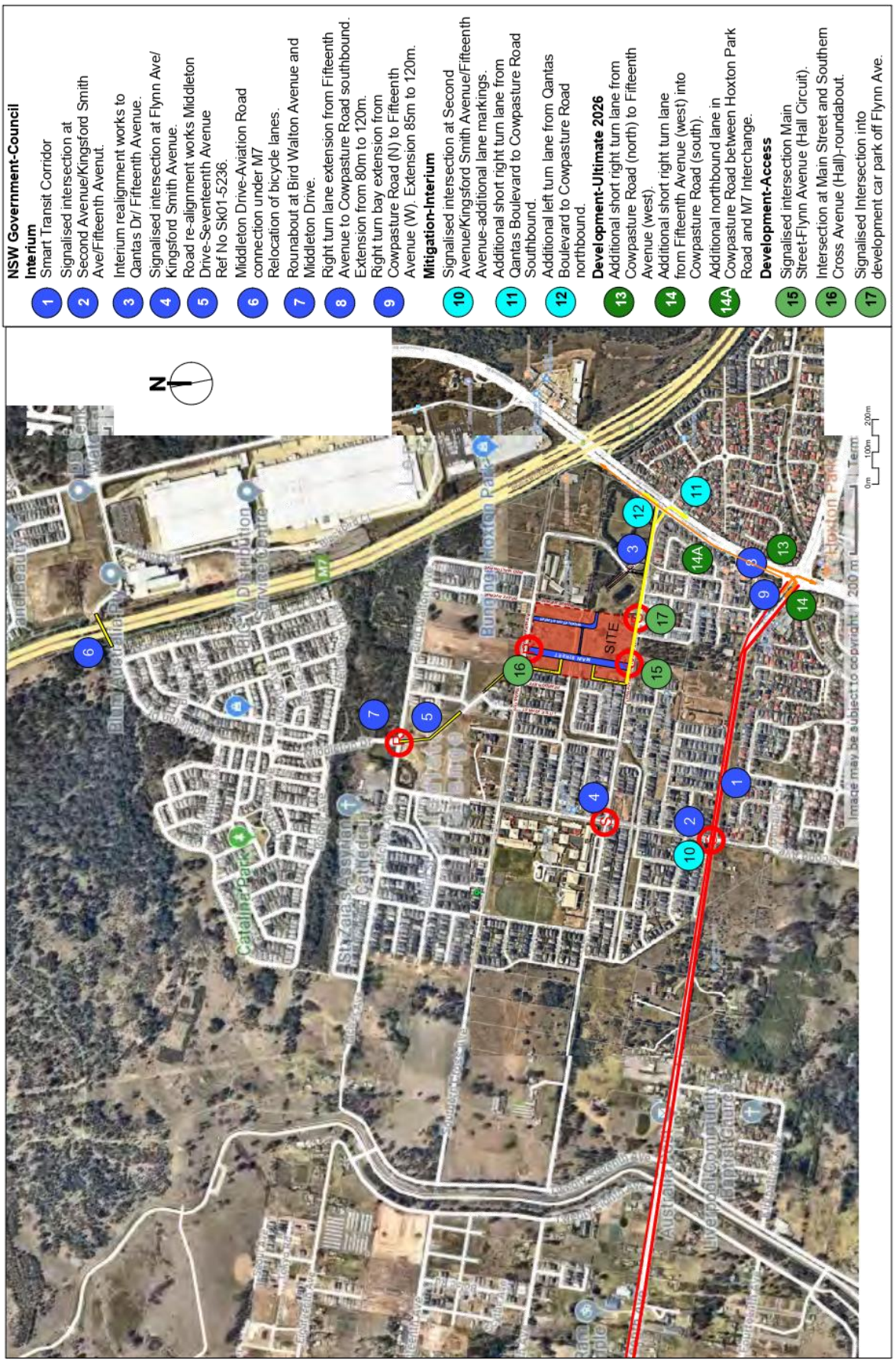


FIGURE 8a: INFRASTRUCTURE MAP
SHOWING STATE GOVERNMENT, COUNCIL PLANNED
INFRASTRUCTURE AND PROPOSED DEVELOPMENT
INFRASTRUCTURE

(7.1 Continued)

Proposed Mitigation

10. Signalised intersection at Second Avenue/Kingsford Smith. Avenue/Fifteenth Avenue-Additional lane markings-See Figure 5.6 (Bitzios Report).

11. Additional short right turn lane from Qantas Boulevard to Cowpasture Road Southbound. See Figure 5.7(Bitzios Report).

12. Additional left turn lane from Qantas Boulevard to Cowpasture Road Northbound. Figure 5.7(Bitzios Report).

7.2 Proposed Infrastructure For Development

Proposed infrastructure upgrades for the development are included in scenario testing 2026 Ultimate Development in the AIMSUN modelling report prepared by Bitzios Consulting.

2026 Ultimate Proposed Infrastructure for Development.

Proposed infrastructure upgrades for the development are included in the Ultimate Model 2026.

12. Additional short right turn lane from Cowpasture Road (north) to Fifteenth Avenue (west). (Refer to Figure 8.1 Bitzios Report).

13. Additional Short right turn lane from Fifteenth Avenue (west) into Cowpasture Road (south) (Refer to Figure 8.1 Bitzios Report).

14A. Additional lane northbound in Cowpasture Road between Hoxton Park Road and M7 Interchange.

Development Access

15. Signalised Intersection Main Street-Flynn Avenue (Hall Circuit). (Refer to Drawing Ref No 9979/SK32 prepared by J. Wyndham Prince). Refer to **Appendix F**.

16. Intersection at Main Street and Southern Cross Avenue (Hall Circuit). Option 1-Roundabout. (Refer to Drawing Ref No 9979/SK30 prepared by J. Wyndham Prince). Refer to **Appendix F**.

17. Signalised Intersection into development car park (Private Access) off Flynn Avenue (Hall Circuit). This intersection is not modelled in the Bitzios Report. (Refer to Drawing Ref No 9979/SK34 prepared by J. Wyndham Prince). Refer to **Appendix F**.

(7.1 Continued)

Design drawings were developed for the main access intersections into the site by the road designers J. Wyndham Prince. Two schemes are produced for the Intersection of Main Street and Southern Cross Avenue. Option 1 the roundabout has been preferred option which is modelled in the AIMSUM modelling report. Option to is a channelized priority T intersection. These drawings re located in **Appendix F** of the report.

Development Access intersections of roundabout at Main Street - Southern Cross Avenue, signalised intersection of Main Street – Flynn Avenue and Flynn Avenue Car park signalised access are modelled using SIDRA 8.0 computer program and are contained in **Appendix G** of this report.

An Opinion of Probable Cost- list of Items and Quantities prepared by J.Wyndham Prince is provided in Appendix F and refers to Figures 5.6, 5.7, 8.1 and Cowpasture Road sketch prepared by Bitzios Consulting.

8.0 AIMSUN MODELLING

8.1 AIMSUN Modelling Background

Previous Modelling was carried out in *Report Base Model Development Report 60-80 Southern Cross Avenue & 45-65 Hall Circuit Middleton Grange reference number 16.068r01v02 September 2017* prepared by Traffix. We refer to page 2 of the TIA report by Traffix Reference No 16.068404v01 which states: -

"The scope and requirements of this modelling report were outlined by RMS during an inception meeting held on 29 March 2017. In this regards the "base case model" has been developed by Traffix and has been reviewed and approved by RMS for use".

The base case model was obtained from Traffix for the purposes of preparing the development scenarios.

8.2 AIMSUN Development Scenarios

The AIMSUN modelling is proposed to develop the following scenario tests as follows: -

Develop a year 2026 "Do Minimum model" which includes all future committed road network improvements and background traffic growth within the study area.

- Background traffic growth only.
- Other committed development traffic (Residential 1-4 and Len Waters Shopping Precinct) as per Figure 4.1 (Bitzios Report).
- Network improvements committed by the NSW Government and Council. See section 7.1.
- Minor upgrades of the Cowpasture Road/Hoxton Park Road intersection. See Section 7.1.

Development of a "2026 Do Minimum with development" which is the same as the "2026 do minimum model" but with development traffic based on the new development proposal.

- "2026 Do Minimum" plus development traffic as per the revised development proposal for the site.
- Limited Network Improvements as identified in Section 7.1.

(8.2 Continued.)

The scenario tests will include all assumptions listed in Section 7.1 and the background development traffic and growth determined in consultation with the Transport For NSW-RMS. The impacts of upon key road links and intersections will be summarized in the Modelling Report prepared by Bitzios Consulting.

The model was further developed for the 2026 Ultimate Scenario.

2026 Do Minimum plus Development Traffic plus Ultimate Improvement Measures.

- Additional capacity at Cowpasture Road/Hoxton Park/Fifteenth Avenue Intersection.
- Additional capacity at the Cowpasture Road/Qantas Boulevard/Collarenebri Road intersection.
- Additional lane in the Cowpasture Road northbound direction between Hoxton Park Road and M7 interchange.

The Modelling Report is included in **Appendix E** of this report.

9.0 CONCLUSIONS AND SUMMARY

- The revised scheme has reduced the amount of residential density on the site from 912 units to 670 residential dwellings and provides a greater mix of employment and social uses. The proposed FSR on the site ranges from 1:1 (R1 zone) to 2.3:1 (B2 zone) and enables a total maximum 1.98:1 density for the scheme.

- This density is not considered high in its context and can sustainably enable the desired urban objectives the scheme promotes and is supported by the AIMSUN modelling.

- The "2026 Do Minimum plus development" with limited improvements demonstrates that most intersections within the network operate with spare capacity except for the intersection of Cowpasture Road/Hoxton Park Road and Collarenebri Road which is already operating at capacity under "2026 Do Minimum scenario". The Cowpasture Road/Airfield Drive has been identified as a network pinch point in the PM Peak Hour.

- The "2026 Do Minimum with development model plus Ultimate Upgrades" model shows that the proposed development and upgrades will operate with spare capacity across the network.

- The improvements shown in the "2026 Do Minimum plus development" ultimate model demonstrates an improvement in travel time and an improvement in level of service for the key intersections across the network.

- There are significant public benefit infrastructure items such as the proposed on and off-road bicycle paths, public open park spaces, and shared pedestrian public areas for cross site linkages. The provision of the first on demand bus service can also be provided to enable workers and elderly residents to travel to the town centre. Alternative access to other transport modes will promote an active lifestyle and reduce car dependent trips.

  We support this development on traffic and parking grounds.

APPENDICES

APPENDIX A

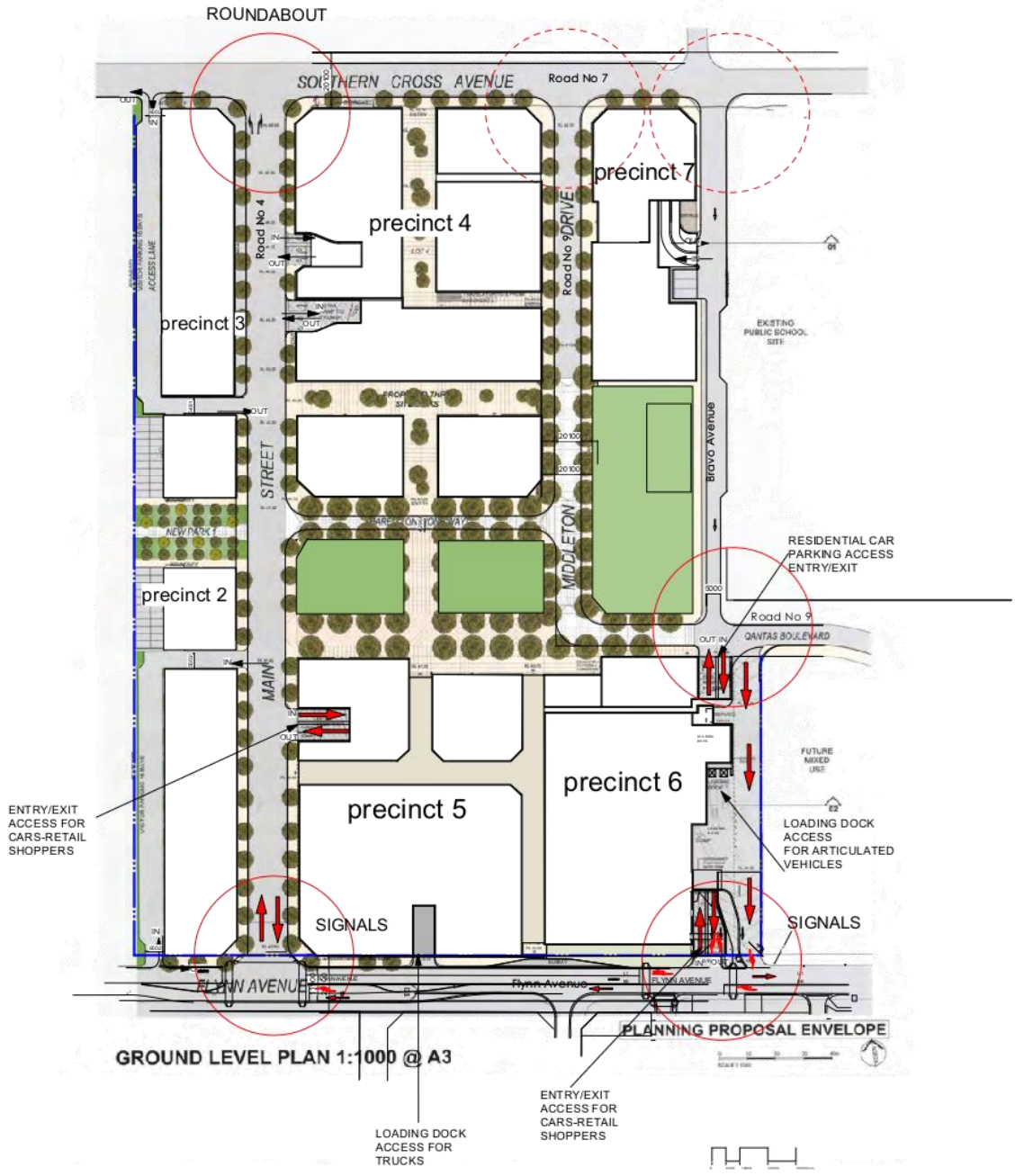


FIGURE 9
SITE ACCESS

APPENDIX B

27/05/2020

Table 3.3a PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 Hall Circuit(Flynn Ave) Middleton Grange-Revised 20 .2.2020 REV F

Precinct Lot 7

Location	Use	Area M^2 GFA	Area M^2 GLFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 15% for retail, medical centre and commercial uses	
Ground	Medical Centre ***	1175	881	RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
				AM 45% of development IN and OUT	5.71	5.71	11.42			9.7	AM
				100% development (50% IN and 50% Out)	21.86	21.86	43.71			37.2	PM
	Retail ***	552	414	RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
				AM 45% of development IN and OUT	2.68	2.68	5.37			4.6	AM
				100% development (50% IN and 50% Out)	10.27	10.27	20.53			17.5	PM
	Café Restaurant ***	505	379	100% development (50% IN and 50% Out)	9.39	9.39	18.79			16.0	PM
First Floor	Imaging Diagnostic ***	1189	892	RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
				AM 45% of development IN and OUT	5.78	5.78	11.56			9.8	AM
				100% development (50% IN and 50% Out)	22.12	22.12	44.23			37.6	PM
	Ancillary Health	1964	1473	AM 45% of development IN and OUT	9.55	9.55	19.09			16.2	AM
				100% development (50% IN and 50% Out)	36.53	36.53	73.06			62.1	PM
Upper Levels				Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
	Office **	7012	5259	(AM 80% IN & 20% OUT)	54.53	13.63	68.16			57.9	AM
				(PM 20% IN & 80% OUT)	50.07	200.26	250.33			212.8	PM
	Outpatients	1189	892	AM 45% of development IN and OUT	5.78	5.78	11.56			9.8	AM
				100% development (50% IN and 50% Out)	22.12	22.12	44.23			37.6	PM
	Total	**13586**		TOTAL AM	84	43	127	71.4	36.7	108	
				TOTAL PM	172	323	495	146.5	274.2	421	

NOTES

The generation rates given are based on (GFLA) which provides a better indication of trip generation than gross floor area. As a general guide, 100 m2 gross floor area equals 75 m2 gross leasable floor area.

*** Rates for Retail and Medical adopted from TD2013/04a-Appendix F3 Prairewood

** Rates for office TD2013/04a-Appendix D2- Liverpool

28/05/2020

Table 3.3b PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 (Hall Circuit) Flynn Ave Middleton Grange. Revised 20 .2.2020 REV F

Precinct Lot 6

Location	Use	Area M² GFA	Area M² LFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 15% for retail, medical centre and commercial uses	
Ground	Mini Major	1200	900	Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
				AM 45% IN & OUT	6	6	11.664			9.9	AM
				100% development (50% IN and 50% Out)	22	22	44.6			37.9	PM
	Café/Retail	1500	1125	RMS TDT 2013/04a Appendix F3 * 4.96 trips per 100m2 PM 50% IN and 50% out	28	28	56			47.4	PM
	Retail Shops	580	435	RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
				AM 45% IN & OUT	2.82	2.82	5.64			4.8	AM
				(100% Trips) PM 50% IN & OUT	10.79	10.79	21.58			18.3	PM
First Floor	Office **	2888	2166	RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
				80% IN and 20% OUT in AM	22.46	5.61	28.07			23.9	AM
				20% IN and 80% OUT in PM	20.62	82.48	103.10			87.6	PM
	Total	**6168**									
				Hour	IN	OUT	TOTAL	IN	OUT		
Residential	No Of Units/Ar	Traffic Gen Rate			0.25	0.75					
	79	0.4		AM	7.90	23.70	31.60			31.6	AM
					0.67	0.33					
	79	0.4		PM	21.07	10.53	31.60			31.6	PM
				TOTAL AM	39	38	77.0	35.6	34.6	70	
				TOTAL PM	103	154	257	89.2	133.8	223	

NOTES

*** Rates for Retail and Medical adopted from TD2013/04a-Appendix F3 Prairewood

** Rates for office TD2013/04a-Appendix D2- Liverpool

The generation rates given are based on (GFLA) which provides a better indication of trip generation than gross floor area. As a general guide, 100 m2 gross floor area equals 75 m2 gross leasable floor area.

28/05/2020

Table 3.3c PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 (Hall Circuit) Flynn Ave Middleton Grange. Revised 20 .2.2020 REV F

Precinct Lot 5

Location	Use	Area M² GFA	Area M² LFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 15% for retail, medical centre and commercial uses		
Ground	Major Retail Supermarket	2600	1950	RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM								
				AM 45% of development IN and OUT	12.6	12.6	25.3			21.48	AM	
				PM 50% IN & 50% OUT	48	48	96.7			82.21	PM	
				RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips								
	Liquor Store	300	225	AM 45% of development IN and OUT	1.46	1.46	2.92			2.48	AM	
				PM 50% IN & 50%OUT	6	6	11			9.49	PM	
	Retail Shops	2600	1950	Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM								
				AM 45% of development IN and OUT	12.64	12.64	25.27			21.48	AM	
				PM 50% IN & OUT	48.36	48.36	96.72			82.21	PM	
	Café/ restaurant	1000	750	100% development (50% IN and 50% Out)	18.60	18.60	37.20			31.62	PM	
	Gymnasium and Health Precinct **	3500	2625	RMS TDT 2013/04a Appendix F3 * 4.96 trips per 100m2 GLFA PM only 50%	31.24	31.24	62.48			53.10	PM	Peak after 6pm**
				RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM								
First Floor	Office **	4135	3101	80% IN and 20% OUT in AM	32.15	8.04	40.19			34.16	AM	
				20% IN and 80% OUT in PM	29.52	118.10	147.62			125.48	PM	
	Total	**14135**										
				Hour	IN	OUT	TOTAL					
Residential	No Of Units/Are	Traffic Gen Rate			0.25	0.75						
	241	0.4		AM	24.10	72.30	96.40			96.40	AM	
					0.67	0.33						
	241	0.4		PM	64.27	32.13	96.40			96.40	PM	
				TOTAL AM	83.0	107.1	190.1	76.8	99.2	176		
				TOTAL PM	246	302	548	216	265	481		

NOTES

* Retail Rates Adopted from TDT 2013/04a Appendix F3 Retail Prairewood

** Rates for office TD2013/04a-Appendix D2- Liverpool

The generation rates given are based on (GFLA) which provides a better indication of trip generation than gross floor area. As a general guide, 100 m2 gross floor area equals 75 m2 gross leasable floor area.

28/05/2020

Table 3.3d PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 (Hall Circuit) Flynn Ave Middleton Grange.Revised 20 .2.2020 REV F

Precinct Lot 4

Location	Use	Area M^2 GFA	Area M^2 LFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 15% retail/ entertainment/ café.	
	Retail Shops *	1790	1343	RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
				AM 45% of development IN and OUT	8.70	8.70	17.40			14.79	AM
				PM 50% IN & 50% OUT	33.29	33.29	66.59			56.60	PM
	Café/restaurant	2000	1500	RMS TDT 2013/04a Appendix F3 4.96 trips per 100m2 PM	37.20	37.20	74.40			63.24	PM
	Entertainment/ Commercial	2862	2147	RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
				AM 45% of development IN and OUT	13.91	13.91	27.82			23.65	AM
				50% IN and 50% OUT in PM	53.23	53.23	106.47			90.50	PM
	Childcare	505	379	RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
				AM 45% of development IN and OUT	2.45	2.45	4.91			4.17	AM
				100% development (50% IN and 50% Out)	9.39	9.39	18.79			15.97	PM
	Total	**7157**									
Residential				Hour	IN	OUT	TOTAL				
	No Of Units/Area	Traffic Gen Rate			0.25	0.75					
	292	0.4		AM	29.20	87.60	116.80			116.80	AM
					0.67	0.33					
	292	0.4		PM	77.87	38.93	116.80			116.80	PM
				TOTAL AM	54.26	112.66	166.9	51.8	107.6	159	
				TOTAL PM	210.99	172.05	383	189	154	343	

NOTES

* Retail Rates Adopted from TDT 2013/04a Appendix F3 Retail Prairewood

The generation rates given are based on (GFLA) which provides a better indication of trip generation than gross floor area. As a general guide, 100 m2 gross floor area equals 75 m2 gross leasable floor area.

28/05/2020

Table 3.3e PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 Flynn Ave Middleton Grange.Revised 20 .2.2020 REV F

Precinct Lot 3

Location	Use	Area M² GFA	Area M² LFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 15% for retail/café	
Ground	Neighbourhood Shops *	2030	1523	RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
				AM 45% of development IN and OUT	9.87	9.87	19.73			16.77	AM
				100% development (50% IN and 50% Out)	37.76	37.76	75.52			64.19	PM
	Café/restaurant	724	543	RMS TDT 2013/04a Appendix F3 4.96 trips per 100m2 PM	13.47	13.47	26.93			22.89	PM
				RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
	Soho	600	450	AM 45% of development IN and OUT	2.92	2.92	5.83			4.96	AM
				100% development (50% IN and 50% Out)	11.16	11.16	22.32			18.97	PM
	Total	**3354**									
Residential				Hour	IN	OUT	TOTAL	IN	OUT		
	No Of Units/Area	Traffic Gen Rate			0.25	0.75					
	29	0.4		AM	2.90	8.70	11.60			11.60	AM
					0.67	0.33					
	29	0.4		PM	7.73	3.87	11.60			11.60	PM
				TOTAL AM	15.68	21.48	37.2	14.1	19.3	33.33	
				TOTAL PM	70.12	66.25	136.4	60.49	57.2	117.65	

NOTES

* Retail Rates Adopted from TDT 2013/04a Appendix F3 Retail Prairewood

Distribution of Retail 45% distribution AM Rate 100% in the PM is 50% IN and 50% Out

The generation rates given are based on (GFLA) which provides a better indication of trip generation than gross floor area. As a general guide, 100 m2 gross floor area equals 75 m2 gross leasable floor area.

28/05/2020

Table 3.3f PROPOSED TRAFFIC GENERATION FOR 60-80 Southern Cross Ave and 45-65 (Hall Circuit) Flynn Ave Middleton Grange.Revised 20 .2.2020 REV F

Precinct Lot 2

Location	Use	Area M² GFA	Area M² LFA	Generation Rate	IN	OUT	TOTAL	IN	OUT	Reduction for multi purpose trips 15% for retail/café	
Ground	Neighbourhood shops *	2030	1523	RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
				AM 45% of development IN and OUT	9.87	9.87	19.73			15.79	AM
				100% development (50% IN and 50% Out)	37.76	37.76	75.52			60.41	PM
	Café/restaurant	718	539	RMS TDT 2013/04a Appendix F3 4.96 trips per 100m2 PM	13.35	13.35	26.71			21.37	PM
				RMS TDT 2013/04a Appendix F3 * 2.88 trips per 100m2 GLFA AM 4.96 trips per 100m2 PM							
	Soho *	600	450	development IN and OUT	2.92	2.92	5.83			4.96	AM
				100% development (50% IN and 50% Out)	11.16	11.16	22.32			18.97	PM
	Total	**3348**									
Residential				Hour	IN	OUT	TOTAL	IN	OUT		
	No Of Units/Area	Traffic Gen Rate			0.25	0.75					
	29	0.4		AM	2.90	8.70	11.60			11.60	AM
					0.67	0.33					
	29	0.4		PM	7.73	3.87	11.60			11.60	PM
				TOTAL AM	15.68	21.48	37.2	13.6	18.7	32.34	
				TOTAL PM	70.01	66.14	136.1	57.8	54	112.35	

NOTES

* Retail Rates Adopted from TDT 2013/04a Appendix F3 Retail Prairewood

Distribution of Retail 45% distribution AM Rate 100% in the PM is 50% IN and 50% Out

The generation rates given are based on (GFLA) which provides a better indication of trip generation than gross floor area. As a general guide, 100 m2 gross floor area equals 75 m2 gross leasable floor area.

APPENDIX C

26/09/2019

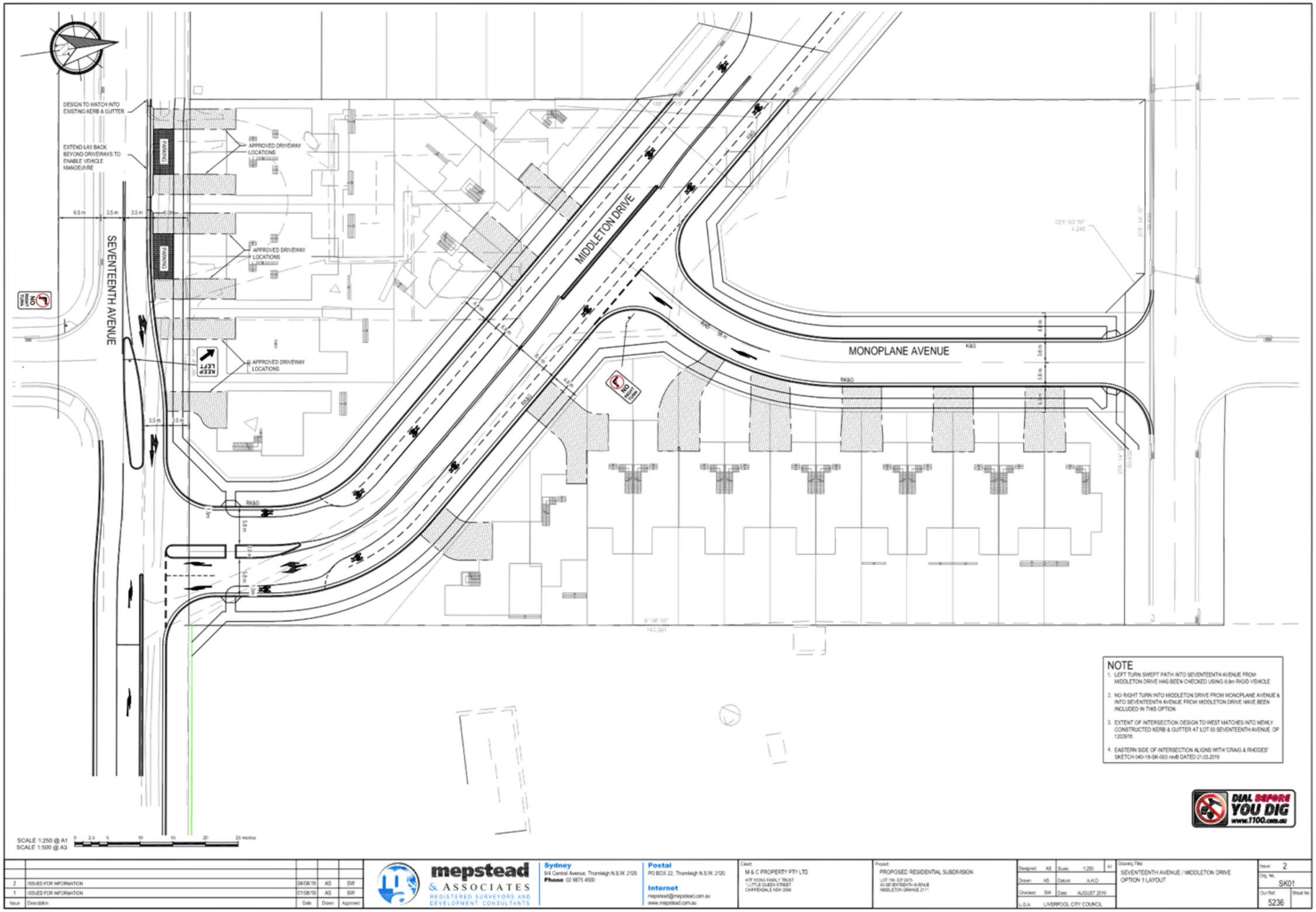
Table 4.4 Proposed Summary Of Uses and Parking

SUMMARY

Location	Uses	Area M^2	LFA**	No of Units	Parking Rate	Parking Required	
Precinct Lot 2	Neighbourhood Shops	2030	1725.5		1 space per 25m2 LFA	69.0	
	Café Restaurant	718	610.3		1 space per 25m2 LFA	24	
	Ground Floor Soho	600					
	Residential			**29**			
	Residential Soho			5	2 spaces per 3 bedrooms	10	
	Residential Terrace			12	2 spaces per 3 bedrooms	24	
	Residential Shop Top			12	2 spaces per 3 bedrooms	24	
	Visitor					7	
		3348				**158**	
Precinct Lot 3	Neighbourhood Shops	2030	1725.5		1 space per 25m2 LFA	69	
	Café Restaurant	724	615.4		1 space per 25m2 LFA	25	
	Ground Floor Soho	600					
	Residential			**29**			
	Residential Soho			5	2 spaces per 3 bedrooms	10	
	Residential Terrace			12	2 spaces per 3 bedrooms	24	
	Residential Shop Top			12	2 spaces per 3 bedrooms	24	
	Visitor					7	
		3354				**159**	
Precinct Lot 4	Retail Shops	1790	1521.5		1 space per 25m2 LFA	61	
	Café Restaurant	2000	1700		1 space per 20m2 LFA	85	
	Commerical/Enterainment	2862	2432.7		1 space per 25m2 LFA	97	
Shared/Visitor	Childcare Centre	505			1 space per 35 LFA	14	
	Residential			**292**			
	1 bed			58	1 space/dwelling	58	
	2 bed			204	1.5 spaces/dwelling	307	
	3 bed			29	2 spaces/dwelling	58	
	Visitor					73	* shared
		7157				**681**	
Precinct Lot 5	Major Supermarket	2600	2210		1 space per 25m2 LFA	88	
	Retail Shops	2600	2210		1 space per 25m2 LFA	88	
	Retail Liquor	300	255		1 space per 25m2 LFA	10	
	Café Restaurant	1000	850		1 space per 20m2 LFA	43	
	Gymnasium	3500	2975		1 space per 22m2	135	
	Office	4135	3514.75		1 space per 35 LFA	100	
	Residential			**241**			
	1 bed			48	1 space/dwelling	48	
	2 bed			169	1.5 spaces/dwelling	253	
	3 bed			24	2 spaces/dwelling	48	
	Visitor					60	
Total GFA		14135				**875**	
Precinct Lot 6	Mini Major	1200	1020		1 space per 25m2 LFA	41	
	Café-Retail	1500	1275		1 space per 20m2 LFA	51	
	Retail Shops	580	493		1 space per 25m2 LFA	20	
	Office	2888	2454.8		1 space per 35 LFA	70	
	Residential			**79**			
	1 bed			16	1 space/dwelling	16	
	2 bed			55	1.5 spaces/dwelling	83	
	3 bed			8	2 spaces/dwelling	2	
	Visitor					20	
Total GFA		6168				**302**	
Precinct Lot 7	Medical Centre **	1175	999		1 space per 25m2 LFA	40	
	Retail	552	469		1 space per 25m2 LFA	19	
	Café Restaurant	505	429		1 space per 20m2 LFA	21	
	Imaging Diagnostic	1189	1011		1 space per 25 LFA	40	
	Ancillary Health Offices	1964	1669		1 space per 35 LFA	48	
	Outpatient	1189	1011		1 space per 35 LFA	29	
	Medical Suites	7012	5960.2		1 space per 35 LFA	200	
	Total	**13586**				**398**	
Parkland	**Community Centre**	**500**					
	TOTAL	**48248**		**670**		**2572**	

Note * Shared Visitor Res with retail parking

APPENDIX D



NOTE

1. LEFT TURN SWEPT PATH INTO SEVENTEENTH AVENUE FROM MIDDLETON DRIVE HAS BEEN CHECKED USING 8.8m RIGID VEHICLE
2. NO RIGHT TURN INTO MIDDLETON DRIVE FROM MONOPLANE AVENUE & INTO SEVENTEENTH AVENUE FROM MIDDLETON DRIVE HAVE BEEN INCLUDED IN THIS OPTION
3. EXTENT OF INTERSECTION DESIGN TO WEST MATCHES INTO NEWLY CONSTRUCTED KERB & GUTTER AT LOT 93 SEVENTEENTH AVENUE, DP 1203918
4. EASTERN SIDE OF INTERSECTION ALIGNS WITH 'CRAIG & RHODES' SKETCH 040-18-SK-003 revB DATED 21.03.2019

DIAL BEFORE YOU DIG www.1100.com.au

Issue	Description	Date	Drawn	Approved
2	ISSUED FOR INFORMATION	06/08/19	AS	SW
1	ISSUED FOR INFORMATION	01/08/19	AS	SW

mepstead & ASSOCIATES
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Project: PROPOSED RESIDENTIAL SUBDIVISION
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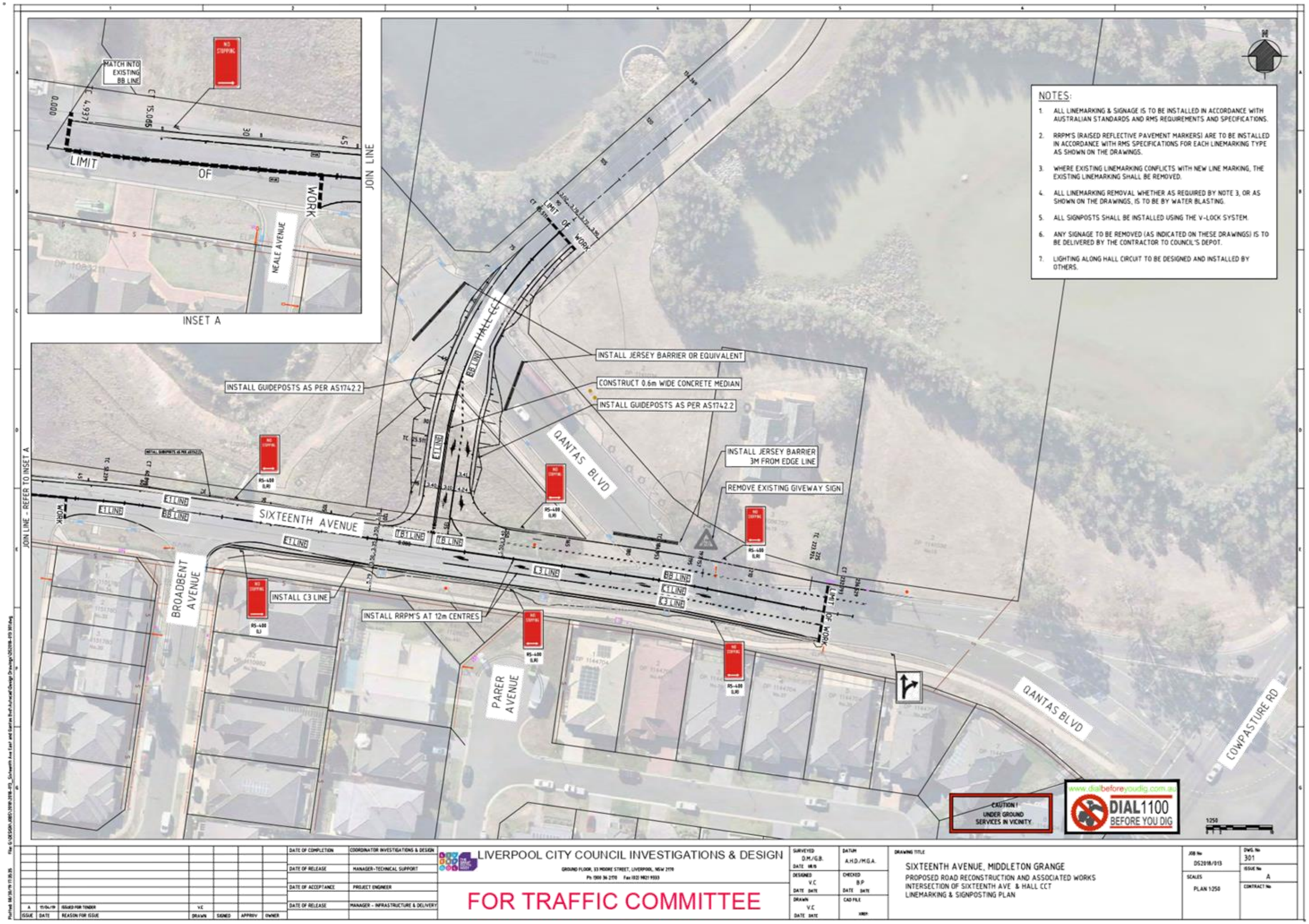
93 SEVENTEENTH AVENUE
MIDDLETON GRANGE 2171

Designed: AS | Scale: 1:250 | A1
Drawn: AS | Datum: A.H.D.
Checked: SW | Date: AUGUST 2019
L.G.A: LIVERPOOL CITY COUNCIL

Drawing Title: SEVENTEENTH AVENUE / MIDDLETON DRIVE OPTION 1 LAYOUT

Issue: 2
Dig. No.: SK01
Our Ref: 5236
Sheet No.



ISSUE	DATE	REASON FOR ISSUE	DRAWN	SIGNED	APPROV	OWNER
A	17/04/19	ISSUED FOR TENDER	V.C			

DATE OF COMPLETION	COORDINATOR INVESTIGATIONS & DESIGN
DATE OF RELEASE	MANAGER-TECHNICAL SUPPORT
DATE OF ACCEPTANCE	PROJECT ENGINEER
DATE OF RELEASE	MANAGER - INFRASTRUCTURE & DELIVERY

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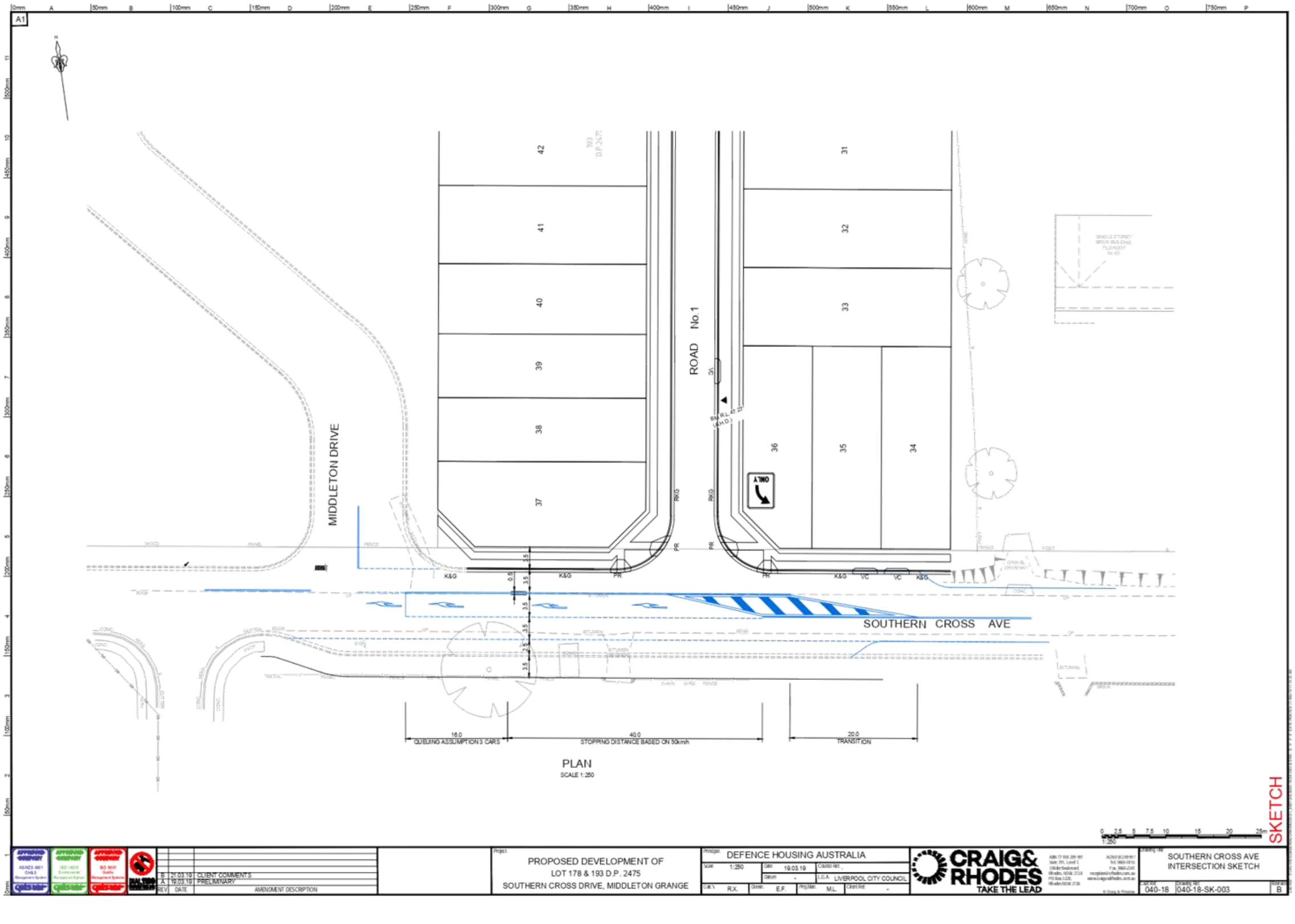
FOR TRAFFIC COMMITTEE

SURVEYED	DATUM
D.M./G.B. DATE 08/19	A.H.D./M.G.A.
DESIGNED	CHECKED
V.C DATE DATE	B.P DATE DATE
DRAWN	CAD FILE
V.C DATE DATE	XREF

DRAWING TITLE
SIXTEENTH AVENUE, MIDDLETON GRANGE
PROPOSED ROAD RECONSTRUCTION AND ASSOCIATED WORKS
INTERSECTION OF SIXTEENTH AVE & HALL CCT
LINEMARKING & SIGNPOSTING PLAN

JOB No DS2018/013	DWG No 301
SCALES PLAN 1:250	ISSUE No A
	CONTRACT No


MIDDLETON DRIVE
ROAD No.1
SOUTHERN CROSS AVE
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ONLY
K&G
PR
VC
16.0
QUEUING ASSUMPTION 3 CARS
40.0
STOPPING DISTANCE BASED ON 50km/h
20.0
TRANSITION
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SCALE 1:250
SKETCH
B 21.03.19 CLIENT COMMENTS
A 19.03.19 PRELIMINARY
REV DATE AMENDMENT DESCRIPTION
PROPOSED DEVELOPMENT OF
LOT 178 & 193 D.P. 2475
SOUTHERN CROSS DRIVE, MIDDLETON GRANGE
DEFENCE HOUSING AUSTRALIA
1:250
19.03.19
L.G.A. LIVERPOOL CITY COUNCIL
R.K.
E.F.
M.L.
CRAIG& RHODES
TAKE THE LEAD
SOUTHERN CROSS AVE
INTERSECTION SKETCH
040-18
040-18-SK-003
B

APPENDIX E

60-80 Southern Cross Avenue and 45-65 Hall Circuit, Middleton Grange

2026 Traffic Modelling Assessment

Pacific Planning Pty Ltd

21 May 2020



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P4356.002R 60-80 Southern Cross Avenue Middleton Grange 2026 Traffic Modelling Assessment	J. Yang / A. Ahmed	S. Daizli	A. Ahmed	11/05/2019	Matthew Daniel, Pacific Planning mdaniel@pacificplanning.com.au
P4356.003R 60-80 Southern Cross Avenue Middleton Grange 2026 Traffic Modelling Assessment	J. Yang / A. Ahmed	S. Daizli	A. Ahmed	21/05/2019	Matthew Daniel, Pacific Planning mdaniel@pacificplanning.com.au

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1. INTRODUCTION

1.1 Background

A Town Centre development is proposed at 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue in Middleton Grange. The development is located within the Liverpool Council Local Government Area (LGA). The Town Centre development proposal includes 670 residential dwellings and 48,248m^2 of 'mixed use' facilities including office space, restaurants, a medical centre and ancillary medical office suites, as well as smaller business operations.

A 2017 'existing conditions' (Base) Aimsun model was developed by Traffix. The model includes all key roads within the Middleton Grange. Sections of Hoxton Park Road and Cowpasture Road were also included in the model.

Bitzios Consulting was engaged by Pacific Planning Pty Ltd to undertake a traffic assessment of the proposed development using the 2017 Base Aimsun Model. An assessment of the 2031 traffic conditions and development impact was prepared in October 2019. The 2031 assessment adopted a number of road network upgrades required to address the future traffic performance. In a recent meeting, representatives from Transport for New South Wales (TfNSW) suggested that additional traffic assessments were undertaken for the intermediate year 2026. TfNSW also suggested that these assessments were carried out assuming limited road network upgrades. This report summarises the outcomes of the 2026 traffic assessment.

1.2 Site Location and Study Area

The subject site is located at 60-80 Southern Cross Avenue and 45-65 Hall Circuit, Middleton Grange Town Centre, in the Liverpool Local Government Area, NSW. The study area and extent of the modelled network is bounded by Aviation Road in the north, Cowpasture Road in the east, Fifteenth Avenue in the south and Kingsford Smith Avenue in the west. Other roads within the study area include:

- Hoxton Park Road
- Westlink M7 Motorway (M7) on and off-ramps at Cowpasture Road
- Southern Cross Avenue
- Hall Circuit
- Flynn Avenue
- Bird Walton Avenue
- Middleton Drive.

The site location and study area are shown in Figure 1.1.



Adapted from Google Maps

Figure 1.1: Site Location and Study Area

2. EXISTING CONDITIONS

2.1 Subject Site

The subject site (1 to 6/-/DP1207518, 1/-/DP1078564 and 12/-/DP1108343) currently includes five single dwellings on predominantly greenfield land and is approximately 7.9 hectares in total. The land is currently zoned B2 Local Centre, R1 General Residential, RE1 Public Recreation and SP2 Drainage under the Liverpool Local Environmental Plan (LEP) 2008.

2.2 Road Network and Hierarchy

The road network contained within the study area includes a mix of state and local roads. Cowpasture Road, Hoxton Park Road and the M7 provide the primary connections between the study area and the wider road network. The classification of roads within the study area are as follows:

- State roads:
  - Cowpasture Road
  - Hoxton Park Road
  - M7.
- Local roads:
  - All other roads.

The study area's road hierarchy is illustrated in Figure 2.1.



Adapted from Google Maps

Figure 2.1: Road Hierarchy Within the Study Area

2.3 Public Transport Network and Services

2.3.1 Buses

The study area is serviced by three bus routes, all operated by Interline Bus Services. Routes and service frequencies are summarised in Table 2.1. A map of the bus routes is shown in Figure 2.2.

Table 2.1: Bus Routes and Frequency

Route No.	Route Description	Direction of Travel	Service Frequency
827	Carnes Hill Marketplace to Liverpool via Bonnyrigg Heights	Both directions	30 mins (daily)
852	Carnes Hill Marketplace to Liverpool via Greenway Dr & Cowpasture Rd	Carnes Hill Marketplace to Liverpool	1 service (late off-peak)
853	Carnes Hill to Liverpool via Hoxton Park Rd	Both directions	15-30 (peak periods) 60 mins (off peak periods, weekends and public holidays)
855	Rutleigh Park to Liverpool via Austral & Leppington Station	Both directions	7-9 services (Monday-Friday) 3-4 services (weekends and public holidays)



Adapted from Google Maps

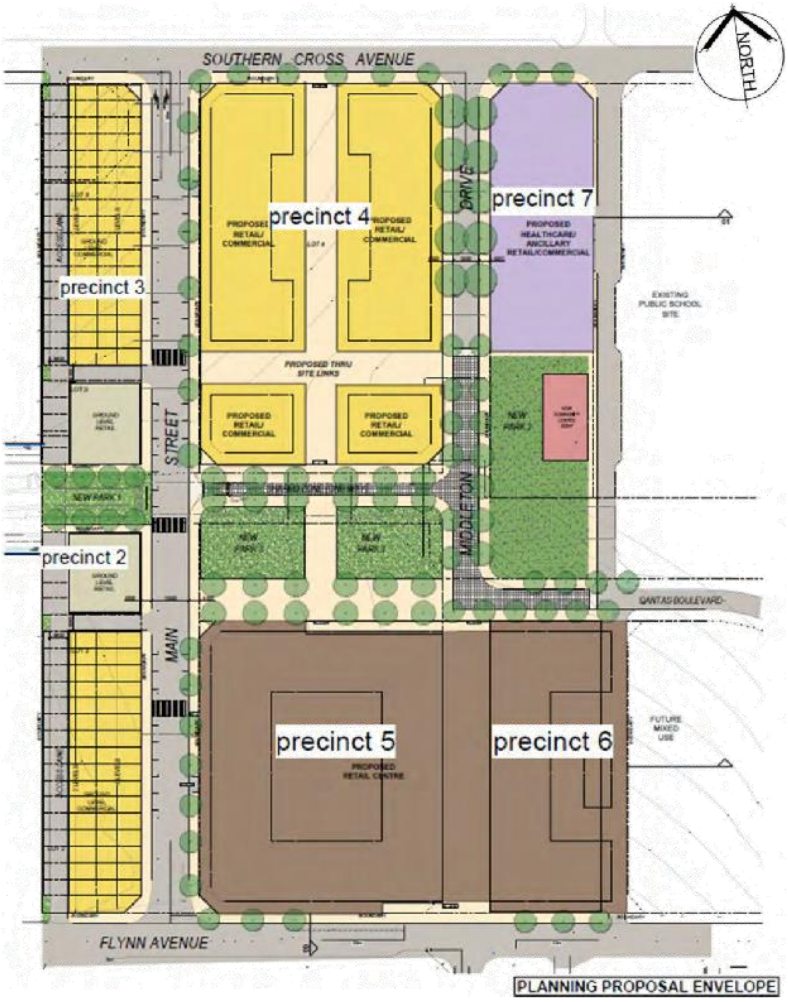
Figure 2.2: Bus Routes Near the Subject Site

3. DEVELOPMENT PROPOSAL

3.1 Development Description and Layout

The proposed development will be split into six precincts (or lots) with additional uses as follows and as shown in Figure 3.1:

- Precinct 2 – Ground level retail
- Precinct 3 – Ground level commercial
- Precinct 4 – Retail/commercial
- Precincts 5 and 6 – Retail centre
- Precinct 7 – Health care and ancillary retail/commercial
- Community centre
- Three parks.



Source: Proposed Concept Plans New Mixed Used Development (Christensen Obrien Architects, 24 September 2019)

Figure 3.1: Proposed Development Layout

3.2 Development Yields

A breakdown of the yield of each component of the proposed development is shown in Table 3.1.

Table 3.1: Proposed Development Components and Yields

Component	GFA (m^2)	Units
Ancillary health offices	1,964	-
Café restaurant	6,447	-
Childcare	505	-
Commercial-Entertainment	2,862	-
Community centre	500	-
Gymnasium	3,500	-
Imaging diagnostic	1,189	-
Major supermarket	2,600	-
Medical centre	1,175	-
Medical suites	7,012	-
Mini major	1,200	-
Neighbourhood shops	4,060	-
Office	7,023	-
Outpatients	1,189	-
Residential units	-	670
Retail shops	5,822	-
Soho ground floor	1,200	-
Total	**48,248**	**670**

Source: Traffic Impact Report For 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue Middleton Grange (Lyle Marshall & Partners Pty Ltd, September 2019) Table 3.1a

A breakdown of the area and units of each precinct of the proposed development is shown in Table 3.2.

Table 3.2: Proposed Development Precincts

Precinct	Area (m^2)	Units
Precinct Lot 2	3,348	29
Precinct Lot 3	3,354	29
Precinct Lot 4	7,157	292
Precinct Lot 5	14,135	241
Precinct Lot 6	6,168	79
Precinct Lot 7	13,586	-
Total	**47,748**	**670**

Source: Traffic Generation- Middleton Grange-Revised-20.2.20-without office rates 25% NLA (Lyle Marshall & Partners Pty Ltd) Table 3.4

The specific precinct yields are attached in **Appendix A**.

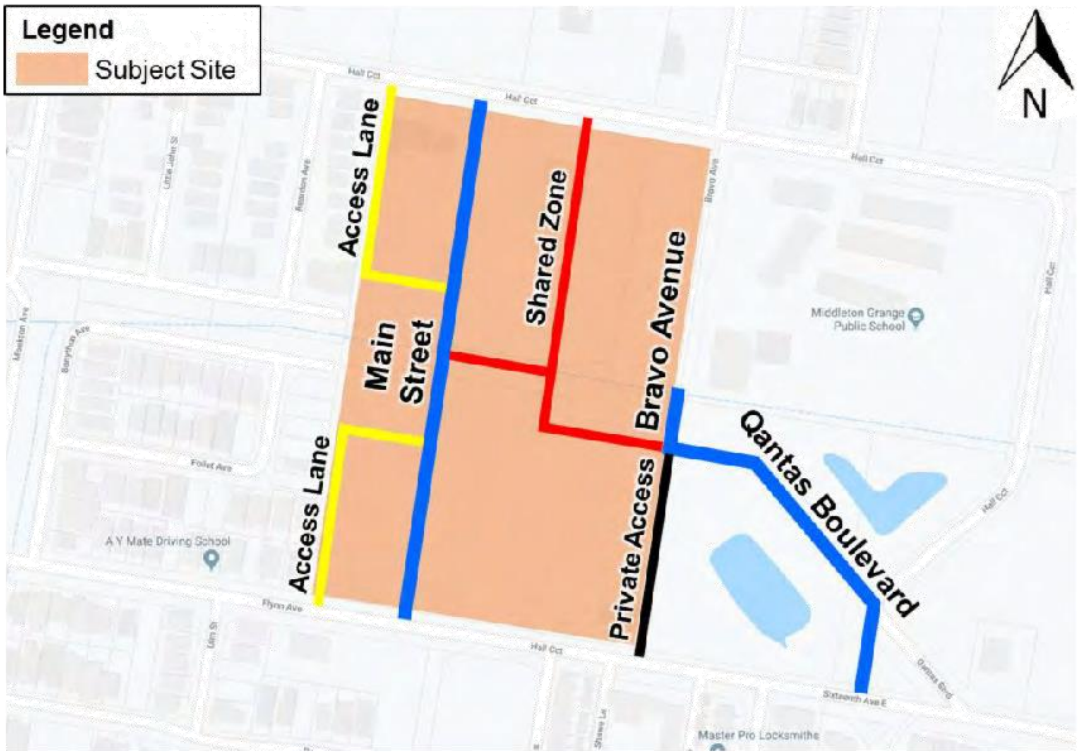
3.3 Internal Road Arrangement

The proposed road network within the development includes two primary north-south roads:

- Main Street linking both sides of Hall Circuit
- An extension of Bravo Avenue south to a new Qantas Boulevard alignment west and south to Sixteenth Avenue East.

There will also be shared zones from Main Street and Hall Circuit north to Qantas Boulevard and Bravo Avenue, two access lanes on the western side and a private access road for the Precinct 6 development on the south-eastern side.

The internal road layout is shown in Figure 3.2.



Source: Proposed Concept Plans New Mixed Used Development (Christensen Obrien Architects, 24 September 2019)

Figure 3.2: Proposed Internal Road Network

4. TRAFFIC GENERATION AND DISTRIBUTION

4.1 Background Traffic Growth

Background traffic growth was extracted from the STFM (Sydney Travel Forecasting Model) sub-area matrices, provided by Roads and Maritime Services for the years 2018 and 2026. The STFM model outputs were based on 'LU16' forecasts for population and employment.

The following assumptions were made in the processing of the STFM outputs:

- As the provided matrices were for two-hour peak periods in the AM and PM peak, a factor of **0.55** was applied to estimate the one-hour peak period demands
- The internal zone representing internal Middleton Grange traffic was removed from the calculation of the growth matrices because future development traffic within the study was calculated separately and added to the background growth.

The future year (2026) base demand matrices were calculated considering the above and then adding the zone-to-zone growth between 2018 and 2026 from the STFM to the base Aimsun model traffic demands.

4.2 Traffic Generation Rates

The traffic generation rates adopted were based on Pacific Planning Pty Ltd's preliminary traffic assessment report for the development (Rev F dated 20/2/20) as summarised in Table 4.1.

Table 4.1: Traffic Generation Rates

SUMMARY LMP

Use	Area M^2	No of Units	Generation Rate	TOTAL	Reduction for multi purpose trips 15% for retail/commercial uses
Precinct Lot 2	3348	29	TOTAL AM	37.2	32
		29	TOTAL PM	136.1	112
Precinct Lot 3	3354		TOTAL AM	37.2	33
			TOTAL PM	136.4	118
Precinct Lot 4	7157	292	TOTAL AM	166.9	159
			TOTAL PM	383.0	343
Precinct Lot 5	14135	241	TOTAL AM	190.1	176
			TOTAL PM	548.3	481
Precinct Lot 6	6168	79	TOTAL AM	77.0	70
			TOTAL PM	256.7	223
Precinct Lot 7	13586	0	TOTAL AM	127	108
			TOTAL PM	495	421
		670	AM	635	579
			PM	1955	1697

Source: Preliminary Traffic Assessment Report for 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue Middleton Grange Revision F (Pacific Planning Pty Ltd, February 2020) Table 3.4

4.3 Traffic Generation

4.3.1 Development Scenario Traffic

The traffic generation for this scenario was based on the above rates in Section 4.2 and the development components provided by Lyle Marshall & Partners Pty Ltd (revision date 20/2/20). The AM and PM peak hour traffic volumes in and out of each precinct are provided in Table 4.2 and Table 4.3.

Table 4.2: AM Peak Development Traffic Generation

Precinct	AM Peak Traffic Volume		Total Traffic Volume Generated
	In	Out	
2	14	19	32
3	14	19	33
4	52	103	155
5	77	103	180
6	36	35	70
7	71	37	108
Total In/Out Traffic Volume	**263**	**315**	**579**

Source: Traffic Generation- Middleton Grange-Revised-20.2.20-without office rates 25% NLA (Lyle Marshall & Partners Pty Ltd)

Table 4.3: PM Peak Development Traffic Generation

Precinct	PM Peak Traffic Volume		Total Traffic Volume Generated
	In	Out	
2	58	55	113
3	60	57	117
4	189	154	343
5	216	265	481
6	89	134	223
7	146	274	420
Total In/Out Traffic Volume	**758**	**939**	**1,697**

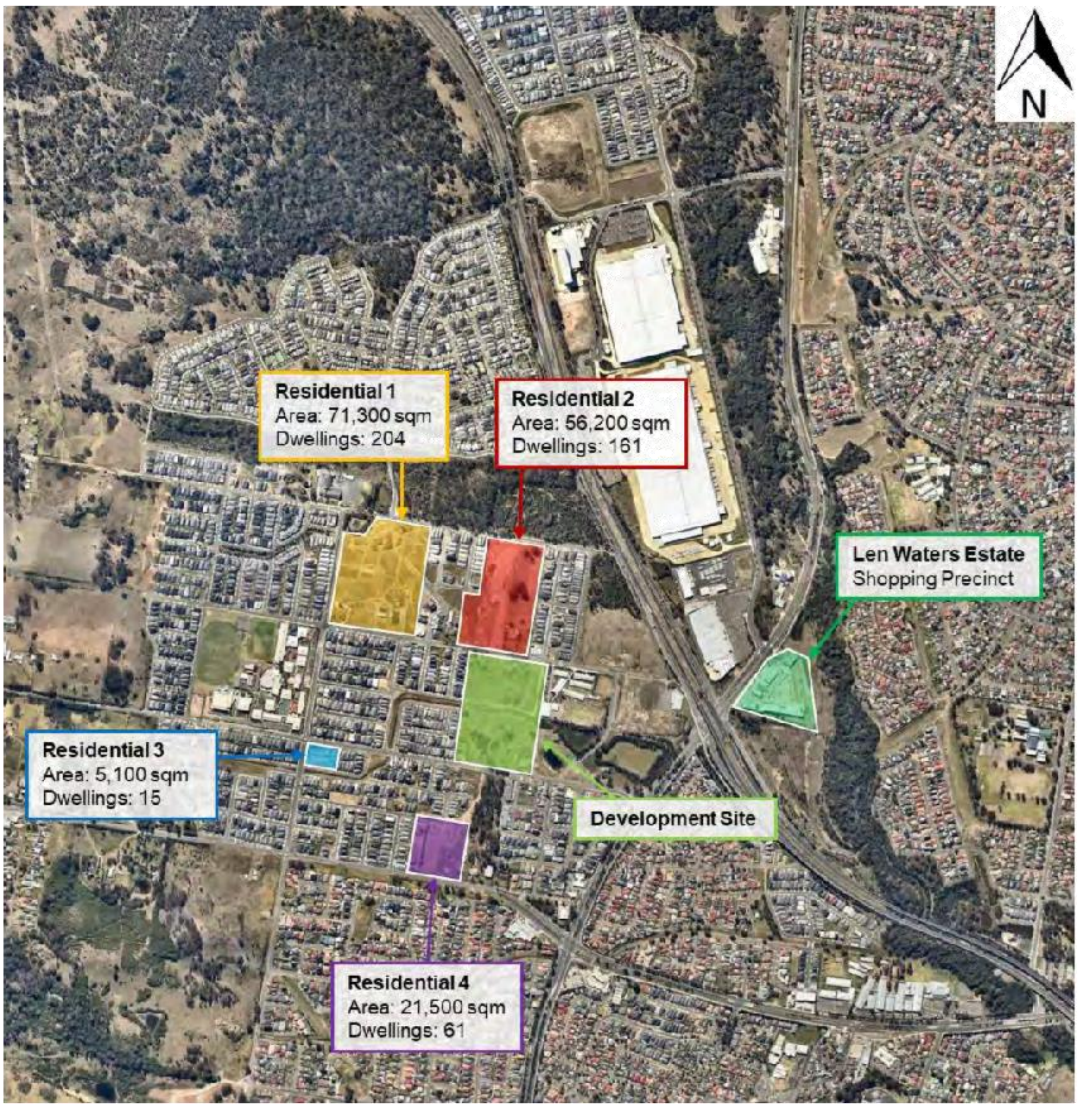
Source: Traffic Generation- Middleton Grange-Revised-20.2.20-without office rates 25% NLA (Lyle Marshall & Partners Pty Ltd)

4.4 Other Surrounding Developments

4.4.1 Other Development Components

There are four other land areas in Middleton Grange that were both vacant and zoned for residential development under the Liverpool LEP 2008. These areas were assumed to be fully developed by 2026 and their traffic was included in the Aimsun traffic modelling. Residential dwelling sites in Residential Areas 1, 2 and 4 were assumed to be 350m^2 in area and each dwelling site in Residential Area 3 was assumed to be 340m^2 in site area.

The study area also includes the Len Waters Estate located east of the Cowpasture Road/Airfield Drive intersection and which includes an ALDI, McDonalds, Oporto, Move Yourself and Guzman y Gomez. The locations of each development area are shown in Figure 4.1.



Adapted from Nearmap

Figure 4.1: Areas of Expected Development Within the Study Area

4.4.2 Traffic Generation – Other sites

The traffic generation for the residential development areas (numbered 1 to 4) was calculated based on the estimated number of residential dwellings in each area.

The following rates for low density dwelling were adopted from *Roads and Maritime Services' Technical Direction TDT2013/4a*:

- AM Peak: 0.99 trips per dwelling
- PM Peak: 0.95 trips per dwelling.

The total residential development traffic generation (not associated with the proposed development) is summarised in Table 4.4.

Table 4.4: Residential Development Peak Development Traffic Generation

Peak	Development	Total Trips Generated	Traffic Split		Directional Trips Generated	
			IN	OUT	IN	OUT
AM	Residential 1	194	25%	75%	49	146
	Residential 2	153			38	115
	Residential 3	14			4	11
	Residential 4	58			15	44
	TOTAL	**419**			**105**	**314**
PM	Residential 1	202	67%	33%	135	67
	Residential 2	159			107	52
	Residential 3	15			10	5
	Residential 4	60			40	20
	TOTAL	**436**			**292**	**144**

The Len Waters Estate Shopping Precinct is accessed via a new connection to the south-east at the Cowpasture Road / Airfield Drive traffic signals. From satellite imagery, the total area of the precinct was measured to be approximately 23,600m^2. For the purpose of this assessment, it was assumed that 20% of the total area is allocated as Gross Leasable Floor Area (GLFA), amounting to 4,720m^2.

The following rates for small suburban shopping centres were selected for estimation of the site's trip generation, based off surveys undertaken by Bitzios Consulting for Roads and Maritime for shopping centres under 10,000m^2:

- AM Peak: (0.066 * GLFA) + 126 trips
- PM Peak: (0.089 * GLFA) + 170 trips.

The total precinct traffic generation is summarised in Table 4.5.

Table 4.5: Shopping Precinct Peak Development Traffic Generation

Peak	Total Traffic Generated	Traffic Split		Directional Traffic Split	
		IN	OUT	IN	OUT
AM	438	50%	50%	219	219
PM	590	50%	50%	295	295

4.5 Trip Distribution

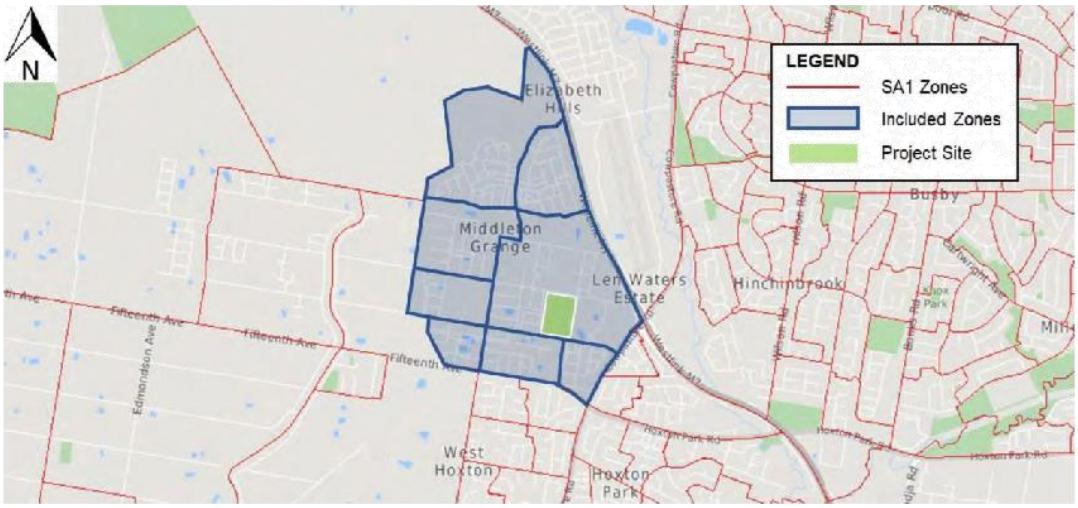
4.5.1 Methodology

The development trip distribution was estimated by comparing the following sources:

- 2016 Australian Bureau of Statistics (ABS) Census Journey to Work data
- Transport Performance and Analytics (TPA) 2018 and 2031 Sydney Strategic Traffic Forecasting Model (STFM) data.

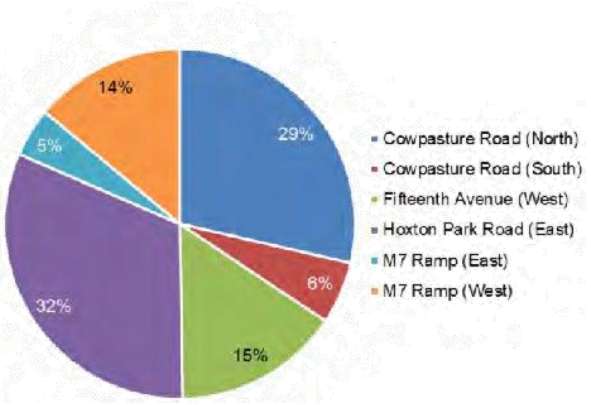
4.5.2 2016 Journey to Work Data

The Statistical Area Level 1 (SA1) regions included in the Journey to Work analysis are shown in Figure 4.2. The trip distribution of residents from and employees to these regions are shown in Figure 4.3 and Figure 4.4 respectively.



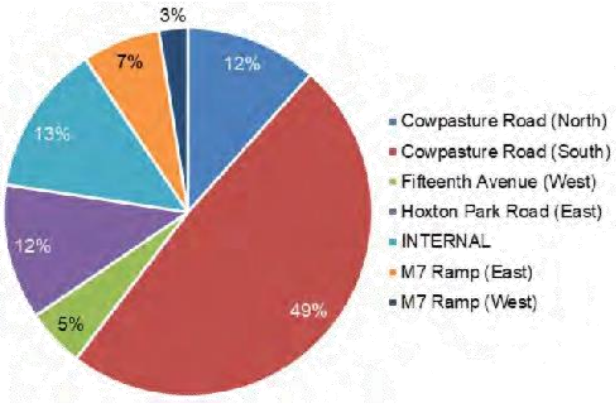
Source: https://itt.abs.gov.au/itt/r.jsp?ABSMaps

Figure 4.2: SA1 Regions Included in Journey to Work Analysis



Source: ABS TableBuilder 2016

Figure 4.3: Journey to Work Trip Distribution of Residents from Middleton Grange



Source: ABS TableBuilder 2016

Figure 4.4: Journey to Work Trip Distribution of Employees to Middleton Grange

The estimated traffic distribution as based on the JTW data is summarised in Table 4.6.

Table 4.6: JTW Estimated Trip Distributions

External Zone	AM Peak		PM Peak	
	In	Out	In	Out
Cowpasture Road (North)	12%	29%	29%	12%
Cowpasture Road (South)	49%	6%	6%	49%
Fifteenth Avenue (West)	5%	15%	15%	5%
Flynn Avenue (West)	0%	0%	0%	0%
Hoxton Park Road (East)	12%	32%	32%	12%
M7 Ramp (East)	7%	5%	5%	7%
M7 Ramp (West)	3%	14%	14%	3%
Second Avenue	0%	0%	0%	0%
Southern Cross Avenue (West)	0%	0%	0%	0%
Internal Zones	13%	0%	0%	13%

4.5.3 2018 and 2026 STFM Model Outputs

The STFM 'cordon' matrices for the study area was assessed to determine development traffic distribution assumptions for the AM (7:30-8:30am) and PM (4:45-5:45pm) peak periods. These were based on the proportions of the trip growth between the Middleton Grange (internal zone) and the wider road network (external zones) between 2018 and 2026.

The resulting combined traffic distribution of residents from the study area and employees to the study area are summarised in Table 4.7 for both peak periods.

Table 4.7: STFM 2018-2026 AM and PM Peak In/Out Trip Distribution

External Zone	AM Peak		PM Peak	
	In	Out	In	Out
Cowpasture Road (North)	12%	9%	9%	12%
Cowpasture Road (South)	3%	13%	7%	2%
Fifteenth Avenue (West)	13%	8%	9%	13%
Flynn Avenue (West)	2%	1%	2%	1%
Hoxton Park Road (East)	32%	46%	45%	32%
M7 Ramp (East)	8%	6%	7%	6%
M7 Ramp (West)	5%	6%	5%	4%
Second Avenue	17%	4%	10%	22%
Southern Cross Avenue (West)	8%	6%	7%	7%

4.5.4 Comparison between JTW and STFM distribution

The distributions based on JTW and STFM data were compared to ascertain the degree of difference between the two methodologies. It was found that the STFM distribution favoured origins and destinations along Hoxton Park Road to the east and Fifteenth Avenue to the west, with a lesser emphasis of Cowpasture Road to the south.

It was considered that the JTW data will not appropriately reflect the planned future expansion of Hoxton Park Road and Fifteenth Avenue to be a major east-west corridor with bus transit services. Furthermore, the planned Western Sydney Airport located in Badgerys Creek to the west is expected to significantly affect the existing traffic distribution of the area. The 2016 JTW data does not reflect these future changes.

The STFM distribution was determined to be the more appropriate source for the purpose of distributing trips to/from the future developments in the model. The STFM distribution was adopted to distribute the residential development traffic.

4.6 Retail Traffic Distribution

Due to the nature of retail-related traffic, a different approach was taken for distribution of retail traffic. Economic analysis indicated that the majority of visits to retail and shopping centres occurred within the suburb of Middleton Grange itself. However, it was understood that these would likely be comprised primarily of active transportation trips due to the close proximity between origin and destination. The vehicle trips to the retail components of the development were expected to come from the surrounding suburbs.

Demographics snapshots were received from PPM Consulting for the surrounding suburbs within a region defined as the 'Main Trade Area', shown in Figure 4.5. The projected 2026 population of each zone was extracted and compared to produce an expected distribution of arrivals and departures to the development's retail components. The calculations are summarised in Table 4.8.

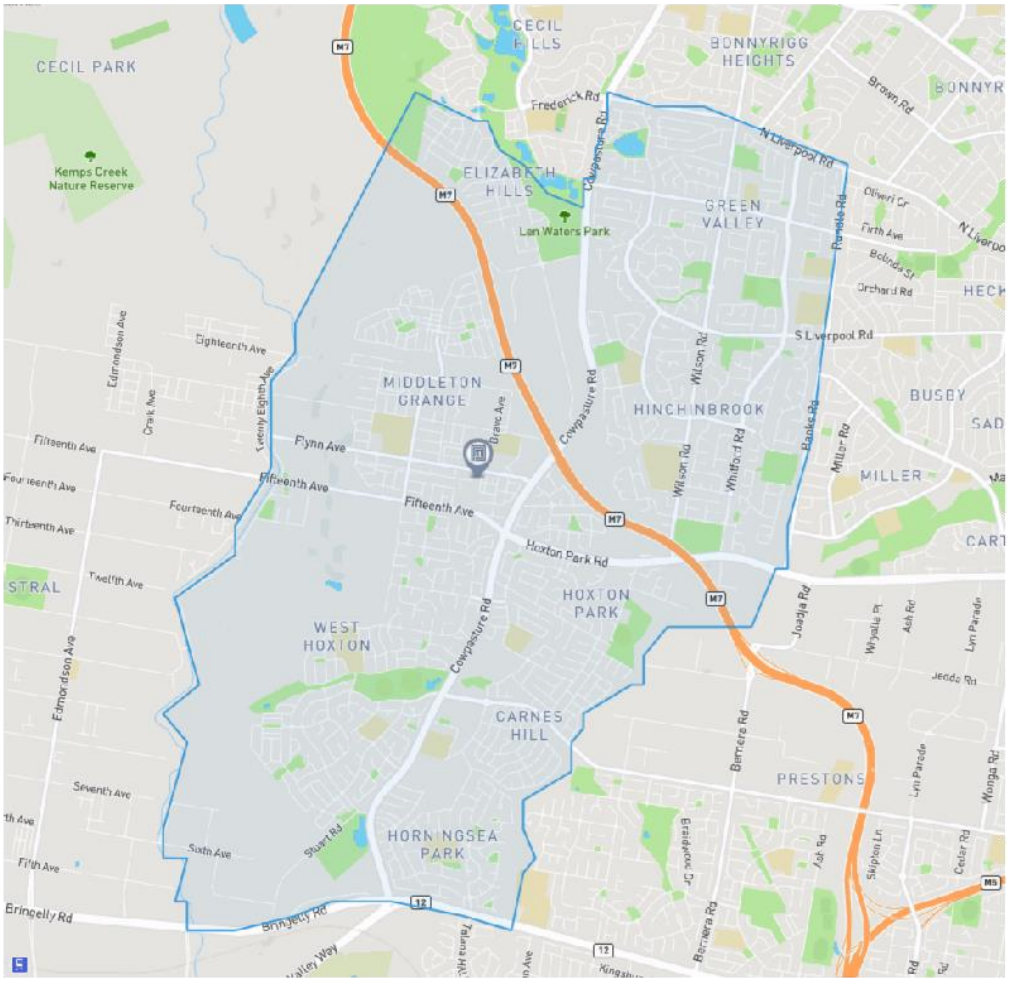
Table 4.8: Main Trade Area Demographics

Suburb	Projected 2026 Population	Weighting	Weighted Percentage
Hinchinbrook	12,520	1	21%
West Hoxton	11,636	1	20%
Austral	15,191	0.5	13%
Green Valley	14,482	0.5	12%
Hoxton Park	6,726	1	11%
Carnes Hill	4,677	1	8%
Elizabeth Hills and Cecil Hills	7,763	0.5	7%
Middleton Grange	6,726	0.5	6%
Horningsea Park	3,788	0.5	3%
TOTAL	**83,508**	**-**	**100%**

A reduced weighting of 50% was applied to the following zones to account for their corresponding factors:

- Austral : distance from the development
- Green Valley : distance from the development
- Elizabeth Hills and Cecil Hills : distance from the development
- Middleton Grange : expected active modes of transportation
- Horningsea Park : distance from the development.

The retail portion of the trips generated in Section 4.3 was distributed to and from the expected road connections for each of the nearby suburbs based on the above weighted percentages.



Source: Middleton Grange Main Trade Area (PPM Consulting, March 2020)

Figure 4.5: Middleton Grange Main Trade Area

4.7 Peak Hour Profiles

For a more sensitive release of traffic within the peak hour, 15-minute peak hour profiles were extracted from the base model traffic demand matrices for the study area. The profiles are presented in Table 4.9.

Table 4.9: Peak Hour Profiles – AM and PM Peak

Time Period	AM Peak	PM Peak
7:30 AM - 7:45 AM	24%	25%
7:45 AM - 8:00 AM	26%	23%
8:00 AM - 8:15 AM	26%	25%
8:15 AM - 8:30 AM	24%	26%

5. FUTURE NETWORK UPGRADES

5.1 Overview

In conjunction with future development in the area and the new airport, TfNSW and Council are committing to a number of upgrades to the surrounding road network. For the purpose of 2026 modelling, these upgrades include the following:

- Smart Transit Corridor
- Signalised intersection at Second Avenue / Kingsford Smith Avenue / Fifteenth Avenue
- Interim realignment works to Qantas Drive / Fifteenth Avenue
- Signalised intersection at Flynn Avenue / Kingsford Smith Avenue
- Road re-alignment works Middleton Drive / Seventeenth Avenue
- Middleton Drive / Aviation Road connection under M7
- Roundabout at Bird Walton Avenue / Middleton Drive
- Right turn lane extension from Fifteenth Avenue to Cowpasture Road southbound
- Right turn bay extension from Cowpasture Road (N) to Fifteenth Avenue westbound.

All the proposed infrastructure improvements are detailed in the sections below and shown in the Infrastructure Map provided in **Appendix B**.

The proposed network upgrades are detailed in the following sections. Preliminary schematic designs for the intersection upgrades are attached in **Appendix C**.

5.2 Fifteenth Avenue Smart Transit Corridor

The Fifteenth Avenue Smart Transit (FAST) Corridor is a key bus service corridor between the future Western Sydney International Airport and Liverpool Railway Station via Fifteenth Avenue, Hoxton Park Road and the existing Liverpool-Parramatta T-way as shown in Figure 5.1 below. The corridor is to include a dedicated bus lane in each direction along Fifteen Avenue within the study area.



Source: Connected Liverpool 2050

Figure 5.1: Proposed Fifteenth Avenue Smart Transit Corridor

5.3 Fifteenth Avenue / Kingsford Smith Avenue / Second Avenue Signalised Intersection

The Fifteenth Avenue/Kingsford Smith Avenue/Second Avenue roundabout is proposed to be upgraded to a signalised intersection. Both Fifteenth Avenue approaches will have two general traffic lanes, a bus lane and a short right turn lane. Both the Kingsford Smith Avenue and Second Avenue approaches will have a left turn/through lane and a short right turn lane. Pedestrian crossings will be provided on all sides. Figure 5.2 shows the concept layout of this intersection.



Adapted from Nearmap

Figure 5.2: Proposed Fifteenth Avenue/Kingsford Smith Avenue/Second Avenue Signalised Intersection

5.4 Re-alignment of Qantas Boulevard and Fifteenth Avenue

The Qantas Boulevard / Fifteenth Avenue intersection is proposed to be re-aligned such that the two streets are approximately perpendicular, forming a priority-controlled T-intersection.

5.5 Kingsford Smith Avenue / Flynn Avenue Signalised Intersection

The Kingsford Smith Avenue/Flynn Avenue roundabout is proposed to be upgraded to a signalised intersection. The north, east and west approaches will each have a left turn/through lane and a short right turn lane, and the south approach will have two lanes. Pedestrian crossings will be provided on all sides. Figure 5.3 shows the concept layout of this intersection.



Adapted from Nearmap

Figure 5.3: Proposed Kingsford Smith Avenue/Flynn Avenue Signalised Intersection

5.6 Middleton Drive Road Realignment

Middleton Drive between Love Road and Little John Street will be extended north to the Bird Walton Avenue/McIver Road/Middleton Drive intersection and south to Hall Circuit at the north-western end of the subject site. Figure 5.4 shows the proposed alignment.



Adapted from Nearmap

Figure 5.4: Proposed Middleton Drive Road Realignment

5.7 Middleton Drive-Aviation Road Connection

Middleton Drive and Aviation Road will be connected via a new road under the M7, providing an additional link between Cowpasture Road and Middleton Grange. The existing bicycle lanes west of the M7 will be relocated as a result.

5.8 Middleton Drive and Bird Walton Avenue roundabout

As a part of the re-alignment of Middleton Drive, the new intersection with Bird Walton Avenue is upgraded to be a single-lane roundabout, based on Liverpool City Council's advice that the subject intersection will be upgraded as a part of the subdivision of the adjacent allotment.

5.9 Limited Network Improvements

The initial traffic analysis suggests that traffic flows at the following intersections will increase substantially due to the proposed development:

- **Location 1:** The southbound approach of the Fifteenth Avenue / Kingsford Smith Avenue / Second Avenue Signalised intersection. With the proposed development, the PM peak traffic flows on this approach will increase from 230 in the Do Minimum scenario to 500 vehicles / hour in the With Development scenario. This represents an 112% increase. The initial traffic assessment suggests that in the PM peak, the intersection will operate overcapacity
- **Location 2:** The eastbound approach of the Cowpasture Road / Qantas Blvd / Collarenebri Road intersection. Traffic flows on this approach will increase from 460 to 670 vehicles / hour (or 45%) with the proposed development.

These locations are also shown graphically in Figure 5.5.

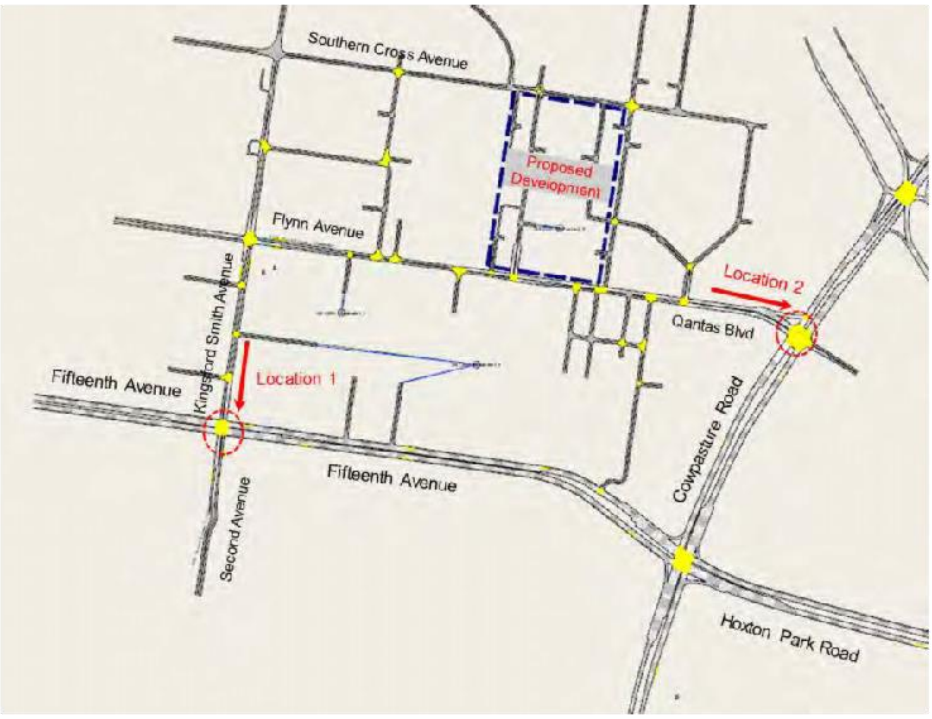


Figure 5.5: Congestion Locations

The traffic modelling assessment suggests that traffic on these approaches experience substantial delays. Improvement measures have been identified to address this issue. The proposed measures are summarised in the following sections.

5.9.1 Fifteenth Avenue / Kingsford Smith Avenue / Second Avenue Iintersection

The following improvements have been proposed:

- The use of the kerbside lane on the Kingsford Smith Drive approach for all movements
- Extend the short exclusive right turn lane back to Melrose Street.

The proposed improvements are shown in Figure 5.6.



Adapted from Nearmap

Figure 5.6: Fifteenth Avenue/Kingsford Smith Avenue/Second Avenue Intersection Improvements

5.9.2 Cowpasture Road / Qantas Blvd / Collarenebri Road

The following improvements have been proposed:

- An additional short right turn lane from Qantas Boulevard (west) into Cowpasture Road (south)
- Conversion of the left turn with care slip lane from Qantas Boulevard (west) into Cowpasture Road (north) to dual signalised left turn slip lanes with a pedestrian crossing.

The proposed improvements are shown in Figure 5.7.



Adapted from Nearmap

Figure 5.7: Cowpasture Road / Qantas Blvd / Collarenebri Road Intersection Improvements

6. PERFORMANCE ASSESSMENT CRITERIA

6.1 Performance Measures

Traffic performance measures were identified at the following three levels:

- **Intersection Level:** measures including delays and Level of Service (LoS) for each turning movement
- **Route Level:** including travel time and delays along key road sections
- **Network Level:** including travel time and distance travelled by all vehicles within the study area.

6.2 Intersection Measures

The following measures were proposed to evaluate the individual turning movements:

- Individual turning volumes
- Individual turning movement delay and overall intersection delay
- LoS for individual turning movements and intersections overall
- Average Queue Length on each approach of an intersection
- Maximum Queue Length on each approach of an intersection.

LoS is a measure of an intersection's operational performance and is related to the number of seconds vehicles are delayed at each approach. Table 6.1 shows the standard LoS criteria for intersection assessment.

Table 6.1: Intersection Level of Service Criteria

Level of Service	Average Delay (sec/veh)	Traffic Signals and Roundabouts	Give Way and Stop Signs
A	≤ 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode
F	> 70	Flow breakdown; forced flow	Intersection failure

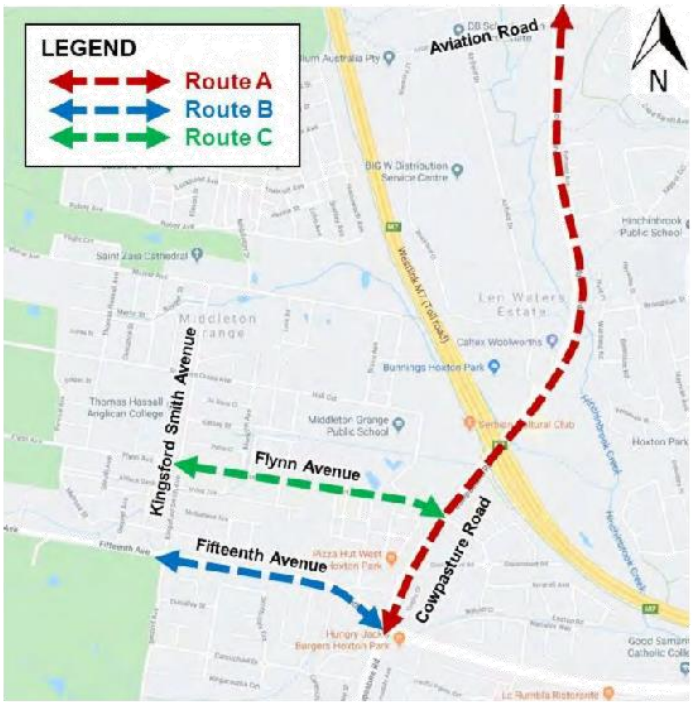
Source: Roads and Maritime Guide to Traffic Generating Developments (2002) Table 4.2

These criteria recommend that for signalised intersections, the LoS is given by the average vehicle delay for all movements, whereas for roundabouts and priority-controlled intersections with give way and stop signs, the LoS is determined by the movement with the highest delay.

6.3 Route Level

The following three travel routes, as also shown in Figure 6.1, provide measures of congestion within the study area:

- **Route A:** Cowpasture Road between Fifteenth Avenue and Aviation Road (northbound and southbound)
- **Route B:** Fifteenth Avenue between Kingsford Smith Avenue and Cowpasture Road (eastbound and westbound)
- **Route C:** Flynn Avenue between Kingsford Smith Avenue and Cowpasture Road (eastbound and westbound).



Adapted from Google Maps

Figure 6.1: Travel Time Survey Routes

6.4 Network Level

The following network performance measures have been used:

- Vehicle Kilometres Travelled (VKT)
- Vehicle Hours Travelled (VHT)
- Average network speed (km/h)
- Completed Trips at the end of the peak period
- Incomplete Trips at the end of the peak period
- Unreleased Trips at the end of the peak period.

At the end of each simulation, Aimsun provides a summary of the above measures. In a congested network with a substantial number of unreleased trips, the VKT and VHT outputs were adjusted to account for unreleased trips.

7. 2026 NETWORK PERFORMANCE

7.1 Scenarios Assessed

Table 7.1 summarises the two scenarios assessed as part of the Aimsun traffic modelling.

Table 7.1: Scenarios Assessed

Scenario	Description	AM	PM
2026 Do Minimum	▪ Background traffic growth only ▪ Other committed development traffic (Residential 1-4 and Len Waters Shopping Precinct) as per Figure 4.1 ▪ Network improvements committed by the NSW Government and Council as per Section 5 ▪ Minor upgrades of the Cowpasture Road / Hoxton Park Road intersection as per Section 7.2.	√	√
2026 With Proposed Development	▪ '2026 Do Minimum' plus development traffic as per the revised development proposal for the subject site ▪ Limited Network Improvements as identified in Section 5.9.	√	√

7.2 Minor Network Upgrades

A future bus service was coded into the model demands, operating along the FAST corridor on Fifteenth Avenue with a 10-minute frequency in both directions.

Additionally, the Cowpasture Road/Hoxton Park Road/Fifteenth Avenue signalised intersection will have the following changes:

- Bus lane along Hoxton Park Road and Fifteenth Avenue in both directions
- Extension of the right turn lane from Fifteenth Avenue (west) to Cowpasture Road (south) from around 80m to 130m
- Extension of the right turn lane from Cowpasture Road (north) to Fifteenth Avenue (west) from around 85m to 120m.

It is noted that TfNSW and Council do not currently have any plans to upgrade this intersection. However, the above extensions of right turn lanes were endorsed by TfNSW for the purpose of this assessment.

7.3 Intersection Performance Outputs

7.3.1 Intersection Analysis

The performance comparison of the key network intersections is summarised in Table 7.2. The results from the two (2) future scenarios are compared to the existing 2017 base model to demonstrate future traffic conditions due to background growth and development-specific impacts on network level of service. The detailed results are provided in **Appendix D**.

The key observations include:

- The overall year 2026 AM peak delays at the Cowpasture Road / Qantas Blvd / Collarenebri Road intersection will not exacerbate with the Development Traffic. This is despite a 112% increase in traffic flows on the Qantas Boulevard Approach and due to the proposed intersection improvements as summarised in Section 5.9.2
- The Cowpasture Road / Hoxton Park Road intersection will operate overcapacity in both the future year scenarios. The interaction will not service the 2026 traffic demands with delays to traffic on the northbound and westbound approaches
- The Cowpasture Road / Airfield Drive intersection has been identified as the network 'pinch point' as it will operate overcapacity in the 2026 PM peak. It will not service the year 2026 southbound traffic demands in the PM peak
- The Kingsford Smith Avenue intersections with Flynn Avenue and Fifteenth Avenue/Second Avenue will provide acceptable traffic performance with the development traffic as shown in Table 7.2.

Table 7.2: Intersection Level of Service Comparison – AM and PM Peaks

Intersection	Level of Service (delay in sec)					
	2017 Base		2026 Do Min		2026 Do Min + Dev	
	AM	PM	AM	PM	AM	PM
Cowpasture Road Qantas Blvd Collarenebri Road	F (76)	B (20)	F (81)	C (38)	F (80)	D (49)
Cowpasture Road Hoxton Park Road Fifteenth Avenue	E (63)	C (36)	F (95)	E (61)	F (108)	F (78)
Kingsford Smith Avenue Fifteenth Avenue Second Avenue	A (1)	A (1)	D (47)	C (43)	D (46)	E (64)
Kingsford Smith Avenue Flynn Avenue	A (1)	A (1)	C (32)	B (22)	C (35)	B (28)
Cowpasture Road Westlink M7	B (19)	B (22)	B (18)	B (23)	B (16)	B (24)
Cowpasture Road Airfield Drive	A (7)	A (14)	B (28)	F (106)	B (26)	F (119)
Main Street Flynn Street	-	-	A (3)	A (2)	A (6)	A (5)

There are a number of pinch points observed in the 2026 Do Minimum (and consequently exacerbated in the With Development) road network, including:

AM Peak Period:

- General northbound congestion on Cowpasture Road.

PM Peak Period:

- General southbound congestion on Cowpasture Road, especially north of Airfield Drive
- Westbound right turn from Hoxton Park Road to Cowpasture Road.

These locations show signs of queues and longer delays to general traffic, which may be indicative of the requirement for additional upgrades to release the traffic locks.

7.3.2 Middleton Drive and Aviation Road Connection

The connection of Middleton Drive and Aviation Road under the M7 will attract around 120-200 vehicles from the Cowpasture Road north-south corridor by providing an alternative access / exit from the Middleton Grange catchment. This will alleviate the traffic pressure at the Cowpasture Road / Qantas Blvd intersection. The connection also improves network connectivity by servicing traffic predominantly from the northern side of the study area.

7.4 Route Performance Outputs

Average vehicle travel times through each section of route identified in Section 6.3 were extracted from the models. Detailed travel time outputs are provided in **Appendix E**.

The AM northbound travel time along Route A (the Cowpasture Road north-south corridor) is shown in Figure 7.1. The year 2026 northbound traffic on Cowpasture Road will experience over one and a half minutes' additional delay in the AM peak at the Hoxton Park Road / Fifteenth Avenue intersection as shown with a red dotted oval. The delays are similar in the year 2026 Do Minimum and With Development scenarios.

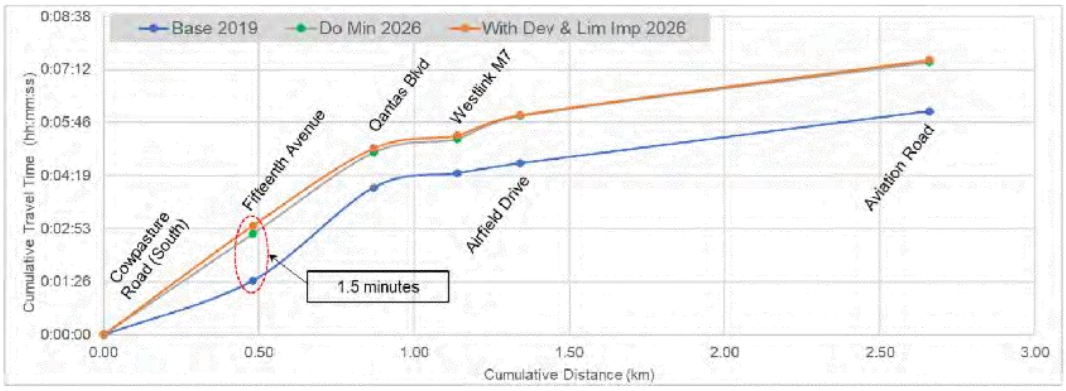


Figure 7.1: AM Travel Time – Route A Northbound

The AM peak eastbound travel time along Route B (the Fifteenth Avenue east-west corridor) is shown in Figure 7.2. The graph indicates that while the Do Minimum and With Development scenarios are very similar, they show an increase in travel time of over two minutes from the 2017 scenario. This is caused partially due to delays at the Fifteenth Avenue / Kingsford Smith Avenue intersection, due to the new signals at this location. The higher delays at the Cowpasture Road / Hoxton Park Road intersection also cause slower eastbound travel times past the Kingsford Smith Avenue intersection.

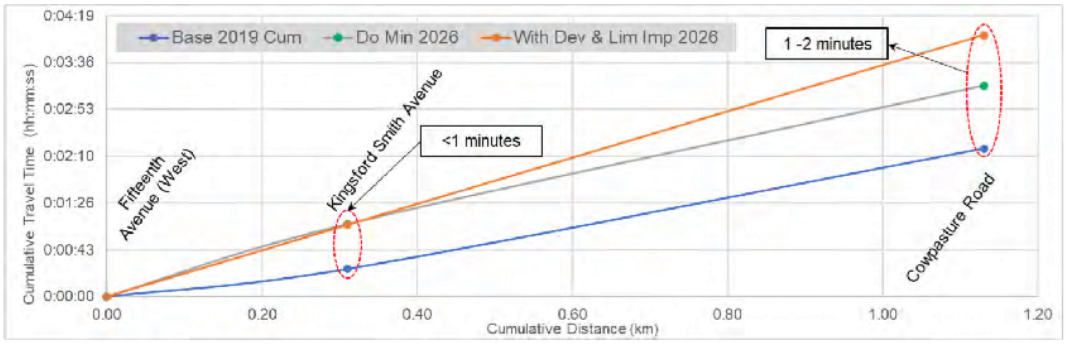


Figure 7.2: AM Travel Time – Route B Eastbound

The AM eastbound travel time along Route C (the Flynn Avenue/Qantas Blvd east-west street which will service development traffic) is shown in Figure 7.3. There is a slight increase in travel time (less than one minute) for the 2026 Do Minimum scenario relative to the 2017 Base scenario. This is reflective of the future growth in eastbound traffic which is constrained by the existing layout at the Cowpasture Road intersection (i.e. with its single short right turn bay). However, in the With Development scenario, the eastbound travel time will fall back to the 2017 Base scenario. This is attributed to the proposed intersection improvements identified in Section 5.9.2.

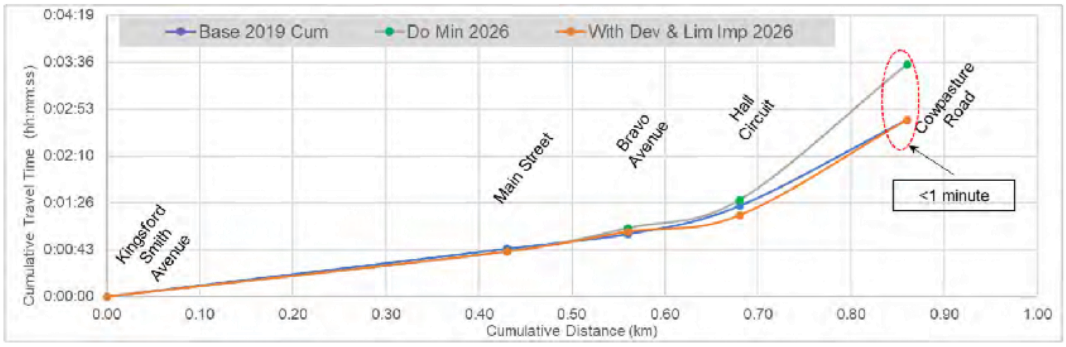


Figure 7.3: AM Travel Time – Route C Eastbound

The PM southbound travel times along Route A are comparted in Figure 7.4 below. There is a significant increase in travel time between all three scenarios, around 4 minutes from the 2017 Base to the Do Minimum and With Development scenarios. This is reflective of the capacity constraint of Cowpasture Road intersections, especially at the Airfield Drive intersection. The corridor is not capable of servicing the future traffic demands without any significant upgrades.

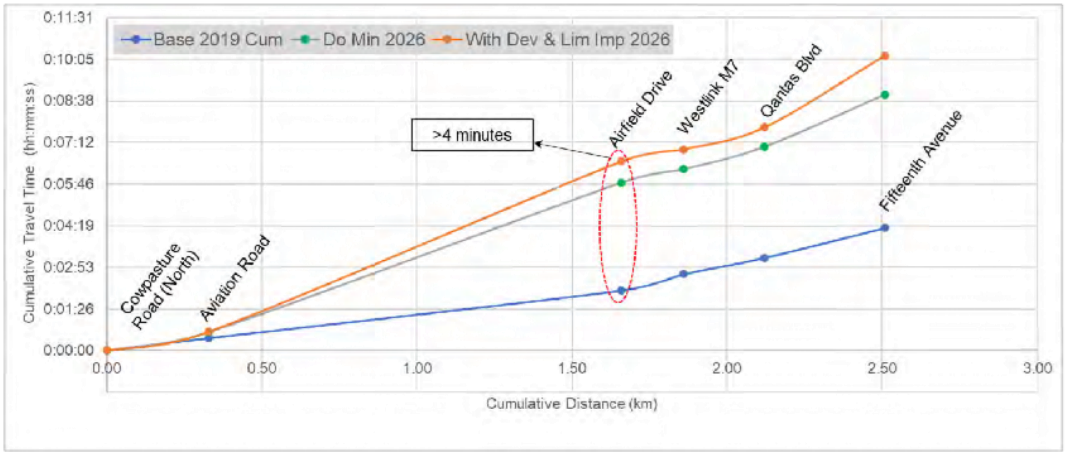


Figure 7.4: PM Travel Time – Route A Southbound

The PM eastbound travel time along Route C is shown in Figure 7.5 below. While the 2017 Base and Do Minimum travel times are noted to be quite similar, the With Development scenario shows a slight increases in travel time by over 0.5 minute.

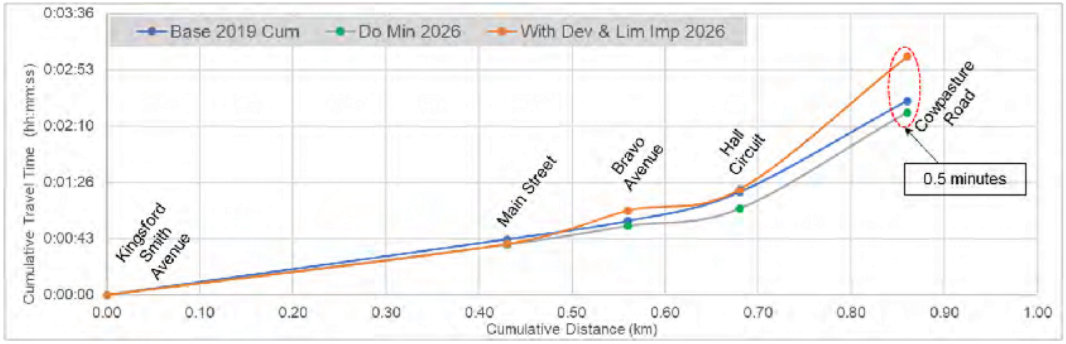


Figure 7.5: PM Travel Time – Route C Eastbound

7.5 Network Performance Outputs

The network statistics for the two modelled future 2026 scenarios in AM and PM peak hours are summarised in Table 7.3. The statistics extracted from model results include Vehicle Hours Travelled (VHT) and Vehicle Kilometres Travelled (VKT), as well as the average speed through the network.

Table 7.3: Network Performance Comparison – AM and PM Peaks

Measure	2026 Do Min		2026 Do Min + With Dev	
	AM	PM	AM	PM
Total Input Flow (veh)	11,667	11,148	12,309	13,039
Total Travel Time (VHT) (hr)	831	809	910	1,066
Total Distance (VKT) (km)	21,880	20,821	22,947	23,494
Total Delay (hr)	504	405	580	640
Average Speed (km/hr)	26.3	25.7	25.2	22.0
Average Travel Time (min)	4.29	4.35	4.45	4.92
Average Distance (km)	1.88	1.87	1.87	1.81
Average Delay (s)	156	131	170	177
Unreleased Trips (veh)	50	1	46	41
Completed Trips (veh)	10,644	10,104	11,189	11,692
Incomplete Trips (veh)	969	1,040	1,067	1,305

The overall findings are summarised below:

- VHT and VKT both increase with the With Development scenario due to the increase in traffic demands
- In the With Development scenario, the average network speed in the AM peak will reduce from 26.3km/h to about 25.2km/h. The PM peak network speed will also reduce from 25.7km/h to 22.0km/h
- The average network delay will increase slightly by 14 seconds (or 9%) in the AM peak. In the PM peak, the average network delay will increase by 46 seconds (or 35%). The substantial increase in the PM peak delay is attributed to capacity constraints at the Cowpasture Road / Hoxton Park Road / Fifteenth Avenue intersection
- Increases in delay and travel time are significantly higher in the PM peak than in the AM peak, indicating the PM peak is the more critical of the two assessed periods
- The number of unreleased and incomplete trips are similar in both the Do Minimum and With Development scenarios. This indicates that there will be no significant worsening of congestion in the With Development scenario.

8. ULTIMATE IMPROVEMENTS

8.1 Overview

The Do Minimum and With Development assessments suggest that in the future assessment year 2026, there will be substantial delays and queues in the Cowpasture Road northbound direction in the AM peak and in the southbound direction in the PM peak. The key findings include:

- The Cowpasture Road / Hoxton Park Road / Fifteenth Avenue intersection will provide LoS F in both the AM and PM peak periods
- The Cowpasture Road / Qantas Blvd / Collarenebri Road intersection will provide LoS F in the AM peak
- In the year 2026, the AM peak northbound travel time will increase up to 1.5 minutes when compared to the 2017 Base scenario
- In the year 2026, the PM peak southbound travel time will increase by over four minutes.

As part of this exercise, a suite of improvements measures has been developed to address the 2026 traffic issues. The improvement measures aim to improve the following network congestion issues:

- Performance of the Cowpasture Road / Hoxton Park Road / Fifteenth Avenue intersection
- The AM peak travel time in the northbound direction.

The proposed improvement measures are discussed in the following sections.

8.2 Improvement Measures

The following improvement measures are proposed:

- Additional capacity at the Cowpasture Road / Hoxton Park Road / Fifteenth Avenue intersection
- Additional capacity at the Cowpasture Road / Qantas Blvd / Collarenebri Road intersection
- One additional traffic lane in the Cowpasture Road northbound direction between Hoxton Park Road and the M7 interchange.

The additional capacity is provided to improve intersection performance and northbound traffic flow due to background traffic growth and adjoining development sites. This is not as a direct result of development traffic.

8.2.1 Cowpasture Road/Hoxton Park Road/Fifteenth Avenue Intersection Upgrades

In addition to the minor network upgrades adopted for the purposed of the do minimum assessment (as summarised in Section 7.2), the following upgrades are identified at the Cowpasture Road/Hoxton Park Road/Fifteenth Avenue signalised intersection:

- Additional short right turn lane from Cowpasture Road (north) into Fifteenth Avenue (west)
- Additional short right turn lane from Fifteenth Avenue (west) into Cowpasture Road (south).

These upgrades are shown in Figure 8.1.



Adapted from Nearmap

Figure 8.1: Proposed Upgraded Cowpasture Road/Hoxton Park Road/Fifteenth Avenue Intersection

8.2.2 Cowpasture Road/ Collarenebri Road/Qantas Boulevard Intersection Upgrades

A set of improvement measures are already identified as part of the Do Minimum Analysis. The measures are summarised in Section 5.9.2. In addition, the Cowpasture Road/Hoxton Park Road/ Fifteenth Avenue signalised intersection will have an additional through traffic lane along Cowpasture Road in the northbound direction as shown in Figure 8.2 and discussed in Section 8.2.



Adapted from Nearmap

Figure 8.2: Proposed Upgraded Cowpasture Road/Collarenebri Road/Qantas Boulevard Intersection

8.2.3 Cowpasture Road

It is proposed to add an additional traffic lane in the Cowpasture Road northbound direction between Hoxton Park Road and the M7 Interchange.

8.3 Intersection Performance Outputs

8.3.1 Intersection Analysis

The performance comparison of the key network intersections is summarised in Table 8.1. Results from the ultimate scenario are compared with the Do Minimum and With Development Scenarios. The detailed results are provided in **Appendix D**.

The key observations include:

- With the proposed ultimate upgrades, in the year 2026, all the key intersection will provide acceptable LoS. The only exception is the Cowpasture Road intersection with Airfield Drive
- The Airfield Drive intersection will provide LoS F in the PM peak. This is due to heavy PM peak traffic in the southbound direction. Additional traffic lane is required for the through traffic in the southbound direction.

Table 8.1: Intersection Level of Service Comparison – AM and PM Peaks

Intersection	Level of Service (delay in sec)							
	2017 Base		2026 Do Min		2026 Do Min + Dev (Limited Improvements)		2026 Do Min + Dev (Ultimate Improvements)	
	AM	PM	AM	PM	AM	PM	AM	PM
Cowpasture Road Qantas Blvd Collarenebri Road	F (76)	B (20)	F (81)	C (38)	F (80)	D (49)	D (47)	C (41)
Cowpasture Road Hoxton Park Road Fifteenth Avenue	E (63)	C (36)	F (95)	E (61)	F (108)	F (78)	D (47)	E (59)
Kingsford Smith Avenue Fifteenth Avenue Second Avenue	A (1)	A (1)	D (47)	C (43)	D (46)	E (64)	D (44)	E (62)
Kingsford Smith Avenue Flynn Avenue	A (1)	A (1)	C (32)	B (22)	C (35)	B (28)	C (35)	C (31)
Cowpasture Road Westlink M7	B (19)	B (22)	B (18)	B (23)	B (16)	B (24)	B (17)	B (29)
Cowpasture Road Airfield Drive	A (7)	A (14)	B (28)	F (106)	B (26)	F (119)	B (27)	F (104)
Main Street Flynn Street	-	-	A (3)	A (2)	A (6)	A (5)	A (10)	A (13)

8.4 Route Performance Outputs

Average vehicle travel times through Cowpasture Road and Fifteenth Avenue are compared for the three scenarios. Detailed travel time outputs are provided in **Appendix E**.

The AM northbound travel times along Cowpasture Road (Route A) are compared in Figure 8.3. With the proposed improvements, the northbound travel time will improve substantially when compared to the Do Minimum and With Development scenarios. The overall travel time will be reduced by over two minutes due to reduced delays at the Hoxton Park / Fifteenth Avenue and Qantas Blvd intersections.

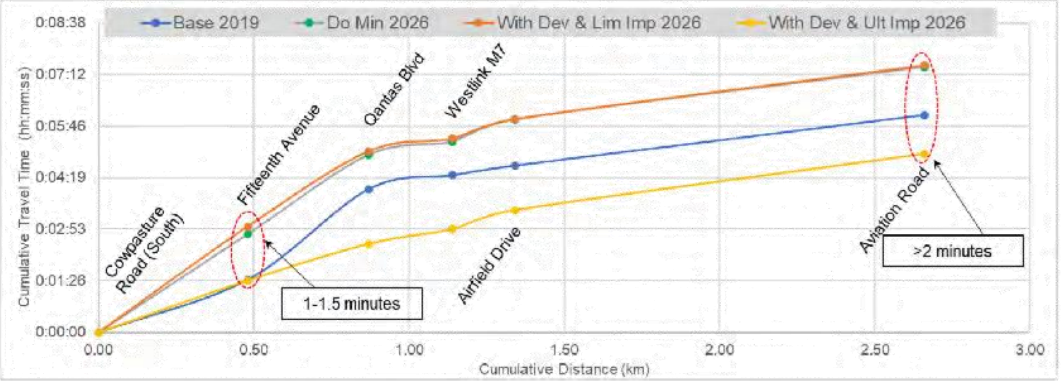


Figure 8.3: AM Travel Time – Route A Northbound

The year 2026 AM and PM peak eastbound travel in Fifteenth Avenue are compared in Figure 8.4 and Figure 8.5 respectively. When compared to the Do Minimum and With Development scenarios, the eastbound travel time will improve between 0.5 and one minute. This is due to reduced delays at the Cowpasture Road / Hoxton Park Road intersection.

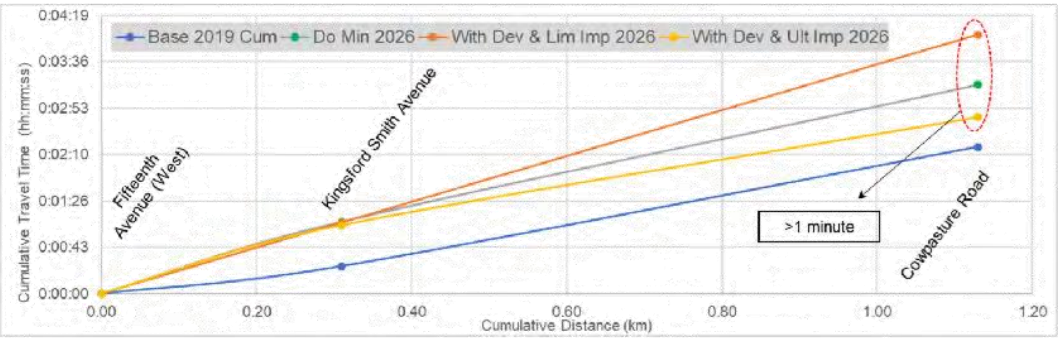


Figure 8.4: AM Travel Time – Route B Eastbound

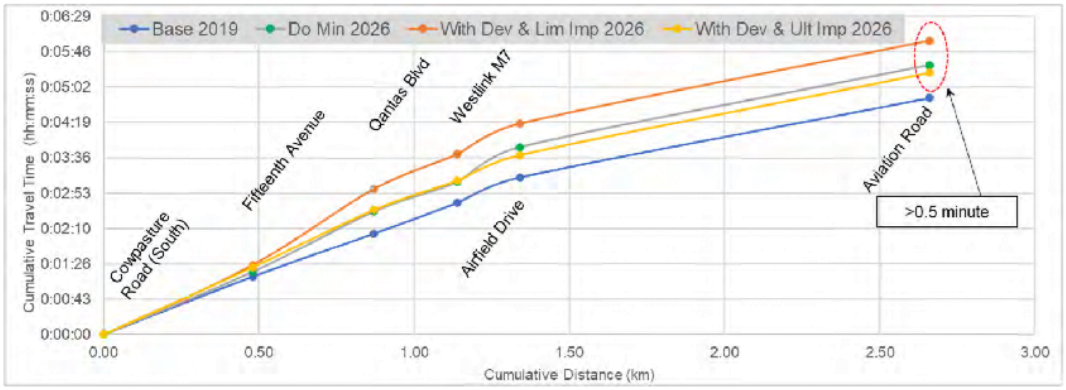


Figure 8.5: PM Travel Time – Route B Eastbound

8.5 Network Performance Outputs

The network statistics for the year 2026 ultimate improvement scenario are compared with the Do Minimum and With Development scenarios in Table 8.2.

Table 8.2: Network Performance Comparison – AM and PM Peaks

Measure	2026 Do Min		2026 Do Min + With Dev (Limited Improvements)		2026 Do Min + With Dev (Ultimate Improvements)	
	AM	PM	AM	PM	AM	PM
Total Input Flow (veh)	11,667	11,148	12,309	13,039	12,292	12,978
Total Travel Time(VHT) (hr)	831	809	910	1,066	778	1,007
Total Distance (VKT) (km)	21,880	20,821	22,947	23,494	23,766	23,623
Total Delay (hr)	504	405	580	640	423	571
Average Speed (km/hr)	26.3	25.7	25.2	22.0	30.5	23.5
Average Travel Time (min)	4.29	4.35	4.45	4.92	3.80	4.68
Average Distance (km)	1.88	1.87	1.87	1.81	1.93	1.83
Average Delay (s)	156	131	170	177	124	159
Unreleased Trips (veh)	50	1	46n	41	2	69
Completed Trips (veh)	10,644	10,104	11,189	11,692	11,546	11,679
Incomplete Trips (veh)	969	1,040	1,067	1,305	734	1,226

The overall findings are summarised below:

- With the Ultimate Improvement scenario, the AM peak VHT will reduce by 15% when compared to the With Development scenario. However, the reduction in the PM peak is minimal
- Despite the reduction in VHT, the AM and PM peak VKT will increase. When compared with the Do Minimum scenario, the AM and PM peak VKT will increase with the Limited and Ultimate improvement scenarios. This is due to increase in the number of completed trips with the two scenarios
- In line with VHT, the AM peak average speed will increase from 25.2km/h to 30.5km/h
- The AM peak average delay will reduce from 2 minutes 50 seconds to slightly over two minutes
- The number of unreleased and incomplete trips decrease in the AM peak Ultimate Improvement scenario. This indicates that there will be a significant improvement of congestion in the With Development scenario.

9. CONCLUSIONS

The key findings of this traffic and transport study for the Town Centre development proposed at 60-80 Southern Cross Avenue and 45-65 (Hall Circuit) Flynn Avenue in Middleton Grange are as follows:

- A total of 2,276 trips are anticipated to be added to the road network through the development in 2026: 579 in the AM peak and 1,697 trips in the PM peak
- Other development sites within the study area, including the several residential developments and the Len Waters Estate shopping precinct, will add a total of 1,883 trips in 2026: 857 in the AM peak and 1,026 trips in the PM peak
- In addition, there will be background traffic growth on the key roads, including the east-west Fifteenth Avenue/Hoxton Park Road and the north-south Cowpasture Road corridors.
- The anticipated traffic volumes in the 2026 future year Do Minimum scenario shows that with no intervention measures, there will be significant worsening of intersection performance and travel times. The Do Minimum assessment shows that with no intervention measures, the Cowpasture Road intersections with Airfield Drive and Hoxton Park Road will operate overcapacity
- The year 2026 AM peak travel time along Cowpasture Road northbound direction will increase by one and a half minutes. In the PM peak, the southbound travel time will increase by over four minutes
- The With Development assessment suggests that with limited intervention measures, the addition of development traffic will have no substantial worsening of intersection performance and travel times
- The overall network performance will slightly worsen as a result of the development traffic. The average travel speed will reduce slightly by between 1 and 3km/h. The average network delay will show a slight increase in the AM peak. In the PM peak, the increase is 46 seconds which is attributed to capacity constraints at the Cowpasture Road / Hoxton Park Road / Fifteenth Avenue intersection. This intersection is approaching capacity now with limited committed upgrades to address these issues. As there is very little route choice in the network and because the network is at the exponential end of the relationship between traffic flow and delay, additional traffic will generate the need for traffic upgrades if current levels of service are desired to be maintained.

Ultimate Improvements

As part of this exercise, a suite of improvements measures has been developed to address the 2026 traffic issues. The improvement measures aim to improve the congestion issues on Cowpasture Road and includes the following improvements:

- Additional capacity at the Cowpasture Road / Hoxton Park Road / Fifteenth Avenue intersection
- Additional capacity at the Cowpasture Road / Qantas Blvd / Collarenebri Road intersection
- One additional traffic lane in the Cowpasture Road northbound direction between Hoxton Park Road and the M7 interchange.

The additional capacity is provided to improve intersection performance and northbound traffic flow due to background traffic growth and adjoining development sites. This is not as a direct result of development traffic. The assessment suggests that all the key intersections will provide acceptable traffic performance. The only exception is the Cowpasture Road / Airfield Drive intersection which requires substantial improvements. The AM peak travel time in the Cowpasture Road northbound direction will improve substantially. The analysis of overall network performance suggests that the implementation of the proposed upgrade measures will generally achieve no worsening to existing traffic performance due to growths in background traffic and the addition of development traffic within the study area.

Appendix A: Precinct Yields



26/09/2019

Table 3.1b PROPOSED Summary Of Uses and Areas

SUMMARY

Location	Uses	Area M^2	No of Units
Precinct Lot 2	Neighbourhood shops	2030	
	Café Restaurant	718	
	Ground Floor Soho	600	
	Residential Terrace		17
	Residential Shop Top		12
	Total	**3348**	
Precinct Lot 3	Neighbourhood shops	2030	
	Café Restaurant	724	
	Ground Floor Soho	600	
	Residential Soho		
	Residential Terrace		17
	Residential Shop Top		12
	Total	**3354**	
Precinct Lot 4	Retail Shops	1790	
	Café Restaurant	2000	
	Commercial/Entertainment	2862	
	Childcare Centre	505	
	Residential		292
	Total	**7157**	
Precinct Lot 5	Major Supermarket	2600	
	Liquor Store	300	
	Retail Shops	2600	
	Café Restaurant	1000	
	Gymnasium	3500	
	Office	4135	
	Residential		241
Total GFA	**Total**	**14135**	
Precinct Lot 6	Mini Major	1200	
	Café-Retail	1500	
	Retail Shops	580	
	Office	2888	
	Residential		79
Total GFA	**Total**	**6168**	
Precinct Lot 7	Medical Centre **	1175	
	Retail	552	
	Café Restaurant	505	
	Imaging Diagnostic	1189	
	Ancillary Health Offices	1964	
	Medical Suites-offices	7012	
	Outpatients	1189	
	Total	**13586**	
Parkland*	Community Centre	500	
		48248	**670**

Appendix B: Committed Road Network Upgrade Map





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Issue	REVISIONS Revision/Description	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 0 5 10 15 20 25 1:500

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

Title: Intersection Layout Concept
Fifteenth Avenue, Second Avenue &
Kingsford Smith Avenue

Design	Drawn	Checked
J.Y	G.Y	A.A

PRELIMINARY

Date: 24.10.2019

Project Number	Sheet Number	Issue
P4356	1	001



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001	INTERSECTION LAYOUT	G.Y	24.10.2019

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Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

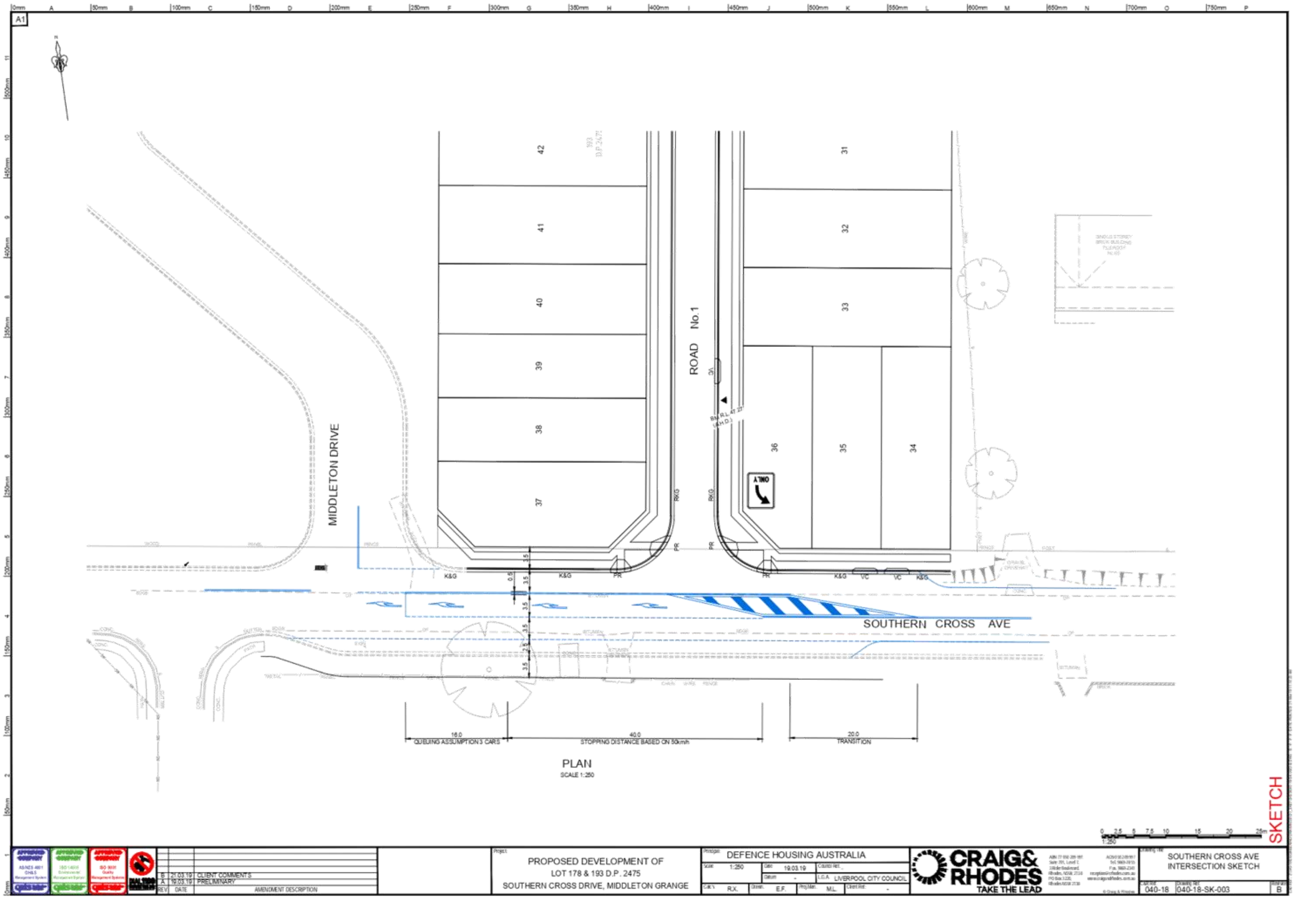
Title: Intersection Layout Concept
Flynn Avenue & Kingsford Smith Avenue

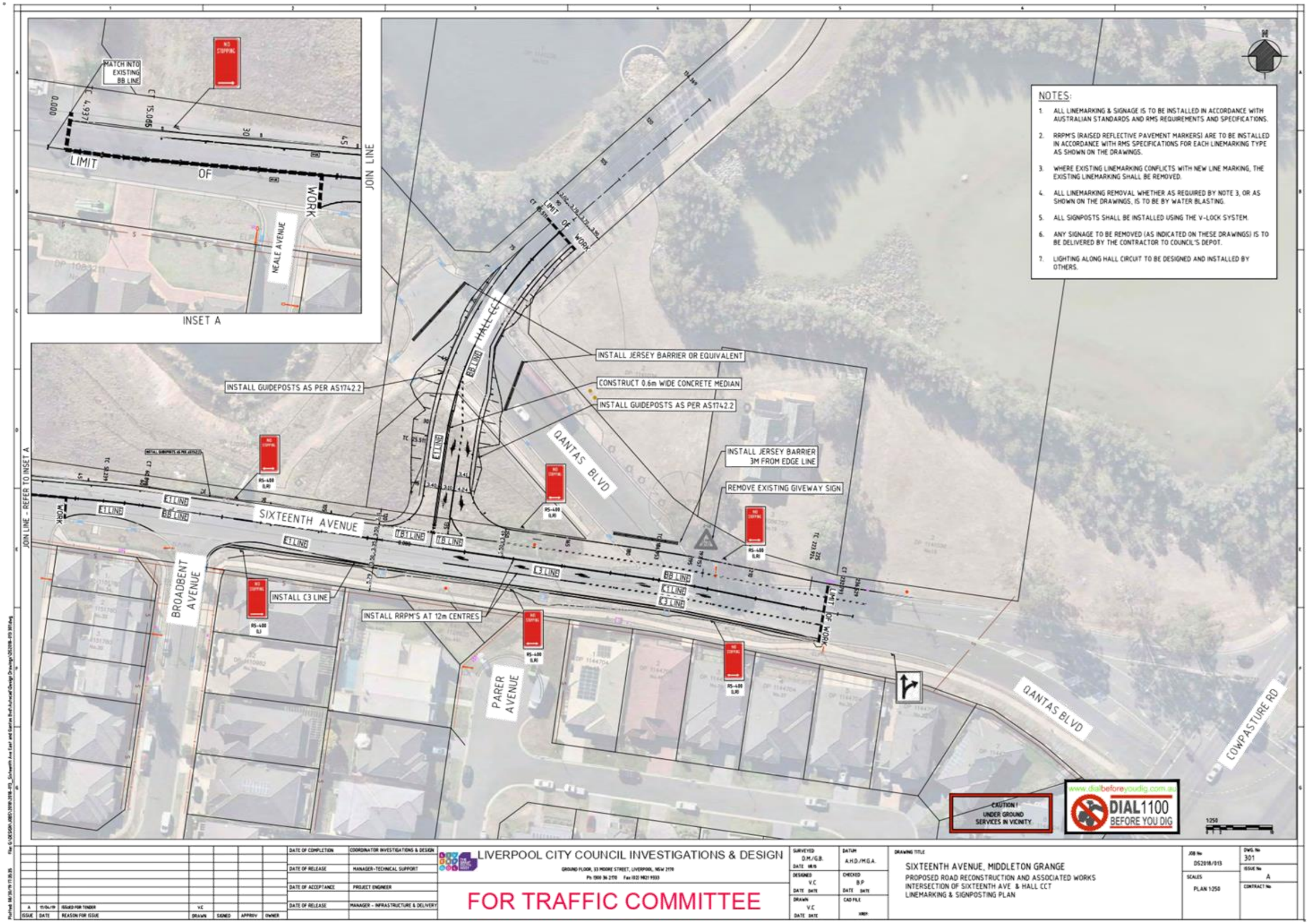
Design	Drawn	Checked
J.Y	G.Y	A.A

PRELIMINARY

Date: 24.10.2019

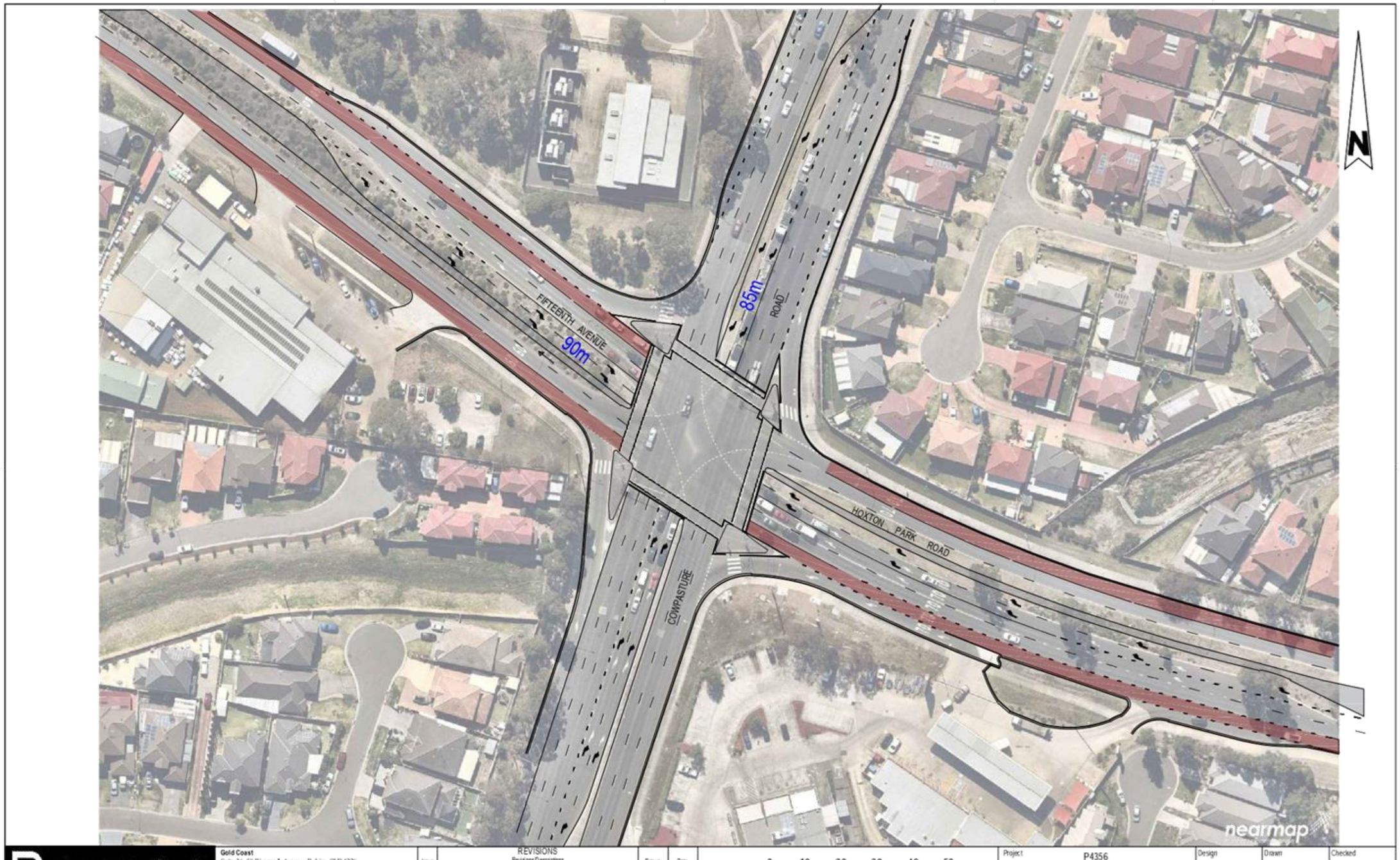
Project Number	Sheet Number	Issue
P4356	2	001


MIDDLETON DRIVE
ROAD No.1
SOUTHERN CROSS AVE
42
41
40
39
38
37
31
32
33
36
35
34
ONLY
K&G
PR
VC
16.0
QUEUING ASSUMPTION 3 CARS
40.0
STOPPING DISTANCE BASED ON 50km/h
20.0
TRANSITION
PLAN
SCALE 1:250
SKETCH
B 21.03.19 CLIENT COMMENTS
A 19.03.19 PRELIMINARY
REV DATE AMENDMENT DESCRIPTION
PROPOSED DEVELOPMENT OF
LOT 178 & 193 D.P. 2475
SOUTHERN CROSS DRIVE, MIDDLETON GRANGE
DEFENCE HOUSING AUSTRALIA
1:250
19.03.19
L.G.A. LIVERPOOL CITY COUNCIL
R.K.
E.F.
M.L.
CRAIG& RHODES
TAKE THE LEAD
SOUTHERN CROSS AVE
INTERSECTION SKETCH
040-18
040-18-SK-003
B


MATCH INTO EXISTING BB LINE
NO STOPPING
LIMIT OF WORK
NEALE AVENUE
INSET A
JOIN LINE
JOIN LINE - REFER TO INSET A
INSTALL GUIDEPOSTS AS PER AS1742.2
INSTALL JERSEY BARRIER OR EQUIVALENT
CONSTRUCT 0.6m WIDE CONCRETE MEDIAN
INSTALL GUIDEPOSTS AS PER AS1742.2
INSTALL JERSEY BARRIER 3M FROM EDGE LINE
REMOVE EXISTING GIVEWAY SIGN
INSTALL C3 LINE
INSTALL RRPM'S AT 12m CENTRES
HALL CCT
QANTAS BLVD
SIXTEENTH AVENUE
BROADBENT AVENUE
PARER AVENUE
COWPASTURE RD
E1 LINE
BB LINE
C3 LINE
CAUTION ! UNDER GROUND SERVICES IN VICINITY
www.dialbeforeyoudig.com.au
DIAL1100 BEFORE YOU DIG
1:250
NOTES:
1. ALL LINEMARKING & SIGNAGE IS TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND RMS REQUIREMENTS AND SPECIFICATIONS.
2. RRPM'S (RAISED REFLECTIVE PAVEMENT MARKERS) ARE TO BE INSTALLED IN ACCORDANCE WITH RMS SPECIFICATIONS FOR EACH LINEMARKING TYPE AS SHOWN ON THE DRAWINGS.
3. WHERE EXISTING LINEMARKING CONFLICTS WITH NEW LINE MARKING, THE EXISTING LINEMARKING SHALL BE REMOVED.
4. ALL LINEMARKING REMOVAL WHETHER AS REQUIRED BY NOTE 3, OR AS SHOWN ON THE DRAWINGS, IS TO BE BY WATER BLASTING.
5. ALL SIGNPOSTS SHALL BE INSTALLED USING THE V-LOCK SYSTEM.
6. ANY SIGNAGE TO BE REMOVED (AS INDICATED ON THESE DRAWINGS) IS TO BE DELIVERED BY THE CONTRACTOR TO COUNCIL'S DEPOT.
7. LIGHTING ALONG HALL CIRCUIT TO BE DESIGNED AND INSTALLED BY OTHERS.
ISSUE A 15/04/19 ISSUED FOR TENDER V.C
DATE OF COMPLETION COORDINATOR INVESTIGATIONS & DESIGN
DATE OF RELEASE MANAGER-TECHNICAL SUPPORT
DATE OF ACCEPTANCE PROJECT ENGINEER
DATE OF RELEASE MANAGER - INFRASTRUCTURE & DELIVERY
LIVERPOOL CITY COUNCIL INVESTIGATIONS & DESIGN
GROUND FLOOR, 33 MOORE STREET, LIVERPOOL, NSW 2170
Ph 1300 36 2170 Fax (02) 9821 9333
FOR TRAFFIC COMMITTEE
SURVEYED D.M./G.B. DATE 08/8
DATUM A.H.D./M.G.A.
DESIGNED V.C DATE DATE
CHECKED B.P DATE DATE
DRAWN V.C DATE DATE
CAD FILE
DRAWING TITLE
SIXTEENTH AVENUE, MIDDLETON GRANGE
PROPOSED ROAD RECONSTRUCTION AND ASSOCIATED WORKS
INTERSECTION OF SIXTEENTH AVE & HALL CCT
LINEMARKING & SIGNPOSTING PLAN
JOB No DS2018/013
SCALES PLAN 1:250
DWG No 301
ISSUE No A
CONTRACT No

Appendix C: Committed Road Network Upgrade Details





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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 0 10 20 30 40 50 1:1000

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

Title: Intersection Layout Concept
Fifteenth Avenue, Hoxton Park Road & Cowpasture Road

Design	Drawn	Checked
J.Y	G.Y	A.A

PRELIMINARY

Date: 24.10.2019

Project Number	Sheet Number	Issue
P4356	3	001



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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 0 5 10 15 20 25 1:500

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

Title: Intersection Layout Concept
Sixteenth Avenue, Cowpasture Road &
Collarenibri Road

Design	Drawn	Checked
J.Y	G.Y	A.A

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Date: 24.10.2019

Project Number	Sheet Number	Issue
P4356	4	001



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Issue	REVISIONS Revisions Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 0 5 10 15 20 25 1:500

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

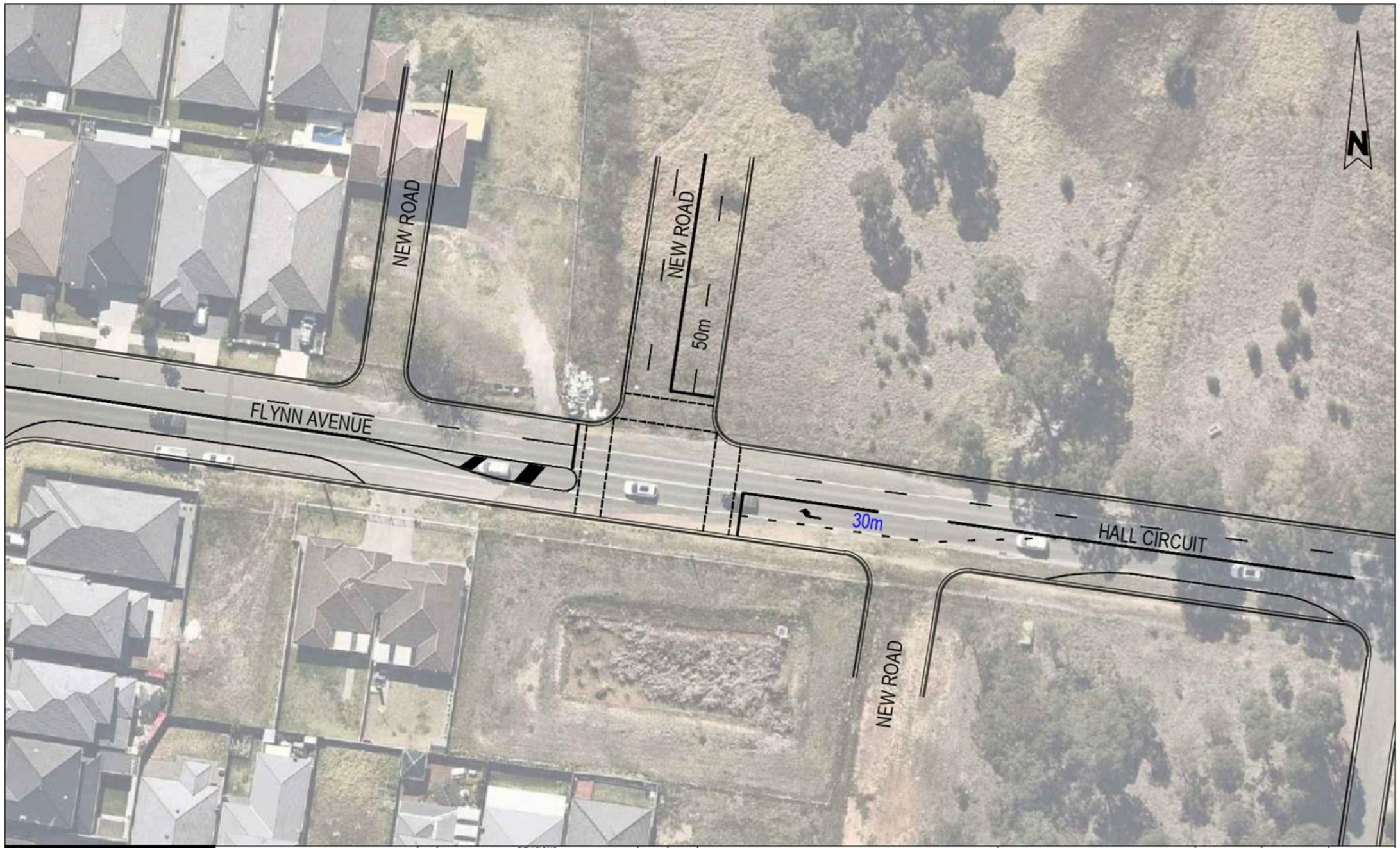
Title: Intersection Layout Concept
Sixteenth Avenue, Bravo Avenue,
Hall Circuit & Shawe Lane

Design	Drawn	Checked
J.Y	G.Y	A.A

PRELIMINARY

Date: 24.10.2019

Project Number	Sheet Number	Issue
P4356	5	001



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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019

Scale @ A3 — 0 5 10 15 20 25 — 1:500

Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

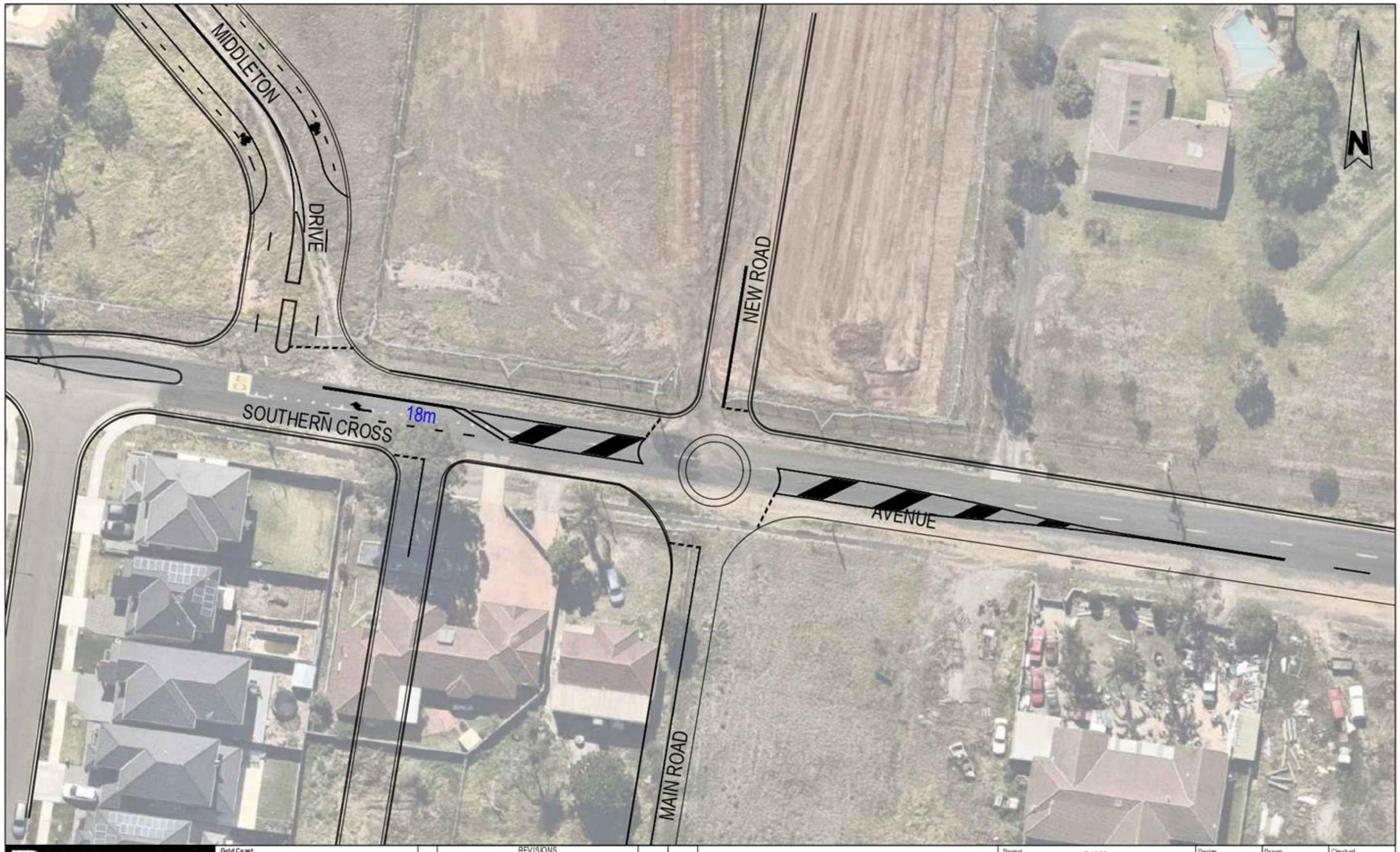
Title: Intersection Layout Concept
Flynn Avenue, Hall Circuit & New Road

Design	Drawn	Checked
J.Y	G.Y	A.A

PRELIMINARY

Date: 24.10.2019

Project Number	Sheet Number	Issue
P4356	6	001



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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	INTERSECTION LAYOUT	G.Y	24.10.2019
002	INTERSECTION LAYOUT	G.Y	24.10.2019
003	INTERSECTION LAYOUT	S.D	17.06.2020

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Project: P4356
60 -80 Southern Cross Avenue
Middleton Grange

Title: Intersection Layout Concept
Southern Cross Avenue, New Road &
Main Development Road

Design	Drawn	Checked
J.Y	S.D	A.A

PRELIMINARY

Date: 17.06.2020

Project Number	Sheet Number	Issue
P4356	7	003

Appendix D: 2026 Intersection Results Comparison



P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Intersection Results Comparison 2026

AM Peak 0730-0830

									Volume (veh)				Delay (seconds)				Level of Service			
ID	Intersection	Aimsun Code_Base	Aimsun Code_Do Min	Turn Number	Movement Code	From	To	Turn	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev
101	Cowpasture Road	10012058	10014505	1	101-1	Cowpasture Road (N)	Qantas Boulevard (W)	R	301	244	282	306	52	74	146	69	D	F	F	E
	Collarenebri Road	10012059	10014506	2	101-2		Cowpasture Road (S)	T	919	1,242	1,275	1,273	14	30	25	34	A	C	B	C
	Cowpasture Road	10012060	10014507	3	101-3		Collarenebri Road (E)	L	30	25	31	31	14	31	27	37	A	C	B	C
	Qantas Boulevard	10012061	10014508	4	101-4	Collarenebri Road (E)	Cowpasture Road (N)	R	70	75	74	74	59	105	132	110	E	F	F	F
		10012062	10014509	5	101-5		Qantas Boulevard (W)	T	27	24	23	24	68	177	197	152	E	F	F	F
		10012063	10014510	6	101-6		Cowpasture Road (S)	L	29	34	32	31	60	112	157	121	E	F	F	F
		10012064	10014511	7	101-7	Cowpasture Road (S)	Collarenebri Road (E)	R	24	15	18	20	148	150	141	94	F	F	F	F
		10012065	10014512	8	101-8		Cowpasture Road (N)	T	1,837	1,925	2,000	2,209	122	106	98	41	F	F	F	C
		10012066	10014513	9	101-9		Qantas Boulevard (W)	L	64	115	202	279	128	111	103	54	F	F	F	D
		10012067	10014514	10	101-10	Qantas Boulevard (W)	Cowpasture Road (S)	R	59	53	150	173	77	141	89	76	F	F	F	F
		10012068	10014515	11	101-11		Collarenebri Road (E)	T	5	2	1	1	79	84	103	109	F	F	F	F
		10012069	10014516	12	101-12		Cowpasture Road (N)	L	442	409	408	381	47	93	88	60	D	F	F	E
						All			3,805	4,162	4,496	4,803	78	81	80	47	F	F	F	D
102	Cowpasture Road	10012046	10014517	1	102-1	Cowpasture Road (N)	Fifteenth Avenue (W)	R	120	195	213	203	57	57	62	49	E	D	E	D
	Hoxton Park Road	10012047	10014518	2	102-2		Cowpasture Road (S)	T	674	722	751	860	43	69	64	63	D	E	E	E
	Cowpasture Road	10012048	10014519	3	102-3		Hoxton Park Road (E)	L	298	588	767	816	9	15	19	16	A	A	B	B
	Fifteenth Avenue	10012049	10014520	4	102-4	Hoxton Park Road (E)	Cowpasture Road (N)	R	259	340	411	538	302	222	258	60	F	F	F	E
		10012050	10014521	5	102-5		Fifteenth Avenue (W)	T	421	612	611	601	63	69	80	49	E	E	F	D
		10012051	10014522	6	102-6		Cowpasture Road (S)	L	170	267	274	283	8	23	31	7	A	B	C	A
		10012052	10014523	7	102-7	Cowpasture Road (S)	Hoxton Park Road (E)	R	339	478	483	493	63	123	132	69	E	F	F	E
		10012053	10014524	8	102-8		Cowpasture Road (N)	T	1,471	1,588	1,581	1,624	58	143	157	58	E	F	F	E
		10012054	10014525	9	102-9		Fifteenth Avenue (W)	L	169	181	178	183	9	62	74	8	A	E	F	A
		10012055	10014526	10	102-10	Fifteenth Avenue (W)	Cowpasture Road (S)	R	134	135	143	153	59	156	247	71	E	F	F	F
		10012056	10014527	11	102-11		Hoxton Park Road (E)	T	417	642	643	649	52	73	119	47	D	F	F	D
		10012057	10014528	12	102-12		Cowpasture Road (N)	L	97	201	295	323	27	23	41	7	B	B	C	A
						All			4,570	5,949	6,352	6,706	63	95	108	47	E	F	F	D
103	Kingsford Smith Avenue	10011836	10012338	1	103-1	Kingsford Smith Avenue (N)	Fifteenth Avenue (W)	R	196	246	273	274	0	64	56	57	A	E	D	D
	Fifteenth Avenue	10011839	10012337	2	103-2		Second Avenue (S)	T	122	168	180	183	0	62	61	58	A	E	E	E
	Second Avenue	10011838	10012427	3	103-3		Fifteenth Avenue (E)	L	28	20	21	10	0	57	56	51	A	E	D	D
	Fifteenth Avenue	10011841	10012330	4	103-4	Fifteenth Avenue (E)	Kingsford Smith Avenue (N)	R	62	122	119	69	0	107	108	98	A	F	F	F
		10011840	10012329	5	103-5		Fifteenth Avenue (W)	T	480	702	719	747	0	28	28	30	A	B	B	C
		10011841	10012430	6	103-6		Second Avenue (S)	L	62	162	163	162	0	10	10	11	A	A	A	A
		10011846	10012333	7	103-7	Second Avenue (S)	Fifteenth Avenue (E)	R	170	298	316	311	1	52	54	53	A	D	D	D
		10011845	10012332	8	103-8		Kingsford Smith Avenue (N)	T	127	144	173	171	0	52	56	52	A	D	D	D
		10011844	10012429	9	103-9		Fifteenth Avenue (W)	L	156	187	182	179	0	43	49	46	A	D	D	D
		10011835	10012334	10	103-10	Fifteenth Avenue (W)	Second Avenue (S)	R	139	154	152	152	0	96	85	86	A	F	F	F
		10011834	10012336	11	103-11		Fifteenth Avenue (E)	T	410	613	638	654	0	47	46	44	A	D	D	D
		10011833	10012428	12	103-12		Kingsford Smith Avenue (N)	L	84	171	194	178	0	19	19	19	A	B	B	B
						All			2,037	2,987	3,130	3,092	1	47	46	44	A	D	D	D
104	Kingsford Smith Avenue	10011885	10012454	1	104-1	Kingsford Smith Avenue (N)	Flynn Avenue (W)	R	14	156	127	110	0	56	66	48	A	D	E	D
	Flynn Avenue	10011883	10012455	2	104-2		Kingsford Smith Avenue (S)	T	349	384	381	407	0	27	33	27	A	B	C	B
	Kingsford Smith Avenue	10011882	10012456	3	104-3		Flynn Avenue (E)	L	31	4	4	3	0	43	42	23	A	D	C	B
	Flynn Avenue	10011876	10012461	4	104-4	Flynn Avenue (E)	Kingsford Smith Avenue (N)	R	11	60	57	57	0	44	50	57	A	D	D	D
		10011877	10012460	5	104-5		Flynn Avenue (W)	T	329	207	245	289	0	33	36	40	A	C	C	C
		10011875	10012462	6	104-6		Kingsford Smith Avenue (S)	L	17	34	56	44	0	34	39	40	A	C	C	C
		10011878	10012459	7	104-7	Kingsford Smith Avenue (S)	Flynn Avenue (E)	R	70	76	96	94	0	35	40	49	A	C	C	D
		10011880	10012458	8	104-8		Kingsford Smith Avenue (N)	T	267	327	348	309	0	23	26	28	A	B	B	B
		10011881	10012457	9	104-9		Flynn Avenue (W)	L	141	161	161	146	0	22	26	27	A	B	B	B
		10011887	10012452	10	104-10	Flynn Avenue (W)	Kingsford Smith Avenue (S)	R	165	182	186	177	0	44	47	49	A	D	D	D
		10011886	10012453	11	104-11		Flynn Avenue (E)	T	89	210	204	186	0	30	28	30	A	C	B	C
		10011888	10012451	12	104-12		Kingsford Smith Avenue (N)	L	124	80	91	120	0	31	31	33	A	C	C	C
						All			1,607	1,882	1,955	1,941	0	32	35	35	A	C	C	C
106	Bravo Avenue	9543	9543	1	106-1	Bravo Avenue (N)	Hall Circuit (W)	R	5	5	8	7	1	0	1	1	A	A	A	A
	Hall Circuit	9544	9544	2	106-2		Bravo Avenue (S)	T	0	22	33	41	-1	1	1	1	#N/A	A	A	A
	Bravo Avenue	9542	9542	3	106-3		Hall Circuit (E)	L	2	0	0	0	1	0	-1	-1	A	A	#N/A	#N/A
	Hall Circuit	9537	9537	4	106-4	Hall Circuit (E)	Bravo Avenue (N)	R	2	3	3	3	0	0	0	1	A	A	A	A
		9536	9536	5	106-5		Hall Circuit (W)	T	12	5	9	10	0	0	0	0	A	A	A	A
		9538	9538	6	106-6		Bravo Avenue (S)	L	0	0	37	37	-1	-1	0	0	#N/A	#N/A	A	A
		9545	9545	7	106-7	Bravo Avenue (S)	Hall Circuit (E)	R	0	0	0	1	-1	-1	-1	8	#N/A	#N/A	#N/A	A
		9547	9547	8	106-8		Bravo Avenue (N)	T	0	1	1	0	-1	2	0	-1	#N/A	A	A	#N/A
		9546	9546	9	106-9		Hall Circuit (W)	L	0	1	9	9	-1	0	1	1	#N/A	A	A	A
		9541	9541	10	106-10	Hall Circuit (W)	Bravo Avenue (S)	R	0	215	291	407	-1	0	1	1	#N/A	A	A	A
		9539	9539	11	106-11		Hall Circuit (E)	T	11	9	7	8	0	1	1	1	A	A	A	A
		9540	9540	12	106-12		Bravo Avenue (N)	L	3	4	5	4	0	0	1	0	A	A	A	A
						All			36	265	403	527	0	0	1	1	A	A	A	A
107	Kingsford Smith Avenue	9644	9644	1	107-1	Kingsford Smith Avenue (N)	Southern Cross Avenue (W)	R	16	30	32	38	4	6	6	7	A	A	A	A
	Southern Cross Avenue	9642	9642	2	107-2		Kingsford Smith Avenue (S)	T	234	286	281	262	3	4	4	4	A	A	A	A
	Kingsford Smith Avenue	9643	9643	3	107-3		Southern Cross Avenue (E)	L	6	31	29	31	1	2	2	2	A	A	A	A
	Southern Cross Avenue	9646	9646	4	107-4	Southern Cross Avenue (E)	Kingsford Smith Avenue (N)	R	9	13	14	18	9	11	10	11	A	A	A	A
		9647	9647	5	107-5		Southern Cross Avenue (W)	T	12	77	87	92	6	9	8	9	A	A	A	A
		9645	9645	6	107-6		Kingsford Smith Avenue (S)	L	15	1	6	10	4	3	6	5	A	A	A	A
		9640	9640	7	107-7	Kingsford Smith Avenue (S)	Southern Cross Avenue (E)	R	144	10	15	16	5	7	6	6	A	A	A	A
		9639	9639	8	107-8		Kingsford Smith Avenue (N)	T	55	99	114	98	3	3	3	3	A	A	A	A
		9641	9641	9	107-9		Southern Cross Avenue (W)	L	177	216	198	195	3	3	3	3	A	A	A	A
		9648	9648	10	107-10	Southern Cross Avenue (W)	Kingsford Smith Avenue (S)	R	58	52	43	46	4	9	10	10	A	A	A	A
		9650	9650	11	107-11		Southern Cross Avenue (E)	T	11	153	168	171	3	7	7	7	A	A	A	A
		9649	9649	12	107-12		Kingsford Smith Avenue (N)	L	2	20	27	21	1	4	3	4	A	A	A	A
						All			739	987	1,012	997	9	11	10	11	A	A	A	A

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Intersection Results Comparison 2026

AM Peak 0730-0830

									Volume (veh)				Delay (seconds)				Level of Service			
ID	Intersection	Aimsun Code_Base	Aimsun Code_Do Min	Turn Number	Movement Code	From	To	Turn	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev
108	Cowpasture Road	9401	10013498	1	108-1	Cowpasture Road (N)	Mclver Avenue (W)	R	194	293	278	272	1	1	1	1	A	A	A	A
	Bird Walton Avenue	-	10013497	2	108-2		Middleton Drive (S)	T	-	82	65	75	-	1	1	1	-	A	A	A
	Mclver Avenue	9404	10013496	3	108-3		Bird Walton Avenue (E)	L	199	65	83	84	1	0	0	0	A	A	A	A
		9402	10013499	4	108-4	Bird Walton Avenue (E)	Cowpasture Road (N)	R	24	9	6	9	2	1	1	1	A	A	A	A
		9403	10013502	5	108-5		Mclver Avenue (W)	T	14	6	5	6	0	1	1	1	A	A	A	A
		-	10013501	6	108-6		Middleton Drive (S)	L	-	0	0	0	-	-1	-1	-1	-	#N/A	#N/A	#N/A
		-	10013504	7	108-7	Middleton Drive (S)	Bird Walton Avenue (E)	R	-	0	0	0	-	-1	-1	-1	-	#N/A	#N/A	#N/A
		-	10013503	8	108-8		Cowpasture Road (N)	T	-	22	34	47	-	1	1	1	-	A	A	A
		-	10013506	9	108-9		Mclver Avenue (W)	L	-	7	9	9	-	0	0	0	-	A	A	A
		-	10013509	10	108-10	Mclver Avenue (W)	Middleton Drive (S)	R	-	0	1	1	-	1	1	1	-	A	A	A
		9405	10013508	11	108-11		Bird Walton Avenue (E)	T	8	4	7	5	0	1	1	1	A	A	A	A
		9400	10013507	12	108-12		Cowpasture Road (N)	L	59	122	156	141	0	0	0	0	A	A	A	A
						All			499	610	644	648	1	1	1	1	A	A	A	A
109	Cowpasture Road	10012070	10014529	1	109-1	Cowpasture Road (N)	Westlink M7 (W)	R	215	226	225	218	70	49	45	51	E	D	D	D
	Westlink M7	10012071	10014530	2	109-2		Cowpasture Road (S)	T	1,066	1,109	1,166	1,182	15	9	9	7	B	A	A	A
	Cowpasture Road	10012072	10014531	3	109-3		Westlink M7 (E)	L	252	268	271	271	2	2	2	2	A	A	A	A
	Westlink M7	10012073	10014532	4	109-4	Westlink M7 (E)	Cowpasture Road (N)	R	174	241	248	248	60	58	57	57	E	E	D	D
		10012074	10014533	6	109-6		Cowpasture Road (S)	L	64	83	96	97	3	3	3	3	A	A	A	A
		10012075	10014534	7	109-7	Cowpasture Road (S)	Westlink M7 (E)	R	244	278	277	283	46	48	37	40	D	D	C	C
		10012076	10014535	8	109-8		Cowpasture Road (N)	T	1,960	2,083	2,095	2,233	10	12	10	13	A	A	A	A
		10012077	10014536	9	109-9		Westlink M7 (W)	L	365	423	435	474	3	4	5	5	A	A	A	A
		10012078	10014537	10	109-10	Westlink M7 (W)	Cowpasture Road (S)	R	186	237	247	249	61	60	56	56	E	E	D	D
		10012079	10014538	12	109-12		Cowpasture Road (N)	L	20	30	32	30	1	3	3	3	A	A	A	A
						All			4,546	4,977	5,092	5,284	19	18	16	17	B	B	B	B
110	Cowpasture Road	10012080	10014539	1	110-1	Cowpasture Road (N)	Airfield Drive (W)	R	2	12	10	9	82	92	84	74	F	F	F	F
	Landmark Shopping Centre Access	10012081	10014540	2	110-2		Cowpasture Road (S)	T	1,320	1,419	1,471	1,487	7	29	31	36	A	B	C	C
	Cowpasture Road	-	10014541	3	110-3		Landmark Shopping Centre Acces	L	-	26	29	29	-	37	40	43	-	C	C	D
	Airfield Drive	-	10014542	4	110-4	Landmark Shopping Centre Acces	Cowpasture Road (N)	R	-	19	20	20	-	69	72	69	-	E	F	E
		-	10014543	5	110-5		Airfield Drive (W)	T	-	3	0	0	-	63	-1	-1	-	E	#N/A	#N/A
		-	10014544	6	110-6		Cowpasture Road (S)	L	-	195	206	206	-	12	13	14	-	A	A	A
		-	10014545	7	110-7	Cowpasture Road (S)	Landmark Shopping Centre Acces	R	-	173	157	174	-	190	135	75	-	F	F	F
		10012082	10014546	8	110-8		Cowpasture Road (N)	T	1,966	2,035	2,065	2,165	2	12	13	16	A	A	A	B
		10012083	10014547	9	110-9		Airfield Drive (W)	L	195	153	157	187	1	2	2	2	A	A	A	A
		10012084	10014548	10	110-10	Airfield Drive (W)	Cowpasture Road (S)	R	7	175	180	171	0	70	65	63	A	F	E	E
		-	10014549	11	110-11		Landmark Shopping Centre Acces	T	-	1	7	4	-	77	33	43	-	F	C	D
		10012085	10014550	12	110-12		Cowpasture Road (N)	L	198	12	44	56	62	1	4	3	E	A	A	A
						All			3,688	4,222	4,345	4,508	7	28	26	27	A	B	B	B
111	Cowpasture Road	10443	10443	1	111-1	Cowpasture Road (N)	Aviation Road (W)	R	39	151	164	157	57	159	279	200	E	F	F	F
	Cowpasture Road	10442	10442	2	111-2		Cowpasture Road (S)	T	1,334	1,468	1,508	1,526	1	2	9	3	A	A	A	A
	Aviation Road	10440	10440	8	111-8	Cowpasture Road (S)	Cowpasture Road (N)	T	2,025	2,127	2,185	2,299	3	7	8	10	A	A	A	A
		10441	10441	9	111-9		Aviation Road (W)	L	12	7	10	7	9	5	5	6	A	A	A	A
		10446	10446	10	111-10	Aviation Road (W)	Cowpasture Road (S)	R	8	10	9	10	51	62	55	65	D	E	D	E
		10445	10445	12	111-12		Cowpasture Road (N)	L	28	161	143	149	62	33	34	32	E	C	C	C
						All			3,445	3,924	4,019	4,149	3	12	20	16	A	A	B	B
112	Qantas Boulevard	9472	9472	1	111-1	Qantas Boulevard (N)	Qantas Boulevard (E)	L	184	261	344	493	32	3	2	14	C	A	A	A
	Qantas Boulevard	10001487	10001487	4	111-4	Qantas Boulevard (E)	Qantas Boulevard (N)	R	58	36	77	80	21	13	15	13	B	A	B	A
	Sixteenth Avenue East	9475	9475	5	111-5		Sixteenth Avenue East (W)	T	342	370	463	568	9	3	3	3	A	A	A	A
		9477	9477	11	111-11	Sixteenth Avenue East (W)	Qantas Boulevard (E)	T	591	713	779	721	8	7	2	2	A	A	A	A
		9476	9476	12	111-12		Qantas Boulevard (N)	L	36	37	36	35	4	5	2	3	A	A	A	A
						All			1,211	1,418	1,698	1,897	12	5	3	6	C	A	B	A
113	Main Street	-	10011939	1	111-1	Main Street (N)	Flynn Avenue (W)	R	-	7	46	8	-	12	25	42	-	A	B	C
	Flynn Avenue	-	10011940	3	111-3		Flynn Avenue (E)	L	-	133	260	89	-	9	13	39	-	A	A	C
	Flynn Avenue	-	10011943	4	111-4	Flynn Avenue (E)	Main Street (N)	R	-	83	176	190	-	9	12	18	-	A	A	B
		-	10011944	5	111-5		Flynn Avenue (W)	T	-	301	299	375	-	4	6	7	-	A	A	A
		-	10011942	11	111-11	Flynn Avenue (W)	Flynn Avenue (E)	T	-	654	593	617	-	1	1	5	-	A	A	A
		-	10011941	12	111-12		Main Street (N)	L	-	12	53	58	-	0	1	3	-	A	A	A
						All			-	1,190	1,425	1,337	-	3	6	10	-	A	A	A

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Intersection Results Comparison 2026

PM Peak 1645-1745

									Volume (veh)				Delay (seconds)				Level of Service			
ID	Intersection	Aimsun Code_Base	Aimsun Code_Do Min	Turn Number	Movement Code	From	To	Turn	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev
101	Cowpasture Road	10012058	10014505	1	101-1	Cowpasture Road (N)	Qantas Boulevard (W)	R	271	213	250	264	51	57	74	67	D	D	F	E
	Collarenebri Road	10012059	10014506	2	101-2		Cowpasture Road (S)	T	1,714	1,985	1,963	1,980	10	27	24	33	A	B	B	C
	Cowpasture Road	10012060	10014507	3	101-3		Collarenebri Road (E)	L	71	68	74	71	14	33	27	37	A	C	B	C
	Qantas Boulevard	10012061	10014508	4	101-4	Collarenebri Road (E)	Cowpasture Road (N)	R	34	34	41	40	62	69	80	72	E	E	F	F
		10012062	10014509	5	101-5		Qantas Boulevard (W)	T	12	9	5	7	64	52	73	66	E	D	F	E
		10012063	10014510	6	101-6		Cowpasture Road (S)	L	22	22	31	28	52	43	58	51	D	D	E	D
		10012064	10014511	7	101-7	Cowpasture Road (S)	Collarenebri Road (E)	R	44	44	46	39	57	64	84	60	E	E	F	E
		10012065	10014512	8	101-8		Cowpasture Road (N)	T	1,219	1,406	1,474	1,527	25	46	63	39	B	D	E	C
		10012066	10014513	9	101-9		Qantas Boulevard (W)	L	130	379	631	658	27	56	75	56	B	D	F	D
		10012067	10014514	10	101-10	Qantas Boulevard (W)	Cowpasture Road (S)	R	3	24	43	102	59	65	101	66	E	E	F	E
		10012068	10014515	11	101-11		Collarenebri Road (E)	T	0	0	0	0	-1	-1	-1	-1	#N/A	#N/A	#N/A	#N/A
		10012069	10014516	12	101-12		Cowpasture Road (N)	L	120	178	170	118	7	23	70	41	A	B	F	C
						All			3,640	4,363	4,727	4,834	20	38	49	41	B	C	D	C
102	Cowpasture Road	10012046	10014517	1	102-1	Cowpasture Road (N)	Fifteenth Avenue (W)	R	169	333	344	346	128	188	201	86	F	F	F	F
	Hoxton Park Road	10012047	10014518	2	102-2		Cowpasture Road (S)	T	1,385	1,381	1,354	1,443	24	60	106	48	B	E	F	D
	Cowpasture Road	10012048	10014519	3	102-3		Hoxton Park Road (E)	L	208	410	560	596	4	15	49	17	A	A	D	B
	Fifteenth Avenue	10012049	10014520	4	102-4	Hoxton Park Road (E)	Cowpasture Road (N)	R	343	795	863	920	56	65	115	112	D	E	F	F
		10012050	10014521	5	102-5		Fifteenth Avenue (W)	T	344	687	798	786	55	70	80	72	D	E	F	F
		10012051	10014522	6	102-6		Cowpasture Road (S)	L	379	550	532	542	14	25	35	36	A	B	C	C
		10012052	10014523	7	102-7	Cowpasture Road (S)	Hoxton Park Road (E)	R	325	462	465	442	67	55	61	83	E	D	E	F
		10012053	10014524	8	102-8		Cowpasture Road (N)	T	841	1,014	1,108	1,132	27	43	53	40	B	D	D	C
		10012054	10014525	9	102-9		Fifteenth Avenue (W)	L	155	149	190	174	3	7	9	2	A	A	A	A
		10012055	10014526	10	102-10	Fifteenth Avenue (W)	Cowpasture Road (S)	R	130	143	168	138	64	83	124	91	E	F	F	F
		10012056	10014527	11	102-11		Hoxton Park Road (E)	T	281	496	491	493	53	93	39	77	D	F	C	F
		10012057	10014528	12	102-12		Cowpasture Road (N)	L	106	49	193	204	6	10	4	11	A	A	A	A
						All			4,667	6,470	7,066	7,216	36	61	78	59	C	E	F	E
103	Kingsford Smith Avenue	10011836	10012338	1	103-1	Kingsford Smith Avenue (N)	Fifteenth Avenue (W)	R	111	150	246	251	0	56	71	70	A	D	F	F
	Fifteenth Avenue	10011839	10012337	2	103-2		Second Avenue (S)	T	6	70	246	243	1	54	72	72	A	D	F	F
	Second Avenue	10011838	10012427	3	103-3		Fifteenth Avenue (E)	L	5	12	7	12	0	35	76	75	A	C	F	F
	Fifteenth Avenue	10011841	10012330	4	103-4	Fifteenth Avenue (E)	Kingsford Smith Avenue (N)	R	21	170	356	310	0	114	89	120	A	F	F	F
		10011840	10012329	5	103-5		Fifteenth Avenue (W)	T	406	760	780	768	0	25	49	49	A	B	D	D
		10011841	10012430	6	103-6		Second Avenue (S)	L	21	226	209	213	0	14	22	22	A	A	B	B
		10011846	10012333	7	103-7	Second Avenue (S)	Fifteenth Avenue (E)	R	137	172	166	166	0	59	75	72	A	E	F	F
		10011845	10012332	8	103-8		Kingsford Smith Avenue (N)	T	72	144	182	194	0	62	91	77	A	E	F	F
		10011844	10012429	9	103-9		Fifteenth Avenue (W)	L	76	132	108	111	0	53	80	65	A	D	F	E
		10011835	10012334	10	103-10	Fifteenth Avenue (W)	Second Avenue (S)	R	112	164	163	168	0	74	63	63	A	F	E	E
		10011834	10012336	11	103-11		Fifteenth Avenue (E)	T	484	655	743	673	0	39	74	61	A	C	F	E
		10011833	10012428	12	103-12		Kingsford Smith Avenue (N)	L	80	161	195	216	0	15	29	26	A	A	C	B
						All			1,498	2,816	3,401	3,326	1	43	64	62	A	C	E	E
104	Kingsford Smith Avenue	10011885	10012454	1	104-1	Kingsford Smith Avenue (N)	Flynn Avenue (W)	R	71	109	103	112	0	20	31	40	A	B	C	C
	Flynn Avenue	10011883	10012455	2	104-2		Kingsford Smith Avenue (S)	T	129	210	302	380	0	14	25	28	A	A	B	B
	Kingsford Smith Avenue	10011882	10012456	3	104-3		Flynn Avenue (E)	L	11	1	2	3	0	21	30	25	A	B	C	B
	Flynn Avenue	10011876	10012461	4	104-4	Flynn Avenue (E)	Kingsford Smith Avenue (N)	R	7	28	23	24	0	46	43	48	A	D	C	D
		10011877	10012460	5	104-5		Flynn Avenue (W)	T	74	89	78	77	0	27	33	31	A	B	C	C
		10011875	10012462	6	104-6		Kingsford Smith Avenue (S)	L	27	54	188	126	0	27	33	38	A	B	C	C
		10011878	10012459	7	104-7	Kingsford Smith Avenue (S)	Flynn Avenue (E)	R	19	79	147	160	0	18	36	42	A	B	C	C
		10011880	10012458	8	104-8		Kingsford Smith Avenue (N)	T	95	169	294	297	0	14	21	24	A	A	B	B
		10011881	10012457	9	104-9		Flynn Avenue (W)	L	48	61	80	72	0	13	22	24	A	A	B	B
		10011887	10012452	10	104-10	Flynn Avenue (W)	Kingsford Smith Avenue (S)	R	130	165	142	155	0	32	38	42	A	C	C	C
		10011886	10012453	11	104-11		Flynn Avenue (E)	T	30	57	79	84	0	27	25	25	A	B	B	B
		10011888	10012451	12	104-12		Kingsford Smith Avenue (N)	L	175	179	166	162	0	26	24	25	A	B	B	B
						All			817	1,201	1,604	1,653	0	22	28	31	A	B	B	C
106	Bravo Avenue	9543	9543	1	106-1	Bravo Avenue (N)	Hall Circuit (W)	R	3	6	13	5	0	0	1	0	A	A	A	A
	Hall Circuit	9544	9544	2	106-2		Bravo Avenue (S)	T	0	11	9	32	-1	1	1	2	#N/A	A	A	A
	Bravo Avenue	9542	9542	3	106-3		Hall Circuit (E)	L	2	1	0	0	1	1	-1	0	A	A	#N/A	A
	Hall Circuit	9537	9537	4	106-4	Hall Circuit (E)	Bravo Avenue (N)	R	9	1	0	1	0	0	-1	0	A	A	#N/A	A
		9536	9536	5	106-5		Hall Circuit (W)	T	15	8	18	20	0	0	0	0	A	A	A	A
		9538	9538	6	106-6		Bravo Avenue (S)	L	0	0	46	79	-1	-1	0	0	#N/A	#N/A	A	A
		9545	9545	7	106-7	Bravo Avenue (S)	Hall Circuit (E)	R	0	0	0	0	-1	-1	-1	-1	#N/A	#N/A	#N/A	#N/A
		9547	9547	8	106-8		Bravo Avenue (N)	T	0	0	9	0	-1	-1	3	-1	#N/A	#N/A	A	#N/A
		9546	9546	9	106-9		Hall Circuit (W)	L	0	2	153	133	-1	0	1	1	#N/A	A	A	A
		9541	9541	10	106-10	Hall Circuit (W)	Bravo Avenue (S)	R	0	104	182	188	-1	1	1	2	#N/A	A	A	A
		9539	9539	11	106-11		Hall Circuit (E)	T	3	5	5	3	1	1	1	2	A	A	A	A
		9540	9540	12	106-12		Bravo Avenue (N)	L	4	5	5	5	0	1	1	1	A	A	A	A
						All			35	143	439	466	0	1	1	1	A	A	A	A

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AIMSUN Intersection Results Comparison 2026

PM Peak 1645-1745

									Volume (veh)				Delay (seconds)				Level of Service			
ID	Intersection	Aimsun Code_Base	Aimsun Code_Do Min	Turn Number	Movement Code	From	To	Turn	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev	Base	Do Min - Base	Do Min (Improved) - With Dev	Ultimate - With Dev
107	Kingsford Smith Avenue	9644	9644	1	107-1	Kingsford Smith Avenue (N)	Southern Cross Avenue (W)	R	1	29	29	34	2	4	4	6	A	A	A	A
	Southern Cross Avenue	9642	9642	2	107-2		Kingsford Smith Avenue (S)	T	74	88	70	80	2	3	3	3	A	A	A	A
	Kingsford Smith Avenue	9643	9643	3	107-3		Southern Cross Avenue (E)	L	1	15	72	43	1	2	2	3	A	A	A	A
	Southern Cross Avenue	9646	9646	4	107-4	Southern Cross Avenue (E)	Kingsford Smith Avenue (N)	R	2	9	29	38	1	4	7	7	A	A	A	A
		9647	9647	5	107-5		Southern Cross Avenue (W)	T	2	102	94	91	3	4	6	6	A	A	A	A
		9645	9645	6	107-6		Kingsford Smith Avenue (S)	L	11	2	3	8	1	1	2	2	A	A	A	A
		9640	9640	7	107-7	Kingsford Smith Avenue (S)	Southern Cross Avenue (E)	R	65	2	8	12	4	5	4	6	A	A	A	A
		9639	9639	8	107-8		Kingsford Smith Avenue (N)	T	162	167	169	179	4	4	4	4	A	A	A	A
		9641	9641	9	107-9		Southern Cross Avenue (W)	L	11	52	156	140	3	3	3	3	A	A	A	A
		9648	9648	10	107-10	Southern Cross Avenue (W)	Kingsford Smith Avenue (S)	R	43	57	61	53	3	8	7	9	A	A	A	A
		9650	9650	11	107-11		Southern Cross Avenue (E)	T	2	121	143	155	1	4	5	6	A	A	A	A
		9649	9649	12	107-12		Kingsford Smith Avenue (N)	L	0	26	19	26	-1	2	5	4	#N/A	A	A	A
						All			374	670	853	859	4	8	7	9	A	A	A	A
108	Cowpasture Road	9401	10013498	1	108-1	Cowpasture Road (N)	Mclver Avenue (W)	R	64	118	143	142	3	1	1	1	A	A	A	A
	Bird Walton Avenue	-	10013497	2	108-2		Middleton Drive (S)	T	-	50	96	103	-	1	1	1	-	A	A	A
	Mclver Avenue	9404	10013496	3	108-3		Bird Walton Avenue (E)	L	77	19	44	38	1	0	0	0	A	A	A	A
		9402	10013499	4	108-4	Bird Walton Avenue (E)	Cowpasture Road (N)	R	166	37	69	86	2	1	1	1	A	A	A	A
		9403	10013502	5	108-5		Mclver Avenue (W)	T	5	3	1	1	1	1	1	1	A	A	A	A
		-	10013501	6	108-6		Middleton Drive (S)	L	-	0	0	0	-	-1	-1	-1	-	#N/A	#N/A	#N/A
		-	10013504	7	108-7	Middleton Drive (S)	Bird Walton Avenue (E)	R	-	0	0	0	-	-1	-1	-1	-	#N/A	#N/A	#N/A
		-	10013503	8	108-8		Cowpasture Road (N)	T	-	78	77	89	-	1	1	1	-	A	A	A
		-	10013506	9	108-9		Mclver Avenue (W)	L	-	6	5	5	-	0	0	0	-	A	A	A
		-	10013509	10	108-10	Mclver Avenue (W)	Middleton Drive (S)	R	-	0	0	0	-	-1	-1	-1	-	#N/A	#N/A	#N/A
		9405	10013508	11	108-11		Bird Walton Avenue (E)	T	4	0	1	0	0	1	1	1	A	A	A	A
		9400	10013507	12	108-12		Cowpasture Road (N)	L	136	177	304	208	1	1	1	1	A	A	A	A
						All			313	227	354	370	3	1	1	1	A	A	A	A
109	Cowpasture Road	10012070	10014529	1	109-1	Cowpasture Road (N)	Westlink M7 (W)	R	78	75	69	68	56	66	64	72	D	E	E	F
	Westlink M7	10012071	10014530	2	109-2		Cowpasture Road (S)	T	1,648	1,569	1,589	1,625	17	13	10	28	B	A	A	B
	Cowpasture Road	10012072	10014531	3	109-3		Westlink M7 (E)	L	274	294	293	285	3	4	3	10	A	A	A	A
	Westlink M7	10012073	10014532	4	109-4	Westlink M7 (E)	Cowpasture Road (N)	R	220	265	268	269	55	57	58	58	D	E	E	E
		10012074	10014533	6	109-6		Cowpasture Road (S)	L	133	167	240	204	9	16	19	19	A	B	B	B
		10012075	10014534	7	109-7	Cowpasture Road (S)	Westlink M7 (E)	R	69	94	113	122	37	52	69	58	C	D	E	E
		10012076	10014535	8	109-8		Cowpasture Road (N)	T	1,147	1,489	1,503	1,523	18	21	25	20	B	B	B	B
		10012077	10014536	9	109-9		Westlink M7 (W)	L	245	308	332	352	3	2	3	3	A	A	A	A
		10012078	10014537	10	109-10	Westlink M7 (W)	Cowpasture Road (S)	R	400	470	471	475	56	61	60	68	D	E	E	E
		10012079	10014538	12	109-12		Cowpasture Road (N)	L	14	59	61	59	0	3	2	2	A	A	A	A
						All			4,230	4,790	4,939	4,981	22	23	24	29	B	B	B	B
110	Cowpasture Road	10012080	10014539	1	110-1	Cowpasture Road (N)	Airfield Drive (W)	R	0	0	1	2	-1	-1	155	243	#N/A	#N/A	F	F
	Landmark Shopping Centre Access	10012081	10014540	2	110-2		Cowpasture Road (S)	T	1,906	1,841	1,866	1,894	11	197	228	199	A	F	F	F
	Cowpasture Road	-	10014541	3	110-3		Landmark Shopping Centre Acces	L	-	25	30	26	-	197	229	208	-	F	F	F
	Airfield Drive	-	10014542	4	110-4	Landmark Shopping Centre Acces	Cowpasture Road (N)	R	-	34	40	33	-	70	65	67	-	F	E	E
		-	10014543	5	110-5		Airfield Drive (W)	T	-	4	0	3	-	44	-1	67	-	D	#N/A	E
		-	10014544	6	110-6		Cowpasture Road (S)	L	-	277	264	251	-	27	24	34	-	B	B	C
		-	10014545	7	110-7	Cowpasture Road (S)	Landmark Shopping Centre Acces	R	-	261	257	247	-	112	91	71	-	F	F	F
		10012082	10014546	8	110-8		Cowpasture Road (N)	T	1,278	1,423	1,462	1,500	16	15	13	10	B	B	A	A
		10012083	10014547	9	110-9		Airfield Drive (W)	L	116	133	102	100	0	1	1	1	A	A	A	A
		10012084	10014548	10	110-10	Airfield Drive (W)	Cowpasture Road (S)	R	7	95	94	92	0	66	68	64	A	E	E	E
		-	10014549	11	110-11		Landmark Shopping Centre Acces	T	-	8	0	2	-	79	-1	104	-	F	#N/A	F
		10012085	10014550	12	110-12		Cowpasture Road (N)	L	101	7	13	8	52	0	0	0	D	A	A	A
						All			3,406	4,109	4,129	4,157	14	106	119	104	A	F	F	F
111	Cowpasture Road	10443	10443	1	111-1	Cowpasture Road (N)	Aviation Road (W)	R	46	157	254	236	47	52	54	62	D	D	D	E
	Cowpasture Road	10442	10442	2	111-2		Cowpasture Road (S)	T	1,922	2,071	2,055	2,055	2	4	2	15	A	A	A	B
	Aviation Road	10440	10440	8	111-8	Cowpasture Road (S)	Cowpasture Road (N)	T	1,296	1,481	1,528	1,550	6	13	13	13	A	A	A	A
		10441	10441	9	111-9		Aviation Road (W)	L	14	18	8	10	8	17	14	13	A	B	A	A
		10446	10446	10	111-10	Aviation Road (W)	Cowpasture Road (S)	R	7	2	2	4	51	92	41	45	D	F	C	D
		10445	10445	12	111-12		Cowpasture Road (N)	L	33	120	171	185	43	29	25	23	C	C	B	B
						All			3,318	3,849	4,018	4,039	5	10	11	18	A	A	A	B
112	Qantas Boulevard	9472	9472	1	111-1	Qantas Boulevard (N)	Qantas Boulevard (E)	L	108	130	303	410	2	0	0	4	A	A	A	A
	Qantas Boulevard	10001487	10001487	4	111-4	Qantas Boulevard (E)	Qantas Boulevard (N)	R	189	60	252	311	4	10	9	12	A	A	A	A
	Sixteenth Avenue East	9475	9475	5	111-5		Sixteenth Avenue East (W)	T	353	675	830	797	4	3	4	6	A	A	A	A
		9477	9477	11	111-11	Sixteenth Avenue East (W)	Qantas Boulevard (E)	T	154	431	369	387	0	0	0	1	A	A	A	A
		9476	9476	12	111-12		Qantas Boulevard (N)	L	3	4	4	7	2	2	2	2	A	A	A	A
						All			807	1,299	1,758	1,912	3	2	3	5	A	A	A	A
113	Main Street	-	10011939	1	111-1	Main Street (N)	Flynn Avenue (W)	R	-	10	119	47	-	16	20	40	-	B	B	C
	Flynn Avenue	-	10011940	3	111-3		Flynn Avenue (E)	L	-	18	227	173	-	1	2	38	-	A	A	C
	Flynn Avenue	-	10011943	4	111-4	Flynn Avenue (E)	Main Street (N)	R	-	228	386	345	-	5	8	12	-	A	A	A
		-	10011944	5	111-5		Flynn Avenue (W)	T	-	439	424	450	-	2	4	6	-	A	A	A
		-	10011942	11	111-11	Flynn Avenue (W)	Flynn Avenue (E)	T	-	229	189	236	-	0	1	7	-	A	A	A
		-	10011941	12	111-12		Main Street (N)	L	-	14	129	121	-	1	2	7	-	A	A	A
						All			-	938	1,474	1,372	-	2	5	13	-	A	A	A

Appendix E: 2026 Travel Time Comparison



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AIMSUN Travel Time Comparison 2026
AM Peak 0730-0830
Route A
Northbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Cowpasture Road (South)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Fifteenth Avenue	0.48	0.48	0:01:28	0:01:28	0:02:44	0:02:44	0:02:57	0:02:57	0:01:27	0:01:27
Flynn Avenue	0.39	0.87	0:02:32	0:04:00	0:02:13	0:04:57	0:02:06	0:05:03	0:01:02	0:02:28
Westlink M7	0.27	1.14	0:00:23	0:04:23	0:00:22	0:05:19	0:00:21	0:05:25	0:00:25	0:02:53
Airfield Drive	0.20	1.34	0:00:16	0:04:39	0:00:37	0:05:56	0:00:33	0:05:57	0:00:32	0:03:25
Aviation Road	1.32	2.66	0:01:25	0:06:04	0:01:28	0:07:24	0:01:30	0:07:27	0:01:34	0:04:59

Southbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019 Cum	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Cowpasture Road (North)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Aviation Road	0.33	0.33	0:00:23	0:00:23	0:00:44	0:00:44	0:01:03	0:01:03	0:00:49	0:00:49
Airfield Drive	1.33	1.66	0:01:24	0:01:48	0:01:44	0:02:28	0:01:47	0:02:50	0:01:52	0:02:41
Westlink M7	0.20	1.86	0:00:38	0:02:26	0:00:26	0:02:54	0:00:26	0:03:15	0:00:24	0:03:05
Flynn Avenue	0.26	2.12	0:00:39	0:03:05	0:00:51	0:03:46	0:01:01	0:04:17	0:00:55	0:04:01
Fifteenth Avenue	0.39	2.51	0:01:09	0:04:14	0:01:27	0:05:13	0:01:25	0:05:42	0:01:21	0:05:22

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AIMSUN Travel Time Comparison 2026
AM Peak 0730-0830
Route B

Eastbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019 Cum	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Fifteenth Avenue (West)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Kingsford Smith Avenue	0.31	0.31	0:00:26	0:00:26	0:01:07	0:01:07	0:01:06	0:01:06	0:01:04	0:01:04
Cowpasture Road	0.82	1.13	0:01:51	0:02:17	0:02:08	0:03:15	0:02:55	0:04:01	0:01:41	0:02:45

Westbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019 Cum	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Hoxton Park Road (East)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Cowpasture Road	0.59	0.59	0:01:38	0:01:38	0:01:41	0:01:41	0:01:53	0:01:53	0:01:21	0:01:21
Kingsford Smith Avenue	0.81	1.40	0:01:50	0:03:27	0:01:22	0:03:04	0:01:23	0:03:16	0:01:22	0:02:43

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Travel Time Comparison 2026
AM Peak 0730-0830
Route C

Eastbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019 Cum	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Kingsford Smith Avenue	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Main Street	0.43	0.43	0:00:44	0:00:44	0:00:41	0:00:41	0:00:42	0:00:42	0:00:43	0:00:43
Bravo Avenue	0.13	0.56	0:00:13	0:00:58	0:00:22	0:01:03	0:00:18	0:01:00	0:00:13	0:00:56
Hall Circuit	0.12	0.68	0:00:26	0:01:24	0:00:26	0:01:29	0:00:15	0:01:15	0:00:13	0:01:09
Cowpasture Road	0.18	0.86	0:01:19	0:02:43	0:02:05	0:03:34	0:01:28	0:02:43	0:01:23	0:02:32

Westbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Cowpasture Road	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Hall Circuit	0.18	0.18	0:00:33	0:00:33	0:00:17	0:00:17	0:00:18	0:00:18	0:00:18	0:00:18
Bravo Avenue	0.12	0.30	0:00:21	0:00:55	0:00:13	0:00:30	0:00:15	0:00:33	0:00:16	0:00:34
Main Street	0.13	0.43	0:00:13	0:01:08	0:00:16	0:00:47	0:00:19	0:00:52	0:00:22	0:00:55
Kingsford Smith Avenue	0.43	0.86	0:01:01	0:02:09	0:01:13	0:01:59	0:01:16	0:02:07	0:01:20	0:02:16

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Travel Time Comparison 2026
AM Peak 0730-0830
Route A
Northbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Cowpasture Road (South)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Fifteenth Avenue	0.48	0.48	0:01:11	0:01:11	0:01:17	0:01:17	0:01:25	0:01:25	0:01:22	0:01:22
Flynn Avenue	0.39	0.87	0:00:53	0:02:04	0:01:13	0:02:30	0:01:33	0:02:58	0:01:10	0:02:32
Westlink M7	0.27	1.14	0:00:38	0:02:41	0:00:36	0:03:07	0:00:43	0:03:41	0:00:36	0:03:08
Airfield Drive	0.20	1.34	0:00:31	0:03:12	0:00:42	0:03:49	0:00:37	0:04:18	0:00:31	0:03:39
Aviation Road	1.32	2.66	0:01:37	0:04:49	0:01:40	0:05:29	0:01:41	0:05:59	0:01:41	0:05:20

Southbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019 Cum	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Cowpasture Road (North)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Aviation Road	0.33	0.33	0:00:26	0:00:26	0:00:39	0:00:39	0:00:39	0:00:39	0:00:51	0:00:51
Airfield Drive	1.33	1.66	0:01:39	0:02:05	0:05:10	0:05:49	0:05:54	0:06:33	0:05:47	0:06:38
Westlink M7	0.20	1.86	0:00:34	0:02:39	0:00:28	0:06:17	0:00:25	0:06:58	0:00:42	0:07:21
Flynn Avenue	0.26	2.12	0:00:34	0:03:13	0:00:47	0:07:03	0:00:46	0:07:43	0:00:53	0:08:14
Fifteenth Avenue	0.39	2.51	0:01:02	0:04:15	0:01:49	0:08:52	0:02:29	0:10:13	0:01:19	0:09:33

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Travel Time Comparison 2026
AM Peak 0730-0830
Route B

Eastbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019 Cum	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Fifteenth Avenue (West)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Kingsford Smith Avenue	0.31	0.31	0:00:22	0:00:22	0:01:02	0:01:02	0:01:46	0:01:46	0:01:23	0:01:23
Cowpasture Road	0.82	1.13	0:01:59	0:02:21	0:02:37	0:03:39	0:01:44	0:03:29	0:02:21	0:03:45

Westbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019 Cum	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Hoxton Park Road (East)	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Cowpasture Road	0.59	0.59	0:01:35	0:01:35	0:01:47	0:01:47	0:01:57	0:01:57	0:01:49	0:01:49
Kingsford Smith Avenue	0.81	1.40	0:01:34	0:03:09	0:01:28	0:03:15	0:01:57	0:03:54	0:01:53	0:03:41

P4356 60_80 Southern Cross Ave Middleton Grange

AIMSUN Travel Time Comparison 2026
AM Peak 0730-0830
Route C

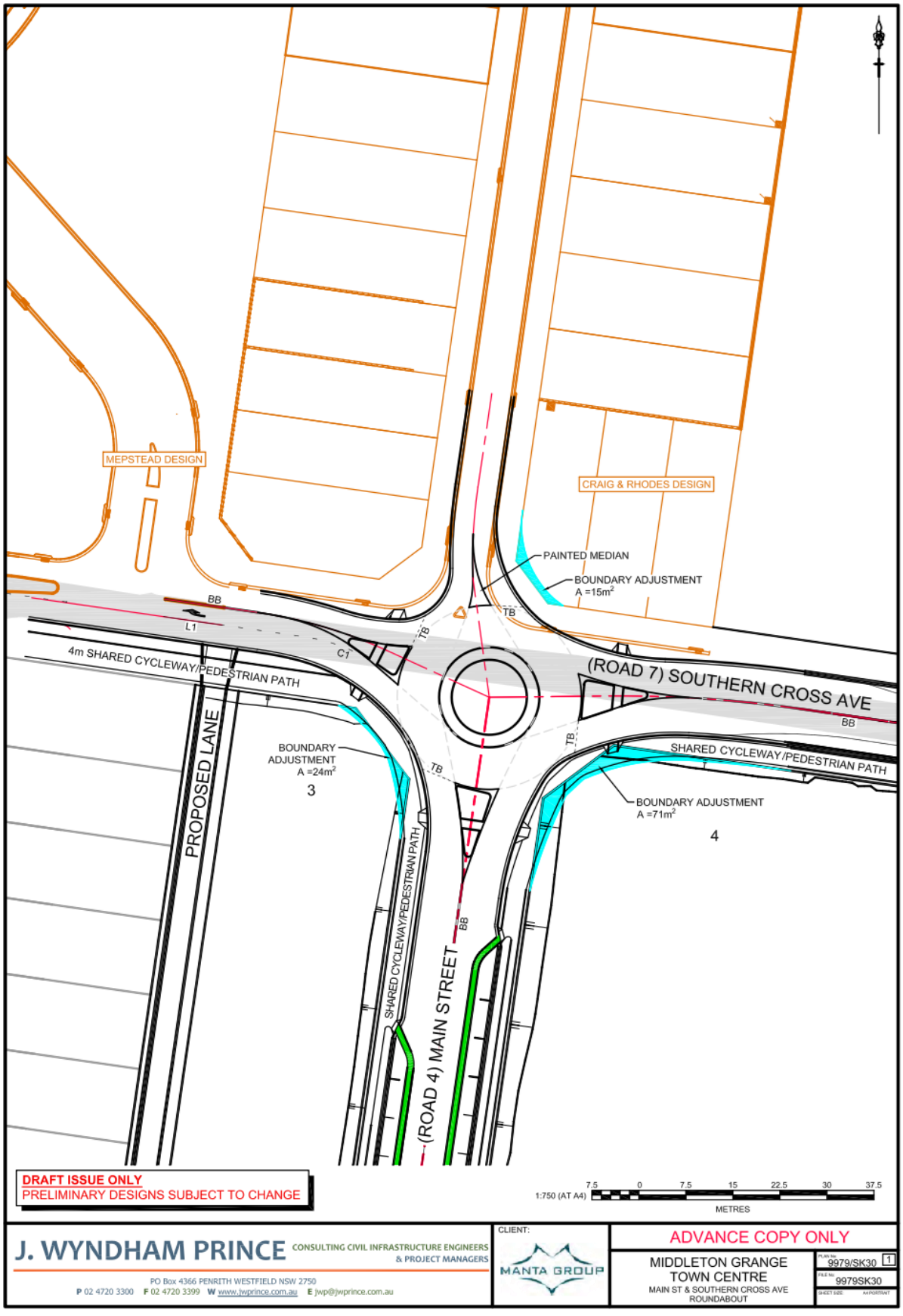
Eastbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019 Cum	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Kingsford Smith Avenue	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Main Street	0.43	0.43	0:00:43	0:00:43	0:00:39	0:00:39	0:00:39	0:00:39	0:00:46	0:00:46
Bravo Avenue	0.13	0.56	0:00:14	0:00:57	0:00:14	0:00:53	0:00:26	0:01:05	0:00:22	0:01:08
Hall Circuit	0.12	0.68	0:00:22	0:01:19	0:00:13	0:01:06	0:00:16	0:01:21	0:00:13	0:01:21
Cowpasture Road	0.18	0.86	0:01:10	0:02:29	0:01:14	0:02:20	0:01:42	0:03:03	0:01:13	0:02:34

Westbound

Sections	Section Distance (km)	Cumulative Distance (km)	Base 2019	Base 2019	Do Min 2026	Do Min 2026	With Dev 2026 Limited lim_imp	With Dev & Lim Imp 2026	With Dev 2026 Ultimate	With Dev & Ult Imp 2026
Cowpasture Road	0.00	0.00	-	0:00:00	-	0:00:00	-	0:00:00	-	0:00:00
Hall Circuit	0.18	0.18	0:00:20	0:00:20	0:00:19	0:00:19	0:00:21	0:00:21	0:00:23	0:00:23
Bravo Avenue	0.12	0.30	0:00:23	0:00:44	0:00:14	0:00:33	0:00:16	0:00:37	0:00:23	0:00:46
Main Street	0.13	0.43	0:00:14	0:00:58	0:00:16	0:00:49	0:00:18	0:00:55	0:00:21	0:01:07
Kingsford Smith Avenue	0.43	0.86	0:00:46	0:01:44	0:01:05	0:01:54	0:01:09	0:02:04	0:01:11	0:02:18

APPENDIX F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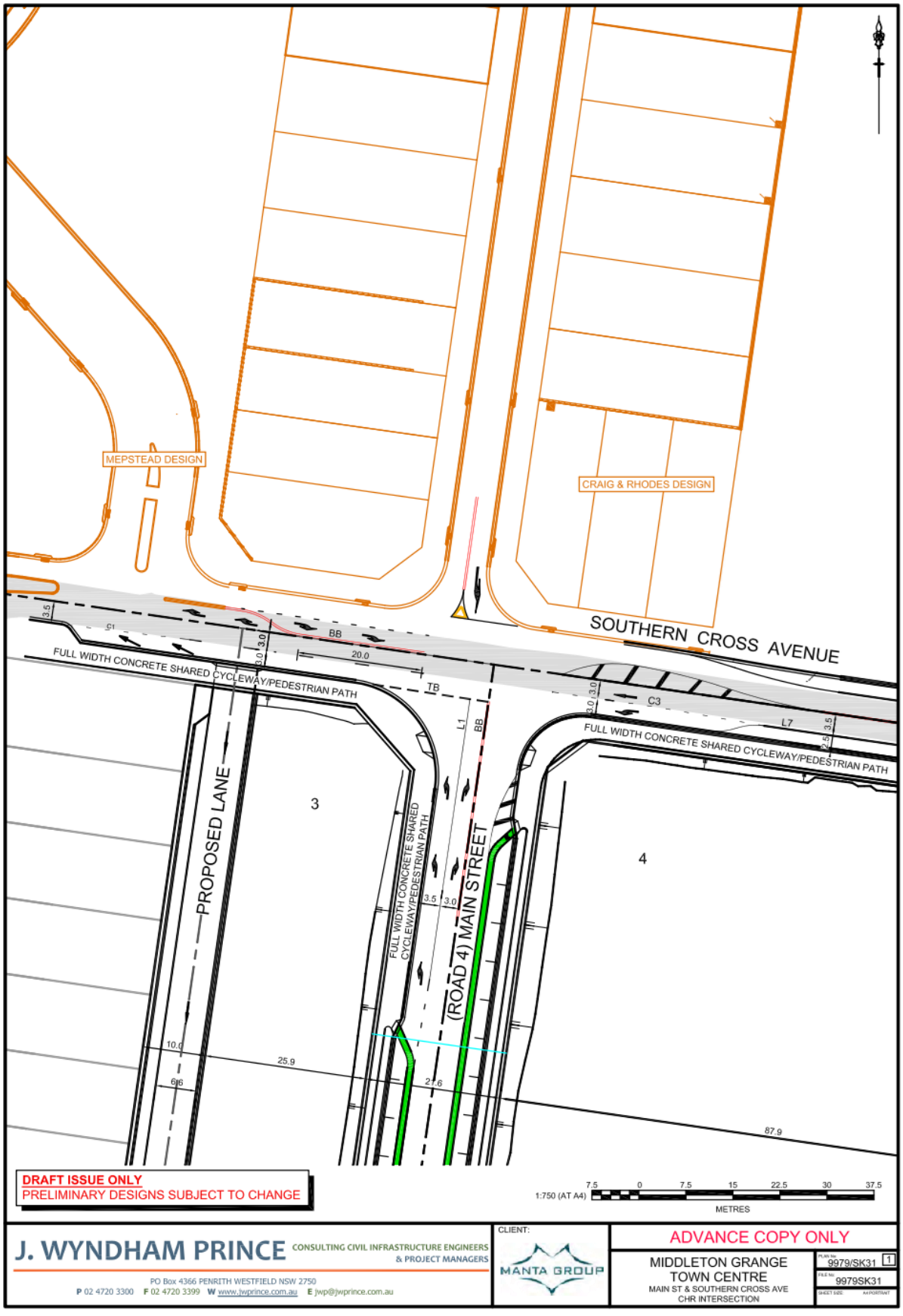
CRAIG & RHODES DESIGN
PAINTED MEDIAN
BOUNDARY ADJUSTMENT
A =15m²
BB
L1
C1
TB
4m SHARED CYCLEWAY/PEDESTRIAN PATH
(ROAD 7) SOUTHERN CROSS AVE
PROPOSED LANE
BOUNDARY
ADJUSTMENT
A =24m²
3
SHARED CYCLEWAY/PEDESTRIAN PATH
BOUNDARY ADJUSTMENT
A =71m²
4
SHARED CYCLEWAY/PEDESTRIAN PATH
(ROAD 4) MAIN STREET
DRAFT ISSUE ONLY
PRELIMINARY DESIGNS SUBJECT TO CHANGE
1:750 (AT A4)
7.5 0 7.5 15 22.5 30 37.5
METRES
J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au
CLIENT:
MANTA GROUP
ADVANCE COPY ONLY
MIDDLETON GRANGE
TOWN CENTRE
MAIN ST & SOUTHERN CROSS AVE
ROUNDABOUT
PLAN No 9979/SK30 1
FILE No 9979SK30
SHEET SIZE A4 PORTRAIT


MEPSTEAD DESIGN
CRAIG & RHODES DESIGN
SOUTHERN CROSS AVENUE
FULL WIDTH CONCRETE SHARED CYCLEWAY/PEDESTRIAN PATH
FULL WIDTH CONCRETE SHARED CYCLEWAY/PEDESTRIAN PATH
PROPOSED LANE
(ROAD 4) MAIN STREET
FULL WIDTH CONCRETE SHARED CYCLEWAY/PEDESTRIAN PATH
3
4
C1
C3
L1
L7
BB
TB
20.0
25.9
87.9
DRAFT ISSUE ONLY
PRELIMINARY DESIGNS SUBJECT TO CHANGE
1:750 (AT A4)
METRES
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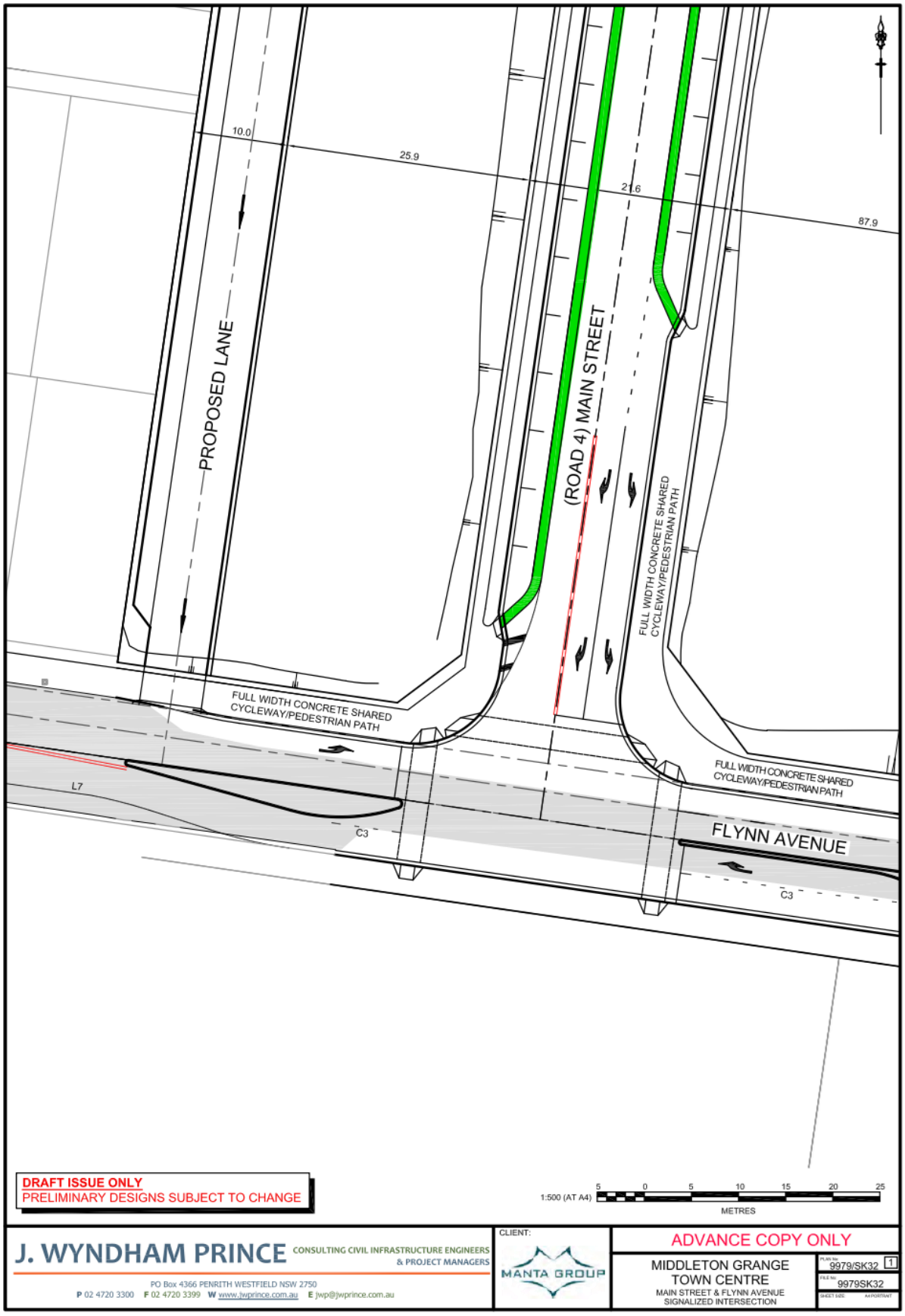
CLIENT:
MANTA GROUP
ADVANCE COPY ONLY
MIDDLETON GRANGE TOWN CENTRE
MAIN ST & SOUTHERN CROSS AVE CHR INTERSECTION
9979/SK31
9979SK31


10.0
25.9
21.6
87.9
PROPOSED LANE
(ROAD 4) MAIN STREET
FULL WIDTH CONCRETE SHARED CYCLEWAY/PEDESTRIAN PATH
FULL WIDTH CONCRETE SHARED CYCLEWAY/PEDESTRIAN PATH
FULL WIDTH CONCRETE SHARED CYCLEWAY/PEDESTRIAN PATH
L7
C3
FLYNN AVENUE
C3
DRAFT ISSUE ONLY
PRELIMINARY DESIGNS SUBJECT TO CHANGE
1:500 (AT A4)
5 0 5 10 15 20 25
METRES
J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
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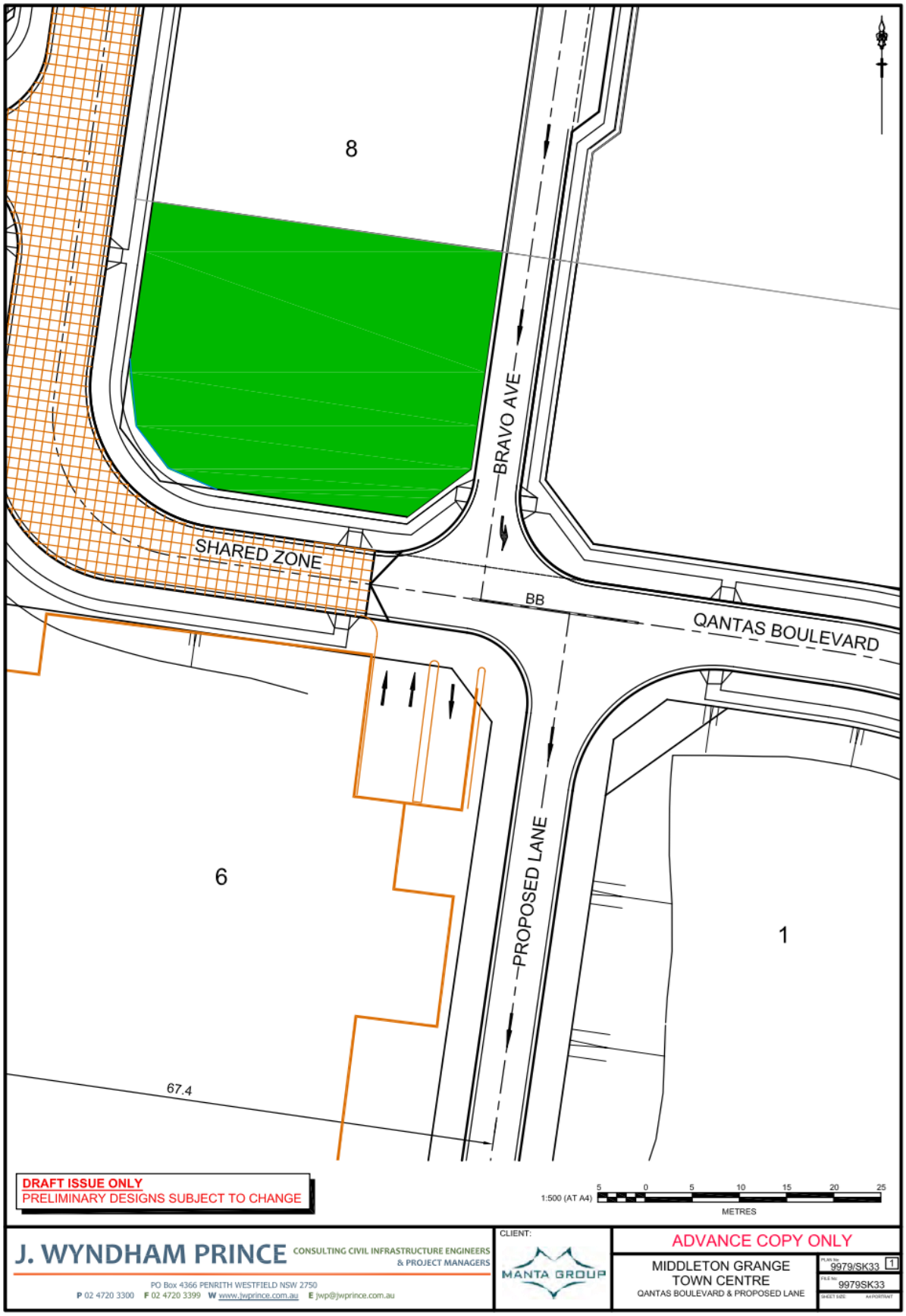
CLIENT:
MANTA GROUP
ADVANCE COPY ONLY
MIDDLETON GRANGE TOWN CENTRE
MAIN STREET & FLYNN AVENUE SIGNALIZED INTERSECTION
PLAN No 9979/SK32 1
FILE No 9979SK32
SHEET SIZE A4 PORTRAIT


8
BRAVO AVE
SHARED ZONE
BB
QANTAS BOULEVARD
6
PROPOSED LANE
1
67.4
DRAFT ISSUE ONLY
PRELIMINARY DESIGNS SUBJECT TO CHANGE
1:500 (AT A4)
5 0 5 10 15 20 25
METRES
J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
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CLIENT:
MANTA GROUP
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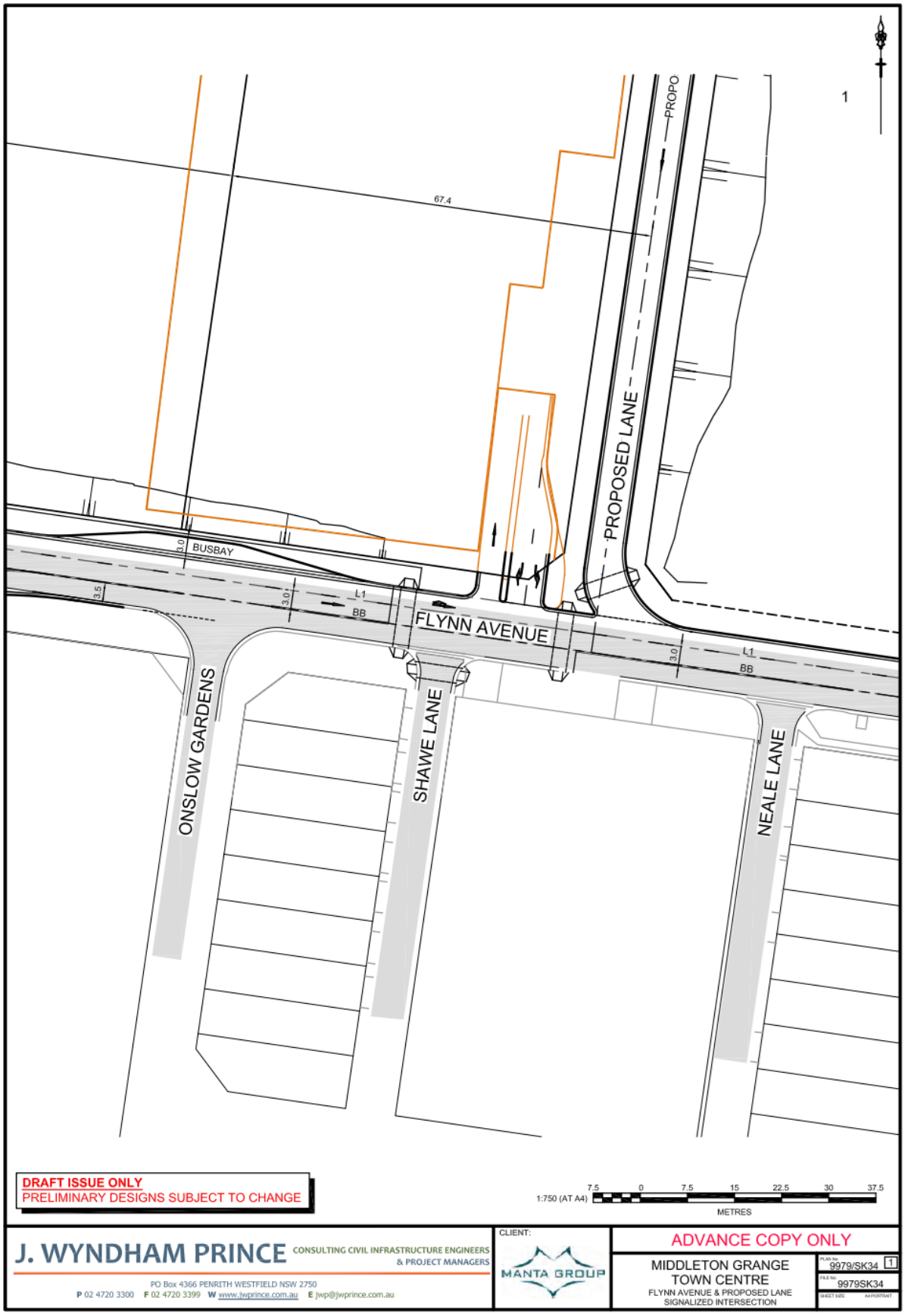
MIDDLETON GRANGE
TOWN CENTRE
QANTAS BOULEVARD & PROPOSED LANE
PLAN No 9979/SK33 1
FILE No 9979SK33
SHEET SIZE A4 PORTRAIT


1
67.4
PROPO
PROPOSED LANE
BUSBAY
3.0
3.5
3.0
L1
BB
FLYNN AVENUE
3.0
L1
BB
ONSLOW GARDENS
SHAWE LANE
NEALE LANE
DRAFT ISSUE ONLY
PRELIMINARY DESIGNS SUBJECT TO CHANGE
1:750 (AT A4)
7.5 0 7.5 15 22.5 30 37.5
METRES
J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
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CLIENT:
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ADVANCE COPY ONLY
MIDDLETON GRANGE
TOWN CENTRE
FLYNN AVENUE & PROPOSED LANE
SIGNALIZED INTERSECTION
PLAN No 9979/SK34 1
FILE No 9979SK34
SHEET SIZE A4 PORTRAIT

OPINION OF PROBABLE DEVELOPMENT COSTS

For Client Issue ONLY

PROJECT: Middleton Grange Town Centre **DATE OF ESTIMATE: 16-Jun-20**
CLIENT: Manta Group **DRAWING REF: Bitzios - Figure 5.6**

	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
1.0	**Fifteenth Avenue / Kingsofrod Smith Avenue / Second Avenue Intersecion**				
1.01	Preliminaries	1	item		$ -
1.02	Traffic control	1	item		$ -
1.03	Additional Line marking in Kingsford Smith Avenue	100	m		$ -
1.04	Traffic signal adjustment	0	Item		$ -
1.05	Professional fees		%		$ 10,000
1.06	Authority fees		%		$ 10,000
1.07	Contingencies		%		$ 5,000
	Total				

Note:



Adapted from Nearmap

Figure 5.6: **Fifteenth Avenue/Kingsford Smith Avenue/Second Avenue Intersection Improvements**

OPINION OF PROBABLE DEVELOPMENT COSTS

For Client Issue ONLY

PROJECT: Middleton Grange Town Centre **DATE OF ESTIMATE: 16-Jun-20**
CLIENT: Manta Group **DRAWING REF: Bitzios - Figure 5.7**

	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
1.0	**Cowpasture Road / Qantas Blvd / Collarenebri Road Upgrade**				
1.01	Preliminaries	1	item		$ -
1.02	Traffic control	1	item		$ -
1.03	Demolish median kerbs and barriers	20	m		$ -
1.04	Demolish kerbs and drainage	150	item		$ -
1.05	Roadworks Qantas Blvd	600	m^2		$ -
1.06	Reinstate concrete median and install new barriers and street furniture	1	Item		$ -
1.07	Drainage adjustments in median	1	Item		$ -
1.08	Drainage adjustments in kerb	150	m^2		$ -
1.09	Median adjustments	1	Item		$ -
1.10	Traffic signal adjustment	1	Item		$ -
1.11	Professional fees	$0	%	12%	$ -
1.12	Authority fees	$0	%	5%	$ -
1.13	Contingencies	$0	%	40%	$ -
	Total				

Note:



Adapted from Nearmap

Figure 5.7: Cowpasture Road / Qantas Blvd / Collarenebri Road Intersection Improvements

OPINION OF PROBABLE DEVELOPMENT COSTS

For Client Issue ONLY

PROJECT: **Middleton Grange Town Centre** **DATE OF ESTIMATE:** **16-Jun-20**
CLIENT: **Manta Group** **DRAWING REF:** **Bitzios - Figure 8.1**

	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
1.0	**Cowpasture Road / Hoxton Park Road / Fifteenth Avenue Upgrade**				
1.01	Preliminaries	1	item		$ -
1.02	Traffic control	1	item		$ -
1.03	Demolish median kerbs and barriers	250	m		$ -
1.04	Demolish kerbs and drainage	0	item		$ -
1.05	Roadworks Cowpasture Road	440	m^2		$ -
1.06	Roadworks Fifteenth Avenue	460	m^2		$ -
1.07	Reinstate concrete median and install new barriers and street furniture	1	Item		$ -
1.08	Drainage adjustments in median	2	Item		$ -
1.09	Drainage adjustments in kerb	0	m^2		$ -
1.10	Median adjustments	2	Item		$ -
1.11	Traffic signal adjustment	2	Item		$ -
1.12	Professional fees	$0	%	12%	$ -
1.13	Authority fees	$0	%	5%	$ -
1.14	Contingencies	$0	%	40%	$ -
	Total				**$ -**

Note:



Adapted from Nearmap

Figure 8.1: **Proposed Upgraded Cowpasture Road/Hoxton Park Road/Fifteenth Avenue Intersection**

OPINION OF PROBABLE DEVELOPMENT COSTS

For Client Issue ONLY

PROJECT: Middleton Grange Town Centre **DATE OF ESTIMATE: 16-Jun-20**
CLIENT: Manta Group **DRAWING REF: Bitzios - Cowpasture Road**

	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
1.0	**Cowpasture Road Upgrades**				
1.01	Preliminaries	1	item		$ -
1.02	Traffic control	1	item		$ -
1.03	Demolish median kerbs and barriers	350	m		$ -
1.04	Demolish kerbs and drainage	200	m		$ -
1.05	Roadworks Cowpasture Road - Northbound	350	m		$ -
1.06	Roadworks Cowpasture Road - Southbound		m		$ -
1.07	Reinstate concrete median and install new barriers and street furniture	2	Item		$ -
1.08	Drainage adjustments in median	350	Item		$ -
1.09	Drainage adjustments in kerb	200	m		$ -
1.10	Median adjustments	2	Item		$ -
1.11	Traffic signal adjustment	2	Item		$ -
1.12	Professional fees	$0	%	12%	$ -
1.13	Authority fees	$0	%	5%	$ -
1.14	Contingencies	$0	%	40%	$ -
	Total				**$ -**

Note:



Item	Preliminary High Level Estimate of Cost	Notes
Signalised intersection at Second Avenue/Kingsford Smith Avenue/Fifteenth Avenue-Additional lane markings-See Figure 5.6 (Bitzios Report)		
Additional short right turn lane from Qantas Boulevard to Cowpasture Road Southbound. See Figure 5.7(Bitzios Report)		Proposed Construction with Left Turn lane on Fig 5.7
Additional left turn lane from Qantas Boulevard to Cowpasture Road Northbound. Figure 5.7(Bitzios Report).		Proposed Construction with Right Turn lane on Fig 5.8
Additional short right turn lane from Cowpasture Road (north) to Fifteenth Avenue (west). (Refer to Figure 8.1 Bitzios Report)		Proposed Construction with Other Right Turn lane on Fig 8.1
Additional Short right turn lane from Fifteenth Avenue (west) into Cowpasture Road (south) (Refer to Figure 8.1 Bitzios Report).		Proposed Construction with Other Right Turn lane on Fig 8.1
Additional lane northbound in Cowpasture Road between Hoxton Park Road and M7 Interchange.		
Signalised Intersection Main Street-Flynn Avenue (Hall Circuit). (Refer to Drawing Ref No 9979/SK32 prepared by J.Wyndham Prince).		Extra Over Cost for Signals - roadworks assumed as base cost
Signalised Intersection into development car park (Private Access) off Flynn Avenue (Hall Circuit). This intersection is not modelled in the Bitzios Report. (Refer to Drawing Ref No 9979/SK34 prepared by J.Wyndham Prince).		Extra Over Cost for Signals - roadworks assumed as base cost
Costing for Proposed Cycleway Paths as per Figure 7B in TIA report.		Approx 2.9km (based on unit rate only)

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
AND PROJECT MANAGERS

OPINION OF PROBABLE CONSTRUCTION COSTS (PRELIMINARY)

For Client Issue ONLY

Not to be included with Contract Documentation

PROJECT: Southern Cross Ave Main St Intersection Middleton Grange **21/05/2020**
OPTION: No. 1 - Roundabout **Revision : 1**

	ITEM	QTY	UNIT	RATE	AMOUNT
	CIVIL WORKS				
1.0	***Preliminaries***				
1.10	Demolish and dispose of existing concrete kerbs, concrete slabs, asphalt, pavement including:	1	Item		$ -
1.20	Sandblast existing linemarking	1	Item		$ -
2.0 2.00	***Earthworks***				
2.10	Excavate in all classes of material in roads (assuming pavement thickness 550mm)				
2.1.1	Cart to stockpile (up to 1 km)	840	cu.m		$ -
3.0	***Roadworks***				
3.10	Prepare, trim and compact:				
3.1.1	Pavement subgrade under roads, accessways, driveways and pathways	1525	sq.m		$ -
3.20	Supply, place and compact crushed sandstone, (or approved equivalent) sub-base courses under pavements / accessway / thresholds:				
3.2.1	300 mm thick (compacted thickness)	1525	sq.m		$ -
3.30	Roundabout				
3.3.1	Polymer-modified asphaltic concrete (AC14, 50mm thickness)	1224	sq.m		$ -
3.3.2	Deep lift asphaltic concrete (AC28) min 200mm thick	1224	sq.m		$ -
4	***Drainage***				
4.10	No allowance provided. Noted that there are existing kerb inlet pits and associated drainage which may need to be relocated. Further detailed design required to provide cost estimate.				To be determined
5.0	***Concrete Works***				
5.10	Supply all materials and construct kerb and gutter to Council standard drawings				
5.1.1	Type SF kerb (Modified back to back with dowels)	38	lin.m		$ -
5.1.2	150mm kerb & gutter including vehicular crossings and kerb ramps	140	lin.m		$ -
5.20	Supply all materials and construct median/island and roundabout annulus				
5.2.1	Median island - 150mm thick concrete including SL72 reinforcing and jointing	100	sq.m		$ -
5.2.2	Roundabout annulus (inner) - 200mm thick reinforced with 2 x SL82 mesh	113	sq.m		$ -
5.2.3	Roundabout annulus (outer) - 1.5m wide concrete base 175mm thick including SL92 reinforcing and jointing	88	sq.m		$ -
5.30	Excavate for, supply all materials and construct concrete footpath to Council's standards.				
5.3.1	125mm thick concrete reinforced with F82 mesh including 25mm approved sand bedding	360	sq.m		$ -
5.3.2	E/O pram ramp	2	each		$ -
6.0	***Signs & Linemarking***				
6.10	Supply all materials and erect traffic regulatory and warning signs and posts				
6.1.1	Roundabout [RMS W2-7]	4	each		$ -
6.1.2	Keep left [RMS R2-s(L)]	3	each		$ -
6.20	Supply all materials, including reflectors, and complete line marking to the approriate RMS standard				
6.2.1	Barrier line (RMS BB)	48	lin.m		$ -
6.2.2	Edge line (RMS E1)	100	lin.m		$ -
6.2.3	Painted median	15	sq.m		$ -
6.2.4	Turning arrow (RMS UA3)	4	each		$ -
7.0	***Utility Services Adjustments***				
7.10	No allowance has been provided for adjustment or protection of existing services utilities. Detailed drawings and further investigation of existing services required to determine any potential conflicts and adjustments required.				To be determined
	Sub Total				**$ -**
8.0	**CONTINGENCIES**				

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
AND PROJECT MANAGERS

	ITEM	QTY	UNIT	RATE	AMOUNT
8.10	Allowance	20	%	$ -	$ -
	TOTAL OPTION 1:				$ -

Assumptions

1. This costing is based on preliminary drawings and not full detailed civil engineering drawings and pavement design from a qualified Geotechnical Engineer.
2. The costing does not allow for any aquitision cost of land if required.
3. This Opinion of Probable cost is based on J. Wyndham Prince's experience and judgment as a firm of practicing professional civil engineers familiar with the construction industry. The cost estimate cannot be guaranteed as we have no control over Contractor's prices, market forces, material supply costs, competitive bids from tenderers and specific site conditions that may be encountered but not yet investigated.
4. The rates used for each element of work are derived recent civil works contracts of similar nature to the work proposed under this estimate in the Greater Sydney Region.
5. The rates in the schedule appear to be precise, however, they are the output of a statistical analysis performed and fed into the Estimate schedule from the background data, for Greater Sydney Region.
6. In some cases the engineer preparing the Estimate will increase or decrease the statistically derived rate based on experience and judgement.
7. As more information becomes available through the development process, and as more design detail becomes available the accuracy of the Estimate could increase subject to latent conditions which may become evident on the site.
8. The rates are as accurate as the latest market information from which the rates are derived. The actual contract awarded for the work will be based on the market conditions at the time of the contract and therefore all rates will be subject at that time to rise and fall.

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
AND PROJECT MANAGERS

OPINION OF PROBABLE CONSTRUCTION COSTS (PRELIMINARY)

For Client Issue ONLY

Not to be included with Contract Documentation

PROJECT: Southern Cross Ave Main St Intersection Middleton Grange **21/05/2020**
OPTION: No. 2 - Pavement Widening **Revision : 1**

		ITEM	QTY	UNIT	RATE	AMOUNT
		CIVIL WORKS				
1.0		***Preliminaries***				
	1.10	Mill and dispose of existing pavement	567	sq.m		$ -
	1.20	Sandblast existing linemarking	1	Item		$ -
2.0	2.00	***Earthworks***				
	2.10	Excavate in all classes of material in roads (assuming pavement thickness 500mm)				
	2.1.1	Cart to stockpile (up to 1 km)	683	cu.m		$ -
3.0		***Roadworks***				
	3.10	Prepare, trim and compact:				
	3.1.1	Pavement subgrade under roads, accessways, driveways and pathways	1330	sq.m		$ -
	3.20	Supply, place and compact crushed sandstone, (or approved equivalent) sub-base courses under pavements / accessway / thresholds:				
	3.2.1	300 mm thick (compacted thickness)	1330	sq.m		$ -
	3.30	Supply, place and compact DGB 20, (or approved equivalent) base course:				
	3.3.1	150 mm thick (compacted thickness)	1238	sq.m		$ -
	3.40	Surfacing of road pavement with:				
	3.4.1	Asphaltic concrete first course (AC10) min 25 mm thick	1238	sq.m		$ -
	3.4.2	Asphaltic concrete wearing course (AC10) min 25mm thick	1238	sq.m		$ -
4.0		***Drainage***				
	4.10	No allowance provided. Noted that there are existing kerb inlet pits and associated drainage which may need to be relocated. Further detailed design required to provide cost estimate.				To be determined
5.0		***Concrete Works***				
	5.10	Supply all materials and construct kerb and gutter to Council standard drawings				
	5.1.2	150mm kerb & gutter including vehicular crossings and kerb ramps	145	lin.m		$ -
	5.20	Excavate for, supply all materials and construct concrete footpath to Council's standards.				
	5.2.1	125mm thick concrete reinforced with F82 mesh including 25mm approved sand bedding	360	sq.m		$ -
	5.2.2	E/O pram ramp	2	each		$ -
6.0		***Signs & Linemarking***				
	6.10	Supply all materials and erect traffic regulatory and warning signs and posts				
	6.1.1	Give Way [RMS R1-2]	1	each		$ -
	6.1.2	Stop sign [R1-1]	1	each		$ -
	6.20	Supply all materials, including reflectors, and complete line marking to the approriate RMS standard				
	6.2.1	Barrier line (RMS BB)	65	lin.m		$ -
	6.2.2	Holding line (RTA TB)	13	lin.m		$ -
	6.2.3	Stop Line TF	6	lin.m		$ -
	6.2.4	Lane line (RMS L1)	30	lin.m		$ -
	6.2.5	L7 line	8	lin.m		$ -
	6.2.6	C1 line	35	lin.m		$ -
	6.2.7	Painted median	46	sq.m		$ -
	6.2.8	Turning arrow (RMS UA3)	14	each		$ -
7.0		***Utility Services Adjustments***				
	7.10	No allowance has been provided for adjustment or protection of existing services utilities. Detailed drawings and further investigation of existing services required to determine any potential conflicts and adjustments required.				To be determined
		Sub Total				$ -
8.0		**CONTINGENCIES**				
	8.10	Allowance	15	%		$ -

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
AND PROJECT MANAGERS

ITEM	QTY	UNIT	RATE	AMOUNT
TOTAL OPTION 1:				$ -

Assumptions

1. This costing is based on preliminary drawings and not full detailed civil engineering drawings and pavement design from a qualified Geotechnical Engineer.
2. The costing does not allow for any aquitision cost of land if required.
3. This Opinion of Probable cost is based on J. Wyndham Prince's experience and judgment as a firm of practicing professional civil engineers familiar with the construction industry. The cost estimate cannot be guaranteed as we have no control over Contractor's prices, market forces, material supply costs, competitive bids from tenderers and specific site conditions that may be encountered but not yet investigated.
4. The rates used for each element of work are derived recent civil works contracts of similar nature to the work proposed under this estimate in the Greater Sydney Region.
5. The rates in the schedule appear to be precise, however, they are the output of a statistical analysis performed and fed into the Estimate schedule from the background data, for Greater Sydney Region.
6. In some cases the engineer preparing the Estimate will increase or decrease the statistically derived rate based on experience and judgement.
7. As more information becomes available through the development process, and as more design detail becomes available the accuracy of the Estimate could increase subject to latent conditions which may become evident on the site.
8. The rates are as accurate as the latest market information from which the rates are derived. The actual contract awarded for the work will be based on the market conditions at the time of the contract and therefore all rates will be subject at that time to rise and fall.

APPENDIX G

Appendix G-Intersection Performance Future Peak Hour Traffic Volumes

Location	Control	Peak Hour	Level of Service LoS	Degree of Saturation DoS	Average Delay Av	Critical Movement
Flynn Avenue/Main Street	S	AM	B	0.833	13.7	East Approach Flynn Avenue-RHT-22.4 secs
	S	PM	B	0.799	12.8	East Approach Flynn Avenue RHT 19.6 secs
Southern Cross Ave (Hall Circuit)/Main Street	R	AM	A	0.231	5.8	New Road North Approach RHT 10.5 secs
	R	PM	A	0.372	6.7	New Road North Approach RHT 10.4 secs
Driveway /Flynn Avenue	s	AM	A	0.783	9.8	North Approach Driveway RHT 16.3s
	s	PM	B	0.798	11.3	North Approach Driveway RHT 22.6s

INTERSECTION SUMMARY

Site: 101 [AM-DEV-Flynn Avenue-Main Street]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 30 seconds (Site Practical Cycle Time)

Intersection Performance - Hourly Values						
Performance Measure	**Vehicles**		**Pedestrians**		**Persons**	
Travel Speed (Average)	48.7	km/h	3.4	km/h	46.7	km/h
Travel Distance (Total)	1426.8	veh-km/h	5.5	ped-km/h	1717.6	pers-km/h
Travel Time (Total)	29.3	veh-h/h	1.6	ped-h/h	36.7	pers-h/h
Demand Flows (Total)	1407	veh/h	158	ped/h	1847	pers/h
Percent Heavy Vehicles (Demand)	0.0	%				
Degree of Saturation	0.833		0.022			
Practical Spare Capacity	8.1	%				
Effective Intersection Capacity	1690	veh/h				
Control Delay (Total)	5.34	veh-h/h	0.42	ped-h/h	6.83	pers-h/h
Control Delay (Average)	13.7	sec	9.6	sec	13.3	sec
Control Delay (Worst Lane)	22.4	sec				
Control Delay (Worst Movement)	22.4	sec	9.6	sec	22.4	sec
Geometric Delay (Average)	1.4	sec				
Stop-Line Delay (Average)	12.2	sec				
Idling Time (Average)	6.5	sec				
Intersection Level of Service (LOS)	LOS B		LOS A			
95% Back of Queue - Vehicles (Worst Lane)	11.4	veh				
95% Back of Queue - Distance (Worst Lane)	79.7	m				
Queue Storage Ratio (Worst Lane)	0.10					
Total Effective Stops	1244	veh/h	127	ped/h	1620	pers/h
Effective Stop Rate	0.88		0.80		0.88	
Proportion Queued	0.90		0.80		0.89	
Performance Index	49.1		2.3		51.4	
Cost (Total)	873.04	$/h	41.96	$/h	915.00	$/h
Fuel Consumption (Total)	120.2	L/h				
Carbon Dioxide (Total)	282.6	kg/h				
Hydrocarbons (Total)	0.025	kg/h				
Carbon Monoxide (Total)	0.333	kg/h				
NOx (Total)	0.087	kg/h				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Site Model Variability Index (Iterations 3 to N): 0.0 %
Number of Iterations: 2 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Main (Timing-Capacity) Iterations: 0.0% 0.0% 0.0%

Intersection Performance - Annual Values						
Performance Measure	**Vehicles**		**Pedestrians**		**Persons**	
Demand Flows (Total)	675,537	veh/y	75,789	ped/y	886,434	pers/y
Delay	2,564	veh-h/y	203	ped-h/y	3,279	pers-h/y
Effective Stops	597,291	veh/y	60,765	ped/y	777,514	pers/y
Travel Distance	684,866	veh-km/y	2,622	ped-km/y	824,462	pers-km/y
Travel Time	14,062	veh-h/y	763	ped-h/y	17,637	pers-h/y
Cost	419,059	$/y	20,140	$/y	439,199	$/y
Fuel Consumption	57,713	L/y				
Carbon Dioxide	135,626	kg/y				
Hydrocarbons	12	kg/y				
Carbon Monoxide	160	kg/y				
NOx	42	kg/y				

MOVEMENT SUMMARY

Site: 101 [AM-DEV-Flynn Avenue-Main Street]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 30 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Flynn Avenue												
5	T1	395	0.0	0.506	7.7	LOS A	4.6	32.0	0.80	0.68	0.80	53.3
6	R2	200	0.0	0.757	22.4	LOS C	3.4	23.8	1.00	0.93	1.42	43.0
Approach		595	0.0	0.757	12.6	LOS B	4.6	32.0	0.87	0.76	1.01	49.3
North: Main Street												
7	L2	94	0.0	0.252	17.4	LOS B	1.3	8.8	0.88	0.75	0.88	45.7
9	R2	8	0.0	0.023	16.4	LOS B	0.1	0.7	0.83	0.65	0.83	46.0
Approach		102	0.0	0.252	17.3	LOS B	1.3	8.8	0.87	0.74	0.87	45.7
West: Flynn Avenue												
10	L2	61	0.0	0.082	11.8	LOS B	0.6	4.0	0.65	0.70	0.65	49.1
11	T1	649	0.0	0.833	14.2	LOS B	11.4	79.7	0.96	1.04	1.35	48.6
Approach		711	0.0	0.833	14.0	LOS B	11.4	79.7	0.93	1.01	1.29	48.7
All Vehicles		1407	0.0	0.833	13.7	LOS B	11.4	79.7	0.90	0.88	1.14	48.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Pedestrian Back of Queue ped	Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	9.6	LOS A	0.0	0.0	0.80	0.80
P3	North Full Crossing	53	9.6	LOS A	0.0	0.0	0.80	0.80
P4	West Full Crossing	53	9.6	LOS A	0.0	0.0	0.80	0.80
All Pedestrians		158	9.6	LOS A			0.80	0.80

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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INTERSECTION SUMMARY

Site: 101 [PM-DEV-Flynn Avenue-Main Street]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 30 seconds (Site Practical Cycle Time)

Intersection Performance - Hourly Values								
Performance Measure	Vehicles			Pedestrians			Persons	
Travel Speed (Average)	49.0	km/h		3.4	km/h		47.1	km/h
Travel Distance (Total)	1464.9	veh-km/h		5.5	ped-km/h		1763.3	pers-km/h
Travel Time (Total)	29.9	veh-h/h		1.6	ped-h/h		37.4	pers-h/h
Demand Flows (Total)	1444	veh/h		158	ped/h		1891	pers/h
Percent Heavy Vehicles (Demand)	0.0	%						
Degree of Saturation	0.779			0.022				
Practical Spare Capacity	15.6	%						
Effective Intersection Capacity	1855	veh/h						
Control Delay (Total)	5.12	veh-h/h		0.42	ped-h/h		6.57	pers-h/h
Control Delay (Average)	12.8	sec		9.6	sec		12.5	sec
Control Delay (Worst Lane)	19.6	sec						
Control Delay (Worst Movement)	19.6	sec		9.6	sec		19.6	sec
Geometric Delay (Average)	2.8	sec						
Stop-Line Delay (Average)	10.0	sec						
Idling Time (Average)	5.6	sec						
Intersection Level of Service (LOS)	LOS B			LOS A				
95% Back of Queue - Vehicles (Worst Lane)	6.1	veh						
95% Back of Queue - Distance (Worst Lane)	42.9	m						
Queue Storage Ratio (Worst Lane)	0.05							
Total Effective Stops	1129	veh/h		127	ped/h		1481	pers/h
Effective Stop Rate	0.78			0.80			0.78	
Proportion Queued	0.85			0.80			0.84	
Performance Index	47.5			2.3			49.8	
Cost (Total)	871.11	$/h		41.96	$/h		913.07	$/h
Fuel Consumption (Total)	121.4	L/h						
Carbon Dioxide (Total)	285.2	kg/h						
Hydrocarbons (Total)	0.025	kg/h						
Carbon Monoxide (Total)	0.338	kg/h						
NOx (Total)	0.087	kg/h						

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Site Model Variability Index (Iterations 3 to N): 0.0 %
Number of Iterations: 2 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Main (Timing-Capacity) Iterations: 0.0% 0.0% 0.0%

Intersection Performance - Annual Values								
Performance Measure	Vehicles			Pedestrians			Persons	
Demand Flows (Total)	693,221	veh/y		75,789	ped/y		907,655	pers/y
Delay	2,457	veh-h/y		203	ped-h/y		3,151	pers-h/y
Effective Stops	541,704	veh/y		60,765	ped/y		710,810	pers/y
Travel Distance	703,154	veh-km/y		2,622	ped-km/y		846,408	pers-km/y
Travel Time	14,343	veh-h/y		763	ped-h/y		17,975	pers-h/y
Cost	418,133	$/y		20,140	$/y		438,273	$/y
Fuel Consumption	58,252	L/y						
Carbon Dioxide	136,893	kg/y						
Hydrocarbons	12	kg/y						
Carbon Monoxide	162	kg/y						
NOx	42	kg/y						

MOVEMENT SUMMARY

Site: 101 [PM-DEV-Flynn Avenue-Main Street]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 30 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Flynn Avenue												
5	T1	474	0.0	0.607	8.3	LOS A	5.9	41.1	0.84	0.74	0.87	52.8
6	R2	363	0.0	0.779	19.6	LOS B	6.1	42.9	0.96	0.99	1.33	44.5
Approach		837	0.0	0.779	13.2	LOS B	6.1	42.9	0.89	0.85	1.07	48.8
North: Main Street												
7	L2	182	0.0	0.490	18.1	LOS B	2.6	18.1	0.93	0.79	0.93	45.3
9	R2	49	0.0	0.133	16.9	LOS B	0.6	4.5	0.85	0.72	0.85	45.8
Approach		232	0.0	0.490	17.9	LOS B	2.6	18.1	0.91	0.77	0.91	45.4
West: Flynn Avenue												
10	L2	127	0.0	0.171	12.1	LOS B	1.3	8.8	0.68	0.72	0.68	49.0
11	T1	248	0.0	0.318	7.0	LOS A	2.6	18.3	0.73	0.60	0.73	53.8
Approach		376	0.0	0.318	8.7	LOS A	2.6	18.3	0.71	0.64	0.71	52.1
All Vehicles		1444	0.0	0.779	12.8	LOS B	6.1	42.9	0.85	0.78	0.95	49.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	9.6	LOS A	0.0	0.0	0.80	0.80
P3	North Full Crossing	53	9.6	LOS A	0.0	0.0	0.80	0.80
P4	West Full Crossing	53	9.6	LOS A	0.0	0.0	0.80	0.80
All Pedestrians		158	9.6	LOS A			0.80	0.80

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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INTERSECTION SUMMARY

Site: 101 [AM-DEV-Southern Cross Ave(Hall Circuit) & Main Street]

Southern Cross Ave(Hall Circuit) & Main Street
Site Category: (None)
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Travel Speed (Average)	53.4	km/h	53.4	km/h
Travel Distance (Total)	622.5	veh-km/h	747.0	pers-km/h
Travel Time (Total)	11.7	veh-h/h	14.0	pers-h/h
Demand Flows (Total)	613	veh/h	735	pers/h
Percent Heavy Vehicles (Demand)	0.0	%		
Degree of Saturation	0.231			
Practical Spare Capacity	268.2	%		
Effective Intersection Capacity	2654	veh/h		
Control Delay (Total)	0.98	veh-h/h	1.18	pers-h/h
Control Delay (Average)	5.8	sec	5.8	sec
Control Delay (Worst Lane)	8.1	sec		
Control Delay (Worst Movement)	10.5	sec	10.5	sec
Geometric Delay (Average)	5.0	sec		
Stop-Line Delay (Average)	0.7	sec		
Idling Time (Average)	0.1	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	1.3	veh		
95% Back of Queue - Distance (Worst Lane)	9.4	m		
Queue Storage Ratio (Worst Lane)	0.01			
Total Effective Stops	325	veh/h	390	pers/h
Effective Stop Rate	0.53		0.53	
Proportion Queued	0.24		0.24	
Performance Index	16.9		16.9	
Cost (Total)	324.96	$/h	324.96	$/h
Fuel Consumption (Total)	49.7	L/h		
Carbon Dioxide (Total)	116.8	kg/h		
Hydrocarbons (Total)	0.010	kg/h		
Carbon Monoxide (Total)	0.140	kg/h		
NOx (Total)	0.036	kg/h		

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Site Model Variability Index (Iterations 3 to N): 0.5 %
Number of Iterations: 3 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Flow-Capacity Iterations: 100.0% 92.1% 0.5%

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	294,063	veh/y	352,876	pers/y
Delay	471	veh-h/y	565	pers-h/y
Effective Stops	156,090	veh/y	187,308	pers/y
Travel Distance	298,783	veh-km/y	358,540	pers-km/y
Travel Time	5,597	veh-h/y	6,716	pers-h/y
Cost	155,983	$/y	155,983	$/y
Fuel Consumption	23,854	L/y		
Carbon Dioxide	56,057	kg/y		
Hydrocarbons	5	kg/y		
Carbon Monoxide	67	kg/y		
NOx	17	kg/y		

MOVEMENT SUMMARY

Site: 101 [AM-DEV-Southern Cross Ave(Hall Circuit) & Main Street]

Southern Cross Ave(Hall Circuit) & Main Street
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Main Street												
1	L2	141	0.0	0.150	5.2	LOS A	0.8	5.5	0.20	0.53	0.20	53.2
2	T1	21	0.0	0.150	5.2	LOS A	0.8	5.5	0.20	0.53	0.20	54.1
3	R2	8	0.0	0.150	8.1	LOS A	0.8	5.5	0.20	0.53	0.20	53.6
Approach		171	0.0	0.150	5.3	LOS A	0.8	5.5	0.20	0.53	0.20	53.3
East: Southern Cross Avenue												
4	L2	1	0.0	0.031	5.1	LOS A	0.2	1.2	0.19	0.47	0.19	53.2
5	T1	31	0.0	0.031	5.1	LOS A	0.2	1.2	0.19	0.47	0.19	54.1
6	R2	1	0.0	0.031	8.1	LOS A	0.2	1.2	0.19	0.47	0.19	53.6
Approach		33	0.0	0.031	5.2	LOS A	0.2	1.2	0.19	0.47	0.19	54.0
North: New Road												
7	L2	92	0.0	0.144	7.5	LOS A	0.8	5.7	0.54	0.67	0.54	51.5
8	T1	1	0.0	0.144	7.6	LOS A	0.8	5.7	0.54	0.67	0.54	52.3
9	R2	21	0.0	0.144	10.5	LOS B	0.8	5.7	0.54	0.67	0.54	51.9
Approach		114	0.0	0.144	8.1	LOS A	0.8	5.7	0.54	0.67	0.54	51.6
West: Southern Cross AVenue												
10	L2	13	0.0	0.231	5.0	LOS A	1.3	9.4	0.15	0.49	0.15	53.3
11	T1	266	0.0	0.231	5.0	LOS A	1.3	9.4	0.15	0.49	0.15	54.1
12	R2	17	0.0	0.231	8.0	LOS A	1.3	9.4	0.15	0.49	0.15	53.7
Approach		296	0.0	0.231	5.2	LOS A	1.3	9.4	0.15	0.49	0.15	54.1
All Vehicles		613	0.0	0.231	5.8	LOS A	1.3	9.4	0.24	0.53	0.24	53.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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INTERSECTION SUMMARY

Site: 101 [PM-DEV-Southern Cross Ave(Hall Circuit) & Main Street]

Southern Cross Ave(Hall Circuit) & Main Street
Site Category: (None)
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Travel Speed (Average)	52.6	km/h	52.6	km/h
Travel Distance (Total)	888.5	veh-km/h	1066.2	pers-km/h
Travel Time (Total)	16.9	veh-h/h	20.3	pers-h/h
Demand Flows (Total)	874	veh/h	1048	pers/h
Percent Heavy Vehicles (Demand)	0.0	%		
Degree of Saturation	0.372			
Practical Spare Capacity	128.4	%		
Effective Intersection Capacity	2348	veh/h		
Control Delay (Total)	1.62	veh-h/h	1.94	pers-h/h
Control Delay (Average)	6.7	sec	6.7	sec
Control Delay (Worst Lane)	8.9	sec		
Control Delay (Worst Movement)	10.4	sec	10.4	sec
Geometric Delay (Average)	5.3	sec		
Stop-Line Delay (Average)	1.3	sec		
Idling Time (Average)	0.1	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	2.4	veh		
95% Back of Queue - Distance (Worst Lane)	16.8	m		
Queue Storage Ratio (Worst Lane)	0.01			
Total Effective Stops	509	veh/h	611	pers/h
Effective Stop Rate	0.58		0.58	
Proportion Queued	0.43		0.43	
Performance Index	26.3		26.3	
Cost (Total)	477.20	$/h	477.20	$/h
Fuel Consumption (Total)	72.1	L/h		
Carbon Dioxide (Total)	169.4	kg/h		
Hydrocarbons (Total)	0.014	kg/h		
Carbon Monoxide (Total)	0.202	kg/h		
NOx (Total)	0.052	kg/h		

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Site Model Variability Index (Iterations 3 to N): 0.9 %
Number of Iterations: 4 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Flow-Capacity Iterations: 92.2% 1.2% 0.7%

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	419,369	veh/y	503,242	pers/y
Delay	778	veh-h/y	933	pers-h/y
Effective Stops	244,368	veh/y	293,241	pers/y
Travel Distance	426,490	veh-km/y	511,788	pers-km/y
Travel Time	8,103	veh-h/y	9,723	pers-h/y
Cost	229,056	$/y	229,056	$/y
Fuel Consumption	34,595	L/y		
Carbon Dioxide	81,299	kg/y		
Hydrocarbons	7	kg/y		
Carbon Monoxide	97	kg/y		
NOx	25	kg/y		

MOVEMENT SUMMARY

Site: 101 [PM-DEV-Southern Cross Ave(Hall Circuit) & Main Street]

Southern Cross Ave(Hall Circuit) & Main Street
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Main Street												
1	L2	274	0.0	0.372	6.4	LOS A	2.4	16.8	0.48	0.62	0.48	52.3
2	T1	66	0.0	0.372	6.4	LOS A	2.4	16.8	0.48	0.62	0.48	53.2
3	R2	15	0.0	0.372	9.4	LOS A	2.4	16.8	0.48	0.62	0.48	52.8
Approach		355	0.0	0.372	6.6	LOS A	2.4	16.8	0.48	0.62	0.48	52.5
East: Southern Cross Avenue												
4	L2	1	0.0	0.161	6.1	LOS A	1.0	6.8	0.40	0.53	0.40	52.5
5	T1	146	0.0	0.161	6.1	LOS A	1.0	6.8	0.40	0.53	0.40	53.3
6	R2	3	0.0	0.161	9.1	LOS A	1.0	6.8	0.40	0.53	0.40	52.9
Approach		151	0.0	0.161	6.2	LOS A	1.0	6.8	0.40	0.53	0.40	53.3
North: New Road												
7	L2	26	0.0	0.071	7.4	LOS A	0.4	2.8	0.54	0.66	0.54	50.9
8	T1	1	0.0	0.071	7.5	LOS A	0.4	2.8	0.54	0.66	0.54	51.7
9	R2	27	0.0	0.071	10.4	LOS B	0.4	2.8	0.54	0.66	0.54	51.3
Approach		55	0.0	0.071	8.9	LOS A	0.4	2.8	0.54	0.66	0.54	51.1
West: Southern Cross AVenue												
10	L2	25	0.0	0.287	5.6	LOS A	2.1	14.6	0.36	0.55	0.36	52.1
11	T1	181	0.0	0.287	5.6	LOS A	2.1	14.6	0.36	0.55	0.36	52.9
12	R2	107	0.0	0.287	8.6	LOS A	2.1	14.6	0.36	0.55	0.36	52.5
Approach		314	0.0	0.287	6.6	LOS A	2.1	14.6	0.36	0.55	0.36	52.7
All Vehicles		874	0.0	0.372	6.7	LOS A	2.4	16.8	0.43	0.58	0.43	52.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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INTERSECTION SUMMARY

Site: 101 [AM-DEV-Flynn Avenue-CAR PARK DRIVEWAY]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 30 seconds (Site Practical Cycle Time)

Intersection Performance - Hourly Values						
Performance Measure	**Vehicles**		**Pedestrians**		**Persons**	
Travel Speed (Average)	51.6	km/h	3.4	km/h	49.2	km/h
Travel Distance (Total)	1236.2	veh-km/h	5.1	ped-km/h	1488.6	pers-km/h
Travel Time (Total)	23.9	veh-h/h	1.5	ped-h/h	30.3	pers-h/h
Demand Flows (Total)	1220	veh/h	158	ped/h	1622	pers/h
Percent Heavy Vehicles (Demand)	0.0	%				
Degree of Saturation	0.783		0.022			
Practical Spare Capacity	14.9	%				
Effective Intersection Capacity	1558	veh/h				
Control Delay (Total)	3.32	veh-h/h	0.42	ped-h/h	4.40	pers-h/h
Control Delay (Average)	9.8	sec	9.6	sec	9.8	sec
Control Delay (Worst Lane)	16.3	sec				
Control Delay (Worst Movement)	17.7	sec	9.6	sec	17.7	sec
Geometric Delay (Average)	0.2	sec				
Stop-Line Delay (Average)	9.6	sec				
Idling Time (Average)	4.8	sec				
Intersection Level of Service (LOS)	LOS A		LOS A			
95% Back of Queue - Vehicles (Worst Lane)	9.2	veh				
95% Back of Queue - Distance (Worst Lane)	64.1	m				
Queue Storage Ratio (Worst Lane)	0.08					
Total Effective Stops	957	veh/h	127	ped/h	1276	pers/h
Effective Stop Rate	0.78		0.80		0.79	
Proportion Queued	0.84		0.80		0.84	
Performance Index	44.8		2.2		47.1	
Cost (Total)	700.18	$/h	40.15	$/h	740.33	$/h
Fuel Consumption (Total)	99.9	L/h				
Carbon Dioxide (Total)	234.8	kg/h				
Hydrocarbons (Total)	0.020	kg/h				
Carbon Monoxide (Total)	0.280	kg/h				
NOx (Total)	0.070	kg/h				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Site Model Variability Index (Iterations 3 to N): 0.0 %
Number of Iterations: 2 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Main (Timing-Capacity) Iterations: 0.0% 0.0% 0.0%

Intersection Performance - Annual Values						
Performance Measure	**Vehicles**		**Pedestrians**		**Persons**	
Demand Flows (Total)	585,600	veh/y	75,789	ped/y	778,510	pers/y
Delay	1,593	veh-h/y	203	ped-h/y	2,114	pers-h/y
Effective Stops	459,565	veh/y	60,765	ped/y	612,243	pers/y
Travel Distance	593,376	veh-km/y	2,468	ped-km/y	714,519	pers-km/y
Travel Time	11,493	veh-h/y	730	ped-h/y	14,522	pers-h/y
Cost	336,086	$/y	19,271	$/y	355,356	$/y
Fuel Consumption	47,954	L/y				
Carbon Dioxide	112,693	kg/y				
Hydrocarbons	10	kg/y				
Carbon Monoxide	135	kg/y				
NOx	34	kg/y				

MOVEMENT SUMMARY

Site: 101 [AM-DEV-Flynn Avenue-CAR PARK DRIVEWAY]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 30 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Flynn Avenue												
5	T1	545	0.0	0.783	12.1	LOS B	9.2	64.1	0.93	0.95	1.21	49.8
6	R2	28	0.0	0.783	17.7	LOS B	9.2	64.1	0.93	0.95	1.21	48.7
Approach		574	0.0	0.783	12.4	LOS B	9.2	64.1	0.93	0.95	1.21	49.8
North: Driveway												
7	L2	2	0.0	0.006	16.3	LOS B	0.0	0.2	0.82	0.61	0.82	46.3
9	R2	5	0.0	0.014	16.3	LOS B	0.1	0.5	0.82	0.64	0.82	46.1
Approach		7	0.0	0.014	16.3	LOS B	0.1	0.5	0.82	0.63	0.82	46.2
West: Flynn Avenue												
10	L2	9	0.0	0.410	12.8	LOS B	3.5	24.7	0.76	0.64	0.76	52.1
11	T1	629	0.0	0.410	7.3	LOS A	3.5	24.7	0.76	0.64	0.76	53.5
Approach		639	0.0	0.410	7.4	LOS A	3.5	24.7	0.76	0.64	0.76	53.5
All Vehicles		1220	0.0	0.783	9.8	LOS A	9.2	64.1	0.84	0.78	0.97	51.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Pedestrian Back of Queue ped	Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	9.6	LOS A	0.0	0.0	0.80	0.80
P3	North Full Crossing	53	9.6	LOS A	0.0	0.0	0.80	0.80
P4	West Full Crossing	53	9.6	LOS A	0.0	0.0	0.80	0.80
All Pedestrians		158	9.6	LOS A			0.80	0.80

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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INTERSECTION SUMMARY

Site: 101 [PM-DEV-Flynn Avenue-CAR PARK DRIVEWAY]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 40 seconds (Site Practical Cycle Time)

Intersection Performance - Hourly Values						
Performance Measure	**Vehicles**		**Pedestrians**		**Persons**	
Travel Speed (Average)	50.4	km/h	3.0	km/h	47.6	km/h
Travel Distance (Total)	1160.6	veh-km/h	5.1	ped-km/h	1397.9	pers-km/h
Travel Time (Total)	23.0	veh-h/h	1.7	ped-h/h	29.3	pers-h/h
Demand Flows (Total)	1145	veh/h	158	ped/h	1532	pers/h
Percent Heavy Vehicles (Demand)	0.0	%				
Degree of Saturation	0.798		0.029			
Practical Spare Capacity	12.7	%				
Effective Intersection Capacity	1435	veh/h				
Control Delay (Total)	3.59	veh-h/h	0.64	ped-h/h	4.95	pers-h/h
Control Delay (Average)	11.3	sec	14.5	sec	11.6	sec
Control Delay (Worst Lane)	22.6	sec				
Control Delay (Worst Movement)	22.6	sec	14.5	sec	22.6	sec
Geometric Delay (Average)	0.7	sec				
Stop-Line Delay (Average)	10.6	sec				
Idling Time (Average)	6.0	sec				
Intersection Level of Service (LOS)	LOS B		LOS B			
95% Back of Queue - Vehicles (Worst Lane)	15.7	veh				
95% Back of Queue - Distance (Worst Lane)	109.9	m				
Queue Storage Ratio (Worst Lane)	0.13					
Total Effective Stops	889	veh/h	135	ped/h	1201	pers/h
Effective Stop Rate	0.78		0.85		0.78	
Proportion Queued	0.79		0.85		0.79	
Performance Index	49.4		2.5		51.9	
Cost (Total)	666.67	$/h	45.78	$/h	712.44	$/h
Fuel Consumption (Total)	93.5	L/h				
Carbon Dioxide (Total)	219.8	kg/h				
Hydrocarbons (Total)	0.019	kg/h				
Carbon Monoxide (Total)	0.262	kg/h				
NOx (Total)	0.065	kg/h				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Site Model Variability Index (Iterations 3 to N): 0.0 %
Number of Iterations: 2 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Main (Timing-Capacity) Iterations: 4.1% 0.0% 0.0%

Intersection Performance - Annual Values						
Performance Measure	**Vehicles**		**Pedestrians**		**Persons**	
Demand Flows (Total)	549,726	veh/y	75,789	ped/y	735,461	pers/y
Delay	1,725	veh-h/y	305	ped-h/y	2,375	pers-h/y
Effective Stops	426,745	veh/y	64,563	ped/y	576,656	pers/y
Travel Distance	557,095	veh-km/y	2,468	ped-km/y	670,982	pers-km/y
Travel Time	11,044	veh-h/y	832	ped-h/y	14,085	pers-h/y
Cost	320,001	$/y	21,972	$/y	341,973	$/y
Fuel Consumption	44,895	L/y				
Carbon Dioxide	105,504	kg/y				
Hydrocarbons	9	kg/y				
Carbon Monoxide	126	kg/y				
NOx	31	kg/y				

MOVEMENT SUMMARY

Site: 101 [PM-DEV-Flynn Avenue-CAR PARK DRIVEWAY]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 40 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Flynn Avenue												
5	T1	767	0.0	0.798	11.8	LOS B	15.7	109.9	0.86	0.89	1.03	50.0
6	R2	51	0.0	0.798	17.3	LOS B	15.7	109.9	0.86	0.89	1.03	48.9
Approach		818	0.0	0.798	12.1	LOS B	15.7	109.9	0.86	0.89	1.03	50.0
North: Driveway												
7	L2	36	0.0	0.128	22.5	LOS C	0.6	4.5	0.90	0.71	0.90	42.9
9	R2	44	0.0	0.159	22.6	LOS C	0.8	5.7	0.90	0.72	0.90	42.7
Approach		80	0.0	0.159	22.6	LOS C	0.8	5.7	0.90	0.72	0.90	42.8
West: Flynn Avenue												
10	L2	9	0.0	0.116	10.2	LOS B	1.2	8.2	0.51	0.43	0.51	53.9
11	T1	238	0.0	0.116	4.7	LOS A	1.2	8.2	0.51	0.42	0.51	55.5
Approach		247	0.0	0.116	4.9	LOS A	1.2	8.2	0.51	0.42	0.51	55.5
All Vehicles		1145	0.0	0.798	11.3	LOS B	15.7	109.9	0.79	0.78	0.91	50.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
P3	North Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
P4	West Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
All Pedestrians		158	14.5	LOS B			0.85	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Organisation: BITZIOS CONSULTING | Processed: Monday, 1 June 2020 6:01:52 PM
Project: \\CENTRAL\Data\LMA Jobs\JOBS 2019\1196-19 50-80 Southern Cross Avenue Middleton Grange\SIDRA\Bitzios file-1.6.20\1196-19-Middelton Grange TIA-20.5.20.sip8

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8 October 2020

Taylor Richardson
HillPDA
Level 3, 234 George Street
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Middleton Grange Town Centre Planning Proposal Preliminary Review

Dear Taylor,

I write in relation to HillPDA's letter of 21 September 2020 in relation to the independent assessment of the Middleton Grange Town Centre Planning Proposal. Specifically, you have requested clarification on a number of matters, generally related to the economic impact assessment.

I am please to attach revised reports that clarify the matters raised by HillPDA to assist the assessment. In particular, the following are attached:

- Economic Impact Analysis – Middleton Grange Town Centre
- Economic Impact Analysis of the retail component – Middleton Grange Town Centre
- Traffic Response to Council communication dated 28 September 2020

Planning Response

I note that the HillPDA communication requested an updated Planning Proposal that includes a table with the proposed land use components and associated GFA and FSR; and a staging plan for the development.

GFA and FSR

We have reviewed the planning proposal for inconsistency, and feel it accurately represents what is being sought by the Planning Proposal, namely, to realign the zoning boundaries and amend the principle planning controls.

Part 2 Explanation of Provisions of the Planning Proposal identifies the changes required, the most significant being:

1. *Amend the Liverpool Local Environmental Plan 2008 Zoning Map by making internal boundary adjustments to the R1 General Residential and B2 Local Centre boundaries.*
2. *Amend the Liverpool Local Environmental Plan 2008 Floor Space Ratio Map to part 1:1 and part 2.3:1 as shown on the proposed map.*
3. *Amend the Liverpool Local Environmental Plan 2008 Height of Building Map to part 9.5 metres, 14 metres, 20 metres, and 29 metres as shown on the proposed map.*

These amendments are further illustrated under *Part 4 Mapping* of the Planning Proposal. Figure 32 provides the proposed land zoning map; figure 33 provides the proposed maximum height of building map; and figure 34 provides the proposed maximum floor space ration map.

The floor space ratio for the site, as discussed above is proposed to be 1:1 for land zoned R1 General Residential and 2.3:1 for land zoned B2 Local Centre. When an averaging provision is applied across the entire Middleton Grange town centre, the FSR is 1.98:1, a decrease from the 2.5:1 originally endorsed by Council. This constitutes only an overall increase across the town centre from 1.16:1/1.3:1 to 1.98:1, and also provides for significant public benefits for the broader community including a significant increase in the amount of open space, state infrastructure contributions (final rate in accordance with TfNSW advice against the Satisfactory Arrangements Clause) of $2.5m for regional road upgrades, and local contribution of approximately $22m in accordance with the Middleton Grange Infrastructure Contributions Plan.

In relation to an update of the Planning Proposal, it is considered that given the application is a Part 3 process to amend the land use provisions and not a development application, this degree of information could be too much detail for a Part 3 process and providing too much detailed information about the land use split and staging plan is usually not received favourably by the Department. This level of detail generally does not align with Section 3.33 of the Act and the accompanying Department of Planning, Industry and *Environment Guide to Preparing Planning Proposals*.

Further, given the stage in the process and the further detailed development applications to come, the exact mix of uses is not final and subject to slight variation, for example the quantum of space a gym or child care centre may subsequently require will be determined in the development application process. However, while the land uses are indicative, there is a degree of certainty around the general quantum of residential and non-residential. Therefore, the table below provides the land use breakdown of future land uses as required, that informs the total GFA and FSR for the town centre.

Land Use	**Total (sq.m)**
Supermarket/Retail Shops	9,622
Cafes and restaurants/food and drink premises	6447
Commercial Entertainment	2,862
Offices/SOHO	8,223
Neighbourhood Shops	4,060
Medical/other	12,529
Gym	3,500
Childcare	505
Community Centre	500
Total Non-Residential Uses	**48,248**
Total Site area	**57,255**

RETAIL AREAS (GFA)	**373**	**379**	**7,157**	**8,075**	**3,280**	**1,057**	**20,320**
COMMERCIAL/MIXED USE (GFA)	2,975	2,975	0	6,135	2,888	0	**14,973**
MEDICAL/OTHER (GFA)	0	0	0	0	0	14,178	**14,178**
RESIDENTIAL AREAS (GFA)	3,770	3,770	26,767	22,222	7,352	0	**63,881**
TOTAL GFA	**7,118**	**7,124**	**33,924**	**36,432**	**13,519**	**15,235**	**113,351**
SITE AREA	7,118	7,124	15,490	17,970	5,538	4,015	**57,255**
FSR	1.00	1.00	2.19	2.03	2.44	3.79	**1.98**
Total development site FSR (rounded)							**1.98**

In considering the above, it is important to not how the above land use breakdown has been analysed for the purposes of the economic impact analysis and the traffic analysis. This is discussed further below.

Finally, it is also worth considering the long historical changes to development controls associated with the town centre site since the town centre site was originally zoned under the Liverpool LEP 2008. Contrary to some understanding within the community, the existing controls can facilitate approximately 626 dwellings and 15,808sq.m of commercial floorspace can be provided. However, within 12 years since the 2008 LEP was notified the site has yet to develop.

The initial Planning Proposal resulted in approximately 143,140sq.m of GFA across the town centre. Through the Gateway process this was refined prior to the commencement of public exhibition. Following public exhibition in 2018 the comments of the community were heard, and further refinements made, including reduced height, doubling the quantum of open space, and additional community and social infrastructure . This has now resulted in a marginal increase in apartments, from approx. 626 to 671 with the focus of the town centre being on commercial, retail and social infrastructure, with a vision to create a retail core at the southern end, cafes, restaurants and social infrastructure wrapped around the communal open spaces, commercial, office and business premises throughout the town centre, and medical facilities anchoring the north east of the site, avoiding any adverse interface with the school grounds.

The evolution of the density controls is included below.

Scheme Description	Residential GFA (dwellings)	Non-residential GFA	Total GFA	Open Space (sq.m)
2008 LEP	54,829 (583)	11,729	66,558	2,000
2008 LEP with Cl 5.3 applied to B2 zone	58,909 (626)	15,808	74,718	2000
2015 Planning Proposal endorsed by Council	86,733 (924)	56,407	143,140	2569
2018 Planning Proposal for Gateway determination	84,694 (912)	29,019	113,173	2569
Revised Planning Proposal 2019	63,703 (671)	34,235 15,235 medical centre	113,173	5695 *note does not include areas of existing SP2 land which will be contiguous with open space and increase the area further.

Note: Rounding provisions have been used to inform the above numbers and are within 0.001% of urban design figures above.

Staging Plan

As discussed above, the application is made under Part 3 and simply seeks to amend the planning controls for the site to facilitate the immediate development of a town centre for the people of Middleton Grange. The following may assist with understanding the next steps to realise further construction, noting that Coles have committed to locating within the town centre, but discussion still on-going that may impact the timing of delivery of other parts of the centre.

1. Subdivision – In 2015 the subdivision of the town centre was approved in alignment with the zone boundaries advanced by the Planning Proposal.
2. Roads and Drainage - In 2007, a development consent for roads and drainage works was approved in alignment with the zoning plan at that time. In May 2020, a modification to the roads and drainage

was approved that aligned with the subdivision plan and ongoing Planning Proposal zone boundaries. Construction has commenced.

3. Major Project Medical Facility – In June 2019 SEARs was issued by the Department of Planning, Industry and Environment for the preparation of an environmental impact statement (EIS) for Middleton Grange Medical Centre. Given the timing of the finalisation of the Planning Proposal which will resolve any permissibility issues with the assessment of the EIS, the EIS has yet to be lodged pending the finalisation of the Planning Proposal.
4. A Concept DA is advancing with a meeting with senior staff scheduled for 13 October 2020. The Concept DA will support the building footprints and elevations, and open space for the town centre, excluding the medical facility which is subject to a separate process.
5. Lots 5 & 6 – Detailed design of Lots 5 & 6 being the southerly lots has advanced with the successful negotiation with future tenants. Timing for the formal lodgement of the development application is dependent on the progression of the Concept DA application mentioned above.

Traffic and Transport

Traffic impact assessment (TIA) is likely one of the primary impact issues significantly relevant to the study of this Planning Proposal. It is noted that many of the comments about various levels of floorspace applied may be different to tables in economic reports. This is a moot point in consideration of how the TfNSW guided the process of TIA.

Despite the minor variations of breakdown of floorspace uses in reports this fine grain analysis was not considered by TfNSW. TfNSW required an application of a worst-case scenario by applying a retail use impact rate to all proposed non-residential floorspace and at a maximum possible level of quantum of mix. The reason for this approach by TfNSW was to ensure any changes that may occur to the use of floorspace in the future (as available and promoted by the underlying land use zone) would not impact the considered study results and would limit the need for further detailed traffic analysis at future DA stages.

Attached to this letter is a response to some of the items raised by council's traffic section to the TIA issued prior to formal TfNSW comment. It is noted that the comments from the council team in part incorrectly make assumption on impacts due to a lack of specified reference of the background growth applied in the model as guided by TfNSW.

Question is also raised on the financial model applied in forming the council comment on funding rates for the proposed shuttle bus. It is also acknowledged that on 13/10 a meeting with the TfNSW is set to discuss aspects of the TfNSW response. It is noted the results of the TIA process are that with considered infrastructure upgrades and relevant SIC payments to be guided by TfNSW the project can be supported on traffic and transport grounds at the density consistently proposed by the EPI amendment since the endorsement of the gateway exhibition by the delegate.

Economic Impact Response

As discussed in the attached Economic Impact Analysis, the Standard Instrument definitions for certain land uses are used differently in the supporting reports. For example, the definition of retail premises captures numerous uses, including those that would not ordinarily be expected within a town centre, such as plant nurseries or vehicle sales or hire premises.

Further, while food and drink premises are defined by the Standard Instrument as retail premises, they are considered separately in the economic study as they do not form the focus of competition with other centres such as Carnes Hill and are therefore not incorporated within the analysis of retail impact. Carnes Hill is a shopping destination whereas the Middleton Grange town centre is intended to be a destination for people and families, that can walk to the centre, play in the, sit in the sun and drink coffee and eat at the restaurants.

This is a very different kind of centre to those elsewhere in the Liverpool LGA and not the focus of the competition or retail analysis. Therefore, it is very important to note that despite the inflexible Standard Instrument definitions, for the purpose of the economic analysis a more practical and realistic approach was required.

As requested, detailed updated economics reports are attached and a summary of the response to the issues raised is included in the table below.

Hill PDA Preliminary Review	Response
• Provide an updated planning proposal that ○ Includes a table with identifying each proposed land use component, associated GFA and associated FSR ○ Identifies an anticipated delivery timetable for the proposed development (e.g. staging) ○ Outlines, in summary tables, the supply and demand of retail and commercial uses to justify densification on the site (as informed by an updated economic impact assessment) ○ Includes a clear planning mechanism that would ensure employment land uses would be provided as part of a future development	Supply and Demand for Retail are contained in the report *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* – Chapters 3-7, including supply and demand for supermarket floorspace and impact of addition of 10,000m^2, 15,000m^2 and 20,000m^2 of supermarket, mini major and specialty retail shops. Other matters related to land use components and staging was discussed above.
• Provide an updated and consolidated economic impact assessment that: ○ Is consistent with land uses and associated GFA, as described in the planning proposal and other supporting documentation (i.e. urban design reporting and traffic impact assessments) ○ Updates trade catchment analysis to describe, clearly and transparently, assumptions for population growth and market share over time, including existing and planned uses at Austral ○ Provides a transparent supply and demand assessment for retail components ○ – Provides a transparent supply and demand assessment for commercial components	Definitions for retail GLA differ because of the purpose of each report. This is explained in Chapter 2.3 of both reports. The trade catchment commentary in Chapter 3 clearly and transparently describes the assumptions used to calculate population and expenditure growth. Planned and existing uses have not been covered for Austral. As noted on Page 15 of the *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* report, "The main trade area does not include the proposed new town centre at Austral. The 2015 MacroPlan Dimasi Economic Impact Analysis was criticised for using a main trade area that was too broad. For this study, the focus has been on actual operating centres that compete with the proposed Middleton Grange Town Centre, rather than relying on a false precision. At the moment, as far as we are aware, there is no proponent for the town centre at Austral; as such it is unknown what the Austral Town Centre will contain and how large it really will be. The decision has therefore been taken to assess the impact on operating centres. In addition, the size of the main trade area has been chosen to ensure that the population, and its spending, is not over-estimated and therefore does not under-estimate the impacts of the Middleton Grange Town Centre on centres such as The Valley Plaza and Carnes Hill Marketplace."

	A transparent supply and demand assessment is made for the retail components in Chapters 3-7 of the *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* report A transparent supply and demand assessment of the commercial components are contained in Chapter 4 of the *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* report.
Ensure the planning proposal and all supporting documentation provide a thorough, accurate and evidence based assessment of the proposed land use mix anticipated to result from the amended LEP.	The draft EPI density controls have not changed since the department of planning endorsement of the exhibition set of documents. It is noted the B2 land is proposed to have a density of 2.3:1 and the R1 land 1:1. As a combined total the site density is 1.98:1. As noted, different floorspace uses are used in different reports for different purposes. These do not undermine the totals given in the Planning Proposal, but merely test different possible scenarios. For example, under the guidance of the state agency TfNSW, the methodology applied to the calculation of traffic and transport impacts took a worst-case scenario by applying a retail use to all proposed non-residential floorspace. The reason for this approach as advised by TfNSW was to ensure any changes that may occur to the use of floorspace in the future (promoted by the underlying land use zone) would not impact the considered study results and would limit the need for further detailed traffic analysis at future DA stages.
The planning proposal and associated assessments are to be able to be read on their own, and not submitted as an addendum to earlier assessment (i.e. not a response to resubmissions). This is required to ensure complete clarity on what is proposed why the proposal has both site specific and strategic merit.	Noted and completed
It is also noted that Council has recently adopted its *Centres and Corridor Strategy*. At its August 2020 Council Meeting, SGS Economics and Planning provided responses to submissions to that strategy. It is recommended that the comments also be considered, as they may also be relevant to the 2020 EIA, notably those regarding assumptions regarding trade catchments and supply/demand. You may also wish to update reporting to reflect the adopted strategy and the now adopted Local Strategic Planning Statement.	The LCCS is noted in the *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* report. Table 7 is from the LCCS. It should be noted that SGS stated that it did not test the assumptions of the PPM Consulting retail impact report, so comments are only assertions based on SGS's broad modelling completed for the purposes of the LCCS and not done with the Middleton Grange Town Centre planning proposal in mind. Indeed, PPM Consulting refutes some of SGS's assertions. It is also noted that the landowners have raised significant concern with the process applied finalise the LCCS and its validity. Significant reliance and resources have been applied to a consistent policy position of the council. The formal serious concerns as well as the conduct of submitters

	have been raised directly with the state department and the council.

Response to Attachment A: Comparison of information sources.

HillPDA Preliminary Review			**Response**
Issue The description of the retail component of the proposal is inconsistent	**Example** • Planning proposal does not appear to describe retail component • 2015 EIA states the proposal includes a retail component of approx. 21,000 sqm GLA • 2019 ERR states the proposal includes a retail component of approx. 20,000 sqm GFA • 2020 EIA states the proposal includes a retail component of approx. 8,000 to 10,000 sqm GLA • 2020 TIA states the proposal includes a retail component approx. 20,000 sqm GFA	**Comment** • Significant discrepancy exists between 2020 EIA and previous/current supporting documents. • Unable to account for GFA sought by planning proposal. • Unclear if 2020 EIA is discussing a development similar to the previous economic reporting or the planning proposal • Unable to assess site or strategic merit for FSR sought by planning proposal without clear and consistent description of planning outcome.	While the Standard Instrument definition covers the whole of the 20,320m² listed in Table 1 of *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (PPM Consulting October 2020), this report analyses goods retail only (supermarket, mini majors and specialty stores that directly compete with other centres). The retail impact analysis compares the shops where people buy things at Carnes Hill to what they will be able to buy in shops in Middleton Grange. This does not include food halls, cafes, restaurants, offices, gyms, child care centres, professional suites like doctors, accountants and solicitors, etc. For this reason, 10,000m² of retail is used in the retail impact report, but a sensitivity analysis has been undertaken at 15,000m² and 20,000m² so that the impact of a larger retail footprint can also be assessed. We refer back to the comment on the methodology applied to test TIA as guided by the TfNSW for the project.
Issue The description of the commercial component is inconsistent	**Example** • Planning proposal does not appear to describe retail component • 2015 EIA: commercial component approx. 15,500 sqm GLA • 2019 ERR: commercial component approx. 15,000 sqm GFA • 2020 EIA: does not appear to discuss commercial uses • 2020 TIA: commercial component approx. 14,400 sqm GFA (assuming child care and community centre uses are combined with commercial uses)	**Comment** • Significant discrepancy exists between 2020 EIA and previous/current supporting documents. • Unable to account for GFA sought by planning proposal. • Unclear if 2020 EIA is discussing a development similar to the previous economic reporting or the planning proposal • Unable to assess site or strategic merit for FSR sought by planning proposal without clear and consistent description of planning outcome.	The commercial component analysed in Chapter 4 of the Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis report only analyses office floorspace, as noted in Chapter 2.3. The differences in floorspace representation also arise from the differences between an engineers, economist or urban planning definition of measurable floorspace for a particular purpose of expertise measurement. We refer back to the comment on the methodology applied to test TIA as guided by the TfNSW for the project.
Issue Inconsistent description of medical centre component	**Example** • Planning proposal describes a 15,000 sqm medical centre • 2015 EIA: 1,200 sqm medical centre as part of the overall commercial uses	**Comment** • Significant discrepancy exists between 2020 EIA and previous/current supporting documents.	Only the employment impact of the medical centre is considered in the Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis report.

	• 2019 ERR: medical centre approx. 15,000 sqm GFA • 2020 EIA: medical uses as part of other supporting uses, with combined size of 500 to 1,000 sqm • 2020 TIA: medical component of approx. 12,529 sqm GFA	• Unable to account for GFA sought by planning proposal. • Unclear if 2020 EIA is discussing a development similar to the previous economic reporting or the planning proposal • Unable to assess site or strategic merit for FSR sought by planning proposal without clear and consistent description of planning outcome.	We refer back to the comment on the methodology applied to test TIA as guided by the TfNSW for the project.
Issue Austral Town Centre not considered transparently	**Example** • Planning proposal does not mention Austral Town Centre • 2015 EIA identifies (then) current retail GLA of approx. 2,500 sqm and planned of 30,000 sqm GLA • 2019 ERR does not appear to assess Austral existing and planned land uses • 2020 EIA notes the Austral existing and planned land uses, but does not transparently assess main trade area share/impacts and anticipated impacts on current/future demand for floorspace	**Comment** • Level of impact associated with Austral Town Centre is unclear • Unable to peer review assumptions without transparency regarding supply/demand allocation	Planned and existing uses have not been covered for Austral. As noted on Page 15 of the Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component report, "The main trade area does not include the proposed new town centre at Austral. The 2015 MacroPlan Dimasi Economic Impact Analysis was criticised for using a main trade area that was too broad. For this study, the focus has been on actual operating centres that compete with the proposed Middleton Grange Town Centre, rather than relying on a false precision. At the moment, as far as we are aware, there is no proponent for the town centre at Austral; as such it is unknown what the Austral Town Centre will contain and how large it really will be. The decision has therefore been taken to assess the impact on operating centres. In addition, the size of the main trade area has been chosen to ensure that the population, and its spending, is not over-estimated and therefore does not under-estimate the impacts of the Middleton Grange Town Centre on centres such as The Valley Plaza and Carnes Hill Marketplace."
Issue Non-retail commercial land use impacts not considered transparently	**Example** • Planning proposal does not address supply and demand of commercial floorspace • 2015 EIA provides an analysis of the supply and demand of the (limited) non-retail commercial floor space in the main trade area • 2019 ERR states that the proposed development would accommodate approximately 2 per cent future Western Sydney Airport commercial floorspace demand, but does not otherwise assess supply or demand for commercial floorspace.	**Comment** • Unable to assess site or strategic merit of FSR sought by planning proposal without clear justification for commercial floorspace components • Broad policy objectives and commentary do not provide sufficient evidence for significant commercial uses on this site.	A transparent supply and demand assessment of the commercial (non-retail) components are contained in Chapter 4 of the Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis report.

	• 2020 EIA does not address commercial supply or demand gaps and restates broad concept that the future airport would increase demand.		

If you have any questions in relation to this matter, please do not hesitate to contact me on 0437 521 110.

Yours sincerely

James Mathews
Planning Director
Pacific Planning

Attachment 1 – Economic Impact Analysis – Middleton Grange Town Centre
Attachment 2 – Economic Impact Analysis of the retail component – Middleton Grange Town Centre
Attachment 3 – Traffic Response to Council communication dated 28 September 2020

PPM CONSULTING

Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis

FINAL – Prepared for Pacific Planning by PPM Consulting

Date: 8 October 2020

COMMERCIAL – IN – CONFIDENCE

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Executive Summary

Background

- The purpose of this report is to provide an economic impact assessment of the proposed Town Centre at Middleton Grange in the Liverpool Local Government Area (LGA) in New South Wales. The focus is on:
  - the employment impacts of the construction of the residential and commercial components
  - the supply of and demand for office space in the Liverpool LGA and for Middleton Grange specifically
  - the ongoing employment impact of the commercial office space, including the proposed medical centre. A further report, *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* (PPM Consulting October 2020) assesses the economic impacts of the retail component, including the employment impact, and should be read with this report.
  - the economic benefit of the proposed park.
- The proposal will facilitate the creation of a new town centre compromising a mix of uses in buildings ranging from 2 storeys to 8 storeys. The new Town Centre will comprise the following approximate uses:
  - approximately 671 new dwellings;
  - shops and office space;
  - a medical and health centre;
  - new roads and infrastructure;
  - over 7,500m^2 of open space and publicly accessible areas;
  - a new community facility;
  - child play areas.
- The suburb of Middleton Grange was created in 2005 when the land was rezoned. This included the land at the Middleton Grange town centre, which incorporated land zoned B2 Local Centre, R1 General Residential, RE1 Public Recreation and SP2 Infrastructure (Drainage). The site has therefore always been identified for the purposes, capable of supporting between 580 and 630 dwellings and approximately 12,000m^2 of commercial and retail floor space.

Demand For Office Space

- The proposed Middleton Grange Town Centre is approximately 350m north of Fifteenth Avenue. From this point, the new Badgerys Creek Airport (Western Sydney Aerotropolis) is approximately 7.5km to the west, making it an ideal location for companies that require airport access, but are unable to pay the price for on-site airport office space.
- Studies have found that airports around the world need office space within 10 to 20km from them, including Copenhagen where the Orestaden business park is 6km from Copenhagen International Aiport and Sophia-Antipolis, which is around 20km from Nice Airportis.
- The Middleton Grange Town Centre is proposed to feature approximately 7,000m^2 of office space and 1,200m^2 of "SOHO" space. This is shown in Table 1. This does not include the proposed medical centres, community centre, child care centre or gym.
- With around 8,000m^2 of office space, Middleton Grange could cater to businesses who:

  - cannot afford to set up at the airport (Middleton Grange rents are likely to be lower than at the airport)
  - want a presence near the airport before it opens in 2026
  - do not want to be affected by the highest levels of noise at the airport
  - are looking for adaptable office spaces
  - are start-ups who are looking for lower rents than are available at the airport.
- Prior to the COVID-19 pandemic, BIS Shrapnel noted that Liverpool is expected to capture a large share of airport-related stand-alone office workforce employment once Badgerys Creek airport is operational from the mid-2020s due to its close proximity. Furthermore, Knight Frank have forecast that, "with the limited available stock in Parramatta we anticipate to see an increase in tenant activity in the South West; more specifically Bankstown and Liverpool as they also offer tenants more affordable office space."
- It should also be noted that these forecasts are pre-COVID. It is highly contentious as to whether workplaces will return to business as usual following the COVID-19 pandemic. Those who have experienced not having to commute to the CBD, and who are aware that the technology exists so that they are able to work from home, may be less inclined to go back to working full time in the city. The commute by train from Liverpool to the Sydney CBD ranges from around 1 hour to 1 hour and 10 minutes. This is likely to increase the demand for business hubs and office space in suburban areas – not contemplated even 6 months ago.
- It may be that workplaces do not return to business as usual following the COVID-19 pandemic.
- At the time of the 2016 Census, 65 per cent of all Liverpool residents left the LGA for work, with 9.9 per cent going to the CBD. Meanwhile, 68 per cent of Fairfield residents leave that LGA, with 9.3 per cent going to the CBD; 66 per cent leave Canterbury Bankstown (18.6 per cent go to the CBD); 62 per cent leave Campbelltown, with 10.9 per cent going to the CBD.
- A significant portion of southern and south-western Sydney residents travel, or did travel, to the Sydney CBD every day for work. It is possible that many of these people will never work full-time in the CBD again. While many are likely to work from home, it is also possible that a new model of working will arise in the suburbs of Sydney, with the need for much more commercial office space for meetings, etc. Commercial office space may be in the form of shared offices, satellite corporate offices or business centres that serve multiple companies.
- It may be possible to attract these workers and companies to new, affordable office space outside of the CBD. Attracting these workers to new office spaces is likely to be a major focus for local government in the next five years. Those councils that facilitate growth in their office floorspace are likely to be able to capture more of these workers and companies.
- There were 8,293 Liverpool residents who worked in the CBD in 2016. If only 5 per cent switch as a result of COVID-19 to living and working in the Liverpool CBD, space for an additional 415 workers would be required in the Liverpool LGA. This is more than can be accommodated by the proposed office space at Middleton Grange Town Centre. If 5 per cent of the 20,972 Liverpool residents who work in neighbouring LGAs are able to live and work in Liverpool, space for a further 1,049 workers would be required in the Liverpool LGA – more than double the accommodation proposed for Middleton Grange

Town Centre. Attracting former CBD workers from neighbouring LGAs would require even more office space in the Liverpool LGA.

- It is clear that if Liverpool can set itself up as the working from home and south-west non-CBD business hub for former CBD workers, it will capture a larger amount of economic activity, but also require much more office space than even recent forecasts are suggesting.

Employment Impact of Construction

- The construction phase of the project will support temporary construction related employment, and additional temporary jobs through the broader economic supply chain (i.e. multiplier impacts).
- The capital investment value of the proposed Town Centre development (including all residential, commercial, parks and community infrastructure) has been estimated to be at least $300 million.
- As a result, 4,650 full-time equivalent jobs would be expected to be created directly and indirectly during the construction phase of the proposed development in New South Wales as a whole, comprising 2,550 direct jobs in the construction industry and 2,100 indirect jobs.

Ongoing Employment Impact

- It is estimated that the Middleton Grange Town Centre will facilitate around 250 retail jobs.
- It is also estimated that there will be 411 office jobs.
- Along with the retail and office jobs, the other commercial uses are estimated to generate around 760 jobs.
- In total, it is estimated that the Middleton Grange Town Centre could facilitate 1,420 direct ongoing jobs.

Economic Impact of the Dedication of Public Parks

- The proponent intends on dedicating a substantial proportion of the site as new public park areas. The proposal is for 7,632m^2 of the site to be dedicated as public open space (either dedicated to the Council or not).
- While it should be acknowledged that Liverpool City Council owns 757m2 of land that would be used in lower density scenarios as parkland, a park this size is considered too small to play any meaningful role in creating community benefit.
- With creation and maintenance the responsibility of the proponent, it is estimated that the total community economic benefit of the parks would be $59 million over 50 years.

Conclusion

- Liverpool is undergoing significant growth. The Middleton Grange Town Centre is expected to be a highly integrated town centre with a high level of amenity. These sorts of amenities will be demanded by residents.
- There are currently no shops in the Middleton Grange area. All residents are required to travel at least 2.8km to get their daily needs. They also need to travel to work and for recreation. The Middleton Grange Town Centre has the potential to ease the burden of travel on residents (current and new) by allowing them to work, play, eat and shop within walking distance.
- The potential benefits of the proposed Middleton Grange Town Centre are many, with few potential downsides.

1. Introduction

The purpose of this report is to provide an economic impact assessment of the proposed Town Centre at Middleton Grange in the Liverpool Local Government Area (LGA) in New South Wales.

Currently there is no Town Centre in Middleton Grange. The current residents of the suburb need to travel at least two kilometres to their nearest supermarket in order to fulfil their daily needs.

The proposal will facilitate the creation of a new town centre compromising a mix of uses in buildings ranging from 2 storeys to 8 storeys. The new Town Centre will comprise the following approximate uses:

- Approximately 671 new dwellings;
- Shops and office space;
- A medical and health centre;
- New roads and infrastructure;
- Over 7,500m^2 of open space and publicly accessible areas;
- A new community facility;
- Child play areas.

The suburb of Middleton Grange was created in 2005 when the land was rezoned. This included the land at the Middleton Grange town centre, which incorporated land zoned B2 Local Centre, R1 General Residential, RE1 Public Recreation and SP2 Infrastructure (Drainage). The site has therefore always been identified for the purposes, capable of supporting between 580 and 630 dwellings and approximately 12,000m^2 of commercial and retail floor space.

The site has not redeveloped since this time under the current controls and zone layout. The Planning Proposal amends the zone boundary layout, to facilitate a more logical town centre layout and road and pedestrian network and support the redevelopment of the Middleton Grange town centre.

Consultation with the community has assisted understand the needs, requirements and concerns of the community. This has directly informed the amended planning proposal.

This report has been prepared under instruction from Pacific Planning.

This report, which should be read along with *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* (PPM Consulting October 2020), is presented as follows:

- Chapter 2 provides an overview of the proposal, including the local and regional context of the subject site.
- Chapter 3 a brief review of the planning context, including the recently adopted Local Strategic Planning Statement and the draft Centres and Corridors Strategy. This Chapter also reviews the surrounding centres hierarchy and the competitive environment within which the Town Centre will operate, taking into account both existing and proposed developments in the immediate region.

- Chapter 4 assesses demand for office space in Middleton Grange, including assessment of evidence of the demand for office space at similar distances from airports overseas.
- Chapter 5 assesses the employment and other impacts of the construction of the development.
- Chapter 6 looks at the ongoing employment and social impact of the Town Centre
- Chapter 7 assesses the economic impact of the proposed parks in the Town Centre.
- Chapter 8 discusses the benefits of walkable neighbourhoods.
- Chapter 9 makes a response to objectors to the proposed Town Centre.
- Chapter 10 makes some concluding remarks about the proposal and its impact on the Middleton Grange and Liverpool economies.

2. The Proposed Development

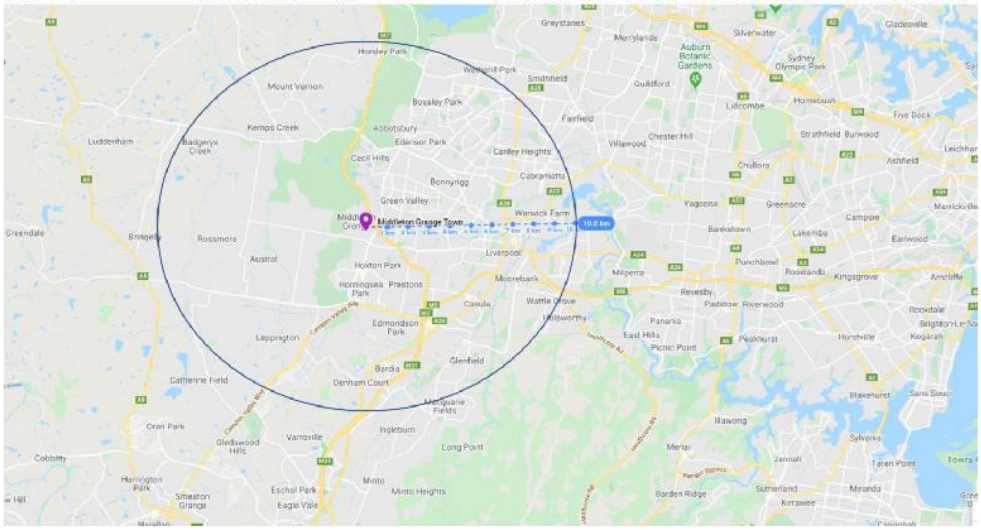
2.1 Regional and Local Context

The proposed Town Centre is a new development. Currently the closest shopping centre to Middleton Grange is Carnes Hill Marketplace, 2.8 kilometres from the proposed Town Centre and up to 4 kilometres from some current and future residents of the suburb.

The Middleton Grange Town Centre is located approximately 40km west of the Sydney Central Business District (CBD) and 7km west of the Liverpool CBD. The Middleton Grange precinct is bounded by Cowpasture Road, Fifteenth Avenue, Hoxton Park Road and the M7 Motorway. Accessibility to and for the suburb are excellent.

Figure 1 shows the location of the Middleton Grange Town Centre within the Greater Sydney area.

Figure 1: Middleton Grange Within Greater Sydney



Source: Google My Maps, PPM Consulting

Middleton Grange is a proposed masterplanned community that could accommodate in excess of 1,000 persons once built out. The Middleton Grange Town Centre will be the epicentre of the community and is proposed to accommodate around 670 dwellings within the Town Centre itself.

The Middleton Grange Town Centre itself is bounded by Southern Cross Avenue to the north, Middleton Grange Public School to the east, Flynn Avenue to the south and Hall Circuit to the west. Figure 2 shows the location of Middleton Grange in its local area.

Figure 2: Location of Middleton Grange Town Centre



Source: Google My Maps

2.2 The Proposed Development

The Middleton Grange Town Centre subject site under consideration in this report incorporates a total area of 58 hectares, around 3.7 hectares is currently zoned B2 – Local Centre in the Liverpool Local Environmental Plan 2008.

Figures 3 and 4 show the proposed floor layout for the Town Centre. As can be seen, it is proposed to turn the greenfields site into a mixed use Town Centre providing residential, retail and commercial uses. It is proposed to build a major supermarket, specialty retail, food premises and office space.

Figure 3: Northern Section Site Plan



Source: Revised Planning Proposal, October 2019, Pacific Planning – the layout is subject to change as part of detailed design

Figure 4: Southern Section Site Plan



Source: Revised Planning Proposal, October 2019, Pacific Planning – the layout is subject to change as part of detailed design

The site area is around 58,000m^2. The proposed gross floor area for the Town Centre (residential and non-residential uses) is around 113,000m^2, which gives a floor space ratio of 1.98:1. This is shown in Table 1.

Table 1: Non-Residential Site Area and Floor Areas – Gross Floor Area (m^2)

	Totals (m^2)
Supermarket/Retail Shops	9,622
Cafes and restaurants	6,447
Commercial Entertainment	2,862
Offices/SOHO	8,223
Neighbourhood Shops	4,060
Medical/other	12,529
Gym	3,500
Childcare	505
Community Centre	500
Total Non-Residential Uses	48,248
Total Site area	57,255

Source: Pacific Planning, Planning Proposal October 2019 – Note specific areas may change during detailed design

We understand that under current planning regulations, the proponent could build a Town Centre with a GLA of 11,729m^2. This analysis will look at both the absolute impact that the new Town Centre could be expected to have on the surrounding retail hierarchy.

2.3 A Note On Floorspace Definitions Used In This Report and Others

It should be noted that different definitions of "retail" floorspace are used in different reports, as each analyses retail floorspace for different purposes.

The following is the definition of ***retail premises*** in the Standard Instrument:

retail premises means a building or place used for the purpose of selling items by retail, or hiring or displaying items for the purpose of selling them or hiring them out, whether the items are goods or materials (or whether also sold by wholesale), and includes any of the following;

(a) (Repealed)
(b) cellar door premises,
(c) food and drink premises,
(d) garden centres,
(e) hardware and building supplies,
(f) kiosks,
(g) landscaping material supplies,
(h) markets,
(i) plant nurseries,
(j) roadside stalls,
(k) rural supplies,
(l) shops,
(la) specialised retail premises,
(m) timber yards,
(n) vehicle sales or hire premises,

but does not include highway service centres, service stations, industrial retail outlets or restricted premises.

However, while the Standard Instrument definition covers over 20,000m^2 of the space listed in Table 1, the report *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* (PPM Consulting October 2020) analyses goods retail only (supermarket, mini majors and specialty stores that directly compete with other centres). The retail impact analysis compares the shops where people buy things at Carnes Hill to what they will be able to buy in shops in Middleton range. This does not include food halls, cafes, restaurants, offices, gyms, child care centres, neighbourhood shops, professional suites like doctors, accountants and solicitors, etc. For this reason, 10,000m^2 of retail is used in the retail impact report, but a sensitivity analysis has been undertaken at 15,000m^2 and 20,000m^2 so that the impact of a larger retail footprint can also be assessed.

While Table 1 notes that 8,223m^2 is proposed for Offices/SOHO (the office component referred to in Chapter 4), there is a further 11,427m^2 in total proposed as "commercial/mixed use". The office space refers only to the supply and demand of *office space* and similar uses, and does not include floorspace for the proposed gym, childcare centre, neighbourhood shops or community centre.

It should also be noted that in relation to the traffic impacts report, Transport for NSW advised the traffic engineers to treat all non-residential floorspace as "retail" floorspace. This has been done for engineering purposes, and therefore the floorspace referred to as "retail" in the engineering report appears as different to the floorspace referred to as "retail" in this report and the planning proposal.

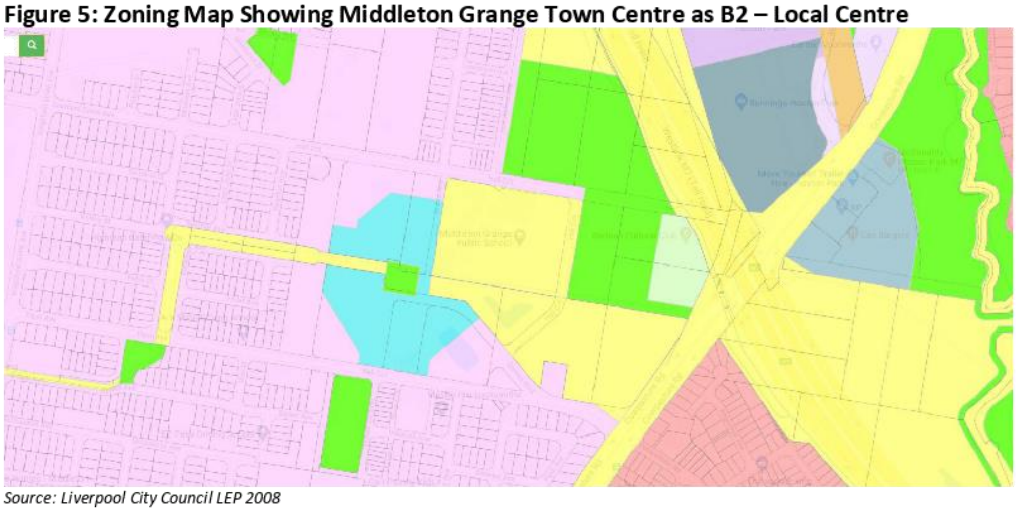
3. Strategic Context

3.1 Strategic Planning Overview

The key controls for the Middleton Grange Town Centre are contained in the Liverpool LEP 2008 and the Middleton Grange Development Control Plan (DCP).

The Middleton Grange Town Centre is zoned B2 – Local Centre in the LLEP 2008, as shown in Figure 5.

Figure 5: Zoning Map Showing Middleton Grange Town Centre as B2 – Local Centre



Source: Liverpool City Council LEP 2008

The Middleton Grange DCP 2015 contains the following planning principles:

1. encourage community and stakeholder collaboration in development decisions
2. take advantage of compact building design that is also sensitive to the environment
3. ensure that land use is appropriate and that any development uses the development site to its best advantage
4. relate the density of development to access to transport and services
5. create a range of housing opportunities and choices
6. create workable neighbourhoods –ensure a civic focus
7. foster distinctive, vibrant communities with a strong sense of place
8. preserve and enhance open space, natural features and critical environmental areas
9. strengthen existing communities –consider employment options and issues such as safety and recreational facilities for the wider community
10. provide a variety of transportation choices –accessibility is the key
11. make development decisions predictable, fair and cost-effective.

3.2 Local Strategic Planning Statement

The Local Strategic Planning Statement (LSPS) for Liverpool (published in March 2020) projects that employment will increase in Middleton Grange by 500-1,000 jobs to 2036. In order to achieve this jobs growth, Middleton Grange will need to be a centre larger than that of a Village Centre.

Page 55 of the LSPS says:

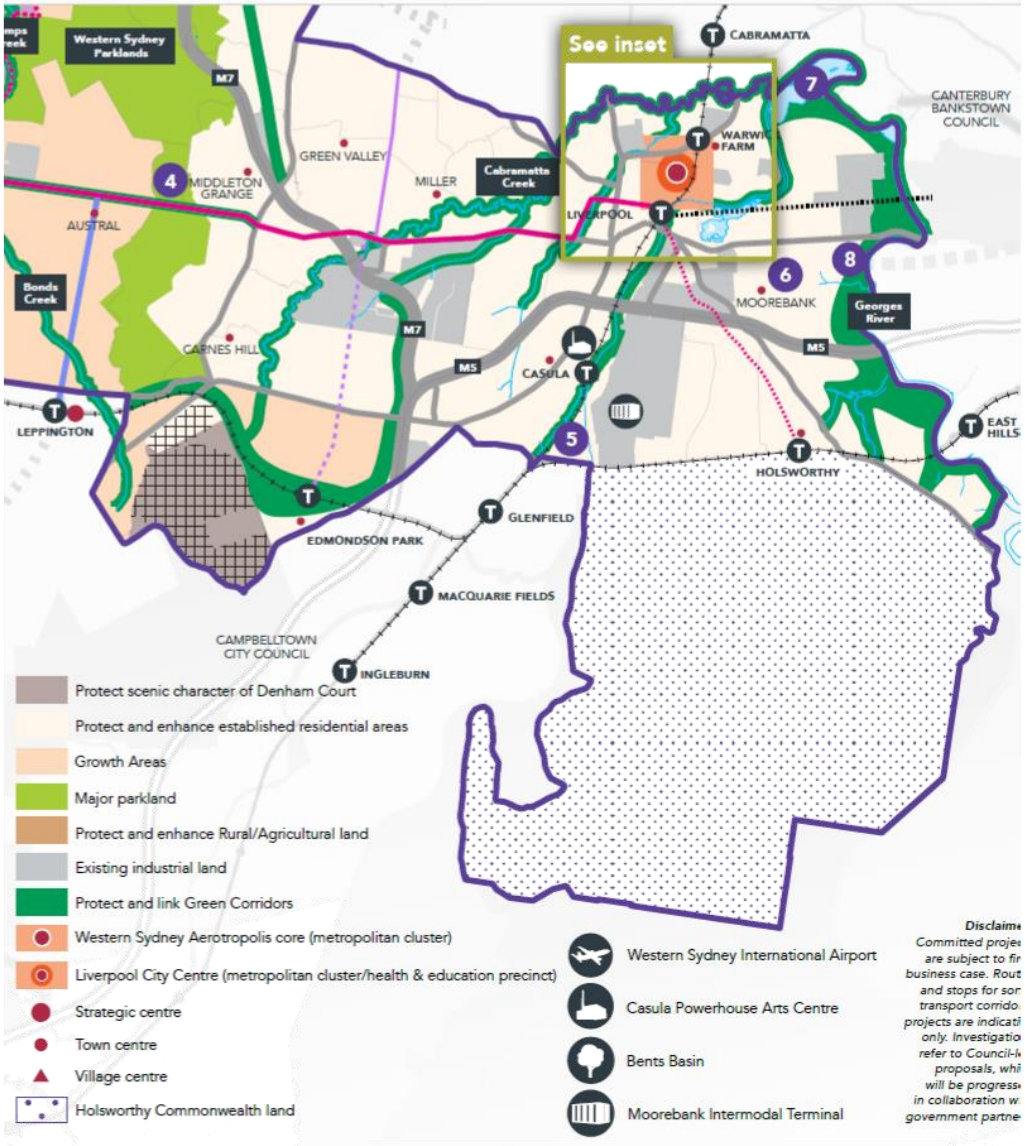
> The LGA has a number of centres differing in size and function. The concentration of retail within centres plays an important role, yet the function of centres extends beyond providing for the day-to-day and specialised retail needs. Centres act as important focal points for the local community, especially when co-located and well integrated with gathering places such as cafes, restaurants and social infrastructure. In turn, the increase in foot traffic from these other uses contributes to the vibrancy of the centre and supports retail uses. Centres also provide opportunities for local employment and are an important part of establishing the 30-minute city when co-located with high quality public transport.
>
> The Liverpool LGA also has 'stand-alone centres' that contain either a supermarket or another large retail role, such as bulky goods retailing. Whilst these stand-alone centres meet the retail needs of the community, they do not provide multi-function community gathering places. As there is limited demand for new centres within the LGA, Council will prioritise the future expansion of retail within local or Town Centres rather than stand-alone centres.

Page 15 of the LSPS says:

> Council's flagship project – the Fifteenth Avenue Smart Transit Corridor – will provide our residents with a rapid public transit connection from Liverpool city centre to the many opportunities provided by Western Sydney Airport, including new high-value jobs. It will also link existing suburbs such as Miller and Middleton Grange, redressing past public transport disadvantage.

The map on Page 21 (Figure 5) shows Middleton Grange as a Town Centre. Figure 6 shows an extract from this map, clearly showing that Middleton Grange is designated as a Town Centre and not a Village Centre.

Figure 6:Liverpool LSPS Showing Middleton Grange as a Town Centre



Source: Connected Liverpool, *Liverpool City Council LSPS, March 2020*

3.3 Liverpool Retail Centres Hierarchy Review 2012 (HillPDA)

In 2012, Liverpool City Council commissioned a review of the retail centres hierarchy in the LGA, based largely on existing and imminent centres. It included potential centres in the South West Growth Centre (SWGC) given that, at the time of the review, and use configuration within the SWGC was unclear. The review is particularly out of date now, as it did not contemplate the Western Sydney Aerotropolis.

The subject Middleton Grange Town Centre was acknowledged as an imminent centre (despite the study being completed in 2012).

At the time of the review, HillPDA estimated a catchment area for retail centres within the Liverpool LGA to contain around 398,000 residents, increasing to around 526,000 in 2031.

The review determined existing demand for retail floorspace across Liverpool LGA of approximately 397,000m^2 in 2012, increasing to 511,000m^2 by 2031, which is equivalent to an increase of around 6,000m^2 per year to 2031. This does not include the demand for retail floorspace in the SWGC. In this context, the proposed Middleton Grange Town Centre would only account for around two years of required retail demand across the Liverpool LGA.

3.4 Draft Centres and Corridors Strategy

Liverpool City Council commissioned a Centres and Corridors study to determine the retail hierarchy of the city into the future. The first draft presented to Council was rejected in April 2020 as it named Middleton Grange as a "Village Centre", despite the LSPS clearly denoting it as a Town Centre.

Strategic planning documents and retail planning guidelines produced by the Department of Planning, Industry and Environment ("the Department") provide the following directions for the planning of retail facilities and local centres:

- local centres should be viewed as high-quality places and as important social connectors at the heart of the local community. They should contain a variety of uses to support this role, similar to those in traditional Town Centres
- concentration of retail provision in centres is necessary to bolster their local roles and to permit multipurpose shopping. Significant out-of-centre development risks limiting the retail spending and vibrancy in local centres
- where possible, higher-density residential development, community facilities, social infrastructure and open space should be co-located with local centres which have good public transport accessibility and other attributes required to support higher density development
- new centres may be needed in the future to increase retail provision to the growing population in both greenfield and established areas, but the potential impacts of these developments on the economic viability of existing centres should *be considered* (our emphasis).
- there are limited cases in which centres may expand into industrial areas, but this should not compromise the function of those industrial areas
- bulky goods clusters should be regarded as part of the centres framework, and planning for new clusters should be conducted in the same was as planning for other new centres

- flexible zoning provisions are required to allow transitions in retail functions.

The draft study found that most residents of the LGA have access by road to a supermarket within 2km of their home. However, Middleton Grange was a suburb that was noted as an exception to this accessibility standard. The study goes on to say that "The creation of planned centres in Middleton Grange… address this problem," and that "It is also important for the timely development of new centres to occur in greenfield areas to provide access to retail facilities for newly developed suburbs."

The draft study is internally inconsistent. At Page ix, the report says that "The New Release District could accommodate an additional supermarket at Carnes Hill or larger than expected supermarkets in greenfield centres in Austral or Middleton Grange," but goes on to name Middleton Grange as a "village centre". There is no concept of "village centre" in the 2008 LEP. Middleton Grange is zoned B2 – Local Centre, a zoning that has the following objectives:

- To provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work in and visit the local area.
- To encourage employment opportunities in accessible locations.
- To maximise public transport patronage and encourage walking and cycling.
- To allow for residential and other accommodation while maintaining active retail, business or other non-residential uses at street level.
- To facilitate a high standard of urban design and a unique character that contributes to achieving a sense of place for the local community.

If a "village centre" is synonymous with a B1 – Neighbourhood Centre, then this would effectively mean that the draft Centres and Corridors Study is calling for Middleton Grange Town Centre to be down-zoned, without compensation.

The draft study identifies 7,000m^2 of retail floorspace for the proposed Middleton Grange Town Centre, which differs from the 5,500m^2 identified in the Liverpool Retail Centres Hierarchy, although is less than could be built under the LEP, which is in excess of 11,000m^2.

It should be noted that Table 13, despite listing Middleton Grange as a "Village Centre", suggests that retail floorspace demand would be 11,068m^2 in 2026 and 11,306m^2 in 2036.

As is noted, "Centres are proposed and zoned for development in Middleton Grange, Holsworthy and Edmonson Park. Each of these would be expected to contain at least one major supermarket. If these were to be developed, access to major supermarkets would be improved for Middleton Grange…"

Table 6 of the draft study shows the proposed centre developments for the LGA. Table 2 provides an extract of this section relevant to the Middleton Grange Town Centre.

Table 2: Proposed Centre Developments in Liverpool LGA

Development	Completion Year	Supermarket	Other Food	Clothing	Hospitality	Household Goods	Other Retail	Department Store	Total
Fashion Spree Expansion	2016-21	0	3	301	1,497	1,499	1,483	7	4,790
Edmonson Park Town Centre Stage 1	2016-21	8,000	1,801	2,251	3,154	0	1,801	7,005	24,012
Liverpool CBD Mixed Use Developments	2021-26	0	1,741	2,175	3,050	0	1,741	1	8,707
Edmonson Park Neighbourhood Centres	2021-26	800	0	800	0	0	400	0	2,000
Middleton Grange Town Centre	2021-26	2,000	506	506	506	506	506	2,470	7,000
Austral Major Centre	2026-31	5,000	2,001	3,001	3,004	5,004	100	6,005	25,015
Austral (2 neighbourhood centres)	2026-31	7,000	1,801	2,250	3,154	0	1,801	0	16,006
Austral (neighbourhood centre)	2026-31	3,500	901	1,125	1,577	0	900	0	8,003
Austral Bulky Goods	2026-31	0	0	0	0	45,756	0	0	45,756
Austral Bulky Goods	2031-36	0	0	0	0	58,824	0	0	58,824

Source: Centres and Corridors Study, SGS Economic and Planning

The draft study (Table 13 of the draft study) goes on to find that the retail floorspace demand for Middleton Grange Town Centre will be 11,306 m^2 by 2036, over 4,000m^2 more than the study says the Town Centre should have.

Page 76 of the draft study says:

> Middleton Grange was previously classified as a Village Centre and has not yet been built. The floorspace of the Middleton Grange centre anticipated in current planning controls is consistent with a local centre role. There is not a large enough retail floorspace gap in the New Release District or a large enough catchment around the Middleton Grange Centre to reclassify it as a Town Centre. In addition, road access to the Middleton Grange Centre is more constrained that road access to most Town Centres.
>
> The centre site is co-located with proposed parkland and with the local school. Planning controls intend to facilitate a mixed-use Town Centre. These attributes make Middleton Grange suitable to be developed as a local centre with strong design integration with the surrounding area.

However, if the road network is poor to access Middleton Grange, then it must also hold that the road access for residents of Middleton Grange is difficult for them to access other centres outside of the suburb.

4. Demand for Office Space

The proposed Middleton Grange Town Centre is approximately 350m north of Fifteenth Avenue. From this point, the new Badgerys Creek Airport (Western Sydney Aerotropolis) is approximately 7.5km to the west.

4.1 Fifteenth Avenue

The 2018 Department of Planning and Environment report *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts* heavily featured Fifteenth Avenue as a major link between the Liverpool CBD and the new airport. This report noted that:

> Fifteenth Avenue has the potential to increase access into the area through dedicated public transport links to enable efficient and reliable services. It is included in the Future Transport Strategy 2056 as a route for city shaping services for investigation in the first 10 years. The link connecting the Airport, Aerotropolis Core and Liverpool could potentially include an extension of the Liverpool–Parramatta T-way, and upgrades along Fifteenth Avenue. Development along this corridor will be designed to integrate transport and land use outcomes.[1]

Furthermore, the plan envisages the precinct along Fifteenth Avenue to grow into a large mixed use development:

> According to the Key features Situated on the eastern side of South Creek in the south of the Aerotropolis, Rossmore Precinct will be the largest concentration of mixed living communities. Development on Fifteenth Avenue will typically be up to six storeys along the corridor, stepping up to a maximum of eight storeys, achieving densities of 65 to 80 dwellings per hectare, recognising a centre serving transport network. A variety of local centres along the route will provide small supermarkets, essential retail and community services. Further investigation is to be undertaken regarding the role of Fifteenth Ave as a transit corridor which may led to further opportunities for higher density centres. To capitalise on the amenity of the waterways, residential development of 45 to 65 dwellings per hectare, in two to four-storey articulated buildings will fringe the creeks, along with other community uses such as schools and community facilities. Local centres will be positioned to maximise the riparian lands, encouraging activity and providing surveillance and public safety.[2]

It is clear that Fifteenth Avenue will be a major connector between the Liverpool CBD and the Western Sydney Aerotropolis.

[1] *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts*, p22
[2] *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts*, p61

4.2 Demand for Overflow Office Space Near Airports – International Experience

A report released by the Airports Council International[3] found that demand for office space near airports in Europe is very high. The report found that:

> Airports can also facilitate the development of 'high tech' clusters. New industries specialising in technology, biochemistry and communications are high users of air transport. Airports can particularly act as attractors to global industries with high levels of research and development. Copenhagen has created the 'Orestaden' zone designed to capitalise on the connectivity offered by the new Oresund bridge to Sweden and the proximity of Copenhagen Airport. Companies are being attracted to this area because of global accessibility and because of proximity to the University of Copenhagen.

Orestaden is up to 6km from Copenhagen International Airport (CPH).

The development at Sophia-Antipolis, around 20km from Nice Airportis, another example of the attraction of high tech industries. The following statements from companies located at Sophia-Antipolis show how important location close to the airport has been for their business, despite it not being immediately adjacent to the airport. The Sophia-Antipolis Science Park was established in the 1960s as a centre for research and service industries. Since that time, 1,227 companies have been attracted to the site, employing 24,550 people. The Science Park is 20 minutes drive time from Nice Airport, which is a primary factor in the Park's success in attracting high tech companies with a need for global connections.

> Valentin Gittom, Business Development Director - LPG Systems:
> "We located several of our corporate activities in Sophia Antipolis because we wanted to be associated with an environment which complements our high-tech image and products…… The international airport in Nice is also absolutely essential for us because we travel constantly and have frequent customers come visit us here."
>
> Andreas Malzach, Managing Director – WIDCOMM
> "I had been working in Sophia Antipolis with two multinational semiconductor companies when I suggested to WIDCOMM that they locate their European headquarters here…… The Côte d'Azur made sense because of the large number of semiconductor companies with a presence in Southern France and Northern Italy…….. In addition, the area features a skilled base of prospective employees, a great airport, international schools and an attractive quality of life."

As the report concludes:

> There is strong anecdotal evidence to illustrate the importance of airports on economic development in their vicinity and on inward investment specifically, although it is difficult to quantify this impact. Surveys have shown that international accessibility is one of the top three factors in company location decisions. There are clear examples of airports developing as growth poles at a national and regional level and acting as attractors of global companies. The effects are equally

[3] *The social and economic impact of airports in Europe*, Airports Council International (ACI), January 2004

> significant at a regional level. Increasingly airports themselves are seeking to exploit the opportunities through the development of business parks on or adjacent to the airport site. Air freight is increasingly important for global trade, carrying as much as a third by value of global merchandise.

It is therefore clear that it is very likely that there will be high demand for quality office space within 10-20km of the airport. The Middleton Grange Town Centre is well-placed to absorb some of this demand.

4.3 Proposed Commercial Space at Middleton Grange

As noted in the previous section, it is likely that there will be a high demand for office space within 10-20km of the new airport at Badgerys Creek. With the airport only 7.5km to the west, the commercial space at Middleton Grange will likely attract demand from airport-related businesses looking for commercial and office space within proximity to the airport. Airport-related businesses would be able to have their offices off-site but use the proposed Fifteenth Avenue Rapid Transit, which would likely be available by the time the Middleton Grange development is built.

The Middleton Grange Town Centre is proposed to feature approximately 7,000m^2 of office space and 1,200m^2 of "SOHO" space. This is shown in Table 3. This does not include the proposed medical centres, community centre, child care centre or gym.

Table 3: Proposed Commercial Gross Floor Area, Middleton Grange

	m^2	% Total Commercial Gross Floor Area
Offices (m^2)	7,023	14.6
SOHO	1,200	2.5
Total	8,223	17.0

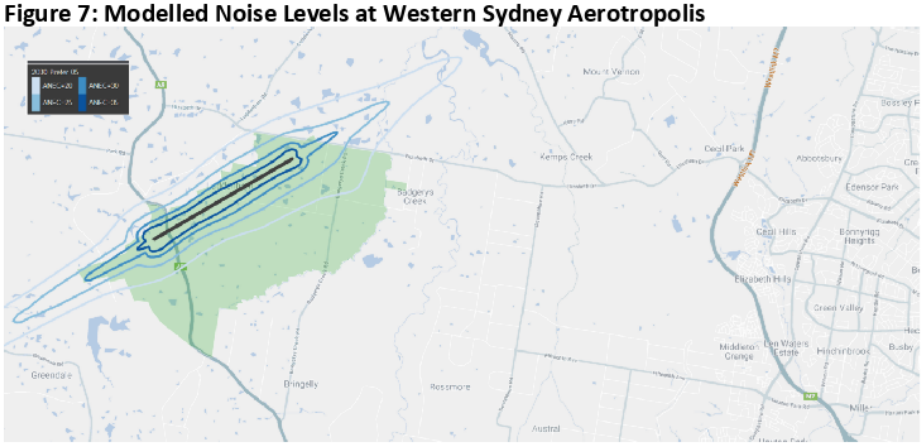
Source: Pacific Planning, PPM Consulting
These specific areas may adjust slightly during detailed design

It should also be noted that Middleton Grange will not be under the flight path. However, the Western Sydney Employment lands will be to the north and the south of the runway, making them potentially susceptible to aircraft noise. Figure 7[4] shows the noise levels likely to be associated with the operation of the airport. While airport-related businesses might want to be close to the airport, or even based at the airport, the need to ensure occupational health and safety with regards to noise exposure may be a consideration. With around 8,000m^2 of office space, Middleton Grange could cater to businesses who:

- cannot afford to set up at the airport (Middleton Grange rents are likely to be lower than at the airport)
- want a presence near the airport before it opens in 2026
- do not want to be affected by the highest levels of noise at the airport
- are looking for adaptable office spaces
- are start-ups who are looking for lower rents than are available at the airport.

[4] https://www.westernsydneyairport.gov.au/about/flight-paths/noise-tool/index.aspx

Figure 7: Modelled Noise Levels at Western Sydney Aerotropolis



Source: https://www.westernsydneyairport.gov.au/about/flight-paths/noise-tool/index.aspx

The proximity to the airport, and its position between the airport and Liverpool CBD, and its proximity to the proposed Fifteenth Avenue Rapid Transit means that the commercial space at Middleton Grange is not only very well located but also very attractive for potential tenants.

As stated by BIS Shrapnel[5], Liverpool is expected to capture a large share of airport-related stand-alone office workforce (SAOWF) employment once Badgerys Creek airport is operational from the mid-2020s due to its close proximity. Furthermore, Knight Frank[6] have forecast that, "with the limited available stock in Parramatta we anticipate to see an increase in tenant activity in the South West; more specifically Bankstown and Liverpool as they also offer tenants more affordable office space." It should also be noted that these forecasts are pre-COVID. It is highly contentious as to whether workplaces will return to business as usual following the COVID-19 pandemic. Those who have experienced not having to commute to the CBD, and who are aware that the technology exists so that they are able to work from home, may be less inclined to go back to working full time in the city. The commute by train from Liverpool to the Sydney CBD ranges from around 1 hour to 1 hour and 10 minutes. This is likely to increase the demand for business hubs and office space in suburban areas – not contemplated even 6 months ago.[7]

4.4 Journey to Work

As noted above, it may be that workplaces do not return to business as usual following the COVID-19 pandemic. Table 4 shows Liverpool and its neighbouring LGAs' journey to work data. At the time of the 2016 Census, 65 per cent of all Liverpool residents left the LGA for work, with 9.9 per cent going to the CBD. Meanwhile, 68 per cent of Fairfield residents leave that LGA, with 9.3 per cent going to the CBD; 66 per cent leave Canterbury Bankstown (18.6 per cent go to the CBD); 62 per cent leave Campbelltown, with 10.9 per cent going to the CBD.

[5] *Forecasting the Distribution of Stand-Alone Office Employment across Sydney to 2035*, BIS Shrapnel, August 2015
[6] *Sydney Suburban Office Market Brief*, Knight Frank, February 2019

[7] *The Future of Work part 1: Considerations for workspaces in new places*, Martin Musgrave, September 2020, https://astrolabegroup.com.au/category/featured/

Table 4: Residents Place of Work, Selected Neighbouring LGAs

Resident LGA	Usual Place Of Work Outside Home LGA (%)	Usual Place of Work in Sydney CBD (%)
Liverpool	65	9.9
Fairfield	68	9.3
Canterbury Bankstown	66	18.6
Campbelltown	62	10.9
Penrith	56	6.3
Sutherland	55	17.6
Camden	66	6.7

Source: 2016 Census, id Profile

This shows that a significant portion of southern and south-western Sydney residents travel, or did travel, to the Sydney CBD every day for work. It is possible that many of these people will never work full-time in the CBD again. While many are likely to work from home, it is also possible that a new model of working will arise in the suburbs of Sydney, with the need for much more commercial office space for meetings, etc. Commercial office space may be in the form of shared offices, satellite corporate offices or business centres that serve multiple companies. Anecdotally, many smaller businesses are leaving their $20,000 per year rented office space in the city and going to a virtual-only model – this is especially a trend among knowledge businesses such as consultants.

It may be possible to attract these workers and companies to new, affordable office space outside of the CBD. Attracting these workers to new office spaces is likely to be a major focus for local government in the next five years. Those councils that facilitate growth in their office floorspace are likely to be able to capture more of these workers and companies.

The opportunities may be even greater for Liverpool, as Liverpool is in a position to take advantage of the trend of leaving the CBD among neighbouring LGAs. Table 5 shows the journey to work data for Liverpool City residents. As can be seen, 30 per cent live and work in Liverpool, while 9.9 per cent work in the CBD, while another 25 per cent work in immediately adjacent LGAs.

Table 5: Employment Location of Liverpool Resident Workers by LGA

LGA	Number	%
Liverpool	25,598	30.5
Sydney	8,293	9.9
Fairfield	7,610	9.1
Canterbury-Bankstown	6,808	8.1
Parramatta	4,729	5.6
No Fixed Address	3,727	4.4
Cumberland	3,711	4.4
Campbelltown	3,644	4.3
Blacktown	3,275	3.9
Penrith	1,581	1.9
Botany Bay	1,382	1.6
Camden	1,329	1.6

Source: 2016 Census, id Profile

The Liverpool Centres and Corridors Strategy suggests that around 8,056m^2 of office floorspace will be required in the New Release District of Liverpool. However, this is based on business as usual, and a complete return of home-based workers to the CBD. As discussed above, this is a highly contentious and unresolved area of public policy – it is not known if, or even if it is desirable for, all CBD workers to return to the city. The LCCS does not make any adjustments to its forecasts for the possibility that there may be a shift from the CBD as a result of COVID-19.

There were 8,293 Liverpool residents who worked in the CBD in 2016. If only 5 per cent switch as a result of COVID-19 to living and working in the Liverpool CBD, space for an additional 415 workers would be required in the Liverpool LGA. This is more than can be accommodated by the proposed office space at Middleton Grange Town Centre. If 5 per cent of the 20,972 Liverpool residents who work in neighbouring LGAs are able to live and work in Liverpool, space for a further 1,049 workers would be required in the Liverpool LGA – more than double the accommodation proposed for Middleton Grange Town Centre. Attracting former CBD workers from neighbouring LGAs would require even more office space in the Liverpool LGA.

It is clear that if Liverpool can set itself up as the working from home and south-west non-CBD business hub for former CBD workers, it will capture a larger amount of economic activity, but also require much more office space than even recent forecasts are suggesting.

5. Employment Impact of Construction

5.1 Estimated Employment Impact of Construction

The construction phase of the project will support temporary construction related employment, and additional temporary jobs through the broader economic supply chain (i.e. multiplier impacts).

The UDIA estimates that the direct impact of $1 million invested in property development results in 8.5 full-time equivalent (FTE) jobs in the property development industry in NSW and 15.5 FTE jobs directly and indirectly in NSW. In addition, each $1 million increases wages and salaries in the NSW property development industry by $327,220 and by $748,806 directly and indirectly. Table 6 shows the potential impact for the proposed redevelopment.

Table 6: Potential Impact of Construction on NSW Employment, and Wages and Salaries

	Initial Investment ($m)	Direct Impact	Indirect Impact	Total Impact
Employment (no).	300	2,550	2,100	4,650
Wages and Salaries ($m)	300	98.2	126.4	224.6

Source: Urban Development Institute of Australia, PPM Consulting

As shown in Table 6, the development has the potential to create an estimated 4,650 jobs in the NSW economy (including 2,550 directly and 2,100 indirectly) as a result of construction. During construction, the proposed redevelopment would also create an estimated $224.6 million in wages and salaries in the NSW economy, with $98.2 million generated directly in the construction industry and $126.4 million created indirectly.

Note that the multiplier effects are for NSW as a whole, and may not necessarily translate to the Liverpool economy specifically. Care should be taken when interpreting multiplier effects, as they can overstate the output and employment impacts. However, the estimates show that construction activity has a high impact on the economy, and a project of this nature would very likely have a significant effect on the Liverpool economy.

6. Ongoing Employment and Social Impact

6.1 Estimated Ongoing Employment Impact of Retail

As noted in the *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* (PPM Consulting October 2020) the Middleton Grange Town Centre will facilitate ongoing jobs in the retail and commercial space.

In estimating the various employment benefits, various data sources have been relied upon, including information from supermarket operators, the ABS, state and local government agencies, as well as 20 years of experience in preparing assessments of this nature.

Table 7 shows the ongoing employment estimate from the retail component of the Town Centre. This is discussed in detail in *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* (PPM Consulting October 2020).

Table 7: Middleton Grange – Estimated Employment Levels

	Estimated employment per '000 m^2	GLA (m^2)	Employment (persons)
Supermarket	30	4,000	133
Mini-Major	40	3,224	81
Specialty Retailer	40	1,414	35
Total Development		8,638	249

Source: ABS Retail Sales, PPM Consulting

6.2 Estimated Ongoing Employment Impact of Office Space

As noted in Chapter 8, the office space will facilitate employment in the Middleton Grange Town Centre.

According to ABS Retail Trade figures, every square metre of commercial space is estimated to be able to sustain 411 commercial jobs. Table 8 shows the potential ongoing employment impact of the proposed commercial floorspace.

Table 8: Potential Ongoing Commercial Jobs, Middleton Grange

	Proposed Commercial GFA (m^2)	Commercial m^2 per job	Commercial Jobs/m^2	Commercial Jobs (no.)
Proposal	8,223	40	0.025	411

Source: ABS Retail Trade Cat. No. 8501.0, PPM Consulting

It is also likely that a number of jobs are created indirectly as a result of new employment in the area, although these have not been calculated here.

6.3 Estimated Ongoing Employment Impact of Commercial and Service Space

The other components of the commercial and service space will also facilitate new direct jobs in the Middleton Grange Town Centre.

The floorspace areas are shown in Table 9.

Table 9: Total Gross Floor Area for Other Commercial Uses (m^2)

Use	Gross Floor Area (m^2)
Health/Medical	12,529
Community Centre	500
Child Care	505
Gym	3,500
Neighbourhood Shops	4,060
Commercial Entertainment	2,862
Café/Restaurant	6,447
Total Other Commercial Uses	30,403

Source: Pacific Planning

It is assumed that these uses facilitate around half the jobs per square metre that purely commercial space would. Therefore, as shown in Table 10.

Table 10: Estimated Employment Impacts of Other Commercial Uses

	Proposed Other Commercial GFA (m^2)	Other Commercial m^2 per job	Other Commercial Jobs/m^2	Other Commercial Jobs (no.)
Proposal	30,403	40	0.025	760

Source: ABS Retail Trade Cat. No. 8501.0, PPM Consulting

6.4 Estimated Total Ongoing Direct Employment Impact

Together, the retail, office and other commercial floorspace is estimated to facilitate around 1,420 jobs, as shown in Table 11.

Table 11: Total Estimated Direct Ongoing Employment, Middleton Grange Town Centre

Component	Estimated Direct Jobs
Retail	249
Offices	411
Other Commercial	760
Total Estimated Jobs	1,420

Source: Pacific Planning, PPM Consulting

However, as this is a Planning Proposal and not a Development Application, caution should be taken in interpreting these numbers, as the floor areas allocated to each use (and the total area allocated to commercial uses) is likely to change as a result of detailed design.

6.5 Other Economic and Social Impacts

The proposed development would generate a range of additional economic benefits, including:

- increased choice and amenity for the population of the area.
- increased competition, potentially resulting in an improvement in offerings from all centres in the area.
- increased competition, potentially leading to innovations in service delivery.
- more convenient access to groceries and other retail offerings those living in the Middleton Grange suburb
- reduced travel time for the those who currently use Carnes Hill Marketplace, The Valley and other shopping centres, and the potential increase in walking. This may have the benefit of reducing fuel expenses as well as helping to combat health issues through increased walking
- an opportunity for the creation of new local businesses, which will likely reinvest in the local area
- providing jobs within the Middleton Grange area, which may be taken up by local residents.

7. Economic Impact of the Dedication of Public Parks

7.1 Background

The proponent intends on dedicating a substantial proportion of the site as new public park areas. The proposal is for 7,632m^2 of the site to be dedicated as public open space (either dedicated to the Council or not). While it should be acknowledged that Liverpool City Council owns 757m^2 of land that would be used in lower density scenarios as parkland, a park this size is considered too small to play any meaningful role in creating community benefit. The parks are shown in Figure 8. The parks are linked and include a two playgrounds, a village green, a healing garden, a piazza and orchard park. The parks provide a link from the east to west, linking the commercial, residential and retail/food areas of the proposed development.

Figure 8: Proposed Middleton Grange Parks



Source: Middleton Grange Planning Proposal 2018, Pacific Planning

The parks are not required under the current controls. Without the density that improves the viability of the development, the parks would not be built.

7.2 Park Creation Costs

The parks will be embellished with landscaping, trees, places to picnic, barbecues and the like. It is likely that the fitout of the park will cost around $2.8 million. This is shown in Table 12.

Table 12: Costs of Park Creation

	Cost	Quantity	Total
Levelling (/m^2) ($)	200	7,632	1,526,400
Landscaping (/m^2) ($)	200	7,632	1,526,400
Equipment ($)			250,000
Creation Cost ($)			**3,302,800**

7.3 Community Economic Benefits

In addition to the dedication of the park, which the community will receive at no cost, the park will benefit the wider community (current residents from around the area and new residents in the proposed apartments).

The benefit is derived from the price that the average person places on leisure time, the amount of visitation, the travel time to the park, and the time spent in the park.

The estimated visitation to the park is based on the Zanon model[8], which estimates the number of visitors to a public park based on four attributes – standard of service, catchment population, area of the park and public awareness of the park. The model has been shown to provide good forecasts for visits to major parks and like spaces in Melbourne. It is assumed that park visitation is similar in Sydney and Melbourne.

Recently, Mr Marcus Spiller of SGS Economics and Planning[9], used the Zanon model to estimate visitation to estimate the visitation to a proposed public square as part of the redevelopment of the Queen Victoria Market in Melbourne.

The Zanon model uses the following formula:

$$Visits = 27 \times Standard\ of\ Service^{1.04} \times Catchment\ Population^{0.19} \times Area^{0.11} \times Public\ Awareness^{0.47}$$

where:

- Standard of Service is a figure between 0 and 100 indicating the "quality" of the park, judged by reference to amenities provided, including seating, shelters, barbecues, landscaping, etc
- Catchment Population is the population within a local catchment
- Area is the area of the proposed park in hectares
- Public awareness is the percentage of a random population that would be aware that the park exists.

Table 13 details the assumptions made for the variables in the Zanon model.

Table 13: Estimated Park Visitation

	Park Estimates
Standard	90
Population*	6,832
Area (ha)	0.6479
Public Awareness	90
Visits	144,953

* Population has been taken to be 10 per cent of the total Main Trade Area population in 2026 (68,317), as shown in Table 2 of the *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail* (PPM Consulting October 2020), *Zanon*

As detailed in Table 13, the Zanon model calculates that there would be an estimated total of 125,291 visits per year (not necessarily unique visits) to the park each year.

[8] A Model for Estimating Urban Park Visitation –Parks Victoria Occasional Paper Series, Dino Zanon, 1998
[9] Melbourne Am C245 Queen Victoria Market Precinct Renewal Evidence report of Marcus Spiller April 2016, SGS Economics and Planning

Table 14 details the economic benefit of the use of the park. The furthest part of Middleton Grange from the town centre is 1.5 kilometres. It is likely that the average distance would therefore be around 500 metres. Therefore, it is assumed that the median return travel distance would be 1 kilometre. At a walking travel speed of 5 km/h, the median return travel time would be 12 minutes (0.2 hours). It is further assumed that, once there, the median time spent at the park would be an hour. According to Transport for NSW, the price of non-business time is $16.89 per hour. Therefore, the value of journeys to and from the park would be a little under $489,207 per year, and the value of time spent at the park would be approximately $2.9 million. The capitalised value of the park, over 50 years, would be a little over $63 million.

Table 14: Economic Benefit of Park Dedication

	Total
Estimated annual visitation (no.)	125,291
Assumed median travel distance return (km)	1
Travel speed (walking) (km/h)	5
Median travel time to and from (hrs)	0.2
Time spent at open space (hrs)	1
Value of leisure time ($)[10]	16.89
Value of journey ($)	423,234
Value of Time Spent ($)	2,116,169
Value of visits/ year ($)	2,539,402
Capitalised value (50 Years) ($)	54,551,913

Source: PPM Consulting, Zanon

7.4 Ongoing Costs and Maintenance

The The park is estimated to produce $55 million worth of economic benefit to the community over 50 years. The proponent is proposing that the owners of the development (via an owners corporation or similar arrangement) would be responsible for the maintenance of the parks and gardens. This has an additional benefit to the Council and people of Liverpool, as they will not be required to maintain the asset, but will benefit from it being fully open and accessible to the public. This benefit of park maintenance and upgrades would add up to nearly $900,000 over the 50 year life of the park. The proponent maintenance of the park and upgrades to it over time. Ongoing maintenance includes mowing, rubbish collection and removal, landscaping and amenities cleaning (e.g. barbecues, etc). In the absence of definitive cost data, a number of assumptions have been made for ongoing maintenance of the park. Table 15 outlines these assumptions.

Table 15: Ongoing Maintenance of Dedicated Park – Cost Assumptions

Ongoing	Times	Hours	Cost	Annual Cost (2020 Dollars)
Mowing	26	4	50	5,200
Rubbish Removal	52	1	50	2,600
Landscape Maintenance	26	4	50	5,200
Amenities Cleaning	52	3	50	7,800
Total				**20,800**

Source: PPM Consulting

[10] *Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives*, June 2018, Transport for NSW

It is also likely that every 15 years, the park will need upgrading, facilities will need replacing and landscaping will need renewal. It is assumed that Council will spend $150,000 (in 2019 dollars) to upgrade the park in Years 16, 31 and 45. Therefore, at an annual inflation rate of 2 per cent, it is assumed that Council will spend $201,880 in Year 16, $271,704 in Year 31 and $365,678 in Year 46.

Under the forgoing assumptions, the net present value of the ongoing and capital costs (which are a benefit to the community) would be $894,641 over 50 years.

7.5 Total Community Economic Benefit

Taking the cost of creating the park and value of visitation, the total economic benefit of the park would be $55 million. As detailed in Table 16, the net benefit of the park (including ongoing maintenance and upgrades) would be just under $59 million over its assumed 50 year life. It should also be noted that this does not include the value of the land that is being dedicated.

Table 16: Total Economic Benefit of Park Dedication

	Total
Creation Cost ($)	3,302,800
Visitor Benefit ($)	54,551,913
Total Benefit ($)	57,854,713
Maintenance Benefit ($)	894,641
Net Benefit ($)	58,749,353

Source: PPM Consulting

8. Benefits of Walkable Town Centres

According to the proponents, the goal of the Middleton Grange Town Centre is for it to be a walkable centre with ample parks and places to relax and recreate.

As pointed out in *Business Performance in Walkable Shopping Areas* (Robert Wood Johnson Foundation, 2011), "Defining a commercial area as 'walkable' requires distinctions to be made beyond how shoppers arrived at their destination and what they do once they arrive." For an area to be considered "walkable", it "usually means that it is possible for a significant fraction of patrons to arrive by some other mode than driving, and that they are in a welcome environment for strolling, meeting others and resting for a few moments. In short, they do not have to get in their car to visit store after store."

According to Dan Burden of Walkable Communities, Inc, (reported in *Let's Talk Business*, *Economic Benefits of A Walkable Community*, Summarized by Bill Ryan*, July 2003) characteristics of a walkable town include:

- intact town centre with a quiet, pleasant main street containing a hearty, healthy set of stores
- residential densities including mixed income and mixed uses near the town centre
- many public places for people to assemble, play and associate with others within their neighbourhood
- universal design that respects and accommodates people of all abilities
- traffic on main street and in neighbourhoods that move at safe, pleasant and courteous speeds
- streets and trails that are well linked, often in a grid or other highly connected pattern
- design that is properly scaled allowing most residents to get to most services in 400m (walking distance)
- town is designed for people first, cars second
- town thinks small with caps on parking and store size
- the town has a vision and decision makers are visionary, communicative, and forward thinking.

In relation to Middleton Grange Town Centre, at the moment residents are required to get into their cars and drive to their nearest shopping centre (up to 3 kilometres away). The town centre is proposed to have many of the characteristics seen as "walkable". The benefits include more viable retail spaces, less sedentary lifestyles and less time spent in cars and traffic.

9. Response to Objectors

In December 2019, Urbis (on behalf of Charter Hall, owners of Carnes Hill Marketplace) released a report critiquing the economic modelling to date. Urbis stated that the MacroPlan Dimasi report is unreliable and that an alternative trade area should have been used for the analysis. While we agree that the inputs are from 2015, their magnitudes remain relevant. While Urbis provides assertions that floorspace productivity levels should be higher, it does not give any updated population forecasts for either the main trade area used by MacroPlan Dimasi, nor for what Urbis believes the main trade area should be. Therefore, the Urbis report merely deals with one side of the equation. In the absence of a full report – with full workings – countering the MacroPlan Dimasi report, the conclusions made by Urbis are merely assertions. This report updates the MacroPlan Dimasi report, taking into account the criticisms made by Urbis.

The response to each point made by Urbis in the Urbis December 2019 report is provided below.

Urbis Statement	**PPM Response**
The report prepared by PPM Consulting titled: *'Middleton Grange – Response to Objectors' Submissions on Economics'* does not adequately address or change any of the analysis and opinions presented in our October 2018 report. The proposed development is highly speculative and ill-founded.	The PPM October 2019 report does address the analysis and opinions (it should be noted Urbis's opinions are highly subjective) and provides a large amount of evidence that should give pause to anyone reading their 2018 report. The fact that a consultant can produce a UDR which states "*The increase in density will provide an uplift of new dwelling supply in the area and an increase in the potential residential population which will result in creating an active Town Centre that promotes a sense of place that is safe, vibrant and attractive*," and then five years later consult for the objectors, calling the proposal development *"highly speculative and ill-founded"* places both the proponent and Urbis in an awkward position. If the Urbis reports of 2019 in favour of the objectors is given any weight, it has the potential to undermine confidence in the entire NSW planning system and undermine investment. This report presents updated analysis of the estimated effect of a new Middleton Grange Town Centre on Carnes Hill Marketplace.
The Macroplan report effectively demonstrates that the proposal is an over-development, as market demand is insufficient to support a centre of the scale proposed and the impacts are high.	The MacroPlan Dimasi report was used as a basis for the planning proposal from 2017. This is the planning proposal based on the Urbis 2015 UDR. In 2017, the planning proposal did not characterise the proposal as an over-development and concluded that demand was sufficient to support a centre of the scale proposed. The conclusion was that the impacts were not high. This is confirmed by the current analysis. This highlights the conflict between the Urbis 2015 UDR and the Urbis reports for objectors from 2019.

Urbis Statement	PPM Response
The trade area defined for the proposed Town Centre at Middleton Grange is insufficient to support a centre of the scale proposed and a tighter trade area, typical for a local centre, would be appropriate.	If Urbis believes that this is the case, it should have undertaken its own full trade area analysis, which is open for any competent consultant to undertake. The fact that this assertion is made without full evidence, and in the face of earlier support for the development, suggests that this statement is highly speculative and partisan. This report presents such an updated trade area analysis and shows that the impacts are not expected to be high, especially by 2031.
The impact assessment provided by Macroplan Dimasi, even at low trading levels, indicates high impacts on the planned network of centres. Usually, competitive developments that are warranted result in relatively low impacts and consequences, simply because the market is large enough to support an expanded network. In this case it isn't.	While it rejected the MacroPlan Dimasi report in its earlier report, Urbis appears to rely on it to make its highly selective point. The MacroPlan Dimasi report showed that there is a likely deficit of retail floorspace in the main trade area by 2031, even with expansion of other current centres. This report confirms this. While Urbis makes claims that the modelling should be different, leading to different conclusions, it does not provide a full report that contradicts the MacroPlan Dimasi report, and therefore can only be regarded as assertion. This report presents such an updated trade area analysis and shows that the impacts are not expected to be high, especially by 2031. That said, this report has shown that, while there may be some short-term effects on Carnes Hill Marketplace, by 2031, it is estimated that it will be trading well above its 2019 levels, even with the development at Middleton Grange.
The Western Sydney Aerotropolis undoubtedly represents a significant investment and change to Western Sydney. The applicant has not provided an updated EIA or any analysis of the need and demand for additional floorspace due to the Aerotropolis, other than the narrative provide in PPMs Response Report.	Urbis does not provide any evidence that the narrative in the PPM October 2019 report draws conclusions that are in any way false.

Urbis Statement	PPM Response
The location of Middleton Grange between the future airport may result in it being a beneficiary of the Aerotropolis to some degree, which may improve residential take-up rates, but it is highly unlikely to change the extent of the trade area of a Town Centre at Middleton Grange, or the market potential for further retail development, due to the planned retail/commercial facilities which will be part of the airport development.	The Urbis report completely misses the point that the PPM October 2019 report was making about the proximity of Middleton Grange to the Aerotropolis. The fact is that airports require a large range of commercial and retail development with varying distance from them. Some commercial tenants may be able to afford to rent premises at the airport itself, or on airport land. However, there will be many potential tenants who either cannot afford the high rents that proximity to the airport will attract, and will be looking for somewhere that is close – within a short drive or bus ride – but not at the airport itself. To suggest that the airport will not create a demand for commercial and industrial land that overflows the airport itself in a significant way is wrong. In this, Urbis misses the point about Middleton Grange's location near the airport and near the main access road, Fifteenth Avenue. It is not about attracting residents, but rather attracting commercial tenants. In any case, the number of residential apartments is significantly lower than the was proposed in the Urbis 2015 UDR.
The updated Liverpool Business Centres and Corridors Strategy will include an updated retail catchment analysis with consideration to recent growth forecasts, Strategy and Local Centre hierarchies and the implications of the Western Sydney Airport and surrounds. This is yet to run its course, and in this respect the Middleton Grange application is premature.	Urbis should not be speaking for the Council. In any event, Urbis did not think Middleton Grange was premature when it wrote the Urbis 2015 UDR. Five years on from that, this study shows that there is a significant supermarket gap currently and ongoing.

Urbis Statement	PPM Response
Even with consideration of the Western Sydney Aerotropolis, the recommended hierarchy and supportable floorspace for Middleton Grange is reliant on the catchment's resident population and their spending habits. The new airport will likely result in greater passing traffic, however it is highly unlikely to result in retail/commercial floorspace of the scale proposed in the most recent application for the Middleton Grange Town Centre. It is important to note that retail/commercial facilities will be part of the airport development and these will be of a significant scale. Middleton Grange's position in the hierarchy, post Aerotropolis, will, in our view, remain as currently planned.	This statement is highly speculative and is not supported by evidence. It is just an assertion that Urbis makes and is based on highly speculative opinion. Middleton Grange Town Centre has been part of the retail hierarchy for over a decade. In the 2006 census, the population of Middleton Grange was 283. The population grew to 515 at the 2011 census. By the 2016 census, the population had grown to 5,177 – 10 times the population in 2011, with more and faster growth forecast. The MacroPlan Dimasi report, which was part of the planning proposal based on the Urbis 2015 UDR states that, "Middleton Grange Town Centre is a designated B2 – Local Centre, with the same zoning as the existing Carnes Hill Town Centre, and future Town Centres such as Austral and Edmondson Park. Middleton Grange is therefore already part of the established/approved centres hierarchy defined by Liverpool Council." While the Urbis October 2019 report rejects the MacroPlan Dimasi Report (which is cited in the planning proposal and which is in turn based on the Urbis 2015 UDR), Urbis does not give a full alternative analysis, other than assertion, to show that MacroPlan Dimasi's conclusions are wrong. However, this report shows that, even with Middleton Grange coming on in 2021 there is a supermarket gap of 3,594m^2 by 2031. This is even with an allowance for an additional supermarket of around 4,000m^2 in the main trade area by 2031. The Aerotropolis is likely to *increase* demand for retail and commercial space at Middleton Grange and in the trade area. This is not refuted by the Urbis December 2019 report. It is true that Middleton Grange will retain its position in the retail hierarchy as currently planned, as a B2 zoned neighbourhood centre with 10,000m^2 of retail and commercial space – lower than the original planning proposal which is based on the Urbis 2015 UDR.

Urbis Statement	PPM Response
The Urbis review is focused on the retail sustainability of the proposed Middleton Grange Town Centre and concludes, in no uncertain terms, that the proposed development is ill-founded, highly speculative and risky. Any potential spin off benefits from increased open space and community facilities, whilst relevant, are very much at the margin.	The Urbis 2015 UDR, upon which the proposal is based and has been refined, supported the Middleton Grange Town Centre at retail and residential densities higher than are being proposed now. At that time, in 2015, Urbis therefore must have been of the opinion that the proposed development was worthwhile, sound, reasonable and safe, or otherwise it would not have allowed it to go forward in the planning proposal. There is no evidence that Urbis believed that the Urbis 2015 UDR was "ill-founded, highly speculative and risky." Indeed, the Urbis 2015 UDR states: "*The increase in density will provide an uplift of new dwelling supply in the area and an increase in the potential residential population which will result in creating an active Town Centre that promotes a sense of place that is safe, vibrant and attractive.*" The increase in open space is of high value to the community, and therefore is not a marginal issue for the development. It may be of marginal relevance to objectors, as it provides a valuable community asset that is difficult to find objectionable, but it is of high importance in the context of the proposal as a whole.

Urbis Statement	PPM Response
The recent assertion that '*the tenant mix is not expected to compete with Carnes Hill*' is completely without foundation and indeed is not reflected in any economic analysis provided in any of the expert reports. The MacroPlan report, for example, clearly shows that there will be high impacts on Carnes Hill Marketplace, which is of course due to direct competition in overlapping catchments as shown in Map 3.1.	Urbis claims that the PPM October 2019 report says *"the tenant mix is not expected to compete with Carnes Hill."* This is very misleading and a complete misconstruction of the point made by PPM, which actually says, *"Apart from the supermarket, it is unlikely that this mix will compete with Carnes Hill Marketplace…"* While Urbis dismisses the MacroPlan Dimasi report, they use it here selectively to make the argument that there will be an impact on Carnes Hill, which is also acknowledged by PPM Consulting in its reports, including this report. There is no dispute that Middleton Grange will have an effect on trade at Carnes Hill. However, it is also true that Middleton Grange Town Centre was meant to be operational by 2021. As a result of the delay, Carnes Hill will have the benefit of the time between 2021 and when the Middleton Grange Town Centre is built to grow the loyalty of their customer base, thereby mitigating against some of the competitive effects. In any case, we understand that Carnes Hill Marketplace has a DA in place to expand. An expanded Carnes Hill Marketplace will no doubt increase the retail offering and thereby attract more customers from the main trade area than they would without the expansion. Shopping centres do not, and should not, exist in a vacuum. For consumers to get the best prices, amenity and services, it is important for there to be competition in the marketplace. Without competition, current retailers get stale, rents rise and prices rise as a result. At the time of the 2016 Census, there were approximately 5,000 people living in Middleton Grange. The nearest supermarket is Carnes Hill Marketplace, some 2 kilometres away. This journey could not be done on foot, and therefore residents are required to get into their cars and drive. This contributes to sedentary lifestyles and poor health outcomes. The Middleton Grange Town Centre will actually be of benefit to consumers by providing groceries at prices lower than would otherwise prevail. This point is not disputed in the Urbis December 2019 report. Not only would the proposed Middleton Grange Town Centre be within walking distance of many current and future residents, it is also proposed to have many of the characteristics seen as "walkable". The benefits include more viable retail spaces, less sedentary lifestyles and less time spent in cars and traffic. Urbis states that it is not aware of the comments attributed to Woolworths; these comments are in a publicly available submission to a public Productivity Commission report. The comments made by Woolworths are highly relevant and are not addressed by the Urbis December 2019 report.

Urbis Statement	PPM Response
The fact that existing centres will be impacted by new centres such as Middleton Grange and commercial facilities in the Western Sydney Aerotropolis, as well as along Fifteenth Avenue, is understood and anticipated to the extent that planning entitlements exist. A considerable short-term impact on Carnes Hill Marketplace, over and above these short- and long-term influences, has not been anticipated and can be expected to influence investment decisions by the owners of Carnes Hill Marketplace as well as other centres in the area.	This should not be used as a reason to exclude Middleton Grange Town Centre from a retail hierarchy that has been settled for over a decade. Just like Carnes Hill Marketplace, Middleton Grange has always been part of the retail hierarchy. That said, Carnes Hill Marketplace has clearly anticipated the size and scope of the Middleton Grange Town Centre because (a) it has always been part of the retail hierarchy at retail densities not much higher than allowed under the LEP, and (b) Carnes Hill are looking to expand, which is a natural competitive response to a potential new entrant.
It is also noted that the Aerotropolis will take some time to come to fruition and the period between 2019 and 2026 provides ample time to investigate and plan for change, including the degree to which both designated and new centres in Liverpool will be affected and/or could benefit.	It should be noted that Middleton Grange Town Centre is not a *new* centre. PPM Consulting maintains that the Aeroptropolis will *increase* demand for retail and commercial space in the area, as logistics and other airport-related companies move to the area to take advantage of proximity to the airport. Many companies, particularly newer companies, will not be in a position to pay the rents that will likely prevail in the airport precinct, so will look to modern facilities close by. Middleton Grange Town Centre is ideally located along the Fifteenth Avenue spine to attract these businesses. New residential along Fifteenth Avenue will also add to the demand for retail space, partially negating some of the impact of the Middleton Grange Town Centre on Carnes Hill Marketplace.
The need for additional retail floorspace at Carnes Hill Marketplace should be considered quite separately as it is a designated Town Centre and serves a broader trade area than would be the case at Middleton Grange.	Middleton Grange and Carnes Hill are both in the retail hierarchy of the Liverpool LGA. There is no reason why expansion of Carnes Hill while opposing Middleton Grange Town Centre should not be looked upon as hypocrisy.

Urbis Statement	PPM Response
It is our view that an additional supermarket could be supported at Carnes Hill Marketplace, as well as Middleton Grange, but that a larger centre at Middleton Grange would curtail further development of Carnes Hill and create considerable planning uncertainty.	The planning uncertainty comes from not allowing Middleton Grange to develop according to the planning proposal which was based upon the Urbis 2015 UDR. Middleton Grange Town Centre has always been part of the hierarchy of centres in the Liverpool LGA. While it is likely that it will take some trade from Carnes Hill, they have already anticipated this with a response of proposing to increase their retail floor space. In addition, there is a deficit of floorspace even when making allowances for an additional new supermarket to come into the main trade area over the period up to 2031.
The purpose of a planned network and/or hierarchy of centres is to maintain the sustainability of higher order, middle order and local centres that serve catchments of various sizes and provide for a range of needs.	As shown in the PPM October 2019 report, restrictive zoning can lower total factor productivity (and therefore increase prices paid by consumers) by: • restricting the total availability of land for retail, thereby increasing space costs • directly limiting store size • concentrating retail development on specific central locations. These points are not disputed in the Urbis December 2019 report. The findings suggest that restricting the size and growth of Middleton Grange Town Centre, and concentrating growth in developed centres, would likely result in an increase in prices, more cars and trucks on the road and more congestion around the designated centres. This is not only bad for the current and potential residents of Middleton Grange, but also the wider catchment area. In addition, restricting retail space adversely affects the poor, since poorer households spend higher proportions of their incomes on supermarket purchases.
In Liverpool, the Central Business Area is the primary centre for higher order needs. Centres such as Carnes Hill Marketplace fulfil a middle order role, often referred to as sub-regional. Middleton Grange is intended to house a local centre, anchored by a major supermarket, orientated to serving local needs. This remains appropriate.	We agree that the planning proposal, based on the Urbis 2015 UDR, remains appropriate.

Finally, Urbis uses the phrase "planning uncertainty" as a justification of its position that a centre no bigger than 5,500m^2 should go ahead on the Middleton Grange Town Centre site. Very much to the contrary, planning uncertainty would be created by the development not going ahead, at least at the size it was given Gateway approval for in 2017. The proponent has been led to believe that the proposal will be assessed in a fair manner, and that if the Gateway conditions can be satisfied (as, from an economic perspective they have) then the plan will be made. Leading a proponent down the path to this point, only to reject it – when it has Gateway approval and the proponent has been working with council on the conditions – definitely creates investment risk. Indeed, it sets a very poor example of the investment climate in New South Wales and increases the risk premium on all developments in Sydney and the state. To effectively repudiate both the 2008 LEP and the Gateway approval of 2017 increases planning risk and increases the risk for all future investment in Liverpool and beyond.

10. Conclusion

Liverpool is undergoing significant growth. The Middleton Grange Town Centre is expected to be a highly integrated town centre with a high level of amenity. These sorts of amenities will be demanded by residents.

In *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* (PPM Consulting October 2020), it was shown the economic impact of the retail component of the Middleton Grange Town Centre. It showed that there is no prospect that any existing centre will suffer any impact which will threaten its ability to provide a level of service at least equivalent to that which each is providing at present.

The proposed Middleton Grange Town Centre will also be home to offices, which may be airport-associated businesses able to establish in close proximity to the new airport without them needing to pay for an airport location. It is likely to also allow for office employment growth as a result of fewer workers commuting to the CBD post-COVID. The potential for offices in suburban locations is likely to put Liverpool at the forefront of changes to work patterns as part of post-COVID norms. It is likely that more office space will be needed in suburban locations, and Middleton Grange is likely to not even accommodate 10 per cent of CBD commuters from the LGA, let alone from neighbouring LGAs.

Large economic benefits are estimated to accrue as a result of the development of the Town Centre, including the benefits of the park (around $58 million), and jobs. The jobs benefit includes a potential 4,650 direct and indirect jobs as a result of construction, and the potential for Middleton Grange Town Centre to support 1,420 ongoing direct jobs.

There are currently no shops in the Middleton Grange area. All residents are required to travel at least 2.8km to get their daily needs. They also need to travel to work and for recreation. The Middleton Grange Town Centre has the potential to ease the burden of travel on residents (current and new) by allowing them to work, play, eat and shop within walking distance.

The potential benefits of the proposed Middleton Grange Town Centre are many, with few potential downsides.

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PPM Consulting is a highly experienced and skilled economics and government relations consultancy.

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- providing economic analysis and advice
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- uplift reports (for example, comparing FSR and height uplift scenarios and their effect on viability)
- viability reports
- writing submissions to government on policy changes on behalf of clients.

PPM Consulting can manage complex major projects, ensuring delivery within budget and timeframes. PPM Consulting prides itself on its ability to work with clients to get the best results possible.

The Director and Principal, Martin Musgrave, holds an honours degree in economics with 25 years of experience in across a wide range of sectors in a number of jurisdictions in both the public and private sectors. Martin is a highly experienced public policy professional, specialising in economic analysis, policy development and leadership, advocacy, and government relations. He is considered a highly skilled economist and policy professional who always acts with integrity.

Martin Musgrave has been a valued senior contributor in the following organisations:

- the Department of Planning and Environment
- the Urban Development Institute of Australia (National and Victorian Division)
- the Property Council of Australia (Residential Development Council)
- the Large Format Retail Association
- the Department of Premier and Cabinet (Victoria)
- the Department of the Prime Minister and Cabinet
- the Roads and Traffic Authority (NSW) (now known as RMS)
- the Hunter Valley Research Foundation (now known as the Hunter Research Foundation)

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PPM CONSULTING

Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component

FINAL – Prepared for Pacific Planning by PPM Consulting

Date: 8 October 2020

COMMERCIAL – IN – CONFIDENCE

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Executive Summary

Background

- The retail component of the Middleton Grange Town Centre is a small part of the Town Centre.
- This report assesses the impact of the *retail* component on the adjacent retail hierarchy, specifically Carnes Hill Marketplace, The Valley Plaza and Hoxton Park.
- The total site area is around 58,000m^2. The proposed gross floor area for the Town Centre (residential and non-residential uses) is around 113,000m^2, which includes residential, parks and other commercial uses. The total floor space ratio is 1.98:1.
- It should be noted that the proposal has evolved as it has progressed through different stages of the assessment process. While originally it was considered that it should have up to 20,000m^2 of retail space, the current proposal for 10,000m^2 is presented in this report is one possible scenario. The report looks at the aspects of the project that would impact other centres.
- As this is a planning proposal, exact uses and the floorspaces they will occupy are yet to be finally determined.
- This report is not intended to fix a retail floorspace, but rather to analyse what the impact would be on other centres of a given floorspace. To the extent that the floorspace for retail changes in subsequent iterations, the impact on neighbouring centres will be more or less.
- Significant community and non-retail floorspace are proposed as part of the Middleton Grange Town Centre. These include 38,626m^2 of floorspace devoted to:
  - medical centre
  - offices
  - community centre
  - child care centre
  - gym
  - neighbourhood shops
  - small home offices
  - commercial entertainment
  - cafes and restaurants.
- PPM Consulting has provided a separate report *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (PPM Consulting, October 2020) that looks at the broader aspects of the proposed Town Centre development, including the demand for office space, economic benefit of the parks, and the estimated employment impact of construction and ongoing operation of the retail and other commercial aspects of the Town Centre. Both this report and the *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* should be read together.
- As these aspects were not part of the retail floorspace proposed, they have not been assessed in this economic impact assessment.
- It should be noted that this report uses a similar methodology to the MacroPlan Demasi economic impact assessment of 2015. It only assesses the retail aspects of the proposal (i.e. goods retailing, not services, nor cafes and restaurants or commercial entertainment), and the impacts on other centres.

- Currently there is no shopping centre in Middleton Grange. The residents of the suburb need to travel at least two kilometres to their nearest supermarket in order to fulfil their daily needs.
- The analysis of the Town Centre consists of 10,000m^2 of gross leasable area (GLA), including:
  - 3,800m^2 for a major supermarket
  - 3,224m^2 for a mini major
  - 1,362m^2 of cafes, restaurants and bars
  - 1,114m^2 of specialty shops
  - 200m^2 liquor shop.
- Two alternative scenarios are also presented to show the impact of 15,000m^2 and 20,000m^2 of retail floorspaces.

Proposed Development

- The Middleton Grange Town Centre is located approximately 40km west of the Sydney Central Business District (CBD) and 7km west of the Liverpool CBD. The Middleton Grange precinct is bounded by Cowpasture Road, Fifteenth Avenue, Hoxton Park Road and the M7 Motorway. Accessibility to and for the suburb are excellent.
- The proposed Town Centre is a proposed new development. Currently the closest shopping centre to Middleton Grange is Carnes Hill Marketplace, 2.8 kilometres from the proposed Town Centre and up to 4 kilometres from some current and future residents of the suburb.
- Middleton Grange is a proposed masterplanned community that could accommodate in excess of 1,000 persons once built out. The Middleton Grange Town Centre will be the epicentre of the community and is proposed to accommodate at least 670 dwellings within the Town Centre itself.

Main Trade Area

- To analyse the impact of the proposed new Town Centre, a main trade area needs to be defined. The main trade area estimated to be served by the proposed Middleton Grange Town Centre has been defined taking into consideration:
  - the following competing centres:
    - Carnes Hill Marketplace, 2.8km from the proposed Town Centre
    - The Valley Plaza, 4.8km from the proposed Town Centre
    - Hoxton Park Aldi, 1km from the proposed Town Centre.
  - the Liverpool CBD (comprising Westfield Liverpool and other specialty shops, cafes, bars and restaurants and other services), is 7km to the east, which limits the extent of the trade area to the east.
  - the central position of the subject site within the Middleton Grange current and future suburb, which provides excellent access to a growing local population.
  - the M7 to the north-east.
- The trade area is defined to include one primary and one secondary sector, described as:
  - the primary sector is generally the distance that a person can walk from the Middleton Grange Town Centre in 10 minutes. It is bounded by Fifteenth Avenue to the south, the M7 to the north-east, the small catchment east of Cowpasture Road,

Kingsford Smith Drive to the West and just north of Southern Cross Drive to the north.
    - the main trade area is bounded by Bringelly Road, Cabramatta Creek and Banks Road/Rundle Road to the east, North Liverpool Road/Frederick Road to the north and includes the whole suburb of West Hoxton and part of Austral to the west.
    - the secondary trade area is the main trade area minus the primary trade area that sits wholly within it.
- The main trade area population is estimated at 56,939 as at June 2019, including 2,036 in the key primary sector. The main trade area population is expected to reach 70,609 by 2031, reflecting average annual growth of 2.2 per cent between 2016 and 2031, or 1,238 persons per year. The primary sector population is estimated to grow at an average annual rate of 5.96 per cent between 2016 and 2031, and to reach 3,660 by 2031.
- The primary trade area includes the Middleton Grange Town Centre, which is expected to include a population in excess of 1,000 once fully built out. It is likely that the population projections are therefore an under-estimate of the total population expected to live in the area by 2031.
- The retail expenditure market is expected to grow from around $577.3 million in 2016 to $926.4 billion in 2031, an increase of 60 per cent at an average annual growth rate of 3.2 per cent.
- Food, liquor and grocery (FLG) expenditure (take home food and groceries, including packaged alcohol) is estimated at $265 million in 2016 and accounts for 62 per cent of all retail expenditure in the main trade area. FLG expenditure is projected to increase to $425 million by 2031, reflecting average annual growth of 3.2 per cent.

Competition

- Middleton Grange Town Centre is a designated B2 – Local Centre, with the same zoning as the existing Carnes Hill Town Centre, and future Town Centres such as Austral and Edmondson Park. Middleton Grange is therefore already part of the established/approved centres hierarchy defined by Liverpool City Council.
- There are currently no shopping centres in the Middleton Grange suburb. Within the main trade area, the following centres currently exist:
    - Carnes Hill Marketplace, 2.8km from the proposed Town Centre
    - The Valley Plaza, 4.8km from the proposed Town Centre
    - Hoxton Park Aldi, 1km from the proposed Town Centre.

Supermarket Gap

- To assess the market demand for the potential redevelopment and addition of new retail facilities at the subject site, the current and future demand for supermarket floorspace generated by the main trade area population needs to be assessed. This is then compared with the existing and proposed supply of floorspace to come to a conclusion about the over- or under-supply of supermarket floor space in the area, and therefore whether the expenditure in the area can justify an increase in supermarket space.
- The estimated supermarket floorspace demand generated by the main trade area population is 18,530m^2 in 2016, and is projected to increase to around 27,594m^2 by 2031, an increase of over 8,000m^2.

- The supermarket supply is assumed to increase by 4,000m^2 in 2021 as the Middleton Grange supermarket comes online. It is unlikely that there will be two full-line supermarkets in the Middleton Grange Town Centre, however in 2031 it is assumed a further full-line supermarket will be established in the main trade area, taking supermarket supply in the main trade area to 24,000m^2.
- The supermarket gap is projected to fall to 1,160m^2 as Middleton Grange comes online, although this does not include population increases over and above projected increases from new residents of the Middleton Grange Town Centre and other new release areas in the main trade area. Therefore it is likely that this is an under-estimate of the supermarket gap that would be experienced in 2026 and beyond. Even with an additional supermarket established in the main trade area by 2031, the undersupply of supermarket floorspace remains high at 3,594m^2.

Economic Impacts of 10,000m^2 of Retail Floorspace

- It is estimated that the proposed development will achieve a sales volume in the order of $86 million in 2026, expressed in constant 2019 dollar terms, including estimated supermarket sales of $55.6 million (at approximately $13,910 per square metre).
- The total projected main trade area retail expenditure for 2026 is estimated at $791 million. Assuming escape expenditure of 10 per cent, the share of total main trade area expenditure that the Middleton Grange Town Centre would be expected to achieve would be 12.1 per cent.
- This means that nearly 90 per cent of all retail expenditure in the main trade area would still be expected to occur in the current centres.
- The other major centres in the main trade area are projected to account for 41.5 per cent of retail spending in 2026.
- There are likely to be impacts on Carnes Hill Marketplace in the short term, including a 12.8 per cent impact in 2026 between the "no development" and "with development" scenarios, and an 11.3 per cent impact in 2031. However, it is estimated that compared with 2019, retail sales at Carnes Hill Marketplace are expected to grow by 26.4 per cent to 2031.
- It should be noted, however, that there is a high degree of brand loyalty among supermarket shoppers. The proponents of Middleton Grange Town Centre advise that they have signed a lease with Coles. The supermarket at Carnes Hill Marketplace is a Woolworths. This is likely to slightly reduce the impact on Carnes Hill Marketplace, as exclusively Coles shoppers already would not shop at Woolworths Carnes Hill.

Economic Impacts of 15,000m^2 and 20,000m^{2}of Retail Floorspace

- Two alternative retail floorspace scenarios were assessed – 15,000m^2 of retail GLA and 20,000m^2 of retail GLA.
- With 15,000m^2 of retail GLA it is estimated that the proposed development would achieve a sales volume in the order of $140 million in 2026, expressed in constant 2019 dollar terms. With 20,000m^2 of retail GLA, sales in the order of $179.3 million would be expected by 2026.
- Assuming escape expenditure of 10 per cent, the share of total main trade area expenditure that the Middleton Grange Town Centre would be expected to achieve would be between 19.7 per cent and 25.2 per cent.

- This means that no less than 75 per cent of all retail expenditure in the main trade area would still be expected to occur in the current centres.
- The short term impact on Carnes Hill Marketplace is estimated to be high. With 15,000m^2 of retail GLA, the estimated impact could be 21.0 per cent in 2026 between the "no development" and "with development" scenarios. With 20,000m^2 of retail GLA at Middleton Grange, the impact is estimated at 26.7 per cent.
- However comparing 2019 (prior to the development) with 2031, retail sales at Carnes Hill Marketplace are expected to *grow* by 16.1 per cent in the 15,000m^2 scenario and 8.9 per cent in the 20,000m^2.

Ongoing Retail Employment and Other Community Impacts

- The estimated net increase in direct on-site retail employment that could potentially be created if the proposed development at the subject site were to proceed. An estimated 249 jobs could be created on site once the Middleton Grange Town Centre is fully operational. This does not include employment in the proposed medical centre, offices, community centre, gym, etc.
- Allowing for some minor impacts on employment across other retail centres in the hierarchy, estimated to be in the order of 5 per cent, the overall net employment that could potentially be created is estimated to be in the order of 230 ongoing jobs.

Conclusion

- The impact analysis, and the sensitivity analysis, shows that there is no prospect that any existing centre will suffer an impact which will threaten its ability to provide a level of service at least equivalent to that which each is providing at present.
- The proposed Middleton Grange Town Centre has been holistically planned, including the way it would fit into the existing area (parks, new cycle ways, sensible road network, social floorspace etc).
- If Council decides not to allow the proposed Middleton Grange Town Centre to go ahead, it will result in the current and future residents of Middleton Grange needing to travel for their daily need. If a smaller ":neighbourhood" style centre is approved, it could result in higher prices and less retail offerings for local residents.
- The potential benefits of the proposed Middleton Grange Town Centre are many, with few potential downsides.

1. Introduction

The purpose of this report is to provide an economic impact assessment of the retail components of the proposed Town Centre at Middleton Grange in the Liverpool Local Government Area (LGA) in New South Wales. This report should be read in conjunction with the main report, *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (PPM Consulting, October 2020).

Currently there is no shopping centre in Middleton Grange. The residents of the suburb need to travel at least two kilometres to their nearest supermarket in order to fulfil their daily needs.

The retail component of the Middleton Grange Town Centre would consist of 10,000m^2 of gross leasable area (GLA), comprising:

- 3,800m^2 for a major supermarket
- 3,224m^2 for a mini major
- 1,362m^2 of cafes, restaurants and bars
- 1,114m^2 of specialty shops
- 200m^2 liquor shop.

The total site area is around 58,000m^2. The proposed gross floor area for the Town Centre (residential and non-residential uses) is around 113,000m^2, which includes residential, parks and other commercial uses. The total floor space ratio is 1.98:1. It should be noted that the proposal has changed, evolving as it progresses through different stages of the assessment process. While originally it was considered that it should have up to 20,000m^2 of retail space, the proposal presented in this report is one possible scenario, and looks at the aspects of the project that would impact other centres. It is not intended as a proposal to fix a retail floorspace, but rather to analyse what the impact would be on other centres of a given floorspace. To the extent that the floorspace for retail changes in subsequent iterations, the impact on neighbouring centres will be more or less. The other alternative scenarios (15,000m^2 and 20,000m^2 of retail floorspace) are analysed to show the impact of higher retail floorspace provision.

The report uses a similar methodology to the MacroPlan Demasi economic impact assessment of 2015. It only assesses the retail aspects of the proposal (i.e. goods retailing, not services, nor cafes and restaurants or commercial entertainment), and the impacts on other current centres. This report does not assess the following significant Town Centre-style infrastructure (which totals an additional 38,626m^2 of floorspace) that is proposed:

- Medical centre
- Offices
- Community centre
- Child care centre
- Gym
- Neighbourhood shops
- Small home offices

- Commercial entertainment
- Cafes and restaurants.

This report has been prepared under instruction from Pacific Planning.

The main report includes an overview of the proposal and a review of the planning context. This report is presented as follows:

- Chapter 2 provides an overview of the project from the retail perspective.
- Chapter 3 introduces the main trade area, and outlines the key demographic and employment data for the area, along with the retail expenditure capacity of the area.
- Chapter 4 provides an analysis of the existing retail hierarchy and proposed and planned retail developments.
- Chapter 5 assesses supermarket supply and demand, and makes an estimate of the market gap.
- Chapter 6 looks at the potential impacts on the surrounding retail hierarchy from the proposed development and discusses the implications of these impacts. This chapter also includes commentary about the nature of competition and the consequences of restricting competition in cities such as Liverpool.
- Chapter 7 assesses the potential impact of two alternative scenarios – one with a gross leasable area (GLA) of retail of 15,000m^2 and one with 20,000m^2.
- Chapter 8 assesses the economic and consumer benefits which are likely to flow from the proposed development, in particular employment creation.
- Chapter 9 makes some concluding remarks about the proposal and its impact on the Middleton Grange and Liverpool economies.

2. The Proposed Development

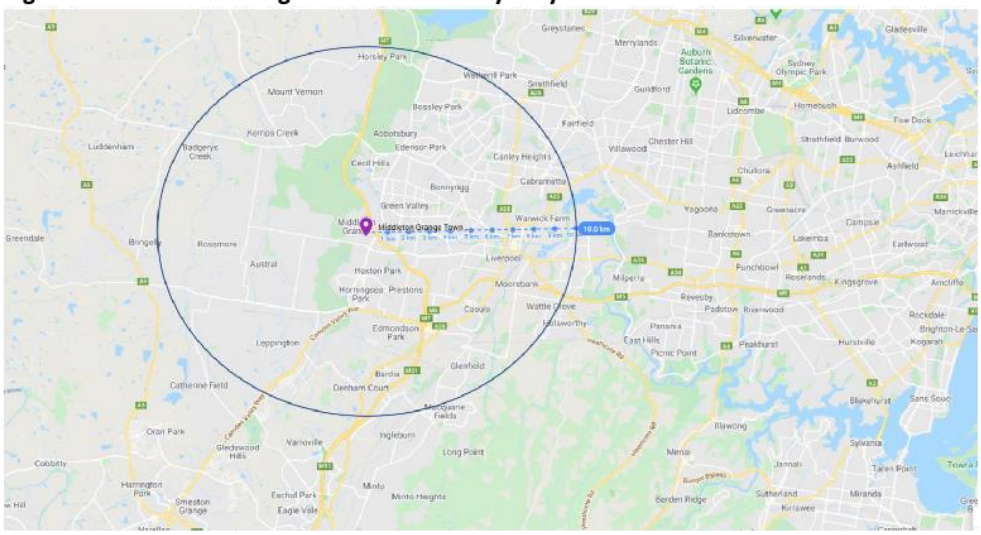
2.1 Regional and Local Context

The proposed Town Centre is a new development. Currently the closest shopping centre to Middleton Grange is Carnes Hill Marketplace, 2.8 kilometres from the proposed Town Centre and up to 4 kilometres from some current and future residents of the suburb.

The Middleton Grange Town Centre is located approximately 40km west of the Sydney Central Business District (CBD) and 7km west of the Liverpool CBD. The Middleton Grange precinct is bounded by Cowpasture Road, Fifteenth Avenue, Hoxton Park Road and the M7 Motorway. Accessibility to and for the suburb are excellent.

Figure 1 shows the location of the Middleton Grange Town Centre within the Greater Sydney area.

Figure 1: Middleton Grange Within Greater Sydney

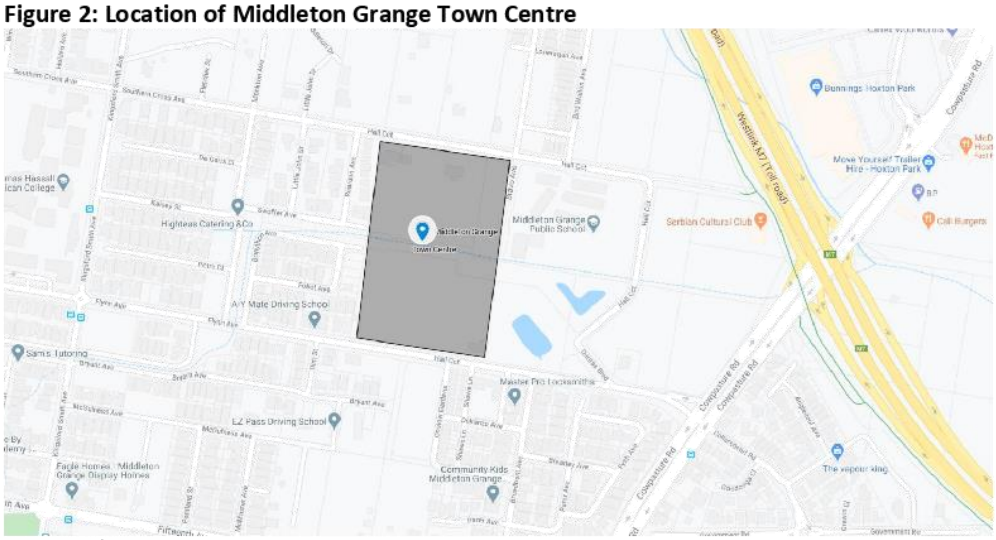


Source: Google My Maps, PPM Consulting

Middleton Grange is a proposed masterplanned community that could accommodate in excess of 1,000 persons once built out. The Middleton Grange Town Centre will be the epicentre of the community and is proposed to accommodate at least 670 dwellings within the Town Centre itself.

The Middleton Grange Town Centre itself is bounded by Southern Cross Avenue to the north, Middleton Grange Public School to the east, Flynn Avenue to the south and Hall Circuit to the west. Figure 2 shows the location of Middleton Grange in its local area.

Figure 2: Location of Middleton Grange Town Centre



Source: Google My Maps

2.2 The Proposed Development

The Middleton Grange Town `Centre subject site under consideration in this report incorporates a total area of 58 hectares, around 3.7 hectares is currently zoned B2 – Local Centre in the Liverpool Local Environmental Plan 2008.

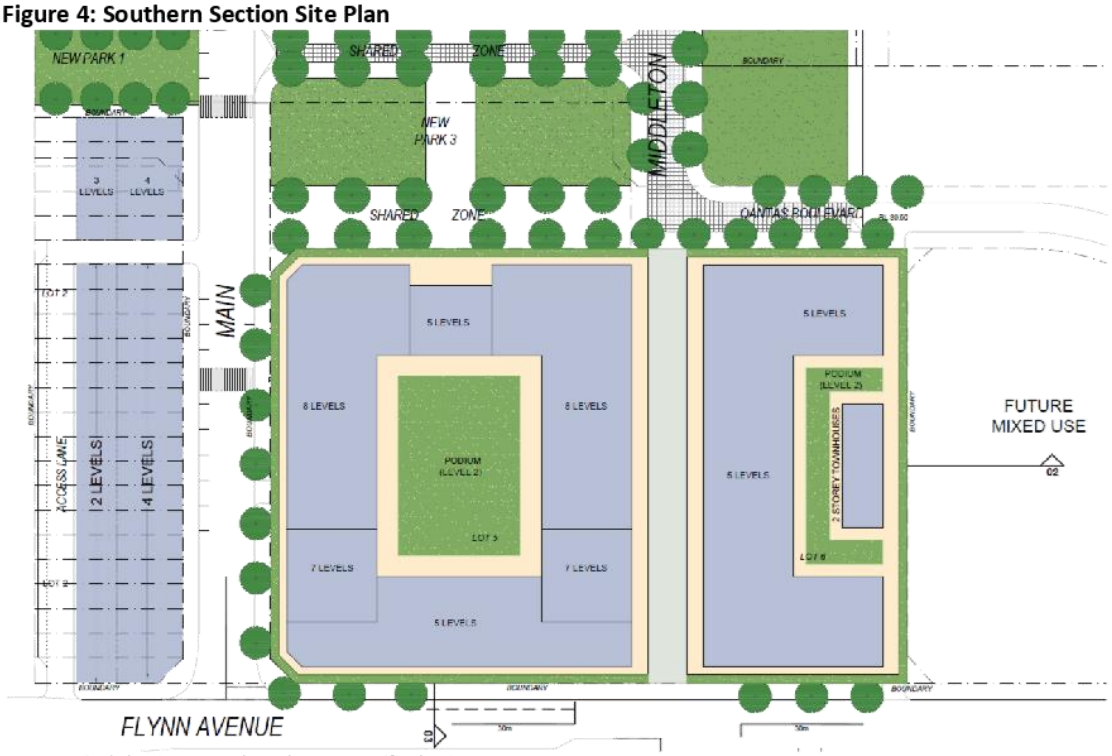
Figures 3 and 4 show the proposed floor layout for the retail spaces in the Town Centre. As can be seen, it is proposed to turn the greenfields site into a mixed use Town Centre providing residential, retail and commercial uses. It is proposed to build a major supermarket, specialty retail, food premises and office space.

Figure 3: Northern Section Site Plan



Source: Revised Planning Proposal, October 2019, Pacific Planning

Figure 4: Southern Section Site Plan



Source: Revised Planning Proposal, October 2019, Pacific Planning

2.3 A Note On Floorspace Definitions Used In This Report and Others

It should be noted that different definitions of "retail" floorspace are used in different reports, as each analyses retail floorspace for different purposes.

The following is the definition of *retail premises* in the Standard Instrument:

> retail premises means a building or place used for the purpose of selling items by retail, or hiring or displaying items for the purpose of selling them or hiring them out, whether the items are goods or materials (or whether also sold by wholesale), and includes any of the following;
> (a) (Repealed)
> (b) cellar door premises,
> (c) food and drink premises,
> (d) garden centres,
> (e) hardware and building supplies,
> (f) kiosks,
> (g) landscaping material supplies,
> (h) markets,
> (i) plant nurseries,
> (j) roadside stalls,
> (k) rural supplies,
> (l) shops,
> (la) specialised retail premises,
> (m) timber yards,
> (n) vehicle sales or hire premises,
> but does not include highway service centres, service stations, industrial retail outlets or restricted premises.

However, while the Standard Instrument definition covers over 20,000m^2 of the space listed in Table 1 of *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (PPM Consulting October 2020), this report analyses goods retail only (supermarket, mini majors and specialty stores that directly compete with other centres). The retail impact analysis compares the shops where people buy things at Carnes Hill to what they will be able to buy in shops in Middleton Grange. This does not include food halls, cafes, restaurants, offices, gyms, child care centres, professional suites like doctors, accountants and solicitors, etc. For this reason, 10,000m^2 of retail is used in the retail impact report, but a sensitivity analysis has been undertaken at 15,000m^2 and 20,000m^2 so that the impact of a larger retail footprint can also be assessed.

It should also be noted that in relation to the traffic impacts report, Transport for NSW advised the traffic engineers to treat all non-residential floorspace as "retail" floorspace. This has been done for engineering purposes, and therefore the floorspace referred to as "retail" in the engineering report appears as different to the floorspace referred to as "retail" in this report and the planning proposal.

3. Trade Area Analysis

3.1 Trade area definition

The extent of the trade area, or catchment that is served by any shopping centre or retail facility is shaped by the interplay of a number of critical factors:

- the relative attraction of the centre in comparison with alternative competing retail centres. The factors that determine the attraction of a centre, and the strength of that attraction, include its size and composition (for example, its anchor tenants and other specialty stores), its layout, its ambience, car parking, access and ease of use. In addition, if a shopper needs to go to more than one centre to obtain their needs, the centre with more variety will likely be the more attractive.
- the proximity and attractiveness of competing centres. The location, composition, quality and scale of competing centres serve to define the extent of the trade area which a shopping centre is effectively able to serve.
- the available road network and public transport infrastructure which determine how easy it is to access a shopping centre. If there are any physical barriers, this will also affect the trade area, particularly any possible foot traffic.

The main trade area estimated to be served by the proposed Middleton Grange Town Centre has been defined taking into consideration all of these factors, in particular the following:

- the following competing centres:
    - Carnes Hill Marketplace, 2.8km from the proposed Town Centre
    - The Valley Plaza, 4.8km from the proposed Town Centre
    - Hoxton Park Aldi, 1km from the proposed Town Centre
- the Liverpool CBD (comprising Westfield Liverpool and other specialty shops, cafes, bars and restaurants and other services), is 7km to the east, which limits the extent of the trade area to the east.
- the central position of the subject site within the Middleton Grange current and future suburb, which provides excellent access to a growing local population.
- the M7 to the north-east.

The main trade area is defined to include one primary and one secondary sector (Figure 5), described as:

- the primary sector is generally distance that a person can walk from the Middleton Grange Town Centre in 10 minutes. It is bounded Fifteenth Avenue to the south, the M7 to the north-east, the small catchment east of Cowpasture Road, Kingsford Smith Drive to the West and just north of Southern Cross Drive to the north.
- the main trade area is bounded by Bringelly Road, Cabramatta Creek and Banks Road/Rundle Road to the east, North Liverpool Road/Frederick Road to the north and includes the whole suburb of West Hoxton and part of Austral to the west.
- the secondary trade area is the main trade area minus the primary trade area that sits wholly within it.

The main trade area does not include the proposed new town centre at Austral. The 2015 MacroPlan Dimasi Economic Impact Analysis was criticised for using a main trade area that was too broad. For this study, the focus has been on actual operating centres that compete with the proposed Middleton Grange Town Centre, rather than relying on a false precision. At the moment, as far as we are aware, there is no proponent for the town centre at Austral; as such it is unknown what the Austral Town Centre will contain and how large it really will be. The decision has therefore been taken to assess the impact on operating centres. In addition, the size of the main trade area has been chosen to ensure that the population, and its spending, is not over-estimated and therefore does not under-estimate the impacts of the Middleton Grange Town Centre on centres such as The Valley Plaza and Carnes Hill Marketplace.

Figure 5: Primary and Main Trade Area



Source: Google My Maps

3.2 Trade Area Population

Table 1 shows the current and projected population within the main trade area. This information has been collected from GapMaps, which sources their information and projections from:

- the Australian Bureau of Statistics (ABS) Census of Population and Housing
- NSW Department of Planning, Industry and Environment (DoPIE).

The main trade area population is estimated at 56,939 as at June 2019, including 2,036 in the key primary sector. The main trade area population is expected to reach 70,609 by 2031, reflecting average annual growth of 2.2 per cent between 2016 and 2031, or 1,238 persons per year. The primary sector population is estimated to grow at an average annual rate of 5.96 per cent between 2016 and 2031, and to reach 3,660 by 2031.

The primary trade area includes the Middleton Grange Town Centre, which is expected to include a population in excess of 1,000 once fully built out. It is likely that the population projections are therefore an under-estimate of the total population expected to live in the area by 2031.

Table 1: Middleton Grange Trade Area Estimated Population 2016-2031

	2016	2018	2021	2026	2031
Primary	1,628	2,036	2,615	3,648	3,660
Secondary	50,411	54,903	57,658	64,669	66,949
Main Trade Area	52,039	56,939	60,273	68,317	70,609
Average Annual Growth (no.)					
	2016-19	2019-21	2021-26	2021-31	
Primary	408	579	1,033	12	
Secondary	4,492	2,755	7,011	2,280	
Main Trade Area	4,900	3,334	8,044	2,292	
Average Annual Growth (%)					
	2016-18	2018-21	2021-26	2020-31	2016-31
Primary	5.75	6.46	8.68	0.08	5.96
Secondary	2.16	1.23	2.91	0.87	2.05
Main Trade Area	2.28	1.43	3.18	0.83	2.20

Source: GapMaps

3.3 Key Demographics

Table 3 shows the socio-demographic profile of the main trade area population, compared to benchmarks for NSW and Australia as a whole, based on data from the 2016 census.

As can be seen in Table 2, the primary trade sector has a relatively low per capita income, with an average per capital income of $31,489. This may be a function of the average age, which is around 10 years younger than the NSW and Australian averages. However, the average household income at $116,281 is higher than the NSW and Australian averages, reflecting larger household sizes.

At the time of the 2016 Census, the unemployment rate for the primary trade area was 4.5 per cent, which is nearly 2.5 percentage points lower than the Australian average.

In the primary trade area, nearly 75 per cent of households are either owned or mortgaged, compared to 67 per cent for NSW and Australia as a whole.

Nearly half of the population was born overseas.

The main trade area also has a lower per capita income but higher average household income than NSW and Australia as a whole. The average age for the main trade area is 32.29. 79 per cent of households are owned or mortgaged and the unemployment rate is 6.8 per cent (slightly higher than the primary trade area).

The main trade area can be characterised as relatively well off, with high home ownership levels and low unemployment.

Table 2: Main Trade Area Demographics, 2016

	Primary Sector	Main Trade Area	NSW Average	Aus Average
Per Capita Income	31,489	32,100.00	40,431.00	39,620.00
Average Household Income	116,281	115,165.00	107,453.00	103,664.00
Average Household Size	3.8	3.67	2.66	2.6
Number of Households	384.0	13,715	2604293	8285829
Age Distribution (% of population)				
Population Aged 0-4	12.4%	7.7%	6.3%	6.4%
Population Aged 65+	3.5%	6.1%	15.8%	15.2%
Average Age	28.9	32.29	38.8	38.4
Housing Status (% of households)				
Owner/Buyer (total)	74.8	79.0	66.96	66.73
Renter	24.4	20.8	32.29	31.42
Other	0.8	0.2	0.8	1.8
Average Weekly Mortgage Payment ($)	2,625	2,380	2,317	2,071
Average Weekly Rental Payment ($)	455	458	415	358
Birthplace (% of population)				
Australian born	53.4%	51.7%	66.5	66.7
Overseas Born				
China	0.6%	0.9%	3.11	2.15
India	2.0%	1.0%	1.88	1.92
Asia Balance	15.0%	17.5%	6.72	5.33
Europe	5.0%	5.2%	5.76	6.72
Other	23.9%	23.7%	17.02	17.16
Labour Force Status (% of persons)				
White Collar Employed	67.6%	63.1%	71.9%	70.2%
Blue Collar Employed	32.4%	36.9%	28.1%	29.8%
Unemployment Rate	4.5%	6.8%	6.2%	6.9%

Source: GapMaps

3.4 Retail Expenditure Capacity

The retail expenditure capacity of the main trade area is generated from information sourced from GapMaps, which uses a detailed micro simulation model of household expenditure behaviour for all residents in Australia. The model takes into account information from a wide variety of sources, including the regular ABS Household Expenditure Surveys, national accounts data, census data and other information.

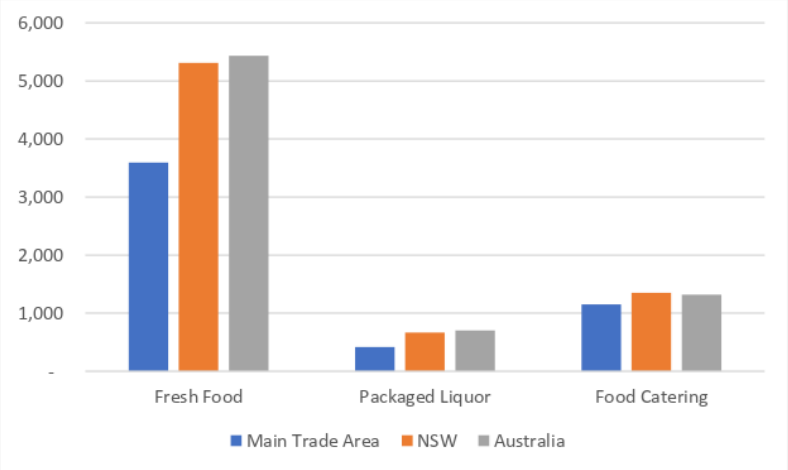
Total retail expenditure comprises the following categories:

- Take-home food and groceries – goods typically sold in supermarkets and speciality fresh food stores
- Packaged liquor – packaged beer, wine and spirits such as those purchased in bottle shops and liquor outlets
- Food catering – cafes, take-aways and restaurants, including alcohol consumed on these premises
- Apparel – clothing, footwear, fashion and accessories
- Household goods – giftware, electrical, computers, furniture, homewares and hardware goods
- Leisure – sporting goods, music, DVDs, games, books, newsagents, photo printing, etc
- General retail – pharmaceutical goods, cosmetics, toys, florists, mobile phones
- Retail services – retail services such as key cutting, shoe repairs, hair and beauty.

Figure 6 shows the estimated retail expenditure capacity per person for the residents of the main trade area for the year 2018-19 and compares these estimates with the average for NSW and Australia. Spending estimates are presented inclusive of GST.

Figure 6: Middleton Grange Main Trade Area – Retail Expenditure Per Person 2018-19







Source: GapMaps

Table 3 presents estimates of total retail spending generated by the main trade area population, by trade area sector, over the period from 2016 to 2031. Spending forecasts are presented inclusive of GST and in constant 2018-19 dollars.

The retail expenditure market is expected to grow from around $577.3 million in 2016 to $926.4 billion in 2031, an increase of 60 per cent at an average annual growth rate of 3.2 per cent. The average annual growth rate of 3.2 per cent comprises two components:

- residential population growth, which is expected to average 2.2 per cent
- real growth per capital retail expenditure, which is expected to average 1.0 per cent per annum over the forecast period.

The total retail expenditure capacity of the primary sector is expected to grow at 6.96 per cent per annum, from $18 million to $49 million by 2031, an increase of 174 per cent.

Table 3: Middleton Grange Main Trade Area Retail Expenditure ($), 2016 to 2031

	Primary Sector	Secondary Sector	Main Trade Area
2016	17,977,869	559,281,933	577,259,802
2017	19,228,625	576,524,699	595,753,325
2018	20,566,400	594,272,920	614,839,320
2019	21,997,245	612,539,522	634,536,768
2020	23,527,638	631,337,620	654,865,258
2021	25,164,503	650,680,504	675,845,007
2022	26,915,248	670,581,630	697,496,878
2023	28,787,796	691,054,609	719,842,405
2024	30,790,621	712,113,189	742,903,810
2025	32,932,786	733,771,240	766,704,027
2026	35,223,986	756,042,738	791,266,725
2027	37,674,590	778,941,742	816,616,332
2028	40,295,687	802,482,371	842,778,058
2029	43,099,139	826,678,781	869,777,920
2030	46,097,633	851,545,138	897,642,770
2031	49,304,738	877,095,582	926,400,319

Source: GapMaps, PPM Consulting

Table 4 shows projections of spending for the main trade area by retail category. Food, liquor and grocery (FLG) expenditure (take home food and groceries, including packaged alcohol) is estimated at $265 million in 2016 and accounts for 62 per cent of all retail expenditure in the main trade area. FLG expenditure is forecast to increase to $425 million by 2031, reflecting average annual growth of 3.2 per cent.

Table 4: Middleton Grange Main Trade Area Retail Expenditure by Category ($), 2016 to 2031

	265,060,397	83,829,190	59,949,190	103,778,525	21,926,326	29,639,790	13,075,630	577,261,064
2017	273,552,068	86,514,804	61,869,767	107,103,251	22,628,774	30,589,352	13,494,531	595,754,627
2018	282,315,785	89,286,456	63,851,872	110,534,490	23,353,726	31,569,335	13,926,851	614,840,664
2019	291,360,263	92,146,904	65,897,478	114,075,655	24,101,903	32,580,714	14,373,022	634,538,155
2020	300,694,496	95,098,990	68,008,619	117,730,267	24,874,050	33,624,494	14,833,487	654,866,690
2021	310,327,768	98,145,652	70,187,393	121,501,961	25,670,933	34,701,713	15,308,704	675,846,484
2022	320,269,658	101,289,919	72,435,969	125,394,488	26,493,346	35,813,443	15,799,145	697,498,403
2023	330,530,054	104,534,917	74,756,581	129,411,719	27,342,107	36,960,789	16,305,298	719,843,979
2024	341,119,160	107,883,875	77,151,538	133,557,648	28,218,059	38,144,892	16,827,666	742,905,434
2025	352,047,506	111,340,123	79,623,222	137,836,400	29,122,074	39,366,930	17,366,770	766,705,703
2026	363,325,961	114,907,098	82,174,091	142,252,229	30,055,050	40,628,118	17,923,145	791,268,455
2027	374,965,741	118,588,347	84,806,681	146,809,527	31,017,916	41,929,711	18,497,344	816,618,117
2028	386,978,421	122,387,531	87,523,610	151,512,826	32,011,629	43,273,002	19,089,938	842,779,900
2029	399,375,948	126,308,429	90,327,581	156,366,803	33,037,177	44,659,328	19,701,518	869,779,822
2030	412,170,652	130,354,939	93,221,383	161,376,286	34,095,580	46,090,067	20,332,690	897,644,733
2031	425,375,257	134,531,087	96,207,892	166,546,256	35,187,892	47,566,643	20,984,083	926,402,345
Average Annual Growth ($)								
2016-31	10,019,678.73	3,168,868.53	2,266,168.88	3,922,983.18	828,847.86	1,120,428.31	494,278.34	21,821,330.04

Source: GapMaps, PPM Consulting

4.Competition

4.1 Existing Retail Hierarchy

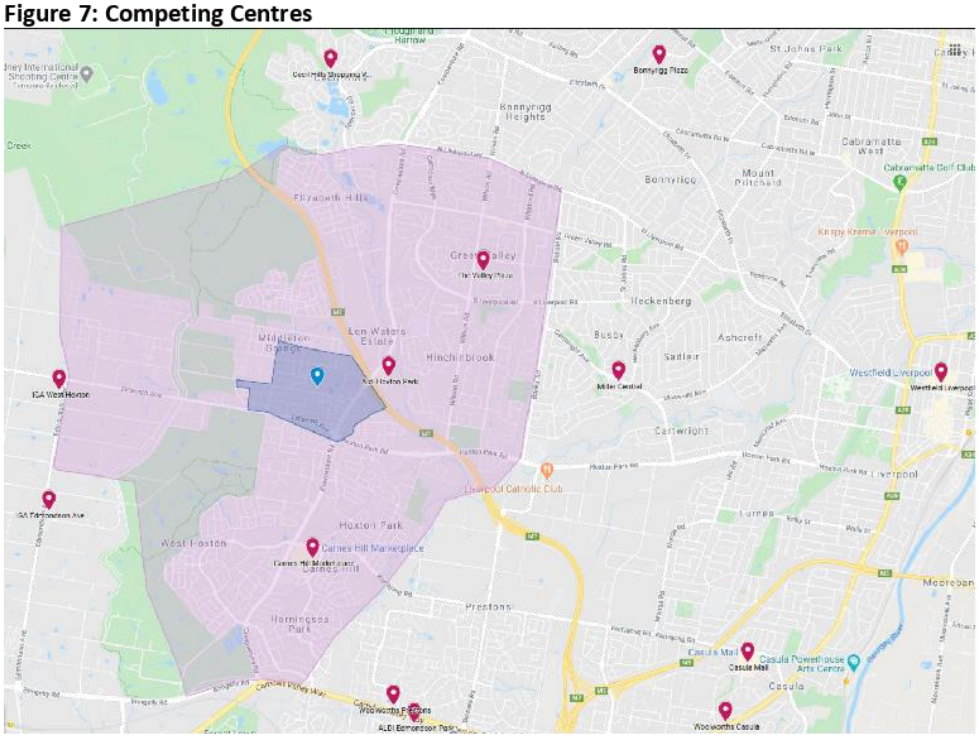
Middleton Grange Town Centre is a designated B2 – Local Centre, with the same zoning as the existing Carnes Hill Town Centre, and future Town Centres such as Austral and Edmondson Park. Middleton Grange is therefore already part of the established/approved centres hierarchy defined by Liverpool City Council.

There are currently no shopping centres in the Middleton Grange suburb. Within the main trade area, the following centres currently exist:

- Carnes Hill Marketplace, 2.8km from the proposed Town Centre
- The Valley Plaza, 4.8km from the proposed Town Centre
- Hoxton Park Aldi, 1km from the proposed Town Centre.

Figure 7 shows the surrounding network of retail centres of relevance to the proposed development.

Figure 7: Competing Centres



Source: Google My Maps, PPM Consulting

Table 5 shows the competing centres.

Table 5: Competing Centres

	Retail GLA (est)	Major Traders	Distance by Road from Middleton Grange
Within Trade Area			
Carnes Hill Marketplace	17,233	Woolworths, Big W, Aldi*	2.8
The Valley Plaza	12,737	Woolworths, Coles	4.8
Hoxton Park	2,000	ALDI	1.0
Total	31,970		
Outside of Trade Area			
Westfield Liverpool	83,538	Woolworths	9.1
Bonnyrigg Plaza	22,388	Woolworths, Big W	7.6
Casula Mall	20,165	Coles, Aldi, Kmart	7.1
Austral	2,500	IGA	4.7
WeHoxton Shopping Centre	2,800	IGA	3.3
Prestons	3,000	Woolworths	5.6
Edmondson Park	1,032	ALDI	6.2
Miller Central		Woolworths, ALDI	5.1
Cecil Hills Shopping Village	2,000	Woolworths	5.4
Casula	3,942	Woolworths	7.8

* Aldi is not located within the Carnes Hill Marketplace
Source: GapMaps, PPM Consulting

Within The Main Trade Area

Carnes Hill Town Centre

The Carnes Hill Town Centre is located 2.8 kilometres to the south of Middleton Grange Town Centre. The key component of the Carnes Hill Town Centre is the 17,208m^2 Carnes Hill Marketplace, anchored by a Big W discount department store and a Woolworths supermarket and includes a Dan Murphy's large format liquor store. According to the most recent statistics, the centre recorded total Moving Annual Turnover (MAT) of around $163.5 million. The Town Centre also accommodates a stand-alone Aldi supermarket, with its own parking as well as surrounding pad-sites, including a medical centre, McDonalds, Pizza Hut and a service station. There is around 18,700m^2 of retail floorspace at this centre.

The Valley Plaza

The Valley Plaza predominantly consists of the double supermarket anchored Green Valley Plaza shopping centre located in the suburb of Green Valley, about 4.5 km north-east of Middleton Grange. There are also several pad sites around this centre including a service station, a McDonalds 24 hour restaurant, an Autobarn and a Carlovers car-wash.

Hoxton Park Aldi

There is an Aldi around 1km from the Middleton Grange Town Centre. This site also has a service station and fast food outlets.

Beyond the Main Trade Area

Beyond the main trade area are the following:

- Liverpool CBD and Westfield Liverpool - which is the highest order retail and commercial centre in the LGA, located about 8 km east of Middleton Grange Town Centre. This centre provides around 125,000m^2 of retail floorspace, including an extensive street/strip retail offer and the 75,000m^2 (retail GLA) Westfield Liverpool shopping centre, a highly successful regional centre than achieved annual sales of $498.8million in 2019. The centre also includes the Liverpool Hospital, a major tertiary hospital serving outer western Sydney, a sizeable office market, street/strip shopfront commercial/business users and community facilities, and is a key bus and rail interchange for outer Western Sydney.
- Casula Mall - consists of the 20,000m^2 Casula Mall sub-regional shopping centre located about 7.8 km south-west of Middleton Grange. The centre is anchored by a Kmart and Coles and Supa IGA supermarkets.
- WeHoxton Shopping Centre is located about 4.2 km to the west of the subject site along Fifteenth Avenue, at the intersection of Edmondson Avenue. The WeHoxton Shopping Village currently occupies the north-west corner of the centre and supports around 2,800m^2 of traditional retail floorspace, including an IGA supermarket of 1,090m^2, 15 – 20 specialty shops, medical centre and allied health facilities.
- Austral Town Centre is planned to accommodate higher order retail and supporting ancillary non-retail uses, and is earmarked to support up to 30,000m^2 of retail floorspace according to the Austral and Leppington North precinct planning report. We expect that the centre will evolve in stages, and could accommodate one or more full-scale supermarkets as an initial stage, followed by sub-regionally oriented retail and commercial uses in subsequent stages.
- There is a stand alone Woolworths at Prestons with approximately 3,000m^2 of GLA.
- Miller Central is located about 5.0 km to the east of Middleton Grange and contains the newly redeveloped Miller Central shopping centre, which includes a large Woolworths supermarket and an Aldi supermarket. This centre sits within a precinct that includes a medical centre, convenience retail and business services, a tavern and a child care centre.
- Other centres include Cecil Hills Shopping Village, Edmondson Park and an IGA at Austral.

4.2 Proposed and Planned Retail Developments

The Draft Centres and Corridors Study 2020 identifies 256,447m^2 of new retail floorspace anticipated to come online by 2036 across the Liverpool LGA. Table 6 provides a snapshot of the proposed new centres and large centre expansions in the LGA. There are several smaller proposed developments within existing centres.

Table 6: Proposed Centre Developments, Liverpool LGA

Development	Completion Year	Supermarket GFA (m²)	Other Food and Retail GFA (m²)	Hospitality GFA (m²)	Department Store GFA (m²)	Total GFA (m²)
Fashion Spree Expansion	2016-2021	0	1,810	1,499	7	4,790
Edmondson Park Town Centre Stage 1	2016-2021	8,000	12,858	3,154	7,005	24,012
Edmondson Park Town Centre Stage 2	2021-2026	0	1,200	3,050	1	8,707
Liverpool CBD Mixed Use Developments	2021-2026	1,645	5,658	8,838	2,191	9,956
Edmondson Park Neighbourhood Centres	2021-2026	800	5,292	0	0	2,000
Austral Major Centre	2016-2021	5,000	11,006	3,004	6,005	25,015
Austral (2 Neighbourhood Centres)	2021-2026	7,000	4,051	3,154	0	16,006
Austral (Neighbourhood Centre)	2021-2026	3,500	2,926	1,577	0	8,003
Austral Bulky Goods	2021-2026	0	45,756	0	0	45,756
Austral Bulky Goods	2031-2036	0	58,824	0	0	58,824

Source: Liverpool Centres and Corridors Strategy, Draft, April 2020, SGS

Note that there are no known additional supermarkets in the main trade area in the development pipeline up to 2036.

5. Supermarket Gap

5.1 Supermarket Floorspace Provision: Main Trade Area

To assess the market demand for the potential redevelopment and addition of new retail facilities at the subject site, the current and future demand for supermarket floorspace generated by the main trade area population needs to be assessed. This is then compared with the existing and proposed supply of floorspace to come to a conclusion about the over- or under-supply of supermarket floor space in the area, and therefore whether the expenditure in the area can justify an increase in supermarket space.

To estimate the supermarket floorspace demand generated by the main trade area population, the available supermarket related expenditure is translated into an estimate of supportable or required supermarket floorspace. Floorspace estimates are generated by applying appropriate thresholds of turnover per square metre of floorspace, referred to as "retail turnover densities" (RTDs), to the available expenditure volume.

Table 7 compares the demand for supermarket floorspace generated by residents of the main trade area with the existing, and proposed, supply of supermarket floorspace, outlining the estimated current and future market gap for supermarket floorspace within the main trade area. For the purposes of calculating the estimated gap, the following steps have been taken:

- the current and future population within the main trade area has been estimated
- the per capital expenditure on take-home food, packaged liquor and groceries (FLG) has been estimated using GapMaps data
- 75 per cent of FLG expenditure has been directed to supermarkets. This estimate is consistent with national benchmarks for comparable areas (i.e. regional and non-metropolitan areas throughout Australia), and allows for the remaining 25 per cent to be allocated to smaller foodstores (e.g. Foodworks), food specialty stores and other general retail stores.
- the per capita FLG expenditure directed to supermarkets has been multiplied by the trade area population, to determine the total available FLG expenditure pool directed to supermarkets.
- 6 per cent of supermarket sales turnover has been allowed for to comprise of general merchandise (i.e. non-food), which is typical across national supermarkets.
- the likely retention of available expenditure for each trade area sector has been estimated. To do so, an outflow of 10 per cent of total supermarket expenditure has been allowed for, i.e. 90 per cent of supermarket expenditure generated by main trade area residents is estimated to be retained within the trade area.
- the inflow from customers who live beyond the main trade area has been allowed for, which is estimated at around 10 per cent. The consequential outcome of these assumptions is that there is a net outflow of 10 per cent (i.e. a net retention rate of 90 per cent). This is considered reasonable, if not conservative.
- applied an RTD for supermarkets of $13,500 per square metre in 2016, which represents a successful and profitable average trading level for supermarket retailers.
- real growth of 0.5 per cent per annum in this RTD has been allowed for from 2016.

Table 7: Middleton Grange Main Trade Area–Estimated Supermarket Floorspace Market Gap 2016-2031

Population and Supermarket Expenditure	2016	2018	2021	2026	2031
Main Trade Area Population	52,039	56,939	60,273	68,317	70,609
FLG Spend Per Capita ($)	5,093	4,958	5,149	5,318	6,024
Total FLG Exp ($)	265,060,397	282,315,785	310,327,768	363,325,961	425,375,257
FLG expenditure to supermarkets at 75% ($)	238,554,357	254,084,207	279,294,991	326,993,365	382,837,731
6% of supermarket sales from GM ($)	11,602,050	12,357,342	13,583,464	15,903,266	18,619,247
Total supermarket expenditure MTA residents ($)	250,156,408	266,441,548	292,878,455	342,896,631	401,456,978
MTA containment ratio	90	90	90	90	90
Beyond trade area capture rate	10	10	10	10	10
Total available supermarket expenditure ($)	250,156,408	266,441,548	292,878,455	342,896,631	401,456,978
Supermarket Floorspace Demand and Market Gap					
RTD @ $13,500 increasing at 0.5% p.a.	13,500	13,635	13,841	14,190	14,549
Supportable supermarket floorspace (m^2)	18,530	19,541	21,160	24,164	27,594
Supermarket Supply(m^2)	16,000	16,000	20,000	20,000	24,000
Total super market gap(m^2)	2,530	3,541	1,160	4,164	3,594

Source: GapMaps, PPM Consulting

Table 7 shows that the estimated supermarket floorspace demand generated by the main trade area population, based on the above methodology, is 18,530m^2 in 2016, and is projected to increase to around 27,594m^2 by 2031, an increase of over 8,000m^2.

The supermarket supply is assumed to increase by 4,000m^2 in 2021 as the Middleton Grange supermarket comes online. It is unlikely that there will be two full-line supermarkets in the Middleton Grange Town Centre, however in 2031 it is assumed a further full-line supermarket will be established in the main trade area, taking supermarket supply in the main trade area to 24,000m^2.

5.2 Supermarket Floorspace Provision: Liverpool LGA

The supermarket gap (under-supply of supermarket floor space) as of today is estimated at around 3,541m^2, the equivalent of around a full-line supermarket. It should be stressed that this is with the population and spending in the main trade area as of today.

The supermarket gap is projected to fall to 1,160m^2 as Middleton Grange comes online, although this does not include population increases over and above projected increases from new residents of the Middleton Grange Town Centre and other new release areas in the main trade area. Therefore it is likely that this is an under-estimate of the supermarket gap that would be experienced in 2026 and beyond. Even with an additional supermarket established in the main trade area by 2031, the undersupply of supermarket floorspace remains high at 3,594m^2. As noted in Chapter 5, there are no new supermarkets planned for the main trade area out to 2036, so the addition of a supermarket in this analysis is a very conservative assumption; if no further supermarkets (other than the Middleton Grange Town Centre) went ahead in the main trade area, the supermarket gap would be larger.

5.3 Escape Expenditure

It is not suggested that all of the supermarket demand generated by main trade area residents will or necessarily should be retained within the main trade area. There are inevitably outflows of expenditure from any trade area, just as there are inflows from tourists/passers-by/residents of other areas (including those who will work in the commercial centre in the Town Centre).

Assessing the market gap provides a broad indication as to whether a community has convenient access to a sufficient quantum and range of supermarket facilities.

The estimation of the market gap is also useful in enabling reasonable conclusions to be drawn as to the likely impact of any particular new development.

6. Economic Impacts

6.1 Estimated Sales Potential

Table 10 summarises the retail sales potential and required market shares of the proposed Middleton Grange Town Centre, assuming a centre of around 10,000m^2 of retail floorspace is provided.

The analysis in Chapter 5 of this report showed that a supermarket could be supported at the subject site today. In order to estimate the potential trading impacts on the surrounding retail hierarchy, it has been assumed that the proposed development would have its first full year of trade in the year 2021-22 (i.e. built by June 2021). Future sales estimates are presented in constant 2019 dollar terms and include GST.

The sales potential for the proposed redevelopment comes from the information provided throughout this report, and in particular the following:

- the existing provision and estimated trading levels of supermarkets across the surrounding region.
- the current and future population within the main trade area, and in particular, the FLG expenditure capacity generated by this population.

As shown in Table 8, it is estimated that the proposed development will achieve a sales volume in the order of $86 million in 2026, expressed in constant 2019 dollar terms, including estimated supermarket sales of $55.6 million (at approximately $13,910 per square metre). The gross leasable area (GLA) has been derived by removing food premises (which are not part of a retail analysis), as well as accounting for the fact that it is likely that not all specialty retail space would be leased at any one time.

Table 8: Middleton Grange Town Centre – Estimated Retail Sales Potential by Store Type, 2026

	GLA (m^2)	Est Sales ($)	$/m^2
Supermarket	4,000	55,640,386	13,910
Mini-Major	3,224	24,914,528	7,728
Specialty Retail	707	5,463,577	7,728
Total Retail	7,931	86,018,490	10,846

Source: Architects, PPM Consulting

The total projected main trade area retail expenditure for 2026 is estimated at $791 million. Assuming escape expenditure of 10 per cent, the share of total main trade area expenditure that the Middleton Grange Town Centre would be expected to achieve would be 12.1 per cent. This is shown in Table 9. This means that nearly 90 per cent of all retail expenditure in the main trade area would still be expected to occur in the current centres. It is estimated that beyond trade area expenditure (including tourists/visitors/workers and other non-trade area residents in the region) would contribute to around 10 per cent of total sales for the centre.

Table 9: Middleton Grange Estimated Share of Total Retail Expenditure of Main Trade Area

Main Trade Area Expenditure ($m)	791.3
Estimated Share from Beyond Area (%)	10.0
Estimated Main Trade Area Share ($)	12.1

Source: PPM Consulting

The other major centres in the main trade area are projected to account for 41.5 per cent of retail spending in 2026, as shown in Table 10, which shows moving average turnover (MAT) for selected centres in 2019 and inflated for 2026.

Table 10: Moving Annual Total Expenditure – Selected Main Trade Area Centres

	MAT 2019 ($m)	MAT 2026 ($m)	Estimated Share Total MTA Expenditure (%)
Carnes Hill Marketplace	163.5	168.5	23.7
The Valley Plaza	96.4	99.4	14.0
Hoxton Park	27.0	27.8	3.9
Total Main Trade Area Expenditure	634.5	791.3	41.5

Source: GapMaps, PPM Consulting

6.2 Purpose of Assessing Trade Impacts

The purpose of an impact assessment is to provide guidance as to whether or not there is likely to be a net community benefit or disbenefit from any proposed development. In particular, if there is a real possibility of some existing facilities potentially being impacted to such a degree that they may be lost to the community and if the service or services provided by those facilities are not at the very least replaced by the proposed new facilities, then a community disbenefit could result.

In order to understand whether any particular centre may be impacted to the extent that its continued viability may be in question, a scenario for the expected retail impacts on the surrounding competitive network if the proposed Town Centre were to proceed as planned has been modelled.

The estimates from this scenario provide indications as to whether the scale of the proposed retail development is reasonable and whether any surrounding centres are likely to be at risk to the extent that the community would suffer a net disbenefit, attributable to the proposed retail development.

In considering likely trading impacts on any individual centre or individual retailer, it must first be acknowledged that such estimates can only realistically be expected to provide a broad indication of likely outcomes, since there are many factors which can change in response to any new retail development, and which will have a bearing on the consequent outcomes. The competitive response of each relevant centre or trader is one such factor, as are further redevelopments or improvements which one or more of the competitive network of centres might implement.

6.3 Impacts Methodology

The following factors are typically considered when assessing the potential impacts of a new supermarket based development on each existing facility or centre:

- the distance of the (impacted) centre, or retail precinct, by road, from the proposed development.
- the size of the centre or precinct, in terms of total retail floorspace.
- the amount of supermarket floorspace, and brands of these supermarkets.
- the role and function of the centre or precinct.
- relative accessibility and relative convenience compared with the proposed retail development.
- the estimated performance of the centre/precinct (in current sales) and future performance (in the impact year), accounting for any future developments in the region that may also impact on the future sales of existing centres.
- the share of available expenditure which the centre/precinct attracts from the identified main trade area of the proposed development. A centre may not be situated in the identified trade area of the proposed development but its main trade area may extend to include parts, or all, of the trade area. For example, the trade area for large regional shopping centre typically includes several hundred thousand persons. Such a trade area is likely to include (partially or completely) trade areas for smaller convenience based centres, sub-regional centres, neighbourhood centres, retail strips and stand-alone supermarkets.

The following key principles are then relied on when assessing the dollar (and percentage) impacts that are likely to be absorbed by existing facilities/centres:

- the greatest impacts are typically absorbed by the closest comparable centres. For example, a new Woolworths supermarket is generally likely to impact the closest nearby Woolworths supermarket to the greatest extent, followed by impacts on other comparable large supermarkets (e.g. Coles), and at the lower end of the spectrum, by smaller scale supermarkets/food stores, which serve much more limited roles.
- impacts on small scale, local supermarkets/food stores, tend to be relatively smaller in scale, as these stores normally attract a small market share of available main trade area expenditure and perform a different role and function in the hierarchy, often serving the local walkable catchments surrounding them, and/or serving more specialised needs (e.g. specialty food stores).

The trading impacts on the three main trade area centres has been estimated using the following methodology, as laid out in Table 13. The table comprises the following:

- Column (1) shows the total GLA of each centre
- Column (2) presents the estimated sales performance of the centre within the surrounding competitive supply network at 2019, based on available datasets.
- Column (3) details the estimated sales for the surrounding competitive supply network as at 2026 under a “No Development” scenario. This estimated sales performance has regard for the planned developments in the region (i.e. accounts for cumulative impacts). It also inflates the retail sales by 1 per cent per annum to take account of inflation.
- Column (4) presents an estimated sales performance of the surrounding competitive supply network as at 2026, assuming the proposed development proceeds. It is assumed

that 50 per cent of expenditure at the new centre would come at the expense of the three top listed centres in the table; 50 per cent is assumed to be "escape expenditure" to other centres outside of the main trade area.

- Columns (5) and (6) detail the estimated trading impact (in dollar and percentage terms) of the proposed development, which is determined by comparing the estimated sales for each competitive centre with and without the proposed development.
- Column (7) details the estimated sales for the surrounding competitive supply network as at 2031 under a "No Development" scenario.
- Column (8) presents an estimate of sales performance in 2031 given the proposed development goes ahead
- Column (9) presents the impact on sales in 2031 with the development going ahead, in percentage terms.
- Column (10) compares the 2031 scenario with the development going ahead and compares it with the 2019 sales performance.

It should be noted that this is only one likely scenario. The actual impact on specific centres may be higher or lower than presented in the scenario outlined in Table 11.

Table 11: Middleton Grange - Estimated Sales Transfer on Specific Centres – 2026 and 2031

	Total GLA (m2)	Estimated Centre Sales 2019 ($m)	Est Sales No Dev 2026 ($)	Est Sales With Dev 2026 ($)	Estimated Impact ($)	Estimated Impact (%)	Est Sales No Dev 2031 ($)	Est Sales With Dev 2031 ($)	Estimated Impact (%)	Estimated Impact With Development 2019-2031
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Carnes Hill Marketplace	17,233	163,529,777	201,120,999	175,315,451.82	25,805,547.13	-12.8%	233,154,360	206,697,190	-11.3%	26.4%
The Valley Plaza	12,737	96,429,370	118,595,962	105,693,188.46	12,902,773.56	-10.9%	137,485,224	124,256,639	-9.6	28.9%
Hoxton Park	2,000	27,000,000	33,206,594	28,905,669.85	4,300,924.52	-13.0%	38,495,544	34,086,016	-11.5	26.2%

Source: PPM Consulting

6.4 Implications

There is a significant market gap for supermarket facilities in the main trade area. The impact of the Middleton Grange Town Centre will offset this gap, but only partially, with scope for more supermarkets in the main trade area to 2031.

There are likely to be impacts on Carnes Hill Marketplace in the short term, including a 12.8 per cent impact in 2026 between the "no development" and "with development" scenarios, and an 11.3 per cent impact in 2031. However, it should be noted that compared with 2019, retail sales at Carnes Hill Marketplace are expected to grow by 26.4 per cent to 2031.

Even if 90 per cent of total projected sales for Middleton Grange were displaced from Carnes Hill Marketplace (a very unlikely scenario), the impact would be a 6 per cent drop between 2019 and 2031.

The competitive environment is also dynamic, and the impact analysis only presents a static analysis. Upon Middleton Grange entering the marketplace, the other centres will likely react by providing more and better services to ensure that they do not lose customers to the new centre. This would benefit all customers of Carnes Hill Marketplace, and would likely offset some of the impacts Middleton Grange might have.

It should be noted that there is a high degree of brand loyalty among supermarket shoppers. The proponents of Middleton Grange Town Centre advise that they have signed a lease with Coles. The supermarket at Carnes Hill Marketplace is a Woolworths. This is likely to slightly reduce the impact on Carnes Hill Marketplace.

In summary, the impact analysis shows that there is no prospect that any existing centre will suffer any impact which will threaten its ability to provide a level of service at least equivalent to that which each is providing at present.

Indeed, by 2031, it is estimated that all centres within the main trade area will be trading well above 2019 levels.

Sales in the three centres only represent 41 per cent of sales of the total $791 million of estimated retail expenditure made by residents of the main trade area in 2026. Therefore, there is a large amount of sales that are still to be captured by the centres operating within the main trade area.

It should also be noted that the population of Middleton Grange is likely an underestimate because of the new residents of Middleton Grange Town Centre and surrounding new developments. To the extent that the population increases are underestimated, the amount of retail expenditure in total, and therefore the amount of retail space demanded, will increase.

6.5 A Comment on Competition

Major British Study of Restrictions of Commercial Space

Cheshire, Hilber and Kaplanis in *Evaluating the effects of planning policies on the retail sector: or do Town Centre first policies deliver the goods?* (Spatial Economics Research Centre, London School of Economics, 2011) found that British land use policies may lower total factor productivity (TFP) in the retailing industry by:

- restricting the total availability of land for retail, thereby increasing space costs
- directly limiting store size
- concentrating retail development on specific central locations.

The researchers used unique store-specific data to estimate the impact of space on retail productivity and the specific effects of planning restrictiveness and micromanagement of store locations.

The research found that total factor productivity (TFP) rises with store size and that planning policy directly reduces productivity both by reducing store sizes and forcing retail onto less productive sites. The results suggest that since the late 1980s British planning policies have imposed a loss of TFP of at least 20 per cent.

Planning policies in NSW are similarly restrictive, establishing Town Centre hierarchies, restricting new Town Centres, restricting the size of Town Centres, restricting what can go into Town Centres and curtailing growth.

The research found that these restrictive "Town Centre first" policies should be removed, especially:

- eliminating the 'needs' and 'sequential' tests and allowing supermarket development on larger sites close to major highways as it would produce major efficiency gains in the sector.
- "Town Centre first" policies are unlikely to deliver on the two explicit goals of improving access to shops for poorer households and encouraging the use of public transport for sustainability.
    - By reducing productivity and raising prices in shops – notably supermarkets – these policies adversely affect the poor, since poorer households spend higher proportions of their incomes on supermarket purchases.
    - Since warehouses are located close to major roads, these policies push retail logistics to more and longer journeys in smaller trucks in more congested conditions. They also push the majority of shoppers using cars to more frequent and time-consuming trips in more congested conditions.

The implications of this research for NSW, and indeed for the proposed Town Centre at Middleton Grange, are profound. The findings suggest that restricting the size and growth of centres, and concentrating growth in current centres (such as CBDs), would likely result in an increase in prices, more cars and trucks on the road and more congestion around the designated centres. Restrictions of this nature, if they were imposed, would not only be bad for the current and potential residents of Middleton Grange, but also the wider catchment area.

Competing Town Centres

The Department of Planning, Industry and Environment (DoPIE) has a long-standing (albeit in draft) policy position when it comes to competition between centres.

The *Centres Policy: Planning for Retail and Commercial Development* has been in draft form since 2009 and provides guidance to planning authorities. The (draft) Centres Policy is based on six planning principles:

- Retail and commercial activity should be located in centres to ensure the most efficient use of transport and other infrastructure, proximity to labour markets, and to improve the amenity and liveability of those centres.
- The planning system should be flexible enough to enable centres to grow, and new centres to form.
- The market is best placed to determine the need for retail and commercial development. The role of the planning system is to regulate the location and scale of development to accommodate market demand.
- The planning system should ensure that the supply of available floorspace always accommodates the market demand, to help facilitate new entrants into the market and promote competition.
- The planning system should support a wide range of retail and commercial premises in all centres and should contribute to ensuring a competitive retail and commercial market.
- Retail and commercial development should be well designed to ensure they contribute to the amenity, accessibility, urban context and sustainability of centres.

Recent residential development in the area has resulted in an increase in population without a commensurate increase in the amount of retail space and other amenities. The proposed neighbourhood centre will bring the retail and other commercial services that are needed today by current residents of the area.

A Note on The Harper Review

The Commonwealth Government's Competition Policy Review (Harper Review) released its final report on 31 March 2015. The key focus of the report, with regards to planning and land use controls, is on the constraints to land use and its impact on competition.

At page 44, the Harper Review states:

> Land is an important input to the production of goods and services and a source of amenity for consumers. Even small policy improvements in this area could yield large benefits to the economy.
>
> Planning systems by their nature create barriers to entry, diversification or expansion, including through limiting the number, size, operating model and mix of businesses. This can reduce the responsiveness of suppliers to the needs of consumers.
>
> Planning regulations should work in the long-term interests of consumers. They should not restrict competition unless the benefits of the restriction to the community as a whole outweigh the costs,

> and the objectives of the regulations can only be achieved by restricting competition. Subjecting planning regulations to the public interest test will ensure they do not inappropriately limit entry to markets.

Comment

It is clear that, even if a new or redeveloped larger commercial or retail development is expected to have an effect on current businesses, this is no reason to prevent the new venture from coming to fruition. Competition is a good thing, and would be welcomed by consumers, as additional choice is offered. Competition could result in better products, better and more innovative service delivery and cheaper goods and services for consumers. For current businesses, competition can be both a threat and an opportunity, but it is not up to planners to protect current businesses from competition (and thereby preventing the benefits of competition flowing to consumers). Current businesses competing with new businesses can find cheaper and better ways to do business, new offerings to consumers and can innovate in both products and service delivery. Stymying competition leads to higher prices for consumers, lower levels of service, further drive times, more congestion and less choice. Therefore, competition should be welcomed by planners, rather than looking for it to be managed.

6.6 Recommended Scale and Mix

The analysis contained in this report indicates that a supermarket of at least 3,800m^2 could be supported at the subject site by 2026.

Across Australia single supermarket anchored shopping centres typically support around 1,300 – 1,500m^2 of specialty retail floorspace and around 500 – 600m^2 of mini-major floorspace, in addition to a supermarket anchor. Typical single supermarket centres tend to also support an additional 500 – 1,000 m^2 of other uses, which could include travel agents, post offices, gyms, childcare, medical uses, professional suites, banks etc.

In some locations, with high volumes of surrounding activity, and limited competition, the provision of specialty retail could be significantly larger than this. This applies to the Middleton Grange Town Centre. In other locations a supermarket centre may only support a handful of specialty tenants.

The Valley Plaza is a good example of the type of local centre that could be envisaged at the subject site, although there are two supermarkets and a larger amount of retail GLA than is currently proposed at Middleton Grange.

In this context, and given the centre's proposed central location within the Middleton Grange, the distance to other full-line supermarkets and the need for complimentary retail around the anchor, it is recommended that a centre of a size around that proposed could be supported at the subject site, with a strong focus on convenience and lifetsyle.

7. Impacts of Higher Retail Floorspace

7.1 Estimated Sales Potential with Increased Retail Floorspace

As the proposed Town Centre is currently a planning proposal, it is impossible to know with accuracy what the final make-up of floorspaces will be. It is therefore prudent to undertake a sensitivity analysis of the impacts shown in Chapter 6. The resulting estimates are mainly sensitive to GLA. This chapter looks at the impacts on the surrounding retail hierarchy of a retail component of 15,000m^2 and 20,000m^2. As noted elsewhere in this report, this is not meant as a proposed amount of floorspace, nor does it include the significant non-retail components of the proposed Town Centre.

As in Chapter 6, in order to estimate the potential trading impacts on the surrounding retail hierarchy, it has been assumed that the proposed development would have its first full year of trade in the year 2021-22 (i.e. built by June 2021). Future sales estimates are presented in constant 2019 dollar terms and include GST.

The sales potential for the proposed redevelopment comes from the information provided throughout this report, and in particular the following:

- the existing provision and estimated trading levels of supermarkets across the surrounding region.
- the current and future population within the main trade area, and in particular, the FLG expenditure capacity generated by this population.

As shown in Table 12, it is estimated that the proposed development could achieve a sales volume in the order of $140.6 million in 2026 if 15,000m^2 of GLA is devoted to retail and $179.3 million if 20,000m^2 is devoted to retail.

Table 12: Middleton Grange Town Centre – Estimated Retail Sales Potential by Store Type, 2026

	15,000m^2 of Retail Floorspace			20,000m^2 of Retail Floorspace		
	GLA (m^2)	Est Sales ($)	$/m^2	GLA (m^2)	Est Sales ($)	$/m^2
Supermarket	4,000	55,640,386	13,910	4,000	55,640,386	13,910
Mini-Major	4,200	32,456,892	7,728	8,000	61,822,651	7,728
Specialty Retail	6,800	52,549,253	7,728	8,000	61,822,651	7,728
Total Retail	15,000	140,646,530	9,376	20,000	179,285,687	8,964

Source: PPM Consulting

The total projected main trade area retail expenditure for 2026 is estimated at $791 million. Assuming escape expenditure of 10 per cent, the share of total main trade area expenditure that the Middleton Grange Town Centre would be expected to achieve would be 19.7 per cent with 15,000m^2 and 25.2 per cent with 20,000m^2 of retail space. This is shown in Table 13. This means that even with 20,000m^2 of retail, nearly 75 per cent of all retail expenditure in the main trade area would still be expected to occur in the current centres. It is estimated that beyond trade area expenditure (including tourists/visitors/workers and other non-trade area residents in the region) would contribute to around 10 per cent of total sales for the centre.

Table 13: Middleton Grange Estimated Share of Total Retail Expenditure of Main Trade Area

	15,000m^2 of Retail Floorspace	20,000m^2 of Retail Floorspace
Main Trade Area Expenditure ($m)	791.3	791.3
Estimated Share from Beyond Area (%)	10.0	10.0
Estimated Main Trade Area Share ($)	19.7	25.2

Source: PPM Consulting

7.2 Impacts of Higher Retail Floorspace

The impacts methodology used in this chapter is the same as that used in Chapter 6. The trading impacts on the three main trade area centres has been estimated using the following methodology, as laid out in Table 15 (15,000m^2 of retail GLA) and Table 16 (20,000m^2 of retail GLA). The table comprises the following:

- Column (1) shows the total GLA of each centre
- Column (2) presents the estimated sales performance of the centre within the surrounding competitive supply network at 2019, based on available datasets.
- Column (3) details the estimated sales for the surrounding competitive supply network as at 2026 under a "No Development" scenario. This estimated sales performance has regard for the planned developments in the region (i.e. accounts for cumulative impacts). It also inflates the retail sales by 1 per cent per annum to take account of inflation.
- Column (4) presents an estimated sales performance of the surrounding competitive supply network as at 2026, assuming the proposed development proceeds. It is assumed that 50 per cent of expenditure at the new centre would come at the expense of the three top listed centres in the table; 50 per cent is assumed to be "escape expenditure" to other centres outside of the main trade area.
- Columns (5) and (6) detail the estimated trading impact (in dollar and percentage terms) of the proposed development, which is determined by comparing the estimated sales for each competitive centre with and without the proposed development.
- Column (7) details the estimated sales for the surrounding competitive supply network as at 2031 under a "No Development" scenario.
- Column (8) presents an estimate of sales performance in 2031 given the proposed development goes ahead
- Column (9) presents the impact on sales in 2031 with the development going ahead, in percentage terms.
- Column (10) compares the 2031 scenario with the development going ahead and compares it with the 2019 sales performance.

It should be noted that this is only one likely scenario. The actual impact on specific centres may be higher or lower than presented in the scenarios outlined in Tables 14 and 15.

Table 14: Middleton Grange - Estimated Sales Transfer on Specific Centres – 2026 and 2031 – 15,000m^2 of Retail GLA

	Total GLA (m2)	Estimated Centre Sales 2019 ($m)	Est Sales No Dev 2026 ($)	Est Sales With Dev 2026 ($)	Estimated Impact ($)	Estimated Impact (%)	Est Sales No Dev 2031 ($)	Est Sales With Dev 2031 ($)	Estimated Impact (%)	Estimated Impact With Development 2019-2031
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Carnes Hill Marketplace	17,233	163,529,777	201,120,999	158,927,039.94	42,193,959.01	-21.0%	233,154,360	189,894,951	-18.6%	16.1%
The Valley Plaza	12,737	96,429,370	118,595,962	97,498,982.52	21,096,979.50	-17.8%	137,485,224	115,855,519	-15.7%	20.1%
Hoxton Park	2,000	27,000,000	33,206,594	26,174,267.86	7,032,326.50	-21.2%	38,495,544	31,285,642	-18.7%	15.9%

Source: PPM Consulting

Table 15: Middleton Grange - Estimated Sales Transfer on Specific Centres – 2026 and 2031 – 20,000m^2 of Retail GLA

	Total GLA (m2)	Estimated Centre Sales 2019 ($m)	Est Sales No Dev 2026 ($)	Est Sales With Dev 2026 ($)	Estimated Impact ($)	Estimated Impact (%)	Est Sales No Dev 2031 ($)	Est Sales With Dev 2031 ($)	Estimated Impact (%)	Estimated Impact With Development 2019-2031
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Carnes Hill Marketplace	17,233	163,529,777	201,120,999	147,335,292.96	53,785,705.99	-26.7%	233,154,360	178,010,497	-23.7%	8.9%
The Valley Plaza	12,737	96,429,370	118,595,962	91,703,109.03	26,892,853.00	-22.7%	137,485,224	109,913,293	-20.1%	14.0%
Hoxton Park	2,000	27,000,000	33,206,594	24,242,310.03	8,964,284.33	-27.0%	38,495,544	29,304,900	-23.9%	8.5%

Source: PPM Consulting

7.3 Implications of 15,000m² and 20,000m² of Retail GLA

If 15,000m² or 20,000m² of retail GLA is provided at the proposed Middleton Grange Town Centre, the short term impacts on Carnes Hill Marketplace are likely to be high.

In 2026, the 15,000m² scenario yields an estimated 21.0 per cent impact, while the 20,000m² scenario is estimated to result in a 26.7 per cent impact. In 2031, the impacts are estimated at 18.6 per cent and 23.7 per cent respectively.

However comparing 2019 (prior to the development) with 2031, retail sales at Carnes Hill Marketplace are expected to *grow* by 16.1 per cent in the 15,000m² scenario and 8.9 per cent in the 20,000m².

The competitive environment is also dynamic, and the impact analysis only presents a static analysis. Upon Middleton Grange entering the marketplace, the other centres will likely react by providing more and better services to ensure that they do not lose customers to the new centre. This would benefit all customers of Carnes Hill Marketplace (and likely all nearby consumers), and would likely offset some of the impacts Middleton Grange might have.

In summary, the impact analysis shows that, while there may be a short term impact that is greater than 20 per cent, there is no prospect that any existing centre will suffer any impact over the long term that will threaten its ability to provide a level of service at least equivalent to that which each is providing at present. Indeed, by 2031, it is estimated that all centres within the main trade area will be trading well above 2019 levels.

8.Ongoing Retail Employment and Other Community Impacts

8.1 Estimated Ongoing Employment Impact of the Retail Component

The proposed Middleton Grange Town Centre will result in additional on-going employment on site, as well as further jobs throughout the supply chain, including those in industries servicing the retail tenants at the site, such as transport workers, wholesalers and the like.

Furthermore, the construction phase of the project will support temporary construction related employment, and additional temporary jobs through the broader economic supply chain (i.e. multiplier impacts).

In estimating the various employment benefits, various data sources have been relied upon, including information from supermarket operators, the ABS, state and local government agencies, as well as 20 years of experience in preparing assessments of this nature.

Table 16 illustrates the estimated net increase in direct on-site retail employment that could potentially be created if the proposed development at the subject site were to proceed. An estimated 249 jobs could be created on site once the Middleton Grange Town Centre is fully operational.

Allowing for some minor impacts on employment across other retail centres in the hierarchy, estimated to be in the order of 5 per cent, the overall net employment that could potentially be created is estimated to be in the order of 230 ongoing jobs.

Table 16: Middleton Grange – Estimated Employment Levels

	Estimated employment per '000 m^2	GLA (m^2)	Employment (persons)
Supermarket	30	4,000	133
Mini-Major	40	3,224	81
Specialty Retailer	40	1,414	35
Total Development		8,638	249

Source: ABS Retail Sales, PPM Consulting

It should be noted that the employment estimate includes all of the space for specialty retailers but does not include the proposed medical centre, offices, community centre, gym, etc. Therefore it is an under-estimate of the employment impact of the Middleton Grange Town Centre.

8.2 Other Economic and Social Impacts of the Retail Component

The retail aspects of the proposed development would generate a range of additional economic benefits, including:

- increased choice and amenity for the population of the area.
- increased competition, potentially resulting in an improvement in offerings from all centres in the area.
- increased competition, potentially leading to innovations in service delivery.
- more convenient access to groceries and other retail offerings those living in the Middleton Grange suburb
- reduced travel time for the those who currently use Carnes Hill Marketplace, The Valley and other shopping centres, and the potential increase in walking. This may have the benefit of reducing fuel expenses as well as helping to combat health issues through increased walking
- an opportunity for the creation of new local businesses, which will likely reinvest in the local area
- providing jobs within the Middleton Grange area, which may be taken up by local residents.

9. Conclusion

Liverpool is undergoing significant growth, and it is likely that many new supermarkets and Town Centres will be required over the next 10 to 20 years.

Middleton Grange has been part of the contemplated retail hierarchy for nearly 10 years.

There is a significant supermarket gap for the main trade area around Middleton Grange, leaving the current and future residents under-served by retail floorspace. The inclusion of one new supermarket in the analysis presented in this report still results in a supermarket gap large enough to nearly fully support another full line supermarket in 2031.

With 10,000m^2 of retail GLA, there are likely to be impacts on Carnes Hill Marketplace in the short term, including a 12.8 per cent impact in 2026 between the "no development" and "with development" scenarios, and an 11.3 per cent impact in 2031. However, it should be noted that compared with 2019, retail sales at Carnes Hill Marketplace are expected to grow by 26.4 per cent to 2031. By 2031, it is estimated that all centres within the main trade area will be trading well above 2019 levels.

The alternative scenarios of 15,000m^2 and 20,000m^2 of retail floorspace could result in a high short-term impact to Carnes Hill Marketplace (between 21.0 per cent and 26.7 per cent, respectively). However, compared with 2019, sales at Carnes Hill Marketplace are expected to *grow* by 16.1 with 15,000m^2 of floorspace and 8.9 per cent with 20,000m^2 of floorspace. Therefore, over the medium term, and with up to double the retail floorspace, it is expected that Carnes Hill Marketplace will not be significantly impacted by the Middleton Grange Town Centre.

In summary, the impact analysis shows that there is no prospect that any existing centre will suffer an impact which will threaten its ability to provide a level of service at least equivalent to that which each is providing at present.

It should be noted that this study has only assessed the impact of the proposed supermarket, mini-major and specialty shops. The proposed Middleton Grange Town Centre has been holistically planned, including the way it would fit into the existing area (parks, new cycle ways, sensible road network, social floorspace etc). At the same time, Carnes Hill has grown in such a way that it has created a traffic bottleneck and has not benefited from good place making principles. The Urbis Urban Design Report of 2015 has been improved upon by the proponent. The already good design has been refined and enhanced.

If Council decides not to allow the proposed Middleton Grange Town Centre to go ahead, it will result in current and future residents of Middleton Grange needing to travel for their daily needs. A smaller "neighbourhood" style centre could result in higher prices for goods than they would be with Middleton Grange Town Centre, and with a smaller retail offering.

The potential benefits of the proposed Middleton Grange Town Centre are many, with few potential downsides.

About PPM Consulting

PPM Consulting is a highly experienced and skilled economics and government relations consultancy.

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- designing, implementing and analysing economic impact assessments and cost-benefit analysis
- providing analysis of retail and commercial development
- providing economic analysis and advice
- providing advice on Voluntary Planning Agreements (for example, reporting on the "public benefits" provided by a developer as part of a planning proposal or permit/DA)
- uplift reports (for example, comparing FSR and height uplift scenarios and their effect on viability)
- viability reports
- writing submissions to government on policy changes on behalf of clients.

PPM Consulting can manage complex major projects, ensuring delivery within budget and timeframes. PPM Consulting prides itself on its ability to work with clients to get the best results possible.

The Director and Principal, Martin Musgrave, holds an honours degree in economics with 25 years of experience in across a wide range of sectors in a number of jurisdictions in both the public and private sectors. Martin is a highly experienced public policy professional, specialising in economic analysis, policy development and leadership, advocacy, and government relations. He is considered a highly skilled economist and policy professional who always acts with integrity.

Martin Musgrave has been a valued senior contributor in the following organisations:

- the Department of Planning and Environment
- the Urban Development Institute of Australia (National and Victorian Division)
- the Property Council of Australia (Residential Development Council)
- the Large Format Retail Association
- the Department of Premier and Cabinet (Victoria)
- the Department of the Prime Minister and Cabinet
- the Roads and Traffic Authority (NSW) (now known as RMS)
- the Hunter Valley Research Foundation (now known as the Hunter Research Foundation)

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Lyle Marshall & Partners Pty Ltd
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ABN 84 095 235 957

Our Ref: EMMc /1196-19

7th October 2020

Attn: Matthew Daniel
Pacific Planning Pty Ltd
PO Box 8
Caringbah NSW 1495

Email: mdaniel@pacificplanning.com.au

Dear Matthew,

Re: Response to Liverpool Council letter dated 28th September 2020 Reference R2-9/2015 Transport Strategy – Middleton Grange Town Centre.

We would like to provide further clarification to comments made in Council's letter dated 28th September 2020: -

1. We refer to the following comment in paragraph 6:
"Based on the agreed traffic generating rate and taking into consideration approximately 25% reduction in external traffic movements".

   We refer to the TIA REVG Table 4.3c, the traffic generation and formulation of the reduction of traffic generating rates was prepared in consultation with TfNSW and Council. We refer to the meeting held at TfNSW office on 18/2/2020, where it was agreed to use the higher traffic generation rate listed in TDT 2013/04a Appendix F for Prairewood and that this traffic generation rate would be applied to the whole of the commercial component. The reduction of 15% was applied to Retail and Commercial use only as agreed with TfNSW. Full disclosure of this reduction is shown in detail in the summary tables provided in Appendix B of the report.

2. Additional Traffic Impacts
We refer to the comment *"This forecast additional traffic will have a significant impact upon the surrounding network…"*

   Bitzios Consulting, in consultation with Lyle Marshall & Partners, developed a future year 2026 base model. The growths in background traffic were calculated from STFM (Sydney Travel Forecasting Model) sub area matrices, provided by Transport for NSW (TfNSW) for the years 2018 and 2026.

In addition to the background traffic growths, the 2026 base model also included four additional residential development sites in the vicinity of the Middleton Grange Town Centre. The future model also included the Len Waters Estate – Shopping Precinct accessed via the Cowpasture Road / Airfield Drive traffic signals.

The number of trips generated from these developments is summarised below: -

	Four residential sites	Len Waters Estate
Peak Hour AM	419	438
Peak Hour PM	436	590

Under 2026 'Do Minimum' model (that is without development traffic) the intersection of Cowpasture Road/Hoxton Park Road / Fifteenth Avenue would operate over capacity at LoS F in the AM and PM peak periods.

Transport for NSW are aware of the capacity constraints at this intersection. The existing capacity constraints are not as a direct result of the proposed town centre development traffic.

We understand after discussions with TfNSW today that their comments will be forwarded to Council towards the end of this week.

3. Flynn Avenue

We refer to paragraph 3 on page 2 of the letter:
"The TIA has also identified that to accommodate the forecast traffic and minimise its impact, the following improvements are also required."

"4 lane Flynn Avenue/Qantas Boulevard widening between Cowpasture road and Western boundary of the Town Centre."

No infrastructure works aside from additional works at the intersection of Flynn Avenue and Kingsford Smith Avenue are documented in the current modelling or TIA report.

The Flynn Avenue/Qantas Boulevard Intersection is recommended to be upgraded with additional short right turn lane from Qantas Boulevard to Cowpasture Road southbound and additional left turn lane from Qantas Boulevard to Cowpasture Road northbound. Again, shown as items 11, 12 in Figure 8a of TIA Revision G Report and Bitzios Report under section 5.9.2.

4. Passenger Bus

We refer to the monetary contribution for a $3.6M shuttle bus service. We require further detailed costings on this service and the route adoption for service. We refer to Figure 7C of the TIA report. The shuttle bus service indicated 2 options.

We understand that TfNSW are happy to consult with us and Council and provide a member of the Bus Planning Group.

We anticipate an indicative date for this meeting to be set up from our clients on 12th October 2020 to discuss this one more in detail.

A meeting invite will be sent out by the client representative to the appropriate Council staff members already involved with this project and James Hall from TfNSW.

5. Funding Mechanism

We refer to the comment:
"The development will bring the need for this road widening and would constitute approximately 50% of the traffic volume in the additional lane."

This statement is incorrect. The capacity of Cowpasture Road is already at saturation levels.

The modelling report prepared a network model to include an additional northbound lane to alleviate the already constrained conditions. The additional capacity is provided to improve intersection performance and northbound traffic flow due to background traffic growth and adjoining development sites. This is not as a direct result of development traffic.

Our understanding from TfNSW is that any funding provider by developer contribution is for regional road results and will need to be prepared in consultation with TfNSW.

We understand from TfNSW that the monetary funding mechanism is sought for increase in residential traffic and not for commercial/retail traffic land use.

Yours faithfully,

E Marshall-McClelland

Erica Marshall-McClelland
LYLE MARSHALL & PARTNERS PTY LTD

APPENDIX C : RELEVANT SECTION 9.1 DIRECTIONS

Section 9.1 Directions

The following is a list of Directions issued by the Minister for Planning to relevant planning authorities under section 9.1(2) of the *Environmental Planning and Assessment Act 1979* - previously section 117(2). These directions apply to planning proposals lodged with the Department of Planning, Industry and Environment on or after the date the particular direction was issued:

Direction	Issue date / Date effective
1. Employment and Resources 1.1 Business and Industrial Zones 1.2 Rural Zones 1.3 Mining, Petroleum Production and Extractive Industries 1.4 Oyster Aquaculture 1.5 Rural Lands	1 July 2009 (Except for New Direction 1.2 effective 14 April 2016; Direction 1.1 effective 1 May 2017; New Direction 1.5 effective 28 February 2019)
2. Environment and Heritage 2.1 Environment Protection Zones 2.2 Coastal Management 2.3 Heritage Conservation 2.4 Recreation Vehicle Areas 2.5 Application of E2 and E3 Zones and Environmental Overlays in Far North Coast LEPs 2.6 Remediation of Contaminated Land	1 July 2009 (Except for New Direction 2.6 effective 17 April 2020; Direction 2.5 effective 2 March 2016; Direction 2.1 and 2.4 effective 14 April 2016; Direction 2.2 effective 3 April 2018)
3. Housing, Infrastructure and Urban Development 3.1 Residential Zones 3.2 Caravan Parks and Manufactured Home Estates 3.3 Home Occupations 3.4 Integrating Land Use and Transport 3.5 Development Near Regulated Airports and Defence Airfields 3.6 Shooting Ranges 3.7 Reduction in non-hosted short term rental accommodation period	1 July 2009 (Except for New Direction 3.6 effective 16 February 2011; Direction 3.1, 3.2, 3.4 and 3.5 effective 14 April 2016; Direction 3.7 effective 15 February 2019)
4. Hazard and Risk 4.1 Acid Sulfate Soils 4.2 Mine Subsidence and Unstable Land 4.3 Flood Prone Land 4.4 Planning for Bushfire Protection	1 July 2009 (Except for New Direction 4.2 effective 14 April 2016; Direction 4.4 effective 19 February 2020
5. Regional Planning 5.1 Implementation of Regional Strategies (Revoked 17 October 2017) 5.2 Sydney Drinking Water Catchments 5.3 Farmland of State and Regional Significance on the NSW Far North Coast 5.4 Commercial and Retail Development along the Pacific Highway, North Coast 5.5 Development in the vicinity of Ellalong, Paxton and Millfield	1 July 2009 (Except for New Direction 5.2 effective 3 March 2011; Direction 5.4 effective 21 August 2015; Direction 5.9 effective 30 September 2013; Direction 5.10 effective

LOCAL PLANNING DIRECTIONS

Section 9.1(2) of the *Environmental Planning and Assessment Act 1979*

Direction		Issue date / Date effective
	(Cessnock LGA) (Revoked 18 June 2010)	14 April 2016; Direction 5.3 effective 1 May 2017; Direction 5.11 effective 6 February 2019)
5.6	Sydney to Canberra Corridor (Revoked 10 July 2008)	
5.7	Central Coast (Revoked 10 July 2008)	
5.8	Second Sydney Airport: Badgerys Creek (Revoked 20 August 2018)	
5.9	North West Rail Link Corridor Strategy	
5.10	Implementation of Regional Plans	
5.11	Development of Aboriginal Land Council land	
6.	Local Plan Making	1 July 2009
6.1	Approval and Referral Requirements	
6.2	Reserving Land for Public Purposes	
6.3	Site Specific Provisions	
7.	Metropolitan Planning	14 January 2015
7.1	Implementation of A Plan for Growing Sydney	Except for Direction 7.3: effective 9 December 2016; Direction 7.4: effective 15 May 2017; Direction 7.5: effective 25 July 2017; Direction 7.6: effective 5 August 2017; Direction 7.7: effective 22 December 2017; Direction 7.8: effective 13 September 2020; Direction 7.9: effective: 25 September 2018; Direction 7.10: effective 25 September 2018; Direction 7.11: effective 27 August 2020; Direction 7.12 effective 28 November 2019
7.2	Implementation of Greater Macarthur Land Release Investigation (Revoked 28 November 2019)	
7.3	Parramatta Road Corridor Urban Transformation Strategy	
7.4	Implementation of North West Priority Growth Area Land Use and Infrastructure Implementation Plan	
7.5	Implementation of Greater Parramatta Priority Growth Area Interim Land Use and Infrastructure Implementation Plan	
7.6	Implementation of Wilton Priority Growth Area Interim Land Use and Infrastructure Implementation Plan	
7.7	Implementation of Glenfield to Macarthur Urban Renewal Corridor	
7.8	Implementation of the Western Sydney Aerotropolis Plan	
7.9	Implementation of Bayside West Precincts 2036 Plan	
7.10	Implementation of Planning Principles for the Cooks Cove Precinct	
7.11	Implementation of St Leonards and Crows Nest 2036 Plan	
7.12	Implementation of Greater Macarthur 2040	

LOCAL PLANNING DIRECTIONS

Section 9.1(2) of the *Environmental Planning and Assessment Act 1979*

1. Employment and Resources

1.1 Business and Industrial Zones

Objectives

(1) The objectives of this direction are to:

- (a) encourage employment growth in suitable locations,
- (b) protect employment land in business and industrial zones, and
- (c) support the viability of identified centres.

Where this direction applies

(2) This direction applies to all relevant planning authorities.

When this direction applies

(3) This direction applies when a relevant planning authority prepares a planning proposal that will affect land within an existing or proposed business or industrial zone (including the alteration of any existing business or industrial zone boundary).

What a relevant planning authority must do if this direction applies

(4) A planning proposal must:

- (a) give effect to the objectives of this direction,
- (b) retain the areas and locations of existing business and industrial zones,
- (c) not reduce the total potential floor space area for employment uses and related public services in business zones,
- (d) not reduce the total potential floor space area for industrial uses in industrial zones, and
- (e) ensure that proposed new employment areas are in accordance with a strategy that is approved by the Secretary of the Department of Planning and Environment.

Consistency

(5) A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Secretary of the Department of Planning and Environment (or an officer of the Department nominated by the Secretary) that the provisions of the planning proposal that are inconsistent are:

- (a) justified by a strategy which:
  - (i) gives consideration to the objective of this direction, and
  - (ii) identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), and
  - (iii) is approved by the Secretary of the Department of Planning and Environment, or
- (b) justified by a study (prepared in support of the planning proposal) which gives consideration to the objective of this direction, or
- (c) in accordance with the relevant Regional Strategy, Regional Plan or Sub-Regional Strategy prepared by the Department of Planning and Environment which gives consideration to the objective of this direction, or
- (d) of minor significance.

Note: In this direction, "identified centre" means a centre that has been identified as a strategic centre, regional city or centre in a regional strategy, regional plan, sub-regional strategy, or another strategy approved by the Secretary.

Direction 1.1 – issued 1 May 2017

3. Housing, Infrastructure and Urban Development

3.1 Residential Zones

Objectives

(1) The objectives of this direction are:

- (a) to encourage a variety and choice of housing types to provide for existing and future housing needs,
- (b) to make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services, and
- (c) to minimise the impact of residential development on the environment and resource lands.

Where this direction applies

(2) This direction applies to all relevant planning authorities.

When this direction applies

(3) This direction applies when a relevant planning authority prepares a planning proposal that will affect land within:

- (a) an existing or proposed residential zone (including the alteration of any existing residential zone boundary),
- (b) any other zone in which significant residential development is permitted or proposed to be permitted.

What a relevant planning authority must do if this direction applies

(4) A planning proposal must include provisions that encourage the provision of housing that will:

- (a) broaden the choice of building types and locations available in the housing market, and
- (b) make more efficient use of existing infrastructure and services, and
- (c) reduce the consumption of land for housing and associated urban development on the urban fringe, and
- (d) be of good design.

(5) A planning proposal must, in relation to land to which this direction applies:

- (a) contain a requirement that residential development is not permitted until land is adequately serviced (or arrangements satisfactory to the council, or other appropriate authority, have been made to service it), and
- (b) not contain provisions which will reduce the permissible residential density of land.

Consistency

(6) A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that the provisions of the planning proposal that are inconsistent are:

- (a) justified by a strategy which:
  - (i) gives consideration to the objective of this direction, and
  - (ii) identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), and
  - (iii) is approved by the Director-General of the Department of Planning, or
- (b) justified by a study prepared in support of the planning proposal which gives consideration to the objective of this direction, or
- (c) in accordance with the relevant Regional Strategy, Regional Plan or Sub-Regional Strategy prepared by the Department of Planning which gives consideration to the objective of this direction, or
- (d) of minor significance.

3.4 Integrating Land Use and Transport

Objectives

(1) The objective of this direction is to ensure that urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve the following planning objectives:

- (a) improving access to housing, jobs and services by walking, cycling and public transport, and
- (b) increasing the choice of available transport and reducing dependence on cars, and
- (c) reducing travel demand including the number of trips generated by development and the distances travelled, especially by car, and
- (d) supporting the efficient and viable operation of public transport services, and
- (e) providing for the efficient movement of freight.

Where this direction applies

(2) This direction applies to all relevant planning authorities.

When this direction applies

(3) This direction applies when a relevant planning authority prepares a planning proposal that will create, alter or remove a zone or a provision relating to urban land, including land zoned for residential, business, industrial, village or tourist purposes.

What a relevant planning authority must do if this direction applies

(4) A planning proposal must locate zones for urban purposes and include provisions that give effect to and are consistent with the aims, objectives and principles of:

- (a) *Improving Transport Choice – Guidelines for planning and development* (DUAP 2001), and
- (b) *The Right Place for Business and Services – Planning Policy* (DUAP 2001).

Consistency

(5) A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that the provisions of the planning proposal that are inconsistent are:

- (a) justified by a strategy which:
  - (i) gives consideration to the objective of this direction, and
  - (ii) identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), and
  - (iii) is approved by the Director-General of the Department of Planning, or
- (b) justified by a study prepared in support of the planning proposal which gives consideration to the objective of this direction, or
- (c) in accordance with the relevant Regional Strategy, Regional Plan or Sub-Regional Strategy prepared by the Department of Planning which gives consideration to the objective of this direction, or
- (d) of minor significance.

4.3 Flood Prone Land

Objectives

(1) The objectives of this direction are:

(a) to ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the *Floodplain Development Manual 2005*, and

(b) to ensure that the provisions of an LEP on flood prone land is commensurate with flood hazard and includes consideration of the potential flood impacts both on and off the subject land.

Where this direction applies

(2) This direction applies to all relevant planning authorities that are responsible for flood prone land within their LGA.

When this direction applies

(3) This direction applies when a relevant planning authority prepares a planning proposal that creates, removes or alters a zone or a provision that affects flood prone land.

What a relevant planning authority must do if this direction applies

(4) A planning proposal must include provisions that give effect to and are consistent with the NSW Flood Prone Land Policy and the principles of the *Floodplain Development Manual 2005* (including the *Guideline on Development Controls on Low Flood RiskAreas*).

(5) A planning proposal must not rezone land within the flood planning areas from Special Use, Special Purpose, Recreation, Rural or Environmental Protection Zones to a Residential, Business, Industrial, Special Use or Special Purpose Zone.

(6) A planning proposal must not contain provisions that apply to the flood planning areas which:

(a) permit development in floodway areas,

(b) permit development that will result in significant flood impacts to other properties,

(c) permit a significant increase in the development of that land,

(d) are likely to result in a substantially increased requirement for government spending on flood mitigation measures, infrastructure or services, or

(e) permit development to be carried out without development consent except for the purposes of agriculture (not including dams, drainage canals, levees, buildings or structures in floodways or high hazard areas), roads or exempt development.

(7) A planning proposal must not impose flood related development controls above the residential flood planning level for residential development on land, unless a relevant planning authority provides adequate justification for those controls to the satisfaction of the Director-General (or an officer of the Department nominated by the Director-General).

(8) For the purposes of a planning proposal, a relevant planning authority must not determine a flood planning level that is inconsistent with the Floodplain Development Manual 2005 (including the *Guideline on Development Controls on Low Flood Risk Areas*) unless a relevant planning authority provides adequate justification for the proposed departure from that Manual to the satisfaction of the Director-General (or an officer of the Department nominated by the Director-General).

Consistency

(9) A planning proposal may be inconsistent with this direction only if the relevant planning authority can satisfy the Director-General (or an officer of the Department nominated by the Director-General) that:

(a) the planning proposal is in accordance with a floodplain risk management plan prepared in accordance with the principles and guidelines of the Floodplain Development Manual 2005, or

(b) the provisions of the planning proposal that are inconsistent are of minor significance.

Note: "flood planning area", "flood planning level", "flood prone land" and "floodway area" have the same meaning as in the *Floodplain Development Manual 2005*.

Direction 4.3 – issued 1 July 2009

6.2 Reserving Land for Public Purposes

Objectives

(1) The objectives of this direction are:

(a) to facilitate the provision of public services and facilities by reserving land for public purposes, and

(b) to facilitate the removal of reservations of land for public purposes where the land is no longer required for acquisition.

Where this direction applies

(2) This direction applies to all relevant planning authorities.

When this direction applies

(3) This direction applies when a relevant planning authority prepares a planning proposal.

What a relevant planning authority must do if this direction applies

(4) A planning proposal must not create, alter or reduce existing zonings or reservations of land for public purposes without the approval of the relevant public authority and the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General).

(5) When a Minister or public authority requests a relevant planning authority to reserve land for a public purpose in a planning proposal and the land would be required to be acquired under Division 3 of Part 2 of the *Land Acquisition (Just Terms Compensation) Act 1991*, the relevant planning authority must:

(a) reserve the land in accordance with the request, and

(b) include the land in a zone appropriate to its intended future use or a zone advised by the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General), and

(c) identify the relevant acquiring authority for the land.

(6) When a Minister or public authority requests a relevant planning authority to include provisions in a planning proposal relating to the use of any land reserved for a public purpose before that land is acquired, the relevant planning authority must:

(a) include the requested provisions, or

(b) take such other action as advised by the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) with respect to the use of the land before it is acquired.

(7) When a Minister or public authority requests a relevant planning authority to include provisions in a planning proposal to rezone and/or remove a reservation of any land that is reserved for public purposes because the land is no longer designated by that public authority for acquisition, the relevant planning authority must rezone and/or remove the relevant reservation in accordance with the request.

Consistency

(8) A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that:

(a) with respect to a request referred to in paragraph (7), that further information is required before appropriate planning controls for the land can be determined, or

(b) the provisions of the planning proposal that are inconsistent with the terms of this direction are of minor significance.

Note: Clause 12 of the EP&A Reg 2000 provides that a planning proposal for a proposed local environmental plan:

(a) may not contain a provision reserving land for a purpose referred to in section 26 (1) (c) of the EP&A Act, and

(b) may not contain a provision in respect of that reservation as required by section 27 of the EP&A Act,

unless the public authority responsible for the acquisition of the land has notified the relevant planning authority of its concurrence to the inclusion of such a provision in the planning proposal.

In this direction:

"public authority" has the same meaning as section 4 of the EP&A Act.

the use or reservation of land for a public purpose has the same meaning as in section 26(1)(c) of the EP&A Act.

Direction 6.2 – issued 1 July 2009

6.3 Site Specific Provisions

Objective

(1) The objective of this direction is to discourage unnecessarily restrictive site specific planning controls.

Where this direction applies

(2) This direction applies to all relevant planning authorities.

When this direction applies

(3) This direction applies when a relevant planning authority prepares a planning proposal that will allow a particular development to be carriedout.

What a relevant planning authority must do if this direction applies

(4) A planning proposal that will amend another environmental planning instrument in order to allow a particular development proposal to be carried out must either:

- (a) allow that land use to be carried out in the zone the land is situated on, or
- (b) rezone the site to an existing zone already applying in the environmental planning instrument that allows that land use without imposing any development standards or requirements in addition to those already contained in that zone, or
- (c) allow that land use on the relevant land without imposing any development standards or requirements in addition to those already contained in the principal environmental planning instrument being amended.

(5) A planning proposal must not contain or refer to drawings that show details of the development proposal.

Consistency

(6) A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that the provisions of the planning proposal that are inconsistent are of minor significance.

7. Metropolitan Planning

7.1 Implementation of A Plan for Growing Sydney

Objective

(1) The objective of this direction is to give legal effect to the planning principles; directions; and priorities for subregions, strategic centres and transport gateways contained in A Plan for Growing Sydney.

Where this direction applies

(2) This direction applies to land comprising of the following local government areas:

Ashfield	Hornsby	Randwick
Auburn	Hunters Hill	Rockdale
Bankstown	Hurstville	Ryde
Blacktown	Kogarah	Strathfield
Blue Mountains	Ku-ring-gai	Sutherland
Botany Bay	Lane Cove	The Hills
Burwood	Leichhardt	Warringah
Camden	Liverpool	Waverley
Campbelltown	Manly	Willoughby
Canada Bay	Marrickville	Wollondilly
Canterbury	Mosman	Woollahra
City of Sydney	North Sydney	
Fairfield	Parramatta	
Hawkesbury	Penrith	
Holroyd	Pittwater	

When this direction applies

(3) This direction applies when a Relevant Planning Authority prepares a planning proposal.

What a Relevant Planning Authority must do if this direction applies

(4) Planning proposals shall be consistent with:

(a) the NSW Government's A Plan for Growing Sydney published in December 2014.

Consistency

(5) A planning proposal may be inconsistent with the terms of this direction only if the Relevant Planning Authority can satisfy the Secretary of the Department of Planning & Environment (or an officer of the Department nominated by the Secretary), that the extent of inconsistency with A Plan for Growing Sydney:

(a) is of minor significance, and

(b) the planning proposal achieves the overall intent of the Plan and does not undermine the achievement of its planning principles; directions; and priorities for subregions, strategic centres and transport gateways.

APPENDIX D : PEER REVIEW OF APPLICANT'S ECONOMIC REPORTING

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Graham Matthews
Strategic Planner
Liverpool City Council
33 Moore Street
Liverpool NSW 2170

22 October 2020

Dear Graham,

Subject: Middleton Grange Town Centre - Economic Assessment of the Planning Proposal

Introduction

As instructed HillPDA has undertaken a review and an appraisal of the likely economic impacts of the proposed Middleton Grange town centre. In our assessment we have reviewed the following documents:

- Attachment 1 - Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis prepared by PPM Consulting dated 8 October 2020
- Attachment 2 - Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component prepared by PPM Consulting dated 8 October 2020
- Planning Proposal prepared by Pacific Planning for Manta Group Pty Ltd dated October 2019
- Submission prepared by Design+Planning on behalf of Charter Hall, owner of the Carnes Hill Marketplace dated 26 October 2018
- Submission prepared by Design+Planning on the revised Middleton Grange Planning Proposal dated 13 December 2019
- Middleton Grange - Response to Objectors' Submissions on Economics prepared for Pacific Planning by PPM Consulting dated 23 October 2019

Our comments are summarised below.

Description of the Proposal

It remains a little unclear as to how much retail space is being planned for. Attachment 2 (the retail component) assesses the impact of a 10,000sqm centre comprising the following:

- 3,800 sqm for a major supermarket
- 3,224 sqm for a mini major
- 1,362 sqm of cafes, restaurants and bars
- 1,114 sqm of specialty shops
- 200 sqm liquor shop.

However Attachment 1 (Middleton Grange Town Centre) shows a different and larger retail and commercial mix as follows:

Table 1: Proposed non-residential floorspace (Attachment 1)

Use	GFA
Supermarket/Retail Shops	9,622 sqm
Cafes and restaurants	6,447 sqm
Commercial Entertainment	2,862 sqm
Offices/SOHO	8,223 sqm
Neighbourhood Shops	4,060 sqm
Medical/other	12,529 sqm
Gym	3,500 sqm
Childcare	505 sqm
Community Centre	500 sqm
Total Non-Residential Uses	**48,248 sqm**

With food services this comes to more than 20,000sqm of retail space. If all 20,000sqm was taken up it would be a significant size centre – classified as a sub-regional centre under the Property Council of Australia definitions and larger than both Carnes Hill and Green Valley.

At this point it is worth mentioning that there is little description of the 4,060sqm of neighbourhood shops and 6,447sqm of restaurants and cafés in both the Attachment 1 and Attachment 2 reports – yet this is a significant amount of floor space that has largely been ignored for reasons unknown. Neither report provide information about the role of these land uses and where the demand for them will come from.

Demand for retail space

Trade area definition

Main Trade Area includes Green Valley area east of M7. M7 is a significant barrier and it is not convenient to travel to Middleton Grange. Hinchinbrook Public School is only 1.2km away in a straight line. However by road it is 4 to 5kms and takes around 8 to 9 minutes to drive either via Hoxton Park Road or Cowpasture Road in either direction. Green Valley Plaza is 1.4km away and is only 3 minutes.

The Main Trade Area includes eastern half of Austral – the boundary runs through the middle of the Austral Town Centre which is likely to have around 25,000 sqm or more GLAR when it is fully developed.

Population growth

Forecast.ID forecasts a slight decline in population in the Main Trade Area outside Austral. Forecast.ID may not have allowed for 1,000 more people in the town centre. Assuming that to be case, it remains that very little growth is forecast in the MTA outside Austral from 2016 to 2041 – no more than around 500 additional residents. Almost all the growth in the MTA is in Austral yet Austral will have its own town centre of 20,000 sqm or more sometime in the future.

Growth in retail expenditure

PPM has assumed 1.125% real growth in retail spend per person per annum from 2016 to 2031. This is overly optimistic and does not reflect the long-term trend. From 1983 to 2019 real retail spend per capita increased by 31% equal to 0.74%/annum – but it varied considerably between retail store types. FGL increased by 59%

(1.3%/ann) and food services (fast foods, restaurants, etc) by 87% (1.8%/ann). However non-food stores experienced only 3% growth over this period (0.1% per annum). Department stores have suffered a massive 46% loss in turnover per capita since 1983.

The difference has been even more prominent since 2004. Over the past 15 years FGL has experienced 9% growth per capita (0.56%/ann), food services 37% growth (2.14%/ann) and non-food stores negative 7% growth (– 0.46%/ann). Sales in department stores fell 35%.

These figures show trends to 2019 which are pre-COVID 19. COVID 19 and the lockdown procedures have significantly impacted the retail industry. In particular there has been a sharp rise in on-line sales which is now accounting for over 11% of total retail sales. While the COVID restrictions may be short-term many commentators believe that there are longer-term impacts. Even before COVID 19 the percentage of on-line sales to total retail sales had been trending upwards above 7.5%. COVID 19 simply escalated it and there is a general view that as consumers become increasingly familiar with on-line shopping they will continue to choose this method post COVID. While not exactly agreeing many commentators believe that on-line retailing could reach around 15% of total retail sales before it shows signs of a slowdown or plateauing.

This trend means that demand for retail shop front space will subdue over time while the demand for dark stores or mini-distribution centres will increase. Already we are seeing both Coles and Woolworths planning the delivery of dark stores across Sydney whereby the traditional supermarkets are bypassed with on-line food and grocery shopping. These stores will also provide customer pick-up (ie click and collect) facilities.

Demand for supermarket space

Table 7 steps through the method of calculating expenditure captured by supermarkets. However the result shows 43.3% of total retail expenditure is captured by supermarkets which is too high. Based on ABS Retail Trade figures (Cat No. 8501.0) supermarkets and grocery stores capture 33% of total retail expenditure. As a result the potential supermarket sales in the PPM report are over estimated.

We further cross-checked the results using our in-house expenditure model which incorporates Marketinfo expenditure data in 2017 and recalibrated to 2019 based on ABS retail sales. Our estimate of supermarket sales per capita in the MTA in 2021 is $3,896 (measured in 2019 dollars) – some 20% lower than PPM consulting estimate of $4,859.

Changing these inputs results in a significantly lower level of demand than PPM suggests – a slight oversupply of supermarket floor space in 2019 and around 2,500sqm oversupply in 2026 following the addition of a full-line supermarket in Middleton Grange.

Notwithstanding some level of oversupply in the MTA we concur with the view that Middleton Grange with an ultimate population of 9,000 to 10,000 (including that part of Hinchinbrook southwest of the M7) should have a local retail centre anchored by a full-line supermarket.

Demand for other retail space

The report is weak in its assessment of demand for other retail space. A full line supermarket with a primary trade area of say 5,000 to 15,000 people is generally supported with a range of specialty stores including specialty food (butcher, bakery, fruit and vegetables, seafood, etc), food services (fast food and restaurants), local non-food stores such as chemist, newsagency, etc, local retail and personal services such as hair and beauty, dry cleaning and optometry and possibly some non-retail commercial services such as real estate, medical and financial services. Total number of specialties would generally range between 10 and 30 and occupy around 1,500 to 4,000sqm of floor space.

In the introduction they describe the mix as including 'a mini-major' of 3,224sqm, but do not specify what that would be. Previous drawings suggest that the floor space would comprise several mini-majors. As a general rule mini-majors are usually stores between 400sqm and 2,000sqm GLA and hence a single store above 3,000sqm would be defined as a major.

The difficulty is identifying what second major or mini-majors would comprise. Many single supermarket anchored centres have no mini-majors and those that do normally have only one. Typically, it is a fresh foods grocery store or a small supermarket / grocery store with an ethnic theme (eg Asian or Arabic). A large format liquor store could also be a mini-major. Some centres have a discount variety store or large format chemist. A large format chemist is a likely option should there be a large medical centre in the town centre. National non-food mini-majors such as JB Hi-Fi, Bing-Lee, Lowes, Rebel Sports, Zara, Daiso, Best & Less and others are generally found in the larger regional and sometimes sub-regional centres.

Impact Assessment

We concur with the forecast likely retail sales figures for the proposed centre (Table 8) assuming all the spaces are occupied. Note however that more than 1,500sqm of specialty stores (mostly food services) were ignored in the demand and impact assessments in the Attachment 2 report as well as the additional 4,000sqm of neighbourhood shops and almost 6,500sqm of additional restaurants and cafés identified in the Attachment 1 report.

The report has ignored the impacts on Austral existing local centre and proposed town centre. Much of the town centre is inside the MTA.

The comment below Table 8 is a little confusing as it seems to imply that only 10% of MTA expenditure escapes the MTA yet following this implies that existing centres in the MTA capture only 41.5% of MTA expenditure. Presumably this is to suggest that there is a high level of escape expenditure that potentially could be captured. Note however that a large proportion of trade will always escape the MTA to the larger regional centres, major employment areas (people spending close to their place of work) and homemaker/bulky goods centres. Given that the Middleton Grange centre will have a similar offer to the existing centres in the MTA (FGL and food and local services and less leisure, apparel, etc) then we cannot assume the bulk of its MAT will be redirected from centres outside the MTA.

Table 11 shows the forecast impact on the three existing centres in the MTA. We have disagreements with several numbers in the table. Firstly the forecast growth in sales is far too high. It is based on 3% per annum growth for all three centres. It also contradicts the forecast MAT figures in Table 10 which are much lower for all three centres.

We would also expect growth to vary between centres due to varying population growth in respective trade areas. Population in Hoxton Park, Carnes Hill and Horningsea Park will increase at around 0.7% per annum (Forecast.ID) however Green Valley and Hinchinbrook will experience a decline in population of almost 1% per annum to 2026.

Green Valley does not have a reported MAT figure but we expect that it would be trading a little higher than suggested given that it is a dual supermarket centre with a primary trade area population of around 25,000 to 30,000.

On average an ALDI store achieves total retail sales of $17m (AFR, May 2019). We suspect the Hoxton Park store is trading lower than the $27m shown in the PPM report. Also to the best of our knowledge the largest ALDI stores are around 1,500sqm.

Table 11 shows a redirection of trade of $43m from the existing centres in the MTA yet it is forecast to achieve total retail sales of twice that level ($86m). It has not been identified where the additional $43m will be redirected

from. Some of this may be redirected from a future town centre in Austral but that would not account for as much as 50% of its MAT.

Carnes Hill is half the distance and travel times from the subject site than is Valley Plaza and hence we would expect stronger impacts in percentage terms on Carnes Hill.

Given all the above we suggest the impacts are more likely as follows:

Table 2: Estimated economic impacts, as considered by HillPDA

Centre	Total GLA (m2)	Estimated Centre Sales 2019 ($m)	Est Sales No Dev 2026 ($)	Est Sales With Dev 2026 ($)	Estimated Impact ($)	Estimated Impact (%)	Impact over time 2019-26
Carnes Hill Marketplace	17,233	163,529,777	185,281,173	148,281,173	-37,000,000	-20.0%	-9.3%
The Valley Plaza	12,737	105,080,250	108,813,688	96,813,688	-12,000,000	-11.0%	-7.9%
Hoxton Park	2,000	21,000,000	22,127,619	17,627,619	-4,500,000	-20.3%	-16.1%
TOTAL	**31,970**	**289,610,027**	**316,222,479**	**262,722,479**	**-53,500,000**		
Middleton Grange				86,018,500	86,018,500		
TOTAL		**289,610,027**	**316,222,479**	**348,740,979**	**32,518,500**		

We can see in the above table the impacts are much stronger than shown in the PPM report – particularly over time which is expected given that the PPM report has over-stated growth in MTA figures. The impact on Carnes Hill would be an immediate loss of 20% trade (which is generally described as significant) and a 10% loss in trade over the 7 years from 2019 to 2026. Carnes Hill is unlikely to return to its 2019 level of trading until 2031-32.

This is not to suggest that a local centre should not be supported. Carnes Hill Marketplace is currently trading at $10,000/sqm which, for a shopping centre with a discount department store, is strong. It is trading 12% above average (around $9,000) of all 81 shopping centres between 10,000 and 20,000sqm GLAR listed in the Shopping Centre News across Australia. Therefore we do not consider the impact to threaten its viability and/or result in social detriment. A local centre should be supported in Middleton Grange.

Similarly if a larger retail centre was to be developed in Middleton Grange, and if was to achieve the retail sales suggested in the PPM report then it would need to redirect more trade from the existing MTA centres. We would expect that a centre of say 15,000sqm GLAR would redirect at least 25% of Carnes Hill trade. Furthermore by 2031 Carnes Hill is likely to remain trading below its 2019 level – possibly by as much as 10%. It is recognised that a larger centre will capture a higher proportion of escape expenditure. A centre of say 20,000sqm GLAR would have a wider retail offer – particularly if it had one full-line supermarket, then it would need to fill the balance of shops with retailers / store types that are not currently represented in the MTA if it is to be successful. Nevertheless the impact on Carnes Hill maybe as high as 30% loss in trade or more which is a very strong level of impact. Carnes Hill would be unlikely to return to its 2019 trading level before 2036 if at all.

The impact on the future Austral town centre is not discussed in the PPM report. This is difficult because the current centre is small and has not yet develop into a town centre. What this means is that Austral is likely to be first trading at a lower rate than it would have otherwise traded at, if Middleton Grange had not proceeded, and/or it means that the development of Austral town centre may be delayed two or three years.

Our suspicions are that the impacts may be a little lower as a centre of 15,000sqm to 20,000sqm may not achieve the optimistic turnover levels in the PPM report. This is because a centre of this size is too large for a PTA of

around 10,000 people. Again it would need to be largely differentiated from the retail offer in Carnes Hill and would need to include retailers that have wider trade areas. Even under this scenario many of the retailers are likely to trade with lower retail sales figures than suggested in the PPM report.

Our conclusion is that an appropriate size centre for Middleton Grange is around 6,000sqm to 10,000sqm GLAR. A larger retail centre would either struggle and/or is likely to result in significant adverse impacts on existing centres in the locality – particularly on Carnes Hill and to a lesser extent on Green Valley and the future Austral Town Centre.

Commercial Office Space

The PPM report is optimistic about demand for office space in Middleton Grange. The arguments centre around its strategic position between Liverpool CBD and Sydney West Airport. In particular the report suggests that the COVID-19 impacts has resulted in a decline in demand for office space in Sydney CBD space and the opportunity to provide more affordable alternatives with reduced commuting times.

We caution against the optimistic outlook for the following reasons:

- Reduced demand in Sydney CBD is the result of a rise in work from home and not work in a suburban office building. The suburban office market could experience similar impacts as the Sydney CBD has
- The location is not as proximate to the airport site as is the Aerotropolis Core precinct which will have higher attraction and will include a metro station one stop from the airport

Outside the main employment centres of Parramatta and Macquarie Park the market for office space in the suburbs has been quite weak since the recession of the early 90s and has generally been outpriced by the residential market. There was some increased interest in the suburban office market pre-COVID-19 not seen since the late 1980s. This was due to the overheating of the Sydney CBD and fringe market and the rippling effects into the suburban market.

However COVID-19 has taken the heat off the office market generally – at least in the short term and possibly longer term as employers and workers are learning to hot desk, work more flexibly in time and by location and work from home. There will be an opportunity or a market for flexible incubator employment spaces in the locality but this market is limited in size and Middleton Grange would find itself competing with potentially superior locations such as Liverpool CBD, Leppington and the Aerotropolis Core. These competing locations are regarded as superior mainly due to their positions and high levels of urban services and infrastructure, particularly public transport.

Construction Employment

The Attachment 1 PPM report assumes 8.5 direct full-time equivalent (FTE) jobs for every million dollars of construction. There are two errors with the assessment. Firstly the terminology is incorrect given that construction jobs are temporary and hence should be expressed as job years. Assuming PPM is referring to job years the estimate is still more than double the true figure (ABS Input Output tables and IBIS World reports).

For $300m of construction we estimate around 1,200 job years directly in construction as sourced from ABS and IBIS World.

Also average salary for FTE in construction in the PPM report is $38,000 which is around half the true figure.

Operations Employment

Note that Table 7 in the Attachment 1 report has some different floor areas to the introduction and the Attachment 2 report.

We generally concur with the employment figures suggested in the PPM report but again this is dependent on the uses being built and the market taking up the offer. Much of the discussion in the Attachment 1 report centres on the speculative office space but there is little to no description of the 10,500sqm of neighbourhood shops and restaurants which is a significant amount of floor space and little to no evidence of demand for this space. The same for the health and medical and entertainment uses. The PPM reports give us no confidence that there is a market for these land uses. The purpose of their inclusion may be to exaggerate the job numbers and there is no certainty that they will ever be delivered.

On a more minor matter lower employment density rates should be applied to the gymnasium, entertainment uses and community centre – in the order of 100 to 150sqm per worker. Hence the total 'other commercial jobs' shown in Table 10 would be around 680 assuming full occupation.

The applicant has subsequently indicated that the ground floor area would comprise around 20,000 to 22,000sqm of employment spaces. If we assume say 10,000sqm is retail including food services and 11,000sqm is non-retail commercial then the likely number of jobs would be around 560 being 130 in the supermarket, 160 in the other retail (based on 40sqm per worker) and 270 in non-retail commercial services (assuming mostly medical services and other office uses). If entertainment uses (such as gymnasium or cinemas) comprised half the non-retail space (say 5,000 to 6,000sqm) then we would expect the total number of workers on the ground floor to be less than 500 as shown in the table below.

Table 3: Estimated number of jobs in the Middleton Grange Town Centre (ground floor)

Use	GFA (sqm)	Job density (sqm/job)	Jobs
Supermarket	3,800	30	126
Other retail	6,200	40	155
Non-retail commercial services (medical/office)	5,500	40	137
Entertainment (gymnasium, cinema, etc)	5,500	100	55
Total			473

Economic Benefit of the Public Parks

Chapter 7 of the Attachment 1 report quantifies what it calls 'benefits' of the park dedication. This includes the capital cost of $3.3m presumably because development, rather than Council, will fund it. Hence it is identified as a benefit to Council. However if it is funded from the statutory developer contributions, as opposed to a VPA, then it would provide no net benefit to Council.

The report mixes maintenance and capex expenditure into a total cost of almost $895,000 over 50 years which on face value appears too low. Again it is described as a benefit rather than a cost and it is described as a cost shared between the owners' corporation and Council.

From whole of economy or community point of view the capital and maintenance costs are costs and not benefits. The only true economic benefit identified in the report is use benefit. The report attempts to quantify this based on a number of assumptions including number of visits, travel time and average time spent in the parks. There is little empirical evidence supporting the assumptions which is not to say that they are wrong – only that we have little confidence in the result. What is also confusing is that the forecast visitation numbers are based on the MTA population – the vast majority of which live more than 1km away – but the assumed method of travelling to the parks for all visitors is walking at an average distance of 500m.

There are some other benefits of the open spaces including environmental (visual, urban heat control, etc) and positive impacts on the amenity of the town centre. These have not been identified or quantified in the report.

Finally most of the numbers in Table 14 do not match the numbers spelled out in the text.

Conclusion

Our overall conclusion is that the Middleton Grange should have a local centre to support a main trade area population of around 10,000 people. The centre should include a total shopfront space of around 6,000 to 10,000sqm anchored by a full-line supermarket. Any proposal for a larger centre should be supported by an economic impact assessment that properly identifies the types of shop front uses and the properly identifies and quantifies where the demand for those uses come from.

The other employment uses in the town centre would be desirable, but the reports have not adequately described and identified where the demand for those uses will come from.

Yours sincerely,



Adrian Hack
Principal, HillPDA
BTP (Hons), MLE, MPIA

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5. Due care has been taken to prepare the attached financial models from available information at the time of writing, however no responsibility can be or is accepted for errors or inaccuracies that may have occurred either with the programming or the resultant financial projections and their assumptions.
6. This report does not constitute a valuation of any property or interest in property. In preparing this report HillPDA has relied upon information concerning the subject property and/or proposed development provided by the Client and HillPDA has not independently verified this information except where noted in this report.
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   This valuation is prepared on the assumption that the lender or addressee as referred to in this valuation report (and no other) may rely on the valuation for mortgage finance purposes and the lender has complied with its own lending guidelines as well as prudent finance industry lending practices, and has considered all prudent aspects of credit risk for any potential borrower, including the borrower's ability to service and repay any mortgage loan. Further, the valuation is prepared on the assumption that the lender is providing mortgage financing at a conservative and prudent loan to value ratio.
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Graham Matthews
Strategic Planner
Liverpool City Council
33 Moore Street
Liverpool NSW 2170

19 November 2020

Dear Graham,

Subject: Middleton Grange Town Centre - Economic Assessment of Additional Information

As instructed HillPDA has undertaken a review and an appraisal of the additional information submitted by the applicant titled "An Analysis of Lower Floor Space Ratios at Middleton Grange" Prepared for Manta Group Pty Ltd by PPM Consulting and dated 20 September 2017.

Please note that the earlier comments by HillPDA dated 22 October 2020 on the economic impact assessment remain unchanged. Our overall conclusion is that the Middleton Grange should have a local centre to support a main trade area population of around 10,000 people. The centre should include a total shopfront space of around 6,000 to 10,000sqm anchored by a full-line supermarket. As per Council's development control plan, any proposal for a centre should be supported by an economic impact assessment that properly identifies the types of shop front uses and the properly identifies and quantifies where the demand for those uses come from.

The planning proposal includes more than 20,000sqm of retail space of which half is restaurants and neighbourhood shops. It doesn't define neighbourhood shops. Nor does it identify where the demand will come from for these spaces and what the likely impacts will be.

The other employment uses in the town centre including the office component would be desirable, but the reports have not adequately described and identified where the demand for those uses will come from.

The additional information provided notes that the planning proposal that received a Gateway 'approval' had an average FSR of 2.5:1 (part 1.5:1 and part 2.5:1). The analysis provides some comparisons of land use distribution on the site at lower FSRs and suggests that there would be significant impacts on the viability of the development. It also suggests that the Gateway 'approval' is a signal for investment, and that a change to a planning proposal would put that investment at risk. It also suggests that if the planning proposal is changed, it may delay development of the site, including outcomes associated with planning agreements, due to feasibility issues.

One of the considered scenarios is an FSR 2.0:1, which is denser than the current proposal.

The additional information puts forward two scenarios under the proposed reduction in FSR being:

a) No development as the project would be deemed unviable

b) A reduced outcome being 684 apartments instead of 912 and 16,200sqm of retail space instead of 20,240sqm

Our comments are as follows:

- The applicant has provided no evidence regarding the feasibility of development under the different density controls.

- The applicant has put forward a revised planning proposal with an FSR that the previous analysis suggested was unviable and would potentially be delayed for ten years. This raises questions regarding the development intent and feasibility, generally.
- Analysis provided by the applicant to date has not demonstrated sufficient demand for the offering provided and the planning proposal does not include a mechanism to guarantee delivery of that land. As such, it is unclear if future development would deliver the employment uses that are described.
- As such, the analysis is not considered a reliable source of information regarding signals to the development community related to changes in proposed controls, development feasibility generally or development outcomes associated with the proposed controls.

In addition, we are of the view that:

- The lower number of apartments would not undermine the viability of the residential component given that the land is a fixed and sunk cost. In this market the land is only a small part of the total development costs and the financial returns (development margin and internal rate of return) on 684 apartments is likely to be similar to 912 apartments.
- The reduction in population of 400 is likely to have minimal or immeasurable impact on the demand for retail and other commercial floor space in the town or village centre. It translates to 4% less population in the primary trade area. Even at a generous rate of 1sqm per resident it translates to a reduced demand for retail space of only 400sqm.
- Under the reduced scheme the amount of retail space at 16,200sqm will be still be around double the level of demand generated by trade area residents.

I trust this clarifies Council's concerns. Please contact us if you have any other queries.

Yours sincerely,



Adrian Hack
Principal, HillPDA
BTP (Hons), MLE, MPIA

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APPENDIX E : SUBMISSIONS BY PUBLIC AUTHORITIES

NSW GOVERNMENT | Transport for NSW

4 November 2020

TfNSW Reference: SYD16/01213/08

The General Manager
Liverpool City Council
Locked Bag 7064
LIVERPOOL BC NSW 1871

Attention: Graham Matthews

Dear Mr Matthews

MIDDLETON GRANGE TOWN CENTRE REVISED TRAFFIC IMPACT ASSESSMENT

Transport for NSW (TfNSW) appreciates the opportunity to provide comments on the revised traffic impact assessment referred 10 August 2020, to support the planning proposal for the Middleton Grange Town.

Detailed comments on the revised traffic impact assessment, including support for local and regional transport infrastructure improvements, are provided at **TAB A** for Council's consideration prior to the making of the plan.

Should you have any questions or further enquiries in relation to this matter, James Hall would be pleased to assist on 0418962609 or via email development.sydney@transport.nsw.gov.au.

Yours sincerely,

[redacted]

Senior Manager – Strategic Land Use
Land use, Networks & Development, Greater Sydney

Transport for NSW
27-31 Argyle Street, Parramatta NSW 2150 | PO Box 973, Parramatta CBD NSW 2124
P 131782 | **W** transport.nsw.gov.au | ABN 18 804 239 602

TAB A: DETAILED TfNSW COMMENTS ON THE REVISED TRAFFIC IMPACT ASSESSMENT (AUGUST 2020) FOR MIDDLETON GRANGE TOWN CENTRE

Developer Contributions to Off-Set Traffic Impacts on the Regional Road Network

TfNSW is of the view that given the scale of the planning proposal and associated traffic generation, that the proponent should provide an appropriate nexus based monetary contribution towards a future upgrade of Cowpasture Road between Hoxton Park Road and the M7 to a six lane corridor.

To identify a nexus based monetary contribution towards the above future upgrade of Cowpasture Road, consideration should be given to the following formula options:

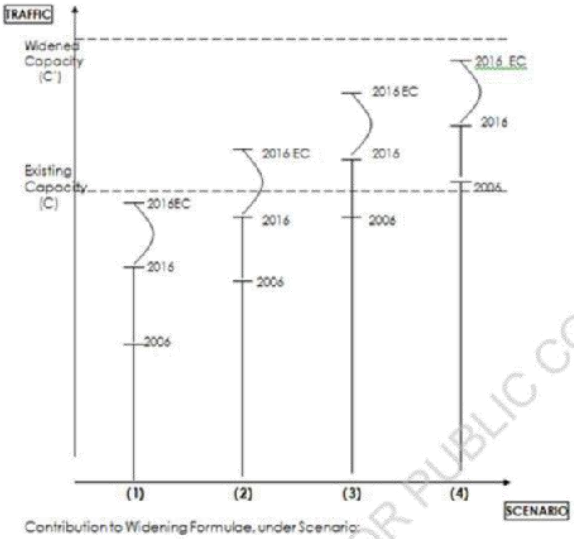
Formula Options

Option 1 – Gateway Intersections on Cowpasture Road

Approach + Departure on Western Leg Only (i.e. Total Development Trips) divide by Total Background Trips either all Approaches or all Departures (except western leg) = ?

Option 2 – Fish Hooks Method

Schematic Diagram and Formulae used for Apportionment



Contribution to Widening Formulae, under Scenario:

(1) = $\frac{2016\,EC - 2016}{C - 2006}$ x Cost of widening

(2) and (3) = $\frac{2016\,EC - 2016}{2016\,EC - 2006}$ x Cost of widening

(4) = $\frac{2016\,EC - 2016}{2016\,EC - C}$ x Cost of widening

Note: 2006 = traffic on link in 2006 without Eastern Creek development
2016 = traffic on link in 2016 without Eastern Creek development
2016 EC = traffic on link in 2016 with Eastern Creek development

Source: *Fish Hooks Methodology used in the Eastern Creek development*

Figure 1 "Fish Hooks" Methodology for Apportionment

Costing Road Works

TfNSW suggests that to fast track the cost apportionment exercise (without the need for design work) for the upgrade of Cowpasture Road between Hoxton Park Road and M7, a global rate of $6.5 million per lane kilometre should be used which is inclusive of unknown contingencies (i.e. utility relocation).

Note: *TfNSW advises that at present there is no funding commitment to deliver this road upgrade. It may be potentially considered for corridor investigation in the medium to long term subject to funding.*

Planning Mechanism

An appropriate funding mechanism should be identified and agreed between all parties for the collection of the above monies towards the future upgrade of Cowpasture Road, *prior* to the making of the plan.

Proposed Upgrade of Qantas Boulevard Approach to Cowpasture Road

It is noted that dual left and right turn movements are proposed on the Qantas Boulevard approach to the signalised intersection on Cowpasture Road, which requires TfNSW approval under the *Roads Act, 1993*. To determine whether this intersection upgrade is supported, TfNSW requires the intersection with and without the improvements to be modelled in SIDRA, and the files forwarded to TfNSW for review and comment. In addition, a road design layout of the proposed intersection improvements illustrating road design dimensions inclusive of swept paths overlayed on an aerial to scale shall also be submitted to TfNSW for review.

Any proposed works on the Qantas Boulevard approach to Cowpasture Road shall be at no cost to the State Government. An appropriate planning agreement shall be entered into between the proponent and Council that identifies the trigger point (i.e. development yield) for these works to be delivered under a Works Authorisation Deed with TfNSW.

Proposed Traffic Signals on the Local Road Network

It is understood that Liverpool City Council will require the provision of a local road network framework within a Development Control Plan (DCP), including traffic management measures (i.e. give-way, roundabout and traffic signals), for each intersection. This DCP should include a note that any proposed traffic control signals require the approval of TfNSW and is contingent on that being granted so it is clear this is not a guaranteed outcome.

As Council would be aware, any proposed traffic signal sites require approval of TfNSW (under clause 87 of the *Roads Act 1993*) and will need to meet warrants in accordance with the TfNSW 'Traffic Signal Design Manual'. As part of this warrant assessment, consideration should be given to background traffic growth over a 5 year period. Subject to the warrants being satisfied for traffic control signals, the proposed signalised intersections shall be modelled in SIDRA and submitted to TfNSW for review along with signal and road design plans.

In advance of the above traffic control signal assessment, TfNSW has concerns with the proposal to upgrade the roundabout at the intersection of Fifteenth Avenue / Kingsford Smith Avenue / Second Ave to a signalised intersection requiring split-phasing of the intersection under the current intersection design. The split-phasing of the intersection is

not supported on operational efficiency grounds as Fifteenth Avenue will become a transit corridor in the medium to long term. Phasing should be double diamond overlap.

Identification of public and active transport improvements

There is no requirement from TfNSW to provide a bus service at this stage. Any bus shuttle service provided by the developer must not require payment or a "gold coin donation" on boarding prior to travel, however it is acceptable to pre-book and pay as a charter type service.

If the developer were to provide a shuttle bus from Middleton Drive to Miller T-way service, vehicles must first be registered to use the T-Way. Current bus services 854 and 853 – Carnes Hill to Liverpool via Hoxton Park Road have low passenger volumes. However, bus services are not always provided in response to high demand and may be provided for social equity.

If the developer wants to provide a shuttle service until such time as the bus services are funded by TfNSW to assist their development that is a decision for the proponent.

Council should also give consideration to requiring enhancement of the walking and cycling experience to reduce private vehicle use for local trips, as well as improving amenity and activity for streets in Middleton Grange.

NSW GOVERNMENT | Planning, Industry & Environment

Our ref: DOC19/1039696
Senders ref: 302539

Graham Matthews
Senior Strategic Planner
Liverpool City Council
Locked Bag 7064
Liverpool BC NSW 1871

Dear Mr Matthews,

Subject: Revised Planning Proposal for 60-80 Southern Cross Avenue and 45-65 Hall Circuit, Middleton Grange

Thank you for your letter dated 21 November 2019, requesting input from Environment, Energy and Science Group (EES) in the Department of Planning, Industry and Environment on the revised planning proposal.

EES previous comments were based around floodplain risk management and requested a detailed assessment which considered the risks to people and property from mainstream and overland flooding. EES has reviewed the revised planning proposal and makes the following comments based on the reports reviewed:

- Planning Proposal (Post Exhibition Revision): Report prepared by Pacific Planning for Manta Group, October 2019
- Middleton Grange Town Centre (Stormwater Management Strategy): Report prepared by J. Wyndham Prince for Manta Group, August 2017
- Cabramatta Creek Floodplain Management Study and Plan (2004), Prepared by Bewsher Consulting for Liverpool and Fairfield Councils.

It is noted that the flooding risks along the existing channel, located within the development site, are low to medium. Land is subject to medium flood risk when it is below the 100Year ARI Flood Level and does not pose high hydraulic hazards or significant evacuation difficulties.

The flooding conditions reported in the above Stormwater Management Strategy do not include a sensitivity analysis under projected climate change scenarios. This is a requirement included in the Planning Proposal from the proponent (Table 9, Item 4.3 and Page 59). This can be done by running the 0.5% and 0.2% AEP year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.

Should you have any queries regarding this matter, please contact Bronwyn Smith, Senior Conservation Planning Officer on 9873 8604 or Bronwyn.smith@environment.nsw.gov.au

Yours sincerely

[redacted] 30/01/20

Senior Team Leader Planning
Greater Sydney Branch
Climate Change and Sustainability

NSW GOVERNMENT Education

DOC19/1124729

Chief Executive Officer
Liverpool City Council
Locked Bag 7064
LIVERPOOL BC NSW 1871

Attn: Graham Matthews
email: MatthewsG@liverpool.nsw.gov.au

Dear Sir,

RZ-9/2015 - Rezoning Application - Middleton Grange Town Centre

Thank you for the opportunity to comment on the subject application which is proposed for land that adjoins Middleton Grange Public School's western boundary.

The potential height, bulk and scale of the future development proposed for the Town Centre in close proximity to the school, raises a number of concerns for the school community. Although the proposal has been amended since the original plan was considered by Council the latest scheme continues to present a number of concerns.

Impacts of multi-storey development
Multi-storey development adjacent to the school boundary will result in significant overshadowing and overlooking of internal and external spaces within the school.The proposal for buildings up to 20 metres high at the western boundary of the school will increase shade during winter months and may create potential for uncontrolled surveillance of school indoor and outdoor spaces. This is a serious concern for the School community.

Construction impacts
The town centre development has the potential for significant impacts from construction activity over an extended period as it is likely that the development will be constructed in a number of stages over a number of years. This has the potential for long-term impacts on school activities and on the safety of students, staff and visitors to the school.

Should Council proceed with the rezoning and future development proposal, consideration needs to be given to enforcement of a Construction Environmental Management Plan to address the construction impacts of the development adjacent to the school. This Plan should include ongoing notification of key construction activities and consultation with Middleton Grange Public School before different types of construction activities commence.

NSW Department of Education
Level 8, 259 George Street Sydney NSW 2000 GPO Box 33 Sydney NSW 2001 T 02 9273 9200
www.schoolinfrastructure.nsw.gov.au

A communication protocol involving the School will help avoid activities such as loud construction practices, dust emissions and other potential construction impacts during key school activities.

Traffic
The potential traffic impact of the development needs to be assessed together with other approved and proposed developments that impact on road capacity and road safety in streets adjoining the School.

The traffic impacts of the development may be reduced if a Construction Traffic Plan and Traffic Safety Plan is developed and implemented by the proponent in conjunction with the School Infrastructure NSW, the Roads and Maritime Services, and Council.

Conclusion and further contact
The School community has long held concerns for the proposed large scale development at its western boundary. The proposed rezoning, and associated development plan now before Council, although of a reduced scale, continues to raise those concerns related to overshadowing, privacy and construction impacts.

We request that the matters raised are carefully considered in Council's assessment of the rezoning application and determination of any associated development application.

If you have any further questions, or require any additional information, please don't hesitate to contact us.

Yours sincerely

[redacted]

Statutory Planner
20/12/2019

NSW Department of Education
259 George Street Sydney NSW 2000 GPO Box 33 Sydney NSW 2001 T 02 9273 9200
www.schoolinfrastructure.nsw.gov.au

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Graham Matthews
Strategic Planner
Liverpool City Council
33 Moore Street
Liverpool NSW 2170

19 November 2020

Dear Graham,

Subject: Middleton Grange Town Centre - Economic Assessment of the Planning Proposal

Introduction

As instructed HillPDA has undertaken a review and an appraisal of the likely economic impacts of the proposed Middleton Grange town centre. In our assessment we have reviewed the following documents:

- Attachment 1 - Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis prepared by PPM Consulting dated 8 October 2020
- Attachment 2 - Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component prepared by PPM Consulting dated 8 October 2020
- Planning Proposal prepared by Pacific Planning for Manta Group Pty Ltd dated October 2019
- Submission prepared by Design+Planning on behalf of Charter Hall, owner of the Carnes Hill Marketplace dated 26 October 2018
- Submission prepared by Design+Planning on the revised Middleton Grange Planning Proposal dated 13 December 2019
- Middleton Grange - Response to Objectors' Submissions on Economics prepared for Pacific Planning by PPM Consulting dated 23 October 2019

Our comments are summarised below.

Description of the Proposal

It remains a little unclear as to how much retail space is being planned for. Attachment 2 (the retail component) assesses the impact of a 10,000sqm centre comprising the following:

- 3,800 sqm for a major supermarket
- 3,224 sqm for a mini major
- 1,362 sqm of cafes, restaurants and bars
- 1,114 sqm of specialty shops
- 200 sqm liquor shop.

However Attachment 1 (Middleton Grange Town Centre) shows a different and larger retail and commercial mix as follows:

Table 1: Proposed non-residential floorspace (Attachment 1)

Use	GFA
Supermarket/Retail Shops	9,622 sqm
Cafes and restaurants	6,447 sqm
Commercial Entertainment	2,862 sqm
Offices/SOHO	8,223 sqm
Neighbourhood Shops	4,060 sqm
Medical/other	12,529 sqm
Gym	3,500 sqm
Childcare	505 sqm
Community Centre	500 sqm
Total Non-Residential Uses	**48,248 sqm**

With food services this comes to more than 20,000sqm of retail space. If all 20,000sqm was taken up it would be a significant size centre – classified as a sub-regional centre under the Property Council of Australia definitions and larger than both Carnes Hill and Green Valley.

At this point it is worth mentioning that there is little description of the 4,060sqm of neighbourhood shops and 6,447sqm of restaurants and cafés in both the Attachment 1 and Attachment 2 reports – yet this is a significant amount of floor space that has largely been ignored for reasons unknown. Neither report provide information about the role of these land uses and where the demand for them will come from.

Demand for retail space

Trade area definition

Main Trade Area includes Green Valley area east of M7. M7 is a significant barrier and it is not convenient to travel to Middleton Grange. Hinchinbrook Public School is only 1.2km away in a straight line. However by road it is 4 to 5kms and takes around 8 to 9 minutes to drive either via Hoxton Park Road or Cowpasture Road in either direction. Green Valley Plaza is 1.4km away and is only 3 minutes.

The Main Trade Area includes eastern half of Austral – the boundary runs through the middle of the Austral Town Centre which is likely to have around 25,000 sqm or more GLAR when it is fully developed.

Population growth

Forecast.ID forecasts a slight decline in population in the Main Trade Area outside Austral. Forecast.ID may not have allowed for 1,000 more people in the town centre. Assuming that to be case, it remains that very little growth is forecast in the MTA outside Austral from 2016 to 2041 – no more than around 500 additional residents. Almost all the growth in the MTA is in Austral yet Austral will have its own town centre of 20,000 sqm or more sometime in the future.

Growth in retail expenditure

PPM has assumed 1.125% real growth in retail spend per person per annum from 2016 to 2031. This is overly optimistic and does not reflect the long-term trend. From 1983 to 2019 real retail spend per capita increased by 31% equal to 0.74%/annum – but it varied considerably between retail store types. FGL increased by 59%

(1.3%/ann) and food services (fast foods, restaurants, etc) by 87% (1.8%/ann). However non-food stores experienced only 3% growth over this period (0.1% per annum). Department stores have suffered a massive 46% loss in turnover per capita since 1983.

The difference has been even more prominent since 2004. Over the past 15 years FGL has experienced 9% growth per capita (0.56%/ann), food services 37% growth (2.14%/ann) and non-food stores negative 7% growth (– 0.46%/ann). Sales in department stores fell 35%.

These figures show trends to 2019 which are pre-COVID 19. COVID 19 and the lockdown procedures have significantly impacted the retail industry. In particular there has been a sharp rise in on-line sales which is now accounting for over 11% of total retail sales. While the COVID restrictions may be short-term many commentators believe that there are longer-term impacts. Even before COVID 19 the percentage of on-line sales to total retail sales had been trending upwards above 7.5%. COVID 19 simply escalated it and there is a general view that as consumers become increasingly familiar with on-line shopping they will continue to choose this method post COVID. While not exactly agreeing many commentators believe that on-line retailing could reach around 15% of total retail sales before it shows signs of a slowdown or plateauing.

This trend means that demand for retail shop front space will subdue over time while the demand for dark stores or mini-distribution centres will increase. Already we are seeing both Coles and Woolworths planning the delivery of dark stores across Sydney whereby the traditional supermarkets are bypassed with on-line food and grocery shopping. These stores will also provide customer pick-up (ie click and collect) facilities.

Demand for supermarket space

Table 7 steps through the method of calculating expenditure captured by supermarkets. However the result shows 43.3% of total retail expenditure is captured by supermarkets which is too high. Based on ABS Retail Trade figures (Cat No. 8501.0) supermarkets and grocery stores capture 33% of total retail expenditure. As a result the potential supermarket sales in the PPM report are over estimated.

We further cross-checked the results using our in-house expenditure model which incorporates Marketinfo expenditure data in 2017 and recalibrated to 2019 based on ABS retail sales. Our estimate of supermarket sales per capita in the MTA in 2021 is $3,896 (measured in 2019 dollars) – some 20% lower than PPM consulting estimate of $4,859.

Changing these inputs results in a significantly lower level of demand than PPM suggests – a slight oversupply of supermarket floor space in 2019 and around 2,500sqm oversupply in 2026 following the addition of a full-line supermarket in Middleton Grange.

Notwithstanding some level of oversupply in the MTA we concur with the view that Middleton Grange with an ultimate population of 9,000 to 10,000 (including that part of Hinchinbrook southwest of the M7) should have a local retail centre anchored by a full-line supermarket.

Demand for other retail space

The report is weak in its assessment of demand for other retail space. A full line supermarket with a primary trade area of say 5,000 to 15,000 people is generally supported with a range of specialty stores including specialty food (butcher, bakery, fruit and vegetables, seafood, etc), food services (fast food and restaurants), local non-food stores such as chemist, newsagency, etc, local retail and personal services such as hair and beauty, dry cleaning and optometry and possibly some non-retail commercial services such as real estate, medical and financial services. Total number of specialties would generally range between 10 and 30 and occupy around 1,500 to 4,000sqm of floor space.

In the introduction they describe the mix as including 'a mini-major' of 3,224sqm, but do not specify what that would be. Previous drawings suggest that the floor space would comprise several mini-majors. As a general rule mini-majors are usually stores between 400sqm and 2,000sqm GLA and hence a single store above 3,000sqm would be defined as a major.

The difficulty is identifying what second major or mini-majors would comprise. Many single supermarket anchored centres have no mini-majors and those that do normally have only one. Typically, it is a fresh foods grocery store or a small supermarket / grocery store with an ethnic theme (eg Asian or Arabic). A large format liquor store could also be a mini-major. Some centres have a discount variety store or large format chemist. A large format chemist is a likely option should there be a large medical centre in the town centre. National non-food mini-majors such as JB Hi-Fi, Bing-Lee, Lowes, Rebel Sports, Zara, Daiso, Best & Less and others are generally found in the larger regional and sometimes sub-regional centres.

Impact Assessment

We concur with the forecast likely retail sales figures for the proposed centre (Table 8) assuming all the spaces are occupied. Note however that more than 1,500sqm of specialty stores (mostly food services) were ignored in the demand and impact assessments in the Attachment 2 report as well as the additional 4,000sqm of neighbourhood shops and almost 6,500sqm of additional restaurants and cafés identified in the Attachment 1 report.

The report has ignored the impacts on Austral existing local centre and proposed town centre. Much of the town centre is inside the MTA.

The comment below Table 8 is a little confusing as it seems to imply that only 10% of MTA expenditure escapes the MTA yet following this implies that existing centres in the MTA capture only 41.5% of MTA expenditure. Presumably this is to suggest that there is a high level of escape expenditure that potentially could be captured. Note however that a large proportion of trade will always escape the MTA to the larger regional centres, major employment areas (people spending close to their place of work) and homemaker/bulky goods centres. Given that the Middleton Grange centre will have a similar offer to the existing centres in the MTA (FGL and food and local services and less leisure, apparel, etc) then we cannot assume the bulk of its MAT will be redirected from centres outside the MTA.

Table 11 shows the forecast impact on the three existing centres in the MTA. We have disagreements with several numbers in the table. Firstly the forecast growth in sales is far too high. It is based on 3% per annum growth for all three centres. It also contradicts the forecast MAT figures in Table 10 which are much lower for all three centres.

We would also expect growth to vary between centres due to varying population growth in respective trade areas. Population in Hoxton Park, Carnes Hill and Horningsea Park will increase at around 0.7% per annum (Forecast.ID) however Green Valley and Hinchinbrook will experience a decline in population of almost 1% per annum to 2026.

Green Valley does not have a reported MAT figure but we expect that it would be trading a little higher than suggested given that it is a dual supermarket centre with a primary trade area population of around 25,000 to 30,000.

On average an ALDI store achieves total retail sales of $17m (AFR, May 2019). We suspect the Hoxton Park store is trading lower than the $27m shown in the PPM report. Also to the best of our knowledge the largest ALDI stores are around 1,500sqm.

Table 11 shows a redirection of trade of $43m from the existing centres in the MTA yet it is forecast to achieve total retail sales of twice that level ($86m). It has not been identified where the additional $43m will be redirected

from. Some of this may be redirected from a future town centre in Austral but that would not account for as much as 50% of its MAT.

Carnes Hill is half the distance and travel times from the subject site than is Valley Plaza and hence we would expect stronger impacts in percentage terms on Carnes Hill.

Given all the above we suggest the impacts are more likely as follows:

Table 2: Estimated economic impacts, as considered by HillPDA

Centre	Total GLA (m2)	Estimated Centre Sales 2019 ($m)	Est Sales No Dev 2026 ($)	Est Sales With Dev 2026 ($)	Estimated Impact ($)	Estimated Impact (%)	Impact over time 2019-26
Carnes Hill Marketplace	17,233	163,529,777	185,281,173	148,281,173	-37,000,000	-20.0%	-9.3%
The Valley Plaza	12,737	105,080,250	108,813,688	96,813,688	-12,000,000	-11.0%	-7.9%
Hoxton Park	2,000	21,000,000	22,127,619	17,627,619	-4,500,000	-20.3%	-16.1%
TOTAL	**31,970**	**289,610,027**	**316,222,479**	**262,722,479**	**-53,500,000**		
Middleton Grange				86,018,500	86,018,500		
TOTAL		**289,610,027**	**316,222,479**	**348,740,979**	**32,518,500**		

We can see in the above table the impacts are much stronger than shown in the PPM report – particularly over time which is expected given that the PPM report has over-stated growth in MTA figures. The impact on Carnes Hill would be an immediate loss of 20% trade (which is generally described as significant) and a 10% loss in trade over the 7 years from 2019 to 2026. Carnes Hill is unlikely to return to its 2019 level of trading until 2031-32.

This is not to suggest that a local centre should not be supported. Carnes Hill Marketplace is currently trading at $10,000/sqm which, for a shopping centre with a discount department store, is strong. It is trading 12% above average (around $9,000) of all 81 shopping centres between 10,000 and 20,000sqm GLAR listed in the Shopping Centre News across Australia. Therefore we do not consider the impact to threaten its viability and/or result in social detriment. A local centre should be supported in Middleton Grange.

Similarly if a larger retail centre was to be developed in Middleton Grange, and if was to achieve the retail sales suggested in the PPM report then it would need to redirect more trade from the existing MTA centres. We would expect that a centre of say 15,000sqm GLAR would redirect at least 25% of Carnes Hill trade. Furthermore by 2031 Carnes Hill is likely to remain trading below its 2019 level – possibly by as much as 10%. It is recognised that a larger centre will capture a higher proportion of escape expenditure. A centre of say 20,000sqm GLAR would have a wider retail offer – particularly if it had one full-line supermarket, then it would need to fill the balance of shops with retailers / store types that are not currently represented in the MTA if it is to be successful. Nevertheless the impact on Carnes Hill maybe as high as 30% loss in trade or more which is a very strong level of impact. Carnes Hill would be unlikely to return to its 2019 trading level before 2036 if at all.

The impact on the future Austral town centre is not discussed in the PPM report. This is difficult because the current centre is small and has not yet develop into a town centre. What this means is that Austral is likely to be first trading at a lower rate than it would have otherwise traded at, if Middleton Grange had not proceeded, and/or it means that the development of Austral town centre may be delayed two or three years.

Our suspicions are that the impacts may be a little lower as a centre of 15,000sqm to 20,000sqm may not achieve the optimistic turnover levels in the PPM report. This is because a centre of this size is too large for a PTA of

around 10,000 people. Again it would need to be largely differentiated from the retail offer in Carnes Hill and would need to include retailers that have wider trade areas. Even under this scenario many of the retailers are likely to trade with lower retail sales figures than suggested in the PPM report.

Our conclusion is that an appropriate size centre for Middleton Grange is around 6,000sqm to 10,000sqm GLAR. A larger retail centre would either struggle and/or is likely to result in significant adverse impacts on existing centres in the locality – particularly on Carnes Hill and to a lesser extent on Green Valley and the future Austral Town Centre.

Commercial Office Space

The PPM report is optimistic about demand for office space in Middleton Grange. The arguments centre around its strategic position between Liverpool CBD and Sydney West Airport. In particular the report suggests that the COVID-19 impacts has resulted in a decline in demand for office space in Sydney CBD space and the opportunity to provide more affordable alternatives with reduced commuting times.

We caution against the optimistic outlook for the following reasons:

- Reduced demand in Sydney CBD is the result of a rise in work from home and not work in a suburban office building. The suburban office market could experience similar impacts as the Sydney CBD has
- The location is not as proximate to the airport site as is the Aerotropolis Core precinct which will have higher attraction and will include a metro station one stop from the airport

Outside the main employment centres of Parramatta and Macquarie Park the market for office space in the suburbs has been quite weak since the recession of the early 90s and has generally been outpriced by the residential market. There was some increased interest in the suburban office market pre-COVID-19 not seen since the late 1980s. This was due to the overheating of the Sydney CBD and fringe market and the rippling effects into the suburban market.

However COVID-19 has taken the heat off the office market generally – at least in the short term and possibly longer term as employers and workers are learning to hot desk, work more flexibly in time and by location and work from home. There will be an opportunity or a market for flexible incubator employment spaces in the locality but this market is limited in size and Middleton Grange would find itself competing with potentially superior locations such as Liverpool CBD, Leppington and the Aerotropolis Core. These competing locations are regarded as superior mainly due to their positions and high levels of urban services and infrastructure, particularly public transport.

Construction Employment

The Attachment 1 PPM report assumes 8.5 direct full-time equivalent (FTE) jobs for every million dollars of construction. There are two errors with the assessment. Firstly the terminology is incorrect given that construction jobs are temporary and hence should be expressed as job years. Assuming PPM is referring to job years the estimate is still more than double the true figure (ABS Input Output tables and IBIS World reports).

For $300m of construction we estimate around 1,200 job years directly in construction as sourced from ABS and IBIS World.

Also average salary for FTE in construction in the PPM report is $38,000 which is around half the true figure.

Operations Employment

Note that Table 7 in the Attachment 1 report has some different floor areas to the introduction and the Attachment 2 report.

We generally concur with the employment figures suggested in the PPM report but again this is dependent on the uses being built and the market taking up the offer. Much of the discussion in the Attachment 1 report centres on the speculative office space but there is little to no description of the 10,500sqm of neighbourhood shops and restaurants which is a significant amount of floor space and little to no evidence of demand for this space. The same for the health and medical and entertainment uses. The PPM reports give us no confidence that there is a market for these land uses. The purpose of their inclusion may be to exaggerate the job numbers and there is no certainty that they will ever be delivered.

On a more minor matter lower employment density rates should be applied to the gymnasium, entertainment uses and community centre – in the order of 100 to 150sqm per worker. Hence the total 'other commercial jobs' shown in Table 10 would be around 680 assuming full occupation.

The applicant has subsequently indicated that the ground floor area would comprise around 20,000 to 22,000sqm of employment spaces. If we assume say 10,000sqm is retail including food services and 11,000sqm is non-retail commercial then the likely number of jobs would be around 560 being 130 in the supermarket, 160 in the other retail (based on 40sqm per worker) and 270 in non-retail commercial services (assuming mostly medical services and other office uses). If entertainment uses (such as gymnasium or cinemas) comprised half the non-retail space (say 5,000 to 6,000sqm) then we would expect the total number of workers on the ground floor to be less than 500 as shown in the table below.

Table 3: Estimated number of jobs in the Middleton Grange Town Centre (ground floor)

Use	GFA (sqm)	Job density (sqm/job)	Jobs
Supermarket	3,800	30	126
Other retail	6,200	40	155
Non-retail commercial services (medical/office)	5,500	40	137
Entertainment (gymnasium, cinema, etc)	5,500	100	55
Total			473

Economic Benefit of the Public Parks

Chapter 7 of the Attachment 1 report quantifies what it calls 'benefits' of the park dedication. This includes the capital cost of $3.3m presumably because development, rather than Council, will fund it. Hence it is identified as a benefit to Council. However if it is funded from the statutory developer contributions, as opposed to a VPA, then it would provide no net benefit to Council.

The report mixes maintenance and capex expenditure into a total cost of almost $895,000 over 50 years which on face value appears too low. Again it is described as a benefit rather than a cost and it is described as a cost shared between the owners' corporation and Council.

From whole of economy or community point of view the capital and maintenance costs are costs and not benefits. The only true economic benefit identified in the report is use benefit. The report attempts to quantify this based on a number of assumptions including number of visits, travel time and average time spent in the parks. There is little empirical evidence supporting the assumptions which is not to say that they are wrong – only that we have little confidence in the result. What is also confusing is that the forecast visitation numbers are based on the MTA population – the vast majority of which live more than 1km away – but the assumed method of travelling to the parks for all visitors is walking at an average distance of 500m.

There are some other benefits of the open spaces including environmental (visual, urban heat control, etc) and positive impacts on the amenity of the town centre. These have not been identified or quantified in the report.

Finally most of the numbers in Table 14 do not match the numbers spelled out in the text.

Conclusion

Our overall conclusion is that the Middleton Grange should have a local centre to support a main trade area population of around 10,000 people. The centre should include a total shopfront space of around 6,000 to 10,000sqm anchored by a full-line supermarket. Any proposal for a larger centre should be supported by an economic impact assessment that properly identifies the types of shop front uses and the properly identifies and quantifies where the demand for those uses come from.

The other employment uses in the town centre would be desirable, but the reports have not adequately described and identified where the demand for those uses will come from.

Yours sincerely,



Adrian Hack
Principal, HillPDA
BTP (Hons), MLE, MPIA

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Graham Matthews
Strategic Planner
Liverpool City Council
33 Moore Street
Liverpool NSW 2170

19 November 2020

Dear Graham,

Subject: Middleton Grange Town Centre - Economic Assessment of Additional Information

As instructed HillPDA has undertaken a review and an appraisal of the additional information submitted by the applicant titled "An Analysis of Lower Floor Space Ratios at Middleton Grange" Prepared for Manta Group Pty Ltd by PPM Consulting and dated 20 September 2017.

Please note that the earlier comments by HillPDA dated 22 October 2020 on the economic impact assessment remain unchanged. Our overall conclusion is that the Middleton Grange should have a local centre to support a main trade area population of around 10,000 people. The centre should include a total shopfront space of around 6,000 to 10,000sqm anchored by a full-line supermarket. As per Council's development control plan, any proposal for a centre should be supported by an economic impact assessment that properly identifies the types of shop front uses and the properly identifies and quantifies where the demand for those uses come from.

The planning proposal includes more than 20,000sqm of retail space of which half is restaurants and neighbourhood shops. It doesn't define neighbourhood shops. Nor does it identify where the demand will come from for these spaces and what the likely impacts will be.

The other employment uses in the town centre including the office component would be desirable, but the reports have not adequately described and identified where the demand for those uses will come from.

The additional information provided notes that the planning proposal that received a Gateway 'approval' had an average FSR of 2.5:1 (part 1.5:1 and part 2.5:1). The analysis provides some comparisons of land use distribution on the site at lower FSRs and suggests that there would be significant impacts on the viability of the development. It also suggests that the Gateway 'approval' is a signal for investment, and that a change to a planning proposal would put that investment at risk. It also suggests that if the planning proposal is changed, it may delay development of the site, including outcomes associated with planning agreements, due to feasibility issues.

One of the considered scenarios is an FSR 2.0:1, which is denser than the current proposal.

The additional information puts forward two scenarios under the proposed reduction in FSR being:

a) No development as the project would be deemed unviable

b) A reduced outcome being 684 apartments instead of 912 and 16,200sqm of retail space instead of 20,240sqm

Our comments are as follows:

- The applicant has provided no evidence regarding the feasibility of development under the different density controls.

- The applicant has put forward a revised planning proposal with an FSR that the previous analysis suggested was unviable and would potentially be delayed for ten years. This raises questions regarding the development intent and feasibility, generally.
- Analysis provided by the applicant to date has not demonstrated sufficient demand for the offering provided and the planning proposal does not include a mechanism to guarantee delivery of that land. As such, it is unclear if future development would deliver the employment uses that are described.
- As such, the analysis is not considered a reliable source of information regarding signals to the development community related to changes in proposed controls, development feasibility generally or development outcomes associated with the proposed controls.

In addition, we are of the view that:

- The lower number of apartments would not undermine the viability of the residential component given that the land is a fixed and sunk cost. In this market the land is only a small part of the total development costs and the financial returns (development margin and internal rate of return) on 684 apartments is likely to be similar to 912 apartments.
- The reduction in population of 400 is likely to have minimal or immeasurable impact on the demand for retail and other commercial floor space in the town or village centre. It translates to 4% less population in the primary trade area. Even at a generous rate of 1sqm per resident it translates to a reduced demand for retail space of only 400sqm.
- Under the reduced scheme the amount of retail space at 16,200sqm will be still be around double the level of demand generated by trade area residents.

I trust this clarifies Council's concerns. Please contact us if you have any other queries.

Yours sincerely,



Adrian Hack
Principal, HillPDA
BTP (Hons), MLE, MPIA

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16 April 2021

Dear Mr Oste

Subject: Consideration of Pacific Planning Response to MGTC Planning Proposal Assessment

This letter is a consideration of the Pacific Planning Response dated January 2021 to HillPDA's assessment of the Middleton Grange Town Centre (MGTC) planning proposal (HillPDA Assessment) dated November 2020. The HillPDA Assessment included a peer review of economic reporting supporting the MGTC planning proposal.

The Pacific Planning Response is supported by a separate PPM Consulting Response to the economic-specific aspects of the HillPDA Assessment. The Pacific Planning Response and PPM Consulting Response are attached at Appendix A. A consideration of the PPM Consulting Response is provided at Appendix B.

After consideration of the Pacific Planning Response, HillPDA's recommendations have changed as follows:

- Residential limits:
  - Cap residential floorspace to 72,000 sqm (up from 65,000 sqm)
  - Introduce cap on dwellings of 671 units (to ensure the additional floorspace is used for larger/more flexible dwellings and not additional dwellings beyond described in the planning proposal)
- An average FSR of 1.8:1 (area applies to R1 General Residential and B2 Local Centre areas, excluding 'New Park 3')
- Northern and southern interfaces:
  - Maintain the proposed 20 m height proposed
  - Introduce 2 storey street wall and 4 m setback control along the *entirety* of Southern Cross Avenue and Flynn Avenue, east of Main Street in LEP (or DCP if Council is satisfied that the outcome would be delivered)
- Map up to 1,200 sqm of R1 General Residential adjacent to New Park 1 on Additional Permitted Use map to permit the Restaurant or café land use.

HillPDA's recommendations relating to the following have not changed:

- Maintain the area proposed to have a height limit of 9.5 m at current 8.5 m limit (agreed to by Pacific Planning Response)
- Map 'New Park 3' on key site map (agreed to by Pacific Planning Response)
- Remove 'New Park 3' from Height and FSR maps (noting the recommended average 1.8:1 FSR includes the floorspace afforded by the proposed mapping)
- Prepare an amended site specific development control plan that requires a staged development application that demonstrates alignment with Council's Local Strategic Planning Statement employment goals for Middleton Grange and is supported by a peer reviewed economic impact assessment that also demonstrates demand for the quantum of employment floorspace to be provided.

Outside of the LEP/DCP framework, HillPDA's recommendations regarding finalising State planning agreements prior to amending the LEP and a short term goal of refining Council's contributions plan have not changed.

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Summary of Middleton Grange Town Centre Planning Proposal and HillPDA Assessment

The HillPDA Assessment was based on the following:

- A review of previous Council reports
- A review of previous iterations of the planning proposal
- A consideration of how the planning proposal has been amended in response to Council concerns
- An assessment of the planning proposal against the requirements of the Department of Planning, Industry and Environment's *A Guide to Preparing Planning Proposals*, including:
  - Considering alignment with key strategic documents including Council's Local Strategic Planning Statement (LSPS), Regional and District plans, State Environmental Planning Policies (SEPPs) and Ministerial Directions
  - Considering site specific merit (e.g. traffic and transport, open space, urban design)
  - Weighing State and public submissions, Council specialist advice and the applicant's planning proposal and technical reporting and HillPDA's peer review of economic reporting on the above matters
- Identification of adjustments to the planning proposal and/or supporting items (e.g. Development Control Plan and Planning Agreements) that would resolve issues arising from the assessment.

The planning proposal sought to amend planning controls relating the following land:

- Lots 2, 3, 4, 5 and 6 DP 1207518
- Lot 1 DP 1078564
- Lot 12 DP 1108343
- Lot 102 DP 1128111.

In summary, the planning proposal, as written, seeks to:

- Amend land use zoning to:
  - Reduce the area of R1 General Residential
  - Increase the areas of B2 Local Centre Zone, RE1 Public Recreation and SP2 Infrastructure
- Increase height limits from 8.5 m and 18 m to a mix of 9.5 m to 14 m (three to four storeys) and 20 m to 29 m (six to eight or nine storeys)
- Increase floor space ratio limits from 0.75:1 and 1.5:1 to a mix of 1:1 and 2.3:1
- Adjust land acquisition mapping to include new RE1 Public Recreation land
- Add an additional permitted use of "restaurant or café" to land to be zoned R1 General Residential.

Overall, the HillPDA assessment did not support the planning proposal in its current form for the following reasons:

- The proposed planning controls do not provide certainty and could create opportunities for a significantly different form of development from that which is described in the concept plan
- The proposed building controls permit a scale of development that is inconsistent with the LSPS and has not been demonstrated to be appropriate for the site
- The described commercial floorspace, while broadly consistent with the LSPS, has not been justified by the applicant as being supported by market conditions and may result in poor ground level activation
- The proposed planning framework does not provide assurance that the proposed open space provision will be achieved on the site and potentially relies on a planning agreement to deliver the space
- The proposed planning controls could result in a scale of development that is not adequately serviced by infrastructure.

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HillPDA's Assessment recommended that Council:

1. Not support the planning proposal in its current form
2. Prepare an amended planning proposal which includes:
    a) A cap residential floorspace to 65,000 sqm GFA
    b) An the average FSR across the site to 1.6:1, with corresponding reductions in height across the site, to Council's satisfaction
    c) Reduction of the proposed height limit of 9.5 m to 8.5 m, consistent with the current planning controls, to limit development in the relevant area to two storeys
    d) Reduction of the northern and southern interface height limits from 20 m to 14 m and reduce maximum FSR accordingly to accommodate the change in height limits
    e) Remove that part of the B2 Local Centre zoning which is to be used for public open space from the height and FSR mapping and include it on Key Site mapping, to ensure that development cannot occur in this location, other than for a kiosk or similar, to protect the area for outdoor community use
3. Prepare an amended site specific development control plan that requires a staged development application that demonstrates alignment with Council's Local Strategic Planning Statement employment goals for Middleton Grange and is supported by a peer reviewed economic impact assessment that also demonstrates demand for the quantum of employment floorspace to be provided.

The suggested amendments to the planning proposal would:

- Generally achieve the development outcomes described by the planning proposal
- Ensure that the development outcomes are consistent with Council's vision for Middleton Grange as identified in the LSPS
- Minimise the risk of negative impacts to established retail centres and the retail hierarchy across the Liverpool LGA, or oversupply of underutilised commercial floorspace in Middleton Grange
- Ensure that the proposed community benefits, including the delivery of open space, are achieved.
- Removal of proposed additional permitted use of 'restaurant or café' from R1 General Residential area to align with the objectives of the zone and reduce the potential for oversaturation of ground level commercial floorspace.

The HillPDA Assessment was undertaken as an independent review. HillPDA did not consider the findings of the *Liverpool Retail Centres Hierarchy Review 2012*, which was authored by HillPDA, as it had since been superseded by Council's *Centres and Corridor Strategy*. At no point did HillPDA take direction from Council regarding the nature or outcomes of the HillPDA Assessment. Council's involvement was limited to:

- Liaising with the applicant regarding specific information requests and setting up meetings
- Providing updates regarding policy (e.g. advancement of the *Centres and Corridor Strategy*)
- Responding to information requests to Council (i.e. relevant background information, specialist referrals and clarification of spatial analysis)
- Providing a summary of submissions to 2019 public exhibition
- A set of editorial comments on the review, relating to minor grammatical and historical matters, and requesting alternate mechanisms to allow for more flexible delivery of specific recommendations.

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Consideration of Pacific Planning Response

The Pacific Planning Response considers the findings and recommendations of the HillPDA Assessment. It is divided into the following sections:

- **Executive Summary:** Overview of the response and alternate recommendations
- **Chapter 1 - Introduction:** Summary Pacific Planning's views on HillPDA's engagement and the merit of HillPDA's recommendations
- **Chapter 2 - Key Issues:**
  - **Section 2.1 - Background and context:** Review of the historical context of the planning proposal
  - **Section 2.2 - Economics:** Response to HillPDA's peer review of the PPM Consulting economic reporting
  - **Section 2.3 - Security of future built form:** Consideration of mechanisms to ensure built form outcomes are delivered.
  - **Section 2.4 - Issues of State roads and infrastructure:** Review of impact assessments and planning agreements to deliver road infrastructure
  - **Section 2.5 - HillPDA Comments on proposal and response:** Analysis of HillPDA's assment where Pacific Planning has a different view
  - **Section 2.6 - Response to summary of suggested amendments:** Review of HillPDA's recommendations and outline of counter-recommendations with reasoning
- **Chapter 3 - Conclusion:** Summary of findings.

The tables below focus on Chapter 1 and Sections 2.1 to 2.5. Section 2.6 is discussed in a separate section below that focuses on HillPDA's amended recommendations.

Table 1: Response to Chapter 1 - Introduction

Summary of Pacific Planning Response	HillPDA Comment
The HillPDA assessment has not considered context of the previous discussion and previous resolution of issues by Council, DPIE and key state agencies	The HillPDA assessment considers the planning proposal currently before Council, correspondence between the applicant, Council and agencies, business papers and supplementary information provided by the applicant. HillPDA has clearly requested that information that the applicant sought to be part of the assessment process be incorporated into the planning proposal and/or supplementary information. This included: • Preliminary review/request for information (RFI) (21 Sept 2020) • Meeting to discuss and clarify the RFI letter (24 Sept 2020) • Email acknowledging applicant response (9 October 2020) • Meeting to discuss applicant response (13 October 2020)
The independence of the HillPDA report should be considered, given that a 2012 review of the retail centres hierarchy concluded that there should be no more than 5,500 sqm of retail at Middleton Grange.	The author of the HillPDA assessment was not involved in the 2012 review. The reviewer of the HillPDA assessment and author of HillPDA's peer review of economic reporting, was also an author of the 2012 review. HillPDA notes that that review has since been superseded by Council's Centres and Corridor Strategy. That report was prepared by a separate consultancy and comes to the same broad conclusions regarding the economic merits for development at Middleton Grange. Aside from authoring a since superseded 2012 review of a 2006 retail hierarchy report, Pacific Planning has offered no reasoning for why HillPDA's independence should be questioned. HillPDA and Council have had minimal interaction during the assessment process, with the exception of requesting spatial information, specialist advice (e.g. traffic planning), confirmation of assumptions and editorial comments following the review of the assessment.

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Summary of Pacific Planning Response	HillPDA Comment
	Where Council has provided information substantively related to the assessment (e.g. merit considerations), the HillPDA assessment has clearly identified Council's involvement. Further HillPDA has offered alternative views on multiple matters discussed by Council's technical experts, such as height and density controls.
"It is our understanding that HillPDA has shown a historical misapplication of the land use controls. This, and other misinformation has led to community confusion, to the point where council was required to re-exhibit the planning proposal and correct the misinformation."	This statement is made in the context of HillPDA's 2012 retail centre's hierarchy review, which advises that the retail component of the centre should comprise around 5,500 sqm GFA as a village centre. As per the planning proposal, Pacific Planning's analysis indicates that the existing planning controls would allow for approximately 12,000 sqm of commercial retail space. The 2012 review considers the demand for retail land uses to guide Council policy regarding retail hierarchies. It is not a consideration of technical site capacity. Interpreting a demand analysis for retail for a suburb as a site capacity assessment and representing that interpretation as a misapplication of land use controls, is spurious. **HillPDA was not involved in earlier iterations of the planning proposal, its assessment or description to the community.**
HillPDA's recommendation for a 1.6:1 average FSR across the site is related to traffic, amenity and a misunderstanding on the issue of non-residential uses.	HillPDA's recommendation for an average FSR of 1.6:1 is based on an analysis of the LSPS's goal of: • 500 to 1,000 additional homes (pg 38-39) • 500 to 1,000 additional jobs (pg 52-53). Rationale is described in Table 8 of the HillPDA assessment (pg 30). The recommended FSR of 1.6:1 exceeds the demand demonstrated by the applicant for non-residential uses but aligns with the LSPS vision. Resolution of traffic and amenity issues does not impact the recommended FSR.
"Such a reduction, which is not based in the primary supporting elements that have guided the planning merit outcomes or as a result of the considerations of the historical context are actually not minor if implemented. The reduction and change to the scheme would undermine the conclusion and guidance of the informing reports that support the plan making proposal and the ability of the project to provide significant new public benefit and high-quality urban amenity."	The relevant supporting report in this instance are the economic impact assessments prepared by PPM Consulting. The PPM Consulting reports have only considered retail demand. It does not consider demand for a medical centre, office space or other non-retail commercial uses beyond broad hypothetical statements. As such, the basis for the GFA sought by the planning proposal is not considered to be sufficient to grant an FSR to achieve a GFA beyond the base level of employment identified in the LSPS.
"HillPDA conflates goods retailing with services retailing in a way that allows a conclusion that 20,000sq.m of retail space is an oversupply. HillPDA concludes that an appropriately sized centre would be between 6,000 and 10,000sq.m of gross leasable area, removing the non-retail/non-residential elements (such as the medical centre, gym and childcare centre, which make up around 16,000sq.m of gross leasable area). PPM Consulting agrees that a centre of 10,000m2 of retail space is appropriate. Therefore, there doesn't seem any issue to justify the reduction in density as the quantum of individual land uses isn't objected to by HillPDA."	This subject is discussed further in the response to the PPM Consulting Response at Appendix B. In short, HillPDA did not contend that that the medical centre, gym and child care centre be included in the analysis of retail impacts. The medical centre, gym and child care centre were all additional uses to the 20,129sqm of retail spaces as documented in *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (PPM Consulting, October 2020). HillPDA never assumed that those uses were part of the 20,129sqm of retail space. Total non-residential spaces proposed exceed 48,000sqm.
Other comments regarding responses to recommendations	Subjects are discussed below

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Table 2: Response to Section 2.1 – Background and context

Summary of Pacific Planning Response	HillPDA Comment
"An 'independent' assessment should consider and address the detailed history that has led the proposal and development concept to what is being proposed today, including what has already been approved. There is considerable repetition on issues that have already been resolved during a lengthy and complex process, and revisiting issues around height transition and the layout of the town centre (already approved via the roads DA) does little to benefit the finalisation of the planning proposal."	As noted above, HillPDA has undergone an independent process in assessing the planning proposal. HillPDA has provided a detailed summary of the historical context of the planning proposal in Chapter 2 of the HillPDA assessment. This has included references to Council's business papers. This has been reported in an unbiased manner. HillPDA disagrees with the claim that there already has been approval for any element of the planning proposal by either DPIE, the elected Council or Council staff on the final design of the planning proposal, with the exception of identifying potential controls for further assessment. This is evidenced by the disagreements with Council's technical specialists regarding critical elements of the planning proposal. The planning proposal process is designed to be iterative, with pre-Gateway reporting considering the broad merit of the proposal and potential areas for additional reporting. The Post-Gateway period is meant to respond to any unanswered questions through specific technical reporting and incorporate community feedback.
Community sentiment regarding the planning proposal has changed between the exhibition of the 2018 and 2019 public exhibitions. This is omitted from the HillPDA report.	This claim is incorrect. HillPDA discusses community sentiment in detail in Section 4.1 - Public exhibition. The themes of submissions are identified and commented on in that section. Community views for the planning proposal have been considered as their own category of a merit consideration, as required by the relevant guidelines. To be clear, the HillPDA assessment has placed no weight on the change in community sentiment during the 2018 and 2019 public exhibitions. There could be any number of reasons for general public sentiment would change, separate from the planning proposal itself. The purpose of Section 4.1 of the HillPDA assessment is to consider the topics raised during community consultation and their relevance to the assessment.
The HillPDA set of recommendations that results from a report that misses key items of historical context of council reporting, council and department decisions, reasons for a new exhibition and glosses over the substantial reversal in community support should be considered in light of those omissions.	As discussed above, HillPDA has provided historical context for the decisions and previous reporting on the planning proposal. It is not the purpose or responsibility of the HillPDA Assessment to provide a full accounting of previous decisions. The HillPDA assessment's purpose is to assess the planning proposal under consideration. The HillPDA Assessment acknowledges that additional context is important, and as such, references to business papers have been provided. This includes a reference to the July 2019 resolution Council resolution which reaffirmed the December 2018 and committed to a revised planning proposal being placed on public exhibition.

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Table 3: Response to Section 2.2 – Economics

Summary of Pacific Planning Response	HillPDA Comment
"While PPM Consulting's analysis concentrated on the retail aspects of the planning proposal for the Middleton Grange Town Centre, HillPDA appears to contend that the medical centre, gym and childcare centre, along with the restaurants and entertainment areas, should have been included in the analysis. This is a flawed presumption. It is important to note that the nature of restaurants and entertainment space is completely different to goods retailing."	In HillPDA's preliminary review dated 21 September 2020, the lack of detail in the planning proposal and supporting reporting regarding the demand and land use impacts of non-retail commercial land was specifically identified as an issue. It was identified as being inconsistent across the reporting and did not transparently identify commercial floorspace supply or demand gaps. Instead, broad policy objectives and commentary were relied upon (e.g. that Council should not pick winners). Subsequent reporting did not provide a meaningful level of additional detail regarding this specific subject, which was highlighted as an issue in HillPDA's peer review. It is the applicant's responsibility to identify the demand for certain outcomes and how a proposal meets that demand. HillPDA agrees that non-retail commercial space is different than retail space. However, this is quantifiable. Pacific Planning and PPM Consulting have been given multiple opportunities to address this specific issue with planning proposal reporting.
"In its review of our 8 October 2020 report, HillPDA conflates goods retailing with services retailing and misrepresents the non-residential uses to only those on the ground floor, in a way that allows a conclusion that 20,000m² of retail space is an oversupply. However, the proposed medical centre, gym and childcare centre are extremely unlikely to compete with surrounding centres."	This topic is discussed more fully in HillPDA's response to the PPM Submission at Appendix B. Extracts are provided below. "Firstly Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis (PPM Consulting, October 2020) proposes 6,447 sqm of cafes and restaurants and 4,060 sqm of neighbourhood shops in addition to almost 10,000sqm of supermarket/retail shops. It is not correct to exclude cafés and restaurants from the retail impact assessment as competing centres also sell food services. Secondly we assume it is also incorrect to exclude the 4,000sqm of neighbourhood shops since being called 'shops' implies that they are retail businesses and would also compete with the surrounding centres – although the application has never defined what these uses are, how they differ from 'supermarket/retail shops' and where the demand for them comes from. ... Thirdly, the medical centre, gym and child care centre were all additional uses to the 20,129sqm of retail spaces as documented in Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis (PPM Consulting, October 2020). HillPDA never assumed that those uses were part of the 20,129sqm of retail space. Total non-residential spaces proposed exceed 48,000sqm."
"HillPDA implies that the Main Trade Area has been drawn too broadly. The Main Trade Area can be drawn in many different ways and is open to interpretation by different practitioners. PPM Consulting stands by its Main Trade Area, which includes three existing shopping centres – Carnes Hill Marketplace, The Valley Plaza and the new Aldi at Hoxton Park. The purpose of drawing a Main Trade Area of this nature was to ensure that the three largest and closest centres were included in the analysis of the catchment for the Middleton Grange Town Centre."	This topic is discussed more fully in HillPDA's response to the PPM Submission at Appendix B. Extracts are provided below. "Our view has not changed in that the primary trade area (PTA) is likely to be the suburb of Middleton Grange and that part of Hinchinbrook southwest of the M7 motorway given the retail hierarchy and location of competing centres. As a general rule primary trade areas around competing centres should not overlap and the areas to the northeast, south and west fall inside the primary trade areas for Green Valley, Carnes Hill and the future Austral town centre respectively. A wider secondary trade area (STA) could be assumed but the STA of a centre is usually defined as that area where only a

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Summary of Pacific Planning Response	HillPDA Comment
	small or minor proportion of total expenditure generated by residents in the STA is directed to the subject centre."
HillPDA asserts that there will be a decline in the population in the Main Trade Area and uses Forecast.id figures to justify this. Indeed, they assert that there will be no more than 500 additional residents in the Main Trade Area to 2041. If the current proposal for new residential just in the Middleton Grange Town Centre is approved, it could account for at least an additional 1,500 residents within the next five years. Therefore, PPM Consulting disagrees with HillPDA's population forecasts and stands by its growth forecasts. This is a matter of professional disagreement over data, leading to different conclusions.	This topic is discussed more fully in HillPDA's response to the PPM Submission at Appendix B. Extracts are provided below. "Our view has not changed. We specifically stated 500 additional residents in the MTA outside Austral based on Forecast.ID projections and adding in the additional 1,000 residents under the planning proposal. The vast majority of new residents in the MTA (as defined in the PPM report) will be in Austral which will have its own town centre sometime in the future. Furthermore the growth in Council's LSPS is based on Forecast.ID projections."
HillPDA concludes that an appropriately sized centre would be between 6,000 and 10,000m² of gross leasable area. Removing the non-retail elements (such as the medical centre, gym and childcare centre, which make up around 16,000sq.m of gross leasable area), PPM Consulting agrees with HillPDA that a centre of approximately 10,000sq.m of retail space is appropriate.	This topic is discussed more fully in HillPDA's response to the PPM Submission at Appendix B. Extracts are provided below. "Please note that in our review we stated that an appropriate size centre would be 6,000sqm to 10,000sqm of shop front space. Shop front space includes non-retail businesses providing a range of services including financial, real estate, travel, postal and medical services as well as personal services such as hair and beauty, dry cleaning, alterations, equipment servicing and the like. We would expect that if the centre were as large as 10,000sqm then it would be expected that around 2,000sqm of that space would be occupied by non-retail businesses. A small allowance for vacancies (3% to 5% of floor space) is also healthy to enable tenants to move around and enable new tenants to move in. In terms of occupied retail stores (the selling of goods including food, groceries, food services and non-food goods) we envisage no more than 8,000sqm being an appropriate size centre. If the centre was considerably larger then it is likely to impact the retail hierarchy. In addition to shop front space there are other non-residential land uses that could be accommodated including education, police, community uses, professional services, medical centres, etc. These uses typically occupy stand alone commercial buildings, shop top commercial suites and other real estate forms. Again there is still some confusion or inconsistencies with the application. "PPM Consulting agrees that a centre of 10,000m² of retail space is appropriate" but *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (PPM Consulting, October 2020) shows that more than 20,000sqm is proposed."

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Table 4: Response to Section 2.3 – Security of built form

Summary of Pacific Planning Response	HillPDA Comment
The recommendations amending the height and density controls seek to limit the quantum of residential dwellings to cover a risk that doesn't exist. The council and state can be confident in the proposed outcome of footprints and elevations due to the following: • Approved DA for roads facilitating the locations of buildings.	Planning controls, particularly regarding undeveloped lands, should be robust enough to accommodate changes in the circumstances of individual developers. In the instance of an approved DA for roads, it is possible for a separate development application or modification to be submitted. Unless substantially developed, an approved road DA should be considered as a potential outcome, rather than secure outcome.
• The DCP.	HillPDA understands that a draft DCP is under consideration, but not yet approved. For the most part, the HillPDA Assessment considers mechanisms that are within the control of the Liverpool LEP. One exception to this is a recommended DCP requirement that a more detailed economic impact assessment be provided during the DA stage. However, it is worth noting that DCPs hold much less weight than LEP controls and are more easily varied.
• The ADG controlling the quantum of residential floorspace within the built form outcome.	The Apartment Design Guide is a State owned document that can be altered at any time. For reference, it superseded the Residential Flat Design Code, applying to applications lodged from 19 June 2015. While this is a valid consideration for the assessment of planning proposal via SEPP 65 requirements, HillPDA recommends that LEPs be able to stand on their own, should the ADG be reformed.
• Heights (which council staff suggested in its letter of 19 September 2017; which the department endorsed in its letter of 28 June 2018; and which Hill PDA generally support).	Pacific Planning has indicated that Council staff have agreed to 18 m, and subsequently 20 m heights at the interfaces. Pacific Planning has also interpreted a Department letter on 28 June 2018 in response to a revised planning proposal to be an endorsement of height controls. HillPDA has reviewed the letters in question and has come to the following conclusions: • The Department's letter on 28 June 2018 only determined that the conditions 2(a) and 2(b) of Gateway were satisfied. The relevant 2(a) condition was: *Prior to public exhibition, Council must revise the planning proposal to... provide additional information regarding transition of proposed heights to existing neighbourhood zones and overshadowing impacts...'* HillPDA does not interpret this as an endorsement of the design, only that the planning proposal has provided suitable information for Council to complete its assessment. • Council's 19 September 2017 letter from the Acting Manager of Strategic Planning required the interfaces in question to be reduced to 18 m. Notably, that same letter required the western FSR to be 0.9:1 and 9.5 m, which the applicant has maintained at 1:1 with heights of 9.5 mand 14m. Further, the central core towers were to be 24 m, where the applicant now seeks 2.3:1 with 29 m heights. Council has had the opportunity to perform more detailed urban design analysis. HillPDA does not concur with the applicant's view that letters from Council staff regarding potential design solutions prior to finalisation of a planning proposal are binding. Instead, they should be interpreted as feedback on a potential solution, pending confirmation of their suitability and acceptability of impacts.

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Table 5: Response to Section 2.4 – Issue of State Roads and Infrastructure

Summary of Pacific Planning Response	HillPDA Comment
Pacific Planning has summarised planning agreement driven intersection and open space upgrades that would facilitate the development.	HillPDA defers to Council on the adequacy of the proposed transport related infrastructure. The suitability for using planning agreements for provision of open space is discussed below in the review of recommendations in contention and HillPDA's response.
"... we note the Department's planning team report that supported the altered Gateway determination dated 23 December 2020, which stated: "Three state agencies (Transport for NSW, NSW Environment Energy and Science and Department of Education) provided comments to the proposal. The issues raised by the state agencies are capable to be addressed further at the development application phase, and no outstanding agency objection is identified concerning the progression of the proposal.""	HillPDA notes that the TfNSW submission identifies finalising a planning agreement for Cowpasture Road must be finalised prior to Liverpool LEP being amended. HillPDA is not aware of that planning agreement being finalised and strongly recommends that this be confirmed by Transport for NSW prior to an amendment being made.

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Table 6: Response to Section 2.5 – HillPDA Comments on proposal with response

Pacific Planning Summary of HillPDA Assessment	Pacific Planning Response	HillPDA Comment
The proposed planning controls do not provide certainty and could create opportunities for a significantly different form of development from that which is described in the concept plan	This is a misleading statement. The plan before the reviewer is a Part 3 process not a Part 4 process. A DCP has been prepared on the basis of the concept. Further a concept DA is being prepared. The DCP does provide a level of security, but the primary context that clearly defines the building massing and location is set as a result of a decision earlier in 2020 with the council approval of the road layout. The location of building footprints is now fixed. The planning proposal seeks to set heights, and density and land use adjustments but combined with these other contributing statutory planning aspects the statement of uncertainty is incorrect. To the contrary, there is significant certainty of the concept associated with the planning proposal. It is noted that the reviewer has suggested an implementation of a key sites map to further securitise the delivery of the additional open space proposed by the applicant. As mentioned earlier in this report such can be supported.	As discussed in the HillPDA Assessment, the primary purpose of the planning proposal is to change zone boundaries and update FSR and Height of building mapping. It does not offer other provisions that would deliver the concept design prepared by the applicant. For these reasons, the HillPDA Assessment focuses on the planning proposal and the proposed planning controls on the site. It is generally agnostic of other instruments such as DCPs, Planning Agreements and DAs. This is because planning controls must be robust enough to support the general intent of the applicant while also being relevant if the applicant decided to not proceed with development. Concerning the Pacific Planning Response: • The DCP is in draft form and is still being refined in consultation with Council staff. As such, it communicates a general intent, but not security. Further, DCPs are a planning consideration that provide guidance for assessment. Provisions in DCPs are not statutory requirements and should not be communicated as such. • Building footprints are not fixed. As discussed above, a site establishment DA relating to roads is understood to be approved. However, HillPDA is not aware of commencement of works related to that DA. As such, it may be abandoned or modified and therefore does not provide security. Council may determine that the DCP, site establishment DAs and Planning Agreements provide sufficient security for development outcomes. If so, HillPDA recommends that those matters be finalised before an LEP amendment is made.
The proposed building controls permit a scale of development that is inconsistent with the LSPS and has not been demonstrated to be appropriate for the site.	The LSPS doesn't reference a scale of development, height, or density. This is being used as an argument on the principal issues of the quantum of residential apartments. The planning proposal facilitates a town centre as per the LSPS in the context of the emerging planning framework and proximity to the new Western Sydney Airport (the Aerotropolis) and the Fifteenth Avenue transitway.	The LSPS provides direct guidance on the scale of a future Middleton Grange Town Centre development, being: • 500 to 1,000 additional homes (pg 38-39) • 500 to 1,000 additional jobs (pg 52-53). Inconsistency with the LSPS was noted based on planning controls having the potential to deliver: • 91,173 sqm of residential floorspace (970 dwellings) • 22,000 sqm of employment floorspace (449 jobs) The method and justification for these conclusions is discussed in detail on pg 30 of the HillPDA Assessment. Without a cap on residential floorspace, it is reasonable to consider a scenario where residential uses are maximised, particularly has the PPM Consulting reporting has not considered demand for non-retail commercial floorspace outside of broad theoretical possibilities.

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Pacific Planning Summary of HillPDA Assessment	Pacific Planning Response	HillPDA Comment
		Regarding the Sydney Airport/Aerotropolis and Fifteenth Avenue transitway (FAST Corridor): • The Airport is approximately 10 km away from the site (approximately 15 km via existing roads). The Western Sydney Aerotropolis SEPP and relevant draft Precinct Plans anticipate development of extensive commercial floorspace that is supported by significant infrastructure. PPM Consulting's reporting and subsequent response to the HillPDA Assessment has not adequately expressed why the Airport would generate demand of commercial floorspace at the level stated in the planning proposal. • HillPDA understands that Liverpool has proposed a nearby FAST Corridor station at this stage. As such, this is not a relevant consideration.
The described commercial floorspace, while broadly consistent with the LSPS, has not been justified by the applicant as being supported by market conditions and may result in poor ground level activation.	The facts are the town centre has not developed under the current land use controls since 2007. This planning proposal is the enabling factor for the investment to occur. The numerous economic reports, the actual market progression of major retail tenancies into the scheme and the continuing desire to progress the substantial investment into the delivery of the town centre show that this conclusion of a possible poor outcome is a wrong conclusion. The primary planning documents in the LSPS, DCP and the existing LEP provides for ground floor activation requirements. It is also a critical component and the theme of the revised urban scheme supported by the community of creating a people first, pedestrian friendly, vibrant town centre to activate the ground floor throughout, creating a safe and attractive environment for residents of the town centre and broader suburb. Proposed changes to the R1 zone dwelling typology with the introduction of home business style development would provide a remedy for the possible risks mentioned by HILLPDA of poor ground level activation. Also, by focusing restaurant and café activity at the central nodes will assist to deliver the objectives of the proposal.	The LSPS, DCP and LEP provisions relate to the opportunity to deliver ground level activation. Market conditions (e.g. tenancy) will actually deliver activation. Oversupply of ground level retail in order to meet the requirements of shop top housing is a high risk on this site. The provision of restaurant or café uses in the R1 General Residential zoned area heightens this risk by further increasing the supply of a land use that has not been demonstrated to be in demand. However, HillPDA does support a limited quantum of the land use directly adjacent to New Park 1, discussed further the summary of recommendations in contention and HillPDA's response. With respect to home business, HillPDA supports housing initiatives that support the land use. However, the planning proposal does not include provisions that guarantee the outcome (e.g. a portion of R1 General Residential are to include specialised floorspace). Further while a future development application may intend to deliver such floorspace, live/work or 'SOHO' style developments are extremely difficult to enforce as home business spaces instead of bedrooms or living areas. As such, while home business is a hypothetical land use that is enabled by the zone, the applicant has not demonstrated how the outcome would be delivered.
The proposed planning framework does not provide assurance that the proposed open space provision will be achieved on the site and potentially relies on a planning agreement to deliver the space	It can be assumed that HillPDA were not aware of the letter of offer submitted to the council from CBP lawyers in 2019 which provided clear and transparent certainty of the open space delivery in accordance with the EPA Act.	HillPDA is not aware of a Planning Agreement that has been finalised for the site. HillPDA understands that the Planning Agreement is in the process of negotiation. A letter of offer is not binding and while demonstrates broad intent, is not a heavily weighted planning consideration.

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Pacific Planning Summary of HillPDA Assessment	Pacific Planning Response	HillPDA Comment
	A planning agreement is the appropriate mechanism, as guided by council staff to achieve this. This original legal offer to protect the delivery of this important community asset of open space has been updated in the more recent letter of offer. It is noted however that the inclusion of a key sites map for the delivery of the additional open space can assist to provide further security and combined with the appropriate land use controls will ensure incentive to deliver a high quality open space environment.	The HillPDA Assessment's statement regarding the lack of assurance for the proposed open space remains valid. Including the site on a key site map, as well a removing the land from the FSR and Height of Building map would help secure the outcome. This would be in combination with a Planning Agreement that is finalised prior to amendment of the LEP.
The proposed planning controls could result in a scale of development that is not adequately serviced by infrastructure.	This statement could be considered to be in conflict with other items in the report. HillPDA confirms that the project is supported on traffic and transport grounds yet makes another statement that it may not be adequately serviced by infrastructure. All the supporting specific study, documentation, and Transport for NSW disagree with this statement. In terms of community infrastructure, the available open space in this scheme seeks to increase it dramatically and for it to be contiguous and link to specific community nodes to promote high quality urban amenity. The new floorspace will enable and encourage the delivery of new community infrastructure floorspace. Any issues with roads infrastructure are as a result of background growth. The development is urgently needed to assist fund these upgrades. The proponent has also offered to undertake some of the infrastructure improvements and well in advance of current planned delivery timeframes.	The HillPDA assessment confirms the potential for transport infrastructure to be upgraded to meet the demands of the planning proposal. This is contingent on the finalisation of a Planning Agreement with Council for delivery of upgrades to local roads. Further as stated in the TfNSW November submission: "An appropriate funding mechanism should be identified and agreed between all parties for the collection of the above monies towards the future upgrade of Cowpasture Road, *prior* to the making of the plan." HillPDA is not aware of a such a mechanism being finalised. Further, as noted above, the planning proposal does not currently secure open space outcomes on the site. The space that is described on the site would fall short of Liverpool Council benchmarks, as described in the response by Council's Community Team. HillPDA's recommendations relate to LEP controls to resolve these issues. However, Council may be satisfied that other mechanisms are sufficient to provide the infrastructure required.

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Recommendations in contention and responses

Section 2.6 of the Pacific Planning considers several of HillPDA's recommendations providing reasoning for not adopting the recommendations and/or providing alternate approaches. Matters in contention are responded to below.

Introduce residential floorspace cap

Pacific Planning has offered a 72,000 sqm residential floorspace cap in response to the 65,000 sqm residential floorspace cap recommend by HillPDA.

HillPDA's original recommendation sought to align the stated goal of the planning proposal to delivery approximately 671 dwellings in a residential GFA of 63,703 sqm. This would equate to approximately 95 sqm per dwelling. The planning proposal did not include an indicative bedroom mix, but it is reasonable that this would allow for a mix of studio to three bedroom units.

HillPDA's recommendation allows for a degree of flexibility in design across the site.

Pacific Planning justifies the request for a cap of 72,000 sqm in order to allow for further flexibility in design and the potential to allocate residential floorspace to possible home business uses.

HillPDA notes that the 95 sqm per dwelling rate (as identified in the planning proposal) would result in approximately 760 dwellings. Assuming 671 dwellings are delivered, the average dwelling size would increase to approximately 107 sqm per dwelling. This would reflect a high proportion of three or more bedroom units.

While additional floorspace could be allocated to larger dwellings, resulting in a smaller number of larger dwellings:

- Pacific Planning has not identified a mechanism that would cap the number of dwellings to achieve this outcome
- Pacific Planning has not provided justification for a higher number of dwellings/residents
- It is highly unlikely that long term enforceability of home office space would be sustainable, potentially resulting in conversion to bedrooms or other living areas.

As such, in order to support the increase to 72,000 sqm of residential floorspace, certainty is required to ensure:

- The number of dwellings delivered on the site does not exceed the clearly communicated vision of 671 dwelling on the site
- Design controls include objectives for delivering high quality home business space that also reflect Council's views on such space being converted to bedrooms or living areas in the future.

This response would allow future development to be responsive to future market needs and best practice design.

Recommendation

HillPDA agrees that the residential GFA cap of 72,000 sqm has merit for the purposes of design flexibility and home business uses under the following conditions:

- Dwelling cap of 671 is applied
- DCP controls for the site include design requirements for home-business enabling units (i.e. design objectives and minimum percentage of units).

Cap average FSR, to 1.6:1 or apply blanket FSR to the site. Reduce heights as required.

The Pacific Planning Response has agreed to cap residential floorspace to 72,000 sqm and agrees with HillPDA's assessment that 10,000 sqm NLA (13,000 sqm GFA) is justified. However, it contends that a 1.98:1 FSR is required for the site.

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The PPM Response provide the following breakdown of non-residential uses, amount to approximately 41,000 sqm GFA, which would require a total FSR of approximately 1.98:1:

- Retail centre: 13,000 sqm
- Gym: 3,000 sqm
- Childcare: 1,500 sqm
- Commercial entertainment: 3,500 sqm
- Medical: 11,000 sqm
- Medical ancillary: 3,000 sqm
- Office: 2,500 sqm
- Café and restaurant: 2,500 sqm
- Community: 500 sqm.

HillPDA's concerns regarding the oversupply of employment focused GFA are discussed in detail in pages 29 to 30 and 44 to 46 of the HillPDA Assessment and discussed in Table 2 and Table 3.

Aside from broad statements regarding potential demand office uses resulting from reduced demand in the Liverpool CBD (notably only 2,500 sqm or 9 per cent of the planning proposal's total non-retail GFA), the planning proposal, its technical reporting and subsequent reporting have not addressed HillPDA's specific concern that the demand for the uses have not been modelled or justified.

For the reasons discussed in Appendix B, HillPDA maintains its concern that an average FSR of 1.98:1 FSR would permit excessive retail and non-retail commercial uses, with the potential poor outcomes on the site and the strategically important Austral centre.

However, assuming up to 72,000 sqm GFA of residential floorspace is permitted, HillPDA's recommend FSR would increase as well. An FSR of 1.75:1 would permit at least 26,000 sqm of non-residential uses, including medical centre, gym and community uses. Should the market support it, the applicant could reduce the residential GFA in favour of additional commercial GFA. Removal of New Park 3 from the FSR application area (discussed below) would increase the average FSR to approximately 1.8:1.

This approach would:

- Align with State and Council strategic visions for employment uses on the site and surrounding centres
- Allow for flexibility in the offering of residential vs non-residential uses.

Recommendation

The applicant has not addressed concerns regarding demand for non-residential uses.

An increased average or blanket FSR is supported to accommodate the above increase in residential GFA. No further increase due to non-residential GFA is supported.

Pending removal of New Park 3 from the calculated site area (discussed further below), the average FSR would be approximately 1.8:1.

Amend site specific DCP to require economic impact assessments for future applications

HillPDA's recommendation is based on the level of economic reporting that has been provided during the planning proposal process and the need to ensure that the site delivers the jobs anticipated in the LSPS. The planning proposal, its technical reporting and subsequent reporting have not addressed the critical issue of demonstrating demand for the quantum of floorspace required to meet the LSPS vision.

While the Pacific Planning and PPM Consulting responses advocate for investment and market dynamics to deliver outcomes, Council has a responsibility to ensure that what is actually delivered aligns with relevant strategies and policies.

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Including a requirement for a peer reviewed economic impact assessment is considered to be a basic mitigation measure for the substantial risk of undersupplying job-creating land on the site in the long term. Should a future application undersupply the land required to meet Council's job target, and land is developed, it is extremely unlikely that land would be redeveloped for additional employment outcomes in the LSPS timeframe.

Recommendation

HillPDA's recommendation that the DCP be amended to include a requirement for a peer reviewed economic impact assessment for future applications has not changed.

Reduce northern and southern interface height limits from 20 m to 14 and reduce FSR to accommodate

HillPDA's recommendation for a 14 m interface is based on the following assumptions:

- Two commercial floors x 4 m per floor
- Two residential floors x 3m per floor.

It is HillPDA's position that the built form outcome possible under this control, being six storeys of development at the site boundary is a poor outcome. It is noted that this is not the outcome envisioned by the planning proposal's urban design report (2 storey street wall and four residential storeys with a 4 m upper level setback).

HillPDA accepts that a control that enforces the proposed setbacks under the planning proposal's urban design report is a supportable outcome that would suitably meet height transition objective outcomes.

A draft DCP for the site appears to include the urban design report's sample setback map. That map does not include the north-eastern site tentatively identified for a medical centre (Lot 12). In order to achieve a uniform outcome along Southern Cross Avenue, this setback should apply to the entirety of the site fronting onto Southern Cross Avenue, east of Main Street.

HillPDA agrees that a 20 m height limit is acceptable if either an LEP or DCP amendment guarantee such an outcome on the site.

Recommendation

HillPDA recommends that Council either:

- Amend the planning proposal to have 14 m height limits along the entirety of Southern Cross Avenue and Flynn Avenue
- Amend the planning proposal or adopt a DCP amendment that sets setback controls for 2 storey street walls with 4 m setbacks above that point along the entirety of Flynn and Southern Cross Avenue, East of Main Street.

R1 General Residential inclusion of restaurant or café permitted use

HillPDA's recommendation to not support the restaurant or café additional permitted use component of the planning proposal was based on the lack of evidence regarding the demand for non-residential land uses and the potential to further dilute supply to meet demand by permitted the restaurant or café land use.

Pacific Planning's recommendation to cap the land use at 1,200 sqm is not based on demand, but on a vision to include cafes and restaurants next to the central open space near 'New Park 1.' HillPDA accepts that this limited space in a centralised area would likely promote positive amenity and public domain outcomes.

Recommendation

HillPDA agrees that a limited quantum of Restaurant or café on the eastern side of Main Street could promote an active public domain. In order to secure the centralised outcomes stated in the Pacific Planning Report,

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HillPDA recommends that the additional permitted use be limited to approximately 1,200 sqm of R1 General Residential land directly adjoining Main Street and New Park 1.

Remove B2 Local Centre land for open space from FSR and building height map

HillPDA has recommended that "New Park 3," an area of approximately 3,600 sqm be removed from height and FSR maps in order to ensure the open space described in the planning proposal is delivered. For reference the planning proposal currently proposes mapping the area with an FSR of 2.3 and a height of 29 m.

The Pacific Planning Response does not support HillPDA's recommendation, as it claims that the open space delivery is supported and protected should by a planning agreement. An alternate height of 3 m is proposed, with the area proposed to be mapped by the FSR for the site.

Regarding planning agreements, HillPDA notes that:

- The planning agreement has not been finalised at the time of this response
- Planning agreements are not substitutes for planning controls, as planning agreements have the potential to be renegotiated outside of the planning proposal and associated processes.

The Pacific Planning Response indicates that the additional density afforded by applying the FSR to the open space area is an incentive provision that ties density to public benefit stating "If the density is removed, it is likely the open space will be removed too."

HillPDA notes that the open space in question would be privately held and would provide amenity for visitors, increasing the attractiveness for customers and residents. As such, while there are public benefits associated with open space generally, a high quality open space outside of a retail centre is a substantial private benefit as well. Council's Community Planning Team has also identified that, after considering the open space provision proposed by the application, there is a shortfall of approximately 7,500 sqm. Therefore, it is critical that the space that is proposed for open space is protected for that use into the future.

From a strategic land use planning position, HillPDA maintains that it is not appropriate to conflate baseline planning controls and incentives. It is important to separate the applicant and their concept plan from the overall strategic vision for the site. While the applicant may intend to provide a certain outcome, the planning framework must reflect the broader strategic vision. In this case, the strategic vision outlined in the planning proposal and supported by Council's strategies is a retail centre supported by high public open space. The Pacific Planning Response is essentially stating that if planning or market outcomes do not allow for a certain economic outcome, the open space would not be delivered. It is exactly for this reason that planning controls must be robust and predictable in what they would deliver.

As stated in the HillPDA assessment, removal of New Park 3 would not preclude development of a small kiosk or similar. A development application would be required to address the objectives of the FSR and Height clauses. This is routine for lands such as parks that do not typically have explicit built form controls.

Recommendation

HillPDA's recommendation that the open space be removed from FSR or height maps has not changed.

HillPDA supports the average FSR on the remainder of the site being increased to compensate for GFA lost by not mapping New Park 3. This FSR should reflect a maximum GFA of 98,000 sqm. Assuming a site area of approximately 53,500 after the park is removed, this would represent an average FSR of approximately 1.8:1.

Request DPIE/Transport finalise State Planning Agreement for road upgrades

The Pacific Planning Response indicates that a satisfactory arrangement clause would be sufficient to meet State road upgrade requirements. As stated in the TfNSW November submission:

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"An appropriate funding mechanism should be identified and agreed between all parties for the collection of the above monies towards the future upgrade of Cowpasture Road, prior to the making of the plan."

HillPDA is not aware of a such a mechanism being finalised. However, HillPDA defers to Council and TfNSW to identify the most appropriate mechanism to ensure the outcome is delivered.

Recommendation

HillPDA recommends that Council confirm the most appropriate and secure method of providing upgrades to State Roads with TfNSW and DPIE.

Recommendations not in contention and responses

Reduction of 9.5 m height area to 8.5 m

The Pacific Planning Response indicates that the applicant has agreed with HillPDA's recommendation.

Recommendation

HillPDA notes the Pacific Planning Response's position. No change in recommendation required.

Map B2 Local Centre lands for open space on key site map

The Pacific Planning Response indicates that the applicant has agreed with HillPDA's recommendation.

HillPDA notes that while the DCP and/or planning agreement may also help promote the open space outcome, the intent of the recommendation is to ensure that the outcomes, which are identified as critical benefits of the planning proposal are reflected in the LEP.

Recommendation

HillPDA notes the Pacific Planning Response's position. No change in recommendation required.

Refine development contributions plan

The Pacific Planning Response indicates that the relevant contribution plan should be updated, but should not be used as a response to delay this proposal further. HillPDA's intent was not to delay the planning proposal in order to update a contributions plan. However, HillPDA agrees that the plan should be updated once the full impact on infrastructure need in the area is better understood.

Recommendation

HillPDA notes the Pacific Planning Response's position. No change in recommendation required.

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Closing

Overall, HillPDA concurs with the Pacific Planning Response's comments that the general outcomes of the Planning Proposal are supported. Remaining recommendations in contention are, while minor in nature compared to the overall planning proposal, critical to delivering the outcome purported to be sought by the applicant.

HillPDA's revised recommendations consider the additional responses and evidence provided by the Pacific Planning and PPM Consulting Responses. They seek to enable the specific outcomes sought by the planning proposal while limiting the potential for other non-desirable outcomes, such as overdevelopment of residential uses or commercial uses that are not anticipated by the LSPS. While Pacific Planning and PPM Consulting rely heavily on the potential for the delivery of the concept design developed by the applicant, HillPDA stresses that this concept design is only one potential outcome. HillPDA's recommendations seek to ensure a similar outcome is delivered, should the concept design be adjusted in the future.

Should you have any questions, please do not hesitate to contact us on 02 9252 8777.

Yours sincerely,



Date: 16 April 2021

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APPENDIX A PACIFIC PLANNING RESPONSE AND PPM CONSULTING RESPONSE

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Middleton Grange Town Centre
Response to HillPDA Planning Proposal Assessment, (November 2020)



Submitted to Liverpool City Council and Department of Planning, Industry and Environment

January 2021

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ATTACHMENTS

ATTACHMENT	NAME
Attachment 1	**Pacific Planning Response to HillPDA letter, dated 21 September 2020**
Attachment 2	**Response to HillPDA Assessment of PPM Consulting Economics Report**
Attachment 3	**Dwelling typology for R1 zone land**

Executive Summary

This report forms a response to the matters raised and recommendations made in the Middleton Grange Town Centre Planning Proposal Assessment, prepared by HillPDA in November 2020.

It is pleasing that HillPDA recommend the planning proposal should be finalised and made. This response report in agreeing with that primary recommendation focuses on the critical items of the recommendations made which can be supported and those that cannot. Whereas we have sought to seek to facilitate the changes suggested, if such is not considered in the appropriate historical and merit outcomes already determined, some changes could lead to land use controls that do not facilitate the appropriate high quality development of the town centre which the community has been seeking since 2008. In relation to the recommendations that are in conflict with the desired outcome it is noted: the recommendation on the density is related to traffic, amenity and a misunderstanding on the issue of non-residential uses. On review it is considered that such a lowering of the density from 1.98:1 to 1.6:1 (averaging) is not supported on planning grounds within the HillPDA report.

Therefore, constructively on review of the basis of the HillPDA recommendations, it is apparent that the proposal isn't in conflict with the outcome sought by HillPDA. In this regard, the following is noted:

- On the primary issue of infrastructure delivery, traffic and impact the three primary state agencies support the planning proposal controls as exhibited.
- The HillPDA recommendations on the 8.5 metres in the R1 zone can be supported. This change is facilitated by removing the majority of non-residential uses in that zone and transferring them to a home office use in a revised dwelling typology. This new typology of a 2 and 4 level terrace style home does not need to achieve the higher limits of heights of 9.5m to accommodate the uses that may have been required for a more dominate commercial use. The residential component does not increase in yield of dwelling number in this zone but the quantum of floorspace attributed to residential uses will increase as the home office accommodation is counted as residential floorspace.
- Other changes in heights were considered but lowering to 14 metres in certain areas from 20m cannot be supported. A change to the height transitions in the central components have been carefully considered through the history of the application and are linked to the delivery of the open space increase and urban design methodology. The historical process shows that the heights minimum 9.5 metres was a recommendation of council in its letter of 19 September 2017. That direction also included an 18 metre height for central and eastern lots (It is noted that this was later adjusted to 20 metres by council on review to accommodate retail floor heights to ceiling heights). This critical outcome (at that time) was also supported by the department in its approval to exhibit on 28 June 2018.
- HillPDA appear concerned that under the proposed controls future development could result in up to 960 dwellings. It is considered this is as a result of a mathematical calculation rather than a review of the urban design study supporting the planning proposal. The hypothesis though to be accurate needs to consider the project's maximum heights, ADG separation requirements, the medical centre, the concept layout (informed by the approved roads) and the detailed methodology on design. However, should the management of residential GFA still be something the council would seek to regulate, noting that this is controlled by the ADG in this context, a site-specific clause that provides for a maximum of around 72,000sq.m could be a solution to solve this issue. This is slightly greater than the 65,000sq.m suggested by HillPDA as it allows for flexibility at DA stage when detailed design occurs should larger apartments/dwellings be preferred and the exact GFA is defined in future Part 4 processes.

- The basis for a reduction in the average FSR from 1.98:1 to 1.6:1 is not clear. Respectfully in presenting a straw-man argument on conflation of possible dwelling yield, the claim misrepresents the non-residential uses only referencing those on the ground floor. Further and critically to the urban amenity of the scheme, there is a confusion of the definition of retail with other non-residential uses that are not trade-area competition generating uses. On a more critical issue that would normally be linked to a density assessment issue; that being infrastructure impact; there is only a generalised claim of a possible impact on infrastructure. Yet, at other times this is contradicted where it is noted by the author that the key state transport agency supports the application on traffic and transport grounds.
- The vision for the town centre is to create an active people and pedestrian focussed centre supported by key nodes of human interests and activity with vibrant streets creating a great place for residents and visitors to the town centre. The recommendation to remove 'restaurant and cafes' as an additional permitted use therefore does not seem consistent with this objective. However, it is not the intention to include restaurants and cafes along the entire frontage of the R1 zoned land along the Main Street Rather, the cafes and restaurants are located adjoining the central open space to ensure that this is the focal point of the activity. It is suggested that this not be removed as an additional permitted use, but maybe a floorspace cap be considered in the R1 zone that limits the quantum of restaurant and café space.

The table below provides a summary of the responses to the key items:

Key Issue	Recommendation	Response
Density	Cap residential floorspace to 65,000sq.m	A residential cap is supported. However, it is requested that this be fixed at 72,000sq.m to allow flexibility in apartment design at future DA stage and allocation of residential floorspace to possible home business uses. **<u>Recommendation:</u> A residential cap of 72,000sq.m of residential be introduced.**
	Cap the average FSR for the site to 1.6:1, or set blanket FSR of 1.6:1 across the site, with corresponding reductions in height	The justification for this in the HillPDA report is to '*align dwelling and job delivery to the LSPS*'. The residential cap suggestion above is supported, however a reduction in FSR from 1.98:1 to 1.6:1 is not supported based on HillPDA's justification. The provision of a 10,000sq.m shopping centre is agreed with, however, the remainder of the floorspace is made up of ancillary uses including medical facilities, entertainment, cafes, restaurants and food premises, childcare and community facilities and a local gym. These are key components of creating a vibrant and vital town centre is supported by the LSPS. The recommendation would undermine the investment in those items that will deliver a high-quality outcome for the community. Noting the density is supported on traffic and transport grounds the reduction proposed is not supported on quantifiable and sound planning grounds. The planning proposal does align with the LSPS. **<u>Recommendation:</u> The average FSR of 1.98:1 be retained.**
Height	Maintain area proposed to have height limit of	Further study has shown that with a transition of commercial floorspace to home office in the majority of the R1 zone and

	9.5 m at current level of 8.5 m.	a change to the dwelling typology of larger family terraces the height limit of 8.5metres can be adopted. **Recommendation: Change the 9.5 metres to adopt height limit of 8.5 metres.**
	Reduce northern and southern interface height limits from 20 m to 14 m and reduce maximum FSR to accommodate the change in height limits.	A height limit of 18 metres was recommended at the northern and southern interface areas by council staff in its letter of 19 September 2017. In subsequent discussion a height of 20 metres was agreed on to provide for the larger floor to ceiling heights associated with non-residential development. 20 metres was subsequently endorsed by the Department for exhibition on 28 June 2018. The success of the town centre is reliant heavily on the urban design and layout of the central blocks. Therefore, these heights need to be maintained. **Recommendation: Retain height limit of 20 metres.**
Remove proposed additional permitted use of 'restaurant or café' from R1 General Residential area	Reduce likelihood of amenity impacts for the surrounding area, ensure alignment with objectives of the zone and reduce likelihood of oversupply of non-residential uses.	It is suggested that this not be removed as an additional permitted use, but a floorspace cap be considered in the R1 zone that limits the quantum of restaurant and café space to ensure that this use does not dominate parts of that town centre that do not meet the objectives for the focus of these land uses. This vision is to include cafes and restaurants adjoining the central open space within the R1 zone area to create a focal point for activity, which cafes and restaurants generally achieve. **Recommendation: Retain 'restaurant or café' as additional permitted use in the R1 zone with a cap of 1,200sq.m.**
Zoning	Map parts of the proposed B2 Local Centre on Council's Key Site Map, with controls requiring delivery of open space.	An expansion of the delivery of the open space is a key element of the proposal and as such inclusion of it in a new key sites map is not opposed. It is however noted that the issue is also achieved through the planning agreement and DCP and remains in private ownership (to the benefit of council financially) as per the agreement with council from 2019. **Recommendation: Support the inclusion of the open space on a key sites map.**
	Remove the mapped areas (on Key Site Map) from the FSR and building height map to Ensure the area identified for public open space in the B2 Local Centre zone would be delivered for that purpose.	Not supported. The additional open space delivery methodology has been provided in an offer to the council as supported and guided by staff. The additional open space and significant public benefit is inherently linked to the additional density. A lower height limit (that enables ancillary uses to the open space) of 3m from the 29m can be considered for this area of open space. However, the density calculation cannot be contemplated. **Recommendation: Support to adjust the height limit in the area of open space from 29m to 3m. Maintain the proposed density control as mapped as 2.3:1.**

Table 1: Summary of response to HillPDA recommendations

1. Introduction

This report forms a response to the matters raised and recommendations made in the Middleton Grange Town Centre Planning Proposal Assessment, prepared by HillPDA in November 2020. It is advised that HillPDA has been engaged as an independent consultant to assist council with the assessment of the planning proposal. Noting the short timeframe that the engagement was progressed in; it is unclear what governance arrangements the council implemented or in what context the term independence is used in this case. To assist the response, the authors have progressed both informal and formal requests to obtain the information and communication provided to the consultant HillPDA that formed the scope of works that guided their engagement, governance and assessment process. Noting the time period to respond in accordance with the gateway amended conditions of December 2020 this report is completed without the guidance of that requested information.

A meeting was held with HillPDA and Council in October 2020, in response to a letter from HillPDA and the Pacific Planning response. The Pacific Planning response dated 21 September 2020, is included at Attachment 1 for reference.

On review of the HillPDA final report, it appears that much that has been discussed and previously resolved council, the department and the key state agencies has not been considered in the context of those issues that were adopted through the planning process. This includes issues of heights, transport and traffic impact, required infrastructure, and the delivery of additional open space including the methodology applied to do so. It is noted that during that meeting clarification was provided to HillPDA in relation to the background and amended planning proposal; the issues resolved via the gateway; the significant public benefits associated with the concept design and broader financial commitments; and the evolving strategic planning context with proximity to the airport. The key historical context and the key issue of the misinformation inserted into the community during the plan making process is not mentioned in specific detail. The history shows, once the errors were uncovered, it led to the reconsideration of the matter following the withdrawal of support of the planning proposal by the council.

HillPDA have come into a project review at the very end; after many years of work, amendments, consultation and commitment made during the process which formally started in 2015. Thus, it is considered somewhat understandable that the report misses some of the historical accuracy and detailed decisions made during the life cycle of the plan making process, revisiting matters that have already been resolved.

Further to the concern of apparent lack of historical context, and as explained in the economic analysis the issue of independence of the HillPDA report should be considered. In 2012, HillPDA undertook a review of the retail centres hierarchy for the Liverpool LGA and concluded that there should be no more than 5,500m2 of retail, anchored by a full line supermarket at Middleton Grange (Liverpool City Council Retail Centres Hierarchy Review, October 2012, p10). **As has been previously advised, the current controls allow for 11,729.3m2 of commercial/retail space and 583 dwellings. These uses at these densities are available now, without providing community infrastructure such as the large open space park.** The quantum and quality of open space and connected walkability of a predominantly low-density neighbourhood would be far lower than the current proposal. It is our understanding that HillPDA has shown a historical misapplication of the land use controls. This, and other misinformation has led to community confusion, to the point where council was required to re-exhibit the Planning Proposal and correct the misinformation.

Despite this negative aspect, it is pleasing that HillPDA recommend the planning proposal should be finalised and made. This response report, in agreeing with that primary recommendation focuses on the critical items of the recommendations made which can be supported and those that cannot. Whereas we have sought to seek to facilitate the changes suggested if such is not considered in the appropriate historical and merit

outcomes already determined some changes could lead to land use controls that do not facilitate the appropriate high quality development of the town centre which the community has been seeking since 2008. In relation to the recommendations that are in conflict with the desired outcome, it is noted: the recommendation on the density is related to traffic, amenity and a misunderstanding on the issue of non-residential uses. On review it is considered that such a lowering of the density from 1.98:1 to 1.6:1 (averaging) is not supported on planning grounds within the HillPDA report.

Such a reduction, which is not based in the primary supporting elements that have guided the planning merit outcomes or as a result of the considerations of the historical context are actually not minor if implemented. The reduction and change to the scheme would undermine the conclusion and guidance of the informing reports that support the plan making proposal and the ability of the project to provide significant new public benefit and high-quality urban amenity.

It appears that the genesis of this is based on the issue that HillPDA conflates goods retailing with services retailing in a way that allows a conclusion that 20,000sq.m of retail space is an oversupply. HillPDA concludes that an appropriately sized centre would be between 6,000 and 10,000sq.m of gross leasable area, removing the non-retail/non-residential elements (such as the medical centre, gym and childcare centre, which make up around 16,000sq.m of gross leasable area). PPM Consulting agrees that a centre of 10,000m2 of retail space is appropriate. Therefore, there doesn't seem any issue to justify the reduction in density as the quantum of individual land uses isn't objected to by HillPDA.

Therefore, on review of the reasoning of the HillPDA recommendations, it is apparent that the proposal isn't in conflict with the rationale for the outcome sought through the HillPDA report. In this regard, the following is noted:

- The project seeks to provide significant public benefit and to balance such in a lower height scheme than originally proposed, within a maximum density that is supported on traffic and transport planning grounds in a report that has been specifically guided by the state transport agency.
- HillPDA make recommendations on matters that have been resolved between council, the proponent and endorsed by the department and the key state agencies thus considerations on changes to various items at a late stage has been a process for the project stakeholders.
- The HillPDA recommendations on the 8.5 metres in the R1 zone can be supported. This change is facilitated by removing the majority of non-residential uses in that zone and transferring them to a home office use in a revised dwelling typology. This new typology of a 2 and 4 level terrace style home does not need to achieve the higher limits of heights of 9.5m to accommodate the uses that may have been required for a more dominate commercial use. The residential component does not increase in yield of dwelling number in this zone but the quantum of floorspace attributed to residential uses will increase as the home office accommodation is counted as residential floorspace.
- Other changes in heights were considered but lowering to 14 metres in certain areas from 20m cannot be supported. A change to the height transitions in the central components have been carefully considered through the history of the application and are linked to the delivery of the open space increase and urban design methodology. The historical process shows that the heights minimum 9.5 metres was a recommendation of council in its letter of 19 September 2017. That direction also included an 18 metre height for central and eastern lots (It is noted that this was later adjusted to 20 metres by council on review to accommodate retail floor heights to ceiling heights). This critical outcome (at that time) was also supported by the department in its approval to exhibit on 28 June 2018.
- HillPDA appear concerned that under the proposed controls future development could result in up to 960 dwellings. It is considered this is as a result of a mathematical calculation rather than a review of the urban design study supporting the planning proposal. The hypothesis though to be accurate, needs

to consider the project's maximum heights, ADG separation requirements, the medical centre, the concept layout (informed by the approved roads) and the detailed methodology on design to promote maximum walkability. However, should the management of residential GFA still be something the council would seek to regulate, noting that this is controlled by the ADG in this context, a site-specific clause that provides for a maximum of around 72,000sq.m could be a solution to solve this issue. This is slightly greater than the 65,000sq.m suggested by HillPDA as it allows for a transition from the planned commercial floorspace in the R1 zone to residential without an increase in dwelling yield and promotes a sensible flexibility at DA stage when detailed design occurs should larger apartments/dwellings be preferred and the exact GFA is defined in future Part 4 processes.

- The basis for a reduction in the average FSR from 1.98:1 to 1.6:1 is not clear. Respectfully in presenting a straw-man argument on conflation of possible dwelling yield, the claim misrepresents the non-residential uses only referencing those on the ground floor. Further and critically to the urban amenity of the scheme, there is a confusion of the definition of retail with other non-residential uses that are not trade-area competition generating uses. On a more critical issue that would normally be linked to a density assessment issue that being infrastructure impact; there is only a generalised claim of a possible impact on infrastructure. Yet, at other times this is contradicted where it is noted by the author that the key state transport agency supports the application on traffic and transport grounds.
- The vision for the town centre is to create an active people and pedestrian focussed centre supported by key nodes of human interests and activity with vibrant streets creating a great place for residents and visitors to the town centre. The recommendation to remove 'restaurant and cafes' as an additional permitted use therefore does not seem consistent with this objective. However, it is not the intention to include restaurants and cafes along the entire frontage of the R1 zoned land along the Main Street Rather, the cafes and restaurants are located adjoining the central open space to ensure that this is the focal point of the activity. It is suggested that this not be removed as an additional permitted use, but maybe a floorspace cap be considered in the R1 zone that limits the quantum of restaurant and café space.

In relation to the important issue of agency objections and concurrence, it is noted that the Planning Proposal could not be finalised with an outstanding agency objection. In this regard, we note the Department's planning team report that supported the altered Gateway determination dated 23 December 2020, which states:

"Three state agencies (Transport for NSW, NSW Environment Energy and Science and Department of Education) provided comments to the proposal. The issues raised by the state agencies are capable to be addressed further at the development application phase, and no outstanding agency objection is identified concerning the progression of the proposal."

Therefore, nothing prevents the finalisation of the Planning Proposal in relation to state unresolved agency objections.

2. Key Issues

2.1 Background and Context

It appears that HillPDA do not understand the background and context to the process, and this may be a consequence of the short timeframe and the process of how they have been briefed and engaged. An '*independent*' assessment should consider and address the detailed history that has led the proposal and development concept to what is being proposed today, including what has already been approved. There is considerable repetition on issues that have already been resolved during a lengthy and complex process, and revisiting issues around height transition and the layout of the town centre (already approved via the roads DA) does little to benefit the finalisation of the planning proposal.

On page 5, HillPDA consider the December 2018 meeting of council and comment *"the basis for withdrawing support was, in part, due to concern for potential overdevelopment and impacts on the surrounding area, including the road network and neighbourhood character"*. That is of course not the entire story and history of the project.

HillPDA, omit to discuss that this community concern was primarily based on a misrepresentation to the community during the exhibition process. The history shows that the exhibition generated a large number of objections and subsequently led to the council withdrawing support due to incorrect information being presented to the community that exacerbated the perceived impacts of the proposal. However, the complete history is noted, that when this misrepresentation was clarified and its rectification endorsed in a detailed report to the council, the project was re-exhibited and the community shifted from a majority in opposition to a majority in support.

Specifically, we note that there was a total of 240 verifiable submissions received from the public during the exhibition period, and one petition in support of the proposal. The submissions consisted of:

- 137 in support of the proposal (57%);
- 100 objections (41%);

Importantly, the percentage of objections between the first exhibition of the planning proposal in 2018 and the revised planning proposal in 2019 has fallen from 94% to 41%. Correspondingly, the number of submissions in support of the proposal has risen from close to 6% to 57%. This is a remarkable change in attitude from submitters, and demonstrates:

- The need and desire for a town centre providing goods and services, entertainment, employment, and medical facilities;
- The need and desire for open space, and playground facilities for children;
- Support a focal point for the community, providing life and vibrancy;
- The need for walkable neighbourhoods and infrastructure upgrades;
- The development of a town centre, on land identified for this use for over a decade and still vacant;
- The provision of jobs, capturing a local workforce that currently travel to seek employment; and
- And provide housing that people can afford, allowing children to stay in the area.

The HillPDA set of recommendations that results from a report that misses key items of historical context of council reporting, council and department decisions, reasons for a new exhibition and glosses over the substantial reversal in community support should be considered in light of those omissions.

2.2 *Economics*

It is noted that there is a disagreement on the economic findings and recommendations and how this has informed the mix and quantum of non-residential floorspace.

An economic response has been prepared by PPM Consulting, dated 21 December 2020 in response to the HillPDA Assessment of the PPM Consulting Economics Report. This is included at Attachment 2 and has already been provided to council under separate cover.

The key findings of that report are summarised as follows:

- While PPM Consulting's analysis concentrated on the retail aspects of the planning proposal for the Middleton Grange Town Centre, HillPDA appears to contend that the medical centre, gym and childcare centre, along with the restaurants and entertainment areas, should have been included in the analysis. This is a flawed presumption. It is important to note that the nature of restaurants and entertainment space is completely different to goods retailing. In its review of our 8 October 2020 report, HillPDA conflates goods retailing with services retailing and misrepresents the non-residential uses to only those on the ground floor, in a way that allows a conclusion that 20,000m2 of retail space is an oversupply. However, the proposed medical centre, gym and childcare centre are extremely unlikely to compete with surrounding centres

- HillPDA implies that the Main Trade Area has been drawn too broadly. The Main Trade Area can be drawn in many different ways and is open to interpretation by different practitioners. PPM Consulting stands by its Main Trade Area, which includes three existing shopping centres – Carnes Hill Marketplace, The Valley Plaza and the new Aldi at Hoxton Park. The purpose of drawing a Main Trade Area of this nature was to ensure that the three largest and closest centres were included in the analysis of the catchment for the Middleton Grange Town Centre.

- HillPDA asserts that there will be a decline in the population in the Main Trade Area and uses Forecast.id figures to justify this. Indeed, they assert that there will be no more than 500 additional residents in the Main Trade Area to 2041. If the current proposal for new residential just in the Middleton Grange Town Centre is approved, it could account for at least an additional 1,500 residents within the next five years. Therefore, PPM Consulting disagrees with HillPDA's population forecasts and stands by its growth forecasts. This is a matter of professional disagreement over data, leading to different conclusions.

- HillPDA concludes that an appropriately sized centre would be between 6,000 and 10,000m2 of gross leasable area. Removing the non-retail elements (such as the medical centre, gym and childcare centre, which make up around 16,000sq.m of gross leasable area), PPM Consulting agrees with HillPDA that a centre of approximately 10,000sq.m of retail space is appropriate.

2.3 *Security of Future Built Form*

The recommendations amending the height and density controls seek to limit the quantum of residential dwellings to cover a risk that doesn't exist. The council and state can be confident in the proposed outcome of footprints and elevations due to the following:

- Approved DA for roads facilitating the locations of buildings.
- The DCP.

- The ADG controlling the quantum of residential floorspace within the built form outcome.
- Heights (which council staff suggested in its letter of 19 September 2017; which the department endorsed in its letter of 28 June 2018; and which Hill PDA generally support).

2.4 *Issue of State Roads and Infrastructure*

The key critical item which would prevent the finalisation of the amendment was the concurrence of TfNSW. As such, the project team have worked diligently on the issue of state roads infrastructure requirements and the impact on the wider network. Since the meeting with council staff and HillPDA in October we have continued to work productively with TfNSW. We have responded in detail to TfNSW using the costing formulas they provided for state roads infrastructure so a costing requirement can be placed on the project to provide a levy to the state during the course of the delivery of the project and enable a concurrence from TfNSW at this time.

It is also noted that from these studies and work with TfNSW that the majority of intersection impacts are from background growth rather than the development of the town centre. Notwithstanding, we have worked these impacts and resolution of impacts through the letter of offer to capture local road issues to ensure there is a logical progression of local roads infrastructure delivery as the development of the project progresses.

The proposed upgrades are numerous, and although they can be guided by the existing contributions plan and could be delivered appropriately in progressing the Part 4 process, it was decided to provide an offer to assist the council to deliver the various significant road delivery and open space items well prior to that anticipated or considered by the contributions plan.

The letter of offer to the council provides a number of opportunities for significant local benefits. By way of example, one key item in the offer is the town centre impact on the intersection of Qantas Blvd and Cowpasture Road. Transport study as guided from TfNSW, shows the impact of the development to the combined intersection is only 12%. The impact is at a level of 38% for west bound traffic on the specific Qantas Blvd and Cowpasture Road corner (a local intersection that meets a state road – thus this section of the intersection is a local item). The study concludes that the intersection needs to be upgraded when the development meets the 50% development mark or at approximately 61,500m2 of GFA which could be sometime away (2026). However, the community, (as our community consultation program informed us), will want these works delivered as soon as possible, yet will not technically be required until the occupation stage.

Our letter of offer, in good faith and to ensure a smooth process for the progression of the proposal and the community, is to propose that we will design and seek approval of the intersection from TfNSW and will seek to include the works at the same time as the first stage development of the southern lots 5 and 6. Further, in a benefit for the council, we propose to forward fund to deliver 100% of the upgrade intersection works and then offset 50% of the cost of the approved upgrade works against the contribution fees. This we were advised by the transport consultants was a generous offer in the context of a 38% impact at total development and delivered considerable NPV economic benefits to the council.

Therefore, we are pleased with the outcomes being generated through the offer as it provided a way for the community to be provided with significant items of roads and open space infrastructure well prior to when the council could plan and conclude its delivery.

Further, as previously discussed we note the Department's planning team report that supported the altered Gateway determination dated 23 December 2020, which stated:

"Three state agencies (Transport for NSW, NSW Environment Energy and Science and Department of Education) provided comments to the proposal. The issues raised by the state agencies are capable to be addressed further at the development application phase, and no outstanding agency objection is identified concerning the progression of the proposal."

2.5 HillPDA Comments on Proposal with Response

Reasons	Response
The proposed planning controls do not provide certainty and could create opportunities for a significantly different form of development from that which is described in the concept plan	This is a misleading statement. The plan before the reviewer is a Part 3 process not a Part 4 process. A DCP has been prepared on the basis of the concept. Further a concept DA is being prepared. The DCP does provide a level of security, but the primary context that clearly defines the building massing and location is set as a result of a decision earlier in 2020 with the council approval of the road layout. The location of building footprints is now fixed. The planning proposal seeks to set heights, and density and land use adjustments but combined with these other contributing statutory planning aspects the statement of *uncertainty* is incorrect. To the contrary, there is significant certainty of the concept associated with the planning proposal. It is noted that the reviewer has suggested an implementation of a key sites map to further securitise the delivery of the additional open space proposed by the applicant. As mentioned earlier in this report such can be supported.
The proposed building controls permit a scale of development that is inconsistent with the LSPS and has not been demonstrated to be appropriate for the site.	The LSPS doesn't reference a scale of development, height, or density. This is being used as an argument on the principal issues of the quantum of residential apartments. The planning proposal facilitates a town centre as per the LSPS in the context of the emerging planning framework and proximity to the new Western Sydney Airport (the Aerotropolis) and the Fifteenth Avenue transitway.
The described commercial floorspace, while broadly consistent with the LSPS, has not been justified by the applicant as being supported by market conditions and may result in poor ground level activation.	The facts are the town centre has not developed under the current land use controls since 2007. This planning proposal is the enabling factor for the investment to occur. The numerous economic reports, the actual market progression of major retail tenancies into the scheme and the continuing desire to progress the substantial investment into the delivery of the town centre show that this conclusion of a possible poor outcome is a wrong conclusion. The primary planning documents in the LSPS, DCP and the existing LEP provides for ground floor activation requirements. It is also a critical component and the theme of the revised urban scheme supported by the community of creating a people first, pedestrian friendly,

	vibrant town centre to activate the ground floor throughout, creating a safe and attractive environment for residents of the town centre and broader suburb. Proposed changes to the R1 zone dwelling typology with the introduction of home business style development would provide a remedy for the possible risks mentioned by HILLPDA of poor ground level activation. Also by focusing restaurant and café activity at the central nodes will assist to deliver the objectives of the proposal.
The proposed planning framework does not provide assurance that the proposed open space provision will be achieved on the site and potentially relies on a planning agreement to deliver the space	It can be assumed that HillPDA were not aware of the letter of offer submitted to the council from CBP lawyers in 2019 which provided clear and transparent certainty of the open space delivery in accordance with the EPA Act. A planning agreement is the appropriate mechanism, as guided by council staff to achieve this. This original legal offer to protect the delivery of this important community asset of open space has been updated in the more recent letter of offer. It is noted however that the inclusion of a key sites map for the delivery of the additional open space can assist to provide further security and combined with the appropriate land use controls will ensure incentive to deliver a high quality open space environment.
The proposed planning controls could result in a scale of development that is not adequately serviced by infrastructure.	This statement could be considered to be in conflict with other items in the report. HillPDA confirms that the project is supported on traffic and transport grounds yet makes another statement that it may not be adequately serviced by infrastructure. All the supporting specific study, documentation, and Transport for NSW disagree with this statement. In terms of community infrastructure, the available open space in this scheme seeks to increase it dramatically and for it to be contiguous and link to specific community nodes to promote high quality urban amenity. The new floorspace will enable and encourage the delivery of new community infrastructure floorspace. Any issues with roads infrastructure are as a result of background growth. The development is urgently needed to assist fund these upgrades. The proponent has also offered to undertake some of the infrastructure improvements and well in advance of current planned delivery timeframes.

Table 2: response to HillPDA rationale

2.6 *Response to Summary of Suggested Amendments*

Suggested Amendment	Reasoning	Response
Cap residential floorspace to 65,000 sqm	Enforce the stated reduced residential yield in the revised planning proposal (Section 3.2.2)	HillPDA appear concerned that under the proposed controls future development could result in up to 960 dwellings. This is simply a mathematical equation and ignores the ADG separation requirements, the medical centre and concept layout (informed by the approved roads). Therefore, there is only a certain capacity that can be reached, and within the height limits it is impossible for 960 dwellings to occur within the town centre. Given the concerns around residential density were also linked to infrastructure and amenity which are no longer issues, and while HillPDA haven't objected to the maximum building heights, it is felt that no change is required to the density control to address the HillPDA concerns. However, should the residential GFA still be a concern, noting that this is controlled by the ADG, a site-specific clause that provides for a maximum of around 72,000sq.m could be a solution to solve this issue. This is slightly greater than the 65,000sq.m suggested by HillPDA as it allows for flexibility at DA stage when detailed design occurs should larger apartments be preferred and the exact GFA is defined in future Part 4 processes. Further, a revised dwelling typology is included at attachment 3 that shows a change from the originally considered Main street commercial uses to that of home office residential. These two lots (R1 zoned land) currently include approximately 3,000sq.m of non-residential use each lot. The slight increase in the proposed cap enables the consideration and provision to the market of these desirable dwelling types which capture these non-residential uses as residential floorspace.
Cap the average FSR for the site to 1.6:1, or set blanket FSR of 1.6:1 across the site, with corresponding reductions in height	Align dwelling and job delivery with the LSPS (Section 3.2.2)	If it is believed that this area of Sydney will have reduced growth as suggested by HillPDA source, then perhaps then a reduced density could be considered. However, to do such does not align with the principle state statutory plans or the LSPS. HillPDA asserts that there will be a decline in the population and that there will be no more than 500 additional residents in the Main Trade Area to 2041. If the current proposal for new residential just in the Middleton Grange Town Centre is progressed, it could account for at least an additional 1,500 residents within the next five years. GapMaps data, which was used by PPM Consulting, shows growth of over 17,000 between the 2016 Census and the forecast period of 2031, or a 2.2 per cent average annual increase.

		GapMaps data appears to be a more reliable indicator of growth in the Main Trade Area, given the anticipated growth by council in its LSPS that is endorsed by the state in March 2020. The HillPDA suggestion that a reduction in the density will enable an alignment with the LSPS is a complete error of translation of the LSPS guidance. The LSPS seeks to be used as a tool to deliver the state and regional plans objectives at a local level. A key objective of those plans is the 30-minute city and ensuring workers are closer to their place of residence. We note the statement made by PPM: *There were 8,293 Liverpool residents who worked in the CBD in 2016. If only 5 per cent switch as a result of COVID-19 to living and working in the Liverpool CBD, space for an additional 415 workers would be required in the Liverpool LGA. This is more than can be accommodated by the proposed office space at Middleton Grange Town Centre. If 5 per cent of the 20,972 Liverpool residents who work in neighbouring LGAs are able to live and work in Liverpool, space for a further 1,049 workers would be required in the Liverpool LGA – more than double the accommodation proposed for Middleton Grange Town Centre.* The blanket/average FSR across the town centre under the planning proposal is 1.98:1. This is not too far off the recommendation of HillPDA. However, HillPDA haven't provided an informed basis for this floorspace, and do not object to the maximum building heights (only transition areas which have already been resolved). Therefore, it appears that the recommendation on the density is related to traffic, amenity and a misunderstanding on the issue of non-residential uses. There is nothing on planning grounds or appropriate reference to the state plan or LSPS within the HillPDA report that comes to a sound conclusion to support a reduction in density from 1.98:1 to 1.6:1 (averaging). It appears that the genesis of this is based on the issue that HillPDA conflates goods retailing with services retailing in a way that allows a conclusion that 20,000sq.m of retail space is an oversupply. HillPDA concludes that an appropriately sized centre would be between 6,000 and 10,000sq.m of gross leasable area. Removing the non-retail/non-residential elements (such as the medical centre, gym and childcare centre, which make up around 16,000sq.m of gross leasable area), PPM Consulting agrees that a centre of 10,000m2 of retail space is appropriate. <u>Therefore, in reality there doesn't seem any issue to justify the reduction in density as the quantum of individual land uses isn't objected to by HillPDA</u>.
Amend site-specific development control plan	Align ground floor non-residential	It is considered that with other changes as adopted and suggested this additional item of future assessment is

to require future staged development application reflect LSPS employment targets and justify the amount employment floorspace in a peer reviewed economic impact assessment, in line with Clause 4.15(1)(b) of the EP&A Act	uses with likely demand and reduce likelihood of poor activation at the ground level (e.g. vacant shops). (Section 3.2.2)	not required. Adding additional red tape to future DA planning processes after a 6-year plan making process to amend controls that have been in place since 2008 (that have not promoted any investment) is not a desirable outcome. Such an additional process step is not warranted or justified, particularly the risk that could be promoted if errors are made as highlighted in review of historical study. The Part 4 process as regulated by the Act and Reg is appropriate for a future consent authority to take into consideration relevant areas of impact and assessment including the issue raised. In keeping with the promotion of a reduction in unrequired process and delay which the government seeks to implement, the opposite should occur. It is time for the normal investment and market dynamics to respond to the foundations created from an adjustment to the land use controls. For example, the key issue of infrastructure and transport delivery impact was guided by TfNSW. That methodology of study was progressed with the clear theme by that agency that as a result of the plan making study process further detailed study of the type applied during the Part 3 process would not be required in future DAs as the study process was concluding and thorough. We see no reason why the same case cannot be made for this discipline of economics which is of course less rigid than an engineering discipline. It is noted that much of the difference between the PPM Consulting reports and the HillPDA review can be explained by differences in data sources and interpretation. For example, one says there will be growth (in keeping with the LSPS , and the relevant state and regional plans) and one says there will be decline. Economics is not a precise science, and so different economists will come to different conclusions, even when presented with the same set of facts. When there is not agreement on facts, the difference in conclusions can be even more stark. The community wants delivery of the project and employment and services not more reports.
Maintain area proposed to have height limit of 9.5 m at current level of 8.5 m	Ensure two storey development proposed by applicant is delivered, aligning with transition to surrounding area. (Section 3.4.1)	Further study has shown that with a change of commercial floorspace to home office in the majority of the R1 zone and a change to the dwelling typology of larger family terraces the height limit of 8.5m can be adopted.
Reduce northern and southern interface height limits from 20 m to 14 m	Allow for four storey podiums, stepping down to	It is noted this was previously addressed through the height transition studies, and overshadowing impact analysis. The council staff suggested a height of 18

and reduce maximum FSR to accommodate the change in height limits.	the two-storey built form of the surrounding area. (Section 3.4.1)	metres in these locations in its letter of 19 September 2017 and refined it to allow for the commercial floor to ceiling heights to a 20 metres height limit. This was supported by staff, submitted to the department and endorsed in the department's letter of 28 June 2018. The central built forms have been relied upon in existing and continuing investment decisions for the delivery of this town centre project and the future significant tenants. This proposed change is therefore considered unnecessary and may undermine the urban design objectives for the central lots of the centre.
Map parts of the proposed B2 Local Centre zoning identified as plaza or open space on Council's Key Site Map, with controls requiring delivery of open space/limited supporting uses. Remove the mapped areas from the FSR and building height map.	Ensure the area identified for public open space in the B2 Local Centre zone would be delivered for that purpose, with allowance for a small kiosk or similar. (Section 3.4.1)	An expansion of the delivery of the open space is a key element of the proposal and as such inclusion of it in a new key sites map is not opposed and a revised height limit reduction from 29m to 3m can be considered with no change to the FSR mapping as proposed. The additional open space was facilitated through the letter of offer through discussion and negotiation with staff in 2019. It is noted that the issue as described is also achieved through the DCP. This is the offer albeit updated by letter in an additional 2020 letter of offer. The provision of open space is connected to the density, an incentive to provide a better outcome for the proponent. If the density is removed it is likely the open space will be removed too. Density is also linked to the public benefits.
Remove proposed additional permitted use of 'restaurant or café' from R1 General Residential area	Reduce likelihood of amenity impacts for the surrounding area, ensure alignment with objectives of the zone and reduce likelihood of oversupply of non-residential uses. (Section 3.4.1)	The vision for the town centre is to create active and vibrant streets creating an inviting place for residents and visitors to the town centre and something the residents of Middleton Grange can be proud of and feel safe in. It is noted that this is also an objective identified by HillPDA to create active and vibrant streets. The recommendation to remove this as an additional permitted use therefore does not seem consistent with this objective or the active frontages diagram within the DCP. Having said that, it is not the intention to include restaurants and cafes along the entire frontage of the R1 zoned land along the Main Street of the town centre. Rather, the cafes and restaurants are located adjoining the central open space to ensure that this key node is the focal point of the activity, which cafes and restaurants generally create. Therefore, it is suggested that this not be removed as an additional permitted use, but maybe a floorspace cap be considered to ensure that this use doesn't dominate parts of that town centre that do not meet the objectives for the focus of these land uses.
Request DPIE/Transport for NSW to finalise State level planning agreement	Ensure delivery of non-Council road upgrades required	It is considered that HillPDA were not aware of the detailed study and response between the applicant's transport experts, council and TfNSW. That study has

for road upgrades prior to finalisation of planning proposal	to support the planning proposal, in line with Transport for NSW comments. (Section 3.4.2)	proposed a formula for the relevant state levy, and it is noted that a satisfactory arrangements clause is to be linked to the land. It is noted that from these studies and work with TfNSW that the majority of intersection impacts are from background growth rather than the development of the town centre. Notwithstanding, we have worked these impacts and resolution of impacts through the letter of offer to capture local road issues to ensure there is a logical progression of local roads infrastructure delivery as the development of the project progresses. The proposed upgrades are numerous, and although they can be guided by the existing contributions plan and could be delivered appropriately in progressing the Part 4 process, it was decided to provide an offer to assist the council to deliver the various significant road delivery and open space items well prior to that anticipated by the contributions plan. The letter of offer to the council provides a number of opportunities for significant local benefits. We propose to forward fund to deliver 100% of the upgrade intersection works and then offset 50% of the cost of the approved upgrade works against the contribution fees. This we were advised by the transport consultants was a generous offer and delivered considerable NPV economic benefits to the council.
Refine development contributions plans to consider demand for infrastructure associated with the planning proposal	Ensure equitable contributions across the local community for infrastructure.	An update to any contributions plan is a good planning process generally however such should not be used as a reason to delay this proposal further. The project is supported by a comprehensive and established contributions plan. That plan is protected by CPI increase and revenue rises with an increase in dwelling yield and density. Further the project is supported by a substantial offer of additional community benefit items in significantly increased open space, new cycle ways and pedestrian infrastructure not contemplated by the current plan. The offer also seeks to deliver additional roads infrastructure ahead of the current planned and suggested timeframes.

Table 3: Response to Summary of suggested amendments

3 Conclusion

Whereas this response report has at times been critical of the process and some of the recommendations by HILLPDA it is respected that the work has been undertaken in a comparatively short timeframe in a context of resources changes by the client in council. There are however a number of items that can be implemented in part or full that is considered appropriate and will not undermine the proposed intent and successful delivery of the Town Centre.

The revised Gateway, community attitude and proposed council timing of reporting support the outcome of the delivery of the town centre in an efficient timeframe in the coming weeks. This is a good outcome as the project investors are seeking to progress delivery works as soon as possible. In moving forward, it is best considered that the proponent continue to work with council to finalise the final land use controls for recommendation to the delegate whilst responding to key issues that may arise from the letter of offer for the delivery of benefit. That can facilitate a planning agreement. In that light it is encouraging that senior council officers have been proactive since the issue of the revised Gateway, advising of the intended processes that will lead to a finalisation of the plan making process.

In relation to the recommendations, the following is recommended to support the delivery of the project:

1. Height

Adopt the change of height from 9.5m to 8.5m in the R1 zone where it adjoins existing residential uses to the west. Maintain all other heights as exhibited.

2. Density

Maintain the density as exhibited with the implementation of a cap on residential development of 72,000m2.

The difference between that recommend by HillPDA of 1.6:1 (averaging) and that sought by the planning proposal 1.98:1 (averaging) is not that great; however, will have great consequences to the outcome. The public benefits are linked to the density, including the significant provision of additional open space and the additional contributions facilitated by the density, which in turn are reinvested in upgrades to key community infrastructure so desperately need across Middleton Grange.

Given the concerns around density were linked to infrastructure and amenity and these are no longer issues, while HillPDA haven't objected to the maximum building heights, it is felt that no change is required to the density control to address the HillPDA concerns. However, should the management of residential GFA still be something the council would seek to regulate additionally, noting that this is controlled by the ADG, a site-specific clause that provides for a maximum of around 72,000sq.m could be a solution to solve this issue. The basis for the 72,000sq.m rather than the recommended 65,000sq.m was discussed in this report and provides for the capture of proposed non-residential floorspace as home businesses along the western lots 2 and 3 whilst maintaining the proposed density of 1:1 in that zone and provides some flexibility in future apartment design that maybe a desirable outcome to respond to future market desirability of large dwelling format.

In further support to maintain the current proposed density, in a post-Covid world, with large numbers of people now working from home rather than going into the CBD of Sydney (and other CBDs such as Liverpool and Parramatta), some have argued that this may be a permanent shift. PPM Consulting's Director and Chief Economist, Martin Musgrave, is a thought leader in this space. In September, Mr Musgrave wrote: "*Councils that are on the front foot in supporting knowledge workers may find their town centres need to grow to provide more daytime services like cafes and eateries. The need for better pedestrian access, and more parking for cars*

and bikes will no doubt be an early need. There is also a need to think about how the transport system will support expanded suburban centres."

It may be that more and larger centres with more services are required to service a growing number of people working from home. Those who work from home would no longer do their shopping at their places of business. Therefore, it is likely that these people will be looking for retailers closer to home. The R1 zone is also an important zone for the provision of building designs that can incorporate home businesses and offices (see attachment 3) that will be in higher demand. The B2 zone also has the capacity to enable shared working spaces. Reducing the density and thus the projects ability to meld to future market forces is not inducive of a vibrant and economically viable town centre.

3. Permissibility of 'restaurant or café' in R1 zone

The vision for the town centre is to create an active people and pedestrian first centre supported by key nodes of human interests and activity supported by vibrant streets creating a great place for residents and visitors to the town centre and something the residents of Middleton Grange can be proud of and feel safe in. It is noted that this is also an objective identified by HillPDA to create active and vibrant streets. The recommendation to remove 'restaurant and cafes' as an additional permitted use therefore does not seem consistent with this objective or the active frontages diagram within the DCP. Having said that, it is not the intention to include restaurants and cafes along the entire frontage of the R1 zoned land along the Main Street of the town centre. Rather, the cafes and restaurants are located adjoining the central open space to ensure that this is the focal point of the activity, which cafes and restaurants generally create.

Therefore, it is suggested that this not be removed as an additional permitted use, but maybe a floorspace cap be considered in the R1 zone that limits the quantum of restaurant and café space to ensure that this use doesn't dominate parts of that town centre that do not meet the objectives for the focus of these land uses. A suggested cap of 1,200sq.m is recommended.

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8 October 2020

Taylor Richardson
HillPDA
Level 3, 234 George Street
SYDNEY NSW 2000

Middleton Grange Town Centre Planning Proposal Preliminary Review

Dear Taylor,

I write in relation to HillPDA's letter of 21 September 2020 in relation to the independent assessment of the Middleton Grange Town Centre Planning Proposal. Specifically, you have requested clarification on a number of matters, generally related to the economic impact assessment.

I am please to attach revised reports that clarify the matters raised by HillPDA to assist the assessment. In particular, the following are attached:

- Economic Impact Analysis – Middleton Grange Town Centre
- Economic Impact Analysis of the retail component – Middleton Grange Town Centre
- Traffic Response to Council communication dated 28 September 2020

Planning Response

I note that the HillPDA communication requested an updated Planning Proposal that includes a table with the proposed land use components and associated GFA and FSR; and a staging plan for the development.

GFA and FSR

We have reviewed the planning proposal for inconsistency, and feel it accurately represents what is being sought by the Planning Proposal, namely, to realign the zoning boundaries and amend the principle planning controls.

Part 2 Explanation of Provisions of the Planning Proposal identifies the changes required, the most significant being:

1. *Amend the Liverpool Local Environmental Plan 2008 Zoning Map by making internal boundary adjustments to the R1 General Residential and B2 Local Centre boundaries.*
2. *Amend the Liverpool Local Environmental Plan 2008 Floor Space Ratio Map to part 1:1 and part 2.3:1 as shown on the proposed map.*
3. *Amend the Liverpool Local Environmental Plan 2008 Height of Building Map to part 9.5 metres, 14 metres, 20 metres, and 29 metres as shown on the proposed map.*

These amendments are further illustrated under *Part 4 Mapping* of the Planning Proposal. Figure 32 provides the proposed land zoning map; figure 33 provides the proposed maximum height of building map; and figure 34 provides the proposed maximum floor space ration map.

The floor space ratio for the site, as discussed above is proposed to be 1:1 for land zoned R1 General Residential and 2.3:1 for land zoned B2 Local Centre. When an averaging provision is applied across the entire Middleton Grange town centre, the FSR is 1.98:1, a decrease from the 2.5:1 originally endorsed by Council. This constitutes only an overall increase across the town centre from 1.16:1/1.3:1 to 1.98:1, and also provides for significant public benefits for the broader community including a significant increase in the amount of open space, state infrastructure contributions (final rate in accordance with TfNSW advice against the Satisfactory Arrangements Clause) of $2.5m for regional road upgrades, and local contribution of approximately $22m in accordance with the Middleton Grange Infrastructure Contributions Plan.

In relation to an update of the Planning Proposal, it is considered that given the application is a Part 3 process to amend the land use provisions and not a development application, this degree of information could be too much detail for a Part 3 process and providing too much detailed information about the land use split and staging plan is usually not received favourably by the Department. This level of detail generally does not align with Section 3.33 of the Act and the accompanying Department of Planning, Industry and *Environment Guide to Preparing Planning Proposals*.

Further, given the stage in the process and the further detailed development applications to come, the exact mix of uses is not final and subject to slight variation, for example the quantum of space a gym or child care centre may subsequently require will be determined in the development application process. However, while the land uses are indicative, there is a degree of certainty around the general quantum of residential and non-residential. Therefore, the table below provides the land use breakdown of future land uses as required, that informs the total GFA and FSR for the town centre.

Land Use	Total (sq.m)
Supermarket/Retail Shops	9,622
Cafes and restaurants/food and drink premises	6447
Commercial Entertainment	2,862
Offices/SOHO	8,223
Neighbourhood Shops	4,060
Medical/other	12,529
Gym	3,500
Childcare	505
Community Centre	500
Total Non-Residential Uses	**48,248**
Total Site area	**57,255**

RETAIL AREAS (GFA)	**373**	**379**	**7,157**	**8,075**	**3,280**	**1,057**	**20,320**
COMMERCIAL/MIXED USE (GFA)	2,975	2,975	0	6,135	2,888	0	**14,973**
MEDICAL/OTHER (GFA)	0	0	0	0	0	14,178	**14,178**
RESIDENTIAL AREAS (GFA)	3,770	3,770	26,767	22,222	7,352	0	**63,881**
TOTAL GFA	**7,118**	**7,124**	**33,924**	**36,432**	**13,519**	**15,235**	**113,351**
SITE AREA	7,118	7,124	15,490	17,970	5,538	4,015	**57,255**
FSR	1.00	1.00	2.19	2.03	2.44	3.79	**1.98**
Total development site FSR (rounded)							**1.98**

In considering the above, it is important to not how the above land use breakdown has been analysed for the purposes of the economic impact analysis and the traffic analysis. This is discussed further below.

Finally, it is also worth considering the long historical changes to development controls associated with the town centre site since the town centre site was originally zoned under the Liverpool LEP 2008. Contrary to some understanding within the community, the existing controls can facilitate approximately 626 dwellings and 15,808sq.m of commercial floorspace can be provided. However, within 12 years since the 2008 LEP was notified the site has yet to develop.

The initial Planning Proposal resulted in approximately 143,140sq.m of GFA across the town centre. Through the Gateway process this was refined prior to the commencement of public exhibition. Following public exhibition in 2018 the comments of the community were heard, and further refinements made, including reduced height, doubling the quantum of open space, and additional community and social infrastructure . This has now resulted in a marginal increase in apartments, from approx. 626 to 671 with the focus of the town centre being on commercial, retail and social infrastructure, with a vision to create a retail core at the southern end, cafes, restaurants and social infrastructure wrapped around the communal open spaces, commercial, office and business premises throughout the town centre, and medical facilities anchoring the north east of the site, avoiding any adverse interface with the school grounds.

The evolution of the density controls is included below.

Scheme Description	Residential GFA (dwellings)	Non-residential GFA	Total GFA	Open Space (sq.m)
2008 LEP	54,829 (583)	11,729	66,558	2,000
2008 LEP with Cl 5.3 applied to B2 zone	58,909 (626)	15,808	74,718	2000
2015 Planning Proposal endorsed by Council	86,733 (924)	56,407	143,140	2569
2018 Planning Proposal for Gateway determination	84,694 (912)	29,019	113,173	2569
Revised Planning Proposal 2019	63,703 (671)	34,235 15,235 medical centre	113,173	5695 *note does not include areas of existing SP2 land which will be contiguous with open space and increase the area further.

Note: Rounding provisions have been used to inform the above numbers and are within 0.001% of urban design figures above.

Staging Plan

As discussed above, the application is made under Part 3 and simply seeks to amend the planning controls for the site to facilitate the immediate development of a town centre for the people of Middleton Grange. The following may assist with understanding the next steps to realise further construction, noting that Coles have committed to locating within the town centre, but discussion still on-going that may impact the timing of delivery of other parts of the centre.

1. Subdivision – In 2015 the subdivision of the town centre was approved in alignment with the zone boundaries advanced by the Planning Proposal.
2. Roads and Drainage - In 2007, a development consent for roads and drainage works was approved in alignment with the zoning plan at that time. In May 2020, a modification to the roads and drainage

was approved that aligned with the subdivision plan and ongoing Planning Proposal zone boundaries. Construction has commenced.

3. Major Project Medical Facility – In June 2019 SEARs was issued by the Department of Planning, Industry and Environment for the preparation of an environmental impact statement (EIS) for Middleton Grange Medical Centre. Given the timing of the finalisation of the Planning Proposal which will resolve any permissibility issues with the assessment of the EIS, the EIS has yet to be lodged pending the finalisation of the Planning Proposal.
4. A Concept DA is advancing with a meeting with senior staff scheduled for 13 October 2020. The Concept DA will support the building footprints and elevations, and open space for the town centre, excluding the medical facility which is subject to a separate process.
5. Lots 5 & 6 – Detailed design of Lots 5 & 6 being the southerly lots has advanced with the successful negotiation with future tenants. Timing for the formal lodgement of the development application is dependent on the progression of the Concept DA application mentioned above.

Traffic and Transport

Traffic impact assessment (TIA) is likely one of the primary impact issues significantly relevant to the study of this Planning Proposal. It is noted that many of the comments about various levels of floorspace applied may be different to tables in economic reports. This is a moot point in consideration of how the TfNSW guided the process of TIA.

Despite the minor variations of breakdown of floorspace uses in reports this fine grain analysis was not considered by TfNSW. TfNSW required an application of a worst-case scenario by applying a retail use impact rate to all proposed non-residential floorspace and at a maximum possible level of quantum of mix. The reason for this approach by TfNSW was to ensure any changes that may occur to the use of floorspace in the future (as available and promoted by the underlying land use zone) would not impact the considered study results and would limit the need for further detailed traffic analysis at future DA stages.

Attached to this letter is a response to some of the items raised by council's traffic section to the TIA issued prior to formal TfNSW comment. It is noted that the comments from the council team in part incorrectly make assumption on impacts due to a lack of specified reference of the background growth applied in the model as guided by TfNSW.

Question is also raised on the financial model applied in forming the council comment on funding rates for the proposed shuttle bus. It is also acknowledged that on 13/10 a meeting with the TfNSW is set to discuss aspects of the TfNSW response. It is noted the results of the TIA process are that with considered infrastructure upgrades and relevant SIC payments to be guided by TfNSW the project can be supported on traffic and transport grounds at the density consistently proposed by the EPI amendment since the endorsement of the gateway exhibition by the delegate.

Economic Impact Response

As discussed in the attached Economic Impact Analysis, the Standard Instrument definitions for certain land uses are used differently in the supporting reports. For example, the definition of retail premises captures numerous uses, including those that would not ordinarily be expected within a town centre, such as plant nurseries or vehicle sales or hire premises.

Further, while food and drink premises are defined by the Standard Instrument as retail premises, they are considered separately in the economic study as they do not form the focus of competition with other centres such as Carnes Hill and are therefore not incorporated within the analysis of retail impact. Carnes Hill is a shopping destination whereas the Middleton Grange town centre is intended to be a destination for people and families, that can walk to the centre, play in the, sit in the sun and drink coffee and eat at the restaurants.

This is a very different kind of centre to those elsewhere in the Liverpool LGA and not the focus of the competition or retail analysis. Therefore, it is very important to note that despite the inflexible Standard Instrument definitions, for the purpose of the economic analysis a more practical and realistic approach was required.

As requested, detailed updated economics reports are attached and a summary of the response to the issues raised is included in the table below.

Hill PDA Preliminary Review	Response
• Provide an updated planning proposal that ○ Includes a table with identifying each proposed land use component, associated GFA and associated FSR ○ Identifies an anticipated delivery timetable for the proposed development (e.g. staging) ○ Outlines, in summary tables, the supply and demand of retail and commercial uses to justify densification on the site (as informed by an updated economic impact assessment) ○ Includes a clear planning mechanism that would ensure employment land uses would be provided as part of a future development	Supply and Demand for Retail are contained in the report *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* – Chapters 3-7, including supply and demand for supermarket floorspace and impact of addition of 10,000m^2, 15,000m^2 and 20,000m^2 of supermarket, mini major and specialty retail shops. Other matters related to land use components and staging was discussed above.
• Provide an updated and consolidated economic impact assessment that: ○ Is consistent with land uses and associated GFA, as described in the planning proposal and other supporting documentation (i.e. urban design reporting and traffic impact assessments) ○ Updates trade catchment analysis to describe, clearly and transparently, assumptions for population growth and market share over time, including existing and planned uses at Austral ○ Provides a transparent supply and demand assessment for retail components ○ – Provides a transparent supply and demand assessment for commercial components	Definitions for retail GLA differ because of the purpose of each report. This is explained in Chapter 2.3 of both reports. The trade catchment commentary in Chapter 3 clearly and transparently describes the assumptions used to calculate population and expenditure growth. Planned and existing uses have not been covered for Austral. As noted on Page 15 of the *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* report, "The main trade area does not include the proposed new town centre at Austral. The 2015 MacroPlan Dimasi Economic Impact Analysis was criticised for using a main trade area that was too broad. For this study, the focus has been on actual operating centres that compete with the proposed Middleton Grange Town Centre, rather than relying on a false precision. At the moment, as far as we are aware, there is no proponent for the town centre at Austral; as such it is unknown what the Austral Town Centre will contain and how large it really will be. The decision has therefore been taken to assess the impact on operating centres. In addition, the size of the main trade area has been chosen to ensure that the population, and its spending, is not over-estimated and therefore does not under-estimate the impacts of the Middleton Grange Town Centre on centres such as The Valley Plaza and Carnes Hill Marketplace."

	A transparent supply and demand assessment is made for the retail components in Chapters 3-7 of the *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* report A transparent supply and demand assessment of the commercial components are contained in Chapter 4 of the *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* report.
Ensure the planning proposal and all supporting documentation provide a thorough, accurate and evidence based assessment of the proposed land use mix anticipated to result from the amended LEP.	The draft EPI density controls have not changed since the department of planning endorsement of the exhibition set of documents. It is noted the B2 land is proposed to have a density of 2.3:1 and the R1 land 1:1. As a combined total the site density is 1.98:1. As noted, different floorspace uses are used in different reports for different purposes. These do not undermine the totals given in the Planning Proposal, but merely test different possible scenarios. For example, under the guidance of the state agency TfNSW, the methodology applied to the calculation of traffic and transport impacts took a worst-case scenario by applying a retail use to all proposed non-residential floorspace. The reason for this approach as advised by TfNSW was to ensure any changes that may occur to the use of floorspace in the future (promoted by the underlying land use zone) would not impact the considered study results and would limit the need for further detailed traffic analysis at future DA stages.
The planning proposal and associated assessments are to be able to be read on their own, and not submitted as an addendum to earlier assessment (i.e. not a response to resubmissions). This is required to ensure complete clarity on what is proposed why the proposal has both site specific and strategic merit.	Noted and completed
It is also noted that Council has recently adopted its *Centres and Corridor Strategy*. At its August 2020 Council Meeting, SGS Economics and Planning provided responses to submissions to that strategy. It is recommended that the comments also be considered, as they may also be relevant to the 2020 EIA, notably those regarding assumptions regarding trade catchments and supply/demand. You may also wish to update reporting to reflect the adopted strategy and the now adopted Local Strategic Planning Statement.	The LCCS is noted in the *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component* report. Table 7 is from the LCCS. It should be noted that SGS stated that it did not test the assumptions of the PPM Consulting retail impact report, so comments are only assertions based on SGS's broad modelling completed for the purposes of the LCCS and not done with the Middleton Grange Town Centre planning proposal in mind. Indeed, PPM Consulting refutes some of SGS's assertions. It is also noted that the landowners have raised significant concern with the process applied finalise the LCCS and its validity. Significant reliance and resources have been applied to a consistent policy position of the council. The formal serious concerns as well as the conduct of submitters

	have been raised directly with the state department and the council.

Response to Attachment A: Comparison of information sources.

HillPDA Preliminary Review			**Response**
Issue The description of the retail component of the proposal is inconsistent	**Example** • Planning proposal does not appear to describe retail component • 2015 EIA states the proposal includes a retail component of approx. 21,000 sqm GLA • 2019 ERR states the proposal includes a retail component of approx. 20,000 sqm GFA • 2020 EIA states the proposal includes a retail component of approx. 8,000 to 10,000 sqm GLA • 2020 TIA states the proposal includes a retail component approx. 20,000 sqm GFA	**Comment** • Significant discrepancy exists between 2020 EIA and previous/current supporting documents. • Unable to account for GFA sought by planning proposal. • Unclear if 2020 EIA is discussing a development similar to the previous economic reporting or the planning proposal • Unable to assess site or strategic merit for FSR sought by planning proposal without clear and consistent description of planning outcome.	While the Standard Instrument definition covers the whole of the 20,320m² listed in Table 1 of *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (PPM Consulting October 2020), this report analyses goods retail only (supermarket, mini majors and specialty stores that directly compete with other centres). The retail impact analysis compares the shops where people buy things at Carnes Hill to what they will be able to buy in shops in Middleton Grange. This does not include food halls, cafes, restaurants, offices, gyms, child care centres, professional suites like doctors, accountants and solicitors, etc. For this reason, 10,000m² of retail is used in the retail impact report, but a sensitivity analysis has been undertaken at 15,000m² and 20,000m² so that the impact of a larger retail footprint can also be assessed. We refer back to the comment on the methodology applied to test TIA as guided by the TfNSW for the project.
Issue The description of the commercial component is inconsistent	**Example** • Planning proposal does not appear to describe retail component • 2015 EIA: commercial component approx. 15,500 sqm GLA • 2019 ERR: commercial component approx. 15,000 sqm GFA • 2020 EIA: does not appear to discuss commercial uses • 2020 TIA: commercial component approx. 14,400 sqm GFA (assuming child care and community centre uses are combined with commercial uses)	**Comment** • Significant discrepancy exists between 2020 EIA and previous/current supporting documents. • Unable to account for GFA sought by planning proposal. • Unclear if 2020 EIA is discussing a development similar to the previous economic reporting or the planning proposal • Unable to assess site or strategic merit for FSR sought by planning proposal without clear and consistent description of planning outcome.	The commercial component analysed in Chapter 4 of the Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis report only analyses office floorspace, as noted in Chapter 2.3. The differences in floorspace representation also arise from the differences between an engineers, economist or urban planning definition of measurable floorspace for a particular purpose of expertise measurement. We refer back to the comment on the methodology applied to test TIA as guided by the TfNSW for the project.
Issue Inconsistent description of medical centre component	**Example** • Planning proposal describes a 15,000 sqm medical centre • 2015 EIA: 1,200 sqm medical centre as part of the overall commercial uses	**Comment** • Significant discrepancy exists between 2020 EIA and previous/current supporting documents.	Only the employment impact of the medical centre is considered in the Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis report.

	• 2019 ERR: medical centre approx. 15,000 sqm GFA • 2020 EIA: medical uses as part of other supporting uses, with combined size of 500 to 1,000 sqm • 2020 TIA: medical component of approx. 12,529 sqm GFA	• Unable to account for GFA sought by planning proposal. • Unclear if 2020 EIA is discussing a development similar to the previous economic reporting or the planning proposal • Unable to assess site or strategic merit for FSR sought by planning proposal without clear and consistent description of planning outcome.	We refer back to the comment on the methodology applied to test TIA as guided by the TfNSW for the project.
Issue Austral Town Centre not considered transparently	**Example** • Planning proposal does not mention Austral Town Centre • 2015 EIA identifies (then) current retail GLA of approx. 2,500 sqm and planned of 30,000 sqm GLA • 2019 ERR does not appear to assess Austral existing and planned land uses • 2020 EIA notes the Austral existing and planned land uses, but does not transparently assess main trade area share/impacts and anticipated impacts on current/future demand for floorspace	**Comment** • Level of impact associated with Austral Town Centre is unclear • Unable to peer review assumptions without transparency regarding supply/demand allocation	Planned and existing uses have not been covered for Austral. As noted on Page 15 of the Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis of the Retail Component report, "The main trade area does not include the proposed new town centre at Austral. The 2015 MacroPlan Dimasi Economic Impact Analysis was criticised for using a main trade area that was too broad. For this study, the focus has been on actual operating centres that compete with the proposed Middleton Grange Town Centre, rather than relying on a false precision. At the moment, as far as we are aware, there is no proponent for the town centre at Austral; as such it is unknown what the Austral Town Centre will contain and how large it really will be. The decision has therefore been taken to assess the impact on operating centres. In addition, the size of the main trade area has been chosen to ensure that the population, and its spending, is not over-estimated and therefore does not under-estimate the impacts of the Middleton Grange Town Centre on centres such as The Valley Plaza and Carnes Hill Marketplace."
Issue Non-retail commercial land use impacts not considered transparently	**Example** • Planning proposal does not address supply and demand of commercial floorspace • 2015 EIA provides an analysis of the supply and demand of the (limited) non-retail commercial floor space in the main trade area • 2019 ERR states that the proposed development would accommodate approximately 2 per cent future Western Sydney Airport commercial floorspace demand, but does not otherwise assess supply or demand for commercial floorspace.	**Comment** • Unable to assess site or strategic merit of FSR sought by planning proposal without clear justification for commercial floorspace components • Broad policy objectives and commentary do not provide sufficient evidence for significant commercial uses on this site.	A transparent supply and demand assessment of the commercial (non-retail) components are contained in Chapter 4 of the Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis report.

	• 2020 EIA does not address commercial supply or demand gaps and restates broad concept that the future airport would increase demand.		

If you have any questions in relation to this matter, please do not hesitate to contact me on 0437 521 110.

Yours sincerely

James Mathews
Planning Director
Pacific Planning

Attachment 1 – Economic Impact Analysis – Middleton Grange Town Centre
Attachment 2 – Economic Impact Analysis of the retail component – Middleton Grange Town Centre
Attachment 3 – Traffic Response to Council communication dated 28 September 2020

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21 December 2020

Mr Matthew Daniel
Director
Pacific Planning

BY EMAIL: mdaniel@pacificplanning.com.au

PROPOSED TOWN CENTRE AT MIDDLETON GRANGE – RESPONSE TO HILLPDA ASSESSMENT OF PPM CONSULTING ECONOMIC REPORTS

Dear Matthew

I am writing in response to the review of PPM Consulting's Economic Impact Analysis Reports (8 October 2020) by HillPDA (19 November 2020). The nature of these reviews is that invariably they are adversarial, and generally requires the reviewer to nitpick; I believe that this has been the case with this review.

It should be noted that in 2012, HillPDA undertook a review of the retail centres hierarchy for the Liverpool LGA and concluded that there should be no more than 5,500m^2 of retail, anchored by a full line supermarket (*Liverpool City Council Retail Centres Hierarchy Review*, October 2012, p10). As has been previously advised, the current controls allow for 11,729.3m^2 of commercial/retail space and 583 dwellings. These uses at these densities are available now, without providing community infrastructure such as the large park. The open space and walkability of a predominantly low density neighbourhood would be far lower than the current proposal. It is our understanding that HillPDA has shown a continual misapplication of the land use controls. This, and other misinforamtion has led to community confusion, to the point where Council was required to re-exhibit the Planning Proposal and correct the misinformation. We note one of the Council officers that briefed HillPDA was an author of these earlier reports in error and finally the report that corrected the historical error.

It is therefore unlikely that, even in the face of overwhelming evidence, HillPDA would give any advice that contradicts this initial finding, even though nearly 10 years of growth has occurred in the meantime, in terms of both population and overall retail spend, while shopping centres in the catchment have not expanded (except for the new Aldi at Hoxton Park and a supermarket-only Woolworths at Prestons which is out of the trade area).

As noted in my response to HILLPDA's preliminary review (7 October 2020), while the Standard Instrument definition covers the whole of the 20,320m^2 listed in Table 1 of *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (PPM Consulting October 2020), our report analysed goods retail only (supermarket, mini majors and specialty stores that directly compete with other centres). The retail impact analysis compares the shops where people buy things at, for example, Carnes Hill to what they will be able to buy in shops in Middleton Grange. This does not include food halls, cafes,

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restaurants, offices, gyms, child care centres, professional suites like doctors, accountants and solicitors, etc. For this reason, 10,000m^2 of retail is used in the retail impact report, but a sensitivity analysis was undertaken at 15,000m^2 and 20,000m^2 (which was not commented on by HillPDA) so that the impact of a larger retail footprint can also be assessed.

While PPM Consulting's analysis concentrated on the retail aspects of the planning proposal for the Middleton Grange Town Centre, HillPDA appears to contend that the medical centre, gym and child care centre, along with the restaurants and entertainment areas, should have been included in the analysis. This is a flawed presumption. It is important to note that the nature of restaurants and entertainment space is completely different to goods retailing. It should also be noted that gymnasiums, medical centres and child care centres are also very different to goods retailing. In its review of our 8 October 2020 report, HillPDA conflates goods retailing with services retailing in a way that allows a conclusions that 20,000m^2 of retail space is an oversupply. However, the proposed medical centre, gym and child care centre are extremely unlikely to compete with surrounding centres (Carnes Hill has two small facilities, including a GP consultancy in the Marketplace). It is also not up to Councils to decide whether gyms and childcare centres should face competition or not.

It should also be noted that much of the difference between the PPM Consulting reports and the HillPDA review can be explained by differences in data sources and interpretation. Economics is not a precise science, and so different economists will come to different conclusions, even when presented with the same set of facts. When there is not agreement on facts, the difference in conclusions can be even more stark.

It should also be noted that, as this is a *planning proposal*, neither the proponent, nor its consultants, can be sure of what the mix of retail and commercial premises will be. It is the very nature of planning proposals that they are fluid and any analysis is a guide. It is disingenuous of HillPDA to dismiss the analysis by PPM Consulting, as it suggests an ignorance of the planning process, or at the very least, a failure for them to have been briefed properly by Council.

Demand for Retail Space

HillPDA implies that the Main Trade Area has been drawn too broadly. The Main Trade Area can be drawn in many different ways and is open to interpretation by different practitioners. PPM Consulting stands by its Main Trade Area, which includes three existing shopping centres – Carnes Hill Marketplace, The Valley Plaza and the new Aldi at Hoxton Park. The purpose of drawing a Main Trade Area of this nature was to ensure that the three largest and closest centres were included in the analysis of the catchment for the Middleton Grange Town Centre.

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Population Growth

HillPDA asserts that there will be a decline in the population in the Main Trade Area, and uses Forecast.id figures to justify this. Indeed, they assert that there will be no more than 500 additional residents in the Main Trade Area to 2041. If the current proposal for new residential just in the Middleton Grange Town Centre is approved, it could account for at least an additional 1,500 residents within the next five years. GapMaps data, which was used by PPM Consulting, shows growth of over 17,000 between the 2016 Census and the forecast period of 2031, or a 2.2 per cent average annual increase. PPM Consulting contents that:

- GapMaps data appears to be a more reliable indicator of growth in the Main Trade Area, given the anticipated growth by Council in its LSPS
- this discrepancy is more than enough to explain the difference in conclusions between PPM Consulting and HillPDA.

Growth in Retail Expenditure

HillPDA has been highly selective in its use of retail expenditure growth figures. They assert that the real retail spend per capital has increased by 0.74 per cent per annum, however, department store retailing has fallen by 46 per cent. There is no proposal to include a department store at Middleton Grange, so these figures are irrelevant and PPM Consulting considers that, when department stores are removed from the 0.74 per cent per annum growth citied by HillPDA, the real growth of 1.125 per cent per annum assumed by PPM Consulting could be considered to be very conservative.

HillPDA asserts that fewer shops will be required because of a move to online shopping. This is a highly contested theoretical discussion which is still playing out in real time. With large numbers of people now working from home rather than going into the CBD of Sydney (and other CBDs such as Liverpool and Parramatta), some have argued that this may be a permanent shift. PPM Consulting's Director and Chief Economist, Martin Musgrave, is a thought leader in this space. In September, Mr Musgrave wrote: "Councils that are on the front foot in supporting knowledge workers may find their town centres need to grow to provide more daytime services like cafes and eateries. The need for better pedestrian access, and more parking for cars and bikes will no doubt be an early need. There is also a need to think about how the transport system will support expanded suburban centres."

In a post-Covid world, it is possible that old models, such as the agglomeration model (which posits the non-Covid safe theory that people and businesses move to be close to each other, and that in this proximity connections form that then result in higher productivity), might no longer be valid.

In a post-Covid world, it may be that *more* and *larger* centres with *more* services are required to service a growing number of people working from home. Those who work from home would no longer do their shopping at their places of business. Therefore, it is likely that these people will be looking for retailers closer to home.

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At the same time, turnover by Woolworths and Coles has *increased* during the pandemic, and their share prices surged, in the knowledge that spending on groceries had increased. Indeed, if more people work from home, the cumulative impact on items usually provided by offices like biscuits, toilet paper, etc, will need to be bought from suburban supermarkets by local homebased workers.

To suggest that online shopping will result in the need for less floor space is highly speculative. It may easily be that people do not return to their offices, and as a result, need better Town Centres that provide more services, including retail services. It is just as likely, maybe more so, that *more* floorspace is needed post-Covid. While it may lead to a rise in click-and-collect, it is likely that more non-discretionary spending will occur as people move past shops on their way to collect their groceries.

Demand for Supermarket Space
While HillPDA and PPM Consulting disagree on the per capita spend on supermarkets, the conclusions drawn are the same – Middleton Grange should have a full-line supermarket.

Impact Assessment
As noted above, PPM Consulting disagrees with HillPDA's population forecasts. PPM Consulting also stands by its growth forecasts. Again, this is a matter of professional disagreement over data, leading to different conclusions.

The impact on the future Austral town centre is not discussed in the PPM Consulting report. As Middleton Grange has been in the retail hierarchy since 2006, it has been considered that a centre that has only just been included in the hierarchy is extremely unlikely to come to fruition for at least another 15-20 years. Any impact that Austral would have on Middleton Grange, or that Middleton Grange would have on Austral, is both highly speculative and potentially prejudicial.

HillPDA concludes that an appropriate sized centre would be between 6,000 and 10,000m^2 of gross leasable area. Removing the non-retail elements (such as the medical centre, gym and child care centre, which make up around 16,000m2 of gross leasable area), PPM Consulting agrees that a centre of 10,000m^2 of retail space is appropriate.

In addition, there are some real dangers with the view that it is for Council planners to determine "the most appropriate centres in which to prioritise growth." Picking winners should not be part of Council considerations in a mixed market economy like Australia. Picking winners in this case merely enriches incumbents and increases barriers to entry, resulting in:

- higher rents for businesses, particularly small businesses – a sector which is likely to grow the strongest post-Covid
- subsequently higher prices for goods and services
- fewer and less diverse retail and service offerings.

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This anti-consumer approach, which suggests that floorspace should be rationed rather than be made abundant, results in the poorest residents having to travel further and pay more for their daily needs. The PPM Consulting EIA cited a landmark study by the London School of Economics, *Evaluating the Effects of Planning Policies on the Retail Sector"* by Professor Paul Cheshire, which showed that

> British land use policies may lower total factor productivity (TFP) in the retailing industry by:
>
> - restricting the total availability of land for retail, thereby increasing space costs
> - directly limiting store size
> - concentrating retail development on specific central locations.
>
> The researchers used unique store-specific data to estimate the impact of space on retail productivity and the specific effects of planning restrictiveness and micromanagement of store locations.
>
> The research found that total factor productivity (TFP) rises with store size and that planning policy directly reduces productivity both by reducing store sizes and forcing retail onto less productive sites. The results suggest that since the late 1980s British planning policies have imposed a loss of TFP of at least 20 per cent.

Commercial Office Space

We similarly caution against HillPDA's conclusion that lower demand for Sydney CBD office space will mean lower demand for suburban office space. Indeed, the nature of work is highly fluid at the moment and it may be that *more* office space is required in suburban locations to meet the needs of satellite workforces for businesses with main offices in the CBD.

It should also be noted that HillPDA did not refute the conclusions drawn from the Journey to Work data cited by PPM Consulting, nor did it comment on the conclusions drawn by PPM Consulting that the proposed office space could only accommodate a small fraction of number of Liverpool residents who worked in the CBD in 2016 :

> There were 8,293 Liverpool residents who worked in the CBD in 2016. If only 5 per cent switch as a result of COVID-19 to living and working in the Liverpool CBD, space for an additional 415 workers would be required in the Liverpool LGA. This is more than can be accommodated by the proposed office space at Middleton Grange Town Centre. If 5 per cent of the 20,972 Liverpool residents who work in neighbouring LGAs are able to live and work in Liverpool, space for a further 1,049 workers would be required in the Liverpool LGA – more than double the accommodation proposed for Middleton Grange Town Centre.

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Attracting former CBD workers from neighbouring LGAs would require even more office space in the Liverpool LGA.

HillPDA was also silent on the need for overflow office space near airports, instead noting that the location "is not as proximate to the airport as is the Aerotropolis Core precinct," which was at the crux of the PPM Consulting argument.

Construction Employment

In no way did PPM Consulting imply that construction jobs are anything but temporary. This is obvious in the split between "construction" jobs and "ongoing" jobs. Indeed, PPM Consulting notes that, "The construction phase of the project will support temporary construction related employment." PPM Consulting considers the term "job years" implies the possibility of double-counting jobs as if they compounded from year to year when this is clearly not the case with temporary construction jobs.

The 8.5 direct full-time equivalent jobs is from the 2009 Urban Development Institute of Australia impacts of construction, which is from a development-industry specific study, rather than implied from Input-Output tables. It is also obvious that the employment impact has been expressed in a way that avoids double counting.

Operations Employment

HillPDA generally concurs with PPM Consulting on ongoing employment, but they note that uses will determine the final figures. As noted above, the proposal is in the *planning proposal* stage and the final uses and their floorspaces, are as yet unknown. Therefore, on the same basis, HillPDA concludes that there could be 80 fewer jobs accommodated.

Economic Benefit of the Public Parks

HillPDA misunderstands the analysis of the benefit of the public park. The analysis shows the benefit to the community of the park. Regardless of who pays for the park, whether it is by Council through statutory developer charges, or from the proponent via a VPA, the community will still benefit from its creation, as the park currently does not exist.

Maintenance has not been included as a capital cost, but rather as an ongoing benefit to the community through lower council requirements to maintain the park out of its operational budget. There is no CAPEX/maintenance mixture as HillPDA asserts.

HillPDA attempts to undermine the confidence in the visitation numbers by implying that the whole of the population of the main trade area has been used to calculate visitation numbers. This is not true. The visitation numbers used are 10 per cent of the Main Trade Area population in 2026, all of which would be within walking distance of the park.

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North Sydney NSW 2059

Conclusion

HillPDA appears to agree with PPM Consulting that a retail centre with a gross leasable area of up to 10,000m^2 would be appropriate for the Middleton Grange Town Centre. The other proposed uses are non-retail, and we contend that the PPM Consulting Economic Impact reports demonstrate overwhelmingly that there is demand for these components.

Yours sincerely

Martin Musgrave
DIRECTOR

Attachment 3 – Home Office Terraces Lots 2 & 3

The HillPDA recommendations on the 8.5 metres in the R1 zone can be supported. This change is facilitated by removing the majority of non-residential uses in that zone and transferring them to a home office use in a revised dwelling typology. This new typology of a 2 and 4 level terrace style home does not need to achieve the higher limits of heights of 9.5m to accommodate the uses that may have been required for a more dominate commercial use. The residential component does not increase in yield of dwelling number in this zone but the quantum of floorspace attributed to residential uses will increase as the home office accommodation is counted as residential floorspace.

The below figure illustrates the revised dwelling typology.

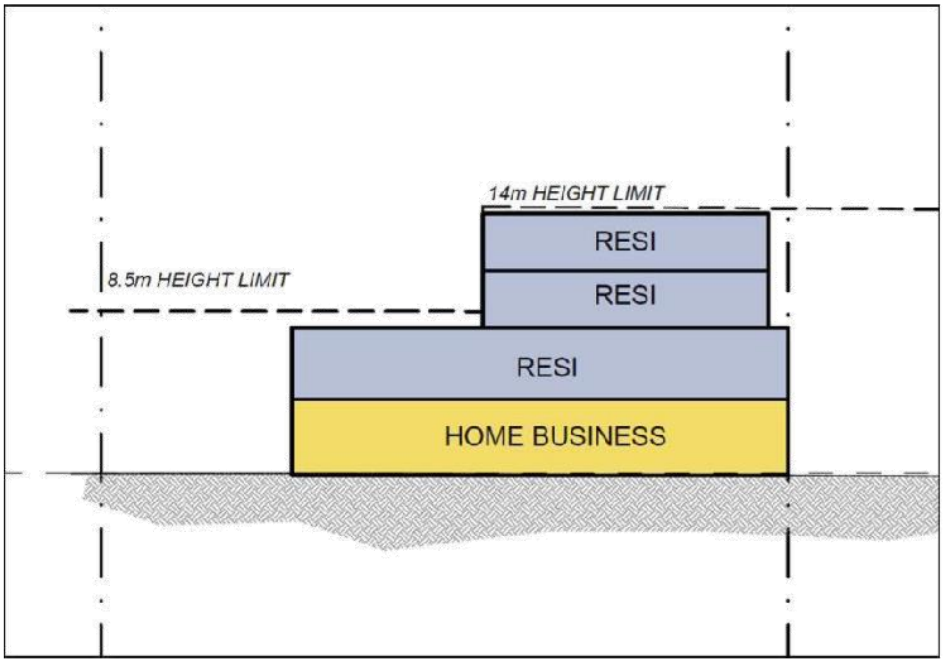


Figure 1: Lot 2 and 3 revised dwelling typology

Addendum 1 – council request for additional line on residential cap scenario.

Scheme Description	Residential GFA (dwellings)	Non-residential GFA	Total GFA	Open Space (sq.m)
2008 LEP	54,829 (583)	11,729	66,558	2,000
2008 LEP with Cl 5.3 applied to B2 zone	58,909 (626)	15,808	74,718	2000
2015 Planning Proposal endorsed by Council	86,733 (924)	56,407	143,140	2569
2018 Planning Proposal for Gateway determination	84,694 (912)	29,019	113,173	2569
Revised Planning Proposal 2019	63,703 (671)	34,235 15,235 medical centre	113,173	5695 *note does not include areas of existing SP2 land which will be contiguous with open space and increase the area further.
Revised scheme response to various assessment review items from council process late 2020 – Jan 2021.	72,000 (671) (change of use of ground floor commercial to home office uses in terrace form housing). Flexibility in dwelling design)	41,000 (non resi) 13,000 retail centre – (note 10000m2 NLA)) 3000 (gym) 1500 (childcare) 3500 (com entertainment) 11000 (medical) 3000 (medical ancillary) 2500 (office) 2500 (café/rest 500 (community)	113,173 (113,000 GFA rounded)	No change to that considered above and proposed to be provided as per letters of offer and methodology of UDR.

Addendum 2 - PPM GapMaps data

PPM CONSULTING

Demographics Report

MARCH 2020



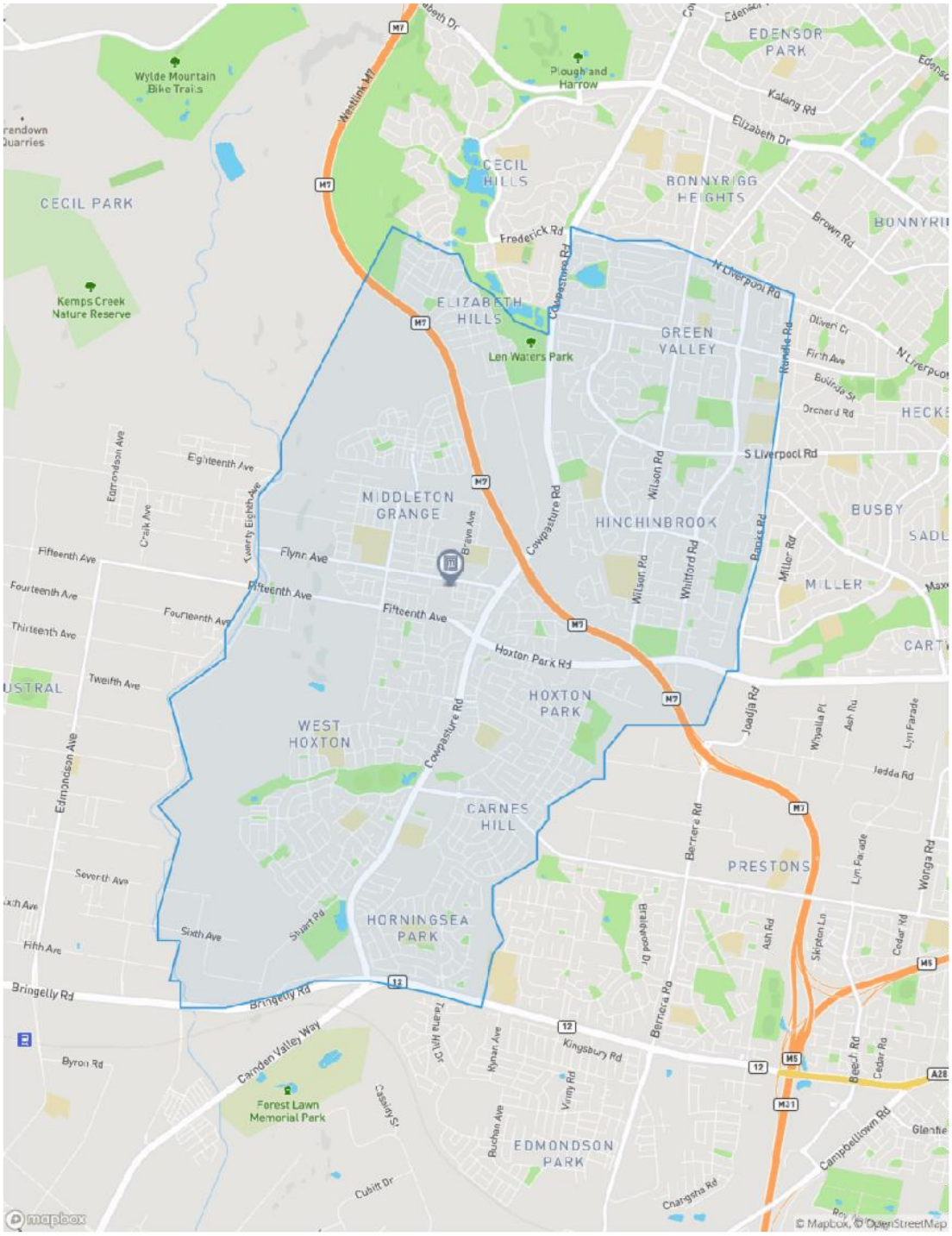
Middleton Grange Town Centre

Hall Cct, Middleton Grange NSW 2171
Hall Cct, Middleton Grange ,

Trade Area

POWERED BY GapMaps

Defined Area Snapshot



Hall Cct, Middleton Grange NSW 2171 Hall Cct, Middleton Grange ,
Trade Area

PPM CONSULTING

Demographics Snapshot

	Defined Area	New South Wales	Australia
Population			
Census Count Population (2016)	50,139	7,467,594	23,401,892
Estimated Resident population (2016)	52,039	7,732,858	24,190,907
Estimated Resident population (2018)	55,277	7,988,241	24,992,860
Avge. Annual Growth Rate, 2016-2018	3.11%	1.65%	1.66%
Population aged 0 - 4	7.8%	6.34%	6.37%
Population aged 65+	5.88%	15.83%	15.24%
Average age (years)	32.12	38.78	38.44
Households			
No. of Households	13,283	2,604,293	8,285,829
Average household size	3.68	2.66	2.60
Income			
Average annual income per capita ($)	$32,049	$40,431	$39,620
Average annual income per household ($)	$115,257	$107,453	$103,664
Lifestage			
Pre-Boomers	2.9%	9.88%	9.36%
Baby Boomers	16.57%	21.94%	21.7%
Gen X	22.5%	19.86%	20.14%
Gen Y	21.98%	21.1%	21.34%
Gen Z	24.79%	18.38%	18.6%
Gen Alpha	11.27%	8.84%	8.86%
Ethnic			
Population born in Australia	51.6%	65.51%	66.73%
Population born in China	0.91%	3.11%	2.15%
Population born in India	1.04%	1.88%	1.92%
Population born in Asia balance	17.57%	6.72%	5.33%
Population born in Europe	5.06%	5.76%	6.72%
Population born Elsewhere	23.82%	17.02%	17.16%
Housing			
Households own/buying home	79.17%	66.96%	67.79%
Households renting	20.63%	32.29%	31.42%
Average monthly mortgage payment ($)	$2,382	$2,317	$2,071
Average Weekly rental payment ($)	$459	$415	$358
Employment			
Workforce White Collar	63.24%	71.88%	70.21%
Workforce Blue Collar	36.76%	28.12%	29.79%
Unemployment rate at Census date	6.71%	6.22%	6.86%
Vehicle			
No. of Motor Vehicles	29,108	4,325,343	14,404,615
Average No. of motor vehicles per household	2.28	1.73	1.80

Source: ABS Census 2016

Hall Cct, Middleton Grange NSW 2171 Hall Cct, Middleton Grange ,
Trade Area

PPM CONSULTING

Location snapshot

Population



50,123

Total households



13,257

Population	Location	%	New South Wales	%	Australia	%
Total Persons Males	24,759	49.40	3,677,843	49.26	11,546,037	49.34
Total Persons Females	25,364	50.60	3,789,037	50.74	11,855,037	50.66
TOTALS:	**50,123**		**7,466,880**		**23,401,074**	

Source: ABS Census

Religious Affiliation Summary	Location	%	New South Wales	%	Australia	%
Christianity Catholic Persons	17,540	34.55	1,844,842	24.67	5,291,982	22.57
Christianity Other Christian Persons	11,739	23.12	2,248,845	30.07	6,815,248	29.06
Buddhism Persons	4,408	8.68	205,614	2.75	557,164	2.38
	2,294	4.52	179,908	2.41	435,598	1.86
Islam Persons	4,880	9.61	265,950	3.56	599,163	2.55
Judaism Persons	4	0.01	34,916	0.47	84,509	0.36
Other Religions Person	1,737	3.42	140,857	1.88	495,961	2.11
No Religion Persons	4,830	9.51	1,875,949	25.09	6,933,341	29.56
Religious affiliation not stated Persons	3,332	6.56	680,720	9.10	2,238,347	9.54
TOTALS:	**50,764**		**7,477,601**		**23,451,313**	

Source: ABS Census 2016

Birthplace Summary	Location	%	New South Wales	%	Australia	%
Australia Persons	25,873	52.22	4,891,706	66.61	15,615,063	67.83
New Zealand Persons	876	1.77	115,536	1.57	514,492	2.23
Europe	2,409	4.86	418,876	5.70	1,543,940	6.71
Asia	5,646	11.40	780,289	10.62	2,061,157	8.95
Middle East	4,266	8.61	105,608	1.44	165,525	0.72
Other	2,834	5.72	122,755	1.67	341,419	1.48
Born elsewhere Persons	5,264	10.63	405,015	5.51	1,163,906	5.06
Country of birth not stated Persons	2,374	4.79	504,203	6.87	1,616,615	7.02
TOTALS:	**49,542**		**7,343,988**		**23,022,117**	

Source: ABS Census 2016

Total Households	Location	%	New South Wales	%	Australia	%
Total Households	13,257	100.00	2,603,930	100.00	8,285,547	100.00

Source: ABS Census 2016

Seifa	Location	%	New South Wales	%	Australia	%

Seifa	Location	%	New South Wales	%	Australia	%
SEIFA Score (Advantaged & Disadvantaged)	5	100.00	5	100.00	5	100.00

Source: ABS Census 2016

Population Projection	Location	%	New South Wales	%	Australia	%
2016 Estimated Resident Population	52,039	5.15	7,732,858	5.62	24,190,907	5.56
2017 Estimated Resident Population	53,988	5.34	7,867,936	5.72	24,601,860	5.65
2018 Estimated Resident Population	55,277	5.47	7,988,241	5.81	24,992,860	5.74
Population Projection 2019	56,939	5.63	8,107,091	5.89	25,407,632	5.84
Population Projection 2020	58,604	5.80	8,226,044	5.98	25,822,488	5.93
Population Projection 2021	60,273	5.96	8,344,196	6.07	26,236,402	6.03
Population Projection 2022	61,875	6.12	8,451,921	6.15	26,633,885	6.12
Population Projection 2023	63,495	6.28	8,559,643	6.22	27,031,255	6.21
Population Projection 2024	65,097	6.44	8,667,340	6.30	27,428,686	6.30
Population Projection 2025	66,710	6.60	8,775,054	6.38	27,826,038	6.39
Population Projection 2026	68,317	6.76	8,871,739	6.45	28,212,442	6.48
Population Projection 2027	68,777	6.80	8,978,209	6.53	28,608,232	6.57
Population Projection 2028	69,237	6.85	9,084,716	6.61	29,004,027	6.66
Population Projection 2029	69,693	6.89	9,191,187	6.68	29,399,831	6.75
Population Projection 2030	70,149	6.94	9,297,678	6.76	29,795,721	6.84
Population Projection 2031	70,609	6.98	9,393,970	6.83	30,181,320	6.93
TOTALS:	**1,011,079**		**137,537,823**		**435,373,586**	

Source: ABS Census 2016; GapMaps 2016

Mortgage Repayment Monthly	Location	%	New South Wales	%	Australia	%
0 to 299 Total	225	3.14	38,812	4.85	132,135	4.83
300 to 449 Total	47	0.66	10,879	1.36	47,166	1.72
450 to 599 Total	48	0.67	9,098	1.14	40,473	1.48
600 to 799 Total	80	1.12	20,433	2.56	89,103	3.26
800 to 999 Total	199	2.77	32,222	4.03	131,571	4.81
1000 to 1399 Total	696	9.70	101,388	12.68	404,832	14.80
1400 to 1799 Total	871	12.14	117,018	14.64	460,963	16.86
1800 to 2399 Total	1,803	25.14	170,111	21.28	605,254	22.13
2400 to 2999 Total	1,327	18.50	93,451	11.69	291,435	10.66
3000 to 3999 Total	1,139	15.88	96,044	12.01	251,885	9.21
4000 and over Total	396	5.52	77,492	9.69	173,462	6.34
Mortgage repayment not stated Total	341	4.75	32,601	4.08	106,215	3.88
TOTALS:	**7,172**		**799,549**		**2,734,494**	

Source: ABS Census 2016

Rent Weekly	Location	%	New South Wales	%	Australia	%
Rent $0 to $74 Total	67	2.60	27,959	3.56	101,214	4.17
Rent $75 to 99 Total	0	0.00	5,638	0.72	28,960	1.19
Rent $100 to 149 Total	39	1.51	49,790	6.35	149,178	6.14
Rent $150 to 199 Total	43	1.67	47,438	6.05	154,057	6.35
Rent $200 to 224 Total	26	1.01	30,161	3.84	107,088	4.41
Rent $225 to 274 Total	66	2.56	52,554	6.70	229,074	9.44
Rent $275 to 349 Total	102	3.96	100,472	12.81	465,679	19.18

Rent Weekly	Location	%	New South Wales	%	Australia	%
Rent $350 to 449 Total	569	22.08	171,718	21.89	585,439	24.11
Rent $450 to 549 Total	1,080	41.91	119,300	15.21	280,212	11.54
Rent $550 to 649 Total	452	17.54	70,307	8.96	128,593	5.30
Rent $650 and over Total	47	1.82	87,817	11.19	133,382	5.49
Rent not stated Total	86	3.34	21,376	2.72	64,994	2.68
TOTALS:	**2,577**		**784,530**		**2,427,870**	

Source: ABS Census 2016

Labour Force Status	Location	%	New South Wales	%	Australia	%
Persons Employed	22,799	93.30	3,376,790	93.78	10,683,185	93.14
Persons Unemployed	1,638	6.70	224,061	6.22	786,725	6.86
TOTALS:	**24,437**		**3,600,851**		**11,469,910**	

Source: ABS Census 2016

Occupation	Location	%	New South Wales	%	Australia	%
Managers	2,206	9.69	455,590	13.51	1,389,458	13.02
Professionals	3,758	16.50	797,441	23.65	2,370,763	22.22
Technicians & trades workers	3,312	14.54	428,639	12.71	1,446,479	13.56
Community & personal service workers	2,092	9.19	349,523	10.37	1,156,606	10.84
Clerical & administrative workers	3,784	16.62	467,305	13.86	1,449,065	13.58
Sales workers	2,194	9.64	310,961	9.22	1,000,310	9.38
Machinery operators & drivers	2,444	10.73	205,383	6.09	667,571	6.26
Labourers	2,401	10.54	297,354	8.82	1,010,999	9.48
Occupation inadequately described/ Not stated	580	2.55	59,644	1.77	177,300	1.66
TOTALS:	**22,771**		**3,371,840**		**10,668,551**	

Source: ABS Census 2016

Retail Expenditure	Location	%	New South Wales	%	Australia	%
Food and Groceries	239,260,399	41.45	42,411,765,634	39.72	135,806,968,812	40.46
Packaged Liquor	25,799,998	4.47	5,329,043,670	4.99	17,614,677,937	5.25
Food Catering	83,829,190	14.52	15,877,778,794	14.87	44,663,773,932	13.31
Apparel	59,949,944	10.39	10,781,242,814	10.10	32,957,609,417	9.82
Household Goods	103,778,525	17.98	18,911,914,200	17.71	59,758,859,127	17.80
Leisure Retail	21,926,326	3.80	4,755,542,307	4.45	15,721,468,727	4.68
General Retail	29,639,790	5.13	5,850,473,212	5.48	19,347,870,563	5.76
Retail Services	13,075,630	2.27	2,857,864,234	2.68	9,801,746,382	2.92
TOTALS:	**577,259,802**		**106,775,624,865**		**335,672,974,897**	

Source: 2018 Market Data Systems 2016

Retail Expenditure	Location	%	New South Wales	%	Australia	%
Food and Groceries Per Capita	4,328	41.44	5,309	39.72	5,434	40.46
Packaged Liquor Per Capita	467	4.47	667	4.99	705	5.25
Food Catering Per Capita	1,517	14.53	1,988	14.87	1,787	13.31
Apparel Per Capita	1,085	10.39	1,350	10.10	1,319	9.82
Household Goods Per Capita	1,877	17.97	2,367	17.71	2,391	17.80
Leisure Retail Per Capita	397	3.80	595	4.45	629	4.68

Retail Expenditure	Location	%	New South Wales	%	Australia	%
General Retail Per Capita	536	5.13	732	5.48	774	5.76
Retail Services Per Capita	237	2.27	358	2.68	392	2.92
TOTALS:	**10,444**		**13,366**		**13,431**	

Source: 2018 Market Data Systems 2016

PPM CONSULTING

Demographics Report

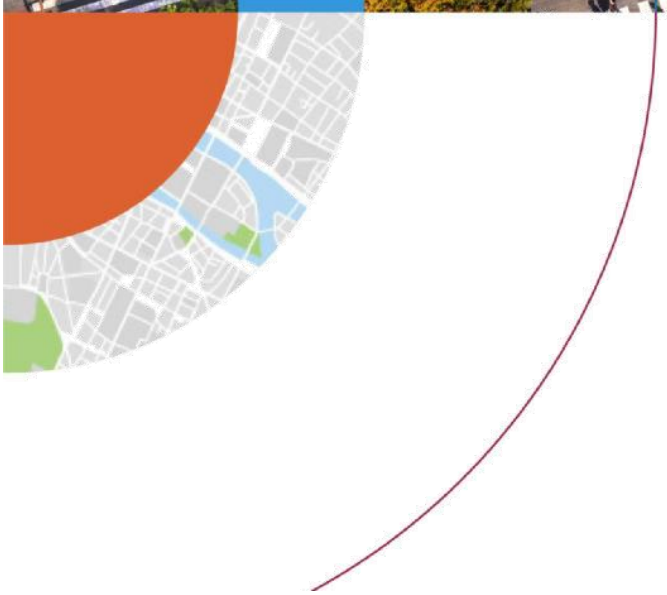
MARCH 2020



Middleton Grange Town Centre

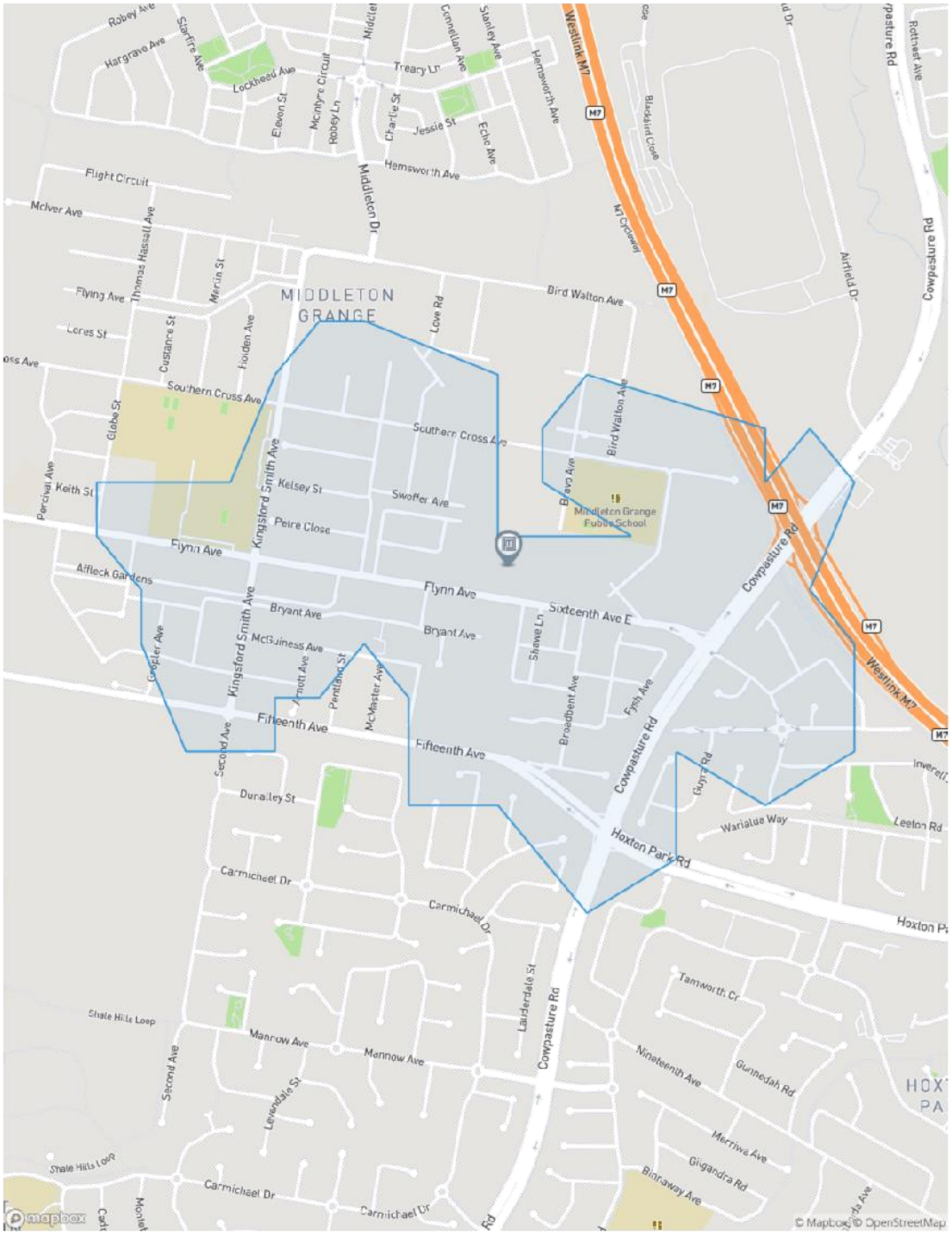
Hall Cct, Middleton Grange NSW 2171
Hall Cct, Middleton Grange ,

Drive Time: 10 min



POWERED BY GapMaps

Defined Area Snapshot


MIDDLETON GRANGE
Bird Walton Ave
Southern Cross Ave
Kelsey St
Swoffer Ave
Peire Close
Flynn Ave
Bryant Ave
McGuiness Ave
Fifteenth Ave
Sixteenth Ave E
Durailey St
Carmichael Dr
Manrow Ave
Hoxton Park Rd
Cowpasture Rd
Westlink M7
Kingsford Smith Ave
Middleton Grange Public School
Hamsworth Ave
Flight Circuit
McIver Ave
Flying Ave
Keith St
Aiffleck Gardens
Shale Hills Loop
Tamworth Cr
Nineteenth Ave
Gunnedah Rd
Merriwa Ave
Gilgandra Rd
Binnaway Ave
Warialda Way
Leeton Rd
Lauderdale St
Second Ave
Levendale St
Broadbent Ave
Fish Ave
Guyra Rd
Sheaves Ln
Bird Walton Ave
Love Rd
Middleton Dr
Kingsford Smith Ave
Cowpasture Rd
Rothest Ave
Airfield Dr
Blackbird Close
Mt Cidowey
Treacy Ln
Lockheed Ave
Elevon St
McIntyre Circuit
Robey Ln
Charlie St
Jessie St
Echo Ave
Stanley Ave
Connellan Ave
Hargrave Ave
Robey Ave
Starfire Ave
Merlin St
Thomas Hassall Ave
Flying Ave
Lores St
Custance St
Holden Ave
Globe St
Percival Ave
Arnott Ave
Penstone St
McMaster Ave
Cooper Ave
Second Ave
Shale Hills Loop
Carmichael Dr
Manrow Ave
Second Ave
Levendale St
Lauderdale St
Cowpasture Rd
Nineteenth Ave
Tamworth Cr
Gunnedah Rd
Merriwa Ave
Gilgandra Rd
Binnaway Ave
Warialda Way
Leeton Rd
Hoxton Park Rd

Demographics Snapshot

	Defined Area	New South Wales	Australia
Population			
Census Count Population (2016)	1,567	7,467,594	23,401,892
Estimated Resident population (2016)	1,628	7,732,858	24,190,907
Estimated Resident population (2018)	1,746	7,988,241	24,992,860
Avge. Annual Growth Rate, 2016-2018	3.62%	1.65%	1.66%
Population aged 0 - 4	12.38%	6.34%	6.37%
Population aged 65+	3.51%	15.83%	15.24%
Average age (years)	28.85	38.78	38.44
Households			
No. of Households	384	2,604,293	8,285,829
Average household size	3.79	2.66	2.60
Income			
Average annual income per capita ($)	$31,489	$40,431	$39,620
Average annual income per household ($)	$116,281	$107,453	$103,664
Lifestage			
Pre-Boomers	1.86%	9.88%	9.36%
Baby Boomers	12.01%	21.94%	21.7%
Gen X	22.16%	19.86%	20.14%
Gen Y	24.95%	21.1%	21.34%
Gen Z	21.96%	18.38%	18.6%
Gen Alpha	17.05%	8.84%	8.86%
Ethnic			
Population born in Australia	53.41%	65.51%	66.73%
Population born in China	0.57%	3.11%	2.15%
Population born in India	2.04%	1.88%	1.92%
Population born in Asia balance	15%	6.72%	5.33%
Population born in Europe	5.04%	5.76%	6.72%
Population born Elsewhere	23.93%	17.02%	17.16%
Housing			
Households own/buying home	74.79%	66.96%	67.79%
Households renting	24.36%	32.29%	31.42%
Average monthly mortgage payment ($)	$2,625	$2,317	$2,071
Average Weekly rental payment ($)	$455	$415	$358
Employment			
Workforce White Collar	67.56%	71.88%	70.21%
Workforce Blue Collar	32.44%	28.12%	29.79%
Unemployment rate at Census date	4.51%	6.22%	6.86%
Vehicle			
No. of Motor Vehicles	776	4,325,343	14,404,615
Average No. of motor vehicles per household	2.16	1.73	1.80

Source: ABS Census 2016

Hall Cct, Middleton Grange NSW 2171 Hall Cct, Middleton Grange ,
Drive Time: 10 min

PPM CONSULTING

Location snapshot

Population



1,563

Total households



376

Population	Location	%	New South Wales	%	Australia	%
Total Persons Males	777	49.71	3,677,843	49.26	11,546,037	49.34
Total Persons Females	786	50.29	3,789,037	50.74	11,855,037	50.66
TOTALS:	**1,563**		**7,466,880**		**23,401,074**	

Source: ABS Census

Religious Affiliation Summary	Location	%	New South Wales	%	Australia	%
Christianity Catholic Persons	610	38.53	1,844,842	24.67	5,291,982	22.57
Christianity Other Christian Persons	376	23.75	2,248,845	30.07	6,815,248	29.06
Buddhism Persons	73	4.61	205,614	2.75	557,164	2.38
	94	5.94	179,908	2.41	435,598	1.86
Islam Persons	96	6.06	265,950	3.56	599,163	2.55
Judaism Persons	0	0.00	34,916	0.47	84,509	0.36
Other Religions Person	30	1.90	140,857	1.88	495,961	2.11
No Religion Persons	103	6.51	1,875,949	25.09	6,933,341	29.56
Religious affiliation not stated Persons	201	12.70	680,720	9.10	2,238,347	9.54
TOTALS:	**1,583**		**7,477,601**		**23,451,313**	

Source: ABS Census 2016

Birthplace Summary	Location	%	New South Wales	%	Australia	%
Australia Persons	837	53.48	4,891,706	66.61	15,615,063	67.83
New Zealand Persons	10	0.64	115,536	1.57	514,492	2.23
Europe	72	4.60	418,876	5.70	1,543,940	6.71
Asia	120	7.67	780,289	10.62	2,061,157	8.95
Middle East	163	10.42	105,608	1.44	165,525	0.72
Other	73	4.66	122,755	1.67	341,419	1.48
Born elsewhere Persons	110	7.03	405,015	5.51	1,163,906	5.06
Country of birth not stated Persons	180	11.50	504,203	6.87	1,616,615	7.02
TOTALS:	**1,565**		**7,343,988**		**23,022,117**	

Source: ABS Census 2016

Total Households	Location	%	New South Wales	%	Australia	%
Total Households	376	100.00	2,603,930	100.00	8,285,547	100.00

Source: ABS Census 2016

Seifa	Location	%	New South Wales	%	Australia	%

Seifa	Location	%	New South Wales	%	Australia	%
SEIFA Score (Advantaged & Disadvantaged)	7	100.00	5	100.00	5	100.00

Source: ABS Census 2016

Population Projection	Location	%	New South Wales	%	Australia	%
2016 Estimated Resident Population	1,628	3.50	7,732,858	5.62	24,190,907	5.56
2017 Estimated Resident Population	1,692	3.64	7,867,936	5.72	24,601,860	5.65
2018 Estimated Resident Population	1,746	3.76	7,988,241	5.81	24,992,860	5.74
Population Projection 2019	2,036	4.38	8,107,091	5.89	25,407,632	5.84
Population Projection 2020	2,326	5.00	8,226,044	5.98	25,822,488	5.93
Population Projection 2021	2,615	5.62	8,344,196	6.07	26,236,402	6.03
Population Projection 2022	2,821	6.07	8,451,921	6.15	26,633,885	6.12
Population Projection 2023	3,029	6.51	8,559,643	6.22	27,031,255	6.21
Population Projection 2024	3,235	6.96	8,667,340	6.30	27,428,686	6.30
Population Projection 2025	3,442	7.40	8,775,054	6.38	27,826,038	6.39
Population Projection 2026	3,648	7.85	8,871,739	6.45	28,212,442	6.48
Population Projection 2027	3,650	7.85	8,978,209	6.53	28,608,232	6.57
Population Projection 2028	3,654	7.86	9,084,716	6.61	29,004,027	6.66
Population Projection 2029	3,656	7.86	9,191,187	6.68	29,399,831	6.75
Population Projection 2030	3,657	7.87	9,297,678	6.76	29,795,721	6.84
Population Projection 2031	3,660	7.87	9,393,970	6.83	30,181,320	6.93
TOTALS:	**46,495**		**137,537,823**		**435,373,586**	

Source: ABS Census 2016; GapMaps 2016

Mortgage Repayment Monthly	Location	%	New South Wales	%	Australia	%
0 to 299 Total	3	1.32	38,812	4.85	132,135	4.83
300 to 449 Total	0	0.00	10,879	1.36	47,166	1.72
450 to 599 Total	0	0.00	9,098	1.14	40,473	1.48
600 to 799 Total	0	0.00	20,433	2.56	89,103	3.26
800 to 999 Total	3	1.32	32,222	4.03	131,571	4.81
1000 to 1399 Total	18	7.89	101,388	12.68	404,832	14.80
1400 to 1799 Total	25	10.96	117,018	14.64	460,963	16.86
1800 to 2399 Total	51	22.37	170,111	21.28	605,254	22.13
2400 to 2999 Total	55	24.12	93,451	11.69	291,435	10.66
3000 to 3999 Total	45	19.74	96,044	12.01	251,885	9.21
4000 and over Total	14	6.14	77,492	9.69	173,462	6.34
Mortgage repayment not stated Total	14	6.14	32,601	4.08	106,215	3.88
TOTALS:	**228**		**799,549**		**2,734,494**	

Source: ABS Census 2016

Rent Weekly	Location	%	New South Wales	%	Australia	%
Rent $0 to $74 Total	4	5.13	27,959	3.56	101,214	4.17
Rent $75 to 99 Total	0	0.00	5,638	0.72	28,960	1.19
Rent $100 to 149 Total	0	0.00	49,790	6.35	149,178	6.14
Rent $150 to 199 Total	0	0.00	47,438	6.05	154,057	6.35
Rent $200 to 224 Total	0	0.00	30,161	3.84	107,088	4.41
Rent $225 to 274 Total	7	8.97	52,554	6.70	229,074	9.44
Rent $275 to 349 Total	0	0.00	100,472	12.81	465,679	19.18

Rent Weekly	Location	%	New South Wales	%	Australia	%
Rent $350 to 449 Total	10	12.82	171,718	21.89	585,439	24.11
Rent $450 to 549 Total	33	42.31	119,300	15.21	280,212	11.54
Rent $550 to 649 Total	15	19.23	70,307	8.96	128,593	5.30
Rent $650 and over Total	0	0.00	87,817	11.19	133,382	5.49
Rent not stated Total	9	11.54	21,376	2.72	64,994	2.68
TOTALS:	**78**		**784,530**		**2,427,870**	

Source: ABS Census 2016

Labour Force Status	Location	%	New South Wales	%	Australia	%
Persons Employed	640	95.52	3,376,790	93.78	10,683,185	93.14
Persons Unemployed	30	4.48	224,061	6.22	786,725	6.86
TOTALS:	**670**		**3,600,851**		**11,469,910**	

Source: ABS Census 2016

Occupation	Location	%	New South Wales	%	Australia	%
Managers	71	10.91	455,590	13.51	1,389,458	13.02
Professionals	139	21.35	797,441	23.65	2,370,763	22.22
Technicians & trades workers	91	13.98	428,639	12.71	1,446,479	13.56
Community & personal service workers	56	8.60	349,523	10.37	1,156,606	10.84
Clerical & administrative workers	93	14.29	467,305	13.86	1,449,065	13.58
Sales workers	68	10.45	310,961	9.22	1,000,310	9.38
Machinery operators & drivers	59	9.06	205,383	6.09	667,571	6.26
Labourers	55	8.45	297,354	8.82	1,010,999	9.48
Occupation inadequately described/ Not stated	19	2.92	59,644	1.77	177,300	1.66
TOTALS:	**651**		**3,371,840**		**10,668,551**	

Source: ABS Census 2016

Retail Expenditure	Location	%	New South Wales	%	Australia	%
Food and Groceries Per Capita	4,319	41.94	5,309	39.72	5,434	40.46
Packaged Liquor Per Capita	522	5.07	667	4.99	705	5.25
Food Catering Per Capita	1,522	14.78	1,988	14.87	1,787	13.31
Apparel Per Capita	1,095	10.63	1,350	10.10	1,319	9.82
Household Goods Per Capita	1,650	16.02	2,367	17.71	2,391	17.80
Leisure Retail Per Capita	349	3.39	595	4.45	629	4.68
General Retail Per Capita	594	5.77	732	5.48	774	5.76
Retail Services Per Capita	246	2.39	358	2.68	392	2.92
TOTALS:	**10,297**		**13,366**		**13,431**	

Source: 2018 Market Data Systems 2016

Retail Expenditure	Location	%	New South Wales	%	Australia	%
Food and Groceries	7,540,436	41.94	42,411,765,634	39.72	135,806,968,812	40.46
Packaged Liquor	911,100	5.07	5,329,043,670	4.99	17,614,677,937	5.25
Food Catering	2,658,219	14.79	15,877,778,794	14.87	44,663,773,932	13.31
Apparel	1,911,348	10.63	10,781,242,814	10.10	32,957,609,417	9.82
Household Goods	2,880,354	16.02	18,911,914,200	17.71	59,758,859,127	17.80
Leisure Retail	609,112	3.39	4,755,542,307	4.45	15,721,468,727	4.68

Retail Expenditure	Location	%	New South Wales	%	Australia	%
General Retail	1,037,388	5.77	5,850,473,212	5.48	19,347,870,563	5.76
Retail Services	429,912	2.39	2,857,864,234	2.68	9,801,746,382	2.92
TOTALS:	**17,977,869**		**106,775,624,865**		**335,672,974,897**	

Source: 2018 Market Data Systems 2016

APPENDIX B HILLPDA CONSIDERATION OF PPM CONSULTING RESPONSE

Liability limited by a scheme approved under the Professional Standards Legislation

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16 April 2021

Dear Mr Oste,

Subject: Middleton Grange Town Centre - Economic Assessment of the Planning Proposal

As instructed, HillPDA has undertaken a review of the comments by PPM Consulting titled "Proposed Town Centre at Middleton Grange – Response to HillPDA Assessment of PPM Consulting Economics Report" dated 21 December 2020. PPM's comments are in blue italic font below and our following comments are in black font as follows:

The nature of these reviews is that invariably they are adversarial, and generally requires the reviewer to nitpick.

We disagree with that statement and it was not HillPDA's intention to be adversarial and nitpick.

It is therefore unlikely that, even in the face of overwhelming evidence, HillPDA would give any advice that contradicts this initial finding, even though nearly 10 years of growth has occurred in the meantime, in terms of both population and overall retail spend, while shopping centres in the catchment have not expanded (except for the new Aldi at Hoxton Park and a supermarket-only Woolworths at Prestons which is out of the trade area).

The advice that we have given to Council is not based on the past context but is based entirely on the current context and the likely / foreseeable changes over the next decade or two.

As noted in my response to HillPDA's preliminary review (7 October 2020), while the Standard Instrument definition covers the whole of the 20,320m² listed in Table 1 of Proposed Development of Middleton Grange Town Centre - Economic Impact Analysis (PPM Consulting October 2020), our report analysed goods retail only (supermarket, mini majors and specialty stores that directly compete with other centres). The retail impact analysis compares the shops where people buy things at, for example, Carnes Hill to what they will be able to buy in shops in Middleton Grange. This does not include food halls, cafes, restaurants, offices, gyms, child care centres, professional suites like doctors, accountants and solicitors, etc. For this reason, 10,000m² of retail is used in the retail impact report, but a sensitivity analysis was undertaken at 15,000m² and 20,000m² (which was not commented on by HillPDA) so that the impact of a larger retail footprint can also be assessed.

We disagree with the above comments for three reasons:

Firstly *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (PPM Consulting, October 2020) proposes 6,447 sqm of cafes and restaurants and 4,060 sqm of neighbourhood shops in addition to almost 10,000sqm of supermarket/retail shops. It is not correct to exclude cafés and restaurants from the retail impact assessment as competing centres also sell food services.

Secondly we assume it is also incorrect to exclude the 4,000sqm of neighbourhood shops since being called 'shops' implies that they are retail businesses and would also compete with the surrounding centres – although the application has never defined what these uses are, how they differ from 'supermarket/retail shops' and where the demand for them comes from.

Finally, HillPDA did comment on the 15,000sqm and 20,000sqm scenarios.

While PPM Consulting's analysis concentrated on the retail aspects of the planning proposal for the Middleton Grange Town Centre, HillPDA appears to contend that the medical centre, gym and child care centre, along with the restaurants and entertainment areas, should have been included in the analysis. This is a flawed presumption. It is important to note that the nature of restaurants and entertainment space is completely different to goods retailing. It should also be noted that gymnasiums, medical centres and child care centres are also very different to goods retailing. In its review of our 8 October 2020 report, HillPDA conflates goods retailing with services retailing in a way that allows a conclusion that 20,000m² of retail space is an oversupply. However, the proposed medical centre, gym and child care centre are extremely unlikely to compete with surrounding centres (Carnes Hill has two small facilities, including a GP consultancy in the Marketplace). It is also not up to Councils to decide whether gyms and childcare centres should face competition or not.

Firstly, and again, it is not correct to exclude cafés and restaurants from the retail impact assessment as competing centres, including Carnes Hill and Green Valley also sell food services.

Secondly, HillPDA did not contend that the medical centre, gym and child care centre be included in the analysis of retail impacts. The entertainment space is questionable but would need to be better defined.

Thirdly, the medical centre, gym and child care centre were all additional uses to the 20,129sqm of retail spaces as documented in *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (PPM Consulting, October 2020). HillPDA never assumed that those uses were part of the 20,129sqm of retail space. Total non-residential spaces proposed exceed 48,000sqm.

Trade Area

HillPDA implies that the Main Trade Area has been drawn too broadly. The Main Trade Area can be drawn in many different ways and is open to interpretation by different practitioners. PPM Consulting stands by its Main Trade Area, which includes three existing shopping centres – Carnes Hill Marketplace, The Valley Plaza and the new Aldi at Hoxton Park. The purpose of drawing a Main Trade Area of this nature was to ensure that the three largest and closest centres were included in the analysis of the catchment for the Middleton Grange Town Centre.

Our view has not changed in that the primary trade area (PTA) is likely to be the suburb of Middleton Grange and that part of Hinchinbrook southwest of the M7 motorway given the retail hierarchy and location of competing centres. As a general rule primary trade areas around competing centres should not overlap and the areas to the northeast, south and west fall inside the primary trade areas for Green Valley, Carnes Hill and the future Austral town centre respectively. A wider secondary trade area (STA) could be assumed but the STA of a centre is usually defined as that area where only a small or minor proportion of total expenditure generated by residents in the STA is directed to the subject centre.

Pop. Growth

HillPDA asserts that there will be a decline in the population in the Main Trade Area, and uses Forecast.id figures to justify this. Indeed, they assert that there will be no more than 500 additional residents in the Main Trade Area to 2041. If the current proposal for new residential just in the Middleton Grange Town Centre is approved, it could account for at least an additional 1,500 residents within the next five years. GapMaps data, which was used by PPM Consulting, shows growth of over 17,000 between the 2016 Census and the forecast period of 2031, or a 2.2 per cent average annual increase. PPM Consulting contents that:

- *GapMaps data appears to be a more reliable indicator of growth in the Main Trade Area, given the anticipated growth by Council in its LSPS*

- *this discrepancy is more than enough to explain the difference in conclusions between PPM Consulting and HillPDA.*

Our view has not changed. We specifically stated 500 additional residents in the MTA outside Austral based on Forecast.ID projections and adding in the additional 1,000 residents under the planning proposal. The vast majority of new residents in the MTA (as defined in the PPM report) will be in Austral which will have its own town centre sometime in the future.

Furthermore the growth in Council's LSPS is based on Forecast.ID projections.

Growth in Retail Expenditure

HillPDA has been highly selective in its use of retail expenditure growth figures. They assert that the real retail spend per capital has increased by 0.74 per cent per annum, however, department store retailing has fallen by 46 per cent. There is no proposal to include a department store at Middleton Grange, so these figures are irrelevant and PPM Consulting considers that, when department stores are removed from the 0.74 per cent per annum growth citied by HillPDA, the real growth of 1.125 per cent per annum assumed by PPM Consulting could be considered to be very conservative.

After removing department stores average real growth per capita since 1983 has been 1.0% per annum. Department stores today comprise less than 6% of total retail sales.

Impact Assessment

The impact on the future Austral town centre is not discussed in the PPM Consulting report. As Middleton Grange has been in the retail hierarchy since 2006, it has been considered that a centre that has only just been included in the hierarchy is extremely unlikely to come to fruition for at least another 15-20 years. Any impact that Austral would have on Middleton Grange, or that Middleton Grange would have on Austral, is both highly speculative and potentially prejudicial.

A future Austral Town Centre of around 20,000sqm to service a trade area of 22,000 people was envisaged in the South West Growth Centres structure plan in 2008-09. Around 9 to 10 hectares of land has been zoned B2 to accommodate the future town centre. It was always envisaged that the town centre in Austral would be the main centre for the shopping and local service needs of the residents in the Austral precinct. Furthermore, it was always envisaged that Austral town centre would be a higher order centre than Middleton Grange. As per our previous advice we agree that it is difficult to assess the impacts given the current offer in Austral. However if a large centre was developed in Middleton Grange and was drawing trade from Austral residents, then that would result in one or both of the following impacts:

1. Austral Town Centre, when it does open its doors, will trade below industry benchmark levels, and/or
2. Austral town centre will be delayed several years, or its rate of expansion will be delayed.

HillPDA concludes that an appropriate sized centre would be between 6,000 and 10,000m² of gross leasable area. Removing the non-retail elements (such as the medical centre, gym and child care centre, which make up around 16,000m² of gross leasable area), PPM Consulting agrees that a centre of 10,000m² of retail space is appropriate.

Please note that in our review we stated that an appropriate size centre would be 6,000sqm to 10,000sqm of shop front space. Shop front space includes non-retail businesses providing a range of services including financial, real estate, travel, postal and medical services as well as personal services such as hair and beauty, dry cleaning, alterations, equipment servicing and the like. We would expect that if the centre were as large as 10,000sqm then it would be expected that around 2,000sqm of that space would be occupied by non-retail businesses. A small allowance for vacancies (3% to 5% of floor space) is also healthy to enable tenants to move around and enable new tenants to move in. In terms of occupied retail stores (the selling of goods including food, groceries, food services and non-food goods) we envisage no more than 8,000sqm being an appropriate size centre. If the centre was considerably larger then it is likely to impact the retail hierarchy. In addition to shop front space there are other non-residential land uses that could be accommodated including education, police,

community uses, professional services, medical centres, etc. These uses typically occupy stand alone commercial buildings, shop top commercial suites and other real estate forms.

Again there is still some confusion or inconsistencies with the application. "PPM Consulting agrees that a centre of 10,000m^2 of retail space is appropriate" but *Proposed Development of Middleton Grange Town Centre – Economic Impact Analysis* (PPM Consulting, October 2020) shows that more than 20,000sqm is proposed.

In addition, there are some real dangers with the view that it is for Council planners to determine "the most appropriate centres in which to prioritise growth." Picking winners should not be part of Council considerations in a mixed market economy like Australia. Picking winners in this case merely enriches incumbents and increases barriers to entry, resulting in:

- *higher rents for businesses, particularly small businesses - a sector which is likely to grow the strongest post-Covid*
- *subsequently higher prices for goods and services*
- *fewer and less diverse retail and service offerings.*

We agree that an undersupply of floor space can result in the above problems. However an oversupply can also result in social problems such as high vacancies and urban blight. Councils are obliged to consider the economic impacts in the locality when assessing a site specific proposal. Proper strategic planning, including a proper assessment of economic and planning need, can help to minimise future adverse economic impacts. Also its important to recognise that a proposal can actually reduce the retail and service offerings for residents in a locality which is exactly the reason why Fabcot lost in the well known case of "Fabcot v Hawkesbury Council".

Construction employment

The 8.5 direct full-time equivalent jobs is from the 2009 Urban Development Institute of Australia impacts of construction, which is from a development-industry specific study, rather than implied from Input-Output tables. It is also obvious that the employment impact has been expressed in a way that avoids double counting.

We didn't fact check PPM's source that they quoted from. Possibly the UDIA source includes production induced multiplier impacts which normally would double the estimated job years on site. These relate to jobs used in producing the inputs to construction and are spread over a wider area. Also we haven't crossed checked if PPM has indexed it to CPI or BPI given that the source is more than 10 years old.

Economic benefits of the Park

Our comments on the park have not changed. PPM has quantified both capex and maintenance costs over 50 years as a benefit of the park. From whole of community point of view these are costs and not benefits. From Council's point of view it is only a benefit if there is a net financial cost saving as a result of the developer and/or owners corporation meeting production and/or maintenance costs that would otherwise had been paid for out of Council's consolidated revenue / operations budget.

Yours sincerely



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NSW GOVERNMENT Planning & Environment

Mr Michael Cullen
Chief Executive Officer
Liverpool City Council
Locked Bad 7064
Liverpool NSW 2170

Our ref: PP_2016_LPOOL_003_00 (16/09103)
Your ref: 167800.2016

Dear Mr Cullen

Planning proposal to amend Liverpool Local Environmental Plan 2008

I am writing in response to your Council's letter dated 28 June 2016 requesting a Gateway determination under section 56 of the *Environmental Planning and Assessment Act 1979* (the Act) in respect of the planning proposal to amend *Liverpool Local Environmental Plan 2008* to rezone land and amend planning controls for 60-80 Southern Cross Avenue and 45-66 Hall Circuit, Middleton Grange.

As delegate of the Greater Sydney Commission, I have now determined the planning proposal should proceed subject to the conditions in the attached Gateway determination.

I have also agreed, as delegate of the Secretary, the planning proposal's inconsistency with S117 Directions 3.4 Integrated Land Use and Transport is of minor significance. In relation to S117 Direction 6.2 Reserving Land for Public Purposes. I have agreed to the relocation of land for public purposes on the basis that the relocation does not seek to reduce the quantum of this land and facilitates better design outcomes. No further approval is required in relation to these Directions.

In relation to s117 Direction 4.3 Flood Prone land Council is required to undertake and provide studies that demonstrate consistency with this direction. A copy of the Flooding Planning Area map must be included in the proposal prior to public exhibition. The proposal, including the flood study must be forwarded to the State Emergency Services for comment. Depending on the comments received from the SES, Council may need to amend the proposal to enable its progression. It is a requirement of the conditions of the Gateway determination that the planning proposal be reviewed by the Department prior to public exhibition.

Plan making powers were delegated to councils in October 2012. It is noted that Council has requested to be issued with delegation for this planning proposal. I have considered the nature of Council's planning proposal and have decided not to issue authorisation for Council to exercise delegation to make this plan.

The amending Local Environmental Plan (LEP) is to be finalised within 18 months of the week following the date of the Gateway determination. Council should aim to commence the exhibition of the planning proposal as soon as possible. Council's

request for the Department of Planning and Environment to draft and finalise the LEP should be made 6 weeks prior to the projected publication date.

The State Government is committed to reducing the time taken to complete LEPs by tailoring the steps in the process to the complexity of the proposal, and by providing clear and publicly available justification for each plan at an early stage. In order to meet these commitments, the Greater Sydney Commission may take action under section 54(2)(d) of the Act if the time frames outlined in this determination are not met.

Should you have any queries in regard to this matter, I have arranged for Ms Alicia Hall of the Department's regional office to assist you. Ms Hall can be contacted on 9860 1587.

Yours sincerely



15/08/16

Catherine Van Laeren
Director, Sydney Region West
Planning Services

Encl:
Gateway Determination

NSW GOVERNMENT Planning & Environment

Gateway Determination

***Planning proposal (Department Ref: PP_2016_LPOOL_003_00)**: to rezone 60-80 Southern Cross and 45-65 Hall Circuit, Middleton Grange.*

I, the Director, Sydney Region West at the Department of Planning and Environment as delegate of the Greater Sydney Commission, have determined under section 56(2) of the *Environmental Planning and Assessment Act 1979* (the Act) that an amendment to *Liverpool Local Environmental Plan 2008* to rezone land and amend planning controls for 60-80 Southern Cross Avenue and 45-66 Hall Circuit, Middleton Grange, should proceed subject to the following conditions:

1. In relation to s117 Direction 4.3 Flood Prone land, prior to public exhibition, Council is required to:
    a. undertake and provide relevant flood studies that demonstrate consistency with this Direction; and
    b. include a Flood Planning Area map in the proposal.

2. Prior to public exhibition, Council must revise the planning proposal to include the flooding information and to provide additional information regarding:
    a. transition of proposed heights to existing neighbouring zones and overshadowing impacts.
    b. proposed controls for proposed commercial uses in residential zones, for example, this may include proposed controls to limit, or encourage certain commercial floor areas, or controls to ensure a proportion of residential uses, and
    c. provide the revised planning proposal to the Department for review.

3. Prior to public exhibition, consultation is required with the following public authorities under section 56(2)(d) of the Act and to comply with the requirements of relevant S117 Directions:

    - Office of Environment and Heritage
    - Roads and Maritime Services
    - Transport for New South Wales
    - Sydney Water
    - Department of Education
    - State Emergency Service.

    Each public authority is to be provided with a copy of the planning proposal and any relevant supporting material, and given at least 21 days to comment on the proposal. The proposal must address any comments made.

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4. Community consultation is required under sections 56(2)(c) and 57 of the Act as follows:

   (a) the planning proposal must be made publicly available for a minimum of **28 days**; and
   (b) the relevant planning authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in section 5.5.2 of *A Guide to Preparing LEPs (Department of Planning and Infrastructure 2013)*.

5. A public hearing is not required to be held into the matter by any person or body under section 56(2)(e) of the Act. This does not discharge Council from any obligation it may otherwise have to conduct a public hearing (for example, in response to a submission or if reclassifying land).

6. The timeframe for completing the LEP is to be **18 months** from the week following the date of the Gateway determination.

Dated 15th day of August 2016

Catherine Van Laeren
Director, Sydney Region West
Planning Services
Department of Planning and Environment

Delegate of the Greater Sydney Commission

NSW GOVERNMENT Planning & Environment

PP_2016_LPOOL_003_00/IRF18/3136

Ms Kiersten Fishburn
Chief Executive Officer
Liverpool City Council
Locked Bag 7064
Liverpool BC NSW 1871

Dear Ms Fishburn

Planning proposal PP_2016_LPOOL_003_00 – Alteration of Gateway determination

I refer to Council's request seeking an extension of time to complete planning proposal PP_2016_LPOOL_003_00 to amend the planning controls for 60-80 Southern Cross Avenue, and 45-66 Hall Circuit, Middleton Grange.

I have determined as the delegate of the Greater Sydney Commission, in accordance with section 3.34(7) of the *Environmental Planning and Assessment Act 1979*, to alter the Gateway determination dated 15 August 2016 for PP_2016_LPOOL_003_00. The Alteration of Gateway Determination is enclosed.

If you have any questions in relation to this matter, I have arranged for Ms Cho Cho Myint to assist you. Ms Myint can be contacted on (02) 9860 1507.

Yours sincerely

AM Carruthers 6/7/18

Ann-Maree Carruthers
Director, Sydney Region West
Planning Services

Encl: Alteration of Gateway determination

NSW GOVERNMENT | Planning & Environment

Alteration of Gateway Determination

Planning proposal (Department Ref: PP_2016_LPOOL_003_00)

I, Director, Sydney Region West at the Department of Planning and Environment, as delegate of the Greater Sydney Commission, have determined under section 3.34(7) of the *Environmental Planning and Assessment Act 1979* to alter the Gateway determination dated 15 August 2016 for the proposed amendment to the Liverpool Local Environmental Plan 2008 as follows:

Delete Condition 6 and replace with a new condition 6:

" The timeframe for completing the LEP is by 22 February 2019".

Dated 6th day of July 2018.

Ann-Maree Carruthers
Director
Sydney Region West
Planning Services
Department of Planning and Environment

Delegate of the Greater Sydney Commission

PP_2016_LPOOL_003_00/IRF18/3136

Alteration of Gateway Determination

Planning proposal (Department Ref: PP_2016_LPOOL_003_00)

I, Director, Western at the Department of Planning, Industry and Environment, as delegate of the Minister for Planning and Public Spaces, have determined under section 3.34(7) of the *Environmental Planning and Assessment Act 1979* to alter the Gateway determination dated 15 August 2016 (since altered) for the proposed amendment to the LIverpool Local Environmental Plan 2008 as follows:

1. Delete:

   "condition 6"

   and replace with:

   a new condition 6: "The time frame for completing the LEP is by 31 December 2020"

Dated 24 day of August 2020.

Adrian Hohenzollern
Director, Western
Greater Sydney, Place and Infrastructure
Department of Planning, Industry and Environment

Delegate of the Minister for Planning and Public Spaces

Alteration of Gateway Determination

Planning proposal Department Ref: PP_2020_LPOOL_009_00 (supersedes PP_2016_LPOOL_003_03)

I, Director, Western at the Department of Planning, Industry and Environment, as delegate of the Minister for Planning and Public Spaces, have determined under section 3.34(7) of the *Environmental Planning and Assessment Act 1979* to alter the Gateway determination dated 15 August 2016 (since altered) for the proposed amendment to the Liverpool Local Environmental Plan 2008 as follows:

1. Delete condition 6 and replace with the following conditions.

2. The timeframe for completing the LEP is 6 months from the date of this Gateway alteration. Council is required to report on the proposal in accordance with the following dates:

   (a) Council to consider a report and recommendation on the proposal by 31 March 2021;

   (b) Council to forward the proposal to the Department for finalisation by 30 April 2021.

Dated 23 December 2020.

Adrian Hohenzollern
Director, Western
Central River City and Western Parkland City
Department of Planning, Industry and Environment

Delegate of the Minister for Planning and Public Spaces

Alteration of Gateway Determination

Planning proposal (Department Ref: PP_2020_LPOOL_009_00)

I, Director, Western at the Department of Planning, Industry and Environment, as delegate of the Minister for Planning and Public Spaces, have determined under section 3.34(7) of the *Environmental Planning and Assessment Act 1979* to alter the Gateway determination dated 15 August 2016 (since altered) for the proposed amendment to the Liverpool Local Environmental Plan 2008 as follows:

1. Delete condition 6 and replace with the following conditions.

2. The timeframe for completing the LEP is 4 months from the date of this Gateway alteration. Council is required to report on the proposal in accordance with the following dates:

    a. Council to consider a report and recommendation on the proposal by 27 August 2021;

    b. Council to forward the proposal to the Department for finalisation by 3 September 2021.

Dated 16 day of July 2021.

Frankie Liang
Acting Director, Western
Greater Sydney, Place and Infrastructure
Department of Planning, Industry and Environment

Delegate of the Minister for Planning and Public Spaces

30 March 2021 Case Ref: 188312, 190468

Luke Oste
Executive Planner
Strategic Planning
Liverpool City Council
Luke.oste@liverpool.nsw.gov.au

RE: Planning Proposal – PP-2020-4126 at 60-80 Southern Cross Avenue and 45-66 Hall Circuit, Middleton Grange

Thank you for notifying Sydney Water of the planning proposal listed above which proposes to rezone the site to expand the B2 Local Centre zone, part of the site from RE1 Public Recreation to B2 Local Centre and rezone part of the site from B2 Local Centre to RE1 Public Recreation, and to increase the FSR and HOB accordingly. This proposal will facilitate 671 new dwellings and commercial GFA across 2-8 storey buildings. We have reviewed the application based on the information supplied and provide the following comments for your information to assist in planning the servicing needs of the proposal.

Water Servicing

- Due to the scale of the proposed development resulting from this planning proposal and according to WSA Code, a minimum of a 200mm watermain will be required to service this development.
- The existing watermains servicing this site range from 100mm to 150mm.
- A new 200mm watermain from the existing 200mm watermain at intersection of Kingsford Smith Avenue and Southern Cross Avenue will need to be constructed to service this development.
- Detailed requirements will be provided at the Section 73 application phase. A staging plan for the proposed development will be required.

Recycled Water Servicing

- Sydney Water currently have recycled water servicing available in this area, and according to our scheme plan, 150mm recycled watermains extensions will be required to service this site.
- Detailed requirements will be provided at the Section 73 application phase.

Wastewater Servicing

- Wastewater servicing should be available to serve the proposal.
- The proponent proposes to adjust and deviate some sections of the 225mm sewer mains traversing the site. The proposed replacement mains are consistent with the sizing of existing mains and are hence acceptable.
- Detailed requirements will be provided at the Section 73 application phase. A staging plan for the proposed development will be required.

Trade wastewater requirement

- If any proposed development is going to generate trade wastewater, the developer must submit an application requesting permission to discharge trade wastewater to Sydney Water's wastewater system. The applicant must wait for the approval and issue of a permit before any business activities can commence.
- The permit application can be made on Sydney Water's web page through Sydney Water Tap In. http://www.sydneywater.com.au/tapin/index.htm

This advice is not a formal approval of our servicing requirements. Detailed requirements, including any potential extensions or amplifications, will be provided once the development is referred to Sydney Water for a Section 73 application. More information about the Section 73 application process is available on our web page in the Land Development Manual.

The development servicing advice provided by Sydney Water is based on the best available information at the time of referral (eg. planning proposal) but will vary over time with development and changes in the local systems. This is particularly important in systems with limited capacity (such as Priority Sewerage Program scheme areas) and it is best to approach Sydney Water for an updated capacity assessment (especially where an approval letter is more than 12 months old).

If you require any further information, please contact the Growth Planning Team via urbangrowth@sydneywater.com.au.

Yours sincerely,

[redacted]

Commercial Growth Manager
City Growth and Development, Business Development Group
Sydney Water, 1 Smith Street, Parramatta NSW 2150