STANBURY
TRAFFIC PLANNING
TRAFFIC, PARKING & TRANSPORT CONSULTANTS

UPDATED TRAFFIC IMPACT ASSESSMENT

EXPANSION OF FAIRFIELD SUSTAINABLE RESOURCE CENTRE
CORNER OF WIDEMERE ROAD & HASSALL STREET
WETHERILL PARK

PREPARED FOR FAIRFIELD CITY COUNCIL
OUR REF: 17-030-4

AUGUST 2020

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1. INTRODUCTION

1.1 Scope of Assessment

Stanbury Traffic Planning has been commissioned by Fairfield City Council to prepare an Updated Traffic Impact Assessment to accompany a Development Application for the expansion of Fairfield Sustainable Resource Centre located on the corner of Hassall Street and Widemere Road, Wetherill Park. The centre primarily accepts construction and demolition waste including roof tiles, clay bricks, concrete and asphalt. The construction waste is crushed or milled to produce recycled materials such as sand, road base, cement stabilised sands and aggregates for use in civil construction, landscaping and domestic building applications.

The existing facility is approved and licenced to receive 180,000 tonnes per year. The facility is however understood to have been operating in excess of that currently licensed for some time, with approximately 500,000 tonnes being processed during the 2017 calendar year and the 2018/2019 financial year.

An application has accordingly been formulated which seeks approval to licence the facility generally in accordance with current operations, whereby a capacity to 550,000 tonnes per year is being sought. The increased Centre capacity is proposed to be facilitated through the filling of an existing gully running north-south through the centre of the site, allowing the creation of a new large temporary stockpiling area for excess material. Further, an increase in the approved and currently prevailing hours of operation is also being sought.

The application forms a State Significant Development and the Secretary's Environmental Assessment Requirements (SEARs) issued 6 May 2019 for the preparation of an Environmental Impact Statement include the following with respect to Traffic and Transport:

- *Details of all traffic types and volumes likely to be generated during construction and operation, including a description of haul routes;*
- *An assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model;*
- *Detailed plans of the proposed layout of the internal road network and parking on site in accordance with the relevant Australian Standards;*
- *Plans of any proposed road upgrades, infrastructure works or new roads required for the development; and*
- *Plans demonstrating how all vehicles associated with the construction and operational awaiting loading / unloading or servicing can be accommodated on the site to avoid queuing in the street network.*

- *Turning path diagrams depicting vehicles entering, exiting and manoeuvring throughout the site.*

This aim of this assessment is to investigate and report upon the potential traffic consequences of the proposal and to recommend ameliorative measures where required. This report provides the following scope of assessment:

- Section 1 provides a summary of the site location, details, existing and surrounding land-uses;
- Section 2 describes the approved and existing operational characteristics of the facility;
- Section 3 describes the proposed operational characteristics of the facility;
- Section 4 assesses the existing traffic, parking and transport conditions surrounding and servicing the subject development site including a description of the surrounding road network, traffic demands, operational performance and available public transport infrastructure;
- Section 5 estimates the projected traffic generating ability of the proposed expanded facility and assesses the ability or otherwise of the surrounding road network to be capable of accommodating the altered demand in a safe and efficient manner;
- Section 6 assesses the adequacy of the existing site access arrangements, parking provision, internal circulation and servicing arrangements and summarises the existing site layout inefficiencies;
- Section 7 assesses the adequacy of the proposed alterations of the site access arrangement, parking provision, internal circulation and servicing arrangements;
- Section 8 provides an indicative assessment of the traffic and pedestrian management measures likely to be implemented during the construction phases of the development.

The report has been prepared pursuant to State Environmental Planning Policy (Infrastructure) 2007.

1.2 Reference Documents

Reference is made to the following documents throughout this report:

- Transport for NSW's (TfNSW, formally Roads & Maritime Services) *Guide to Traffic Generating Developments*;
- Fairfield City Council's *Fairfield City Wide Development Control Plan 2013* (DCP 2013);

- Australian Standard for *Parking Facilities Part 1: Off-Street Car Parking* (AS2890.1:2004);

- Australian Standard for *Parking Facilities Part 2: Off-Street Commercial Vehicle Facilities* (AS2890.2:2002); and

- Australian Standard for *Parking Facilities Part 6: Off-Street Parking for People with Disabilities* (AS2890.6:2009).

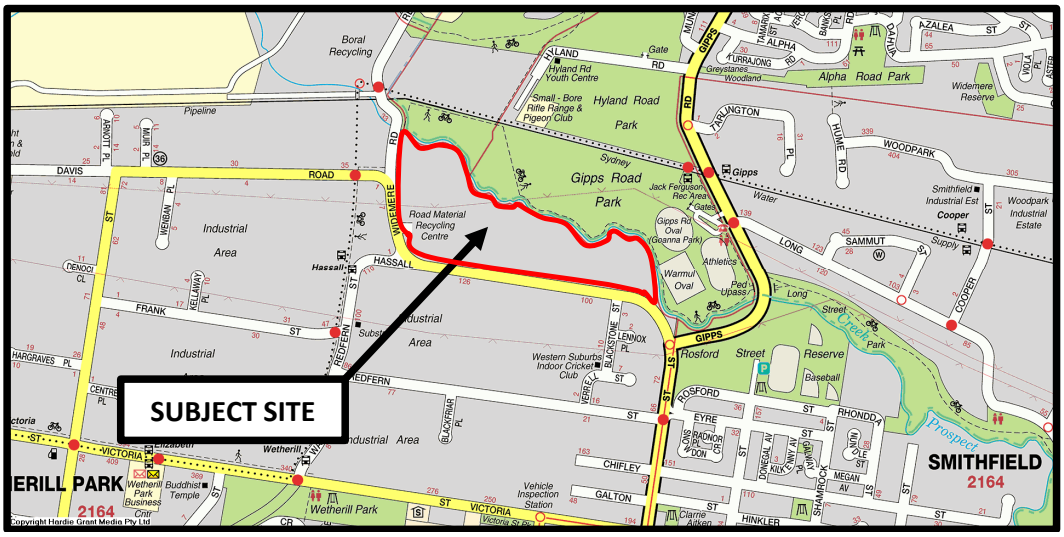
Site plans have been prepared by 4D Architecture, reduced copies of a selection of which are included as **Appendix 1** for reference.

1.3 Site Details

1.3.1 Site Location

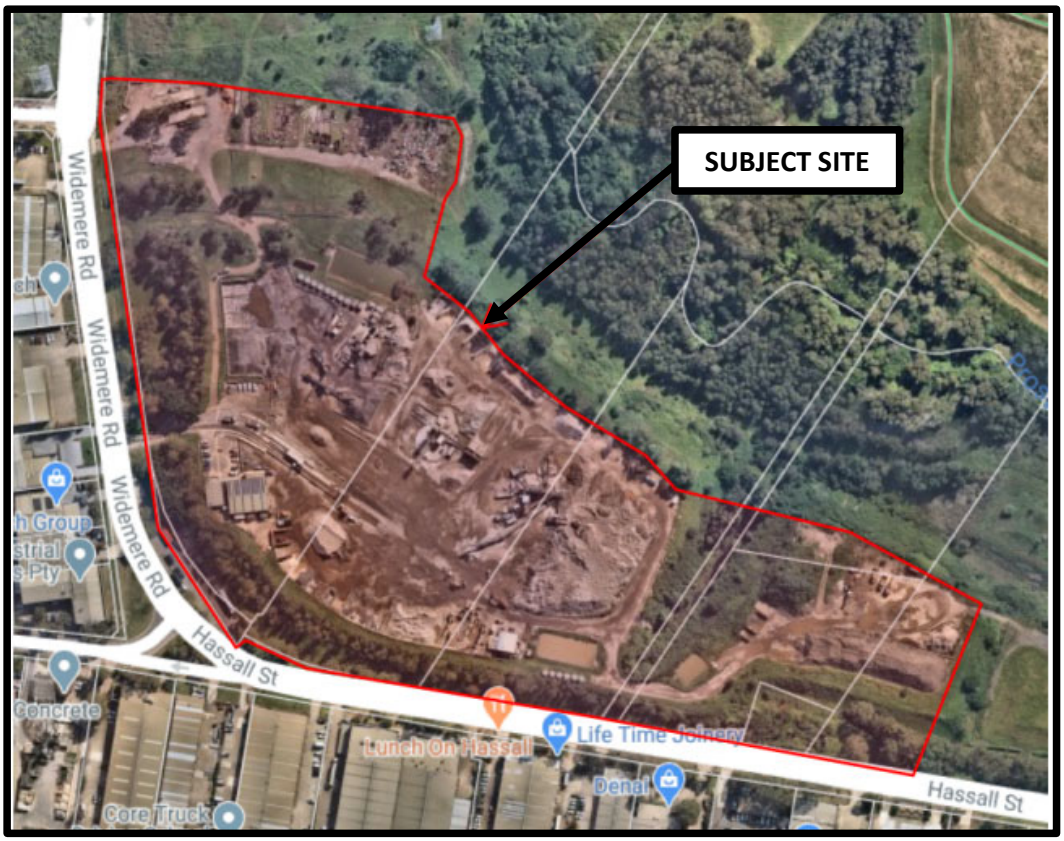
The subject site is situated on the north-eastern corner of the junction of Hassall Street and Widemere Road, Wetherill Park. This location is illustrated below and overleaf within a local and aerial context by **Figures 1** and **2**, respectively.

FIGURE 1
SITE LOCATION WITHIN A LOCAL CONTEXT



Source: UBD's Australian City Streets – Version 8

FIGURE 2
SITE LOCATION WITHIN AN AERIAL CONTEXT



Source: Nearmap (2020)

1.3.2 Site Description

The subject site comprises a number of lots as follows:

- Lot 1 DP 515773;
- Lots 34, 35 and 37 in DP 657040;
- Lot 100 DP 1220637;
- Lots 1 and 2 in DP 620755; and
- Lot 1 DP 368374.

The lots collectively form an irregular shaped parcel of land providing approximate frontages of 730m and 310m to Hassall Street and Widemere Road, respectively.

1.3.3 Existing Site Use

The subject site currently accommodates a Sustainable Resource Centre operated by Fairfield City Council. The Centre primarily forms a recycling centre whereby waste products from the construction and demolition industries such as roof tiles, pavers, bricks, concrete and asphalt are delivered to the centre, crushed, mixed and sorted into a number of products such as sand, road base, cement stabiliser and aggregates which are then sold to customers.

1.3.3 Surrounding Uses

Prospect Creek adjoins the north and eastern site boundaries. Boral Quarry and an industrial development is located further to the north, whilst Gipps Road sports grounds are located to the north-east and east, on the opposite side of the Creek. Large scale industrial development is located to the west and south on the opposite side of Widemere Road and Hassall Street, respectively, forming part of the Wetherill Park industrial area.

2. APPROVED / EXISTING OPERATION

2.1 Materials and Capacity

The Sustainable Resource Centre forms a recycling centre whereby the following waste materials from the construction and demolition industries are received:

- Virgin excavated natural material;
- Building and demolition waste including roof tiles, clay bricks and concrete;
- Asphalt waste from road construction and waterproofing; and
- Spoil and soils.

The received materials are crushed, mixed and sorted into a number of products such as sand, road base, cement stabiliser and aggregates which are then sold to customers.

The 1996 development consent provides for an approved processing capacity of 180,000 tonnes per annum.

Since the commencement of the Sustainable Resource Centre, it has continued to grow and now processes in excess of approved 180,000 tonnes of materials per annum. In this regard, the facility is understood to have processed 480,663 tonnes during the 2017 calendar year and 473,244 tonnes being processed during the 2018/2019 financial year.

2.2 Hours of Operation

The approved Sustainable Resource Centre hours of operation are as follows:

- 7:00am – 4:00pm Monday to Friday; and
- 7:00am – 12:00pm Saturday.

The facility, due to current operational demands, operates with the following approximate hours of operation:

- 6:00am – 4:00pm Monday to Friday; and
- 6:00am – 12:00pm Saturday.

2.3 On-Site Staffing Levels

This Practice is not aware of any approved limit on the number of staff associated with the Sustainable Resource Centre.

The existing operations are understood to generate up to 28 staff on-site at any one time, incorporating the following:

- Administration / management = 6 employees;
- Weighbridge – 2 employees;
- Machine operators – 5 employees; and
- Material recyclers – 15 employees.

These employees currently work a single daily shift between but generally less than 6:00am and 6:00pm.

2.4 Classification of Vehicles Servicing the Centre

This Practice is not aware of any approved classification limit with respect to size of vehicles servicing the Sustainable Resource Centre.

The existing site operations accommodate a range of vehicles from passenger vehicles to 25m long B-double vehicles. See Section 2.6.2 for more details with respect to vehicle classifications accommodated within the centre.

2.5 Facility Layout

The Sustainable Resource Centre operations are largely approved and currently accommodated in an open yard situation contained within the central western portions of the site. Vehicular access to the centre is approved and provided via separated ingress and egress driveways connecting with Widemere Road approximately central to the site frontage of that road.

The access driveway provides connectivity to and internal roadway which extends to the east into the site thence connecting with entrance and exit weighbridges and an adjoining control office which then provides connectivity to the open yard facility.

An office and maintenance building is located to the south of the internal access roadway connecting the driveway to the weighbridge facility. A formal passenger vehicle parking area is located between the abovementioned buildings and the internal access roadway, containing 13 spaces, seven of which are specifically allocated to staff of the Centre.

A further informal passenger vehicle parking area is located to the north of the internal access roadway, which currently accommodates additional staff parking demand.

Site plans prepared by 4D Architecture, reduced copies of a selection of which are included as **Appendix 1**, illustrate the existing site layout including the indicative internal vehicle routes.

2.6 Traffic Generating Characteristics

2.6.1 Traffic Volumes

This Practice is not aware of any approved traffic generation limit however the traffic generating ability of the Sustainable Resource Centre is generally a function of the material processing capacity. In order to obtain an accurate indication of the traffic generating capacity of the centre, reference is made to weeklong automatic tube surveys of the site access driveways. The surveys were commissioned over a full week of operational between the 17th and 23rd of August 2017.

Whilst it is acknowledged that these surveys are approximately three years old, it was not considered practical to update the surveys given the significant alteration to overall network demands during the COVID-19 period. In order to demonstrate the robustness of the August 2017 survey period, this Practice has been advised that the results remain valid with respect to standard (non-COVID) operational characteristics. In this regard, this Practice has obtained the centre operational characteristics during the 2018/2019 financial year. The centre processed 473,244 tonnes during the 2018/2019 financial year, which is consistent with that previously reported upon during the 2017 calendar year (480,663 tonnes).

Table 1 provides a summary of the results of the survey in terms of traffic volumes, whilst full details are contained within **Appendix 2** for reference.

TABLE 1
EXISTING (AUGUST 2017) PEAK HOURLY TRAFFIC DEMANDS
FAIRFIELD SUSTAINABLE RESOURCE CENTRE ACCESS DRIVEWAYS

Time Period	In	Out	Total
4-5am	10	2	12
5-6am	25	2	27
6-7am	20	25	45
7-8am	24	19	43
8-9am	44	43	87
9-10am	48	36	84
10-11am	52	44	96
11-12pm	35	46	81
12-1pm	40	46	86
1-2pm	45	33	78
2-3pm	33	33	66
3-4pm	16	38	54
4-5pm	3	14	17

Table 1 indicates the following:

- The site generates traffic movements in a reasonably evenly dispersed nature between 8:00am and 2:00pm on weekdays, whereby maximum hourly demands of between 80 – 95 vehicle movements are generally generated;

- Site generated traffic demands are significantly reduced during other weekday periods; and

- The maximum hourly traffic generation of the site was surveyed to be 96 vehicle movements, occurring between 10:00am – 11:00am on the Thursday surveyed.

Whilst not displayed within **Table 1** the following additional traffic generation characteristics were obtained from the survey (full details are obtained within **Appendix 2**):

- Traffic demands were negligible (less than two vehicle movements) during periods outside that shown within **Table 1**;
- Hourly traffic demands during the Saturday surveyed were approximately half that surveyed during weekdays; and
- Traffic demands on Sunday were nil (as the centre was closed).

2.6.2 Vehicle Classification

The mechanical tube survey also captured the classification of vehicles entering and exiting the site, in addition to the previously presented vehicle volume characteristics. The following provides a summary of the survey results in terms of vehicle classification, whilst full details are contained within **Appendix 2**:

- 18% of vehicles were passenger vehicles (including passenger vehicles towing trailers);
- 10% of vehicles were Small Rigid Vehicles (SRVs);
- 19% of vehicles were Medium Rigid Vehicles (MRVs);
- 25% of vehicles were Heavy Rigid Vehicles (HRVs); and
- The remaining 28% of vehicles were articulated vehicles (AVs) including semi-trailers, truck and dog combination vehicles and B-double vehicles.

On the basis of passenger vehicles, SRVs, MRVs, HRVs and AVs providing approximate lengths of 6m, 6.5m, 9m, 13m and 22.5m, respectively, the average length of vehicle entering the site is extrapolated to be in the order of 13m.

3. PROPOSED OPERATION

3.1 Processing Materials and Capacity

Approval is now sought for the Sustainable Resource Centre processing capacity to increase primarily in accordance with current operations, with a maximum capacity of 550,000 tonnes per annum.

No alteration to the previously presented approved and existing materials to be processed is sought.

3.2 Hours of Operation

It is proposed that the hours of operation be altered as follows:

- Receiving and loading of vehicles – 24 hours, seven days;
- Crushing operations – 5:00am – 6:00pm Monday to Friday; and
- Pug mill operations – 3:00am – 4:00pm Monday to Friday.

3.3 Staffing Levels

It is understood that the existing number of staff on-site is proposed to increase from 28 to 32 employees.

3.4 Classification of Vehicles Servicing the Site

No alterations to the existing operations are proposed with respect to the size of vehicles to be serviced by the site.

3.5 Centre Layout

Approval is sought for the filling of a gully running north-south through the centre of the site, known locally as 'Canal Road' and the filling of a small area of land to the south east of the gully, fronting Hassall Street. A total of 31,000m^3 of fill is proposed to be imported to the site associated with these areas of fill, facilitating the provision of increased flexibility with respect to on-site material storage areas.

Approval is also sought for the rationalisation of the existing passenger vehicles parking areas within the site to a single formalised parking area located to the south of the site access road, providing 33 passenger vehicle parking spaces.

Further, the existing site access and egress driveways are to be redesigned to provide for improved connectivity to and between the various on-site vehicular areas and the adjoining Widemere Road.

A detailed illustration of the Centre layout is provided within architectural plans prepared by 4D Architecture, reduced copies of a selection of which are included as **Appendix 1** for reference.

3.6 Traffic Generating Characteristics

3.6.1 Traffic Volumes

The traffic generating capacity of the site is proportional to the capacity of materials processed. It has previously been presented that the Sustainable Resource Centre operations resulted in 480,663 tonnes of material being processed during the 2017 calendar year. The proposal involves increasing that capacity to 550,000 tonnes of materials to be processed per annum, an increase of approximately 14% and above that process during 2017.

It is accordingly expected that the subject application will result in an increased in the 2017 traffic generating capacity of the site by approximately 14%. On the basis of a maximum surveyed hourly traffic generating capacity of the site in 2017 of of 96 vehicle movements (see **Table 1**), the proposal could be expected to generate up to an additional 13.4 (adopt 14) vehicle movements to and from the site over and above that surveyed in 2017.

It should however by acknowledged that any increase in the total traffic generating capacity of the site will be more than off-set by the proposed spreading of traffic demands over longer operational hours. In this regard, the existing general operational hours of 6:00am – 4:00pm is proposed to be increased to a minimum of 5:00am – 6:00pm, representing an increase of 30%. The maximum hourly traffic generation of the development could therefore be expected to actually reduce.

Notwithstanding the above and for the purposes of generating an absolute worst case scenario, it has been assumed for the purposes of this assessment, that the development proposal will result in the generation of an additional 14 vehicle movements to and from the site in any given single hourly period over and above that surveyed in 2017, representing 7 ingress movements and 7 egress movements.

3.6.2 Vehicle Classification

It is not proposed or expected that the proposal will result in any alterations to the existing classification of vehicle servicing the site.

4. EXISTING TRAFFIC CONDITIONS

4.1 Surrounding Road Network

The following provides a description of the local road network surrounding the subject site:

- **Widemere Road** performs a higher order collector road function under the care and control of Fairfield City Council linking Reconciliation Road in the north with Hassall Street in the south. Widemere Road forms a 13m wide pavement adjacent to the subject site, primarily providing one through lane of traffic in each direction. Kerb-side parking is restricted through 'No Stopping' sign posting. Traffic flow is governed by a sign posted speed limit of 60km/h.

  Two lanes are provided in each direction within Widemere Road immediately to the south of Davis Road, with which it intersects under traffic signal control.

  Widemere Road curves to the east and forms Hassall Street adjacent to the south-western corner of the site, whereby these two roads form the priority head of a T-junction with the western Hassall Street approach.

  Reconciliation Road forms a continuation of the north-south Widemere Road higher order collector function to the north of the Wetherill Park precinct. Reconciliation Road forms a divided carriageway providing two through lanes in each direction being separated by a raised concrete median. Pavement widening is provided on approach to major junctions to facilitate exclusive turning lanes, primarily operating under traffic signal control. Traffic flow is governed by a sign posted speed limit of 60km/h.

  Reconciliation Road is administered by Blacktown City Council and continues to the north to link with M4 Motorway at Pemulwuy. To the north of M4 Motorway, Prospect Highway performs a State Road function under the care and control of TfNSW, connecting with Sevens Hills to the north-east.

- **Hassall Street** primarily forms a continuation of the Widemere Road collector function to the south and east of the site, under the care and control of Fairfield City Council. In this regard, the Widemere Road pavement curves to the east to form Hassall Street, thence extends to the east prior to curving back to the south at which point it intersects with Gipps Road under circulating roundabout control. To the south of Gipps Road, Hassall Street performs a State Road function under the care and control of TfNSW, continuing to the south to link with The Horsley Drive and Gipps Street, intersecting under traffic signal control.

  Hassall Street, in the vicinity of the subject site, forms a 13m wide pavement providing one through lane of traffic in each direction in conjunction with parallel parking along both kerb alignments, being formalised by a marked parking lane along the southern kerb alignment. Traffic flow is governed a sign posted speed limit of 60km/h.

Hassall Street also extends to the west from Widemere Road, with this section of the road performing a local street function linking with and forming Redfern Street.

- **Redfern Street** continues to the local Hassall Street road function under the care and control of Fairfield City Council to the south to form Walter Street, prior to linking with Victoria Street, intersecting with which under traffic signal control. Redfern Street forms a 13m wide pavement providing one through lane of traffic in each direction in conjunction with parallel parking along both kerb alignments. Parking restrictions apply on approach to a T-junction with Frank Street (and Walter Street), with which it intersects under 'Stop' signage control with Frank Street forming the priority route.

- **Davis Road** performs a local collector road function under the care and control of Fairfield City Council. It provides an east-west function between Widemere Road in the east and Elizabeth Street in the west, thence extending further to the west prior to forming a terminating cul-de-sac.

  Davis Road forms a 13m wide pavement providing one through lane of traffic in each direction in conjunction with marked parallel parking lanes along both kerb alignments. Traffic flow is governed by a sign posted speed limit of 60km/h.

- **Gipps Road** performs a State Road function under the care and control of TfNSW, providing a north-south arterial route between Great Western Highway in the north (via Greystanes Road) and Hassall Street in the subject vicinity to the south.

4.2 Existing Traffic Volumes

This Practice commissioned the undertaking of peak hour traffic surveys of the following intersections in order to accurately ascertain traffic existing demands within the immediate precinct:

- The junction of Widemere Road and the Fairfield Sustainable Resource Centre Access Road;

- The junction of Widemere Road and Davis Road;

- The junction of Widemere Road and Hassall Street;

- The junction of Hassall Street and Gipps Road;

- The junction of Redfern Street, Frank Street and Walter Street; and

- The junction of Victoria Street and Walter Street.

Surveys were undertaken between 7:00am – 9:00am and 3:00pm – 5:00pm on the 15th of August 2017. It is acknowledged that the evening weekday commuter peak period is normally 4:00pm – 6:00pm, however the early peak period has

been selected in order to capture the industrial afternoon commuter peak as well as the existing operational periods of Sustainable Resource Centre.

Whilst it is acknowledged that these surveys are approximately three years old, it was not considered practical to update the surveys given the significant alteration to overall network demands during the COVID-19 period. Traffic demands within the Sydney metropolitan region at the time of writing this report were not representative of normal operating conditions as a result of reduced population movement associated with the COVID-19 situation.

This Practice has accordingly obtained historical pre-COVID traffic signal detector data for the following signalised intersections within the immediate precinct:

- The junction of Widemere Road and Davis Road;
- The junction of Victoria Street and Walter Street; and
- The junction of Hassall Street and Redfern Street.

The detector data was obtained for Wednesday the 19th of February 2020, prior to the currently experienced significant reductions in traffic demands.

Comparison of the surveyed 2017 traffic demands with the 2020 detector data indicates an average increase in traffic demands of 5.8%. The 2017 traffic demands have accordingly been increased by 6% to provide an accurate reflection of current standard operational characteristics.

Figure 3 overleaf provide a summary of the extrapolated 2020 peak hour traffic flows at the subject intersections, whilst full details of the 2017 surveys results are contained within **Appendix 3** (the February 2020 traffic signal detector data is available upon request). Minor gains / losses are evident at adjoining intersections as a result of slightly differing peak hour periods, turning movements at other public road intersections and abutting private development.

FIGURE 3
EXISTING WEEKDAY COMMUTER PEAK HOUR TRAFFIC VOLUMES

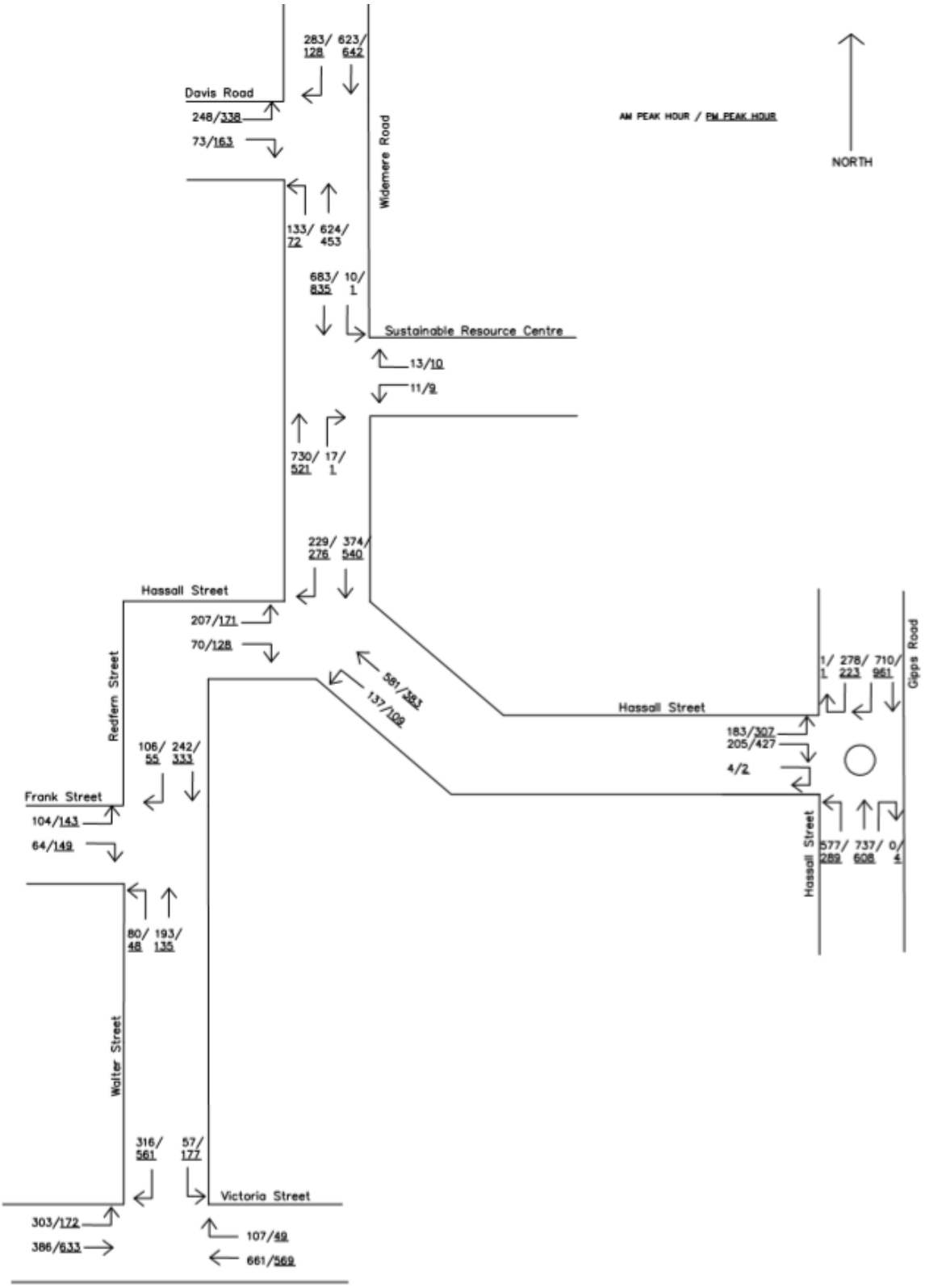


Figure 3 indicate the following:

- Widemere Road accommodates directional traffic demands of between 500 – 800 vehicles during weekday peak hours immediately adjacent to the site;
- Hassall Street accommodates directional traffic demands of between 400 – 600 vehicles during weekday peak hours immediately adjacent to the site;
- The portion of Hassall Street to the south of Gipps Road (performing an arterial function) accommodates directional traffic demands of between 800 – 1,200 vehicles during weekday peak hours;
- The portion of Hassall Street to the west of Widemere Road (performing a local function) and Redfern Street accommodate directional traffic demands of between 250 – 350 vehicles during weekday peak hours;
- Frank Street accommodates directional traffic demands of between 100 – 300 vehicles during weekday peak hours, on approach to Redfern Street;
- Walter Street accommodates directional traffic demands of between 200 – 700 vehicles during weekday peak hours, on approach to Victoria Street; and
- Davis Road accommodates directional traffic demands of between 200 – 550 vehicles during weekday peak hours, on approach to Widemere Road.

4.3 Existing Road Network Operation

4.3.1 Intersection Operation Assessment

The surveyed intersections have been analysed utilising the SIDRA computer intersection analysis program in order to objectively assess the operation of the nearby public road network.

SIDRA is a computerised traffic arrangement program which, when volume and geometrical configurations of an intersection are imputed, provides an objective assessment of the operation efficiency under varying types of control (i.e. signs, signal and roundabouts). Key indicators of SIDRA include level of service where results are placed on a continuum from A to F, with A providing the greatest intersection efficiency and therefore being the most desirable by the Roads and Maritime Services.

SIDRA uses detailed analytical traffic models coupled with an iterative approximation method to provide estimates of the abovementioned key indicators of capacity and performance statistics. Other key indicators provided by SIDRA are average vehicle delay, the number of stops per hour and the degree of saturation. Degree of saturation is the ratio of the arrival rate of vehicles to the capacity of the approach. Degree of saturation is a useful and professionally accepted measure of intersection performance.

SIDRA provides analysis of the operating conditions that can be compared to the performance criteria set out in **Table 2** below (being the TfNSW method of calculation of Level of Service).

TABLE 2 LEVEL OF SERVICE CRITERIA FOR INTERSECTIONS PRIORITY CONTROLLED INTERSECTIONS		
Level of Service	**Average Delay per Vehicle (secs/veh)**	**Expected Delay**
SIGNAGE / PRIORITY CONTROLLED INTERSECTIONS		
A	Less than 14	Good
B	15 to 28	Acceptable delays and spare capacity
C	29 to 42	Satisfactory
D	43 to 56	Near capacity
E	57 to 70	At capacity and requires other control mode
F	> 70	Unsatisfactory and requires other control mode
SIGNALISED INTERSECTIONS AND ROUNDABOUTS		
A	Less than 14	Little or no delay
B	15 to 28	Minimal delay and spare capacity
C	29 to 42	Satisfactory delays with spare capacity
D	43 to 56	Satisfactory but near capacity
E	57 to 70	At capacity, incidents will cause excessive delays
F	> 70	Extreme delay, unsatisfactory

The existing conditions have been modelled utilising the peak hour traffic volumes presented within **Figure 3**.

Table 3 overleaf provides a summary of the SIDRA output data whilst more detailed summaries are included as **Appendix 4**.

TABLE 3 SIDRA OUTPUT – EXISTING WEEKDAY PEAK HOUR PERFORMANCE		
	AM	**PM**
Widemere Road & Davis Road		
Delay	24.2	21.0
Degree of Saturation	0.82	0.64
Level of Service	B	B
Widemere Road & Site Access Road		
Delay	23.0	21.6
Degree of Saturation	0.41	0.44
Level of Service	B	B
Widemere Road & Hassall Street		
Delay	27.3	33.1
Degree of Saturation	0.31	0.56
Level of Service	B	C
Hassall Street & Gipps Road		
Delay	9.8	11.9
Degree of Saturation	0.86	0.92
Level of Service	A	A
Redfern Street & Frank Street		
Delay	10.5	10.4
Degree of Saturation	0.24	0.32
Level of Service	A	A
Victoria Street & Walter Street		
Delay	30.1	47.9
Degree of Saturation	0.72	0.91
Level of Service	C	D

Table 3 indicates the following during weekday peak periods:

- The signalised junction of Widemere Road and Davis Road provides a level of service B, representing minimal delay and spare capacity;

- The priority controlled junction of Widemere Road and the site access roadway provides a level of service B, representing acceptable delay with spare capacity;

- The signage controlled junction of Widemere Road and Hassall Street provides a level of service C representing satisfactory operation;

- The roundabout controlled junction of Hassall Street and Gipps Road provides a level of service A representing little or no delay;

- The priority controlled junction of Redfern Street and Frank Street provides a level of service A representing good conditions; and

- The signalised junction of Victoria Street and Walter Street provides a level of service D representing operation near capacity.

4.3.2 Safety Assessment

Whilst all surveyed intersections have been assessed to operate with an acceptable level of service, it is normal procedure for priority and signage controlled junctions which provide a level of service C or worse to provide a safety assessment. This applies to the junction of Widemere Road and Hassall Street. Whilst turning movements at this junction occur in an uncontrolled manner, they are assisted by regular and extended gaps in opposing Widemere Road / Hassall Street through traffic flow, being punctuated by the operation of traffic signals at Davis Street to the north and the roundabout intersection control governing Gipps Road.

Observations undertaken during commuter peak periods indicate that whilst right turn movements from the western to the eastern Hassall Street approaches occasionally incur some level of delay, the punctuation of through traffic movements along Widemere Road / Hassall Street ensures that such movements occur with a reasonable level of efficiency. In this regard, whilst the SIDRA model allows for some calibration of main road traffic demands to account for traffic flow platooning, it is still considered to somewhat overstate the delays incurred. Accordingly, the level of service afforded to the right turn movements from the western Hassall Street approach are considered to be within an acceptable range.

Notwithstanding the above, this Practice has obtained 5 year (2012 – 2016 inclusive) crash history from TfNSW for the junction of Widemere Road and Hassall Street, a copy of which is attached as **Appendix 5**. Six crashes non-fatal crashes were recorded at the junction. Consultation with Council's traffic engineering staff in this respect has indicated that such a number of crashes is not considered to be categorised as a safety concern warranting infrastructure alteration. Council's traffic engineer specifically noted that right turning vehicles from Hassall Street are able to (and should) access the State Road section of Hassall Street to the east under traffic signal control, via Redfern Street.

4.4 Public Transport

4.4.1 Buses

The Liverpool-Parramatta Transitway route runs in a north-south alignment on specifically designated roads approximately 200m to the west of the subject site. Services along the Transitway provide frequencies of 5 minutes during weekday commuter peak periods, extending to 10 minutes during other weekday periods and 15 minutes during weekend periods. Hassall Transitway Station is located approximately 300m walking distance to the west of the site, accessed via Hassall Street.

Further to the above, a single bus service (Route 812) operates along Davis Road and to the north along Widemere Road and Prospect Highway between Fairfield and Blacktown, provided by Transit Systems. This service provides weekday commuter peak services with a 30 minute frequency, with the closest stops being situated within Davis Road, approximately 500m to the north-west of the site.

5. PROJECTED TRAFFIC CONDITIONS

5.1 Traffic Generation

It had previously been presented that the traffic generating capacity of the site is proportional to the capacity of materials processed. It has previously been presented that the Sustainable Resource Centre operations resulted in 480,663 tonnes of material being processed during the 2017 calendar year. The proposal involves increasing that capacity to a maximum of 550,000 tonnes of materials to be processed per annum, an increase of approximately 14% over and above that surveyed in 2017.

It is accordingly expected that the subject application will result in an increased in the traffic generating capacity of the site by approximately 14%. On this basis, the maximum surveyed hourly traffic generating capacity of the site in 2017 of 96 vehicle movements, could be expected to increase to 110 vehicle movements, an increase of 14 vehicle movements to and from the site over and above that currently generated within a single hourly period.

It should however by acknowledged that any increase in the total traffic generating capacity of the site will be more than off-set by the proposed spreading of traffic demands over longer operational hours. In this regard, the existing general operational hours of 6:00am – 4:00pm is proposed to be increased to a minimum of 5:00am – 6:00pm, representing an increase of 30%. The maximum hourly traffic generation of the development could therefore be expected to actually reduce, thereby resulting in improved overall road network performance compared with that assessed Section 4 of this report.

Notwithstanding the above and for the purposes of generating an absolute worst case scenario, it has been assumed for the purposes of this assessment, that the development proposal will result in the generation of an additional 14 vehicle movements to and from the site in any given single hourly period, representing 7 ingress movements and 7 egress movements over and above that surveyed in 2017.

5.2 Trip Assignment & Projected Traffic Volumes

The development has been projected to generate in the order of 14 additional vehicle movements to and from the subject site over and above that currently generated. The construction based nature of the development results in it accommodating heavy vehicles and accordingly, transit routes are most likely to comprise the surrounding arterial roads being M4 Motorway to the north, Cumberland Highway to the south-east and The Horsley Drive to the south-west.

For the purposes of this assessment, the additional traffic has been reasonably evening distributed between the abovementioned arterial routes, as follows:

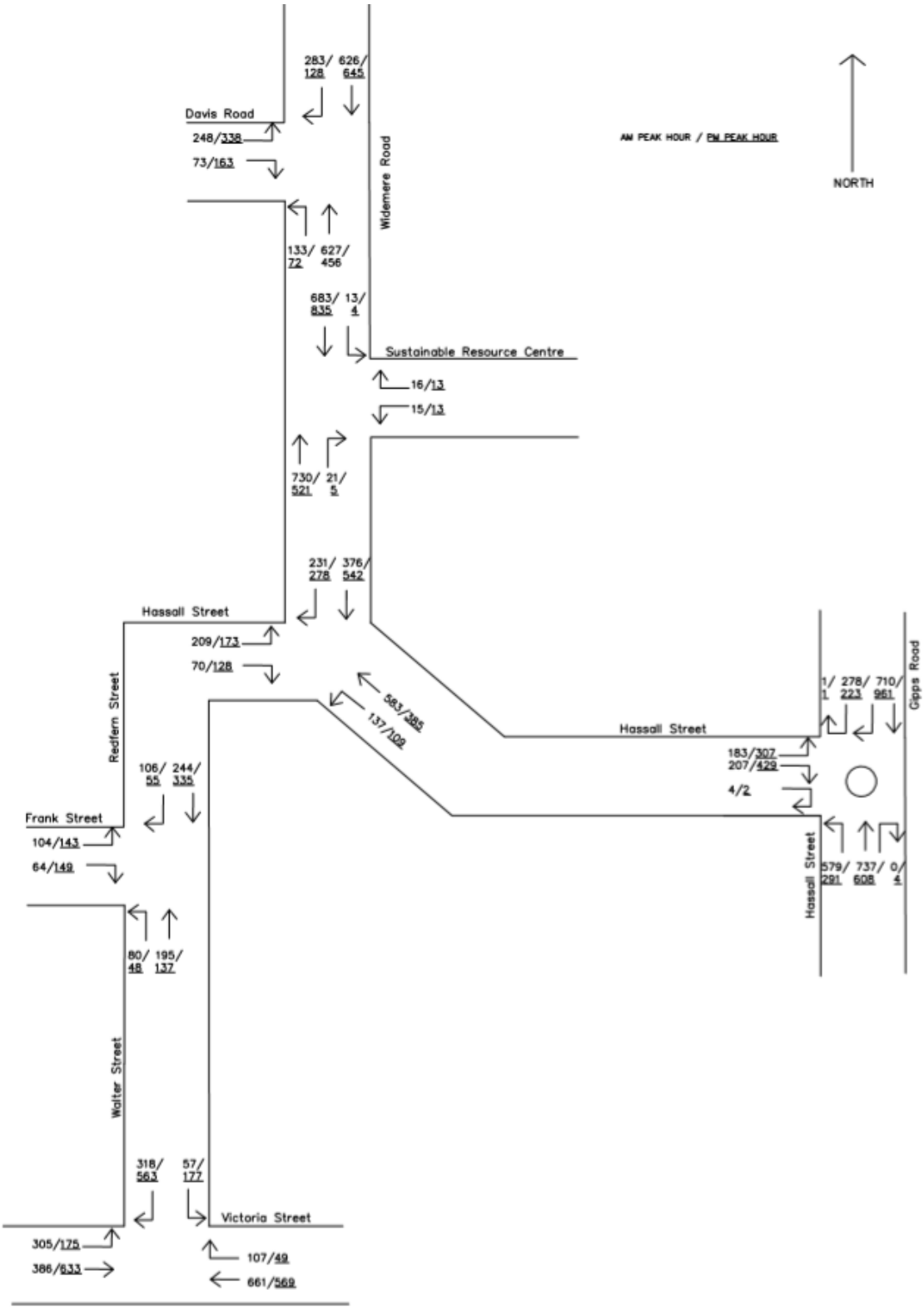
- 40% of vehicles are expected to approach and depart the site from / to the north via M4 Motorway, Prospect Highway, Reconciliation Road and Widemere Road;

- 30% of vehicles are expected to approach and depart the site from / to the south-east via Cumberland Highway, The Horsley Drive, Hassall Street and Widemere Road; and

- The remaining 30% of vehicles are expected to approach and depart the site from / to the south-west via The Horsley Drive, Elizabeth Street, Victoria Street, Walter Street, Redfern Street, Hassall Street and Widemere Road.

The projected peak hour traffic volumes throughout the surrounding road network have been formulated by adding the abovementioned traffic generation and trip assignment to the existing demands presented within **Figure 3**. **Figure 4** overleaf provides an estimation of the future traffic demands at the nearby public road intersections.

FIGURE 4
PROJECTED WEEKDAY COMMUTER PEAK HOUR TRAFFIC VOLUMES
INCORPORATING THE PROJECTED DEVELOPMENT



5.3 Projected Road network Performance

The surrounding public road intersections have been modelled in order to estimate that likely impact on traffic safety and efficiency utilising the projected traffic volumes incorporating the proposed development. A summary of the most pertinent results are indicated within **Table 4** whilst more detailed summaries are provided within **Appendix 6**.

TABLE 4
SIDRA OUTPUT
EXISTING AND PROJECTED PEAK HOUR PERFORMANCE

	Existing Conditions		Projected Conditions	
	AM	**PM**	**AM**	**PM**
Widemere Road & Davis Road				
Delay	24.2	21.0	24.4	21.0
Degree of Saturation	0.82	0.64	0.83	0.64
Level of Service	B	B	B	B
Widemere Road & Site Access Road				
Delay	23.0	21.6	23.4	22.0
Degree of Saturation	0.41	0.44	0.41	0.44
Level of Service	B	B	B	B
Widemere Road & Hassall Street				
Delay	27.3	33.1	27.6	33.5
Degree of Saturation	0.31	0.56	0.32	0.56
Level of Service	B	C	B	C
Hassall Street & Gipps Road				
Delay	9.8	11.9	9.8	12.0
Degree of Saturation	0.86	0.92	0.86	0.92
Level of Service	A	A	A	A
Redfern Street & Frank Street				
Delay	10.5	10.4	10.6	11.8
Degree of Saturation	0.24	0.32	0.24	0.32
Level of Service	A	A	A	A
Victoria Street & Walter Street				
Delay	30.1	47.9	30.2	48.4
Degree of Saturation	0.72	0.91	0.73	0.90
Level of Service	C	D	C	D

Table 4 indicates that the additional traffic generated by the development is not projected to have noticeable impacts on operation of the surrounding public road intersections with only minor alterations projected with respect to delay and degree of saturation. In this regard, the intersection levels of service are projected to remain unaltered, representing reasonable conditions. It is accordingly not expected that the development will necessitate any upgrades to surrounding public road intersections.

The impact of the development from an overall road network safety and performance standpoint is therefore most likely to be a factor of the continued ability or otherwise of the internal development infrastructure to accommodate site access movements, internal circulation and parking demands in a safe and efficiency manner. These aspects of the development are assessed within Sections 6 and 7 of this report.

6. ASSESSMENT OF EXISTING SITE OPERATION

6.1 Site Access

The site is currently accessed via separated ingress / egress driveway connecting with Widemere Road, approximately midday way between Hassall Street and Davis Road. The driveway provides 8m wide ingress and egress lanes separated by a landscaped central island. Whilst the ingress and egress lanes are paved, no kerb and gutter is provided and the central landscaped island is defined by large sandstone blocks. The ingress and egress lanes provide limited splays on connection to the Widemere Road pavement.

The above generally informal access arrangement results in the largest vehicles servicing the site (25m long B-double vehicles) not utilising the full extent of the paved ingress and egress lanes and, at times, encroaching on the northbound Widemere Road travel lane when undertaking left turn ingress and egress movements.

6.2 Parking Provision

The site is currently serviced by formal and informal parking areas located on the southern and northern sides of the internal site access roadway respectively. The formalised passenger vehicle parking area is located between the office and maintenance building and the internal access roadway, containing 13 marked spaces, seven of which are specifically allocated to staff of the Centre whilst the remaining six are allocated to visitors / customers.

An informal passenger vehicle parking area is located to the north of the internal access roadway. Parking spaces within this area are unmarked. A further informal parking area is located to the east of the maintenance and office building. The informal parking areas are currently utilised by staff.

6.3 Internal Circulation and Manoeuvrability

When entering the subject site, vehicles proceed in a forward direction for approximately 50m, at which point they are presented with an informal internal intersection where they can access the following:

- The informal staff parking area to the north;
- The open yard access road to the north of the weighbridge;
- The weighbridge; or
- The formal (and connected informal) staff and visitor / customer parking area to the south.

Vehicles accessing the informal staff parking area and the access road to the north of the weighbridge are able to do so without being required to give way to other vehicle movements.

Vehicular access to the weighbridge is governed by a traffic signal system which displays a red signal when the entrance weighbridge is already occupied. During periods of peak operation, entering vehicles are required to queue on approach to the weighbridge. The separation of the stop signal and the property boundary (approximately 55m) results in between two large 25m long B-double vehicles being able to queue internally prior to the queue encroaching into Widemere Road. Section 2.6.2 of this report however presents that, the average length of vehicle entering the site is in the order of 13m, thereby indicating that on average, four vehicles can be queued within the site on approach to the weighbridge.

Vehicles wishing to access the formal (and adjacent informal) passenger vehicle parking area to the south of the access roadway are required to give way to vehicles departing the site via the exit weighbridge. Delays for these passenger vehicles associated with waiting for heavy vehicles to depart the exit weighbridge are generally minimal.

The scale of the open yard (to the east of the weighbridge) is such that vehicles are able to manoeuvre in a safe and efficient manner with little or no interaction with other vehicles.

6.4 Weighbridge Queuing Analysis

The weighbridge operation currently requires motorists to drive onto the weighbridge, liaise with the control office staff and attend to a transaction if appropriate. This process has been observed to take, on average, approximately 45 seconds to complete.

Section 2.6.1 of this report presents that the site access driveway has been surveyed to accommodate a peak inbound traffic volume of 52 vehicles in any one hourly period. Not all vehicles which enter the site access the entrance weighbridge. Comparison of weighbridge data provided for the 2018 / 2019 financial year with the total volume of vehicles accessing the site during 2017 indicates that approximately 70% of vehicles which enter the site are required to stop at the entrance weighbridge. The peak number of vehicles in any given single hourly period accessing the weighbridge is accordingly envisaged to be 37 vehicles.

In order to generate an absolute worst case scenario, for the purposes of this assessment, it has been assumed that the peak number of vehicles entering the site (surveyed to be 52 vehicles) are required to access the entry weighbridge. On this basis, given the average service time of the weighbridge (45 seconds) is less than the peak entering vehicle headway (3600 seconds / 52 vehicles or approximately 70 seconds), vehicles generally does not occur on approach to the weighbridge.

Notwithstanding the above, in order to quantitatively assess the ability or otherwise of the internal queuing area on approach to the weighbridge to provide adequate capacity to accommodate existing peak demands, a queuing analysis has been undertaken in accordance with standard Markov (M/M/1) procedures, whereby:

$$a = arrival\ rate$$

$$s = service\ rate$$

$$p = utilisation\ rate\ (\frac{a}{s})$$

$$E(m) = Mean\ number\ of\ vehicle\ in\ queue\ (\frac{p2}{1-p})$$

The following provides the queuing analysis procedure for the existing operational characteristics of the entry weighbridge:

- The entry weighbridge services up to 52 vehicles in any given single hourly period;
- The average arrival rate of vehicles is accordingly 1 vehicle every 1.15 minutes (a = 0.87);
- The average service time at the weighbridge is 45 seconds (or 0.75 minutes);
- The average service rate is accordingly 1 vehicle every 0.75 minutes (s = 1.33);
- The utilisation rate is the arrival rate divided by the service rate (p =0.6541); and
- The average vehicles is the queue is 0.74 vehicles [$E(m) = \frac{\mathrm{p2}}{\mathrm{1-p}}$].

The average number of vehicles waiting to be serviced on approach to the weighbridge is accordingly between zero and one vehicle.

The provided queuing area of approximately 55m therefore provides adequate internal storage to account for normal fluctuations in entering traffic flows over short periods of time. In this regard, queuing associated with entering vehicles has not been observed to extend into Widemere Road.

6.5 Pedestrian Safety

Pedestrian movements on the site are generally limited to staff and visitors / customers walking from vehicular parking areas to the office and maintenance building. The formal parking area directly adjoins and therefore provides efficient connectivity to the office and maintenance building. Notwithstanding this, pedestrian movements within the formal parking area are provided with a marked crossing which runs approximately central to the parking aisle thereby increasing the likelihood of vehicular / pedestrian conflict.

Staff wishing to walk from the informal parking area (north of the weighbridge) to the office / maintenance building are required to walk through the informal internal intersection linking the site access roadway, the weighbridge, the parking areas and the open yard access road. These pedestrian movements are not provided with any signage or infrastructure to assist through the complex

intersection until such time as they reach the formalised passenger vehicle parking area. The existence of these pedestrian movements through this complex intersection is particularly undesirable.

7. ASSESSMENT OF PROPOSED SITE OPERATION

7.1 General Discussion on Site Impacts

The subject proposal involves the undertaking of various alterations to the existing site access, internal circulation and parking arrangements to ameliorate existing site inefficiencies presented within Section 6 of this report. It has previously been presented that the proposal will only result in a minor extent of additional staff (increasing from 28 to 32 employees) and traffic generating capacity (up to an additional 14 vehicle movements) in any given single hourly period).

The abovementioned minor extent of additional internal vehicle activity is not expected to result in significant impacts to the overall site operation. However, the general objective of the proposal is to improve the safety and efficiency experienced by site users as follows:

- The formalisation and widening of the existing site access driveways in order to ensure that all vehicles can enter and exit the site in a safe and efficient manner;

- The rationalisation of the existing on-site parking areas to a single location providing direct connectivity to the existing office and maintenance building;

- The general formalisation of internal circulation arrangements whereby vehicular movements associated different site functions are separated as much as is practical; and

- The minimisation of undesirable and unnecessary pedestrian movements within the subject site and accordingly the minimisation of potential conflicts and interactions, particularly with heavy vehicles.

The following sub-sections of this report provide discussion on the proposed altered site access, parking provision, internal circulation and servicing arrangements.

7.2 Site Access / Egress Movements

The proposal involves the widening and formalisation of the existing site access driveways.

A series of swept path plans have been prepared, copies of which are contained within **Appendix 7**, which demonstrate the ability of the altered site access arrangements to accommodate vehicles up to and including 25m long B-doubles in a safe and efficient manner, without unreasonable encroachment on opposing public road travel lanes and public road of driveway kerbs.

7.3 Parking Provision

The subject proposal results in the existing formal parking provision of 13 spaces being increased to 33 formalised parking spaces.

Fairfield City Council does not provide parking requirements within their DCP 2013 for sustainable resource centres, with the suitability of the proposed parking provision being a factor of the maximum number of staff on-site at any one time and the number of visitors expected to access the site.

It has previously been presented that the centre is expected to accommodate a maximum of 32 staff on-site at any one time. On the basis of 80% of these staff driving themselves to and from the site on a daily basis (the remaining 20% utilising public transport or car-pooling), a peak staff parking demand of 26 spaces is expected. The provision 33 spaces, thereby allows up to seven visitors vehicles to be on-site at any one time. Discussions with existing site operators have indicated that the facility generates negligible visitors, being on average less than one per day. The proposed parking provision is therefore considered to be satisfactory.

7.4 Internal Circulation

7.4.1 Site Ingress Movements

The subject proposal involves the general rationalisation and formalisation of potential internal vehicular movements. In this regard, upon entering the subject site, motorists are to be provided with three site ingress lanes as follows:

- The left lane is proposed to provide connectivity to the open yard access road to the north of the weighbridges;
- The central lane is proposed to provide connectivity to the ingress weighbridge; and
- The right lane is proposed to form a dedicated right turn lane servicing the rationalised and enlarged passenger vehicle parking area.

The through lanes servicing the open yard access road and the weighbridge are to provide widths of 3.5m, widening as necessary further within the site to account for a variable horizontal alignment. The right turn lane servicing the passenger vehicle parking area is to provide a width of 3.0m. Signage and line marking is to be provided within the site access roadway immediately inside the subject site to ensure motorists are able to select the lane appropriate to their desired destination.

The above altered internal circulation alterations are expected to reduce the potential for internal conflict between entering vehicles and the overall level of safety and efficiency of internal access traffic movements.

7.4.2 Weighbridge Queuing Analysis

The existing peak number of vehicles accessing the entry weighbridge has been reported to be 52 vehicles in any given single hourly period. The proposed development is projected to result in a maximum additional hourly traffic generation of 14 vehicle movements, being evenly split between inbound and outbound movements. On this basis, the projected peak number of vehicles expected to access the entry weighbridge is envisaged to be 59 (52 + 14/2) vehicles in any given single hourly period.

The following provides the queuing analysis procedure for the proposed operational characteristics of the entry weighbridge:

- The entry weighbridge services up to 59 vehicles in any given single hourly period;
- The average arrival rate of vehicles is accordingly 1 vehicle every 1.07 minutes (a = 0.93);
- The average service time at the weighbridge is 45 seconds (or 0.75 minutes);
- The average service rate is accordingly 1 vehicle every 0.75 minutes (s = 1.33);
- The utilisation rate is the arrival rate divided by the service rate (p =0.70); and
- The average vehicles is the queue is 1.63 vehicles [$E(m) = \frac{\mathrm{p2}}{1-\mathrm{p}}$].

The average number of vehicles projected to be waiting to be serviced on approach to the weighbridge is accordingly between one and two vehicles.

Based on the previously report average vehicle length of 13m, the average queue length is accordingly expected to be 23m.

The provided queuing area of approximately 55m is therefore projected to continue to provide adequate internal storage to account for normal fluctuations in entering traffic flows over short periods of time. In this regard, it is not expected that queuing associated with entering vehicles will extend into Widemere Road.

7.4.3 Passenger Vehicle Parking Area

The proposal involves the provision of a single parking area located between the site access road and the office and maintenance building. The parking area is to comprise a series of parking aisles servicing standard 90 degree angled parking spaces.

The parking and circulation areas have been designed in accordance with AS2890.1-2004 and AS2890.6-2009 providing the following minimum dimensions:

- Staff parking space width = 2.4m;

- Standard visitor / customer parking space width = 2.5m;
- Disabled visitor / customer parking space width = 2.4m (width adjoining 2.4m wide shared area);
- Parking space length = 5.4m;
- Parking aisle width = 5.8m;
- Two-way roadway width = 5.5m; and
- Parking aisle extension adjoining end parking space = 1.0m.

Safe and efficient internal manoeuvring and parking space accessibility is anticipated to result, taking into consideration the above compliance with the relevant AS2890.1:2004 and AS2890.6:2009 specifications.

In order to demonstrate the internal passenger vehicle manoeuvrability generally throughout the overall parking area, this Practice has prepared a number of swept path plans which are included as **Appendix 7**. The turning paths provided on the plans have been generated using Autoturn software and derived from B99 and B85 vehicle specifications provided within AS2890.1:2004.

Section B4.4 of AS2890.1:2004 states the following with regard to the use of templates to assess vehicle manoeuvring:

'Constant radius swept turning paths, based on the design vehicle's minimum turning circle are not suitable for determining the aisle width needed for manoeuvring into and out of parking spaces. Drivers can manoeuvre vehicles within smaller spaces than swept turning paths would suggest.'

It would therefore appear that whilst the turning paths provided within AS2890.1:2004 can be utilised to provide a 'general indication' of the suitability or otherwise of internal parking and manoeuvring area, vehicles can generally manoeuvre more efficiently than the paths indicate. Notwithstanding this, the swept path plans illustrate that passenger vehicles can manoeuvre throughout and enter and exit the most difficult passenger vehicle parking spaces within the parking area. The proposed parking area layout as it relates to passenger vehicle manoeuvrability is therefore considered to be satisfactory.

7.4.4 Pedestrian Considerations

The rationalisation of the passenger vehicle parking areas to a single location immediately adjoining the office and maintenance building effectively limits the potential for pedestrian movements to that area immediately within and adjoining the passenger vehicle parking area and the office and maintenance building. Given the low number of parking spaces serviced by the parking areas, it is considered reasonable that pedestrians share the parking aisles with vehicles without the need to provide separate pedestrian paths.

7.4.5 Internal Yard Manoeuvring

The overall yard size is to be expanded through the filling of an existing gully running north-south through the centre of the site. This expanded yard will facilitate the creation of a new large temporary stockpiling area for excess material and the provision of more efficiency internal vehicle circulation and servicing. The large scale of the yard is such that it is expected that vehicles up to and including 25m long B-doubles will be able to circulate and load / unload in a safe and efficient manner.

In order to demonstrate the general manoeuvring throughout the internal yard, a series of swept path plans have been prepared, copies of which are contained within **Appendix 7**. These swept path plans illustrate that vehicles up to and including 25m long B-double vehicles are capable of manoeuvring throughout the internal yard, providing additional internal roadway width to allow for circulation, loading / unloading and passing as required.

8. PRELIMINARY CONSTRUCTION MANAGEMENT PLAN

8.1 Introductory Statement

This Section of the report constitutes a preliminary Construction Traffic Management Plan (CTMP) addressing the traffic access and safety issues associated with demolition and construction works associated with the proposal. CTMPs are generally prepared at Construction Certificate stage following the commissioning of a builder thereby allowing a greater appreciation of the likely construction methodology and therefore the required traffic management measures to be implemented.

The terms of the initiatives contained within the following subsections of this report are therefore somewhat generic and some modifications may be needed by or on behalf of the successful builder / civil contractor at Construction Certificate stage depending on their feasibility taking into consideration all project requirements.

8.2 Traffic Management During On-Site Works

A significant majority of the works are to be completed within the eastern portion of the site which is largely not currently operational. A temporary construction only site access location is expected to be established to / from Hassall Street, immediately to the west of Blackstone Street. This will allow construction vehicles to enter and exit the site separate from the operational site access driveway connecting with Widemere Road, thereby minimising the interaction of construction vehicles with ongoing facility operation.

It is expected that construction vehicles will be able to undertake all necessary loading / unloading and turnaround activities wholly within the site, such that all construction vehicle access and egress movements will occur in a forward direction.

It is not expected that any external Works Zone will be required to be implemented within either Widemere Road or Hassall Street.

All site sheds associated with the construction works are also anticipated to be wholly accommodated within the subject site.

Construction fencing is expected to define the construction compound, effectively separating the construction activity from the adjoining public roadway and the operational component of the sustainable resource centre.

The indicative construction access driveway and the internal routes of construction vehicles are illustrated within architectural plans prepared by 4D Architecture, reduced scale copies of which are contained within **Appendix 1**.

8.3 Traffic Management during Public Domain Works

Following the undertaking of the presented on-site works, the development will involve public domain works associated with the reconstruction of the sustainable resource centre access driveway connecting with Widemere Road. Some minor public domain works will also be required with respect to the establishment and removal of the temporary construction vehicle access driveway connection to Hassall Street prior to and following the construction works.

The abovementioned public domain works will require the temporary closures of the eastern Widemere Road and northern Hassall Street footways. Traffic Control Plans associated with these public road occupations will be prepared and submitted to Council for assessment. The traffic and pedestrian management measures to be implemented are to be certified on the Traffic Control Plans as being in accordance with the Australian Standard for *Manual of Uniform Traffic Control Devices* (AS1742) and TfNSW's *Traffic Control at Work Sites* manual.

Appropriate road use permits, including the payment of fees, will be sought and obtained from Fairfield City Council associated with the abovementioned construction activities requiring public road occupation. Further, adjoining property owners are to be advised of the implementation of any temporary traffic control measures as required by Council.

Any other unforeseen works which may necessitate the temporary occupation of the public roadway associated with the construction works will require separate formal approval from Council, via the preparation of a Traffic Control Plan in accordance with AS1742 and the TfNSW manual.

8.4 Safe Ingress and Egress of Construction Traffic

Construction vehicles, up to and including 19m long articulated vehicles are expected to access the site via a simple forward movements from Hassall Street via the previously presented temporary construction vehicle access. Similarly, construction vehicles will exit the site via a simple forward movements to Hassall Street via the temporary construction vehicle access. Indicative swept paths of 19m long articulated truck and dog combination vehicles entering and exiting the site via the temporary construction vehicle access connection with Hassall Street are contained within **Appendix 8**.

All construction site access and egress movements are to be strictly controlled by appropriately qualified traffic controllers. Traffic controllers are not to stop traffic on the public street to allow trucks to enter or leave the site. They must wait until a suitable gap in traffic flows allows them to assist construction vehicles to enter or exit the site. The Roads Act does not give any special treatment for trucks leaving a construction site – the vehicles already on the road have right of way.

No queuing / marshalling of construction vehicles is to occur in any public road.

Further to the large construction vehicles described above, construction employee / tradesperson passenger vehicles are to be accommodated within the subject site, being accommodated within a dedicated area, separate to the operational sustainable resource centre or construction operation. Access / egress associated with this passenger vehicle parking function is to occur via the temporary construction access connection to Hassall Street. These movements are to occur in a forward direction at all times.

8.5 Construction Vehicle Transport Routes

Construction vehicles are to access and vacate the subject site via M4 Motorway as the main approach / departure route. The following provides a description of the construction vehicle transit routes:

Inbound Route

M4 Motorway, left or right to Prospect Highway, Reconciliation Road, Widemere Road, Hassall Street and thence a left turn into the site.

Outbound Route

Left turn from the site to Hassall Street, left turn to Horsley Park Road, left turn to Cumberland Highway and thence a left or right turn to M4 Motorway.

Widemere Road / Hassall Street provide good connectivity to the State Road network in Prospect Highway, The Horsley Drive and Cumberland Highway and finally M4 Motorway. Construction vehicles are able to access and depart the site creating very little disturbance to surrounding local road traffic flow.

The multiple directional traffic lanes of the approach and departure routes are such that heavy vehicle manoeuvring is able to occur without any unreasonable encroachment on opposing travel lanes, kerbs and / or parking lanes. None of the abovementioned roads are light thoroughfares or are restricted by load limits.

8.6 Parking Control

All construction employee / tradesperson passenger vehicle parking is to be accommodated within the subject site, being situated within a dedicated area, separate to the operational sustainable resource centre or construction operation. Notwithstanding this, construction workers / tradespersons will accordingly be encouraged to do either of the following when travelling to the site in order to minimise the extent of parking demand:

- Utilise public transport to the site (the site is well serviced by previously presented bus services operating within the subject vicinity); and / or
- Car pool with other construction workers.

The above transport options will form part of the conditions of commissioning when engaging the relevant site workers and as such form part of any site induction process.

8.7 Construction Traffic Generation

The construction works are likely to generate a maximum of six heavy vehicles servicing the site during peak periods, most likely associated with the transportation of fill to the site.

In general, the construction activities are projected to generate less traffic than the assessed to be generated by the proposed centre expansion, thereby indicating that impacts will be minimal. During periods of more heavy construction vehicle generation, drivers are to be instructed by radio when to arrive at the site to ensure that there is no vehicle queuing or parking within the adjoining road network. This is to be strictly adhered to.

8.7 Traffic Impact

The recent traffic investigations of the adjoining road network and the analysis contained within previous sections of this report have indicated that motorists are provided with a reasonable level of service within the immediately adjoining public road network. It is therefore considered that the limited traffic generation associated with the construction activities can be accommodated without any unreasonable impacts on adjoining vehicle movements considering the previously mentioned maximum hourly traffic generation.

Notwithstanding the above, it has accordingly been recommended that construction vehicle movements to and from the site be minimised and eliminated where possible during road network peak periods (7:00am – 9:00am and 4:00pm – 6:00pm).

8.8 Impacts on Pedestrians

Pedestrian demands along both Widemere Road and Hassall Street are reasonably low, however pedestrian movements adjacent to the site are to occur in an unimpeded fashion during all periods of construction, albeit at times, under appropriate traffic control.

Whilst the public domain works associated with the development involve the temporary full closure of the eastern Widemere Road and northern Hassall Street footways, pedestrian accessibility and mobility is to be maintained at all times through the diversion of pedestrian movements and appropriate ancillary measures, which will be governed by the preparation and implementation of appropriate Traffic Control Plans. The temporary closures of the footpaths adjoining site are therefore most unlikely to result in any unreasonable impacts on the amenity of pedestrian movements.

Unimpeded pedestrian access to adjoining developments will be maintained at all times.

Boundary hoarding / construction fencing will protect pedestrians from dust and debris.

No unreasonable impacts on the safety or mobility of pedestrians are therefore anticipated during the construction works associated with the subject development.

9. CONCLUSION

This report assesses the potential traffic implications associated with a proposal to expand the existing Fairfield Sustainable Resource Centre located on the corner of Hassall Street and Widemere Road, Wetherill Park. Based on this assessment, the following conclusions are now made:

- The centre accepts construction and demolition waste including roof tiles, clay bricks, concrete and asphalt. The construction waste is crushed or milled to produce recycled materials such as sand, road base, cement stabilised sands and aggregates for use in civil construction, landscaping and domestic building applications.

- The existing facility is approved and licensed to receive 180,000 tonnes per year. The facility is however understood to have been operating in excess of that currently licensed for some time, with approximately 480,663 tonnes being received during the 2017 calendar year and 473,244 tonnes being processed during the 2018/2019 financial year.

- An application has accordingly been formulated which seeks approval to license the facility generally in accordance with current operations, whereby a capacity to 550,000 tonnes per year is being sought. The increased Centre capacity is proposed to be facilitated through the filling of an existing gully running north-south through the centre of the site, allowing the creation of a new large temporary stockpiling area for excess material and the extension of the existing facility hours of operation. Further, an increase in the currently approved hours of operation is also being sought.

- The existing facility generates up to 96 vehicle movements to and from the site during any one particular hour, generally occurring outside of adjoining public road commuter peak periods.

- The surrounding road network currently operates with a reasonable level of performance during weekday commuter peak periods.

- Queuing analysis indicates that the existing storage capacity on approach to the internal entry weighbridge is readily capable of accommodate peak operational demands wholly within the subject site.

- It is expected that the subject application will result in an increased in the traffic generating capacity of the site by 14%. On this basis, the maximum surveyed hourly traffic generating capacity of the site of 96 vehicle movements, could be expected to increase to 110 vehicle movements, an increase of 14 vehicle movements to and from the site over and above that currently generated within a single hourly period.

- Post development modelling of the surrounding road network indicates that the minor extent of potential additional traffic is not envisaged to result in any unreasonable impacts on the surrounding road network performance.

- It is accordingly not expected that the development will necessitate any upgrades to surrounding public road intersections.

- In any case, the abovementioned potential increase in the total traffic generating capacity of the site will however be more than off-set by the proposed spreading of traffic demands over the proposed longer operational hours. In this regard, the maximum hourly traffic generation of the development could be expected to actually reduce, thereby resulting in improved overall road network performance.

- Post development queuing analysis indicates that the existing storage capacity on approach to the internal entry weighbridge is expected to continue to be readily capable of accommodate peak operational demands wholly within the subject site.

- Notwithstanding the above, the proposal involves a number of alterations and additions to the existing site access, parking and internal circulation arrangements to improve the safety and efficiency experienced by site users as follows:

  - The formalisation and widening of the existing site access driveways in order to ensure that all vehicles can enter and exit the site in a safe and efficient manner;
  - The rationalisation of the existing on-site parking areas to a single location providing direct connectivity to the existing office and maintenance building;
  - The provision of additional on-site parking to assist in the accommodation of existing site demands;
  - The general formalisation of internal circulation arrangements whereby vehicular movements associated different site functions are separated as much as is practical; and
  - The minimisation of undesirable and unnecessary pedestrian movements within the subject site and accordingly the minimisation of potential conflicts and interactions, particularly with heavy vehicles.

- Subject to a detailed construction traffic management plan being prepared, it is envisaged that construction works associated with the development can occur without unreasonable safety and efficiency impacts on the ongoing operation of the centre and / or the surrounding pubic road network.

It is considered there are no traffic related issues that should prevent approval of the subject application. This action is therefore recommended.

APPENDIX 1

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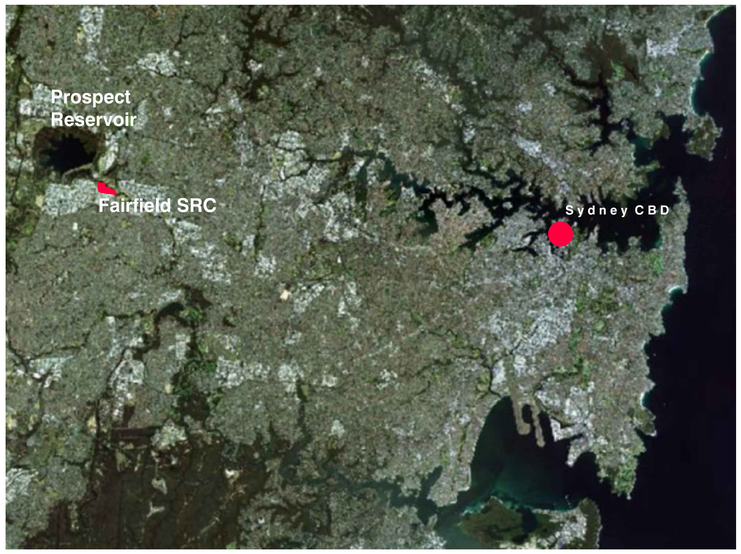
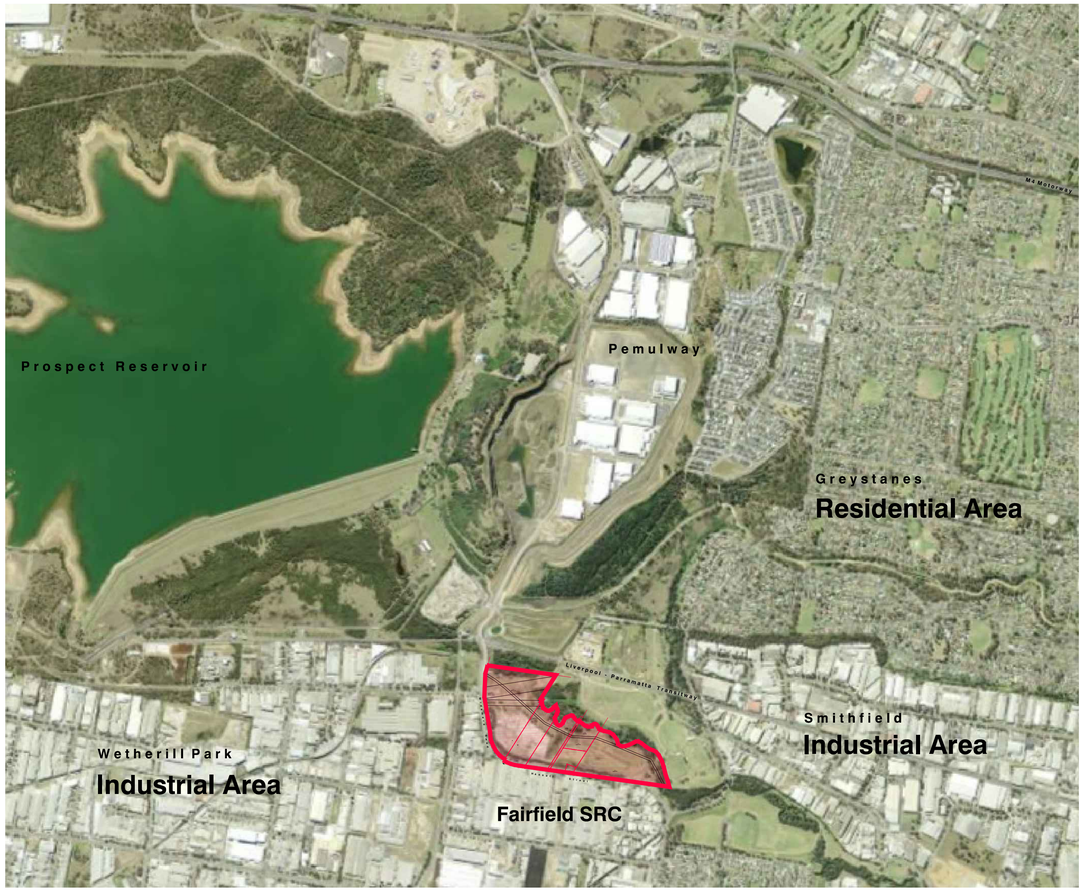
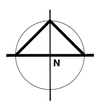
Fairfield Sustainable Resource Centre
Corner Widemere Road & Hassell Street / Wetherill Park NSW 2164
SL001

A / 04/08/2020





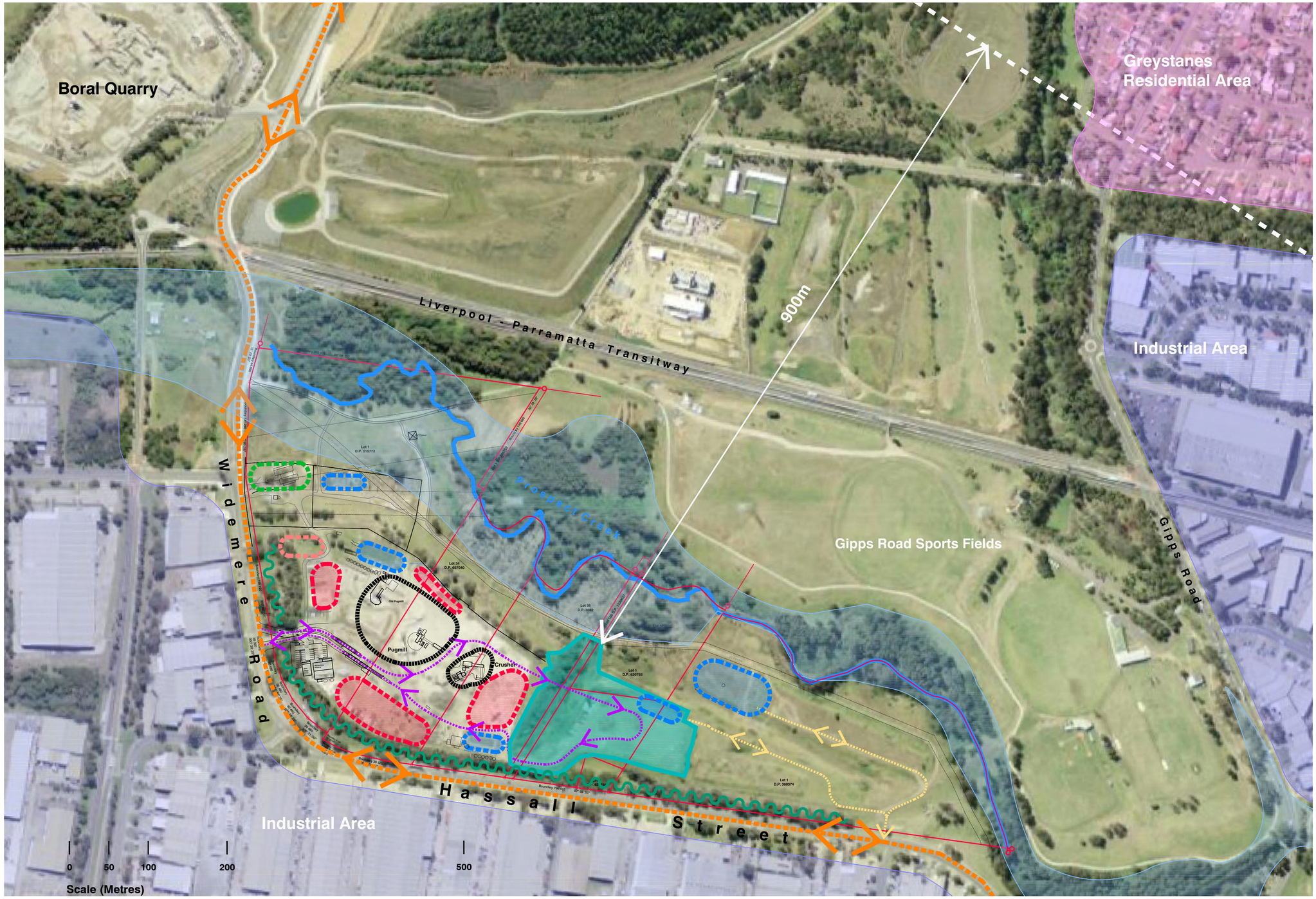


Notes

All dimensions are in millimetres unless noted otherwise.
Check all dimensions on site prior to commencement of the work shown on the drawing. Work to figured dimensions where given.
Report any discrepancies or omissions to the architect for resolution before proceeding with the work.
All work to comply with the Australian Standards;The National Construction Code of Australia & the relevant Authorities.

Legend

- Primary Vehicular-Truck Movements
- Site Vehicular-Truck Movements
- Site Vehicular-Truck Movements (Temporary / Construction)
- Landscape Screening
- Stockpile Areas
- Equipment Zones
- Sediment & Flood Control Measures
- Expansion Areas
- Flood Areas
- Household Recycling Drop-off Area
- Community Recycling Centre (Approved)
- Greystanes Residential Area
- Industrial Area



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Issue		
A	Development Application	04/08/2020

Project Title **Fairfield Sustainable Resource Centre**
Corner Widemere Road & Hassell Street / Wetherill Park NSW 2164

Drawing Title **Site Analysis Plan**

Scale 1:2500 (A1)
Project # 2019-14
Drawing # **SA001**

Notes

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Issue		
A	Development Application	04/08/2020

Project Title **Fairfield Sustainable Resource Centre**
Corner Widemere Road & Hassell Street / Wetherill Park NSW 2164

Drawing Title **Existing Site Plan**

Scale 1:1500 (A1)
Project # 2019-14
Drawing # **EX001**

Notes

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Check all dimensions on site prior to commencement of the work shown on the drawing. Work to figured dimensions where given.
Report any discrepancies or omissions to the architect for resolution before proceeding with the work.
All work to comply with the Australian Standards;The National Construction Code of Australia & the relevant Authorities.

N

Legend

Existing Site Stockpile Areas

Expansion Stockpile Areas

Expansion Areas

Civil Engineering works to create sediment pond #5 according to civil engineering solution.

Existing Household Recycling Centre

Location for Approved Community Recycling Centre

Civil Engineering works to sediment pond #1 to create a forebay & dosing facility.

Civil/Driveway Entry-Exit Widening according to civil & traffic engineering solutions.

Staff & Visitor Parking area revised & expanded according to civil & traffic engineering solutions. (33 Spaces)

Civil Engineering works to sediment pond #2 to create a forebay & dosing facility.

One-way truck movements through the site according to traffic engineering solution.

Civil Engineering works including cut & fill to create levelled usable site area.

Civil Engineering works including excavation to create flood compensation basin.

Civil Engineering works including excavation to create sediment pond #4.

Temporary road with access from Hassall Street for use during construction stages according to Civil & Traffic Engineering solutions.

Decommission existing sediment pond according to civil engineering solution

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Issue		
A	Development Application	04/08/2020

Project Title **Fairfield Sustainable Resource Centre**
Corner Widemere Road & Hassell Street / Wetherill Park NSW 2164

Drawing Title **Site Plan**

Scale 1:1500 (A1)
Project # 2019-14
Drawing # **A001**

APPENDIX 2

Job No	N3475
Client	Stanbury Traffic Planning
Site	Fairfield Sustainable Resource Centre Access Driveway connection with Widemere R
Location	between Davis Road and Hassall Street
Site No	1
Start Date	17-Aug-17
Description	Volume Summary
Direction	EB

MATRIX Traffic and Transport Data

Hour Starting	Day of Week							W'Day Ave	7 Day Ave
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	21-Aug	22-Aug	23-Aug	17-Aug	18-Aug	19-Aug	20-Aug		
AM Peak	38	42	41	52	30	21	1		
PM Peak	43	45	34	40	34	3	1	314	242
0:00	0	0	0	1	0	0	0	0	0
1:00	0	0	0	1	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
4:00	1	4	10	2	1	0	0	4	3
5:00	19	17	21	23	25	14	0	21	17
6:00	12	9	15	20	14	15	0	14	12
7:00	19	14	23	25	24	19	0	21	18
8:00	34	23	32	44	30	21	0	33	26
9:00	31	39	40	48	25	18	0	37	29
10:00	38	42	31	52	24	13	0	37	29
11:00	34	35	41	35	30	16	1	35	27
12:00	43	24	30	40	32	3	0	34	25
13:00	34	45	34	37	34	3	0	37	27
14:00	33	17	22	31	27	0	1	26	19
15:00	20	11	10	16	11	0	0	14	10
16:00	2	2	2	3	2	1	0	2	2
17:00	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0
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21:00	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
Total	320	282	311	378	279	123	2	314	242

7-19	288	252	265	331	239	94	2	275	210
6-22	300	261	280	351	253	109	2	289	222
6-24	300	261	280	351	253	109	2	289	222
0-24	320	282	311	378	279	123	2	314	242