GTAconsultants

Swire Cold Storage Facility
Sydney Business Park (Marsden Park)
Transport Impact Assessment

Client //	Swire Cold Storage Pty Ltd
Office //	NSW
Reference //	14S1407100
Date //	22/07/15

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Issue: B 22/07/15

Client: Swire Cold Storage Pty Ltd
Reference: 14S1407100
GTA Consultants Office: NSW

Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
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Table of Contents

1.	**Introduction**	**1**
1.1	Background	1
1.2	Secretary's Environmental Assessment Requirements	1
1.3	Purpose of this Report	1
1.4	References	2
2.	**Transport Situation**	**3**
2.1	Subject Site	3
2.2	Existing Conditions	3
2.3	Future Conditions	4
3.	**Development Proposal**	**6**
3.1	Land Uses	6
3.2	Vehicle Access	6
3.3	Parking	6
3.4	Bicycle Facilities	6
3.5	Loading Areas	7
4.	**Car Parking**	**8**
4.1	Car Parking Requirements	8
4.2	First Principles Assessment of Car Parking Demand	8
4.3	Adequacy of Parking Supply	9
4.4	Accessible Parking	9
4.5	Bicycle End of Trip Facilities	10
4.6	Car Parking and Loading Layout Review	10
5.	**Traffic Impact Assessment**	**12**
5.1	Traffic Generation	12
5.2	Traffic Impact	14
5.3	Vehicle Routes to the Site	14
5.4	Site Access	15
5.5	Heavy Vehicle Access	15
5.6	Construction Traffic Impact	16
6.	**Conclusion**	**17**

Appendices

A: Existing Conditions Assessment

B: Future Marsden Park Transport Situation

C: Swept Path Assessment

Figures

Figure 2.1:	Subject Site and Its Environs (based on Sydway 2010)	3
Figure 2.2:	Marsden Park Industrial Precinct – Indicative Layout Plan	5
Figure 3.1:	Proposed Site Layout	7
Figure 5.1:	Total Traffic Generation	13
Figure 5.2:	Vehicle Access Routes	15
Figure A.1:	Existing Intersection Locations	20
Figure A.2:	Bus Network Map	21
Figure A.3:	Cycle Routes	22
Figure B.1:	North West Growth Centre	24
Figure B.2:	Richmond Road Upgrade – Staging Plan	25
Figure B.3:	Proposed All Day Bus Routes	26
Figure B.4:	Bus Infrastructure Requirements	27
Figure B.5:	North West Rail Link	28
Figure B.6:	Marsden Park Public Transport Corridor	28

Tables

Table 3.1:	Development Schedule	6
Table 4.1:	DCP Car Parking Requirements	8
Table 4.2:	Staff and Visitor Accumulation Forecasts	8
Table 4.3:	RMS Guide Mode Share Data	9
Table 4.4:	Forecast Peak Parking Accumulation	9
Table 5.1:	Forecast Truck Movements (Following Stage 2)	12
Table 5.2:	Private Vehicle Movements (Following Stage 2)	13
Table 5.3:	Subject Site Traffic Generation Rate	14
Table A.1:	RMS Count Data – Richmond Road (February Counts)	20

1. Introduction

1.1 Background

It is understood that a State Significant Development Application (SSDA) is to be lodged with the Department of Planning and Environment (the Department) for a proposed warehouse and distribution centre at the Marsden Park Industrial Estate. The proposed development incorporates 36,287sq.m GFA of warehouse (and ancillary office) floor area, 35 loading docks and 128 car parking spaces.

GTA Consultants was commissioned by Swire Cold Storage Pty Ltd in December 2014 to undertake a transport impact assessment for the proposed development.

1.2 Secretary's Environmental Assessment Requirements

An overview of the proposed development was lodged with the Department along with a request for the Secretary's Environmental Assessment Requirements (SEAR's) by JBA Planning in November 2014. The Department referred the proposal to a number of authorities with feedback pertaining to transport issues received from RMS, Transport for NSW (TfNSW) and Blacktown City Council. Subsequently, the SEAR's were provided by the Department on 11 December 2014, with the traffic requirements reproduced below:

*"**Traffic and Transport** – including:*

- *Details of all traffic and transport movements likely to be generated during construction and operation, including a description of haul routes and the impacts on nearby intersections;*
- *Details on access to the site from the road network including intersection location, design and sight distance;*
- *An assessment of predicted impacts on road safety and capacity of the road network to accommodate the project;*
- *Plans of any road upgrades or new roads required for the development;*
- *Detailed plans of the proposed layout of the internal road network and parking on site in accordance with the relevant Australian Standards; and*
- *Details of the likely dangerous goods to be transported on arterial and local roads to/from the site and the preparation of an incident management strategy (if relevant)."*

This report does not include an assessment of the dangerous goods to be transport to and from the site. This will be prepared by others.

1.3 Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed development, including consideration of the following:

i existing traffic and parking conditions surrounding the site
ii suitability of the proposed parking in terms of supply (quantum) and layout
iii service vehicle requirements
iv pedestrian and bicycle requirements
v the traffic generating characteristics of the proposed development
vi suitability of the proposed access arrangements for the site

vii the transport impact of the development proposal on the surrounding road network.

1.4 References

In preparing this report, reference has been made to the following:

- an inspection of the site and its surrounds
- Blacktown City Council Growth Centre Council Development Control Plan (DCP) 2010
- Australian Standard/ New Zealand Standard, Parking Facilities, Part 1: Off-Street Car Parking AS/NZS 2890.1:2004
- Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS 2890.2:2002
- Australian Standard / New Zealand Standard, Parking Facilities, Part 6: Off-Street Parking for People with Disabilities AS/NZS 2890.6:2009
- plans for the proposed development prepared by BECA, Drawing Number 2520460-96, Revision B, dated 13/05/15
- other documents and data as referenced in this report.

2. Transport Situation

2.1 Subject Site

The subject site is located at Lot 101 of the Sydney Business Park. The site of approximately 70,320sq.m has frontages of 225m to Hollingsworth Road to the south, 320m to Road No. 2 to the west and 235m to Road No. 5 to the north. The site is zoned Light Industrial (IN2).

The location of the subject site and its surrounding environs is shown in Figure 2.1.

Figure 2.1: Subject Site and Its Environs (based on Sydway 2010)

(Reproduced with permission from Sydway Publishing Pty Ltd)

2.2 Existing Conditions

A detailed review of the existing transport situation is provided in Appendix A of this report.

2.3 Future Conditions

2.3.1 Marsden Park Industrial Precinct

The 551ha Marsden Park Industrial Precinct was rezoned in November 2010 under the NSW Government's Precinct Acceleration Protocol. Located 40km west of Sydney CBD, the Precinct is anticipated to provide 10,000 jobs and 1,200 homes within Sydney's North West Growth Centre.

The rezoning was subject to a voluntary planning agreement which has provided funding towards the proposed upgrade of Richmond Road between Hollinsworth Road and Townson Road which is currently being completed.

On completion Marsden Park Industrial Precinct will provide:

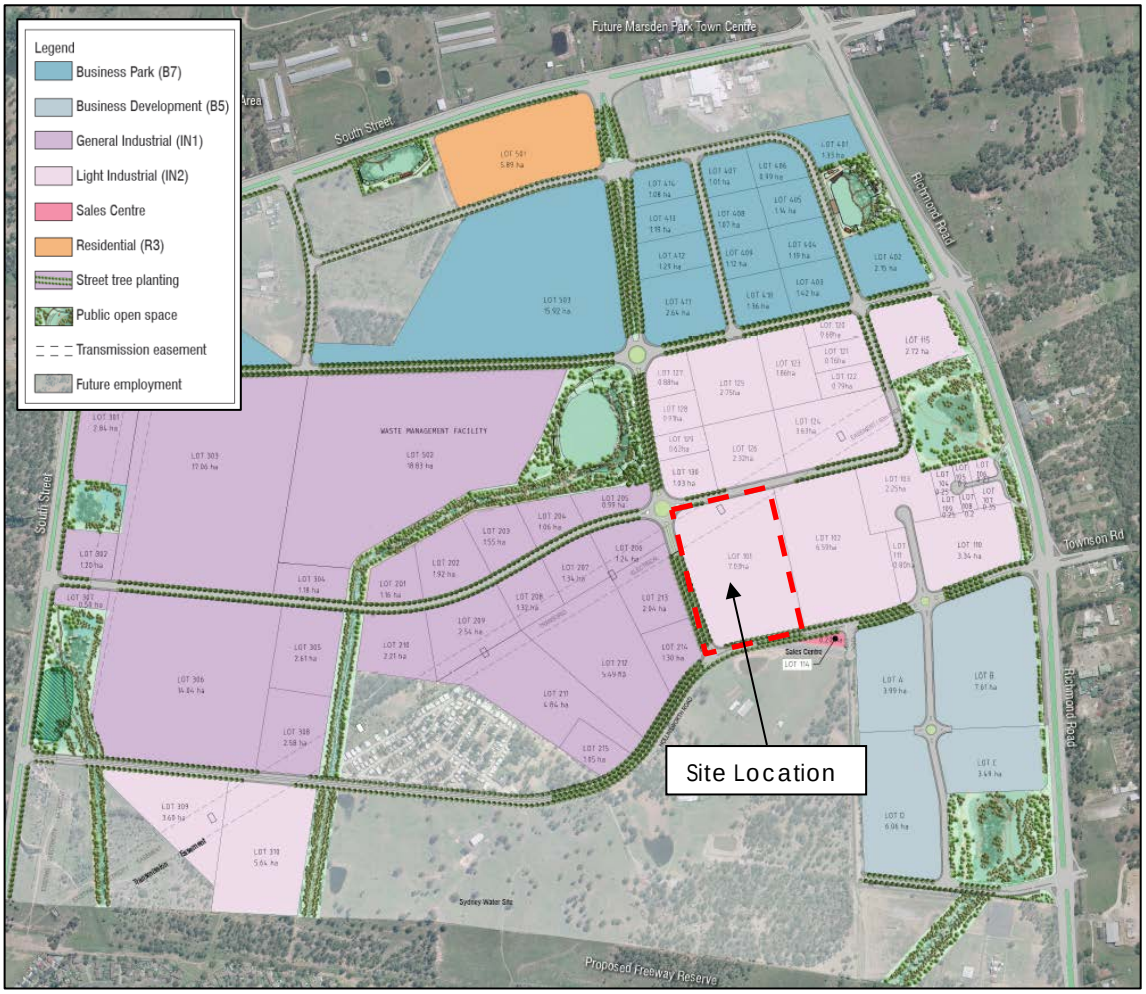
- 60ha of commercial land
- 40ha of bulky goods retail
- 206ha of industrial land
- 63ha of conservation land and open space
- Residential housing close to the planned Marsden Park town centre (located to the north of the Industrial Precinct) to accommodate 3,500 people.

2.3.2 Sydney Business Park

The Sydney Business Park forms the majority of the Marsden Park Industrial Precinct. The 256ha Sydney Business Park will accommodate industrial, commercial and bulky good land uses.

The future Sydney Business Park layout is provided in Figure 2.2.

Figure 2.2: Marsden Park Industrial Precinct – Indicative Layout Plan



3. Development Proposal

3.1 Land Uses

The proposed Swire Cold Storage Facility will operate as a warehouse and distribution centre for chilled and frozen products. The warehouse is designed to be a highly automated operation with lower employee density than a typical industrial use.

The facility will be used for two main functions, as follows:

- Warehouse and transport –products are stored and dispatched
- Cross dock logistics – products are sorted and then dispatched

The site will be developed in two stages. A summary of the proposed floor areas is provided in Table 3.1.

Table 3.1: Development Schedule

Stage	Floor Area		
	Warehouse	Office	Total
Stage 1	18,802sq.m	734sq.m	19,536sq.m
Stage 2	15,333sq.m	1,418sq.m	16,751sq.m
Total	**34,135sq.m**	**2,152sq.m**	**36,287sq.m**

An overview of the proposed development layout is provided in Figure 3.1.

3.2 Vehicle Access

Vehicle access to the site is proposed via four crossovers to Road 5 on the northern boundary of the site, as follows:

- Car park access (x2)
- Truck entry
- Truck exit.

The suitability of the proposed access arrangements is discussed in Section 4 of this report.

3.3 Parking

The proposed development will provide a total of 128 car parking spaces, including 94 spaces as part of Stage 1 and 34 spaces as part of Stage 2. Two accessible parking spaces are provided.

There are also parking facilities provided for up to 17 trucks, catering for vehicles of varying sizes.

The suitability of the parking provision and layout is discussed in Section 4 of this report.

3.4 Bicycle Facilities

A bicycle shed accommodating 12 bicycle parking spaces is proposed to be provided within the car park.

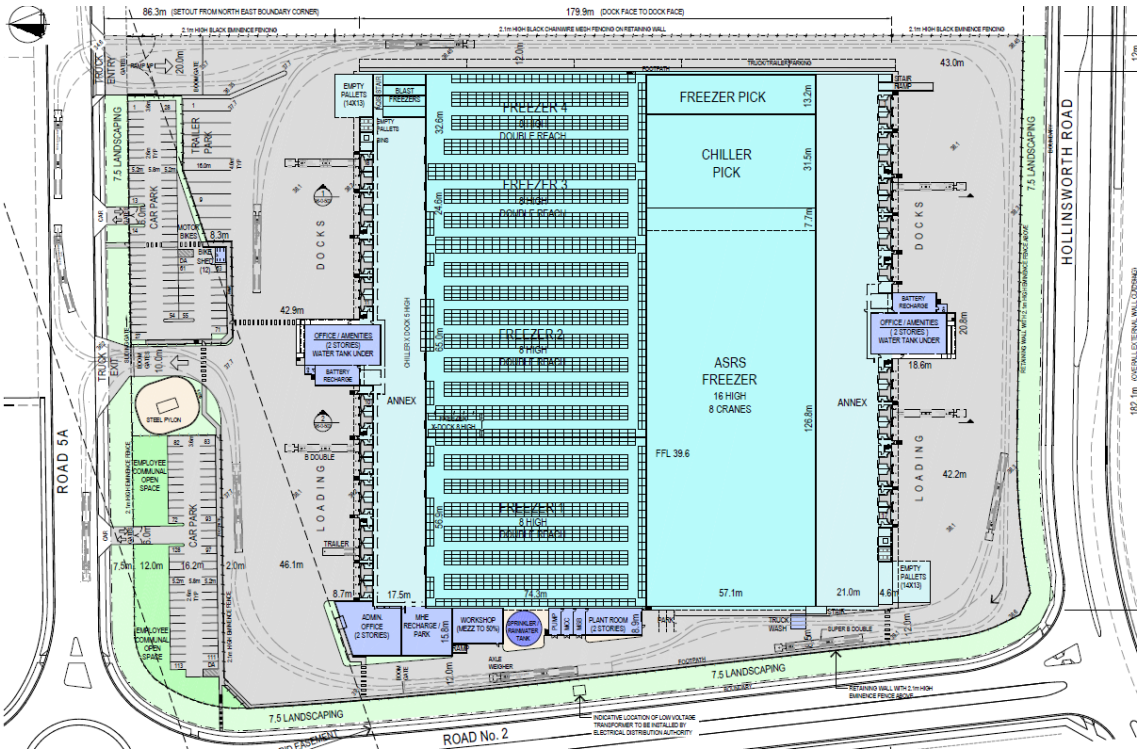
The suitability of the bicycle provisions is discussed in Section 4 of this report.

3.5 Loading Areas

There are 35 loading docks currently proposed within the site. All loading docks can accommodate up to and including 32m Super B-Doubles.

The suitability of the proposed loading arrangements is discussed in Section 4 of this report.

Figure 3.1: Proposed Site Layout



4. Car Parking

4.1 Car Parking Requirements

The car parking provision requirements for different development types are set out in Blacktown City Council's 'Growth Centre Precincts Development Control Plan 2010'. A review of the car parking requirement rates and the floor area schedule results in a DCP parking requirement for the proposed development is summarised in Table 4.1 below.

Table 4.1: DCP Car Parking Requirements

Stage	Description	Use	Size	DCP Parking Rate	DCP Parking Requirement
1	Warehouse	Factory, Warehouse & Bulk Storage	18,802sq.m	1 space / 75sq.m GFA for floor areas up to 7,500sq.m GFA	100 spaces
				1 space / 200sq.m GFA for floor areas up to 7,500sq.m GFA	57 spaces
	Office	Office Component	734sq.m	1 space per 40sq.m GFA	18 spaces
	Total				175 spaces
2	Warehouse	Factory, Warehouse & Bulk Storage	34,135sq.m	1 space / 75sq.m GFA for floor areas up to 7,500sq.m GFA	100 spaces
				1 space / 200sq.m GFA for floor areas up to 7,500sq.m GFA	133 spaces
	Office	Office Component	2,152sq.m	1 space per 40sq.m GFA	54 spaces
	Total				287 spaces

Based on the above, the proposed development is required to provide 175 car parking spaces at the completion of Stage 1 and 287 spaces at the completion of Stage 2.

In this instance, the proposed on-site parking provisions of 94 and 128 car spaces for Stages 1 and 2 respectively do not meet the DCP requirement.

4.2 First Principles Assessment of Car Parking Demand

Swire provided staff forecasts for the proposed development that are summarised in Table 4.2 for Stage 1 and Stage 2 of the development.

Table 4.2: Staff and Visitor Accumulation Forecasts

Shift	Time	Stage 1	Stage 2
Day	5:00am to 2:00pm	46	72
Afternoon	2:00pm to 10:30pm	22	51
Night	10:30pm to 5:00am	4	12
Total	**24hrs**	**72**	**135**
Peak Accumulation	Between the day and afternoon shift	68	123

Table 4.2 indicates that at the staff changeover between the day and afternoon shifts there are forecast to be up to 68 and 123 staff and visitors on-site at the one time.

Reference has been made to mode share data for business parks and industrial estates presented in the RMS Guide to Traffic Generating Developments (Technical Direction dated

August 2013) indicates. Four sites were surveyed in Metropolitan Sydney including Erskine Park, Helensburgh, Eastern Creek and Riverwood. The mode share data for each of these sites is presented in Table 4.3.

Table 4.3: RMS Guide Mode Share Data

Travel Mode [1]	Erskine Park	Helensburgh	Eastern Creek	Riverwood	Average
Car (as driver)	87.3%	85.5%	85.3%	78.7%	84.2%
Car (as passenger)	11.2%	8.7%	11.2%	14.1%	11.3%
Other (Pedestrian, Cycle, Public Transport)	1.5%	5.8%	3.5%	7.2%	4.5%

[1] The data excludes commercial vehicle movements.

Table 4.3 indicates that there is an average mode share to car (as driver) of 84%. Utilising the above mode share data, an assessment of the future parking requirements are provided in Table 4.4.

Table 4.4: Forecast Peak Parking Accumulation

Stage	Peak Accumulation of Staff and Visitors On-site	Mode Share to Car	Peak Car Parking Accumulation
Stage 1	68	84%	57 spaces
Stage 2	123		103 spaces

Table 4.4 indicates a peak parking accumulation of 57 spaces for Stage 1 and 103 spaces for Stage 2.

4.2.1 Melbourne Case Study

Swire Cold Storage currently operates a similar warehouse and distribution facility located in Laverton North in Victoria. Similar to the proposed facility, the existing facility is highly automated with low employee densities. It is noted that Laverton North site is located on the outskirts of Melbourne within an industrial precinct with limited (walk up) public transport accessibility similar to the Marsden Park location.

The Laverton North facility includes 31,670sq.m GFA and 103 car parking spaces, provided at a rate of 0.33 spaces per 100sq.m. Car parking demands generated by the site are accommodated wholly within the provided on-site car parking provision.

The Marsden Park site proposes a car parking provision of 0.35 spaces per 100sq.m (at the completion of Stage 2), marginally greater than the Laverton North site.

4.3 Adequacy of Parking Supply

On the basis of the above assessment, the proposed on-site car parking provision (94 spaces for Stage 1 and 128 spaces for Stage 2) is capable of accommodating the anticipated car parking demands (57 spaces for Stage 1 and 103 spaces for Stage 2) associated with the proposed development.

4.4 Accessible Parking

The Blacktown City Council Growth Centre Precincts Development Control Plan 2010 (DCP) indicates that all developments with provisions of more than 50 car parking spaces must provide

at least 2% of those spaces as accessible parking. This equates to a requirement for three accessible parking spaces (=128x2%) or if applied to the anticipated demand two accessible parking spaces (=103x2%).

The proposed accessible parking provision of 2 accessible parking spaces does not meet the Blacktown City Council's requirements. In this regard, it is noted that the proposed car parking provision (128 spaces) exceeds the anticipated demand (103 spaces) by 25 spaces, should the accessible parking demand exceed two spaces a standard space could be converted to an accessible space (likely resulting in the loss of one space).

4.5 Bicycle End of Trip Facilities

The Blacktown City Council Growth Centre Precincts Development Control Plan 2010 indicates that 1 bicycle locker or other suitable form of secure bicycle accommodation is to be provided for staff per 200m^2 GFA.

Based on the above and the proposed area of 16,790sq.m for Stage 1 and 32,970sq.m for Stage 2, the proposed development is required to provide 84 and 165 bicycle parking spaces at the completion of each stage.

It is proposed to provide 12 bicycle parking spaces as part of the development and therefore does not meet Blacktown City Council's requirements.

The RMS mode share data (presented in Section 4.2) indicates a mode share to bicycle for existing industrial estates of less than 1%. This equates to a demand of approximately 1 bicycle space.

Therefore the proposed provision of 12 bicycle parking spaces is considered satisfactory.

4.6 Car Parking and Loading Layout Review

The car parks and loading layout has been reviewed against the requirements of Blacktown City Council's Growth Centre Precincts Development Control Plan (DCP) 2010 and the Australian Standard for Off Street Car Parking and Commercial Vehicle Facilities (AS2890.1:2004, AS2890.2:2002 and AS2890.6:2009). This assessment included a review of the following:

- bay and aisle width
- circulation roads
- internal queuing
- parking for persons with disabilities
- loading vehicle access and facilities.

The proposed car parking and loading layout is generally designed in accordance to relevant Australian Standards and/or DCP requirements.

The DCP recommends that car parking be provided with the following minimum dimensions:

- Bays 2.5m by 5.2m
- Aisle widths in accordance with AS2890.1

The proposed car parking spaces are configured with bays 2.6m by 5.2m (0.1m wider than the DCP requirement) and accessed by a 5.8m wide aisle (User Class 1A of AS2890.1). In addition vehicles could on an informal basis overhang the spaces into the adjacent landscape areas. Such an arrangement would be consistent with Clause 2.4.1 (a)(i) of AS2890.1-2004.

Swept paths have been undertaken for a Super B-Double entering and exiting the site and manoeuvring within and are provided in Appendix C.

5. Traffic Impact Assessment

5.1 Traffic Generation

5.1.1 Preamble

To appreciate the full impact of the development, the traffic assessment undertaken in this section is for the ultimate development (i.e. at the completion of Stage 2).

The Sydney Business Park road network has been designed to accommodate traffic generation from typical industrial park uses. Given that the site is anticipated to be highly automated the traffic generation from the site is anticipated to be less than a typical industrial use.

The following sets out an assessment of the following:

- Site specific traffic generation (utilising information provided by the Client)
- Generic industrial park use traffic generation (utilising the RMS Guide).

5.1.2 Swire Data

Truck Movements

Swire has provided truck delivery information for stock deliveries to the site (inbound) and stock deliveries out of the site (outbound). The data is based on existing truck deliveries to other similar facilities and their forecast product volumes through this site. A summary of the data is provided in Table 5.1.

Table 5.1: Forecast Truck Movements (Following Stage 2)

Time Period	Truck Movements (One-Way)		Total Truck Movements (Two-way) [1]	Average Truck Movements per Hour
	Inbound Stock	Outbound Stock		
1:00 to 5:00am	6	24	60	15 trucks per hour
5:00 to 9:00am	12	30	84	21 trucks per hour
9:00am to 1:00pm	18	22	80	20 trucks per hour
1:00 to 5:00pm	8	16	48	12 trucks per hour
5:00 to 9:00pm	10	4	28	7 trucks per hour
9:00pm to 1:00am	0	0	0	-
Total	**54**	**96**	**300**	**-**

[1] Assuming that trucks arrive and depart in the same time period.

Table 5.1 indicates that 300 truck movements are anticipated across a typical day, with approximately 21 truck movements during a peak hour.

Staff Vehicle Movements

An assessment of the forecast employee movements is presented in Table 5.2 and is based on the forecast staff data provided in Section 4.

Table 5.2: Private Vehicle Movements (Following Stage 2)

Shift Changeover	Time	Vehicle Movements [1]		
		In	Out	Total
Night to day shift	4:30 to 5:30am	60	10	70
Day to afternoon shift	1:30 to 2:30pm	43	60	103
Afternoon to night shift	10:00 to 11:00pm	10	43	53

[1] Based on the staff forecast provided earlier in this report and adopting a mode share to car of 84%.

Table 5.2 indicates that a peak staff traffic generation of 103 movements is anticipated between 1:30 and 2:30pm.

Total Vehicle Movements

The anticipated total traffic generation (staff and truck movements) across the day is presented in Figure 5.1. The assessment includes consideration for up to 10 visitor vehicle movements per hour between 6:00am and 6:00pm.

Figure 5.1: Total Traffic Generation

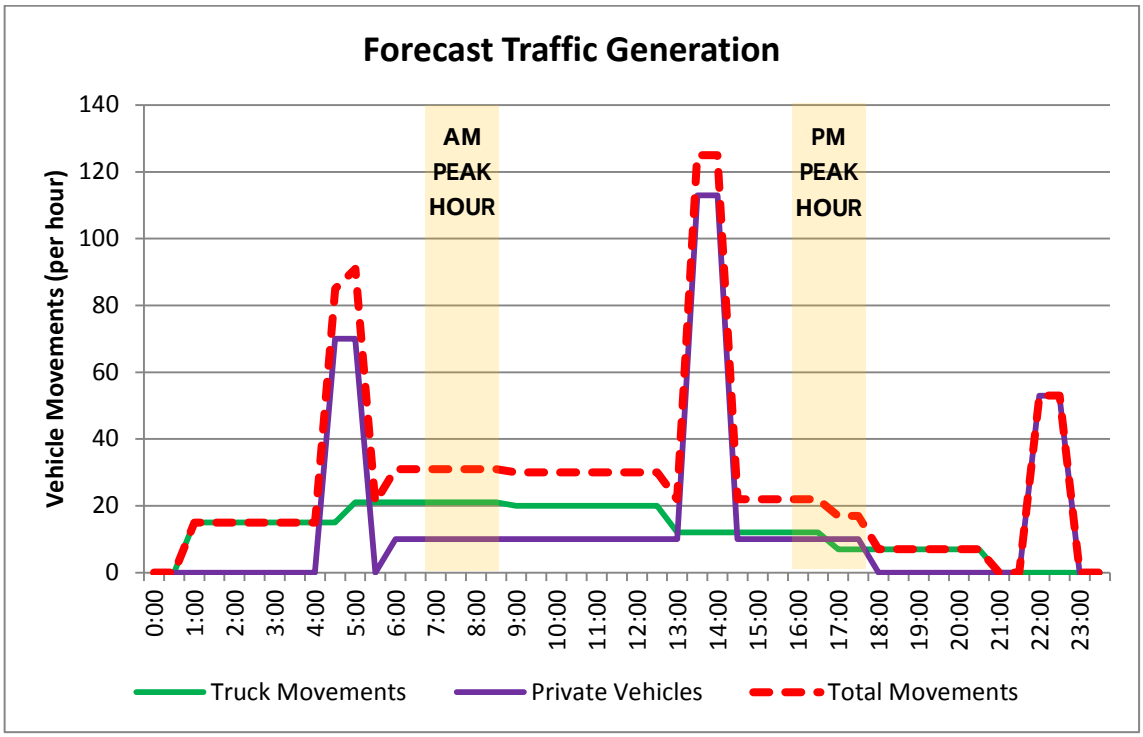


Figure 5.1 indicates that the site could be expected to generate up to 125 movements during the site peak hour (lunchtime). The site is expected to generate between 20 and 30 movements during the road network peak hours.

5.1.3 Generic Industrial Traffic Generation Data

Typical traffic generation estimates for the proposed development have been sourced from the RMS Guide to Traffic Generating Developments (Technical Direction: August 2013). Estimates of the AM and PM peak hour traffic generation for the site are provided in Table 5.3.

Table 5.3: Subject Site Traffic Generation Rate

Source	Use	Size	Traffic generation Rate		Traffic Generation	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Technical Direction 2013	Business Parks and Industrial Estates	36,287sq.m	0.52 movements per 100sq.m GFA	0.56 movements per 100sq.m GFA	189	203

Table 5.3 indicates that adopting generic traffic generation rates that the subject site operating as a typical industrial use could be anticipated to generate some 189 to 203 movements in each of the AM and PM peak hours.

The above traffic generation estimates are significantly higher than those anticipated for the site, noting that the traffic generation rates are based on a variety of industrial and business park uses rather than a site specific assessment.

5.2 Traffic Impact

The road network within the Marsden Park Industrial and Bulky Goods Precinct was initially designed to cater for traditional industrial and factory uses. The proposed development is anticipated to generate less traffic than a traditional industrial land use. By extension there will be adequate capacity in the Sydney Business Park and broader road network to accommodate the traffic generated by the site. Indeed the peak traffic generation from the site is anticipated to occur outside the traditional road network peak periods.

It is noted that the above assessment technique (with no specific SIDRA modelling) is consistent with the approach undertaken for other developments within the Sydney Business Park that have been approved by the Department and Council, including the Lindt site, Hargraves bulky goods development and IKEA.

Based on the above the traffic generated from the development is not expected to compromise the safety or function of the surround road network.

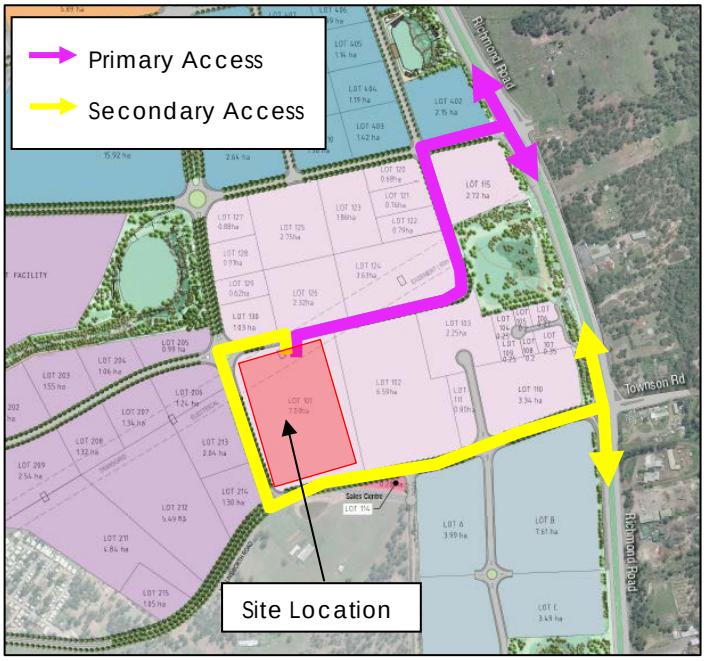
5.3 Vehicle Routes to the Site

Vehicle access is provided via the rear of the site to Road No. 5 and as a result it is anticipated that vehicles accessing the site would primarily use Quarry Street, rather than Hollinsworth Road, to access Richmond Road. This would allow vehicles accessing the site to avoid any potential future congestion associated with the bulky goods precinct that may occur during peak retail periods (Thursday evenings and Saturday lunchtime).

It is noted that the road network to the north of the site may not be delivered by the time the site is operational. As such, vehicles accessing the site will be initially required to access the site via the established road network to the south (shown as the secondary access in Figure 5.2).

The main vehicle access routes between the site and Richmond Road are illustrated in Figure 5.2.

Figure 5.2: Vehicle Access Routes



5.4 Site Access

The site is bound by Hollinsworth Road to the south, Road No. 2 to the west and Road No. 5 to the north. Hollinsworth Road is the highest order road with future property access typically restricted to left in / left out movements only. Road No. 5 is the lowest order road of the three frontage roads. Reference to the RMS Guide indicates that vehicle access should typically be provided from the lowest order road.

In this regard, vehicle access to the site is proposed via four crossovers to Road No. 5 in accordance with typical vehicle access management.

The access points are spaced approximately as follows (from west to east):

- Road No. 2 to car park access: 50m
- Car park access to truck egress: 50m
- Truck egress to car park access: 40m
- Car park access to truck ingress: 40m.

Reference to Clause 3.2 of the Australian Standards (AS2890.1:2004) indicates that vehicle access points should be located a minimum 6m from the tangent point of an intersection. Furthermore, Blacktown City Council has anecdotally indicated that they require any vehicle access to be spaced a minimum 35m from an intersection.

The proposed vehicle access arrangements are designed in accordance with the requirements of the Australian Standards and Councils requirements.

5.5 Heavy Vehicle Access

Swire intend to use a variety of truck sizes to service the facility, including potentially using Super B-Double vehicles to access the site. The Super B-Double vehicle is larger than a standard B-Double vehicle and is classified as a restricted access vehicle.

In this regard the RMS website states the following regarding the use of restricted access vehicles:

"Allowing the operation of more productive quad axle group combinations is an important initiative that will boost the economy of NSW and reduce the number of trucks on our roads."

Advice from Sydney Business Park indicates that the road network within the Marsden Park Industrial and Bulky Goods Precinct have been designed to accommodate B-triple vehicles.

B-triple vehicles have comparable turning movement/swept path requirements to Super B-double vehicles. Although it is acknowledged that the existing road network beyond the Precinct has limited accessibility for Super B-Doubles, the proposed development is 'future proofed' should the use of such vehicle on State Roads be expanded.

Driver amenities and rest facilities are provided as part of the development and will be available for drivers of all truck types.

5.6 Construction Traffic Impact

During the construction phase of the proposed development, it is anticipated that the site would not generate more than 40 construction vehicles (i.e. trucks) a day. In addition, it is anticipated that there would be around 70 workers on-site who would predominantly drive to/from site.

The above construction traffic estimates are less than the traffic generation anticipated during the normal operation of the site.

Furthermore, taking into consideration that the Marsden Park Industrial Precinct was designed with transport infrastructure to accommodate the expected full development of the Precinct, the volume and composition of traffic during construction could not be expected to compromise the safety or function of the surrounding road network.

A detailed construction management plan would be prepared prior to issue of the construction certificate.

6. Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

i The proposed development generates a DCP parking requirement of 287 spaces.

ii The warehouse is designed to be a highly automated operation with lower employee density than a typical industrial use.

iii A first principles assessment of parking demand indicates peak parking demands of 57 spaces for Stage 1 and 103 spaces for Stage 2.

iv The proposed car supplies of 94 spaces for Stage 1 and 128 spaces for Stage 2 will meet the forecast car parking demands.

v The proposed parking and loading layout is consistent with the dimensional requirements as set out in the Blacktown City Council's Growth Centre Precincts Development Control Plan 2010 and the Australian Standard for Off Street Car Parking and Commercial Vehicle Facilities (AS2890.1:2004, AS2890.2:2002 and AS2890.6:2009).

vi The proposed provision of 12 bicycle parking spaces is considered satisfactory.

vii The site is expected to generate in the order of 20 to 30 vehicle movements during the road network peak hours.

viii The proposed development is consistent with the intended uses for the Marsden Park Industrial and Bulky Goods Precinct and therefore is not expected to compromise the safety or function of the surround road network during the peak periods.

ix A detailed construction management plan should be prepared for the development prior to issue of the construction certificate.

Appendix A

Existing Conditions Assessment

A.1 Road Network

Richmond Road

Richmond Road is a classified State Road (MR537) aligned in a north-south direction that is a key link between the M7 and Richmond that travels through the Marsden Park Industrial Precinct. Richmond Road, a two-way road, was recently upgraded in the vicinity of the site to two-northbound and three-southbound lanes set within an approximately 50 metre wide road reserve.

Richmond Road carries approximately 33,000 vehicles per day[1].

Townson Road

Townson Road is a Local Road aligned in an east-west direction. It is a two-way road configured with one lane in each direction, set within an approximately 20 metre wide road reserve. Townson Road was recently widened on approach to Richmond Road as part of the Richmond Road upgrade works.

Hollinsworth Road

Hollinsworth Road is a Local Road aligned in an east-west direction. Hollinsworth Road, a two-way road, was recently realigned at Richmond Road to form a four-leg intersection with Townson Road. It is currently being upgraded with two lanes in each direction, set within an approximately 30 metre wide road reserve.

A.1.1 Surrounding Intersections

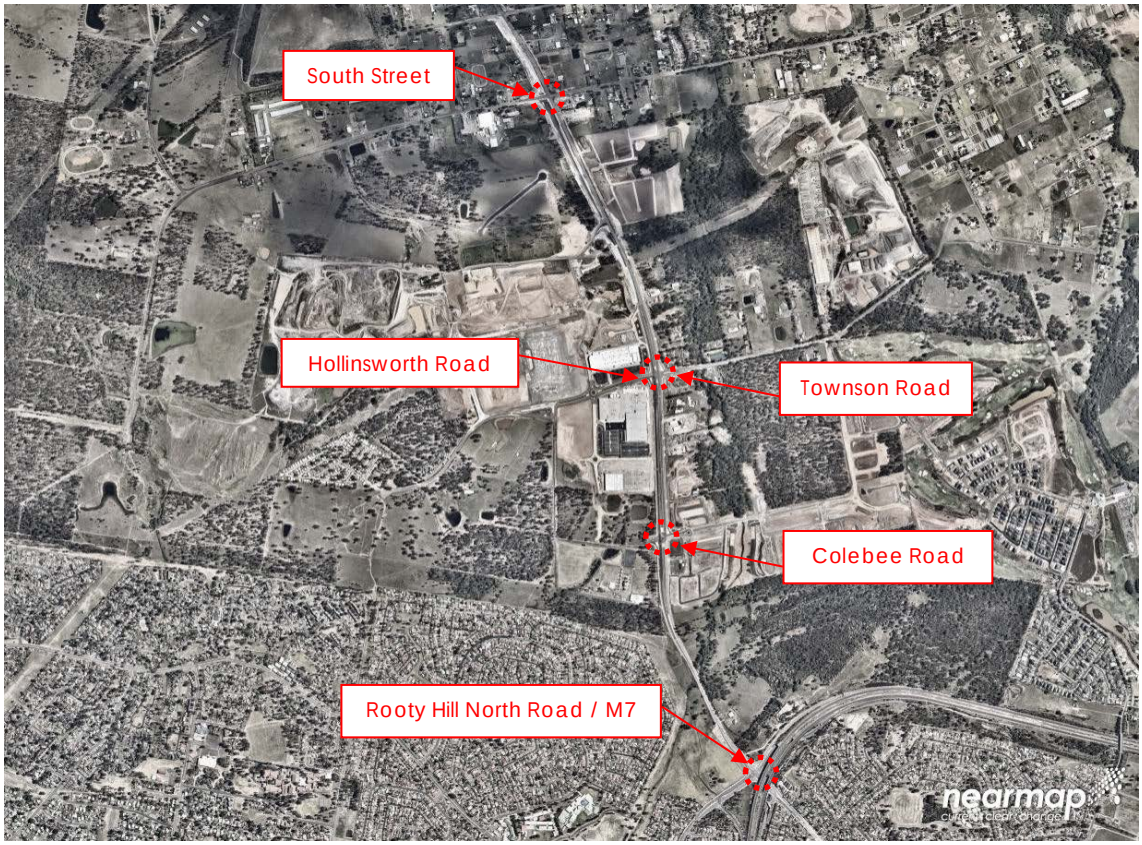
The following intersections currently exist in the vicinity of the site (north to south):

- Richmond Road / South Street (unsignalised)
- Richmond Road/ Townson Road/ Hollinsworth Road (signalised)
- Richmond Road/ Colebee Road (signalised)
- Richmond Road/ Rooty Hill North Road / M7 Interchange (signalised).

The existing Richmond Road intersection locations are illustrated in Figure A.1.

1 Based on RMS permanent count station data for Richmond Road from 2013.

Figure A.1: Existing Intersection Locations



Source: Nearmap dated 30 November 2014

A.2 Traffic Volumes

The RMS permanent traffic count station on Richmond Road located between Rooty Hill Road and Townson Road records average daily traffic. The results of these automatic counts are provided in Table A.1.

Table A.1: RMS Count Data – Richmond Road (February Counts)

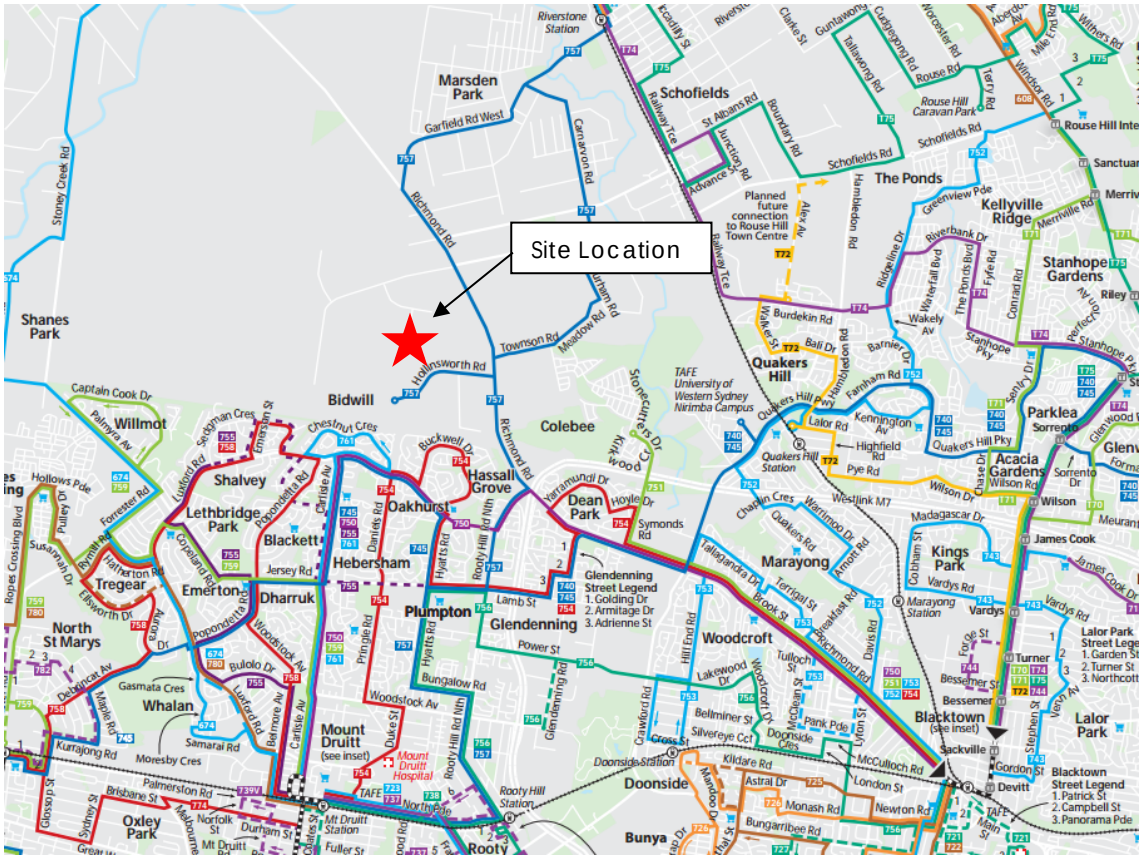
Year	Week Commencing	Weekday Daily Count Data
2011	14 February	31,547vpd
2012	13 February	31,292vpd
2013	4 February	32,551vpd

Table A.1 indicates that between 2011 and 2013 the daily traffic volumes on Richmond Road increased by 1.6% per annum.

A.3 Public Transport

Richmond Road, Hollinsworth Road and Townson Road are served by the route 757 bus service operated by Busways as shown in Figure A.2. Route 757 is an hourly service between Riverstone to Marsden Park and Mt. Druitt via Plumpton, including to Riverstone Railway Station. There are two existing bus stops on either side of Richmond Road at South Street.

Figure A.2: Bus Network Map



Source: Busways

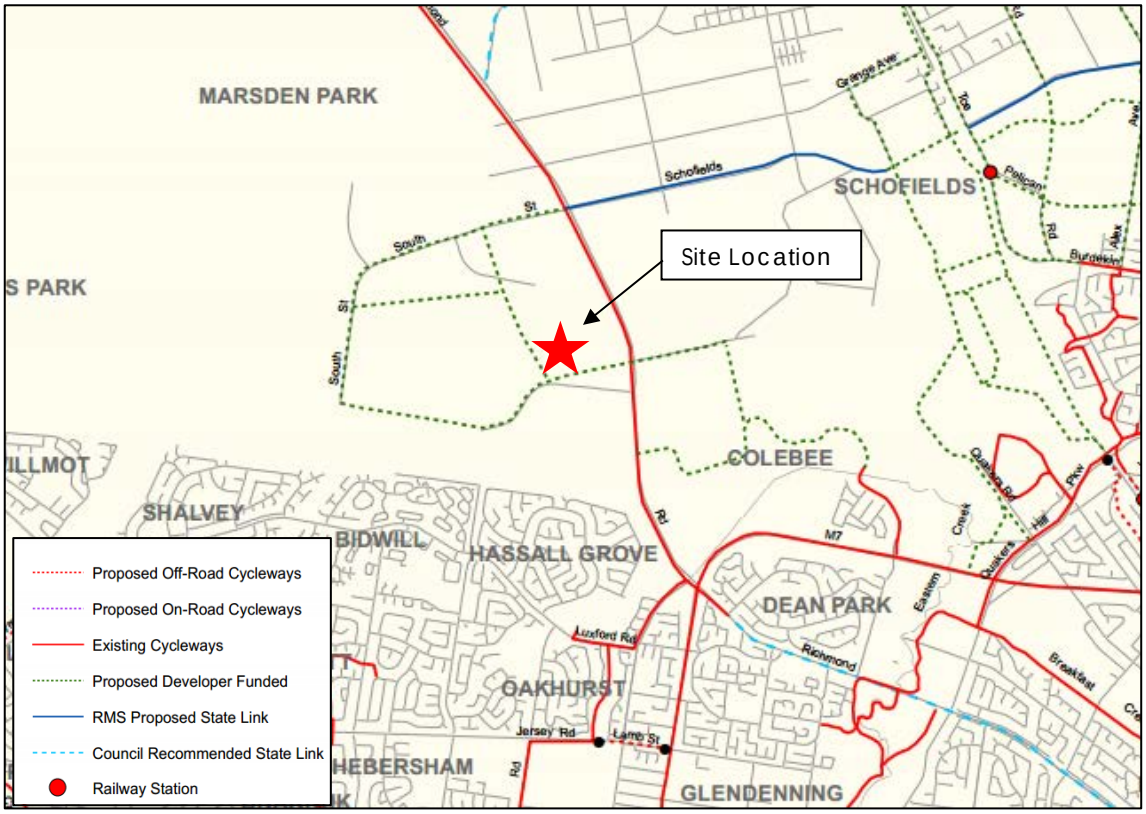
Riverstone Railway Station is located approximately 7km north-east from Marsden Park Industrial Precinct on the Western Line of the CityRail network. Western Line rail services stopping at Riverstone operate between Richmond and Chatswood with services every 30 minutes during peak and off-peak periods.

A.4 Pedestrian and Cycle Infrastructure

Richmond Road forms part of an on-road cycle route connecting Rooty Hill Road North and Richmond as shown in Figure A.3. As part of the current Richmond Road upgrade works, off-road bicycle paths are being constructed along both sides of Richmond Road in the vicinity of the subject site.

There is no dedicated pedestrian infrastructure in the immediate vicinity of the Marsden Park Industrial Precinct.

Figure A.3: Cycle Routes



(Source: Blacktown City Council)

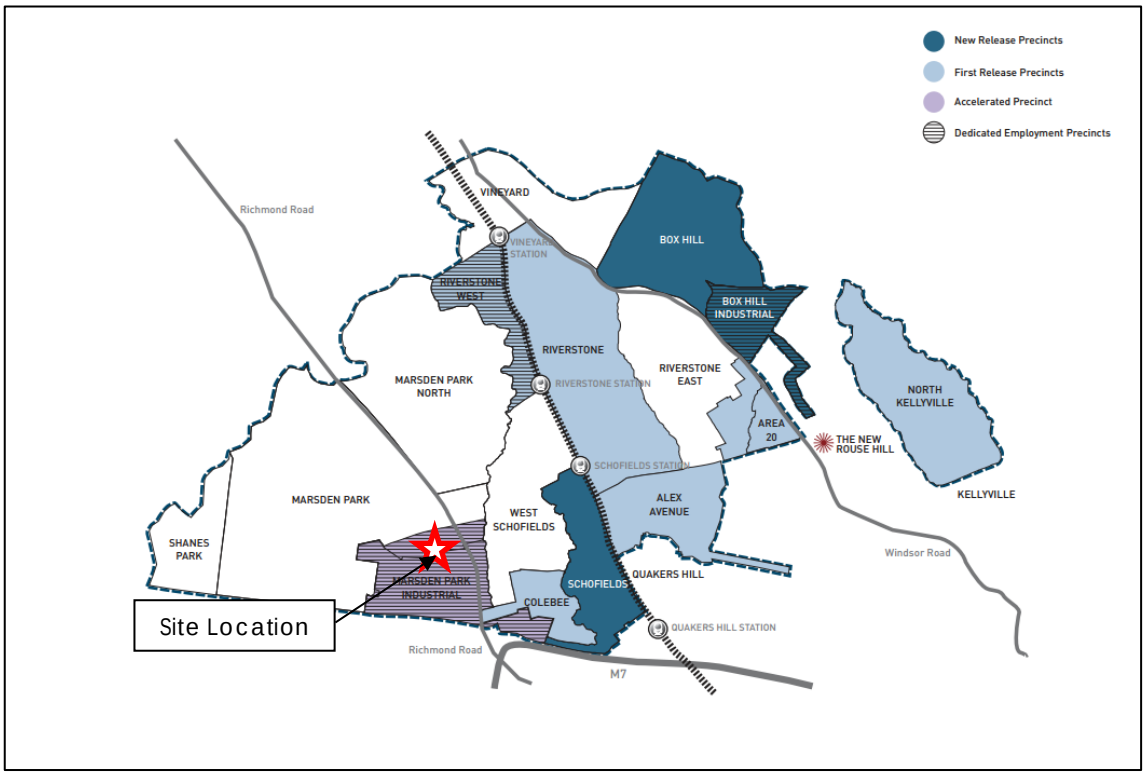
Appendix B

Future Marsden Park Transport Situation

B.1 Overview

Marsden Park Industrial Precinct is located within the North West Growth Centre, 40km west of Sydney CBD. The Growth Centre of approx. 10,000ha is comprised of 16 precincts which on completion will contain 70,000 new dwellings for 200,000 people. The North West Growth Centre is shown in Figure B.1.

Figure B.1: North West Growth Centre



Source: NSW Department of Planning and Infrastructure website (accessed 26 March 2014)

B.2 Future Road Network

B.2.1 Richmond Road Upgrade

Richmond Road is currently being upgraded between Bells Creek and South Creek floodplain. The road will initially be upgraded from its current 2-lane configuration to a 4-lane divided road with a shared path provided on the western side. In the future the road will be able to be upgraded to a 6-lane carriageway with shared paths on both sides of the carriageway.

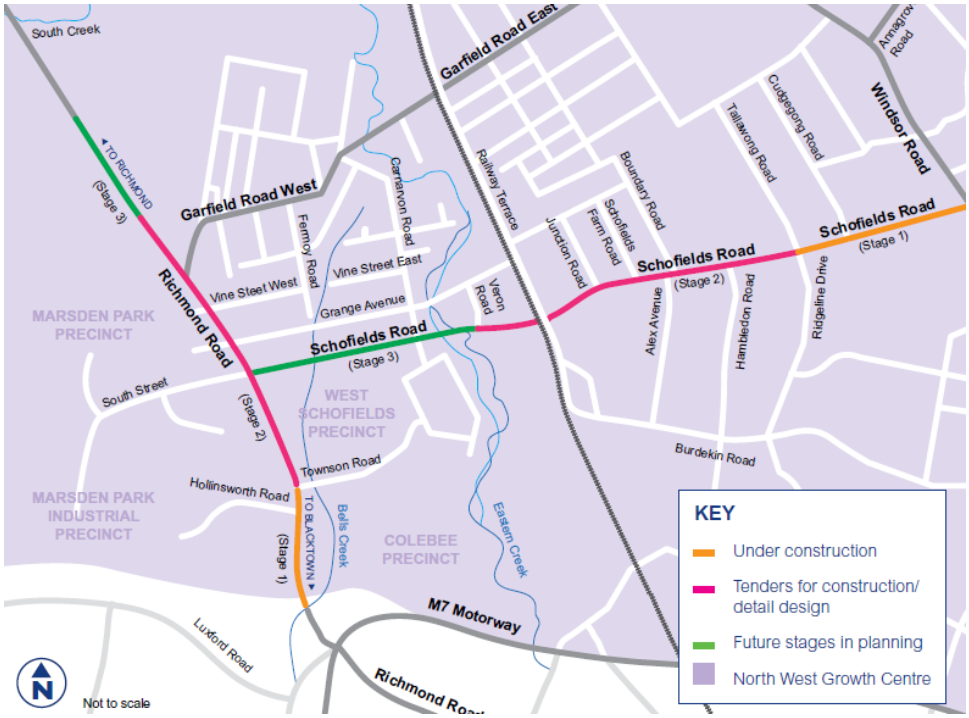
The initial duplication of Richmond Road from 2 lanes to 4 lanes will be undertaken in 3 stages, as follows:

- Stage 1: Bells Creek to Townson Road (currently under construction)
- Stage 2: Townson Road to north of Garfield Road West (construction to commence later this year)
- Stage 3: north of Garfield Road West to South Creek Floodplain.

It is understood that Stages 2 and 3 of the project are now to be delivered concurrently. Works on Stages 2 and 3 are anticipated to commence in mid-2014 and be completed by the end of 2016[2].

The staging plan for the future Richmond Road and nearby Schofield Road project is provided in Figure B.2.

Figure B.2: Richmond Road Upgrade – Staging Plan



(Source: Richmond Road Community Update – December 2013)

Ultimately four new intersections will be provided between the upgraded Richmond Road and the Marsden Park Industrial Precinct (including the Sydney Business Park), as follows:

- Colebee Precinct
- Townson Road
- Quarry Road
- South Street.

The Colebee Precinct and Townson Road intersections will be delivered as part of the Stage 1 upgrade of Richmond Road. The Quarry Road and South Street intersections will be delivered as part of subsequent stages.

B.2.2 Schofields Road

Similar to Richmond Road, Schofields Road is currently being upgraded and extended to provide a future link between Richmond Road and Windsor Road. It will intersect with Richmond Road at South Street and form a continuous east-west link. The new link will provide improved access to the east (including Rouse Hill) from the site. Schofields Road will be delivered in 3 Stages as illustrated in Figure B.2.

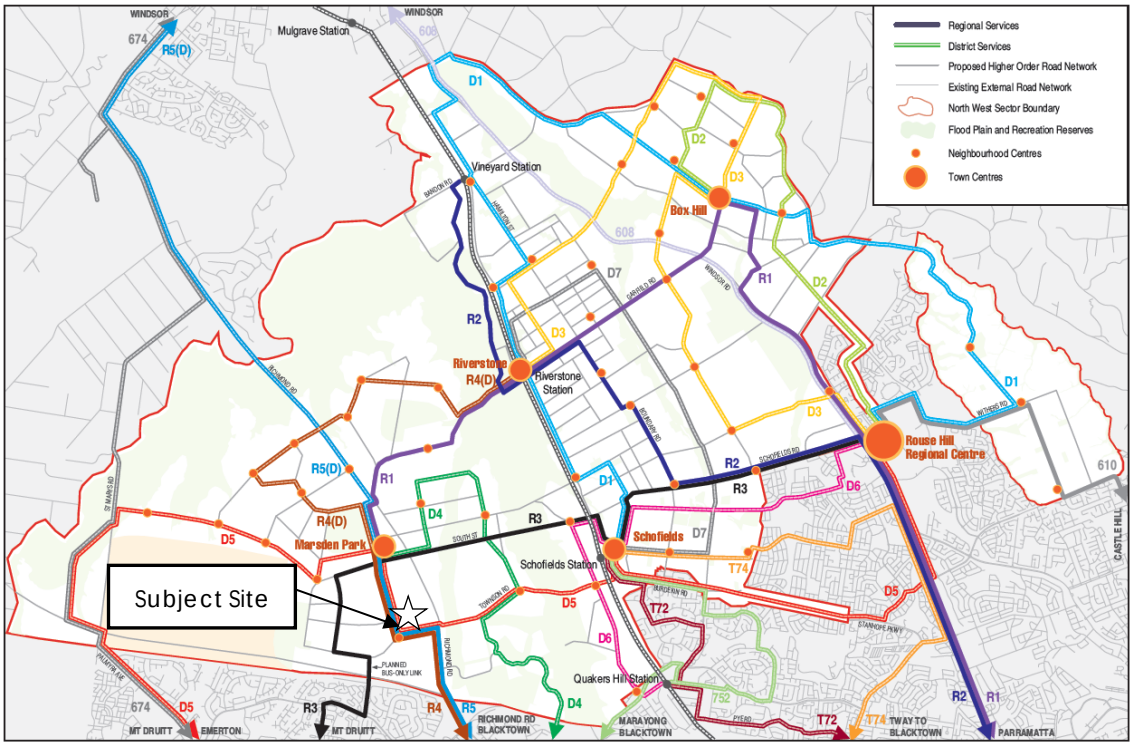
[2] NSW Liberal Party Media Release, dated 17 April 2014 (link: https://www.nsw.liberal.org.au/news/state-news/contract-awarded-next-stage-richmond-road-upgrade)

B.3 Future Sustainable Transport Opportunities

B.3.1 Bus Network

Bus network planning for the North West Growth Centre is directed by the North West Sector Bus Servicing Plan (2009) prepared by McCormick Rankin Cagney for NSW Transport and Infrastructure. The recommended North West Growth Centre bus network, including regional and district services is shown in Figure B.3.

Figure B.3: Proposed All Day Bus Routes



Source: North West Sector Bus Servicing Plan (McCormick Rankin Cagney, 2009)

As shown in Figure B.3, the Marsden Park Industrial Precinct will be served by three regional services and one district service as follows:

i Regional Routes:

- R3: Mount Druitt – Marsden Park – Schofields – Rouse Hill
- R4/R5: Blacktown – Richmond Road – Marsden Park.

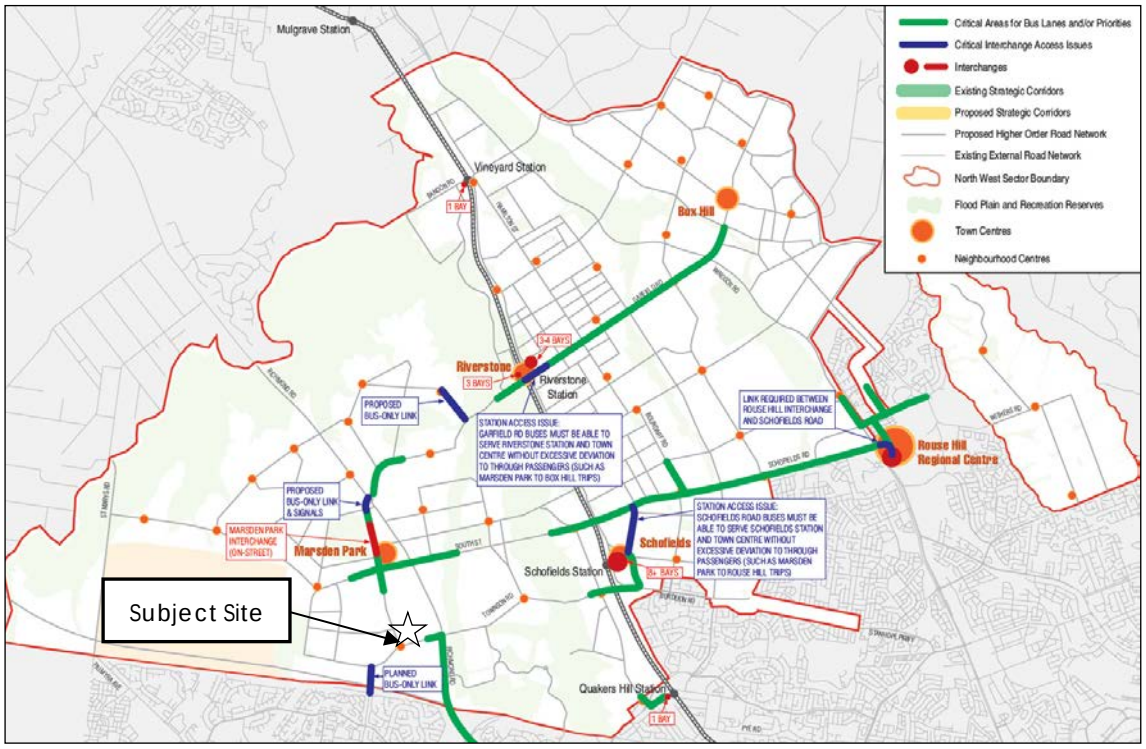
ii District Routes:

- D4: Blacktown – Colebee – Marsden Park.

The regional routes 'R3' would provide access to Mount Druitt, Schofields, and Rouse Hill railway stations while R4/R5 would provide a direct service to Blacktown Station.

The North West Sector Bus Servicing Plan also identified the future bus infrastructure requirements in relation to the proposed development of the North West Growth Centre as shown in Figure B.4.

Figure B.4: Bus Infrastructure Requirements



Source: North West Sector Bus Servicing Plan (McCormick Rankin Cagney, 2009)

As shown in Figure B.4, the bus interchange requirements within Marsden Park Industrial Precinct identified in the North West Sector Bus Servicing Plan include:

- An on-street bus interchange west of Richmond Road
- Two bus only links west of Richmond Road.

B.3.2 North West Rail Link

The North West Rail Link is a priority rail infrastructure project for the NSW Government to provide a 23km rail link through the North West Growth Centre. The rail link would connect to the existing CityRail network and provide eight new stations at Cherrybrook, Castle Hill, Hills Centre, Norwest, Bella Vista, Kellyville, Rouse Hill and Cudgegong Road as well as 4,000 commuter car parking spaces. The North West Rail Link is shown in Figure B.5.

Figure B.5: North West Rail Link

Source: North West Rail Link website: http://northwestrail.com.au, (Transport for NSW) accessed 30/08/2012

Following community consultation, the NSW Government recently announced that a dedicated public transport corridor would be provided from the end of the North West Rail Link at Cudgegong Road west to Schofields Station then onto Marsden Park, a distance of approx. 6.8km. This corridor has now been included in the NSW Government's Long Term Transport Master Plan with Transport for NSW now working to finalise the planning rules to protect this corridor. This protection means any development within or near the corridor will need to consider potential impacts to the viability of the corridor's future use for public transport.

Figure B.6: Marsden Park Public Transport Corridor

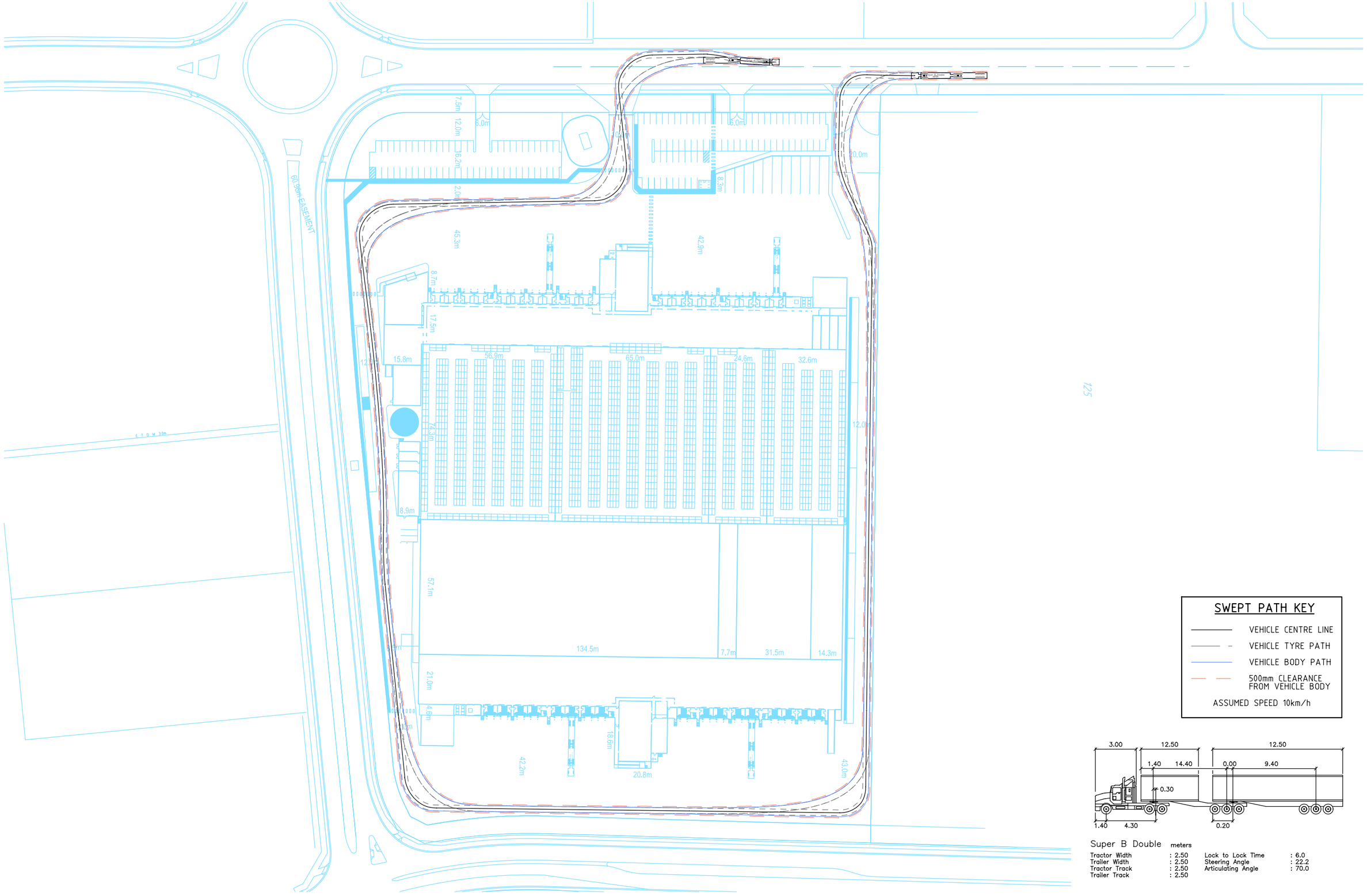
Source: Northwest options website: http://northwestoptions.com.au/ (Transport for NSW), accessed 18 April 2013

B.3.3 Walking and Cycling Network

Shared paths are proposed on both sides of Richmond Road as part of the road upgrade. The signalised intersections along Richmond Road would provide safe crossing points for pedestrians and cyclists.

Appendix C

Swept Path Assessment



SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 10km/h

Super B Double meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 22.2
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

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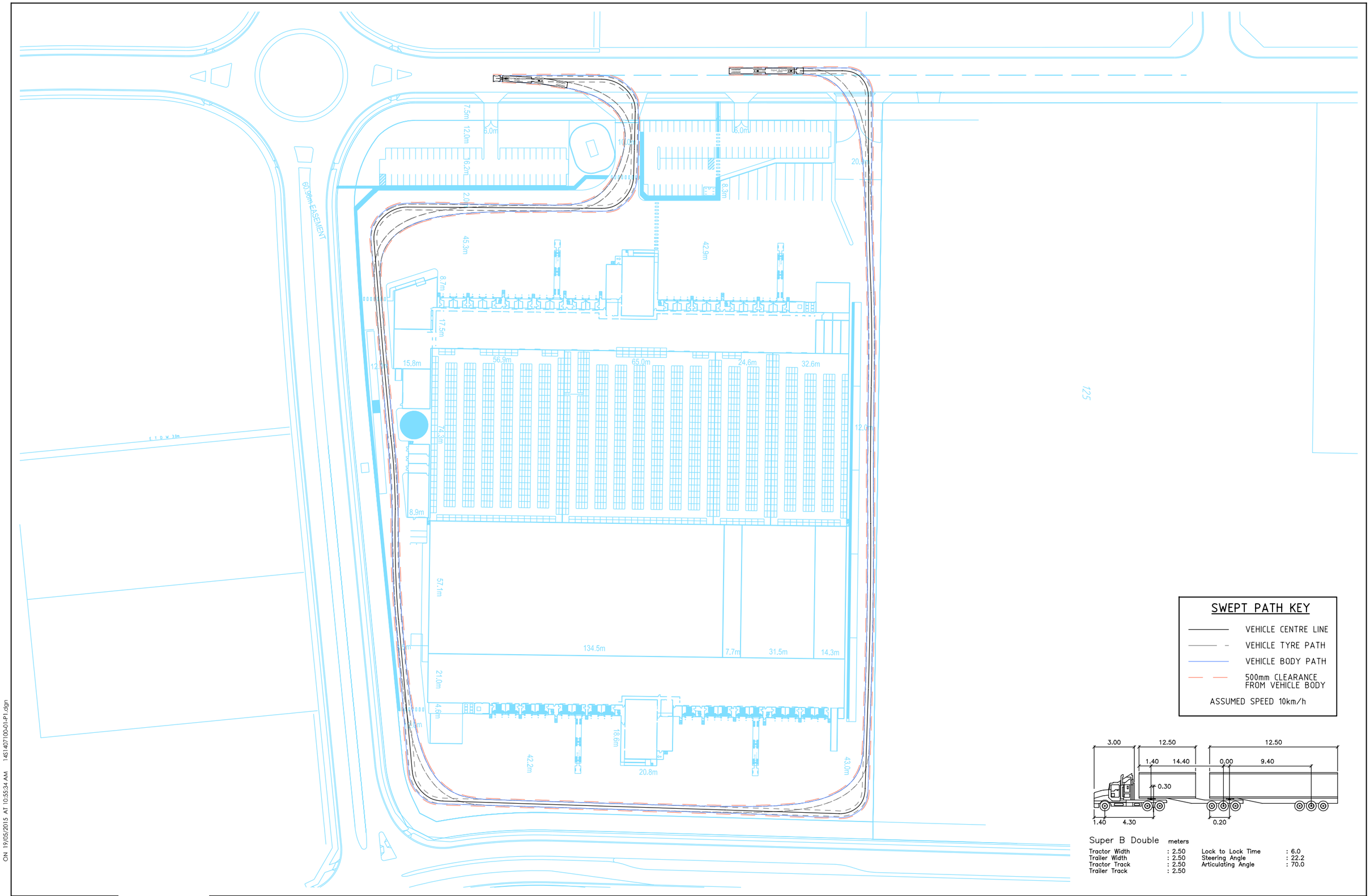
PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

SWIRE COLD STORAGE, MARSDEN PARK
SWEPT PATH ASSESSMENT
32.1m SUPER B-DOUBLE

DATE: 19.05.2015
SCALE: 1:1500@A3
0 15 30 45
APPROVED: ADF
DRAWING NO. 14S1407100-01-01-P1
SHEET: 01 OF 02

PLOTTED BY: barryli ON 19/05/2015 AT 10:55:33 AM 14S1407100-01-P1.dgn



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Trailer Track	: 2.50		

PLOTTED BY : barry.li ON 19/05/2015 AT 10:55:34 AM 14S1407100-01-P1.dgn

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SHEET: 01 OF 02

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