TRAFFIC IMPACT ASSESSMENT

OF PROPOSED

CONCEPT PLAN AND STAGE 1 PROJECT APPLICATION RELATING TO STORAGE AND DISTRIBUTION FACILITIES

ON PT LOT 5, DP 1094504, LENORE LANE

ERSKINE PARK EMPLOYMENT AREA

Prepared on behalf of

C S R L I M I T E D

Prepared by

T R A F F I X

T R A F F I C A N D T R A N S P O R T P L A N N E R S

Ref: 05 079 Report v5
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TRAFFIX

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1. INTRODUCTION

TRAFFIX has been commissioned by CSR Limited to undertake a traffic impact assessment to accompany two applications under Part 3A of the EP&A Act 1979 for development of land owned by CSR Limited in the Erskine Park Employment Area ("EPEA") for industrial purposes. The applications include:

- an application for approval of a Concept Plan for the project comprising earthworks, subdivision and associated infrastructure works to create building pads and for the subsequent erection of buildings to be used for warehousing and distribution purposes; and
- an application for approval of Stage 1 of the project which includes earthworks, subdivision and associated infrastructure works including an industrial building for warehousing and distribution purposes.

The proposed development relates to 38 hectares of land to provide building platforms for subsequent construction of storage and distribution facilities. This report documents the findings of our investigations and forms part of An Environmental Assessment prepared by BBC Consulting Planners, which incorporates an assessment of all the relevant matters for consideration as required under the Environmental Planning and Assessment Act, including the Director General's requirements as advised by the Department of Planning.

The report is structured as follows:

Section 2: Location and Site

Section 3: Existing Traffic Conditions

Section 4: Impacts of Proposed Bulk Earthworks

Section 5: Description of Proposed Distribution Facility

Section 6: Traffic Generation and Impacts

Section 7: Parking Requirements

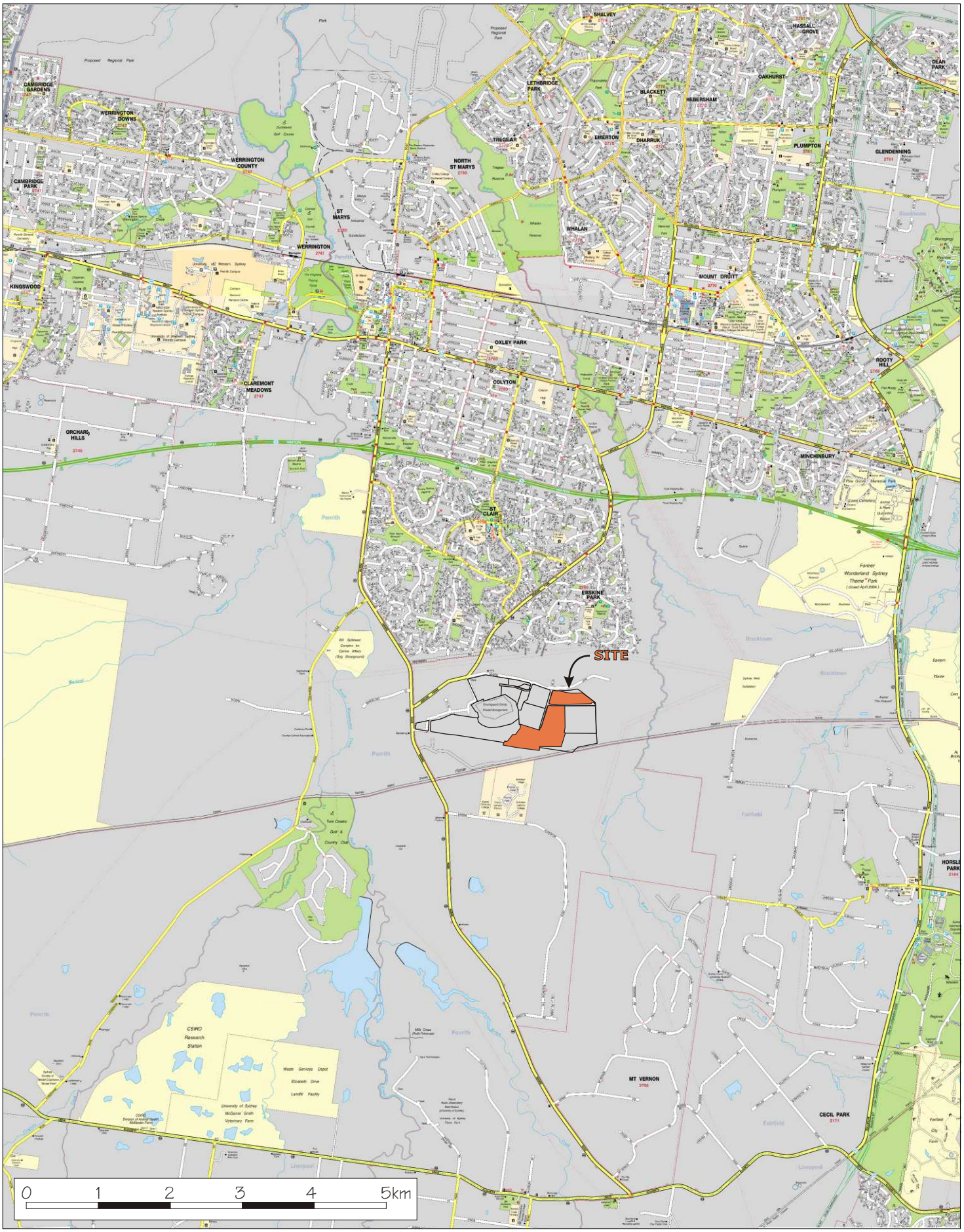
Section 8: Conclusions

2. LOCATION AND SITE

The overall EPEA site lies to the east of Mamre Road, about 3.5 kilometres south of the M4 Motorway, essentially at the southern outskirts of Erskine Park. The subject site forms part of Lot 5 in DP 1094504 which has a total area of 94.4 hectares. The Project site is located in the central and eastern part of this land and the earthworks relate to an area of 38 hectares. Reference should be made to the Location Plan shown in ***Figure 1***.

The EPEA is surrounded by residential development to the north-west of Erskine Park Road (the suburb of St. Clair) as well as to the south-east of Erskine Park Road (the suburb of Erskine Park). It is bounded by vacant and predominantly rural lands to the east, south and west, with the Sydney Water Supply pipeline delineating a continuous east-west corridor to the south of the site in the vicinity of Kemps Creek.

The site is shown in ***Figure 2*** and is located generally on the eastern and southern side of Road 1 which is a new road corridor that is on the southern side of Lenore Lane. Road 1 serves the BlueScope Steel and Lysaght Steel sites on its western side, the proposed Coles distribution facility on its eastern side as well as the subject site and residual land parcels on the eastern side.



Source: UBD 2005

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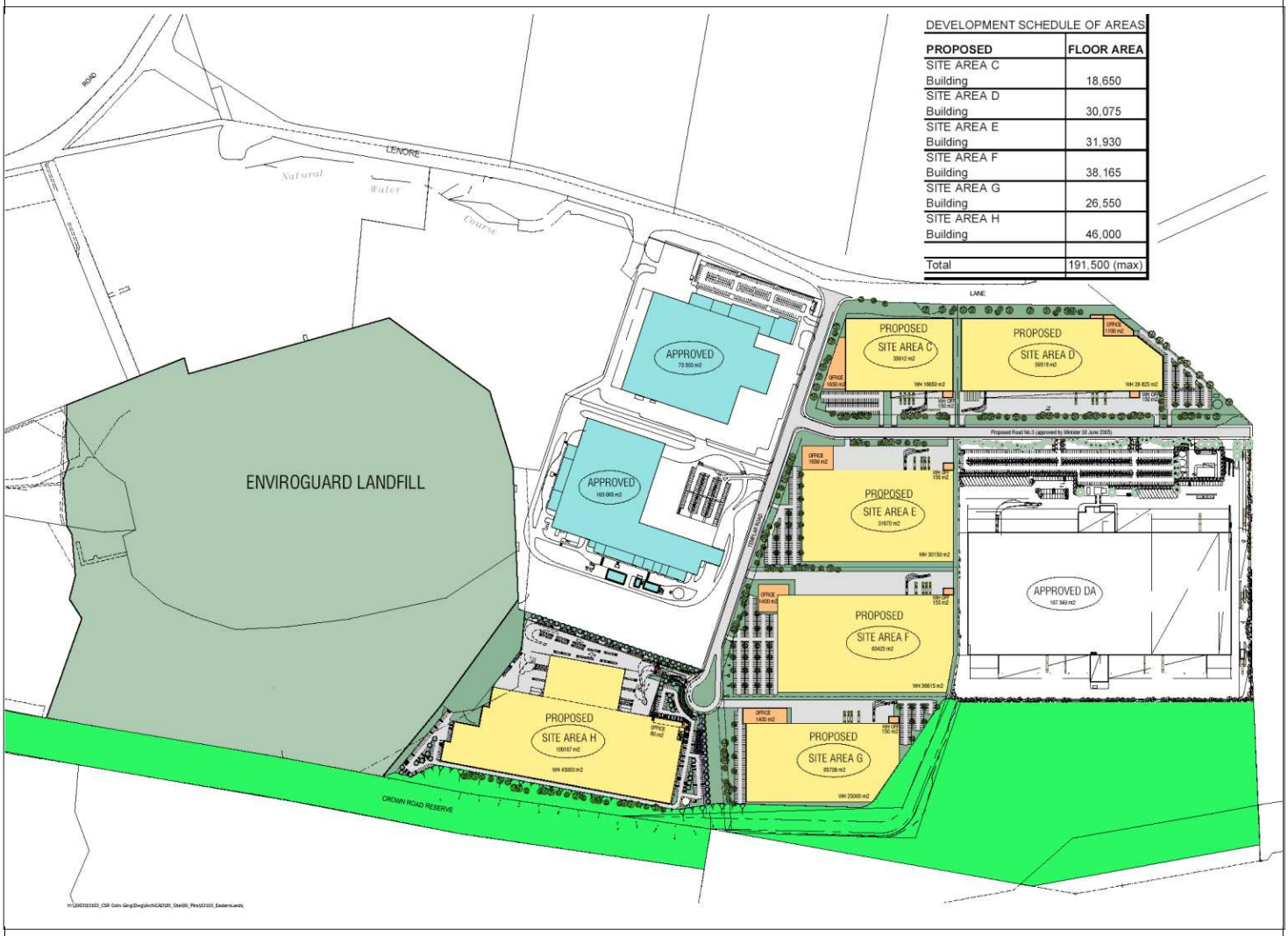
Figure **1** **LOCATION**



ARCHITECT

DEVELOPMENT MANAGER/CLIENT CSR

PROJECT
CSR SITE
LENORE LANE AND MAMRE ROAD
ERSKINE PARK

PROJECT NORTH

DRAWING NAME: Concept Masterplan
DRAWN MB/JM
CHECKED GB/TM
SCALE 1:5000 @A3
DATE
DRAWING NUMBER 03103-ST-20 P06

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Figure **2** **SITE**

3. OVERVIEW OF EXISTING TRAFFIC CONDITIONS

3.1 General Description of Road Environment

The existing road hierarchy in the vicinity of the site is shown in ***Figure 3***. Mamre Road is a classified State Road (MR 536) that is under the care and control of the Roads and Traffic Authority. It provides an arterial road function and connects the M4 Motorway to the north of the site (and the Great Western Highway beyond), with Elizabeth Drive to the south of the site, at Mount Vernon. This includes full interchange movements between Mamre Road and the M4 Motorway. Mamre Road carries single lane traffic flow in each direction in the vicinity of the site, with turning lanes at key intersections. In particular, Erskine Park Road forms a 'T' junction with Mamre Road, approaching from the east. This intersection is under priority control and incorporates a right turn storage lane for the movement from Mamre Road into Erskine Park Road (south to east). Mamre Road also incorporates a separate right turn bay for the movement from Mamre Road into the private access road that presently serves the EPEA, including the subject site.

It can be seen that the Erskine Park Road - Roper Road – Carlisle Avenue route forms part of Main Road 629 and is under the care and control of the Roads and Traffic Authority. This is an arterial route which connects Erskine Park in the south with Mt Druitt in the north. Along this route, to the north of the subject site, MR 629 intersects with the M4 Motorway where east-facing ramps are constructed to facilitate access to/from the east. Carlisle Avenue also intersects the Great Western Highway to the north of the subject site, which provides access to the east and west.

Roper Road continues further south where eastbound on and off ramps are constructed to the M4 Motorway. The on-ramp is via a priority controlled 'T' intersection with Roper Road, which incorporates a right turn storage lane and a left turn deceleration lane. This ramp intersects Roper Road on its western side. The off-ramp intersects Roper Road at a signal controlled 'T' intersection immediately south of the M4 Motorway. Roper Road becomes Erskine Park Road on the southern side of the Motorway.

3.2 Historic Daily Traffic Flows

Historic daily traffic volumes in the vicinity of the site are available for various locations. These are shown in Table 1 and the locations of these count stations are shown in ***Figure 4***.

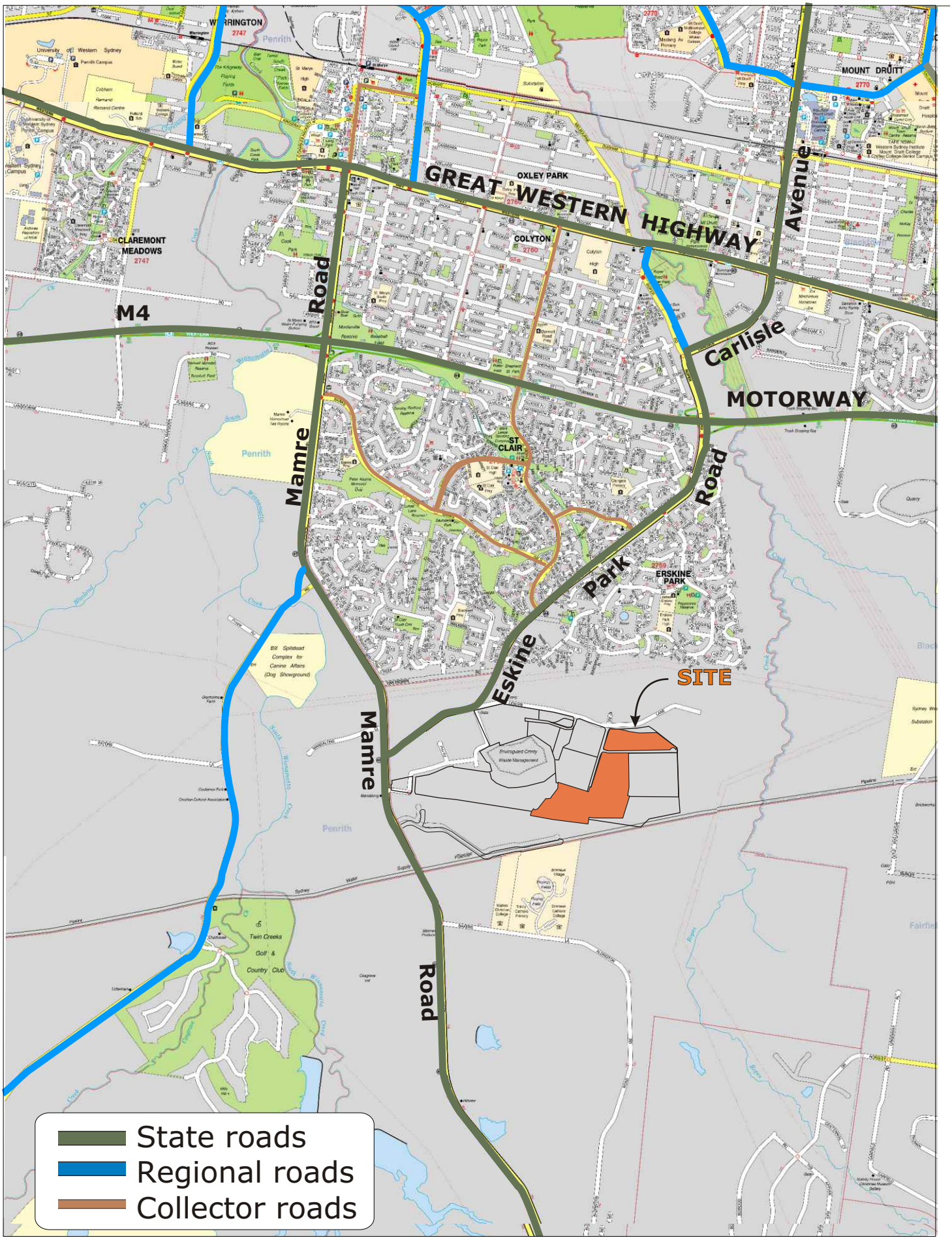

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Figure **3** **ROAD HIERARCHY**

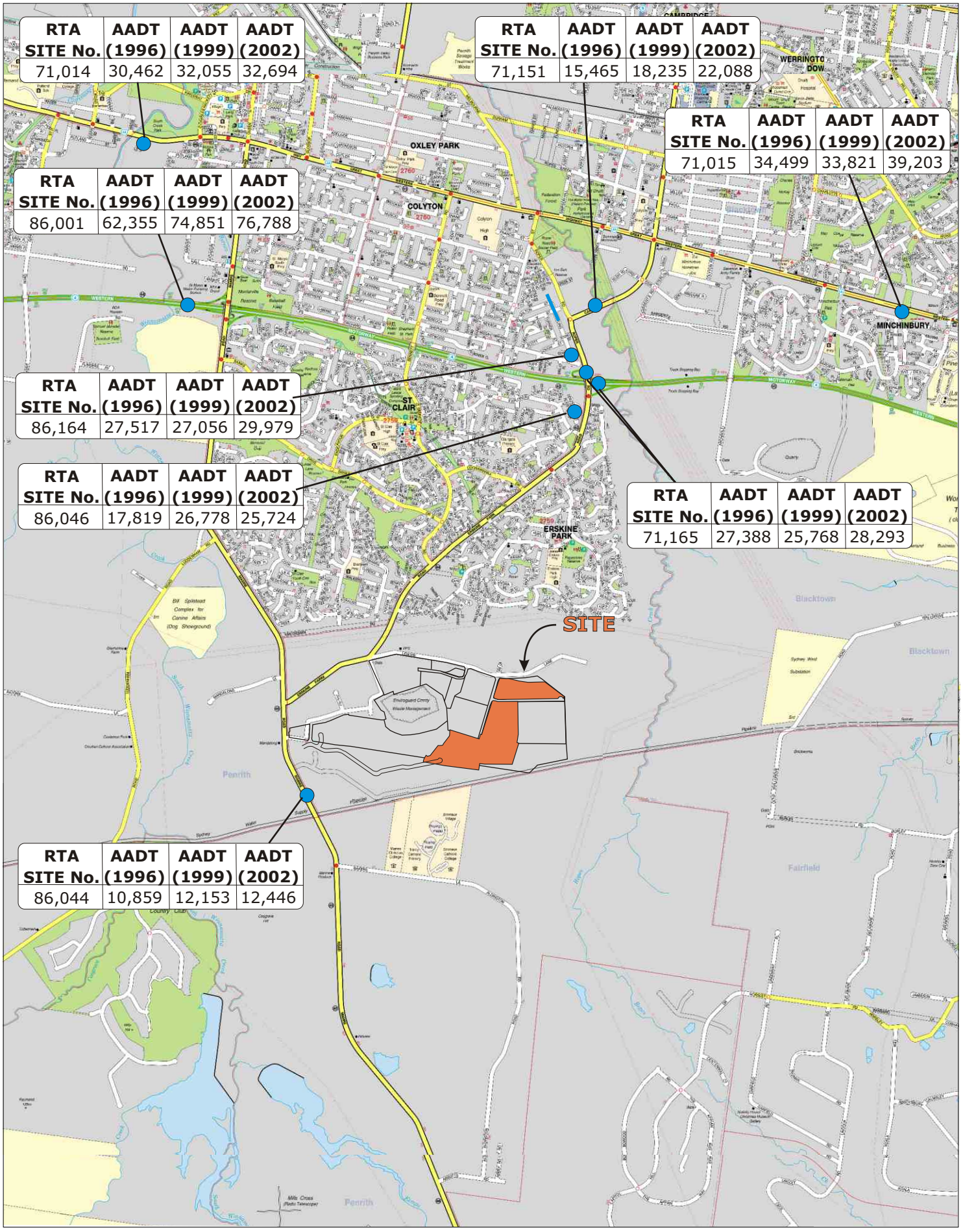

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Figure **4** **RTA AADT SITE LOCATION**

TRAFFIX Traffic & Transport Planners: Level 2, 55 Mountain Street, Broadway, 2007.

Table 1 - Historic Daily Traffic Flows

Location	RTA Site No	AADT (1996)	AADT (1999)	AADT (2002)
Great Western Highway, at Ropes Creek Bridge	71,014	30,462	32,055	32,694
Great Western Highway, west of Beaconsfield Road	71,015	34,499	33,821	39,203
Carlisle Avenue, at Ropes Creek Bridge	71,151	15,465	18,235	22,088
Roper Road, north of M4 on-ramp	86,164	27,517	27,056	29,979
Mamre Road, at the Sydney Water Pipeline	86,044	10,859	12,153	12,446
Erskine Park Road, south of M4 off-ramp	86,046	17,819	26,778	25,724
M4 On/Off-Ramps, at Roper Road	71,165	27,388	25,768	28,293
M4 Motorway, west of Mamre Road	86,001	62,355	74,851	76,788

Source: Traffic Volume Data for Sydney Region, RTA

It can be seen that significant growth has occurred on the Great Western Highway. Sustained growth has also occurred on Carlisle Avenue, on Roper Road, and on the M4 Motorway ramps to Roper Road. Growth on Erskine Park Road has declined slightly between 1999 and 2002, while flows on Mamre Road have been increasing at a moderate rate of less than 1 percent per annum since 1999.

3.3 Existing Site Traffic generation

The site is presently vacant and generates no traffic activity.

3.4 Existing Public Transport Services

Existing public transport services in the locality are shown in ***Figure 5***. These are focussed mainly upon the existing residential catchment to the immediate north of the site that includes Erskine Park and St Clair, with connections to/from the north to St. Marys and Mount Druitt. However, Route 835 connects Liverpool with Penrith and traverses Mamre Road immediately adjacent to the subject site, continuing along Erskine Park Road.

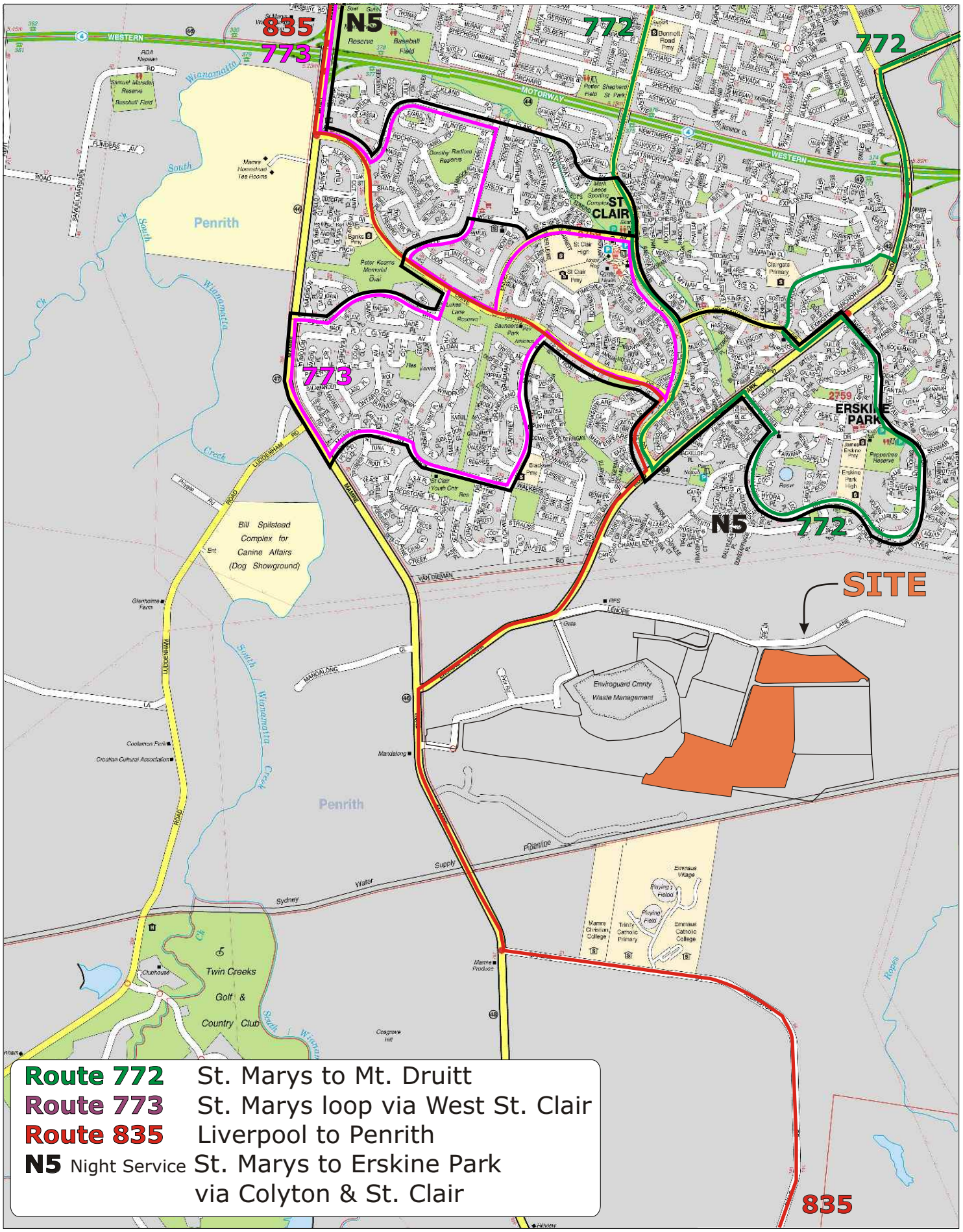

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Figure 5 EXISTING PUBLIC TRANSPORT

4. IMPACTS OF PROPOSED CONCEPT PLAN

4.1 Planning Context

Penrith Council and the Roads and Traffic Authority have agreed the basis upon which the road system should be assessed in 2016, based on the overall EPEA lands at full development potential in 2016. This assessment is based upon the adoption of the following trip rates:

Lysaght, BlueScope, Walkers & Strammit sites	10 trips/ha
Balance of EPEA (including the CSR Master Plan site)	15 trips/ha

These trip rates thus underpin the assessment of the EPEA generally. The resulting performance of the road system in 2016 was the subject of advice to Penrith Council in a letter dated 8 October 2004 in relation to the BlueScope Steel subdivision and the analysis provides the overall planning context for the EPEA site, including the subject site.

The subject site is contained within the area defined by the RTA as "Site B" which incorporates a total site area of 182.9 hectares and includes all sites east of Erskine Park Road that are accessed via Lenore Lane. This includes the Bluescope, Lysaght and Paclib sites, with a balance of 147 hectares which includes the subject site. These 147 hectares have previously been assessed at an inherent rate of 15 trips per hectare. The total site that is the subject of this application has also therefore been assumed to generate 15 trips per hectare.

Based on this strategic analysis, the necessary road improvements (in 2016) included the construction of the intersection of Road 1 with Lenore Lane as *a* signal-controlled 'T' junction that connects Lenore Lane on the eastern side of the Lysaght/BlueScope steel development site and has been previously referred to as the main access to the CSR Erskine Park Estate site. This road also serves the site that is the subject of this application and this intersection operates satisfactorily based on the proposed layout and predicted traffic volumes in 2016. This intersection will be constructed (geometrically) to accommodate ultimate traffic demands in 2016. The proposed traffic signal design prepared by Brown Consulting (Drawing L03042.03 dated 27 September 2004) was previously assessed and also operates satisfactorily in 2016, as previously reported in our letter to Council and the RTA dated 26 November 2004 in relation to the BlueScope Steel DA. These works are a condition on the BlueScope Steel consent. However, the consent also provides for a staged design. This was also assessed in our letter dated 26 November 2004 and it was established that at 50% development (about 2010), the intersection would operate satisfactorily under priority (sign) control (i.e. without traffic signals), based on the ultimate geometry for this intersection.

4.2 Traffic Impact Assessment

The implications of the project application will relate to the changed land areas and proposed land uses and the most important issue is the ability of Road 1 to service the expected traffic levels that will result. In this regard, under the proposal Road 1 will serve the Lysaght and

BlueScope sites, the Coles Myer DA site and the development sites that will result from the current project. The implications of these are discussed separately below:

Lysaght and BlueScope Sites

These sites have a combined area of 18.2 hectares and were assessed on the basis of a generation rate of 10 trips/he as required by the RTA, notwithstanding that the development application for these sites is predicted to be lower. Hence, these sites will generate about 182 veh/hr and this is inherent in the strategic modelling. However, only about 75% of this traffic (140 veh/hr) is expected to make use of Road 1, with the balance using Road 2.

Coles Myer Site

The site of the Coles/Myer distribution facility (as approved) has an area of 20.94 hectares. It has been assumed to generate 15 trips per hectare in the strategic assessment and would therefore generate 314 veh/h during peak periods. This provides a 'base case' against which the proposed Coles Myer facility was assessed. However, that facility is expected to generate an expected 43 veh/hr in the morning peak and 9 veh/hr in the evening peak, so that when compared with a total of 314 vehicle trips per hour under the Council/RTA trip rates discussed, the proposed Coles Myer development will result in substantially lower vehicle trips during peak periods (a reduction of at least 271 veh/hr). It was therefore concluded that the proposed Coles distribution facility will result in substantial benefits arising from the reduced peak period trip rates. In particular, a significant improvement is expected to result at all intersections assessed and it was concluded that the traffic generated by the Coles Myer development (including the expansion area) can be readily accommodated subject to the payment of the appropriate Section 94 contributions.

It is noted that the Coles Myer facility has been relocated to Eastern Creek and that the site is currently the subject of separate applications. The adopted trip rates for these applications is likely to be premised upon the application of 15 trips per hectare which, if it occurs in practice, would mean that the 'benefits' discussed above would not be realised.

Current Project

The Concept Plan area is shown diagrammatically in Figure 2 and includes an area of 38 hectares. It is located generally between Lenore Lane and the crown road reservation to the south; and between Road 1 (Templar Road) in the west and the Coles Myer site in the east. It also extends to the south-west of the Coles Myer site along a newly defined boundary on the general alignment of the crown road reserve. Based upon the application of the generic trip rate of 15 trips/ha, the site would generate 570 veh/hr.

Combined Impacts

The land served by Road 1 (Templar Road) would thus generate about 1,065 veh/hr during peak periods based on a worst-case scenario where generic trip rates are applied to the total land served.

These flows compare with a flow of about 800 veh/hr in both the AM and PM peaks on Road 1 as assessed for the Bluescope DA. This is likely to bring the staging implementation of traffic signals forward slightly from 2010, as discussed further in Section 6.1, when about

50% of the total development served by Road 1 will be operational. This is not required however for the subject development.

4.3 Road Configuration

The land that is the subject of this Project will be served the by Road 1 (Templar Road) which forms a north-south link to Lenore Road. The southern end of this road terminates at a proposed cul-de-sac which has a large diameter circulation road that provides access to properties on the eastern and western sides (Areas G and H) and also permits 'U' turn manoeuvres. This cul-de-sac provides a generous landscaped central median 'island'.

The site is also served by Road 3 which is an east-west road that connects to Templar Road in the west. This road provides access to Site Areas C and D (northern side) and E (southern side) via a series of driveway crossings.

The above arrangements are consistent with the established planning framework for this part of the EPEA.

5. PROPOSED STAGE 1 INDUSTRIAL BUILDING ON SITE H

Stage 1 of the Project includes the construction of an industrial building on Site Area H which is located on the south-western portion of the land that is the subject of this application. The development proposes:

- Building within the Area H Site which has an area of 100,167m^2 (about 10.0 hectares);
- Construction of a total floor area of 46,000m^2, comprising 45.000m^2 of warehouse area and 1,000m^2 of ancilliary office area;
- Provision of access driveways, internal circulation roadways;
- Provision of truck manoeuvring areas;
- Parking provision for 264 spaces for staff and visitors;

Reference should be made to the plans prepared by Morris Bray Architects which are submitted separately. These are presented at reduced scale in ***Appendix A***. The traffic impacts of this development are discussed in the following sections.

It is noted that the development is a Schedule 1 development for the purpose of application of State Environmental Planning Policy Number 11, and requires formal referral to the Roads and Traffic Authority.

6. STAGE 1 TRAFFIC IMPACTS

6.1 Planning Context

As discussed in the context of the project, the site has been assumed to generate 15 trips per hectare in the strategic planning undertaken for the EPEA. Based on this level of traffic generation, the following road improvements are proposed:

The intersection of Road 2 with Lenore Lane

This is the proposed four-way signal-controlled junction that connects Lenore Lane on the western side of the Lysaght/BlueScope steel development site, which also serves the Paclib site on its northern side, with the layout as previously considered by Council. This intersection operates satisfactorily based on the previously proposed layout and predicted traffic volumes in 2016.

The intersection of Road 1 with Lenore Lane

This is the 'T' junction that connects Lenore Lane on the eastern side of the Lysaght/BlueScope steel development site and has been previously referred to as the main access to the CSR Master Plan site. This road also serves the site that is the subject of this application. This intersection operates satisfactorily based on the previously proposed traffic signal design layout and predicted traffic volumes in 2016.

As discussed above in the context of the project, this intersection has been constructed (geometrically) to accommodate ultimate traffic demands in 2016 and these works are a condition on the BlueScope Steel consent. However, the consent also provides for a staged design. This was also assessed and at 50% development (in about 2010), the intersection will operate satisfactorily under priority (sign) control, based on the ultimate geometry for this intersection.

The intersection of the Eastern CSR Access with Lenore Lane

This is also a proposed 'T' junction that connects Lenore Lane east of Road 1 and has been previously referred to as the secondary access to the CSR site. The design of this intersection will be a 'T' junction incorporating a 120m right turn lane in Lenore lane, a 2 lane approach on the access road and an 80m deceleration lane for the left turn movement from Lenore Lane. This intersection also operates satisfactorily based on the proposed layout and predicted traffic volumes in 2016. This intersection is not relied upon for access by the Stage 1 industrial building.

The intersection of Lenore Lane with Erskine Park Road

This is the main access to the EPEA lands and with no connection to the M7, this carries all traffic that uses Lenore Lane to access the site. This intersection will operate satisfactorily based on volumes in 2016 and the provision of the second left turn lane in Erskine Park Road (northern approach) will not be required until the EPEA has been developed to 75% capacity, in about 2013 assuming a uniform development rate.

The Section 94 design for this intersection would be satisfactory until about 2010 (depending upon the rate of development) when 50% of overall development has occurred. This is a conservative assessment and it is likely that the design will be satisfactory well beyond 2010. The design prepared by Wyndham Prince Pty Limited on behalf of Penrith Council (Drawing 7174/P20B) was also assessed and this design was previously found to be satisfactory until 2013 at 75% development completion. This is also considered to be conservative and this design will also probably be satisfactory to well beyond 2013.

The intersection of Erskine Park Road with Mamre Road

This intersection has been previously assessed as a T junction under traffic signal control with the assumed geometry and operates satisfactorily based on the proposed layout and predicted traffic volumes in 2016.

The intersection of the Main Western Access with Mamre Road

This is the main access to the EPEA lands from Mamre Road and has previously been modelled as a T intersection under traffic signal control with the assumed geometry. It operates satisfactorily based on the proposed layout and predicted traffic volumes in 2016.

In view of the analysis reported upon above, the improvements discussed above will readily accommodate the expected generation from the site, which has been assumed to generate trips at the 'design' level of 15 trips/hectare.

6.2 Implicit Generation of Industrial Building on Site H

The subject site has an area of 10 hectares. It has been assumed to generate 15 trips per hectare in the above strategic assessment and would therefore generate 150 veh/h during peak periods. This provides a 'base case' against which the proposed development may be assessed.

6.3 Predicted Traffic Generation Based on RTA Guidelines

The traffic generation associated with the proposed warehouse can also be assessed on the basis of application of the Roads and Traffic Authority's Guidelines. This recommends a trip rate of 0.5 trips/hr for warehouse developments and application of this rate to the 46,000m2 of floor area proposed results in a total of 230 veh/hr as follows:

- AM Peak 230 vehicle trips per hour (160 in, 70 out);
- PM Peak 60 vehicle trips per hour (70 in, 160 out);

This is slightly more that the total of 150 vehicle trips per hour under the Council/RTA trip rates discussed in Section 6.2, based on 15 trips per hectare as applied to this 10 hectare site.

6.4 Impacts of Predicted Traffic Volumes

The above increase is moderate and equates to slightly more than one additional vehicle trip per minute during peak periods and this will not alter traffic conditions appreciably. In addition, these additional trips will be dispersed onto all available access routes which in the long term, is likely to include trips to/from both the east and west using the Lenore Lane link road to the M7.

In addition to this, it is emphasised that the 15 trips per hectare trip rate adopted by Penrith Council and the RTA is an average rate and that this implies that there will be some developments above this average and some below. The subject development may well be slightly above this average, but this is more than compensated by the fact that other developments in the vicinity will generate less traffic at peak times, including Bluescope Steel, Lysaght and Coles Distribution Centre (as approved).

6.5 Implications of Link to M7

The provision of a possible road link between Lenore Lane at Erskine Park and Wallgrove Road in the vicinity of the M7 (to the east of the EPEA) is still under investigation by the RTA and no commitment has been given to it at this time. It is however considered reasonable that the potential implications of this link be given some consideration when assessing the subject application. The link would be an important regional link and therefore the responsibility for the assessment of its impacts is a matter that Penrith Council and the RTA should address, in discharging their respective strategic planning responsibilities. Conversely, it is unreasonable that individual developments be required to assess the strategic implications of this link and to accommodate changes that may or may not be required.

Notwithstanding, it is understood that while the provision of the link will alter traffic distributions to individual developments, overall traffic levels through intersections do not appreciably alter, with minimal use of the link road by through traffic (i.e. not associated with development sites) travelling between Erskine Park Road and the M7. To the extent that adjustments to intersections may be required to accommodate altered turning movement patterns, these can be accommodated within the planned road reservations.

In summary, it is considered that the future provision of a link road, should it occur, would not be an impediment to the subject development application.

6.6 Short to Medium Term Traffic Impacts

The above assessment relates to the ultimate operation of the road network in 2016. However, the various road improvements that are required will be staged and accordingly, it is necessary to establish interim conditions that will occur prior to 2016. This matter was dealt with in the context of the BlueScope Steel Subdivision DA, in response to Condition 19 of the consent. This condition required an interim design for the intersection of Road 1 with Lenore Lane and in response to this condition, traffic conditions were assessed with 50% development completion within the EPEA. This showed that this intersection would operate

satisfactorily with the same road geometry as proposed in 2016, but without traffic signals being installed. These improvements have been implemented under the BlueScope Subdivision DA, together with the construction of Road 1, which was the subject of condition 20 of the BlueScope consent. Accordingly, there are no other improvements required to support the current application. In summary, the road system will be able to accommodate the proposed development in the short term as well as in 2016.

6.7 Site Access Design

The site will be accessed via Road 1 from Lenore Lane. A proposed truck access with separate entry and exit driveways is located adjacent to the northern boundary of Site Area H, on the western side of the cul-de-sac. This will therefore be accessed via left turn entry and exit movements only and these will not be in conflict, with free-flow traffic conditions. This access arrangement establishes a one-way clockwise circulation system within the site which will maximise safety.

This arrangement will also ensure that on-street queuing does not occur, with extensive internal storage capacity within the site. A landscaped median separates the entry driveway from the exit driveway. The exit driveway will only accommodate a single vehicle exit at one time, providing safe and convenient exit manoeuvres.

The staff and visitor parking area is accessed via a combined entry-exit driveway at the southern end of the cul-de-sac and this is physically separate from all truck access. The driveway is of width 6 metres and is to a local road, which complies with AS2890.1 for a Category 2 driveway. It also has access that is limited to left-in and left-out movements from the proposed cul-de-sac.

The staff and visitor access driveway connects to an internal perimeter road that serves three separate parking areas that are dispersed around the perimeter of the proposed building. This complies with AS2890.1 and will operate satisfactorily.

Sight distance requirements for these driveways are embodied in AS2890.1 for cars and trucks. The requirements for driveways to be used by cars and other light vehicles relate to minimum and desirable criteria. The minimum requirement relates to the Stopping Site Distance (SSD) which is 45 metres for an approach speed of 50km/h. The desirable distance relates to a 5 second gap and is 69 metres for an approach speed of 50km/h. This latter criteria is also the minimum criteria for truck access under AS2890.2. In this regard, the proposed exit driveways all have sight distances that are significantly greater than required for the expected speed of 20km/h that is expected within the roadway of the cul-de-sac. It is however recommended that the road verges be kept clear of vegetation within the view envelope (within a distance of 2.5 metres from the kerb line), with the prohibition of all parking parking within the circulation roadway.

It will be noted that the one-way flow arrangement proposed provides safe access, while also fostering safe movement of vehicles and pedestrians within the site by reducing conflicts.

6.8 Internal Design Aspects

Council's Off Street Parking DCP embodies the RTA's Guidelines for internal design aspects. The RTA's Guideline similarly endorses the use of AS 2890.1 and AS 2890.2. The design complies with these standards and accordingly, Council's requirements are met. The following factors are noteworthy:

- The entry and exit driveways for cars and trucks are all secured by gates;
- The internal circulation system is designed to accommodate all classes of vehicles, up to and including B Doubles. The detailed design of driveways is a matter for consideration at construction stage;
- All truck and car parking will be wholly contained within the site;
- The truck parking areas have been designed to comply with the requirements of AS 2890.2; and
- The car parking area has been designed to comply with the requirements of AS 2890.1 and will operate satisfactorily. Parking is also physically segregated internally from truck movements.

The proposed access and internal design is shown on the DA Plans prepared by Morris Bray Architects, reproduced in Appendix A. In summary, the internal design arrangements will operate safely and efficiently.

6.9 Construction Traffic Impacts

The site is well-removed from the external road system and as a consequence the construction traffic impacts will be localised and minor and can be dealt with as a normal project approval condition. This approach would also enable detailed input to be provided from the project manager/builder in relation to the specific impacts associated with the various stages of development.

In general terms, the construction programme will occur over about a 12 month period with construction vehicles using Road 1 (Templar Road). Construction deliveries would most likely occur over a 10 hour day and an average of about 20 truck trips per hour (10 in, 10 out) is predicted, with occasional short term peaks. Worker activity will vary over the various stages although these will not generally coincide with external on-street peak periods. These expected levels of traffic will be readily accommodated and are compatible with the routes that will be relied upon for access, both internally and on the external classified main road network. The expected traffic volumes will also be significantly less than will occur when the development is operational.

7. PARKING REQUIREMENTS

It is noted that Section 4.4 of the EPEA Development Control Plan requires that adequate on site parking be provided to satisfy the demands generated by developments within the EPEA. In addition, a key objective is to eliminate the need for kerb side parking and congestion on the public road network. To this end, parking rates are provided for specific types of floor space. These can be varied by Council where considered justified. In addition, for major developments the proponent may refer to the parking requirements of the RTA's Guide to Traffic Generating Developments. These RTA rates have been established on the basis of extensive surveys and this research even precedes the more recent rationalisation into larger and more efficient facilities (with fewer workers).

In light of these comments the application of Council and RTA parking rates to the proposed building is shown in Table 2.

Table 2: Comparative Parking Requirements of the Site H Industrial Building

Land Use	GFA (m^2)	NFA (m^2)	Council DCP Requirement		RTA Guideline Requirement	
			Rate (NLA)	Spaces	Rate (GFA)	Spaces
Warehouse	45,000	45,000	1/100m^2	450	1/300m^2	150
Office	1,000	1,000	1/40 m^2	25	1/300m^2	4
Combined	**46,000**	**46,000**		**475**		**154**

It can be seen that the site requires between 154 and 475 spaces depending upon which rate is applied. The development proposes 264 spaces which is within this range and is considered acceptable and is 71% more than required under the RTA's Guideline. It is proposed to provide all of these spaces in Stage 1.

It is proposed that about 5% of these spaces (13 spaces) will be allocated for visitor parking, with 1% of parking (3 spaces) allocated for disabled parkers as required under AS 2890.1.

8. CONCLUSIONS

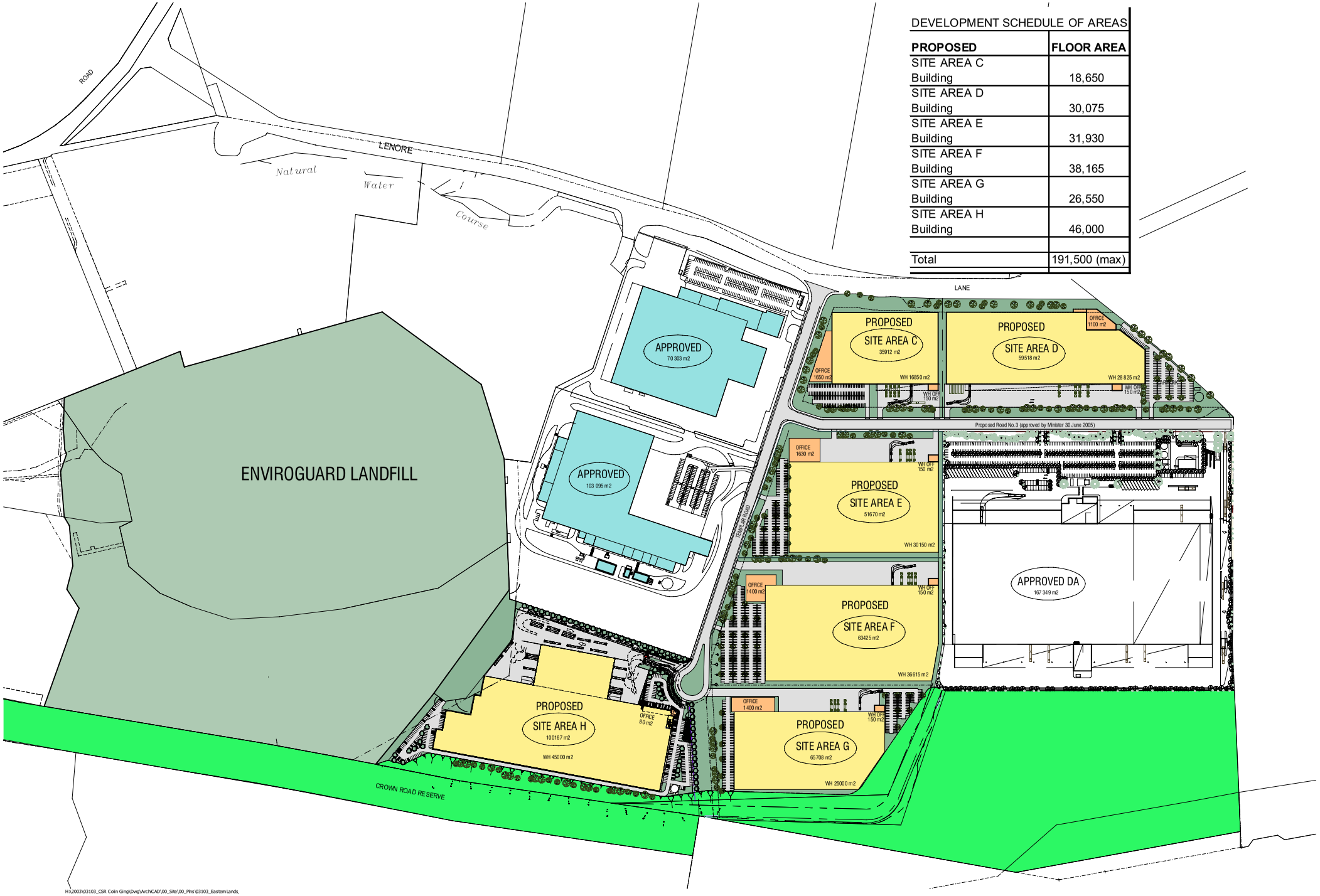
The following matters are noteworthy:

- *The site enjoys excellent access to and from the arterial road network, using the road network that has been developed;*
- *The adopted road system is unchanged from the planned system and hierarchy;*
- *The expected generation from the various development sites within the area covered by the project as well as the traffic from surrounding development (that also relies on Road 1 for access) is comparable to that in the strategic assessments that underpin the EPEA generally, so that the road system as planned will operate satisfactorily;*
- *The proposed storage and distribution building on Site Area H is a low order industrial use, with traffic demands at peak times that have been assumed to be the same as the average 'generic' rate published by the RTA. In practice, many development sites that are occurring have lower generation rates than the average, including the Bluescope Steel and Lysaght sites that are both served by Road 1;*
- *Notwithstanding this, the road system has been previously assessed on the basis of increased trip rates established by Council and the RTA and will operate satisfactorily in 2016 subject to the construction of all identified road improvements. In the short to medium term, the development will therefore be supported by a staged road system to be provided under the BlueScope Steel subdivision DA approval. The upgrading of Lenore Lane and the intersection of Lenore Lane with Erskine Park Road have been completed;*
- *The proposed access arrangements are satisfactory, with a one-way clockwise internal flow pattern. In addition, cars and trucks have been physically segregated to maximise safety;*
- *The resulting total floor area within the Site Area H Building requires between 154 spaces and 475 spaces based on RTA and Council requirements respectively. In response to this, the development proposes 264 spaces which is within this range and therefore acceptable; and*
- *The access and internal design arrangements comply with AS2890.1 and AS2890.2.*

It is concluded that the proposed development is supportable on traffic planning grounds.

APPENDIX A:

Reduced Plans



DEVELOPMENT SCHEDULE OF AREAS

PROPOSED	FLOOR AREA
SITE AREA C Building	18,650
SITE AREA D Building	30,075
SITE AREA E Building	31,930
SITE AREA F Building	38,165
SITE AREA G Building	26,550
SITE AREA H Building	46,000
Total	191,500 (max)

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ARCHITECT

DEVELOPMENT MANAGER/CLIENT

CSR

PROJECT

CSR SITE
LENORE LANE AND MAMRE ROAD
ERSKINE PARK

PROJECT NORTH

DRAWING NAME: Concept Masterplan

DRAWN MB/JM

CHECKED GB/TM

SCALE 1:5000 @A3

DATE Wednesday, 23 August 2006

DRAWING NUMBER **03103-ST-20** P06

DEVELOPMENT DATA

SITE

Site Area		100,167m²		
Site Cover	Required Max	50,084m²	50%	
	Provided	45,533m²	45%	

SETBACKS AND HEIGHTS

Setback to Templar Street		10m		
Maximum Height of Building measured to bench levels		13.5m		

GROSS FLOOR AREAS

Office				
	Ground Floor	80m²		
	First Floor	920m²		
	Total	1,000m²		
Warehouse		45,000m²		

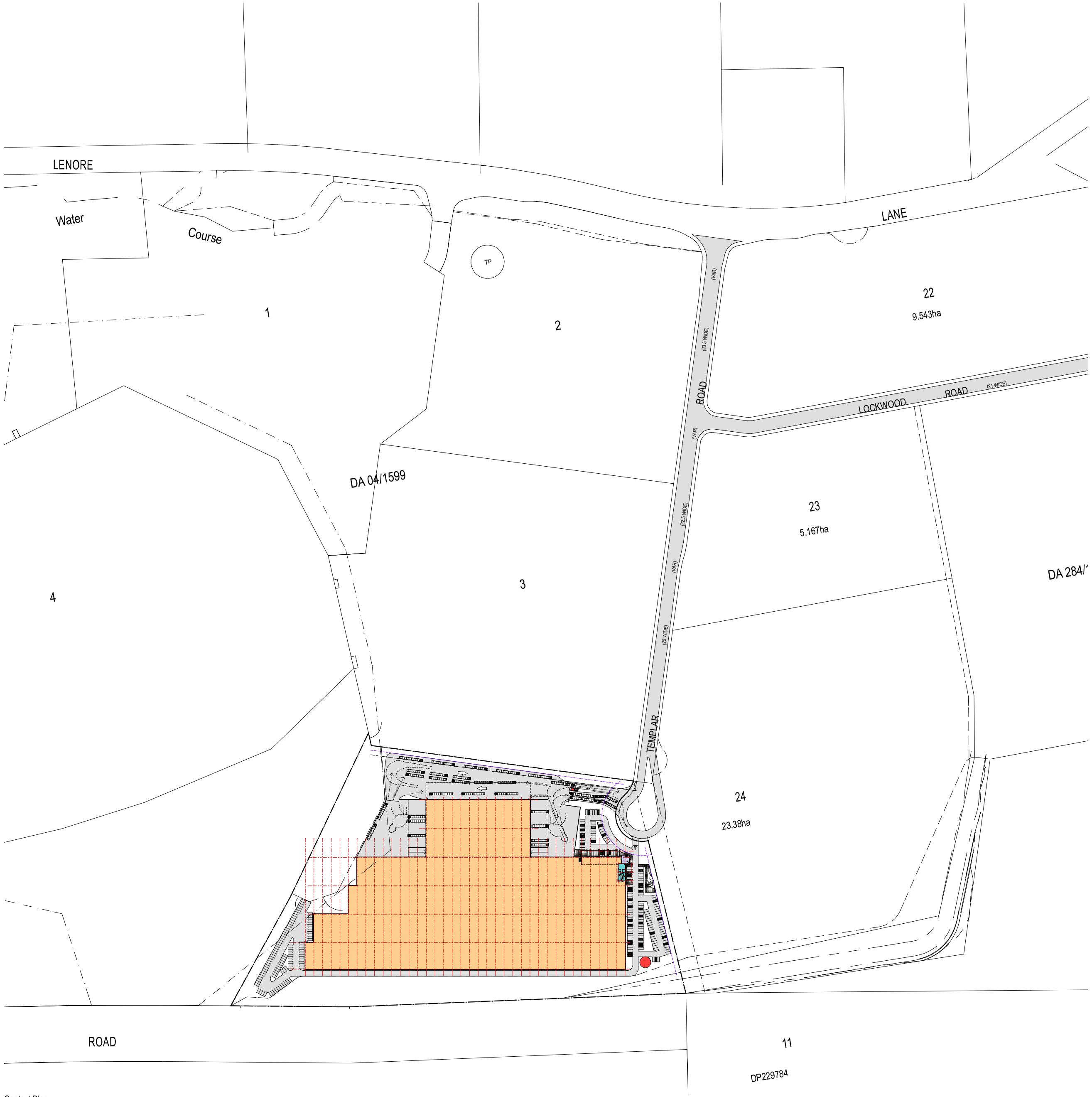
CAR PARKING CALCULATIONS

Required per DCP	Rate	Area	Cars
Office	1/40	@1,000m²	25
Warehouse	1/100	@45,000m²	450
Total			**475**

Required per RTA requirements	Rate	Area	Cars
Office	1/40	@1,000m²	25
Warehouse	1/300	@45,000m²	150
Total			**175**

Provided

Office	25
Warehouse	239
Total	**264**



Context Plan
SCALE 1:2000

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USE FIGURED DIMENSIONS ONLY. DO NOT SCALE.

ALL WORK TO COMPLY WITH CURRENT REGULATIONS AND S.A.A. STANDARDS,

No.	DATE	REVISION / ISSUE DETAILS
P08	04.07.06	ISSUED FOR FINAL APPROVAL BY CLIENT
P04	27.06.06	ISSUED FOR APPROVAL BY CLIENT
P03	23.06.06	ISSUED FOR APPROVAL BY CLIENT
P02	09.06.06	ISSUED FOR APPROVAL BEFORE DA SUBMISSION
P01	07.06.06	ISSUED FOR APPROVAL BY CLIENT

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Proposed Industrial Building
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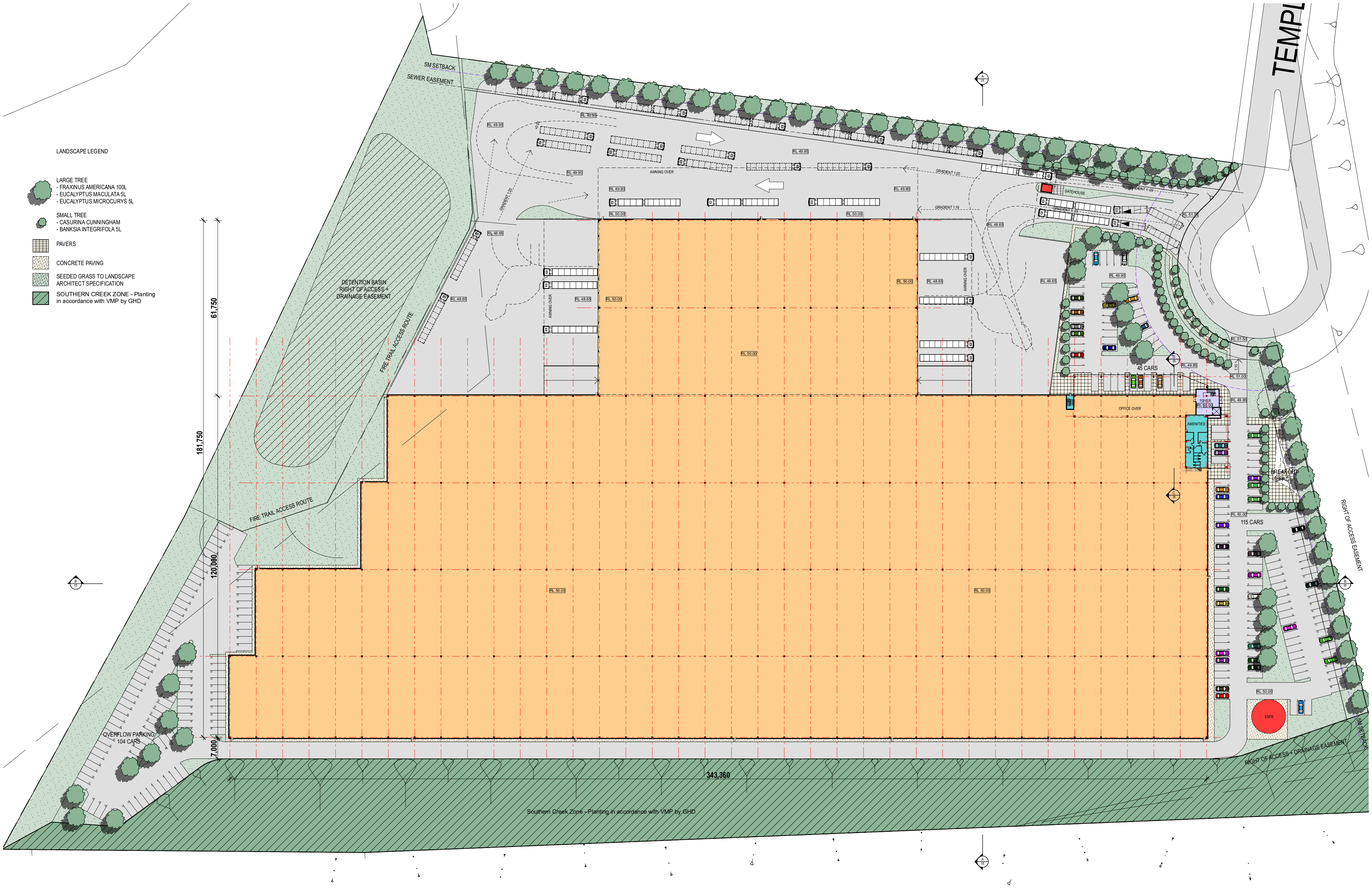
DRAWING TITLE:
Context and Data

SCALE:	DRAWN BY:	DATE:	CHECKED:	QA:	JOB No:	DRAWING NUMBER:	ISSUE:
1:2000	MB	4/07/2006			06056	DA-01	P08



NOTES:

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P07	27.06.06	ISSUED FOR APPROVAL BY CLIENT
P06	26.06.06	TRUCK QUEUING AREA AMENDED
P05	23.06.06	HARDSTAND RAMPS AMMENDED
P04	23.06.06	ISSUED FOR APPROVAL BY CLIENT
P03	22.06.06	ISSUED TO CONSULTANTS
P02	09.06.06	ISSUED FOR APPROVAL BEFORE DA SUBMISSION
P01	07.06.06	ISSUED FOR APPROVAL BY CLIENT

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DRAWING TITLE:
Siteplan

SCALE:	DRAWN BY:	DATE:	CHECKED:	QA:	JOB No:	DRAWING NUMBER:	ISSUE:
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