CUMBERLAND
CITY COUNCIL

PLANNING PROPOSAL

80 Betty Cuthbert Drive, Lidcombe



Proposal to facilitate redevelopment of the site for a mix of health, education, and residential land uses.

NOVEMBER 2022

FOR ENDORSEMENT

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- Gateway Determination
- Council Report and Resolutions
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- Department of Education Letter
- Assessment of Public Benefits
- Urban Design Report
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- Preliminary Tree Assessment
- Habitat Assessment and Targeted Flora Survey
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- Proponent additional advice – post gateway

Introduction

Cumberland City Council (Council) prepared this Planning Proposal in response to a request made by Urbis on behalf of Property and Development NSW for land at 80 Betty Cuthbert Drive, Lidcombe (the site).

The proposal seeks to facilitate redevelopment of the Site for a mix of health, education and residential uses via the following amendments to Cumberland LEP 2021:

- Rezone the Site from SP2 Hospital to SP2 Educational Establishment, SP2 Hospital, SP2 Drainage and R3 Medium Density Residential
- Within the R3 Medium Density Residential part of the site:
  - Amend the Height of Building control for the site from nil to 9m
  - Amend the Floor Space Ratio control for the site from nil to 0.75:1
  - Amend clause 4.1(3C) and associated mapping to allow maximum subdivision lot sizes between 170sqm and 350sqm, consistent with Botanica.

Cumberland Local Planning Panel and Cumberland City Council have endorsed for the Proposal to be forwarded to the Department of Planning and Environment for a Gateway Determination.

On 28 July 2022, a Gateway Determination was issued requesting that the proposal proceed with conditions. Council has exhibited the proposal from 6 September to 5 October 2022 and carried out an extensive community consultation for the proposal. The proposal is updated for endorsement by Council.

The site and its context

The Site is located approximately 10km south-east of Parramatta CBD, 3km south of Lidcombe Principal Local Centre and 2km east of Berala Local Centre (Figure 1).

The north-central part of the Site is occupied by a Multiple Sclerosis Facility built in the 1970s. The rest of the Site is undeveloped and contains internal roads and vegetation (Figure 2).

Surrounding land uses include:

- To the north and east: established residential neighbourhoods, dominated by 1-2 storey detached dwellings
- To the south – the 'Botanica' estate (former Lidcombe hospital site), with a mix 1-2 storey attached and detached houses
- To the south-east – Lidcombe TAFE and Sydney University Cumberland Campus
- The west – Carnarvon Golf Course and Coleman Park.

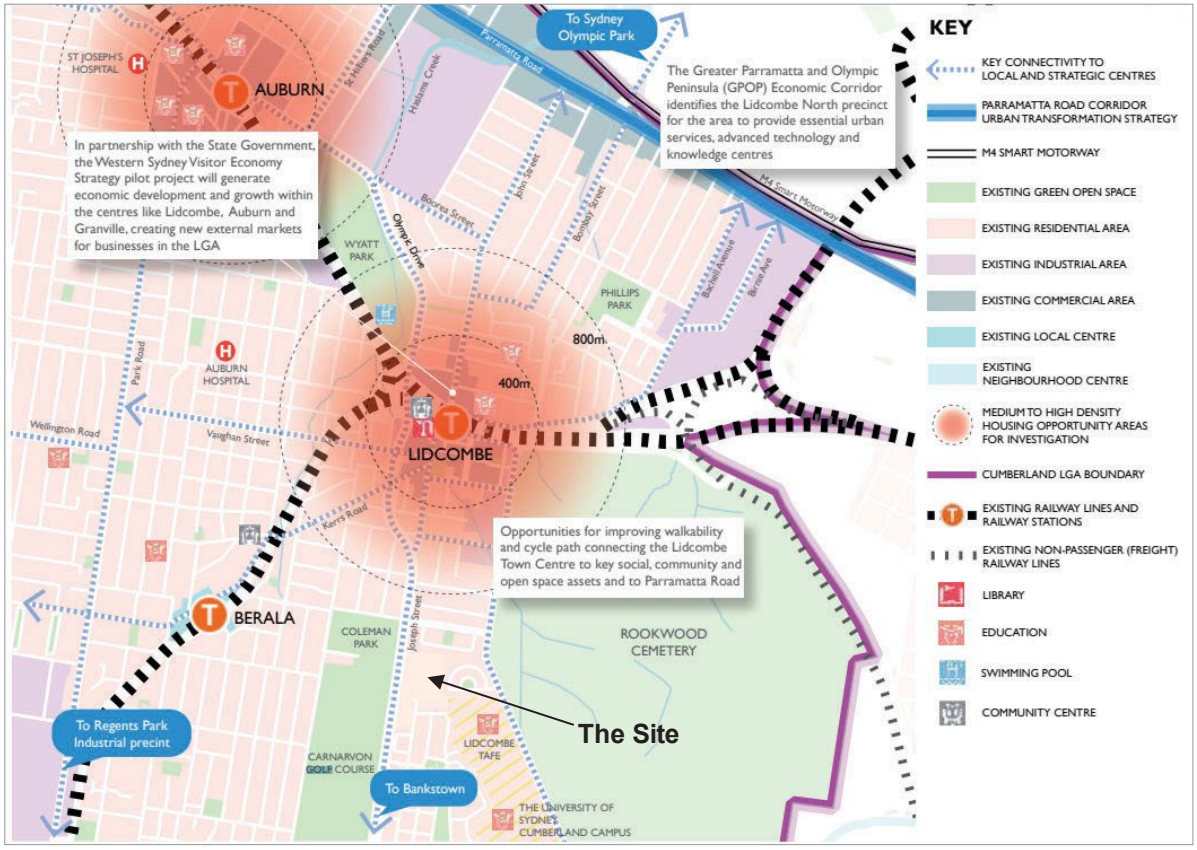


Figure 1: The Site in its regional context



Figure 2: The Site in its local context

Structure of this Planning Proposal

The form and content of this Planning Proposal complies with Section 3.33 of the *Environmental Planning and Assessment Act 1979* and the NSW Department of Planning and Environment's Local Environmental Plan Making Guideline (2021).

The Planning Proposal is structured as follows:

- Part 1—Objectives and intended outcomes
- Part 2—Explanation of provisions
- Part 3—Justification of strategic and site-specific merit
- Part 4—Maps
- Part 5—Community consultation
- Part 6— Project timeline

Part 1—Objectives and intended outcomes

The Planning Proposal seeks to facilitate redevelopment of the Site for a mix of land uses, as shown in the indicative masterplan at Figure 3, and summarised below.

- A new Multiple Sclerosis (MSL) Facility: This is a permitted use on the site and has already been approved. On 15 November 2021, the Sydney Central City Planning Panel issued development consent for the new MSL Facility, which will include 20 two-bedroom units for temporary accommodation, provision of carparking and new access driveways, drainage and stormwater detention works and tree removal (DA2021/0435).

- Medium density housing: The proposed planning controls for this part of the site are the same as those for the adjoining Botanica estate (former Lidcombe Hospital Site) to the south. Property and Development NSW intends to sell this part of the site to a private developer.

- Educational establishment: The type and scale of educational establishment is yet to be confirmed, and is subject to the preparation of a business case by NSW Department of Education (DoE) and approval by NSW Treasury. Until a business case is approved, the NSW Government is unable to provide a firm commitment to the type of educational establishment or timing for delivery.

- Stormwater detention basins and local roads: To serve the development.



Figure 3: Indicative masterplan

Part 2—Explanation of provisions

The proposal seeks to amend Cumberland LEP 2021 as summarised in Table 1 below and shown Part 4 (Maps).

Control	Existing	Proposed
Land Zone	SP2 Hospital	Part SP2 Educational Establishment (32%) Part SP2 Hospital (16%) Part SP2 Drainage (4%) Part R3 Medium Density Residential (30%)
Height of Buildings	N/A	9m within R3 zone
Floor Space Ratio	N/A	0.75:1 within R3 zone
Lot Size	N/A	Apply the existing clause 4.1(3C) and associated mapping to allow maximum subdivision lot sizes between 170sqm and 350sqm on the R3 part of the Site, consistent with Botanica.

Table 1: Proposed amendments to Cumberland LEP 2021

Site provision for minimum lot size (Clause 4.1(3C))

There is an existing clause in the Cumberland LEP that outlines site-specific minimum lot size requirements on adjoining land to the Site, as outlined below. It is proposed that these provisions apply to the residential component of the Site.

4.1 Minimum subdivision lot size

…

(3C) The minimum lot size for development on land shown edged blue and identified as "Former Lidcombe Hospital Site" on the Lot Size Map is as follows in relation to development for the purposes of—

(a) dwelling houses—

(i) 350 square metres, or

(ii) if a garage will be accessed from the rear of the property—290 square metres, or

(iii) if the dwelling house will be on a zero lot line—270 square metres,

(b) semi-detached dwellings—270 square metres,

(c) multi dwelling housing—170 square metres for each dwelling,

(d) attached dwellings—170 square metres

Site specific Development Control Plan

The Planning Proposal is supported by a draft site-specific Development Control Plan (draft DCP), which is based on the indicative masterplan.

Part 3—Justification of strategic and site-specific merit

Section A – Need for the Proposal

Q1. Is the planning proposal a result of an endorsed LSPS, strategic study or report?

No. The Planning Proposal is the result of a comprehensive environmental, feasibility and urban design analysis undertaken by Government and endorsed by MSL and DoE.

It is noted that the District Plan and Draft Cumberland Local Strategic Planning Statement encourages new housing and employment to meet growth targets. It also identifies the need for social infrastructure to meet the needs of the growing population.

The District Plan stipulates an increase of 9,350 new dwellings by 2021 for the Cumberland area and 75,000 additional people by 2036. The proposed rezoning and large lot subdivision of the site will contribute to housing targets and reduces the growing demand on existing services and social infrastructure such as schools. The Planning Proposal will assist in achieving District Plan objectives and housing and job targets and will provide important health and education infrastructure.

Q2. Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Yes. The Planning Proposal is the only means of achieving the objectives and intended outcomes. There is a strong case for change and a genuine need to review the zoning of the site to allow for a commercially viable and sustainable alternate mix of land uses, in support of Government's strategy.

Section B – Relationship to strategic planning framework

Q3. Will the planning proposal give effect to the objectives and actions of the applicable regional, or district plan or strategy (including any exhibited draft plans or strategies)?

Yes. The proposal is broadly consistent with the strategic planning framework and policy context, as outlined below.

<u>Consistency with Greater Sydney Region Plan - A Metropolis of Three Cities</u>

The proposal is broadly consistent with the Greater Sydney Region Plan, including:

- Objective 3: Infrastructure adapts to meet future needs. The proposal seeks to deliver an educational establishment and supporting roads and stormwater infrastructure to meet the needs of Cumberland's rapidly growing population.

- Objective 10: Greater housing supply: the proposal provides a greater amount of housing supply than would be possible without the proposed rezoning.

- Objective 11: Housing is more diverse and affordable: The proposal aims to deliver a mix of housing types and sizes, including 'missing middle' attached housing, similar to the Botanica site to the south.

- Objective 14. integrated land use and transport creates a walkable and 30-minute cities: The proposal will improve pedestrian permeability and active transport network. The proposed pedestrian linkage to Ironbark Walkway, new intersection at Joseph Street and pedestrian connection opportunity to Leila Street increase permeability between eastern and western communities, including Berala. The direct pedestrian connection through Ironbark Walkway and Norman May Drive will also improve accessibility to more bus services and regional cycleway network at East Street.

Consistency with the Central City District Plan

The proposal is generally consistent with the Central City District Plan, including:

- Priority C1: Planning for a city supported by infrastructure. The proposal seeks to deliver a new MSL facility, educational establishment, and supporting infrastructure including roads, drainage and pedestrian links.

- Priority C3: Providing services and social infrastructure to meet people's changing needs. The proposal will facilitate redevelopment of a large, underutilised Government site for a mix of land uses, including a new MSL facility and educational establishment.

- Priority C5: Providing housing supply, choice and affordability with access to jobs, services and public transport. The proposal seeks to deliver additional housing in close proximity to established residential neighbourhoods, services and facilities, including public transport.

- Priority C16: Increasing urban tree canopy cover and delivering Green Grid connections. The indicative master plan maintains the landscape character of the site by retaining high and medium value trees to allow for future movement of species along the green corridor. Trees are also proposed to be retained where possible along the site periphery within the rear side of the proposed residential and the proposed buffer zone to Joseph Street for potential habitats for local species.

Q4. Will the planning proposal give effect to a council's endorsed local strategic planning statement, or another endorsed local strategy or strategic plan?

Yes. The proposal is generally consistent with Cumberland 2030: Our Local Strategic Planning Statement, including:

- Objective P4: Improving accessibility within our town centres. The proposal will make it easier for current and future residents to access other nearby centres and surrounding neighbourhoods through the provision of pedestrian and cycle links.

- Objective P5: Delivering housing diversity to suit changing needs. The proposal seeks to deliver a mix of housing types and sizes, similar to the Botanica site to the south.

- Objective P9. Providing high quality, fit-for-purpose community and social infrastructure in line with growth and changing requirements. Redeveloping the site for a school and MSL facility will provide valuable social infrastructure to meet the needs of Cumberland's rapidly growing population.

- Objective P13: Protecting, enhancing and increasing natural and green spaces. The proposal seeks to retain significant vegetation and to provide tree planting along Joseph Street.

Q5. Is the planning proposal consistent with any other applicable State and regional studies or strategies?

Yes. In June 2019, the NSW Premier unveiled 14 Premier's Priorities which represent the NSW Government's commitment to making a significant difference to enhance the quality of life of the people of NSW.

- Bumping up education results for children
- Improving service levels in hospitals
- Improving outpatient and community care
- Greening our city

The Planning Proposal is aligned with these priorities as it seeks to upgrade current health facilities on site and also proposes a future educational establishment.

Q6. Is the planning proposal consistent with applicable SEPPs?

Yes. The Planning Proposal is consistent with applicable *State Environmental Planning Policies* (SEPPs). There are no applicable *Regional Environmental Plans* (**REPs**).

State Environmental Planning Policy	**Comment**
State Environmental Planning Policy (Biodiversity and Conservation) 2021	Not applicable. Any proposed tree removal on site will be documented at the DA stage.
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004	The Planning Proposal does not preclude the application of the BASIX SEPP. The proposed development concept has been designed with building massing and orientation to facilitate future BASIX compliance, which will be documented at the DA stage.

State Environmental Planning Policy	Comment
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008	The provisions of the SEPP may be relevant for future developments on the site.
State Environmental Planning Policy (Housing) 2021	Not applicable at this stage. Provisions for affordable or diverse housing may be considered as part of the future residential subdivision and development of the site.
State Environmental Planning Policy (Industry and Employment) 2021	Not applicable at this stage. Compliance with the relevant provisions in relation to advertising or signage will be considered at the DA stage.
State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development	Given the proposed maximum height of 9 metres, residential flat buildings are not considered as a likely housing typology for the site. As such, the provisions of the SEPP 65 and the Apartment Design Guide are not considered relevant.
State Environmental Planning Policy (Planning Systems) 2021	Consideration of Chapter 2 State and regional development will be relevant to the future development of the site including: • Development carried out by or on behalf of the Crown (within the meaning of Division 4.6 of the Act) that has a capital investment value of more than $5 million is considered 'regionally significant development' • Development for the purpose of a new school that has a capital investment value of more than $20 million is considered 'state significant development'
State Environmental Planning Policy (Precincts—Central River City) 2021	Not applicable. While the site is within the Central River City Precinct, there are no specific provisions which relate to the site.
State Environmental Planning Policy (Precincts—Eastern Harbour City) 2021	Not applicable. The site is within the Central City.
State Environmental Planning Policy (Precincts—Regional) 2021	Not applicable. The site is not identified as a state significant precinct.

State Environmental Planning Policy	Comment
State Environmental Planning Policy (Precincts—Western Parkland City) 2021	Not applicable. The site is within the Central City.
State Environmental Planning Policy (Primary Production) 2021	Not applicable. The proposal does not result in any primary production and rural development; State significant agricultural land; or marine waters or oyster aquaculture
State Environmental Planning Policy (Resilience and Hazards) 2021	Any future DA will need to demonstrate compliance with the SEPP. A Preliminary Contamination and Acid Sulfate Soils Investigation has been prepared by Mott McDonald**.** This report states that there is no evidence of current or potential contamination found on site.
State Environmental Planning Policy (Resources and Energy) 2021	Not applicable. The proposal does not result in any mining, petroleum production and/or extractive industries.
State Environmental Planning Policy (Transport and Infrastructure) 2021	The provisions of this SEPP will be relevant to the future development of the site. The Planning Proposal will facilitate the rezoning for a future educational facility to meet the services needs of the community. Consideration of the relevant provisions of the SEPP will be required during the DA stage. As the site has access to a classified road (Joseph Street) future development applications will need to review the 'traffic generating development' controls of the SEPP during the DA stage.

Table 2: Consistency with applicable SEPPs

Q7. Is the planning proposal consistent with applicable Ministerial Directions (section 9.1 Directions)?

Yes. The Planning Proposal is consistent with the following applicable Section 9.1 Ministerial Directions.

Section 9.1 Direction	Comment
Focus area 1: Planning Systems	
1.1 Implementation of Regional Plans	The Planning Proposal is consistent with the overall intent of the Central District Plan, and will not undermine the achievement of its vision, land use strategy, policies, outcomes or actions.

Section 9.1 Direction	Comment
	Consistency with Regional and District Plan is discussed in **Table 5** of this report. The Planning Proposal is consistent with the objectives of this direction.
1.2 Development of Aboriginal Land Council land	The Planning Proposal has considered the relevant provisions of Chapter 3 of the State Environmental Planning Policy (Planning Systems) 2021. It is noted this site is not identified within the Land Application Map and a delivery plan has not been prepared for the site.
1.3 Approval and Referral Requirements	This is an administrative requirement for Council. It is noted that the proposed amendments do not require the concurrence, consultation or referral of development applications to a Minister or public authority and do not incorporate designated development
1.4 Site Specific Provisions	The planning proposal and associated mapping has been prepared in accordance with the provisions of the Standard Instrument and in a manner consistent with CLEP 2021. Further provisions relating to the future educational establishment outlined in State Environmental Planning Policy (Transport and Infrastructure) 2021 are not precluded by the proposed zoning.
1.5 Parramatta Road Corridor Urban Transformation Strategy	Not applicable
1.6 Implementation of Northwest Priority Growth Area Land Use and Infrastructure Implementation Plan	Not applicable
1.7 Implementation of Greater Parramatta Priority Growth Area Interim Land Use and Infrastructure Implementation Plan	Not applicable
1.8 Implementation of Wilton Priority Growth Area Interim Land Use and Infrastructure Implementation Plan	Not applicable

Section 9.1 Direction	Comment
1.9 Implementation of Glenfield to Macarthur Urban Renewal Corridor	Not applicable
1.10 Implementation of the Western Sydney Aerotropolis Plan	Not applicable
1.11 Implementation of Bayside West Precincts 2036 Plan	Not applicable
1.12 Implementation of Planning Principles for the Cooks Cove Precinct	Not applicable
1.13 Implementation of St Leonards and Crows Nest 2036 Plan	Not applicable
1.14 Implementation of Greater Macarthur 2040	Not applicable
1.15 Implementation of the Pyrmont Peninsula Place Strategy	Not applicable
1.16 North West Rail Link Corridor Strategy	Not applicable
1.17 Implementation of the Bays West Place Strategy	Not applicable
Focus area 2: Design and Place	
[This Focus Area was blank when the Directions were made and this Planning Proposal was prepared in June 2022]	
Focus area 3: Biodiversity and Conservation	
3.1 Conservation Zones	The Planning Proposal is supported by an Environmental Assessment and Habitat Tree Assessment and Targeted Flora Survey. Both reports confirm that no threatened flora and threatened fauna have been recorded in the study site. Any future development application will be accompanied by a Biodiversity Development Assessment Report. During future construction, strategies to avoid harm to protected species will form part of the Construction Management Plan.

Section 9.1 Direction	Comment
3.2 Heritage Conservation	The site is 300 metres from one local heritage item to the east and a heritage conservation area to the south. No further heritage matters have been considered due to the absence of heritage within or adjacent to the site.
3.3 Sydney Drinking Water Catchments	This direction does not apply to the Cumberland LGA.
3.4 Application of C2 and C3 Zones and Environmental Overlays in Far North Coast LEPs	This direction does not apply to the Cumberland LGA.
3.5 Recreation Vehicle Areas	Not applicable, the site does not incorporate any conservation zone or comprise a beach or a dune adjacent to or adjoining a beach
Focus area 4: Resilience and Hazards	
4.1 Flooding	Not applicable. The site is not identified as flood prone under the CLEP 2021. To reduce the rate of stormwater runoff discharged to the public drainage network from development, three above ground detention basins are proposed on site as part of this Planning Proposal. All proposed basins are located within the landscaped area along Joseph Street which allows water to pool during storm events and slowly discharge to the pit and pipe network. The proposed site drainage is discharging to Joseph Street which is a classified RMS road. As such, both Council and RMS requirements must be met for all stormwater discharged to the existing Joseph Street stormwater drainage.
4.2 Coastal Management	Not applicable.
4.3 Planning for Bushfire Protection	Not applicable. The site is not identified as Bushfire Prone Land or proximate to Bushfire Prone Land on Council's published Bushfire Prone Land Map.
4.4 Remediation of Contaminated Land	The Planning Proposal is supported by a Preliminary Contamination and Acid Sulfate Soils Investigation that confirms the potential for contamination of the site is low and the site is suitable for development.
4.5 Acid Sulfate Soils	The Preliminary Contamination and Acid Sulfate Soils Investigation report confirms the potential for acid sulfate soils within the site is low and the site is suitable for development.

Section 9.1 Direction	Comment
4.6 Mine Subsidence and Unstable Land	No applicable. The site is not identified on land that is within a declared mine subsidence district in the *Coal Mine Subsidence Compensation Regulation 2017* pursuant to section 20 of the *Coal Mine Subsidence Compensation Act 2017.*
Focus area 5: Transport and Infrastructure	
5.1 Integrating Land Use and Transport	The Planning Proposal will enable development consistent with the direction, by providing housing and jobs and services close to public transport and accessible by walking and cycling in an existing urban area.
5.2 Reserving Land for Public Purposes	Not applicable. The proposal does not include any land reserved for a public purpose or likely to be acquired. The site is already publicly owned and will result in a logical expansion of public services on publicly owned land.
5.3 Development Near Regulated Airports and Defence Airfields	Not applicable. The site is not located near a regulated airport.
5.4 Shooting Ranges	Not applicable. The proposal does not seek to rezone land adjacent to and/ or adjoining an existing shooting range
Focus area 6: Housing	
6.1 Residential Zones	The Planning Proposal and associated Site Specific Development Control Plan prepared by Urbis include provisions that encourage the provision of housing that will: • broaden the choice of building types and locations available in the housing market, and • make more efficient use of existing infrastructure and services, and • reduce the consumption of land for housing and associated urban development on the urban fringe, and • be of good design. The Planning Proposal is supported by a Utilities and Services Report that identifies upgrades or modifications

Section 9.1 Direction	Comment
	to the existing utilities infrastructure that will be required for the redevelopment of the site.
6.2 Caravan Parks and Manufactured Home Estates	Not applicable
Focus area 7: Industry and Employment	
7.1 Business and Industrial Zones	The rezoning includes health and education uses, which are consistent with the future employment needs and will provide more jobs closer to home for Cumberland residents without reducing existing employment and industrial floorspace in the LGA. Upgrades to the MSL Facility and the future educational establishment associated with the Planning Proposal will provide 130 staff on site, reflecting a net uplift of 90 additional jobs, taking into account employees at the existing MSL Facility.
7.2 Reduction in non-hosted short-term rental accommodation period	This direction does not apply to the Cumberland LGA.
7.3 Commercial and Retail Development along the Pacific Highway, North Coast	This direction does not apply to the Cumberland LGA.
Focus area 8: Resources and Energy	
Mining, Petroleum Production and Extractive Industries	Not applicable. This proposal does not propose mining, petroleum production and/or extractive Industries
Focus area 9: Primary Production	
9.1 Rural Zones	This direction does not apply to the Cumberland LGA.
9.2 Rural Lands	This direction does not apply to the Cumberland LGA.
9.3 Oyster Aquaculture	Not applicable. The site is not identified as a 'Priority Oyster Aquaculture Area'.
9.4 Farmland of State and Regional Significance on the NSW Far North Coast	This direction does not apply to the Cumberland LGA.

Table 3: Consistency with applicable Ministerial Directions

Section C – Environmental, social and economic impact

Q8. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

No. The NSW Office of Environment and Heritage BioNet database was searched for species protected from harm under the Biodiversity Conservation Act 2016 and Environment Protection and Biodiversity Conservation Act 1999 on 12 March 2019 by Mott Macdonald as part of the Environmental Assessment which forms part of this Planning Proposal. The database held records of 42 threatened species and 208 non-threatened species within 5 kilometres of the site from the last 5 years. No species were listed as sighted within the site. Any future development application will be accompanied by a Biodiversity Development Assessment Report. During future construction, strategies to avoid harm to protected species will form part of the Construction Management Plan.

Further additional development controls has been put in place to mitigate and address the biodiversity issues.

Q9. Are there any other likely environmental effects as a result of the Planning Proposal and how are they proposed to be managed?

Yes. The Planning Proposal Request is supported by a range of technical studies that identify potential environmental effects of the proposal and how they will be managed. These matters are summarised below.

- Noise and vibration: The development would impact adjacent residents during both construction and operation. The development would also be subject to significant noise levels from Joseph Street. It is noted that the masterplan provides for large setbacks to, and significant tree planting, along Joseph Street which may help to mitigate noise impacts. Additional DCP controls have been included to mitigate within the draft DCP for the proposed school including other amenity issues.

- Built form, scale and other residential amenity impacts – additional development controls and objectives have been proposed under the draft site-specific development control plan for the proposed school development and the low and medium density residential to mitigate any local amenity impacts such as overshadowing and overlooking.

- Traffic, parking, transport and access -The proposed school's student capacity has been recommended to be reduced from 1000 students to 750 students to reduce any traffic generation and parking impacts to immediate residential surrounds especially Botanica. The Council has also recommended a part closure of the Betty Cuthbert Drive to contain the traffic generated as a result of the proposed development to the master planned area. Further development controls and objectives have been added to mitigate this.

- Trees and vegetation: The site contains 16 trees with high retention value and should be retained and protected wherever possible. All opportunities for retaining these subject trees using design modification and tree sensitive

construction techniques should be explored. The draft site-specific DCP contains mapping to identify the location of trees that must be retained. Further additional development controls have been included to address the agency and community submissions received. These controls address biodiversity, tree canopy cover through street tree planting, tree replacement strategy to offset loss of existing vegetation and concept details about the proposed school. Should this proposal proceed and a development application is lodged the above matters will be addressed in detail.

- Landscape and visual: The Project has the potential to impact the visual amenity and landscape character of the local area. If the proposal proceeds past Gateway, a site-specific Development Control Plan will be in place to guide the future development of the site.

- Air quality: The focus of an impact on air quality from the proposed project would be during the construction phase, as the proposed land uses would not involve significant air emissions.

- Surface and groundwater: Due to proposed land uses, the project will likely only interact with the ground water through a pollution pathway during construction.

- Heritage: The site does not contain a heritage item, nor are there any heritage items immediately adjacent to the Site.

- Contamination and Acid Sulphate Soils: The site was found to have a low risk of contamination; however, further investigations are recommended before the site is redeveloped.

The above matters will be further considered at development application stage should the proposal proceed to Gateway and finalisation.

Q10. Has the planning proposal adequately addressed any social and economic effects?

Yes. The Planning Proposal Request is supported by a range of technical studies that identify potential social and economic effects of the proposal and how they will be managed. These matters are summarised below.

Social and economic

- The proposal will deliver social infrastructure to meet the needs of the local area and wider region.
- The proposal will deliver a range of employment opportunities in the health and education sector, with access to Lidcombe TAFE and Sydney University Cumberland Campus.
- In addition to ongoing employment opportunities, the proposal will also result in a temporary increase in construction jobs.

Urban design and built form

- The proposed planning controls for the residential component will result in a similar built form outcome as the Former Lidcombe Hospital site to the south.
- The proposed school will be required to meet the design controls and design quality principles in the State Environmental Planning Policy (Transport and Infrastructure) (SEPP) (formerly Education SEPP) and associated Design Guide for Schools.
- The design of the MSL facility has been approved by Sydney Central City Planning Panel.
- Further development controls have been introduced to the draft site specific DCP to strengthen built form, scale and address amenity issues as result of the proposal school in addition to residential uses proposed.

Traffic, parking and access

- Transport for NSW requirements have been addressed in the masterplan. The concept layout for the master plan includes the introduction of an interim left-in left-out connection to Joseph Street. This connection is to be converted to a signalised intersection before the educational establishment is operational.
- The Proponent will also be required to address local requirements and issues as part of any development application for the educational establishment. A traffic report will be required to show, at a minimum: school and cumulative traffic between 8-9.30am and 2-4pm; sweep path analysis on proposed cul-de-sac; and

operational management details for the school.

- The proponent has further undertaken additional traffic analysis following post gateway exhibition as requested by Council to minimise traffic generation impacts to Botanica and local surrounds with the proposed closure of Betty Cuthbert Drive and use of Leila Street as a kiss and ride drop off area for the proposed school. The Department of Education (School Infrastructure NSW) has provided additional details to provide more certainty about the type and scale of the proposed school for the site and potential locations for car drop off and pickup. Council has also reduced the student capacity of the school from 1000 to 750 students to reduce adverse local traffic and parking impacts.

- As suggested by Council, the applicant has undertaken additional traffic modelling and proposed to closure the part of Betty Cuthbert Drive so that traffic impacts are contained within the master planned school site. The proposed concept plans have been updated to reflect this along with including this provision under the site-specific development control plan.

- Council has also recommended that a right turn lane must also be provided when turning from Joseph Street to the proposed school. These provisions would be assessed at the DA stage in detail.

Section D – State and Commonwealth Interests

Q11. Is there adequate public infrastructure for the Planning Proposal?

Yes. The Site is located in an existing, developed area, serviced by relevant utilities and essential infrastructure as identified in the Utilities and Services Report. Council has also consulted with relevant utility service agencies accordingly. No concerns or objections have been raised. Some of the concerns raised by Origin Energy and Jemena Gas works could be addressed in detail at the development stage should the proposal proceeds. Please refer to council report and summarised submissions.

Q12. What are the views of State and Commonwealth public authorities consulted in accordance with the gateway determination?

As required by the Gateway Determination relevant public agencies have been consulted as required.

No major concerns have been raised. Most concerns raised have been addressed through the site-specific development control plan and would be subjected to further detailed assessment at the DA stage. These provisions include a detailed bio-diversity assessment study for threatened species, achievement of tree canopy cover through street tree planting and address significant loss of vegetation through an existing a tree replacement strategy be submitted as part of any future DA lodged for the site to prevent any significant loss of existing vegetation (high and medium value trees) on site.

The proposal is also supported with an ecological, flora and fauna and tree assessment studies as required for a planning proposal which has been exhibited as per Gateway determination issued and will be subjected to detailed assessment at the DA stage.

Part 4—Maps

Proposed changes to Cumberland LEP 2021 mapping are shown in Figures 4 to 11.

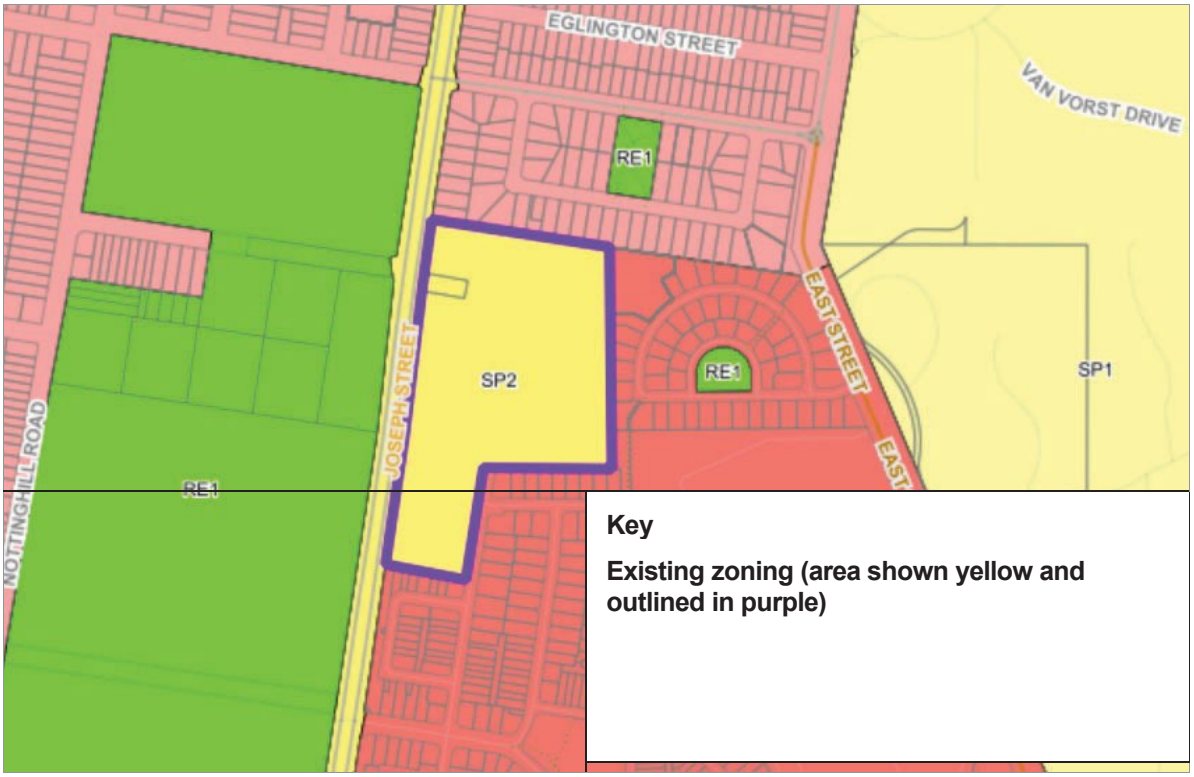


Figure 4: Existing land zoning

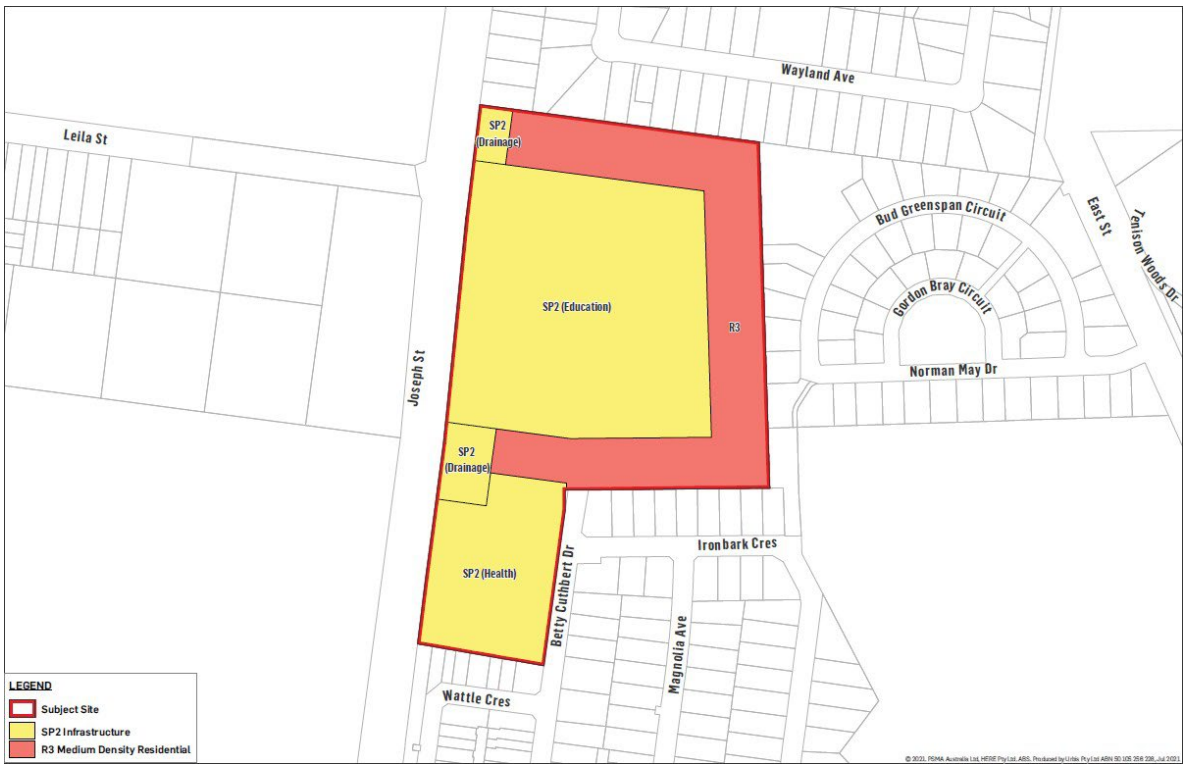


Figure 5: Proposed land zoning



Figure 6: Existing height of buildings



Figure 7: Proposed height of buildings



Figure 8: Existing floor space ratio



Figure 9: Proposed floor space ratio



Figure 10: Existing lot size



Figure 11: Proposed lot size (see existing Cumberland LEP Clause 4.1(3C) applied)

Part 5—Community Consultation

The Proponent carried out preliminary community consultation from May to June 2020, before the Planning Proposal Request was lodged with Council.

Council officers placed the Planning Proposal Request on early consultation from 6 October 2021 to 3 November 2021, in accordance with policy requirements. In response, Council received a total of 36 submissions, including eight objections, 20 submissions in support of the proposal and eight neutral submissions.

Items covered in the submission included:

- Most submissions expressed strong support for the establishment of a new school on the site
- Many submissions requested for additional uses be delivered on the site as part of the proposal, including open space and commercial/retail uses, to reduce the need for residents to drive to other surrounding areas to access services and facilities
- Concerns about potential impacts associated with the proposed school and residential component, including pedestrian safety, traffic and parking, and amenity impacts such as privacy and noise
- Objections to the residential component.

Council has undertaken post gateway consultation of the proposal with community and public agencies as required by the Gateway Determination from 6 September to 5 October 2022. Refer to council report for details.

Part 6—Project Timeline

An indicative project timeframe is provided below.

Milestone	**Timeframe**
Council's endorsement of the Planning Proposal	01/06/2022
Submission to NSW Planning, Industry and Environment	02/06/2022
Gateway Determination issued	28/07/2022
Public exhibition and public authority consultation	6 Sept – 5 October 2022
Reporting of the Planning Proposal to Council	Dec 2022
Submission to NSW Planning, Industry and Environment	Dec/Jan 2023
Publication of LEP amendment	March/April 2023

Table 4 – Indicative Project Timeline

Department of Planning and Environment

Mr Peter Fitzgerald
General Manager
Cumberland City Council
PO Box 42
Merrylands NSW 2160

Our ref: IRF22/2443

via email:
sarah.sheehan@cumberland.nsw.gov.au
carmel.oconnor@cumberland.nsw.gov.au

Dear Mr Fitzgerald

Planning proposal (PP-2022-2295) to amend Cumberland Local Environmental Plan 2021

I am writing in response to the planning proposal you have forwarded to the Minister under section 3.34(1) of the *Environmental Planning and Assessment Act 1979* for land at 80 Betty Cuthbert Drive, Lidcombe, to rezone the site from SP2 Hospital to SP2 Hospital, SP2 Educational Establishment, SP2 Drainage and R3 Medium Density Residential, and introduce a maximum height of buildings standard of 9 metres, maximum floor space ratio standard of 0.75:1 and minimum lot size standard of 170-350 square metres.

As delegate of the Minister for Planning, I have determined that the planning proposal should proceed subject to the conditions in the enclosed gateway determination. The Minister for Planning or appointed delegate will be the local plan-making authority.

The NSW Government has committed to reduce the time taken to complete LEPs. To meet these commitments, the Minister may appoint an alternate planning proposal authority if Council does not meet the timeframes outlined in the gateway determination, as follows:

- The planning proposal must be exhibited within **2 months** of the date of the gateway determination.
- The planning proposal must be reported to council for a final recommendation within **5 months** of the date of the gateway determination.
- The amending local environmental plan (LEP) must be finalised within **9 months** of the date of the gateway determination.

The Department's categorisation of planning proposals in the *Local Environmental Plan Making Guideline* (Department of Planning and Environment, 2021) is supported by category specific timeframes for satisfaction of conditions and authority and Government agency referrals, consultation, and responses. Compliance with milestones will be monitored by the Department to ensure planning proposals are progressing as required.

Should you have any enquiries about this matter, I have arranged for Jorge Alvarez to assist you. Mr Alvarez can be contacted on 9995 5748.

Yours sincerely

Alison McLaren

Alison McLaren
Executive Director, Metro Central and North
Planning and Land Use Strategy
28 July 2022

Encl: Gateway determination

Gateway Determination

***Planning proposal (Department Ref: PP-2022-2295)**: applying to land at 80 Betty Cuthbert Drive, Lidcombe, seeking to redevelop existing public land for a new multiple sclerosis health facility, educational establishment, medium density housing and associated infrastructure.*

I, the Executive Director, Metro Central and North at the Department of Planning and Environment, as delegate of the Minister for Planning and Homes, have determined under section 3.34(2) of the *Environmental Planning and Assessment Act 1979* (the EP&A Act) that an amendment to *Cumberland Local Environmental Plan 2021* to rezone surplus government land for health and education facilities and residential uses, and amend the development standards, should proceed subject to the conditions below.

The LEP should be completed on or before **30 April 2023**.

Gateway Conditions

1. Prior to public exhibition, the planning proposal is to be updated to include:
   a. Individually identify and attach all technical reports and documents relevant to the planning proposal and exhibit these as individual accompanying documents.
   b. Include the most recent copy of the Traffic and Transport Assessment Report.
   c. Updated project timeline to reflect the timeframe conditions of this determination.
2. Public exhibition is required under section 3.34(2)(c) and clause 4 of Schedule 1 to the Act as follows:

   (a) the planning proposal is categorised as standard, as described in the *Local Environmental Plan Making Guidelines* (Department of Planning and Environment, 2021) and must be made publicly available for a minimum of 20 days; and

   (b) the planning proposal authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in *Local Environmental Plan Making Guidelines* (Department of Planning and Environment, 2021).

   The draft amendment to Cumberland Development Control Plan 2021 is to be exhibited at the same time and in the same way as the planning proposal (as far as practicable).

   Exhibition must commence within **2 months** following the date of the gateway determination.

   Consultation is required with the following public authorities and government agencies under section 3.34(2)(d) of the Act and/or to comply with the requirements of applicable directions of the Minister under section 9 of the EP&A Act:

   - Transport for NSW
   - School Infrastructure NSW
   - NSW Health
   - NSW Environment and Heritage
   - Utility providers

Each public authority is to be provided with a copy of the planning proposal and any relevant supporting material via the NSW Planning Portal and given at least 30 days to comment on the proposal.

3. A public hearing is not required to be held into the matter by any person or body under section 3.34(2)(e) of the EP&A Act. This does not discharge Council from any obligation it may otherwise have to conduct a public hearing (for example, in response to a submission or if reclassifying land).

4. The planning proposal must be reported to council for a final recommendation within **5 months** of the date of the Gateway determination.

Dated 28th day of July 2022.

Alison McLaren
Executive Director, Metro Central & North
Planning and Land Use Strategy
Department of Planning and Environment

Delegate of the Minister for Planning and Homes

Minutes of the Council Meeting 07 December 2022

Present:

Councillors

Lisa Lake (Mayor)	Councillor
Suman Saha (Deputy Mayor)	Councillor
Steve Christou	Councillor
Diane Colman	Councillor
Greg Cummings	Councillor
Glenn Elmore	Councillor
Sabrin Farooqui	Councillor
Paul Garrard	Councillor
Ola Hamed	Councillor
Kun Huang	Councillor (via Audio-Visual Link)
Helen Hughes	Councillor
Mohamad Hussein	Councillor (arrived 7:00pm)
Joseph Rahme	Councillor (arrived 6:34pm)
Eddy Sarkis	Councillor (via Audio-Visual Link)
Michael Zaiter	Councillor

Officers

Peter Fitzgerald	General Manager
Daniel Cavallo	Director Environment & Planning/Acting Deputy GM
Brendan Govers	Director City Services
Charlie Ayoub	Acting Director Governance & Risk
Nicole Byrn	Acting Director Community & Culture
Tony Chahine	Acting Director Corporate Performance
Colin McFadzean	General Counsel
Carol Karaki	Senior Coordinator Governance & Civic Events
Bianca Mourched	Governance Officer

The Mayor, Councillor Lake declared the meeting open at 6:31pm.

Opening Prayer

The opening prayer was read by Pdt. Jatin Bhatt from Sri Mandir Hindu Temple Auburn.

Acknowledgement of Country

The Mayor, Councillor Lake read the following Acknowledgement of Country:

"I would like to acknowledge the traditional owners of this land – the Darug People, and pay my respects to their elders past, present and emerging."

National Anthem

At this point in the meeting the Mayor, Councillor Lake asked all of those in attendance to stand for the playing of the Australian National Anthem.

Min.308 Apologies / Requests for Leave of Absence/ Requests for Attendance by Audio Visual Link

Motion (Garrard/Cummings)

That in accordance with Clause 5.24 of the Code of Meeting Practice, Council approve the attendance of Councillor Sarkis at this meeting via Audio/Visual Link as he is unwell.

The Motion on being Put was declared **CARRIED.**

Councillor(s) For the Motion:	Christou, Colman, Cummings, Elmore, Farooqui, Garrard, Hamed, Hughes, Lake, Rahme, Saha, Sarkis, and Zaiter.
Councillor(s) Against the Motion:	Nil.

Councillor Rahme entered the Meeting at 6:34pm during the consideration of this item.

Min.309

Motion (Sarkis/Farooqui)

That in accordance with Clause 5.24 of the Code of Meeting Practice, Council approve the attendance of Councillor Huang at this meeting via Audio/Visual Link as he is unwell.

The Motion on being Put was declared **CARRIED.**

Councillor(s) For the Motion:	Christou, Colman, Cummings, Elmore, Farooqui, Garrard, Hamed, Huang, Hughes, Lake, Rahme, Saha, Sarkis, and Zaiter.
Councillor(s) Against the Motion:	Nil.

Min.310

Motion (Elmore/Cummings)

That in accordance with Clause 5.24 of the Code of Meeting Practice, Council approve the attendance of Councillor Farooqui at the 21 December 2022 Council Meeting via Audio/Visual Link as she will be overseas.

The Motion on being Put was declared **CARRIED** Unanimously**.**

Councillor(s) For the Motion:	Christou, Colman, Cummings, Elmore, Farooqui, Garrard, Hamed, Huang, Hughes, Lake, Rahme, Saha, Sarkis, and Zaiter.
Councillor(s) Against the Motion:	Nil.

Notice of Live Streaming of Council Meeting

The Mayor, Councillor Lake advised that the Council meeting was being streamed live on Council's website and all in attendance must ensure their speech to the Council is respectful and use appropriate language.

Confirmation of Minutes

Min.311 C12/22-212 Minutes of the Ordinary Meeting of Council - 16 November 2022

Motion (Cummings/Elmore)

That Council confirm the minutes of the Ordinary Meeting of Council held on 16 November 2022.

The Motion on being Put was declared **CARRIED.**

Councillor(s) For the Motion:	Christou, Colman, Cummings, Elmore, Farooqui, Garrard, Hamed, Huang, Hughes, Lake, Rahme, Saha, Sarkis, and Zaiter.
Councillor(s) Against the Motion:	Nil.

Request for Adjournment – Councillor Rahme

Councillor Rahme requested that the Meeting be adjourned at 9:00pm in accordance with clause 5.8 of the *Code of Meeting Practice* to allow for a prayer break.

The Mayor, Councillor Lake ruled that she will adjourn the Meeting for a period of 15 minutes after the first item that concludes after 9:00pm.

Councillor Garrard requested that he be recorded as opposing the adjournment for a prayer break.

Declarations of Pecuniary & Non Pecuniary Conflicts of Interest

Councillor Hughes declared a Less Than Significant, Non-Pecuniary interest in item C12/22-215 as she is a neighbour of one of the houses listed in the report. Councillor Hughes indicated she will be remaining in the Chamber for the consideration of the item.

The Mayor, Councillor Lake acknowledged the General Manager and Council officers for the recent awards Council received:

- 2022 Ministers Awards for Women in Local Government - Employment Diversity - Metro Award
- 2022 Work, Health and Safety Excellence Showcase Champions (Large business – government category)

- Local Government NSW Community Development Award for Covid-19 support hubs.

Councillor Garrard requested that it be noted that Councillor Christou be congratulated as he was Mayor when the submissions were lodged to the appropriate bodies. The Mayor, Councillor Lake advised this would be noted.

Min.312 MM12/22-22 Mayoral Minute – Congratulating Graduating Year 6 School Students

Motion (Lake)

That Council:

1. Write to each student finishing year 6 within Cumberland Council, congratulating them on this achievement and wishing them well as they transition to high school; and

2. Offer each graduating student a twin pass to a swimming pool of their choice within the Cumberland Council Local Government Area.

The Motion on being Put was declared **CARRIED** Unanimously**.**

Councillor(s) For the Motion:	Christou, Colman, Cummings, Elmore, Farooqui, Garrard, Hamed, Huang, Hughes, Lake, Rahme, Saha, Sarkis, and Zaiter.
Councillor(s) Against the Motion:	Nil.

Min.313 MM12/22-21 Mayoral Minute – Flood Support for Regional NSW

Motion (Lake)

That Council make a donation of $10,000 to the GIVIT NSW Flood Appeal, funded from the Emergency Relief Fund.

The Motion on being Put was declared **CARRIED** Unanimously**.**

Councillor(s) For the Motion:	Christou, Colman, Cummings, Elmore, Farooqui, Garrard, Hamed, Huang, Hughes, Lake, Rahme, Saha, Sarkis, and Zaiter.
Councillor(s) Against the Motion:	Nil.

Min.314 MM12/22-23 Mayoral Minute – Uluru Statement and Voice to Parliament

Motion (Lake)

That Council:

1. Hears and supports the Aboriginal and Torres Strait Islander peoples calls for the establishment of a First Nations Voice enshrined in the constitution;

2. Supports the call for a constitutional referendum to be held in the current term of Federal Parliament on this matter; and

3. Continues to work with our local constituents, other levels of Government and all Australians to take this step in our shared future.

The Motion on being Put was declared **CARRIED.**

Councillor(s) For the Motion:	Colman, Cummings, Elmore, Farooqui, Garrard, Hamed, Huang, Hughes, Hussein, Lake, Saha.
Councillor(s) Against the Motion:	Christou, Rahme, Sarkis and Zaiter.

Councillor Hussein entered the Meeting at 7:00pm during the consideration of this item.

Councillor Rahme left the Meeting at 7:13pm and returned to the Meeting at 7:15pm during the consideration of this item.

Min.315 MM12/22-24 Mayoral Minute – Condolences- The Late Muriel Yvette Whitfield

Motion (Lake)

That Council:

1. Note with sadness the passing of former Holroyd City Council Mayor, Yvette Whitfield; and

2. Observe a minute's silence to honour the life of former Mayor Yvette Whitfield, including her achievements and contributions to the former Holroyd City Council and the wider community.

The Motion on being Put was declared **CARRIED.**

Councillor(s) For the Motion:	Christou, Colman, Cummings, Elmore, Farooqui, Garrard, Hamed, Huang, Hughes, Hussein, Lake, Rahme, Saha, Sarkis, and Zaiter.
Councillor(s) Against the Motion:	Nil.

Min.316 Matter of Urgency – Councillor Hughes

The Mayor ruled that in accordance with Clause 9.3(b) of the *Code of Meeting Practice*, the business raised by Councillor Hughes in relation to Christmas decorations in the Regents Park Ward is business of great urgency that requires a Council decision before the next ordinary meeting of Council.

Motion (Rahme/Garrard)

That the business raised by Councillor Hughes concerning Christmas decorations in the Regents Park Ward be considered at this meeting.

The Motion on being Put was declared **CARRIED.**

Councillor(s) For the Motion:	Christou, Colman, Cummings, Farooqui, Garrard, Hamed, Huang, Hughes, Hussein, Lake, Rahme, Saha, Sarkis, and Zaiter.
Councillor(s) Against the Motion:	Elmore.

Min.317 Matter of Urgency – Christmas Decorations in the Regents Park Ward

Motion (Hughes/Garrard)

That:

1. This Chamber expresses its thorough disappointment with Council's performance in providing inadequate Christmas decorations within the commercial shopping areas of the Regents Park Ward.

2. This neglect is further supported by the unkempt nature of the verges, whereby debris lies unattended for weeks and where stormwater pits and gutters become reservoirs crammed with leaves and vegetation.

3. As a matter of urgency, the General Manager instigate an immediate response to these problems and that an action plan be developed to ensure much improved performance in 2023.

The Motion on being Put was declared **CARRIED.**

Councillor(s) For the Motion:	Christou, Colman, Cummings, Elmore, Farooqui, Garrard, Hamed, Huang, Hughes, Hussein, Lake, Rahme, Saha, Sarkis, and Zaiter.
Councillor(s) Against the Motion:	Nil.

Councillor Hussein left the Meeting at 7:44pm and returned to the Meeting at 7:46pm during the consideration of this item.

Public Forum:

Speakers on Items on the Council Meeting Agenda

Speaker	Item #	Suburb
Ms Alaine Roff	C12/22-214 80 Betty Cuthbert Drive, Lidcombe - Planning Proposal and Development Control Plan	Sydney
Ms Caroline Staples	C12/22-214 80 Betty Cuthbert Drive, Lidcombe - Planning Proposal and Development Control Plan	Lidcombe
Mr Tony Oldfield (via Audio-Visual Link)	C12/22-214 80 Betty Cuthbert Drive, Lidcombe - Planning Proposal and Development Control Plan	Auburn
Ms Nikki Yuen (via Audio-Visual Link)	C12/22-215 Cumberland Heritage Study planning proposal	Auburn
Mr Vinh Trang	C12/22-215 Cumberland Heritage Study planning proposal	Sydney
Ms Angelena Tsui	C12/22-215 Cumberland Heritage Study planning proposal	Berala
Ms Monica Kanaan	C12/22-215 Cumberland Heritage Study planning proposal	Merrylands
Mr Daniel Graham	C12/22-215 Cumberland Heritage Study planning proposal	Wentworthville
Mr Nicholas Abi-Esber	C12/22-215 Cumberland Heritage Study planning proposal	Auburn
Mr James Phillips	C12/22-215 Cumberland Heritage Study planning proposal	Woolloomooloo
Mr Heath Fayad	C12/22-215 Cumberland Heritage Study planning proposal	Granville
Mr Antonio Bonacruz	C12/22-215 Cumberland Heritage Study planning proposal	Auburn
Mr Karthigesu Ratnakumar	C12/22-215 Cumberland Heritage Study planning proposal	Mayshill
Mr Tony Giunta	C12/22-215 Cumberland Heritage Study planning proposal	Lidcombe
Mr Simon Ford	C12/22-215 Cumberland Heritage Study planning proposal	Lidcombe
Mr Phillip Giunta	C12/22-215 Cumberland Heritage Study planning proposal	West Pennant Hills
Mr Roydon Ng	C12/22-216 Parramatta Light Rail - Stage 2 Parramatta to Sydney Olympic Park Submission on the Environmental Impact Statement Potential Extension between Sydney Olympic Park and Lidcombe	Lidcombe
Mr Ian Bell	C12/22-217 Draft Prospect Pipeline Corridor Strategic Masterplan - Post Exhibition Report	Greystanes

Councillor Saha left the Meeting at 8:01pm and returned to the Meeting at 8:04pm during Public Forum.

Councillor Christou left the Meeting at 8:03pm and returned to the Meeting at 8:06pm during Public Forum.

Councillor Farooqui left the Meeting at 8:07pm and returned to the Meeting at 8:13pm during Public Forum.

Councillor Christou left the Meeting at 8:44pm and returned to the Meeting at 8:46pm during Public Forum.

Councillor Huang left the Meeting at 8:46pm and returned to the Meeting at 8:47pm during Public Forum.

Councillor Hussein left the Meeting at 8:46pm and returned to the Meeting at 8:49pm during Public Forum.

Councillor Rahme left the Meeting at 8:58pm and returned to the Meeting at 9:03pm during Public Forum.

Councillor Cummings left the Meeting at 9:12pm and returned to the Meeting at 9:17pm during Public Forum.

Councillor Zaiter left the Meeting at 9:24pm and returned to the Meeting at 9:25pm during Public Forum.

Councillor Huang left the Meeting at 9:31pm and returned to the Meeting at 9:34pm during Public Forum.

ADJOURNMENT

9:36pm The Mayor, Councillor Lake adjourned the meeting for 15 minutes.

9:51pm The Mayor, Councillor Lake resumed the meeting.

Min.318 Alteration of Order of Business

Motion (Garrard/Cummings)

That in accordance with Clause 8.2 of the Code of Meeting Practice, Council alter the order of business to allow Items C12/22-214, C12/22-215, C12/22-216 and C12/22-217 to be brought forward for consideration at this time of the Meeting.

The Motion on being Put was declared **CARRIED.**

Councillor(s) For the Motion:	Christou, Colman, Cummings, Elmore, Farooqui, Garrard, Hamed, Huang, Hughes, Hussein, Lake, Rahme, Saha and Zaiter.
Councillor(s) Against the Motion:	Nil.

Min.319 C12/22-214 80 Betty Cuthbert Drive, Lidcombe - Planning Proposal and Development Control Plan

Motion (Farooqui/Huang)

That Council:

1. Adopt the exhibited planning controls for 80 Betty Cuthbert Drive, Lidcombe, that seeks to amend the Cumberland Local Environmental Plan 2021 being:
   a. Rezone the Site from SP2 Hospital to SP2 Educational Establishment, SP2 Hospital, SP2 Drainage and R3 Medium Density Residential.
   b. Amend the Height of Building control for the site from nil to 9m within the R3 Medium Density Residential zone.
   c. Amend the Floor Space Ratio control for the site from nil to 0.75:1 within the R3 Medium Density Residential zone.
   d. Apply existing clause 4.1(3C) and associated mapping to allow maximum subdivision lot sizes between 170sqm and 350sqm on the R3 zoned part of the Site, consistent with Botanica.
2. Endorse that the planning proposal for 80 Betty Cuthbert Drive, Lidcombe, be forwarded to Department of Planning and Environment for plan making and finalisation.
3. Note that the Local Environmental Plan amendment will be published in the Government Gazette upon finalisation.
4. Adopt the site-specific Development Control Plan as an amendment to the Cumberland Development Control Plan 2021, as provided in Attachment 2, with the Development Control Plan coming into effect on the date of notification (gazettal) of the Local Environmental Plan amendment.
5. Delegate to the General Manager the authority to make minor, non-policy corrections or formatting changes to the Development Control Plan controls, if required, prior to it coming into effect.
6. Note that the proponent has elected not to enter into a Planning Agreement with Council on the basis that the proposal will deliver a range of public benefits.
7. Writes to the NSW Government seeking a firm commitment to the provision of a new public school.

Councillor Sarkis left the meeting at 9.36pm and returned to the Meeting at 9:57pm during the consideration of this item.

Min.320 Extension of Council Meeting

Motion (Cummings/Sarkis)

That Council in accordance with clause 18.2 of the Code of Meeting Practice, extend the meeting by 1 hour to conclude at 11:00pm, or if an item being discussed is unfinished at 11:00pm, at the conclusion of that item.

The Motion on being Put was declared **CARRIED.**

Councillor(s) For the Motion:	Christou, Colman, Cummings, Elmore, Farooqui, Garrard, Hamed, Huang, Hughes, Hussein, Lake, Rahme, Saha, Sarkis, and Zaiter.
Councillor(s) Against the Motion:	Nil.

Debate then resumed on Item C12/22-214.

The Motion on being Put was declared **CARRIED.**

Councillor(s) For the Motion:	Colman, Elmore, Farooqui, Hamed, Huang, Hussein, Lake and Saha.
Councillor(s) Against the Motion:	Christou, Cummings, Garrard, Hughes, Rahme, Sarkis and Zaiter.

During debate, Councillor Christou raised a Point of Order, citing an alleged breach of Clause 15.11 (d) of the *Code of Meeting Practice*, alleging that Councillor Hussein made a personal insult. The Mayor, Councillor Lake ruled against the Point of Order.

During debate, Councillor Elmore raised a Point of Order, citing an alleged breach of Clause 15.11 (d) of the *Code of Meeting Practice* by Councillor Christou. The Mayor, Councillor Lake advised Councillor Christou that he is required to be silent during another Councillors speech, and asked Councillor Elmore to continue his speech.

Min.321 C12/22-215 Cumberland Heritage Study Planning Proposal

Motion (Colman/Hussein)

That Council:

1. Note the status of the Cumberland Heritage Study and preparation of a Cumberland Heritage Study Planning Proposal.
2. Note the advice of the Cumberland Local Planning Panel on the Cumberland Heritage Study Planning Proposal.

Item No: C12/22-214

80 BETTY CUTHBERT DRIVE, LIDCOMBE - PLANNING PROPOSAL AND DEVELOPMENT CONTROL PLAN

Directorate:	Environment and Planning
Responsible Officer:	Director Environment & Planning
File Number:	PP2021/0002
Community Strategic Plan Goal:	*Enhancing the Natural and Built Environment*

SUMMARY

On 4 May 2022, Council endorsed a planning proposal for 80 Betty Cuthbert Drive, Lidcombe to be forwarded to the Department of Planning and Environment (the Department) for a Gateway Determination. At this meeting, Council also endorsed a site-specific Development Control Plan to be exhibited with the planning proposal concurrently.

On 28 July 2022, the Department issued a Gateway Determination endorsing the planning proposal for public exhibition. Consistent with the Gateway Determination, Council officers publicly exhibited the planning proposal and supporting documentation concurrently with a draft site-specific development control plan endorsed by Council.

The proposal was exhibited from 6 September 2022 to 5 October 2022. An online webinar and a drop-in information session was also held to engage the wider community considering the nature, type and scale of uses (health, education and residential) for this proposal.

This report outlines the submissions received during public exhibition of the planning proposal and supporting information. In response to the submissions received, enhancements are proposed in the site-specific Development Control Plan to mitigate potential impacts, including traffic and transport, loss of trees and a planning framework regarding the proposed school.

It is recommended that Council endorse the planning proposal to proceed to plan making and finalisation. It is also recommended that Council adopt the site-specific Development Control Plan.

RECOMMENDATION

That Council:

1. **Adopt the exhibited planning controls for 80 Betty Cuthbert Drive, Lidcombe, that seeks to amend the Cumberland Local Environmental Plan 2021 being:**
    a. **Rezone the Site from SP2 Hospital to SP2 Educational Establishment, SP2 Hospital, SP2 Drainage and R3 Medium Density Residential.**

b. **Amend the Height of Building control for the site from nil to 9m within the R3 Medium Density Residential zone.**

c. **Amend the Floor Space Ratio control for the site from nil to 0.75:1 within the R3 Medium Density Residential zone.**

d. **Apply existing clause 4.1(3C) and associated mapping to allow maximum subdivision lot sizes between 170sqm and 350sqm on the R3 zoned part of the Site, consistent with Botanica.**

2. **Endorse that the planning proposal for 80 Betty Cuthbert Drive, Lidcombe, be forwarded to Department of Planning and Environment for plan making and finalisation.**

3. **Note that the Local Environmental Plan amendment will be published in the Government Gazette upon finalisation.**

4. **Adopt the site-specific Development Control Plan as an amendment to the Cumberland Development Control Plan 2021, as provided in Attachment 2, with the Development Control Plan coming into effect on the date of notification (gazettal) of the Local Environmental Plan amendment.**

5. **Delegate to the General Manager the authority to make minor, non-policy corrections or formatting changes to the Development Control Plan controls, if required, prior to it coming into effect.**

6. **Note that the proponent has elected not to enter into a Planning Agreement with Council on the basis that the proposal will deliver a range of public benefits.**

REPORT

Background

Planning Proposal

A Planning Proposal Request was lodged with Cumberland City Council on 3 September 2021 for 80 Betty Cuthbert Drive, Lidcombe which seeks to facilitate the redevelopment of the site for a mix of health, education and residential uses to amend the Cumberland Local Environmental Plan (LEP) 2021.

The proposal amends the existing SP2 Hospital zoning to SP2 Hospital, SP2 Educational Establishment, SP2 Drainage and R3 Medium Density Residential for the site, introduces principal development controls (Floor Space Ratio and Height of Buildings) and amends minimum lot size controls for the R3 Medium Density Residential portion proposing to apply an existing LEP clause 4.1(3C) under the Cumberland LEP 2021. Property and Development NSW is the applicant and landowner for this proposal.

The proposal was considered by the Cumberland Local Planning Panel on 13 April 2022. On 4 May 2022, Council considered a report on the Planning Proposal Request for 80 Betty Cuthbert Drive, Lidcombe. At the meeting, Council resolved to:

"*1. Endorse a planning proposal for 80 Betty Cuthbert Drive, Lidcombe, that seeks to amend the Cumberland Local Environmental Plan 2021 to:*

a. Rezone the Site from SP2 Hospital to SP2 Educational Establishment, SP2 Hospital, SP2 Drainage and R3 Medium Density Residential.

b. Amend the Height of Building control for the site from nil to 9m within the R3 Medium Density Residential zone.

c. Amend the Floor Space Ratio control for the site from nil to 0.75:1 within the R3 Medium Density Residential zone.

d. Amend clause 4.1(3C) and associated mapping to allow maximum subdivision lot sizes between 170sqm and 350sqm on the R3 part of the Site, consistent with Botanica.

2. Endorse that the planning proposal for 80 Betty Cuthbert Drive, Lidcombe, be forwarded to the Department of Planning and Environment for a Gateway Determination.

3. Endorse the draft site-specific Development Control Plan associated with the planning proposal for 80 Betty Cuthbert Drive, Lidcombe, as provided in Attachment 3.

4. Note that, subject to the receipt of a Gateway Determination by the Department of Planning and Environment, the planning proposal and site-specific Development Control Plan for 80 Betty Cuthbert Drive, Lidcombe, will be exhibited concurrently.

5. Note that the proponent has elected not to enter into a Planning Agreement with Council on the basis that the proposal will deliver a range of public benefits".



Figure 1: Location of Planning Proposal

On 28 July 2022, the Department of Planning and Environment issued a Gateway Determination and endorsed that the proposal proceed to public exhibition.

Site-specific Development Control Plan

On 4 May 2022 meeting, Council endorsed a draft site-specific Development Control Plan to be exhibited concurrently along with the planning proposal to guide the future development of the site. Key elements of the draft Development Control Plan include:

- An indicative masterplan, showing the proposed location of proposed land uses and key infrastructure to be delivered on the site. The Proponent would need to obtain subdivision approval from Council before any rezoning occurs and to implement the draft LEP mapping provisions.
- Objectives and controls for the proposed movement network and street layout. This includes a requirement for a signalised intersection on Joseph Street to be delivered before occupation of the proposed educational establishment.
- Objectives and controls for the proposed medium density residential, which are consistent with those for the Botanica estate (former Lidcombe Hospital site) to the south.

Public exhibition

The planning proposal, draft site-specific Development Control Plan and supporting documentation was placed on public exhibition from Tuesday 6 September 2022 to Wednesday 5 October 2022 for a period of 30 days. During this time, the proposal's exhibition material was made available on Council's 'Have Your Say' page and the NSW Government's planning portal. Submissions were encouraged to be lodged online, posted or emailed to Council. During the public consultation period, Council engaged the community through a range of methods including:

- *Notification letters*

  In accordance with Council's resolution in June 2022, property owners and occupiers (residents) within a 1km distance of the subject site also received written notification on the proposal exhibition and approximately 5,000 notification letters were sent prior to commencement of exhibition. The area notified (outlined in red) is shown in Figure 2, and the subject proposal site is outlined in black.



Figure 2: Letter notification area

- *Social media and newspaper notices*

  The online exhibited proposal information was promoted through Council's social media platforms. Public notices were published in the Auburn Review and Parra News local newspapers on the week of 6, 11, 13 and 18 September 2022 which occurred during the proposal's exhibition period.

- *Signage*

  Council also displayed large corflute signs with the QR code on the afternoon of 5 September 2022 at different strategic locations near to the proposal site along Joseph Street, Betty Cuthbert Drive and libraries at Lidcombe and Berala. This was to inform the wider resident community in Lidcombe, Berala and Regents Park (including Botanica residential estate) regarding the proposal's exhibition.

- *Online webinar*

  On 15 September 2022, Council conducted an online webinar from 6pm to 7pm. The purpose of the webinar was for residents to raise questions or seek any clarification on the proposal from relevant Council staff and representatives from Property and Development NSW. 23 people registered and only 20 people attended the webinar session. This included 14 residents, 2 Councillors, 3 Council staff and applicant's consultant (representing Property and Development NSW).

- *Face to face drop in session*

  On 20 September 2022, Council officers conducted a face-to-face drop-in session for residents at the Berala Community Centre, from 5pm to 7pm. The session was attended by 13 people including 4 residents, 4 councillors, applicant's consultant, applicant (Property and Development NSW) and 3 council staff.

Community submissions

During the public exhibition period of the planning proposal, a total of 49 community submissions were received, including 2 late submissions. This included 31 online and 18 written submissions. Some of the key insights from the submission included:

- In regard to the proposed educational facility, 15 supported an educational facility, 6 objected to an educational facility and 28 did not provide a specific view on an educational facility.
- In regard to the proposed residential development, 21 objected to increased housing, 2 supported increased housing and 26 did not provide a specific view of increased housing.
- The majority of submitters who lodged submissions were residents from the Botanica Estate and Lidcombe, with submissions also received from residents in Berala, Regents Park and Auburn.

Key concerns raised in community submissions included the following:

- Traffic generation and parking impact to immediate and neighbouring surrounds
- Lack of information with regards to the proposed school with regards to the type, scale and capacity including school drop off pick up zones, parking and if a funding commitment was available from Department of Education
- Loss of significant amount of existing vegetation (mature trees)
- Provision of more park and play space provisions
- Potential amenity impacts such as noise as a result of the school
- Lack of support for residential development

The issues raised with the community submissions have been considered by Council officers, and a response is attached to this report.

Public agency submissions

As required by the Gateway Determination, Council consulted with the following public agencies:

- Transport for NSW
- NSW Health
- School Infrastructure NSW
- NSW Environment and Heritage
- Utility service providers (Jemena Gas Works, Ausgrid, Sydney Water, Endeavour Energy and AGL)

In total, five submissions were received as part of this process. This included:

- Department of Planning and Environment (Biodiversity and Conservation Division)
- Jemena Gas Works
- Sydney Water
- Ausgrid
- Endeavour Energy

Out of the five agency submissions received, two submissions (Ausgrid and Department of Planning and Environment – Biodiversity and Conservation Division) raised some concerns with regards to the proposal site:

- Ausgrid informed that the proposal would need to consider and meet electricity infrastructure provisions as required within proximity to existing network assets such as underground cables, substations and for activities within or near to the electricity easement. Any further impacts on electrical service infrastructure provisions will be further assessed when a DA is lodged for the proposed site in the future.
- The Department of Planning and Environment (Biodiversity and Conservation Division) submission raised concerns with regards to biodiversity and lack of tree canopy cover. The submission stated that the applicant's ecological, tree, flora and fauna assessments were not detailed enough to prove that threatened species was prevalent or not on the proposal site, since the site was not surveyed. Any significant and potential impacts to biodiversity are likely to be further assessed when a DA is lodged for the proposed site in the future.

No agency submissions were received from Transport for NSW, NSW Health, School Infrastructure, AGL and NSW Environment and Heritage.

Response to Issues from Public Exhibition

Following the post Gateway exhibition, further information was requested by Council officers from the applicant in October 2022 to address key issues from the consultation process. These included:

- Consideration of local traffic impacts from the proposed school, including potential alternate arrangements for Betty Cuthbert Drive
- Opportunities and constraints to Leila Street for a kiss and ride facility, should a pedestrian overpass be provided between the school and Coleman Park
- Clarification on the impact to existing vegetation on the site
- Confirmation of status on the proposed school on site
- Further details on the proposed school

A response to these issues was provided by the applicant in November 2022, with a summary of these responses provided in Table 1 and the full response attached to this report. The response has been reviewed by Council officers, and has informed the proposed approach towards finalising the planning proposal and site-specific Development Control Plan.

Issue	Applicant Response	Council Officer Comment
Consideration of local traffic impacts from the proposed school, including potential alternate arrangements for Betty Cuthbert Drive	• Traffic modelling has been undertaken to assess impacts of the proposed school and potential alternate arrangements • Traffic modelling indicates that the proposal can be accommodated within the road network, based on the proposed new intersection on Joseph Street to access the school identified in the masterplan for the proposal • Should a road closure be required on Betty Cuthbert Drive, this could be located south of the new local street near its intersection with Ironbark Crescent. A connection should be maintained between the existing development and the site for active transport	The information provided has been reviewed by Council officers. The traffic modelling indicates that a road closure on Betty Cuthbert Drive can be accommodated by the road network It is proposed that the road closure at Betty Cuthbert Drive is included in the site-specific Development Control Plan to separate existing development from the site. An active transport link would still be provided to offer local connectivity
Opportunities and constraints to Leila Street from parents dropping off children, should a pedestrian overpass be provided between the school and Coleman Park	• A desktop analysis has been undertaken on the potential of this facility, and assumes the pedestrian link over Joseph Street • The analysis found that the proposed kiss and ride could be accommodated on the local street with negligible traffic impact	The information has been reviewed by Council officers. It is proposed that the ability of a kiss and ride facility to be provided on the western side of Joseph Street be included in the site-specific Development Control Plan
Clarification on the impact to existing vegetation on the site	• The draft Development Control Plan identifies the approach to tree retention. Tree replacement strategies can be considered for inclusion in planning controls	The information has been reviewed by Council officers. It is proposed that additional controls are included in the site-specific Development Control Plan
Confirmation of status of proposed school on site	• Schools Infrastructure has advised that there is no firm commitment to the timing of a new school on the site	Noted. Planning controls to manage potential impacts included in the site-specific Development Control Plan to guide future service and infrastructure planning for the school
Further details on the proposed school	• Indicative information on the school and management arrangements was provided, based on State guidelines and masterplan details • Detailed service and infrastructure planning still be undertaken for a potential school on the site, taking into account staging and potential enrolment numbers	Noted. Planning controls to manage potential impacts included in the site-specific Development Control Plan to guide future service and infrastructure planning for the school

Table 1: Applicant Response to Key Issues Raised During Public Exhibition

Proposed Approach

Based on the submissions received and additional information provided by the applicant, a proposed approach has been developed by Council officers to progress the finalisation of the proposal. This includes:

- No change to the scope of the planning controls identified in the planning proposal to provide educational, health and residential uses. There is strategic merit in providing land for a school to meet current and future needs, consistent with Council strategies and policies. It is also noted that enrolment capacity is exceeded at nearby primary public schools in Lidcombe and Berala, and there is population growth forecast in the area. The applicant requires the provision of additional housing on the site to facilitate redevelopment in accordance with the indicative masterplan, including the relocation of the MS Facility and to dedicate land for a school.
- Strengthen the site-specific Development Control Plan to mitigate potential impacts. This includes planning controls related to the closure of Betty Cuthbert Drive near the school whilst maintaining pedestrian access, additional controls related to loss of trees, and additional controls related to the planning and management of the proposed school.

It is noted that there is a proposed control in the site-specific Development Control Plan that the design of the school is for a maximum of 750 students. While the technical reports provided as part of the proposal were based on up to 1,000 students, insufficient detail has been provided on the service and infrastructure planning for the new school, and therefore a lower number of students is proposed to mitigate potential impacts on the amenity of the surrounding area.

The planning proposal and updated site-specific Development Control Plan is attached to this report.

It is recommended that Council endorse the planning proposal to proceed to plan making and finalisation. It is also recommended that Council adopt the site-specific Development Control Plan.

Public Benefit Offer

Through the application of the Cumberland Planning Agreements Policy and Guideline, Council seeks to ensure a fair and reasonable apportionment of the costs and benefits of development and deliver planning outcomes that contribute to a net public benefit for the community.

The Proponent has elected not to enter into a Planning Agreement with Council on the basis that the proposal will deliver a range of public benefits such as including a proposed new school, pedestrian overhead bridge, new health facility and housing. The proposal is supported by an Assessment of Public Benefits which provides an estimation of the State Government's proposed direct investment into 80 Betty Cuthbert Drive, Lidcombe, and the expected quantitative public benefits derived from the NSW Government's direct investment into the site.

COMMUNITY ENGAGEMENT

Consultation processes for the proposal are outlined in the main body of the report.

POLICY IMPLICATIONS

Policy implications are outlined in the main body of this report.

RISK IMPLICATIONS

There are no risk implications for Council associated with this report.

FINANCIAL IMPLICATIONS

It is noted that the Proponent has elected not to enter into a Planning Agreement with Council on the basis that the proposal will deliver a range of public benefits. On this basis, there are no financial implications for Council.

CONCLUSION

As required by Council's resolution, the draft planning proposal and draft site-specific Development Control Plan have been prepared and publicly exhibited. Following a review of submissions and strengthening of planning controls in the Development Control Plan, it is recommended that Council finalise the planning proposal and adopt the site-specific Development Control Plan.

ATTACHMENTS

1. Planning Proposal ⇩
2. Site-Specific Development Control Plan ⇩
3. Community Submissions ⇩
4. Public Agency Submissions ⇩
5. Engagement Evaluation Report ⇩
6. Further Information from Applicant on Proposal ⇩
7. Assessment of Public Benefits (confidential)
8. Gateway Determination ⇩

ITEM LPP031/22 - MODIFICATION APPLICATION FOR 267 WOODVILLE ROAD GUILDFORD

PANEL DECISION:

1. **That Modification Application No. MOD2021/0455 for Section 4.55(2) modification application to the approved motor repair workshop and motor showroom to increase the number of vehicles on display, the number of visitors to the site per week, the amount of oil to be stored on-site per year and additional hardstand area on land at 267 Woodville Road GUILDFORD NSW 2161 be referred to the Council's in-house legal counsel for advice regarding the applicants' use of the modification provisions in the Environmental Planning and Assessment Act 1979 to deal with changes to a development consent and ongoing existing use.**

2. **In the event that the legal advice is that there is no legal power, then the application be refused by the Panel on that basis.**

3. **In the event that the legal advice is that there is legal power, then the application be refused by the Panel for the reasons set out in the Planning Officer's report.**

For: Stuart McDonald (Chairperson), Graham Brown, Naomi Fiegel and Irene Simms.

Against: Nil.

ITEM LPP032/22 - PLANNING PROPOSAL - 80 BETTY CUTHBERT DRIVE, LIDCOMBE

PANEL DECISION:

That the Panel advises the Council that it supports the Planning Proposal request for 80 Betty Cuthbert Drive, Lidcombe proceeding to a Gateway Determination.

The Panel also recommends to the Proponent and the Council that the following items be subject to more detailed consideration including, where relevant, in the preparation of future planning controls for the site:

1. **The identification of significant trees in the Development Control Plan (DCP).**

2. **The means of promoting public transport use, including the most effective way of providing bus access and whether bringing buses on to the site is the optimal solution, recognising that these buses may serve more than just the school.**

3. **The provision of pedestrian linkages from the school to the areas to the east and whether the link as shown on the drawings is sufficient or whether additional linkages should be provided.**

4. **The acknowledgment of the adjoining state heritage item being the former Lidcombe hospital site and its associated relationship to the subject site and the need for appropriate planning controls in the DCP to ensure an acceptable development interface with that item.**

For: Stuart McDonald (Chairperson), Graham Brown, Naomi Fiegel and Irene Simms.

Against: Nil**.**

ITEM LPP016/22 - DEVELOPMENT APPLICATION FOR 4A AUBURN ROAD AUBURN

PANEL DECISION:

That Development Application No. DA2022/0015 for the use of the land as a telecommunications facility with third party advertising on a 32 inch electronic display screen incorporated in the payphone structure on the public footpath adjacent to 4A Auburn Road, Auburn NSW 2144 be approved subject to the recommended conditions.

For: Stuart McDonald (Chairperson), Graham Brown, Naomi Fiegel and Irene Simms.

Against: Nil.

Reasons for Decision:

1. The Panel generally concurs with the Planning Officer's report subject to the attached conditions within the report.

2. The Panel noted that the 75-inch advertising structure had previously been approved under a prior development consent. The structure supporting those signs were deemed acceptable at the time of construction and did not require consent.

3. The proposal is consistent with the objectives of the B4 Mixed Use zone of the Cumberland Local Environmental Plan 2021 and the relevant provisions under the Cumberland Development Control Plan 2021.

4. The Panel is satisfied that the development will not have any unreasonable impacts on the amenity of the neighbouring properties or the locality, also noting there were no written submissions in response to the notification of the application.

5. Taking into account reasons above, approval of the application will be in the public interest.

Item No: LPP032/22

PLANNING PROPOSAL - 80 BETTY CUTHBERT DRIVE, LIDCOMBE

Responsible Division: Environment & Planning
Officer: Executive Manager Environment and Precincts
File Number: PP2021/0002

Lodged	17 September 2021	
Proponent	Urbis on behalf of Property and Development NSW	
Landowner	Minister Administering the Public Works and Procurement Act 1912 (Property and Development NSW)	
Site address and legal description	80 Betty Cuthbert Drive, Lidcombe, legally described as Lot 74 & 75 DP 1141724 and Lot 475 DP 45747	
Site area	5.8 hectares	
Site description and existing Use	Large irregular shaped allotment with a primary frontage to Joseph Street, a six-lane road, between Georges Avenue to the north and Botanica Drive to the south. Currently occupied by a Multiple Sclerosis Facility that has reached the end of its economic life. Most of the site is undeveloped and underutilised.	
Existing planning controls	Land zone	SP2 Hospital
	Height of buildings	N/A
	Floor space ratio	N/A
	Lot size	N/A
Requested planning controls	Land zone	SP2 Hospital, SP2 Education and R3 Medium Density Residential
	Height of buildings	9m within R3 zone
	Floor space ratio	0.75:1 within R3 zone
	Lot size	N/A
Recommended planning controls	Land zone	SP2 Hospital, SP2 Education and R3 Medium Density Residential
	Height of buildings	9m within R3 zone
	Floor space ratio	N/A
	Lot size	Between 170sqm to 350sqm for residential component, as per Cumberland LEP Clause 4.1(3C).
Heritage	The site is 300 metres from one local heritage item to the east and a heritage conservation area to the south. No further heritage matters have been considered due to the absence of heritage within or adjacent to the Site.	
Disclosure of political donations and gifts	N/A	

Previous considerations	N/A

SUMMARY:

The purpose of this report is to provide an overvew of a Planning Proposal Request lodged with Council on 17 September 2021 for 80 Betty Cuthbert Drive, Lidcombe (the Site).

The Planning Proposal Request seeks to amend the Cumberland Local Environmental Plan 2021 (CLEP 2021) to facilitate redevelopment of the Site for a mix of health, education, and residential uses.

The status of the Planning Proposal Request is shown in Figure 1. This report recommends that the proposal is supported for the purpose of a Gateway Determination.

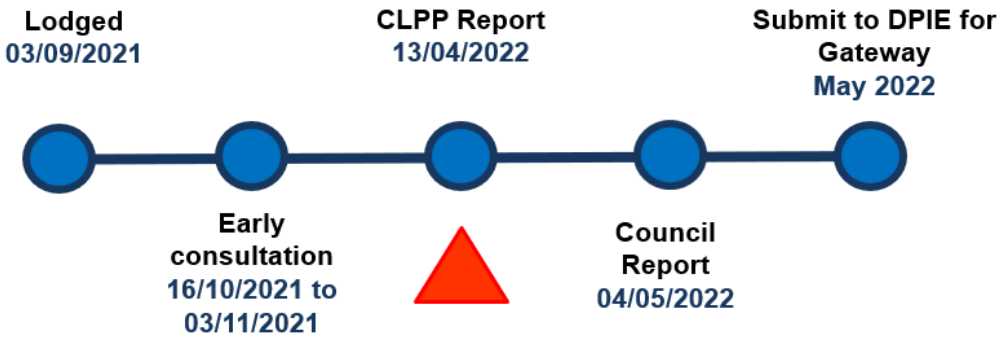


Figure 1: Status of the Planning Proposal

REPORT:

The Site and its context

The Planning Proposal Request relates to 80 Betty Cuthbert Drive, Lidcombe, which is located approximately 10km south-east of Parramatta CBD, 3km south of Lidcombe Principal Local Centre and 2km east of Berala Local Centre (Figure 2).

The north-central part of the Site is occupied by a Multiple Sclerosis Facility built in the 1970s. The rest of the Site is undeveloped and contains internal roads and vegetation (Figure 3).

Surrounding land uses include:

- To the north and east – established residential neighbourhoods, dominated by 1-2 storey detached dwellings
- To the south – the 'Botanica' estate (former Lidcombe hospital site), with a mix 1-2 storey attached and detached houses
- To the south-east – Lidcombe TAFE and Sydney University Cumberland Campus
- The west – Carnarvon Golf Course and Coleman Park.

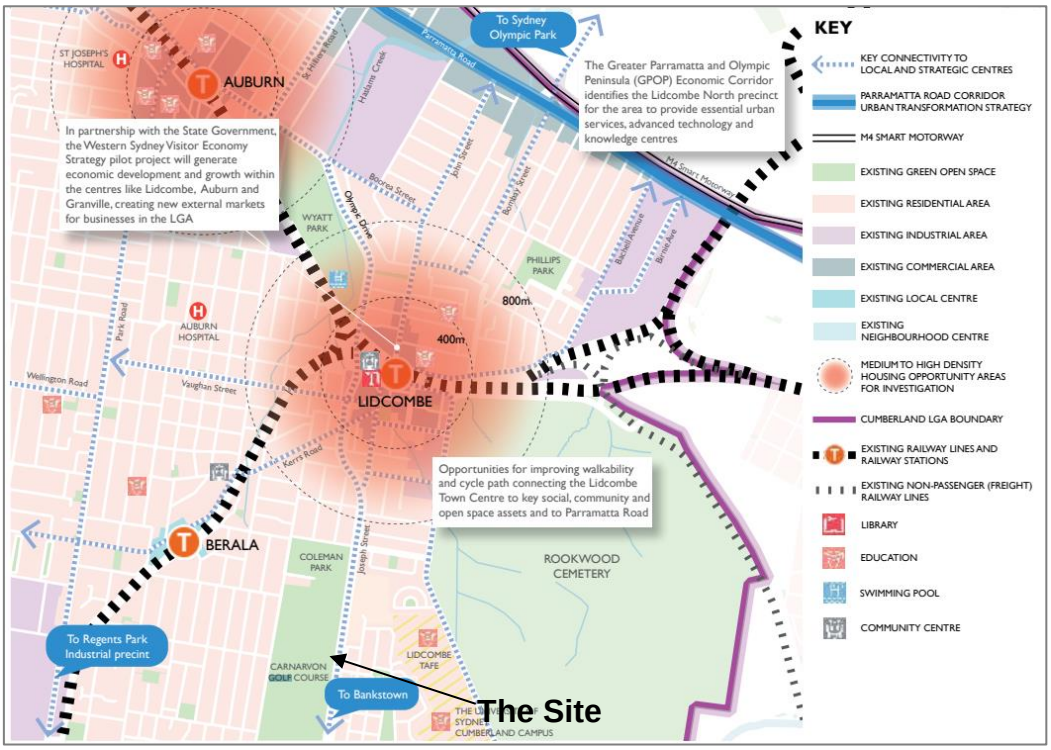


Figure 2: The Site in its regional context



Figure 3: The Site in its local context

Objectives and intended outcomes

The Planning Proposal Request seeks to facilitate redevelopment of the Site for a mix of health, education, and residential land uses, as shown in the masterplan at Figure 4, and summarised below.

- Stage 1: A new Multiple Sclerosis (MSL) Facility which is to be relocated to the southern part of the Site. On 15 November 2021, the Sydney Central City Planning Panel issued development consent for the new MSL Facility, including 20 two-bedroom units for temporary accommodation, provision of carparking and new access driveways, drainage and stormwater detention works and tree removal (DA2021/0435).

- Stage 2: Medium density housing along the northern, eastern, and southern boundaries of the Site. This part of the site is proposed to have the same controls as the Botanica Estate to the south, and is to be sold to and redeveloped by a private developer.

- Stage 3: Educational establishment on the north-western part of the Site, fronting Joseph Street. The proposed type and scale of educational establishment is yet to be confirmed following the preparation of a business case by NSW Department of Education (DoE) and approval by NSW Treasury. Until a business case is approved, the NSW Government is unable to provide a firm commitment to the type of educational establishment or timing for delivery.

- Stormwater detention basins and local roads to serve the development.

Explanation of provisions

To achieve the objectives and intended outcomes, the proposal seeks to amend Cumberland LEP 2021 as summarised in Table 1 below and shown in Figures 5 to 12.

Control	Existing	Proposed
Land Zone	SP2 Hospital	Part SP2 Educational Establishment (32%) Part SP2 Hospital (16%) Part SP2 Drainage (4%) Part R3 Medium Density Residential (30%)
Height of Buildings	N/A	9m within R3 zone
Floor Space Ratio	N/A	0.75:1 within R3 zone
Lot Size	N/A	Amend clause 4.1(3C) and associated mapping to allow maximum subdivision lot sizes between 170sqm and 350sqm on the R3 part of the Site, consistent with Botanica.

Table 1: Proposed amendments to Cumberland LEP 2021



Figure 4: Indicative masterplan

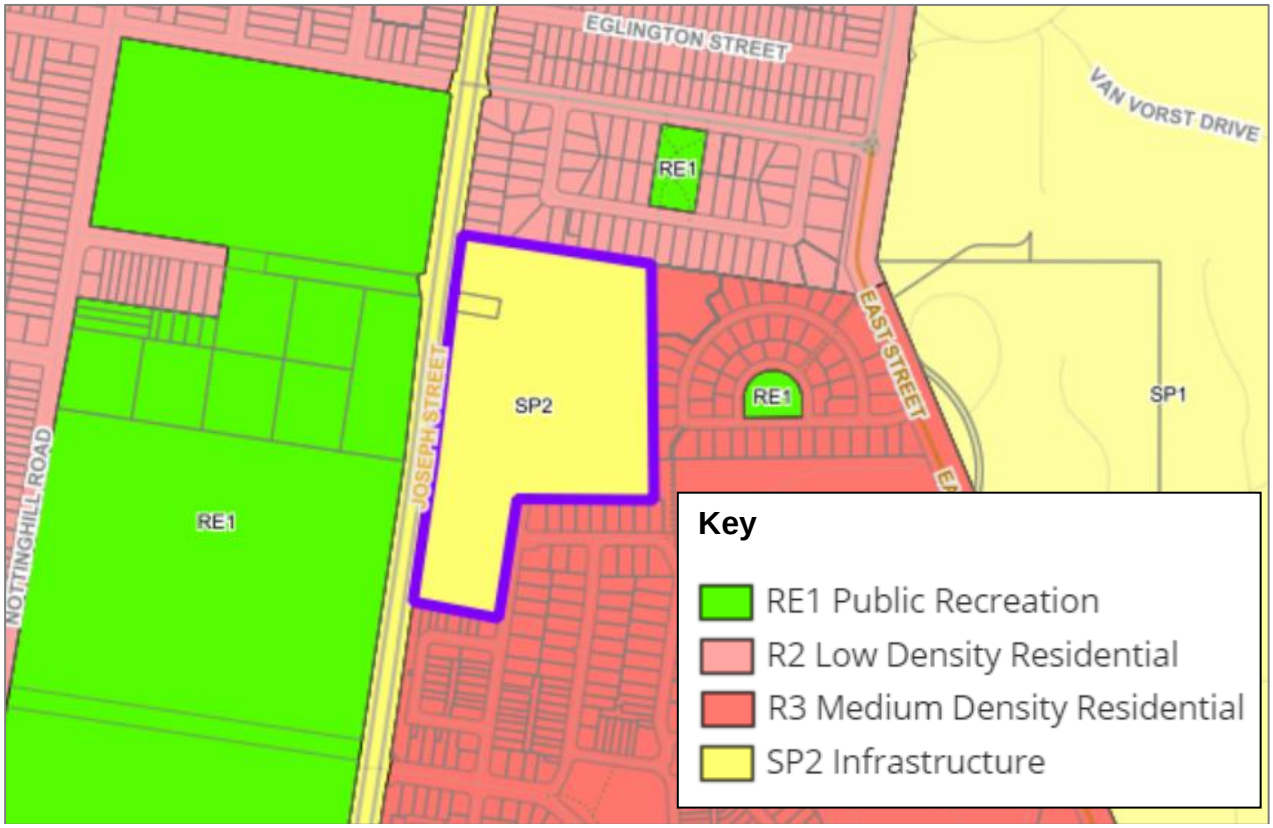


Figure 5: Existing land zoning

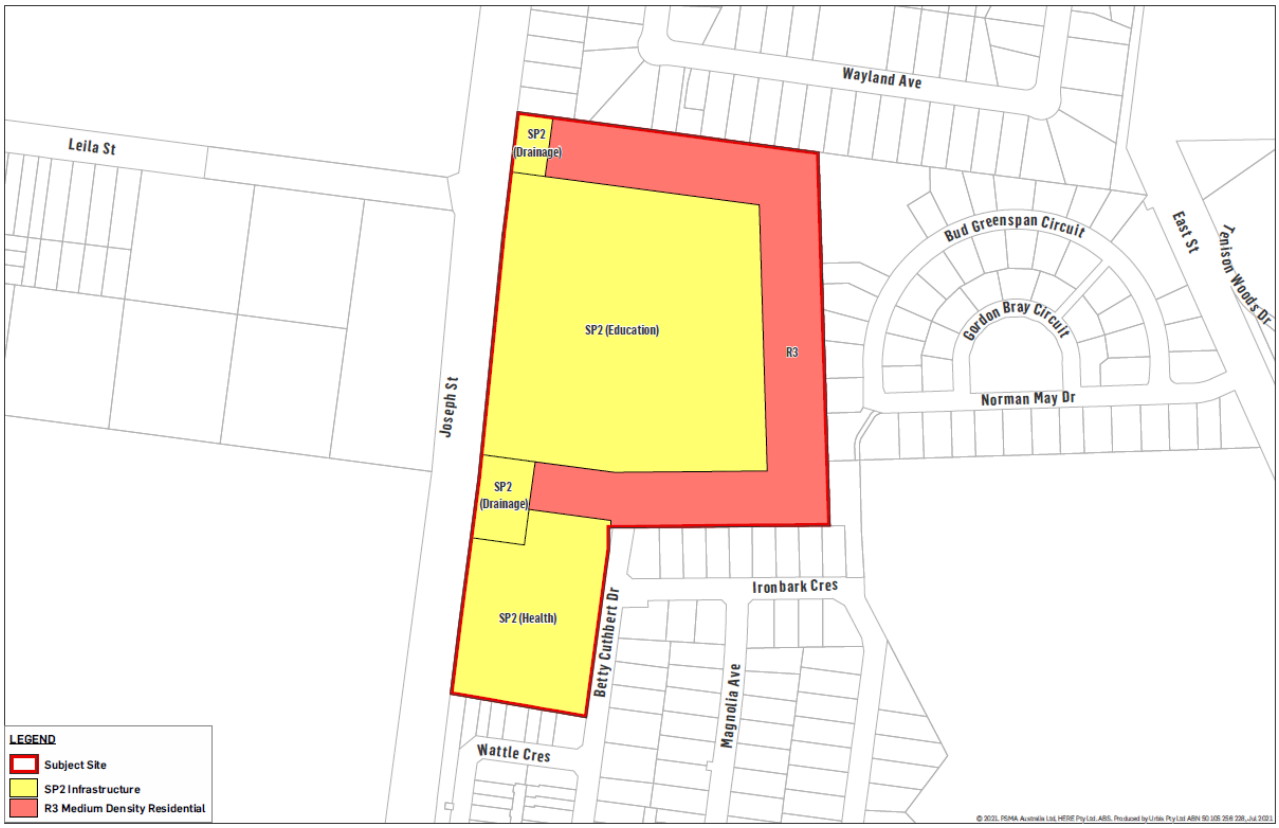


Figure 6: Proposed land zoning

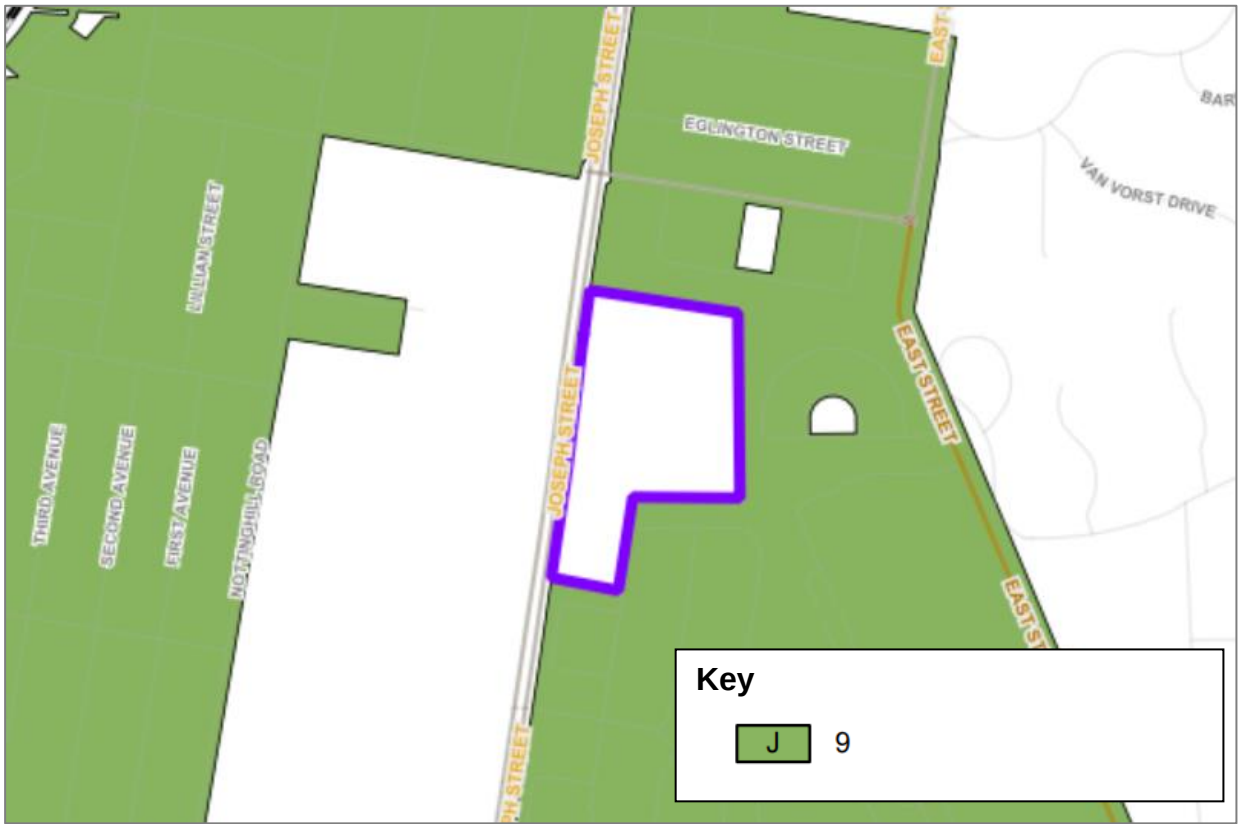


Figure 7: Existing height of buildings



Figure 8: Proposed height of buildings



Figure 9: Existing floor space ratio



Figure 10: Proposed floor space ratio

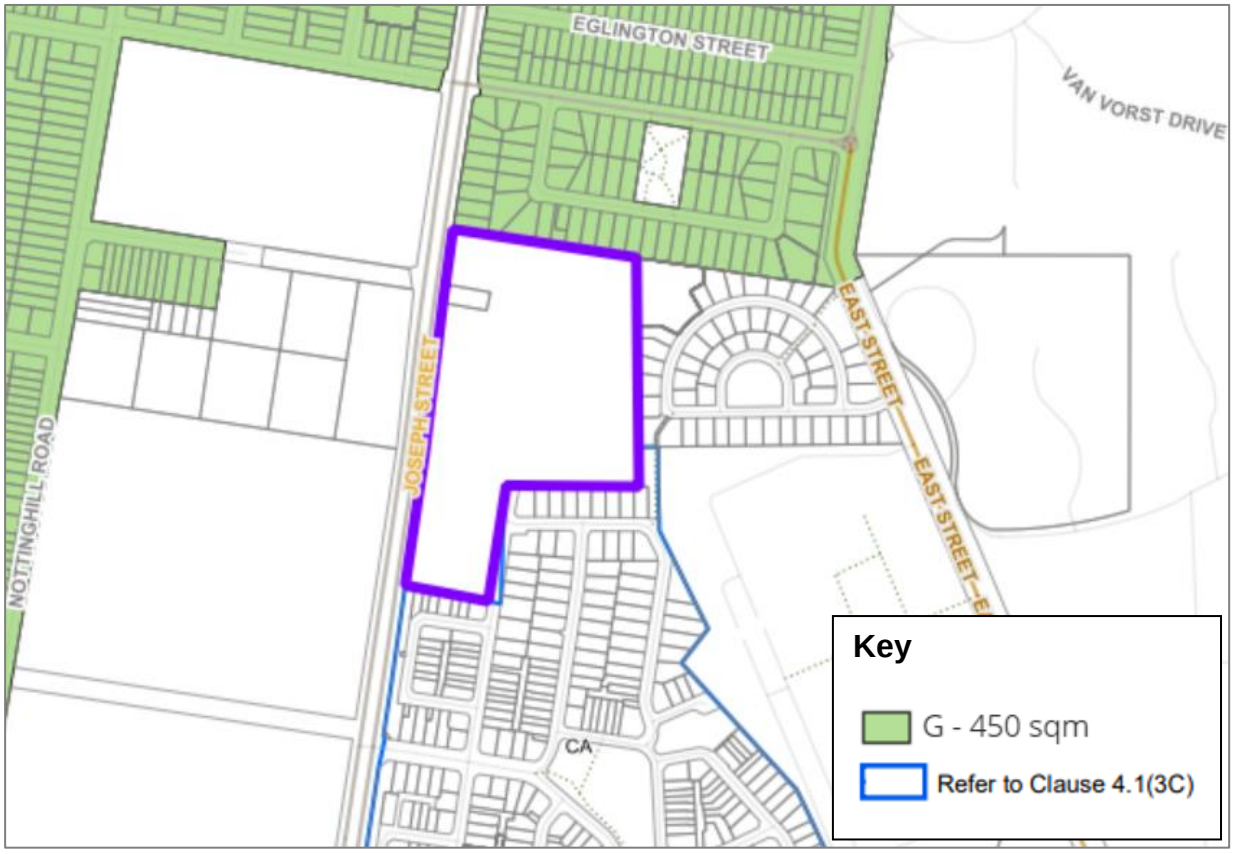


Figure 11: Existing lot size

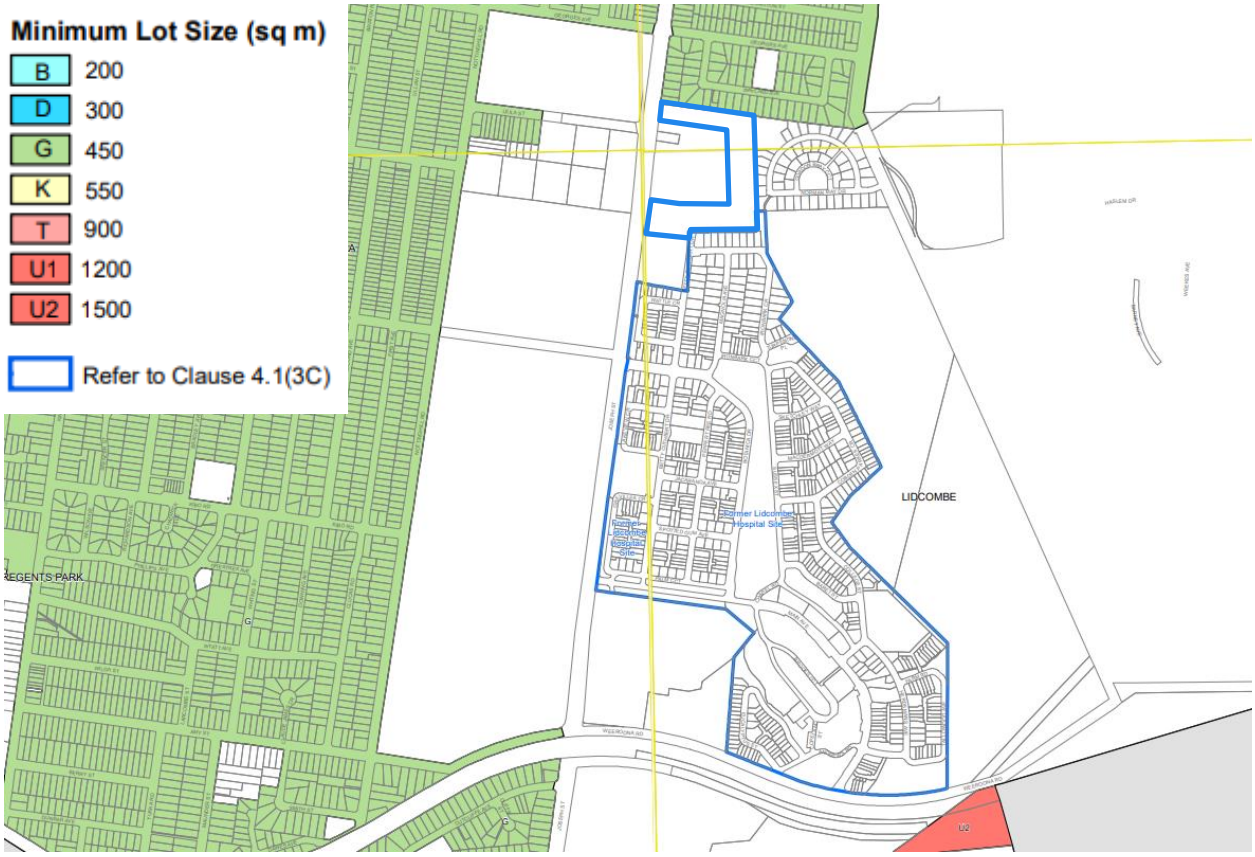


Figure 12: Proposed lot size (see existing Cumberland LEP Clause 4.1(3C) below)

Site provision for minimum lot size (Clause 4.1(3C))

There is an existing clause in the Cumberland LEP that outlines site-specific minimum lot size requirements on adjoining land to the Site, as outlined below. It is proposed that these provisions apply to the residential component of the Site.

4.1 Minimum subdivision lot size
…

(3C) The minimum lot size for development on land shown edged blue and identified as "Former Lidcombe Hospital Site" on the Lot Size Map is as follows in relation to development for the purposes of—

(a) dwelling houses—
(i) 350 square metres, or
(ii) if a garage will be accessed from the rear of the property—290 square metres, or
(iii) if the dwelling house will be on a zero lot line—270 square metres,
(b) semi-detached dwellings—270 square metres,
(c) multi dwelling housing—170 square metres for each dwelling,
(d) attached dwellings—170 square metres

Development Control Plan

The Proponent prepared a draft site-specific Development Control Plan (draft DCP) to support the proposed LEP controls and guide the future development of the site.

Key elements of the draft DCP include:

- An indicative masterplan, showing the proposed location of proposed landuses and key infrastructure to be delivered on the site. The Proponent would need to obtain subdivision approval from Council prior to before any rezoning occurs.
- Objectives and controls for the proposed movement network and street layout. Council officers will update the draft DCP prior to exhibition to include a requirement for the signalised intersection on Joseph Street to be devliered before occupation of the educational establishment.
- Objectives and controls for the proposed medium density housing. This section is to be updated prior to exhibition to ensure consistency with the site-specific DCP for the Botanica Estate to the south (the Former Lidcombe Hospital site).

Public benefit offer

Through the application of the Cumberland Planning Agreements Policy and Guideline, Council seeks to ensure a fair and reasonable apportionment of the costs and benefits of development and deliver planning outcomes that contribute to a net public benefit for the community.

The Proponent has elected not to enter into a Planning Agreement with Council; however, the Planning Proposal Request is supported by an Assessment of Public Benefits, which provides an estimation of the NSW Government's proposed direct

investment and expected quantitative public benefits derived from Government's direct investment into the site.

Preliminary consultation

The Proponent carried out preliminary public consultation from May to June 2020, before the Planning Proposal Request was lodged with Council.

Council officers placed the Planning Proposal Request on preliminary consultation from 6 October 2021 to 3 November 2021, in accordance with policy requirements. In response, Council received a total of 36 submissions, including eight objections and 20 submissions in support of the proposal. Items covered in the submission included:

- Most submissions expressed strong support for the establishment of a new school on the site
- Many submissions requested for additional uses be delivered on the site as part of the proposal, including open space and commercial/retail uses, to reduce the need for residents to drive to other surrounding areas to access services and facilities
- Concerns about potential impacts associated with the proposed school and residential component, including pedestrian safety, traffic and parking, and amenity impacts such as privacy and noise.

Strategic merit assessment

The proposal is broadly consistent with the strategic planning framework and policy context, as outlined below.

Consistency with Greater Sydney Region Plan - A Metropolis of Three Cities

The proposal is broadly consistent with the Greater Sydney Region Plan, including:

- Objective 3: Infrastructure adapts to meet future needs. The proposal seeks to deliver an educational establishment and supporting roads and stormwater infrastructure to meet the needs of Cumberland's rapidly growing population.

- Objective 10: Greater housing supply: the proposal provides a greater amount of housing supply than would be possible without the proposed rezoning.

- Objective 11: Housing is more diverse and affordable: The proposal aims to deliver a mix of housing types and sizes, including 'missing middle' attached housing, similar to the Botanica site to the south.

- Objective 14. integrated land use and transport creates a walkable and 30-minute cities: The proposal will improve pedestrian permeability and active transport network. The proposed pedestrian linkage to Ironbark Walkway, new intersection at Joseph Street and pedestrian connection opportunity to Leila Street increase permeability between eastern and western communities, including Berala. The direct pedestrian connection through Ironbark Walkway and Norman May Drive will also improve accessibility to more bus services and regional cycleway

network at East Street.

Consistency with the Central City District Plan

The proposal is generally consistent with the Central City District Plan, including:

- Priority C1: Planning for a city supported by infrastructure. The proposal seeks to deliver a new MSL facility, educational establishment, and supporting infrastructure including roads, drainage and pedestrian links.

- Priority C3: Providing services and social infrastructure to meet people's changing needs. The proposal will facilitate redevelopment of a large, underutilised Government site for a mix of land uses, including a new MSL facility and educational establishment.

- Priority C5: Providing housing supply, choice and affordability with access to jobs, services and public transport. The proposal seeks to deliver additional housing in close proximity to established residential neighbourhoods, services and facilities, including public transport.

- Priority C16: Increasing urban tree canopy cover and delivering Green Grid connections. The indicative master plan maintains the landscape character of the site by retaining high and medium value trees to allow for future movement of species along the green corridor. Trees are also proposed to be retained where possible along the site periphery within the rear side of the proposed residential and the proposed buffer zone to Joseph Street for potential habitats for local species.

Consistency with Cumberland 2030: Our Local Strategic Planning Statement (LSPS)

The proposal is generally consistent with Cumberland 2030: Our :Local Strategic Planning Statement, including:

- Objective P4: Improving accessibility within our town centres. The proposal will make it easier for current and future residents to access other nearby centres and surrounding neighbourhoods through the provision of pedestrian and cycle links.

- Objective P5: Delivering housing diversity to suit changing needs. The proposal seeks to deliver a mix of housing types and sizes, similar to the Botanica site to the south.

- Objective P9. Providing high quality, fit-for-purpose community and social infrastructure in line with growth and changing requirements. Redeveloping the site for a school and MSL facility will provide valuable social infrastructure to meet the needs of Cumberland's rapidly growing population.

- Objective P13: Protecting, enhancing and increasing natural and green spaces. The proposal seeks to retain significant vegetation and to provide tree planting along Joseph Street.

Key considerations

Social and economic

- The proposal will deliver social infrastructure to meet the needs of the local area and wider region.

- The proposal will deliver a range of employment opportunities in the health and education sector, with access to Lidcombe TAFE and Sydney University Cumberland Campus.

- In addition to ongoing employment opportunities, the proposal will also result in a temporary increase in construction jobs.

Urban design and built form

- The proposed planning controls for the residential component will result in a similar built form outcome as the Former Lidcombe Hospital site to the south.

- The proposed school will be required to meet the design controls and design quality principles in the State Environmental Planning Policy (Transport and Infrastructure) (SEPP) (formerly Education SEPP) and associated Design Guide for Schools.

- The design of the MSL facility has been approved by Sydney Central City Planning Panel.

Traffic and access

- Transport for NSW requirements have been addressed in the masterplan. The concept layout for the master plan includes the introduction of an interim left-in left-out connection to Joseph Street. This connection is to be converted to a signalised intersection before the educational establishment is operational.

- The Proponent will also be required to address local requirements and issues as part of any development application for the educational establishment. A traffic report will be required to show, at a minimum: school and cumulative traffic between 8-9.30am and 2-4pm; sweep path analysis on proposed cul-de-sac; and operational management details for the school.

Environmental

The Planning Proposal Request is supported by a range of technical studies that address the following matters.

- Noise and vibration: The development would impact adjacent residents during both construction and operation. The development would also be subject to significant noise levels from Joseph Street. It is noted that the masterplan provides for large setbacks to, and significant tree planting, along Joseph Street which may help to mitigate noise impacts.

- Trees and vegetation: The site contains 16 trees with high retention value and should be retained and protected wherever possible. All opportunities for retaining these subject trees using design modification and tree sensitive construction techniques should be explored.

- Landscape and visual: The Project has the potential to impact the visual amenity and landscape character of the local area. If the proposal proceeds past Gateway, a site-specific Development Control Plan will be prepared to guide the future development of the site.

- Air quality: The focus of an impact on air quality from the proposed project would be during the construction phase, as the proposed land uses would not involve significant air emissions.

- Surface and groundwater: Due to proposed land uses, the project will likely only interact with the ground water through a pollution pathway during construction.

- Heritage: The site does not contain a heritage item, nor are there any heritage items adjacent to the Site.

- Contamination and Acid Sulphate Soils: The site was found to have a low risk of contamination; however, further investigations are recommended before the site is redeveloped.

The above matters will be further considered at development application stage should the proposal proceed to Gateway and finalisation.

CONCLUSION:

The Planning Proposal Request is consistent with the strategic planning framework and policy context and will deliver a wide range of benefits, including a new MSL facility, educational establishment, and diverse housing. It is therefore recommended that the proposal is reported to Council with a recommendation to proceed to Gateway Determination.

CONSULTATION:

The proposal has been subject to extensive consultation as outlined in this report. Further consultation will occur should the proposal receive a Gateway Determination.

FINANCIAL IMPLICATIONS:

Financial implications for Council are outlined in this report.

POLICY IMPLICATIONS:

This report recommends that the Planning Proposal Request be reported to Council for further consideration. If Council resolves to forward the planning proposal to the Department of Planning and Environment for a Gateway Determination, there will be policy implications associated with the subsequent stages of the planning proposal process. These will be outlined in subsequent Council reports.

COMMUNICATION / PUBLICATIONS:

The final outcome of this matter will be notified on Council's website. Submitters will also be notified in writing of the outcome.

REPORT RECOMMENDATION:

That Cumberland Local Planning Panel (CLPP) recommend that Council supports, for the purpose of a Gateway Determination, the Planning Proposal Request for 80 Betty Cuthbert Drive, Lidcombe.

ATTACHMENTS

1. Attachment 1 - Planning Proposal Request ⇩
2. Attachment 2 - Urban Design Report ⇩
3. Attachment 3 - Draft Site-specific Development Control Plan ⇩
4. Attachment 4 - Department of Education Letter ⇩
5. Attachment 5 - Assessment of Public Benefits ⇩
6. Attachment 6 - Transport and Traffic Assessment Report ⇩
7. Attachment 7 - Environmental Assessment Report ⇩
8. Attachment 8 - Preliminary Tree Assessment ⇩
9. Attachment 9 - Habitat Assessment and Targeted Flora survey ⇩
10. Attachment 10 - Preliminary Contamination and Acid Sulfate Soils Investigation ⇩
11. Attachment 11 - Utilities and Services Report ⇩
12. Attachment 12 - Water Cycle Management Report ⇩
13. Attachment 13 - Engagement Outcomes Report - Proponent ⇩
14. Attachment 14 - Summary of Submissions - Council Preliminary Consultation ⇩

CUMBERLAND
CITY COUNCIL

PART F1-19

80 BETTY CUTHBERT DRIVE, LIDCOMBE

1. Introduction

1.1 Purpose of this DCP

The purpose of this Development Control Plan ('DCP') is to outline the 'site specific controls' (the detailed planning and design framework) that relates to 80 Betty Cuthbert Drive (refer to **Figure 1**) which is located south of the Lidcombe town centre. Where there is inconsistency between this document and provisions contained elsewhere in the Cumberland Development Control Plan 2021, the site-specific controls contained in this document shall apply to the extent of the inconsistency.

1.2 Land to which this Part applies

This section applies to the site referred to as 80 Betty Cuthbert Drive, containing the following three (3) lots – Lots 74 and 75 in DP 1141724 and Lot 475 in DP 45747. The site has a total area of 58,818 sqm.

Figure 1 Site Aerial



1.3 Relationship to Cumberland Development Control Plan 2021

The controls contained in this part are supplementary to and shall be read in conjunction with the following relevant parts of Cumberland DCP 2021.

- Part A – Introduction and General Controls
- Part B – Development in Residential zones
- Part C – Development in Business zones

- Part E – Other land use-based development controls
- Part G - Miscellaneous Development Controls

Where there is an inconsistency between this DCP Part and provisions contained elsewhere in Cumberland DCP 2021, the provisions of this Part shall prevail.

2 Vision and general objectives

2.1 Vision

Provide a mix of residential, educational and health services within a landscaped setting to complement and enhance the Lidcombe area.

2.2 General objectives

O1. Assist in creating a 30-minute city where residents are close to jobs, education, health facilities and other services.

O2. Exemplify a thriving community where residents live in healthy and highly connected neighbourhood served by well-maintained public spaces and facilities.

O3. Facilitate the opportunity for residents to choose from a variety of housing choices to range of income levels and lifestyles.

O4. Provide a highly connected, safe and permeable network with convenient access to public transport, public spaces and facilities, and amenities.

O5. Provide opportunities to extend the pedestrian and cycle routes beyond the site.

O6. Celebrate the natural environment through conservation of important trees and maintain the existing landscaped character of surrounding residential areas.

O7. Prioritise healthy living, including design to mitigate and adapt to heat, and design for active transport.

O8. Buildings are sited, positioned and designed to maximise climatic responsiveness and provide high levels of desirable solar access and natural ventilation.

2.3 Indicative Master Plan

The vision and principles for the site as identified above are spatially expressed in the urban structure for the precinct as shown in **Figure 2**. To ensure that development provides key elements, where variations to the master plan are proposed, the development application is to demonstrate how the vision and principles have been achieved.

Figure 2 Indicative Master Plan



3 Specific objectives and controls

3.1 Land use

Objectives

O1. Educational Establishment - Providing a future educational establishment on an existing government site to meet the current educational demands of the Lidcombe area and surrounding areas.

O2. MSL Health Facility - Provide a fit for purpose facility for the care, support and treatment for multiple sclerosis and other neurological conditions.

O3. Residential - Provide additional residential facilities within an existing residential area to contribute towards housing targets set by State Government.

O4. Road Reserve - Provide efficient infrastructure to enable to possibility to accommodate buses for the future educational facility and connect to the existing road network.

O5. Stormwater Basins - To reduce the rate of stormwater runoff discharged to the public drainage network from development.

Figure 3 Indicative Land Uses

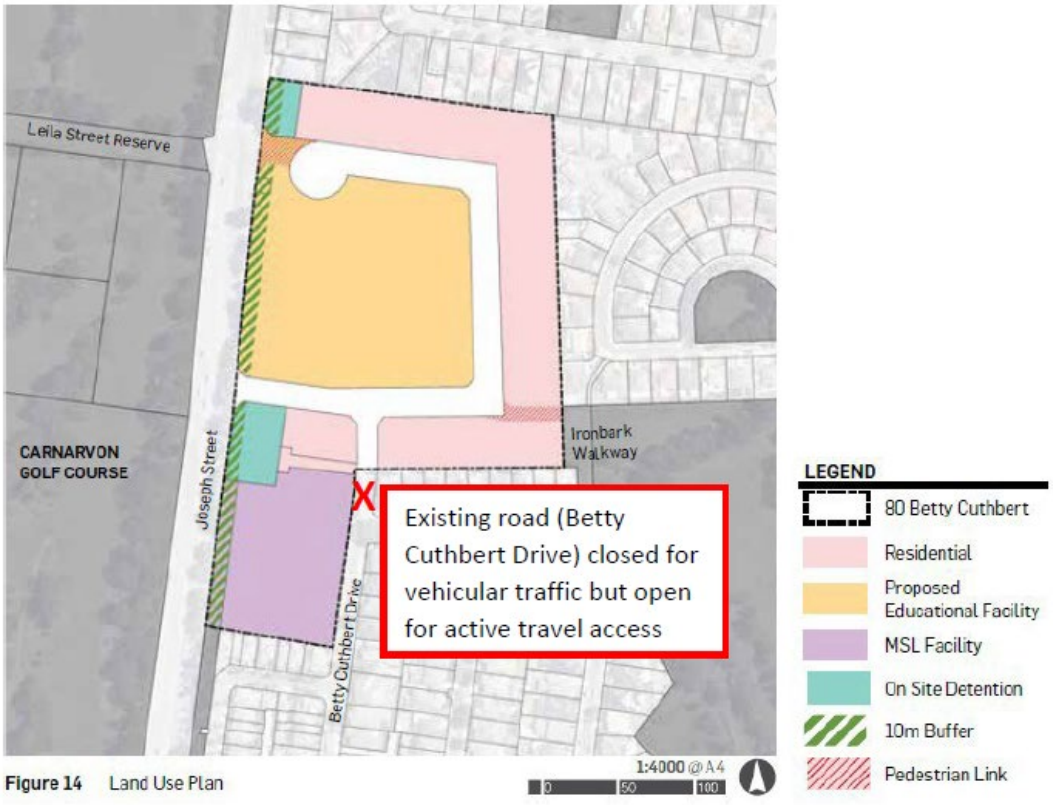


Figure 14 Land Use Plan

3.2 Movement Network and Street Layout

Objectives

O1. Create a safe and permeable road network that caters for pedestrians, cyclists and vehicles.

O2. Provide opportunities to extend the pedestrian and cycle routes beyond the site boundaries.

Controls

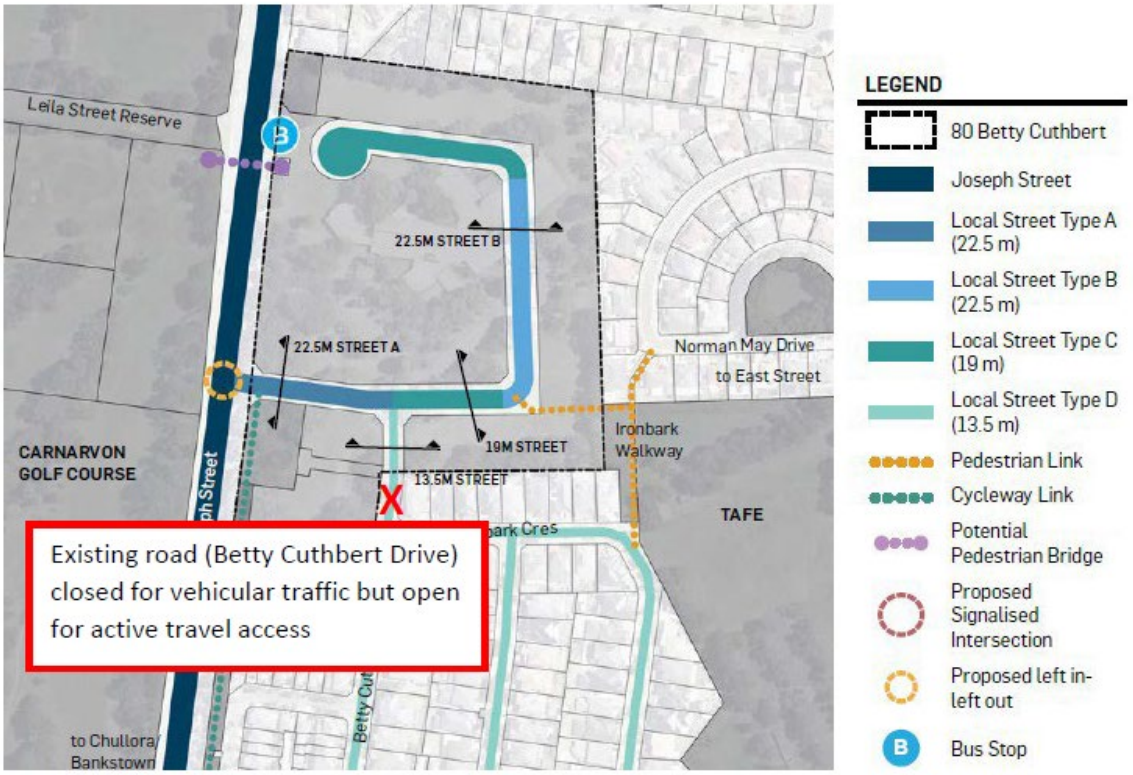
C1. Vehicular movement and directions are in accordance with the Access and Movement Network in **Figure 4** and associated indicative street sections.

C2. The new access road from Joseph Street, with a left-in left-out arrangement, is required prior to the commencement of construction of the residential development or new school, whichever comes first.

C3. A signalised intersection on Joseph Street is required prior to the operation of any educational establishment on site.

C4. Betty Cuthbert Drive is to be permanently closed between the New Street and Ironbark Crescent to separate local traffic and future development. This shall be undertaken prior to the commencement of construction of the residential development or new school, whichever comes first.

Figure 4 Access and Movement Network



3.3 Pedestrian and cycle circulation

Objectives

O1. Encourage and facilitate walking and cycling within the site and the general neighbourhood.

O2. Encourage use by pedestrian and cyclist use of the site by:

- providing footpaths on all streets on the site;
- providing safe and high amenity pedestrian linkages connecting all major activities and open spaces;
- designing for safe on-street cycling conditions along residential streets;
- providing bicycle parking at key locations;
- providing new pedestrian and cycle access to adjoining housing development to the south and east
- allowing for future pedestrian/cycle links to adjoining sites and regional routes and integrating accessibility for the mobility impaired.

Controls

C1. Pedestrian and cycle routes shall be provided in accordance with the Access and Movement Network in **Figure 4.**

C2. Streetscaping/public domain design shall strengthen the connection within the site and to surrounding residential development and other local amenities.

C3. Pedestrian and cycle access is to be maintained between the existing development and the site at the point where the road closure of Betty Cuthbert Drive is located.

3.4 Parking

Objectives

O1. Maintain high amenity of the residential neighbourhoods by ensuring that adequate provision is made for adequate parking is provided across the precinct.

Controls

C1. Parking should be consistent with the parking rates identified in Part G of the Cumberland DCP

C2. Public parking spaces shall be provided in addition to the resident parking provided for each dwelling.

C3. Public domain, street and landscape design shall clearly delineate parking areas.

Figure 5 Local Street A (22.5 metre road) indicative section

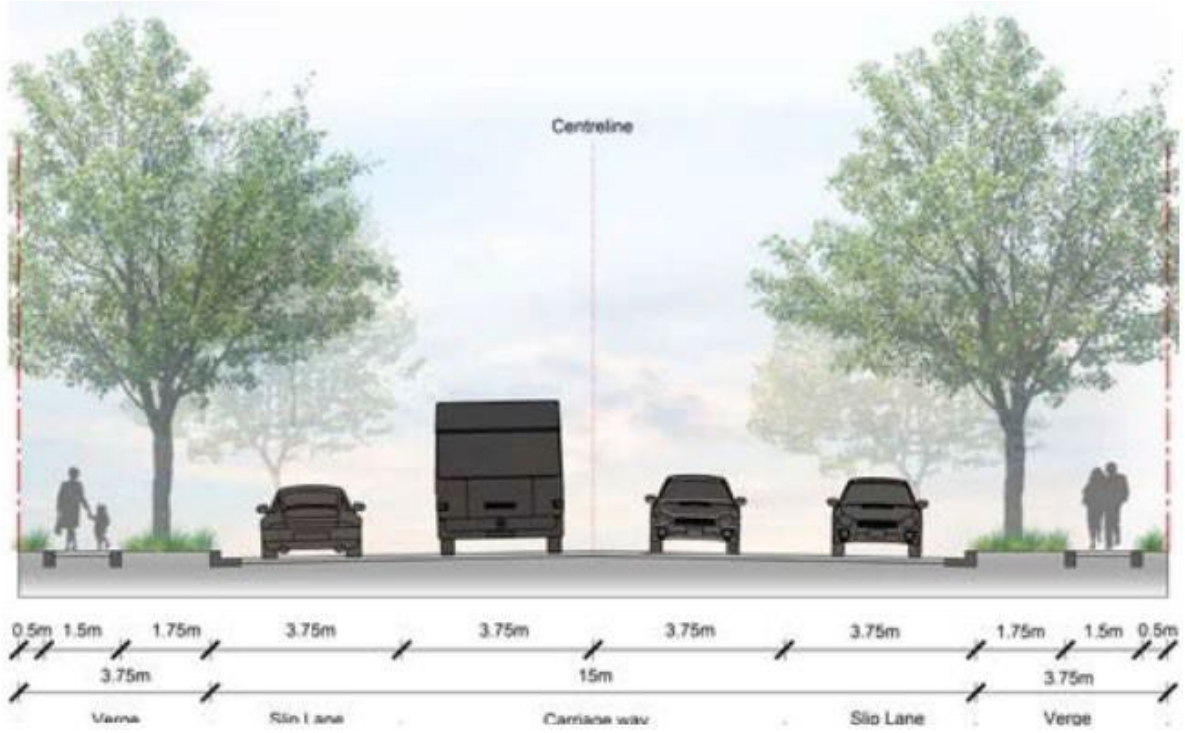


Figure 6 Local Street B (22.5 metre road) indicative section

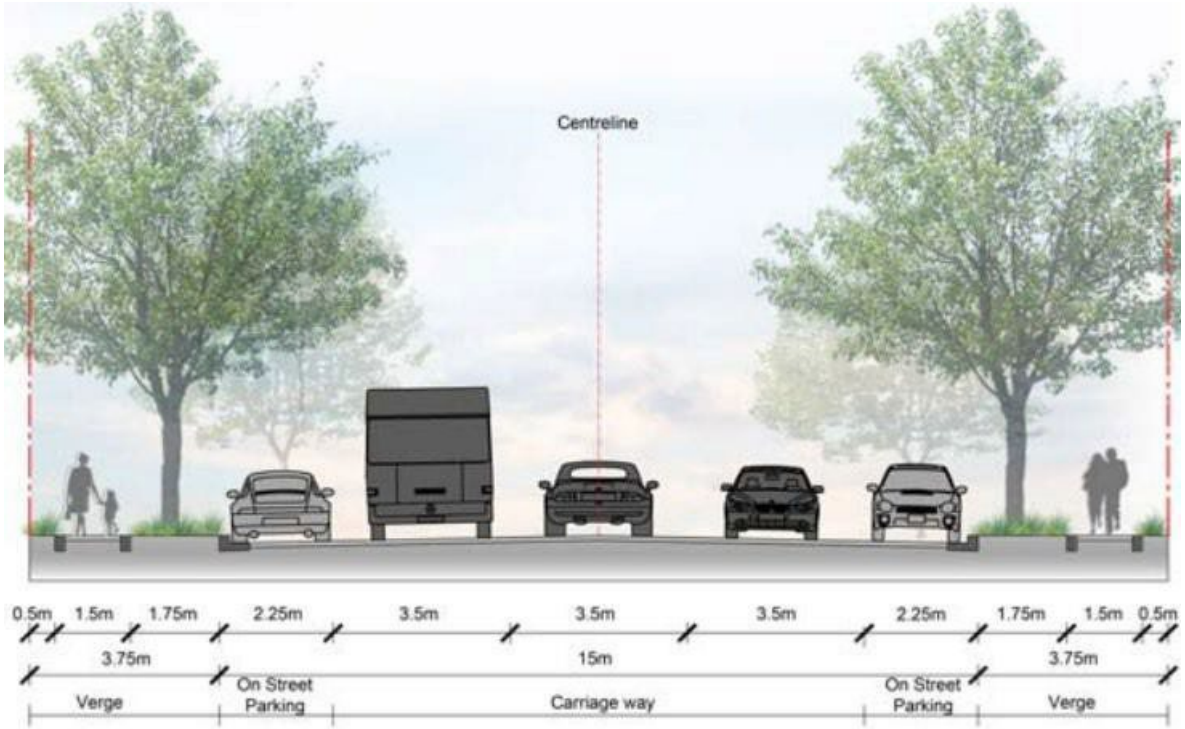
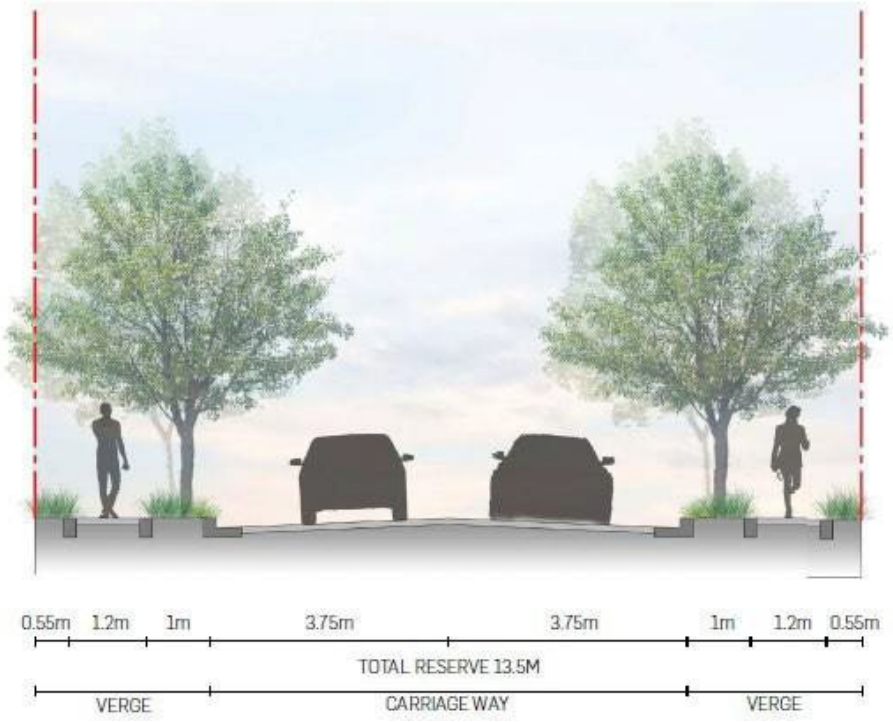


Figure 7 Local Street Type C (19 metre road) indicative section



Figure 8 Local Road Type D (13.5 metre road) indicative section



3.5 Landscape and Public Domain

Objectives

O1. Retain high and medium value trees where possible subject to future educational establishment, MSL and residential development.

O2. Extend streetscape character of Betty Cuthbert Drive and establish the streetscape character to the future educational establishment perimeter street.

O3. Provide a consistent landscape buffer along Joseph Street to reflect the Botanica interface.

O4. Maintain and enhance biodiversity on the site.

Controls

C1. All development is to be consistent with the Landscape and Public Domain Strategy in **Figure 9**.

C2. Retention of trees shall consider:

- the safe useful life expectancy (assessed by a qualified arborist) and estimated future lifespan;
- the current and future amenity and contribution to the landscape that the tree provides;
- management and safety issues associated with retention
- preliminary tree retention mapping in **Figures 10 – 15.**

C3. Landscape design of private lots and retained existing trees shall contribute to the landscape amenity of the neighbourhood and precinct landscape framework.

C4. Based on the preliminary tree retention mapping in **Figures 10 – 15.**

- 'medium retention value trees' should be retained wherever possible but should not be a constraint on the development.
- 'high retention value trees' are considered important for retention and should be retained and protected wherever possible. All opportunities for retaining these subject trees using design modification and tree sensitive construction techniques should be explored.

C5. Street patterns and street tree planting shall be strong components of the landscape framework and contribute to tree plan.

C6. Streetscape planting shall ensure the coherence of new plantings and continuity with key elements and themes of the existing landscape and surrounding residential developments.

C7. Where tree removal is proposed, a tree replacement strategy must be incorporated. This strategy must demonstrate how a net increase in tree canopy shall be achieved, and how tree management will be undertaken during the life of the tree.

C8. A biodiversity study which investigates threatened species and their habitats for the subject site is to be undertaken. The outcomes of the study are to be applied during the development of the site.

C9. Development on the site is to meet the requirements of the Biodiversity and Conservation SEPP.

C10. All local roads proposed within the proposed master planned area must be provided with Street tree planting that contributes to tree canopy cover through appropriate species selection where possible.

Figure 9 Landscape and Public Domain Strategy



Figure 10 Tree Retention Value Reference Map

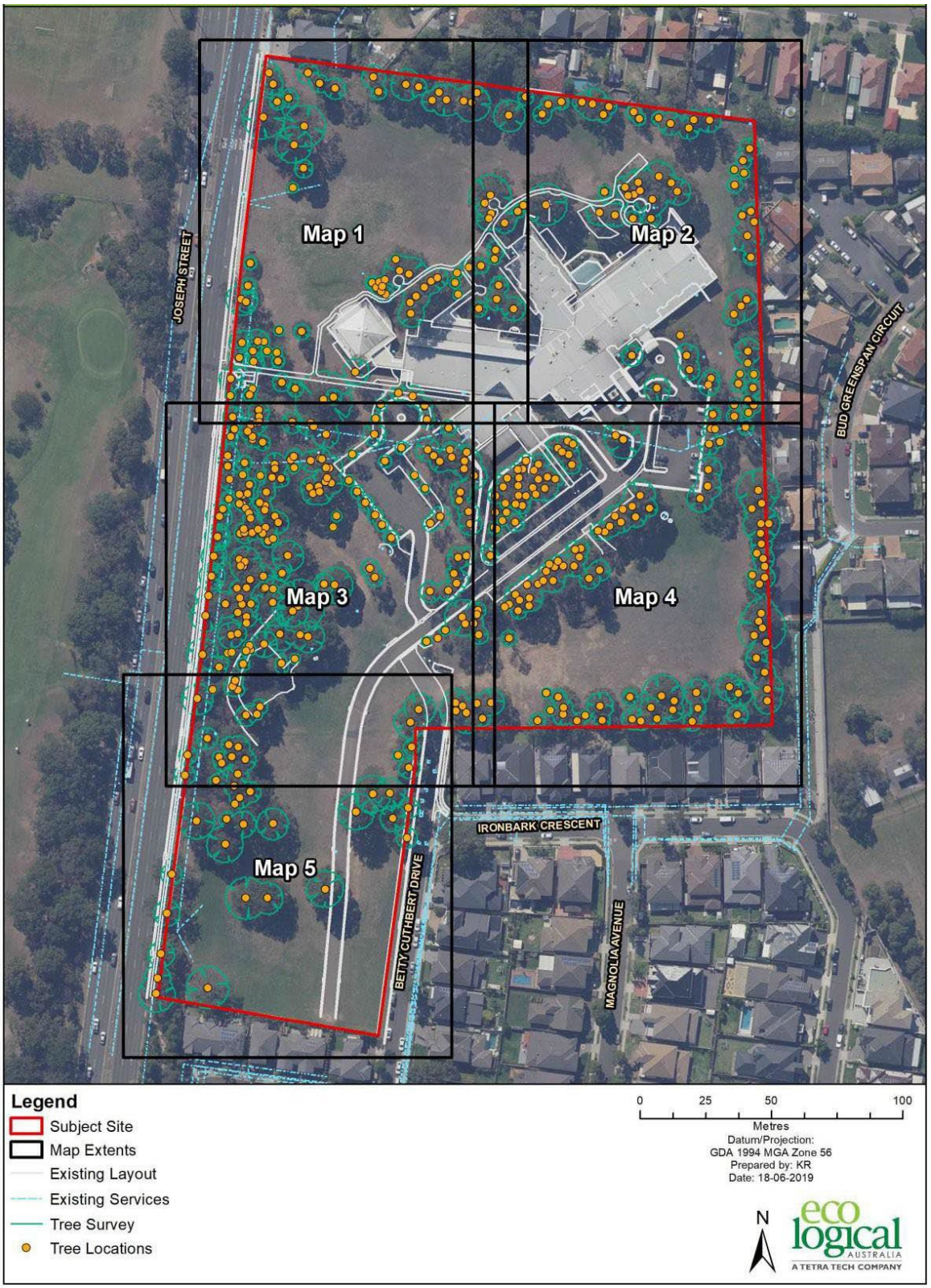


Figure 11 Tree Retention Values – Map 1

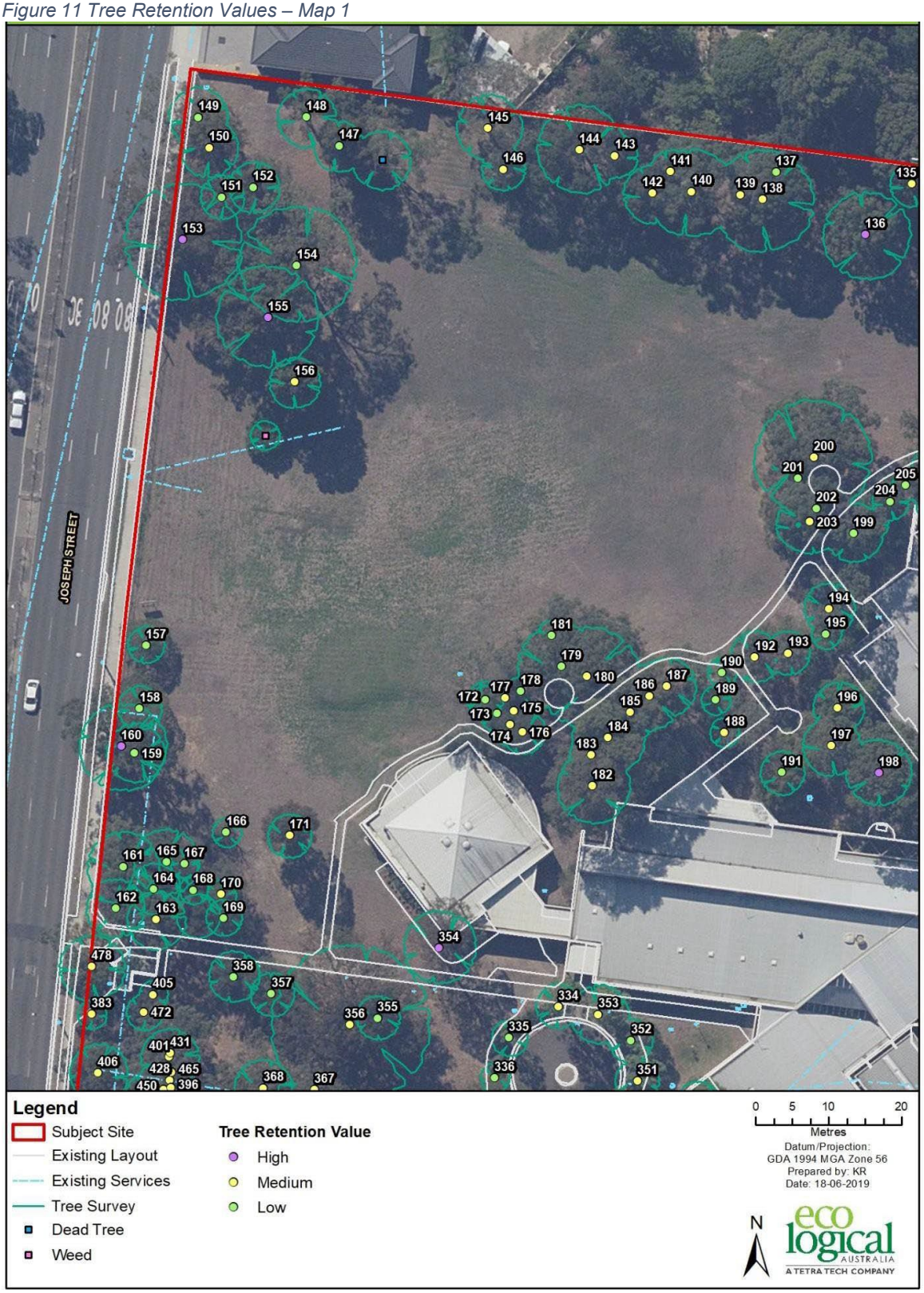


Figure 12 Tree Retention Values – Map 2

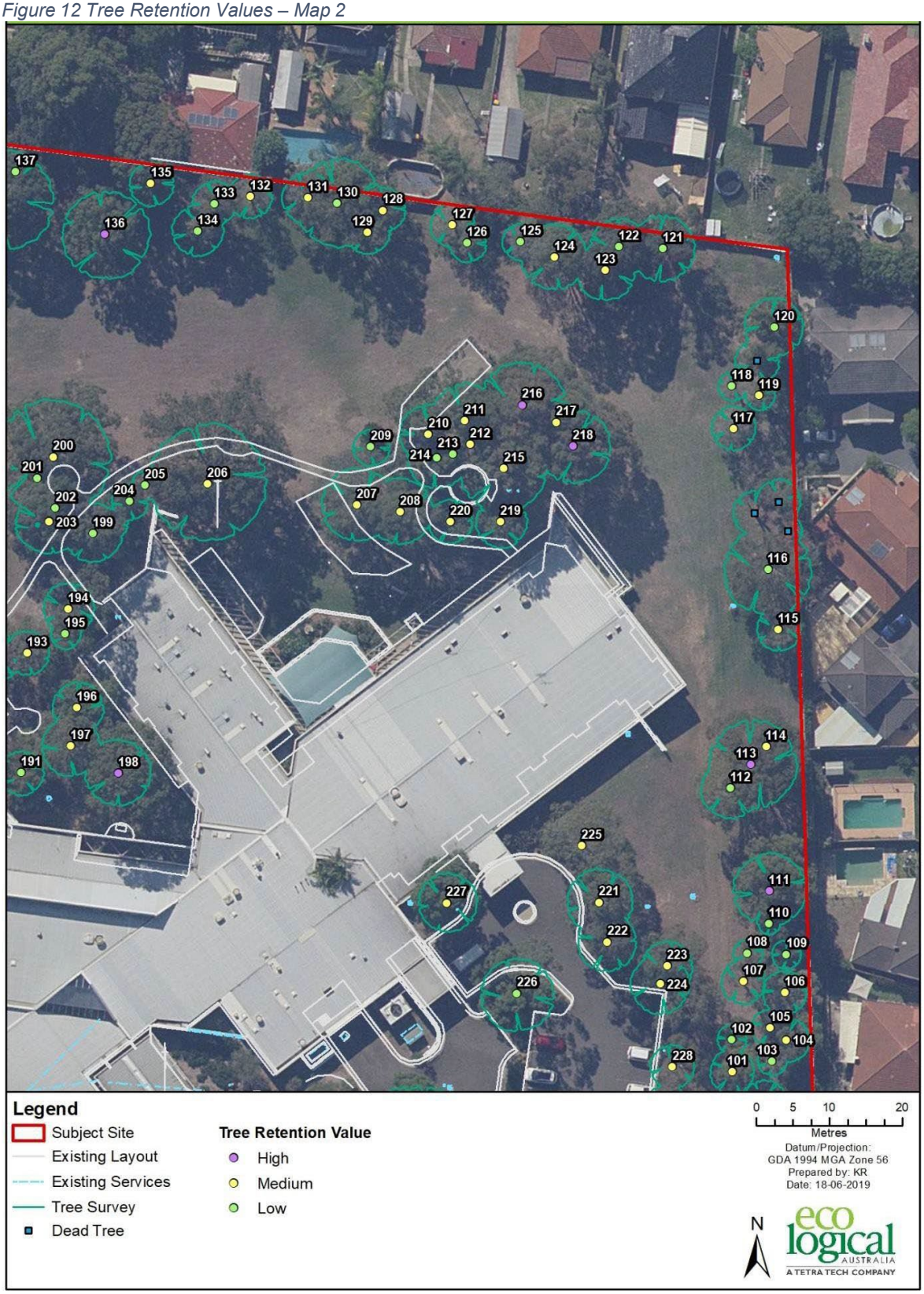


Figure 13 Tree Retention Values – Map 3

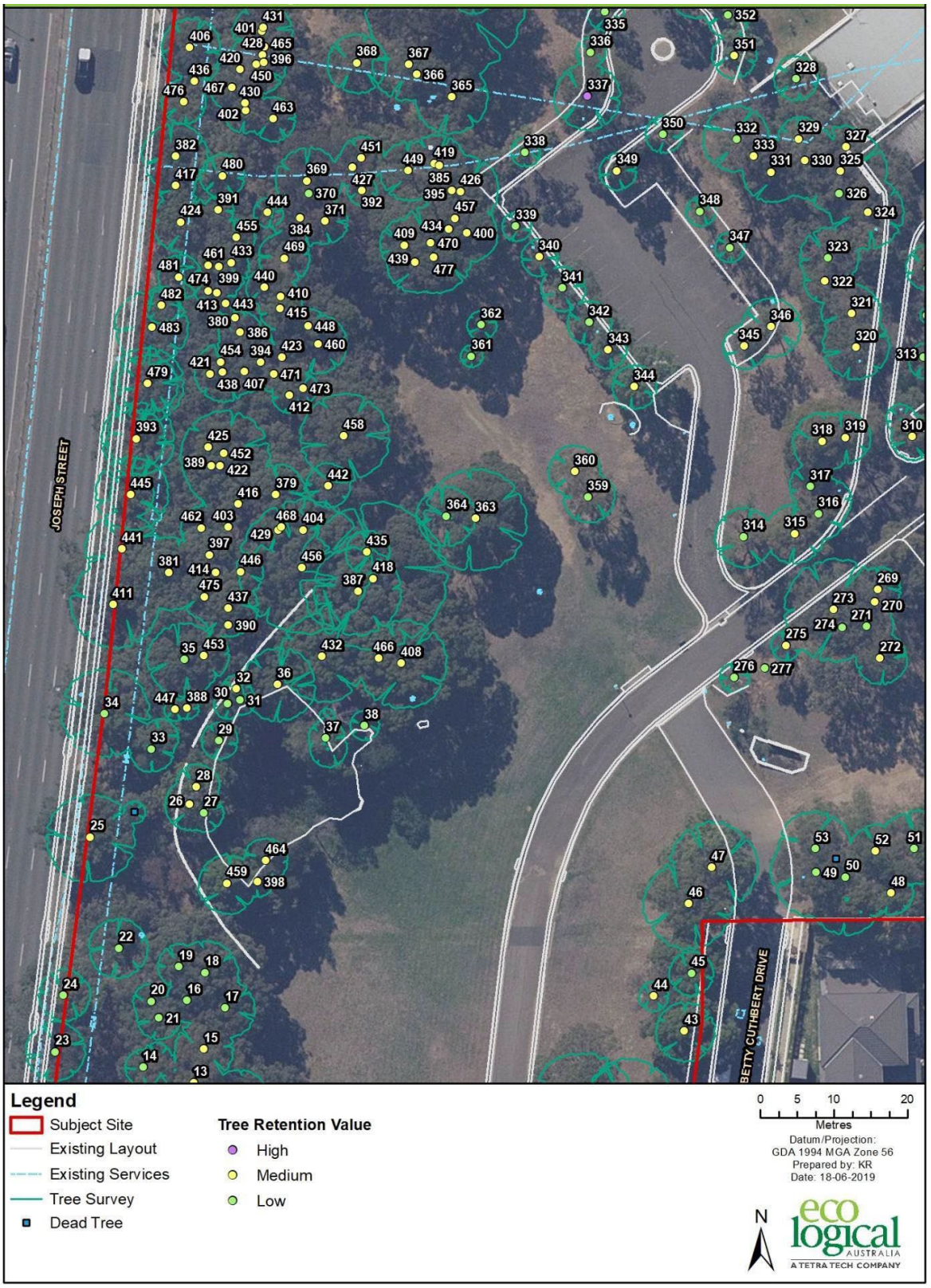


Figure 14 Tree Retention Values – Map 4

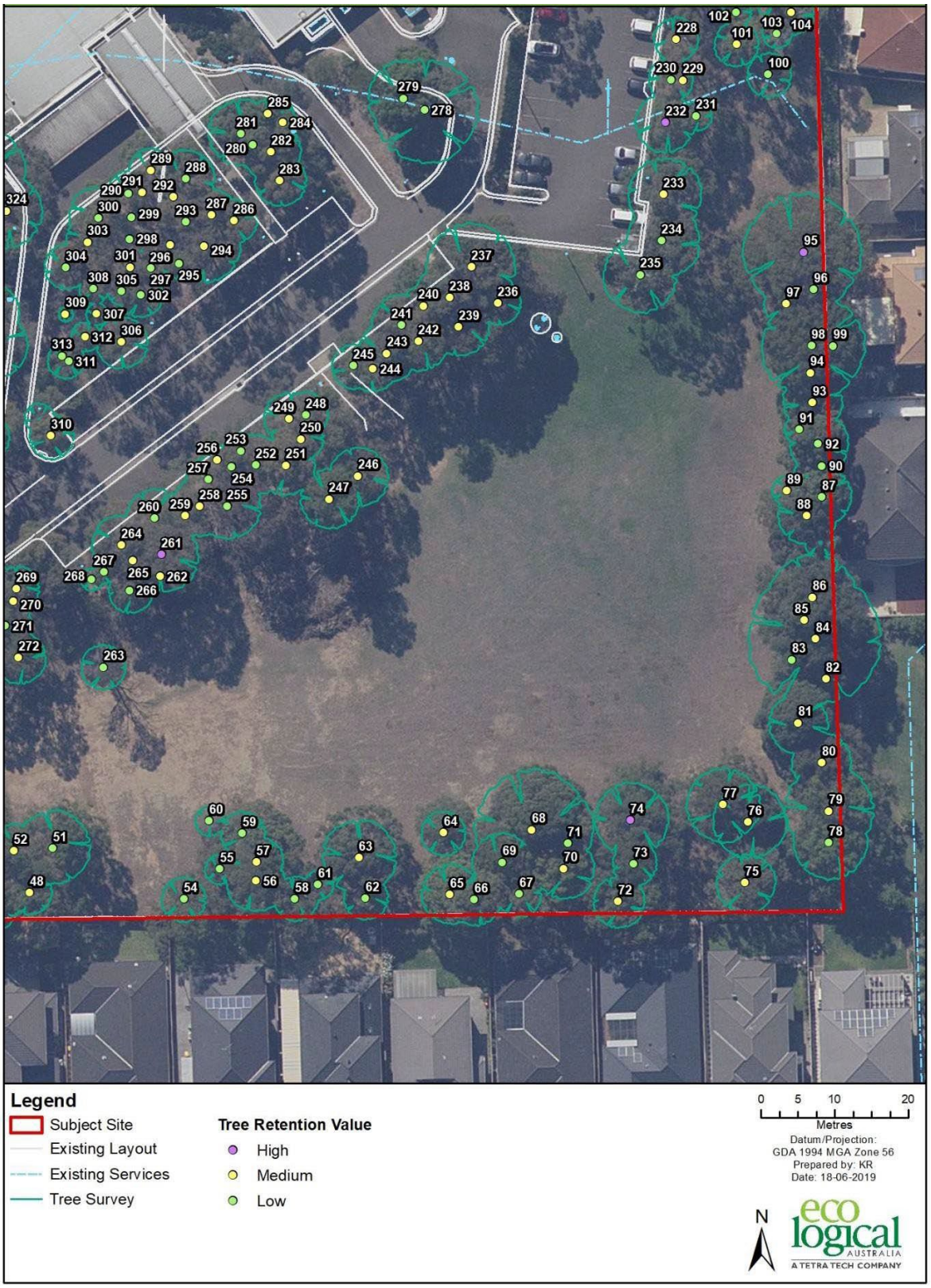


Figure 15 Tree Retention Values – Map 5



3.6 Proposed School

Objectives

O1. Provide a framework for service and infrastructure planning to support a new school on the site to meet the needs of the local area.

O2. Ensure that local impacts arising from the new school on the site can be mitigated.

Controls

C1. A new school is to be provided on the site in accordance with the indicative masterplan.

C2. The following framework is to be considered for the planning, design and development of a new school on the site:

- The applicant is to proactively consult with Council to inform the service and infrastructure planning associated with the new school.
- The design of the school is to be consistent with relevant State policies and guidelines, as well as provisions identified in the Cumberland Development Control Plan.
- The new school shall be designed to support up to 750 students. Teaching and general staff numbers are to correspond to the maximum number of students attending the school.
- The built form and scale of the new school must consider and respond sensitively to the existing low and medium density residential scaled surrounds of Botanica residential estate located south, R3 medium density residential proposed within the site and low-density residential surrounds located north and east of the site. This is to reduce any potential built form, scale, character, overshadowing and overlooking impacts.
- The new school active play or open space areas shall be designed to provide a minimum of 10m^2 per student of open space standard at grade.
- The new school shall be up to a maximum of four storeys. The maximum height of any structures for the school shall be located as far away as possible from the adjoining residential areas.
- Parking shall be consistent with parking rates identified in Part G of the Cumberland DCP.
- Traffic impacts shall be minimised by identifying infrastructure and operational solutions to encourage access to the school by walking, cycling and public transport.

C3. Local impacts arising from the new school are to be assessed and mitigation measures identified as part of the planning and development for the new school. This includes, but is not limited to, the following:

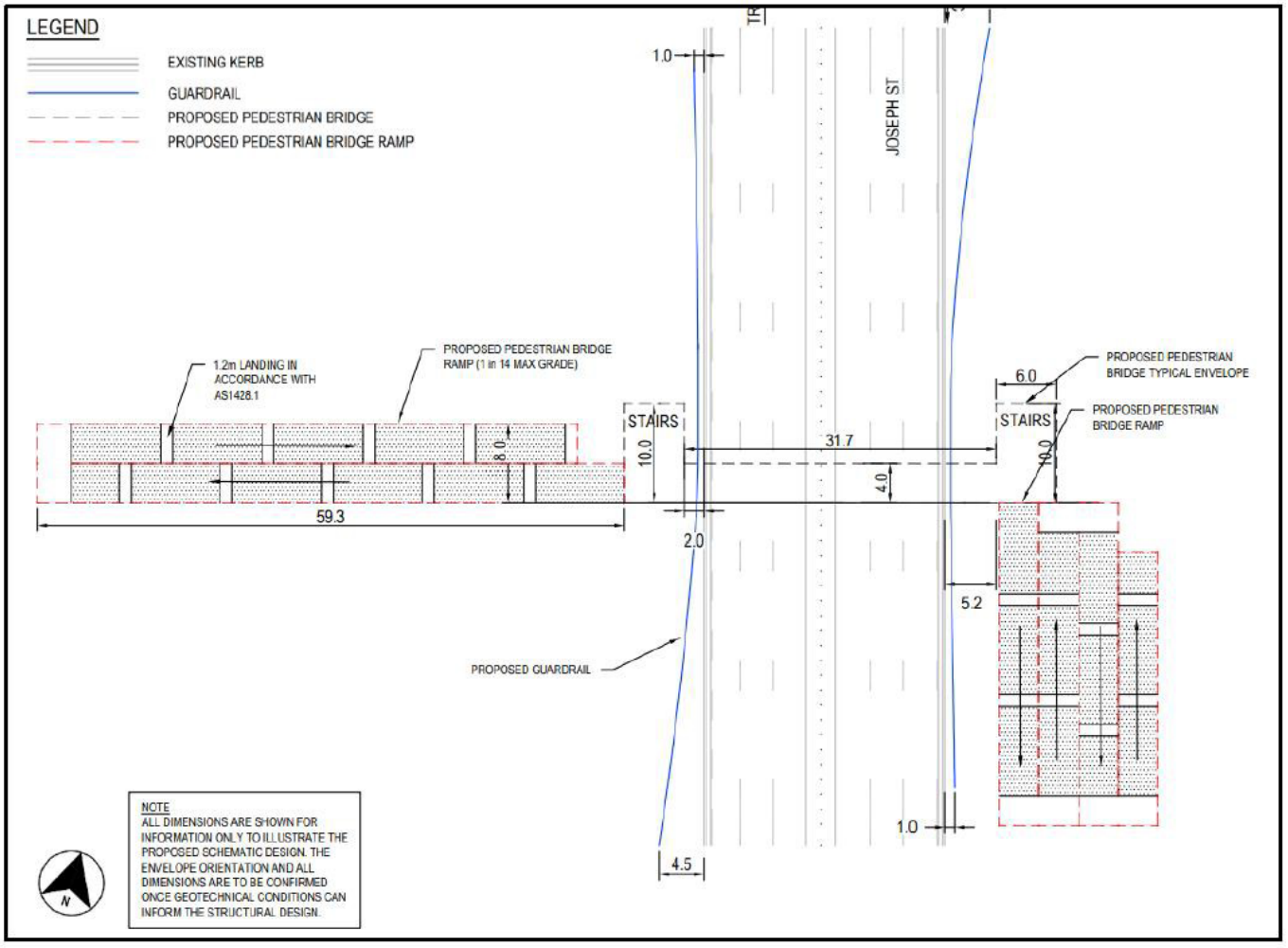
- Built form and function
- Traffic, transport, parking and access
- Acoustics
- Environmental management
- Plan of Management for the operation of the site.

C4. The road network identified in the indicative masterplan that supports the school is to be provided prior to the construction of the new school.

C5. The pedestrian overpass across Joseph Street is to be provided prior to the operation of the new school. The pedestrian overpass is to be based on the indicative design as shown in Figure 16. A kiss and ride facility on Leila Street adjacent to Coleman Park is to be integrated with the pedestrian overpass, providing safe access between the school and Berala area.

C6. Opportunities for open space within the new school to be shared with the local community are to be considered as part of planning and development for the new school.

Figure 16 Indicative Layout of Pedestrian Overpass over Joseph Street, Lidcombe



4 General Residential Controls

This section recognises that a range of densities is required to create a diverse built form that provides a wide choice of housing types.

A range of densities across the site is occurring and is further anticipated, and concentration of certain types is encouraged where it may be appropriate to create areas of distinct character where all other urban design, built form and housing controls can be met.

The private domain is to provide a high level of amenity to residents. The private domain includes private open space as well as the interface between private open space and dwelling interiors. Adequate solar access and privacy are fundamental qualities of the private domain.

To guide the built form and character of the private domain and to ensure that a high-quality environment is created the following principles are to be met:

- Enable flexibility in the choice of housing design and siting of a dwelling house as well as suitable space available for other activities normally associated with the use of a dwelling house.
- Provide an appropriate level of amenity for new and existing residential areas.
- Ensure appropriate levels of service for utilities and the road network are achieved and to optimise existing infrastructure.
- Adequately consider environmental constraints and impacts including flooding, drainage, vegetation, erosion on a proposed subdivision.
- Ensure the proposed development lot is of sufficient size to accommodate the form of dwelling house proposed.

4.1 Site Planning Controls

This section sets out the objectives, performance criteria and development standards that relate to site planning and subdivision development.

Objective

O1. The site planning and subdivision controls are to ensure that:

- interference with the topography is minimised;
- the topography can be clearly read and understood;
- the subdivision patterns set up regular rows of buildings and spaces and are suitable for the dwelling types;
- a system of vehicular access to properties contributes to rather than dictates the resolution of the street; and
- there are precincts/streets with a range of discrete characters.

Controls

C1. The street and block pattern shall:

- relate to the building types;

- minimise cut and fill;
- enable small increments of change between buildings;
- enable the street hierarchy to be reinforced by the building types;
- set up an appropriate spacing between buildings;
- create a regular pattern of driveway access from the street;
- provide views and vistas;
- reinforce the qualities of the site; and
- have the potential to provide external linkages over time.

4.1.1 Subdivision, allotment planning, size and shape

Objectives

O1. Subdivision provides for a variety of housing types to meet a variety of housing needs including meeting the needs of the aged and people with a disability.

O2. The allotment size and shape is adequate to contain the particular housing type, open space and car parking (with the required amenity).

O3. The allotment size and shape sets up a regular subdivision pattern related to the particular dwelling type, the street hierarchy and the block and street pattern.

O4. The allotment size and shape allows for buildings to align with the street system.

O5. Subdivision makes provision for dwelling houses and multi dwelling housing such as:

- detached housing;
- semi detached/zero lot line houses; and
- terrace houses.

O6. Individual allotments permit sufficient area commensurate with the dwelling type to allow for useable outdoor open space and solar access as required elsewhere in this Part.

O7. The allotments and the location of the buildings are organised to set up regular patterns of buildings and space.

O8. The allotments enable a range of housing types and spatial distribution.

O9. The irregular shaped and sized allotments provide the opportunity for specific design solutions.

O10. The allotments are predominantly rectangular.

O11. The allotments which provide the higher density are located around the open space system.

O12. The allotments are located so that the dwellings relate to the street hierarchy.

Controls

C1. Level changes along a street block shall be made incrementally with minimal cut and fill.

C2. Housing types shall be built to a height of up to 3 storeys where it is necessary to define and balance the spatial system.

C3. Minimum lot frontages for each of the dwelling types are set out in Table 1 below.

Table 1 Minimum subdivision standards for individual dwelling types

	Detached	Semi-detached / zero lot line houses	Terrace houses & town houses
Minimum frontage width at building line (m)	12*	7.5	6
*may be reduced to 10m if the dwelling has a garage that is accessed from the rear of the property			

C4. Strata titling of studio accommodation shall be considered where the following outcomes are provided:

- both the primary residence and the studio have individual frontage to a public road;
- a minimum of 1 covered off-street car parking space is provided for the studio in addition to car parking required for the principal residence;
- the studio accommodation has a minimum habitable floor area of 45sqm;
- the studio accommodation has a balcony or private courtyard (designed to eliminate overlooking) of minimum 8sqm and a minimum depth of 2m;
- the allotment on which the studio accommodation is located has a minimum width of 10m and a maximum area of 55sqm; and
- the privacy of the principal residence's rear yard and adjoining allotments is not compromised.

4.1.2 Water Quantity Planning Controls

On-site detention (OSD) is required to be designed for each lot to ensure peak flow rates at any point within the downstream drainage system do not increase as a result of development during all storm events up to the 100-year ARI, with the following requirements:

- Permissible site discharge (PSD) - 100L/s/Ha
- Site storage requirement (SSR) - Minimum of 455m3/Ha

Objectives

O1. The drainage strategy takes into account a total catchment management approach such that downstream drainage systems are not impacted adversely through alteration to existing drainage flows from the site.

O2. Drainage systems and ground surface areas are to be protected from pollutants and soil erosion. Pollutant and sediment control measures are required for all subdivision applications.

O3. The drainage works for the site are to preserve the effectiveness of existing downstream flood mitigation and drainage works.

O4. Proposed development is not to increase downstream flooding or increase pollutants on a total site performance basis. Off-site mitigation measures will be accepted as meeting this criteria subject to satisfactory arrangements with the affected landowner.

O5. Stormwater infrastructure is to be designed to be aesthetically pleasing and landscaped so as to serve a dual function as a continuation of the open space and stormwater management.

Controls

C1. Stormwater runoff from all new roof areas shall be routed through the OSD system. Runoff entering the site from upstream properties shall be directed bypassing the on-site detention system.

C2. A portion of the new impervious areas (excluding roof areas) shall discharge directly to road drainage system if it cannot be drained to the storage facility, provided the PSD is reduced to compensate for the smaller catchment.

C3. No more than 15% of the total site area shall be permitted to bypass the detention system.

C4. The maximum desirable extent of impervious surfaces bypassing the detention system is 15% of the total impervious site area.

4.2 Residential Dwelling Controls

4.2.1 Dwelling design and form

Objectives

O1. Housing variation caters for a socio-economically diverse community.

O2. Ensure dwellings and garages are designed with regard to site conditions and minimise impact on landform.

O3. Ensure dwelling and garage design has regard to the amenity of adjoining development and surrounding properties.

O4. Ensure that dwellings have a high level of internal and external amenity.

O5. Denser housing forms are to be located around open space and on wide verges.

O6. Dwelling groups are not composed of different dwelling types (e.g., terrace dwellings are to stand alone as one group).

O7. Taller or raised housing forms are to be located where land slopes away from an open space or across the width of the street.

O8. Where land slopes along the street, dwellings to follow the slope of the land.

O9. Floor to ceiling heights to enable good light penetration and cross ventilation.

O10. Ensure that groupings of similar types of dwellings create areas of a particular identity in the built form and streetscape.

O11. Ensure that dwelling design and types reinforce corners, the street, and open space hierarchy.

O12. Dwellings and garages are designed with regard to the site conditions and minimise the impact on landform.

Controls

C1. A minimum of 20% of the total number of dwellings shall be detached dwellings.

C2. The building height controls and floor to ceiling controls applicable to buildings are set out in the Table 2 below.

Table 2 Floor to ceiling heights

	Levels	Minimum	Maximum
Dwellings	Ground floor	2.7m	3m
	1st and 2nd floor	2.4m	2.7m

C3. The maximum building depth of any second or third storey components of dwellings shall be 14m.

C4. Stairs, verandahs, entry features, courtyard walls, balconies, carports and porticos may encroach within the primary building line by not more than 2m provided the design, materials, colour and construction match the main dwelling.

C5. Dwellings shall be predominantly 2 storeys with some component of single storey. 3 storey dwellings shall be considered if they are on sites where it can be demonstrated that it enhances the streetscape and/or legibility.

C6. The floor level of any dwelling shall be a minimum of 500mm above the 1% AEP level of any adjacent drainage easement or water course or OSD facility.

C7. Garage door openings fronting a public road shall be not be more than 5m wide or 50% of the frontage width of the allotment measured at the building alignment, whichever is the greater.

C8. Garage door fronts shall be setback a minimum of 5.5m from the street boundary and 1.5m back from the front dwelling façade.

C9. Garages, particularly doors, carports and parking areas shall be detailed to reduce their visual impact and add interest at ground level. The materials used in the garage shall complement those of the house.

C10. Garage and carport design shall be in the same application as the dwelling even if it is to be constructed at a later date.

C11. Carports shall be designed so that secondary elements do not dominate the dwelling façade.

C12. Pitched roofs to carports shall not permitted unless compliance with the streetscape objectives can be demonstrated and the carport structure does not dominate the dwelling façade.

C13. Carports shall be a maximum of 3.5m in width.

C14. Carports shall be designed as open pergola type structures. This may include a flat roof and shall not be screened on the sides or front.

C15. Carport structures shall be setback a minimum of 2m from a primary street front boundary.

C16. Carport structures shall not exceed 3.5m in height including all elements.

4.2.2 Density of dwellings

Objectives

O1. Density is to be optimised while allowing for:

- adequate open space;
- appropriate curtilage for landscape of exceptional and high value;
- a street and block system which suits the building typologies and enables the reading of the landscape setting; and
- minimum intrusion on the topography.

4.2.3 Site coverage

Objectives

O1. Site coverage enables the proposed building type, adequate open space and the required car parking.

O2. Site coverage varies to suit the dwelling type i.e. terrace houses require greater site coverage than detached houses.

O3. Development achieves:

- a clear physical (bulk) relationship between each building type and its allotment size with regard to creating neighbourhoods of some homogeneity; and
- adequate separation between dwellings particularly at the rear of the site.

Controls

C1. The maximum site coverage for residential development as a percentage of the total site area for each dwelling type shall be compliant with the requirements set out in Table 3 below.

Table 3 Minimum site coverage

	Detached	Semi-detached / zero lot line houses	Terrace houses & town houses
Maximum site coverage	55%	60%	70%

4.2.4 Setbacks

Setbacks are required to protect the privacy of adjoining residents, to provide for sunlight to adjoining dwellings and to provide a visual rhythm and coherence to the streetscape.

Objectives

O1. Ensure that the dwellings address the public domain and set up a spatial rhythm.

O2. Ensure there is adequate solar access and privacy

O3. The setbacks to the street need to provide:

- a clear reading of the topography;
- a clear edge to the street and/or open space system;
- a semi-private zone;
- houses which are more dominant than garages;
- reinforcement of the street hierarchy;
- reinforcement of the street block where appropriate; and
- an open streetscape with adequate areas for landscaping, fencing, and screen planting.

O4. The setbacks to the side boundary and the rear are to ensure that there is:

- adequate solar access to neighbours;
- privacy for residents and neighbours, and minimise overshadowing; and
- an even spatial rhythm along the street so that individual building types do not dominate.

Controls

C1. Table 4 below sets out the minimum setback requirements for all dwelling types on the site.

Table 4 Minimum setback requirements for all dwelling types

All Dwelling Types	
Primary front setback	4m to building façade of habitable rooms from the front boundary line. This setback may be reduced to 3m for dwellings fronting public open space or a corner, providing solar access and other environmental provisions are met.
Side and rear set back	A 1.2m side setback is required for 1 and 2 storey portions of dwellings.
	Garages, including those with studio accommodation above, in lanes can be located on the rear boundary provided a minimum of 7.5m is provided between the façade and opposite boundary fence or building façade. (Refer below for additional requirements).
Eaves/facias	825mm for 1 or 2 storey buildings.

C2. Garages facing a street shall be set back a minimum of 5.5m from the front boundary.

C3. Two storey, open, non-habitable structures including carports, pergolas, verandahs and entry features shall sit within the 2m articulation zone as measured from the primary front setback.

C4. Adjoining building facades shall be aligned. Building facades may vary in alignment only if a cohesive streetscape is achieved. Any variation to the alignment shall be derived from the building type and the topography, i.e. where a lot slopes away from an area of parkland or to achieve a more successful result by locating a building or group closer to the street edge.

4.2.5 Orientation

Objectives

O1. Ensure that the orientation and organisation of lots will enable dwellings to achieve the environmental performance guidelines as set out in section 2 of this Part.

O2. The building zone for the dwelling is predominantly at the front of the lot.

O3. The higher density areas with smaller lot frontages are predominantly east-west or north-south where the north is at the rear.

O4. Ensure the subdivision of allotments maximises the potential for energy efficient housing development whilst maintaining the design integrity of the overall development.

O5. All allotments are to provide for sufficient area to allow the siting of dwellings and to allow for adequate areas of private open space, vehicle access and parking as set out elsewhere in this Part.

Controls

C1. Lots shall be oriented to facilitate the siting of dwellings to meet the Ecologically Sustainable Development (ESD) criteria set out in this Part.

C2. The above requirements may be varied in cases where an applicant submits an integrated subdivision and development application demonstrating that the performance criteria have not been compromised.

4.2.6 Private open space and landscaping

Objectives

O1. Private open space areas are to:

- relate to the living spaces, windows, access/egress points and function of the dwelling; and
- be amenable and suitable for the intended use.

O2. All setback areas are to be landscaped to Council's satisfaction.

O3. Ensure private open space is of a size and location suitable for the intended use.

O4. Private open spaces and living areas are protected from overlooking from public and neighbouring areas.

O5. Private open space areas are clearly defined and screened for private use.

O6. Landscape treatment of private open space areas contribute to the master planned themes for streetscape and public open space (where private open space is visible from these public areas).

O7. Landscape treatments complement solar access requirements for buildings.

O8. Planting:

- is appropriate for its setting and environment;
- is provided in the public and private domain;
- complements the existing landscaping and topography, lighting and street furniture;
- is simple and robust; and
- provides privacy, screening and shading where required.

O9. All new landscaping is to be designed to be low maintenance and low water usage.

Controls

C1. New plantings shall contain endemic species that are of low maintenance and low water usage.

C2. Cultural plantings shall be used where existing plantings are to be enhanced.

C3. The minimum area of soft landscaping for residential development as a percentage of the total site area for each dwelling type shall be as set out in Table 5 below.

C4. Private open space shall be of a minimum size as set out in Table 5 below and be able to contain a square measuring a minimum of 4m x 4m which is free from obstructions such as garden beds and steps.

C5. Private open space areas associated with residences shall accommodate outdoor recreation needs and function as an extension of interior living areas.

C7. Planting shall be used to minimise overlooking between dwellings, and between dwellings and public or common areas; having regard to crime prevention principles.

C8. Planting shall be of appropriate mature heights and volumes to the space allotted to them.

C8. The area between the front property boundary and the front building line shall not be considered as private open space unless solar access is principally to the front garden space and this area is suitably fenced and screened.

Table 5 Minimum private open space per dwelling type

	Detached	Semi-detached / zero lot line houses	Terrace houses & town houses
Minimum area of private open space	70m²	60m²	35m²
Minimum landscaped area of site	45%	40%	30%

4.2.7 Architectural Expression

Objectives

O1. Ensure that dwellings relate well to one another and contribute to the quality of each precinct and the overall quality of the development.

O2. The architectural expression of dwellings is to ensure that:

- attached housing has clearly defined party walls which enable buildings to adjust to the topography without large benching;
- roof forms in attached housing are to reflect the stepped changes at ground level;
- a high standard of architectural design of both individual dwellings and groups of dwellings;
- special urban design features are reinforced such as the alignment of roads which curve towards a spatial gateway or landscape focus;

- building entries are clear and legible;
- windows, facades and rooms are well proportioned;
- materials and detailing are appropriately used;
- roof forms are used which relate to the definition of space and do not create big buildings such as hip roofs on runs up terrace houses are not appropriate;
- attention to both the building base and roof is required;
- roof forms in attached housing reflect the stepped changes at ground level;
- windows to main rooms are directed to the front and rear
- the head height of windows relate to the height of the ceiling; and
- there is variety but continuity between dwellings.

Controls

C1. Design of dwellings shall consider the following:

- Articulation of building facade using:
    - material and detailing;
    - legible building entrances;
    - balcony and other elements; and
    - well proportioned openings, window, type and size.
- corner buildings shall be articulated to reinforce the corner condition by addressing both street frontages;
- building elements such as balconies, verandahs, pergolas, sun shading, porches and other elements shall be used to articulate the façade;
- windows to living areas shall be directed either to the street or rear private open space (and vehicular access ways) to provide surveillance to the street and other open space areas;
- modulation of the facade shall be integral to the design of the building, its setting and not arbitrary;
- level changes along a street block shall be made incremental with minimal cut and fill; and

C2. Windows and doors, particularly those that face the street, shall be provided in a balanced manner and respond to the orientation and internal uses.

4.2.8 Adaptable housing

Objectives

O1. Ensure a sufficient proportion of dwellings include accessible layouts and features to accommodate changing environments of residents.

O2. Development to allow for dwelling adaptation that meet the changing needs of people's lifestyle.

Controls

C1. A minimum of 10% of the total number of dwellings shall be constructed so as to be adaptable for use by aged or disabled occupants in accordance with the relevant provisions of the Building Code of Australia and Australian Standards.

C2. Refer to the requirements for adaptable housing in Part B of this DCP.

4.2.9 Building materials

Objectives

O1. Ensure that materials are durable and have a long life.

O2. Ensure that materials have low embodied energy.

O3. Ensure that materials contribute to the design of the buildings in terms of aesthetics and comfort.

O4. Materials are to:

- create a high quality finish which is robust over time;
- be appropriate to the scale and detailing of the building;
- relate well to one another; and
- provide thermally responsive dwellings.

Controls

Walls

C1. Exterior walls shall be predominantly masonry and/or timber. Lightweight materials especially timber can be used to add interest and texture to the building and to break up larger expanses of wall.

C2. Bolder brighter shades for areas of detail shall be appropriate provided that these are in keeping with the overall colour scheme of the house and do not detract from the general harmony of the street.

Roofs

C1. Single colour tile roofs are preferred. Pre-finished metal sheeting may be used on concealed roofs or "lean to" construction.

C2. Colours shall reinforce the character of the precinct.

Windows

C1. Windows may be constructed of timber or pre-finished aluminium and shall be in a dark colour.

4.2.10 Solar amenity

Objectives

O1. Ensure that housing design is energy efficient, assists in developing ecologically sustainable residential communities and leads to a reduction in the household use of fossil fuels.

O2. The design of buildings minimises household energy needs, utilises passive solar design principles and ensures adequate solar access.

O3. Shading to western walls is to be provided where not overshadowed by adjoining walls or vegetation.

O4. Roof insulation is incorporated into all residential development.

O5. All dwellings have high levels of light penetration.

O6. Cross ventilation is provided.

O7. Buildings are to be designed with windows that are located, sized and/or shaded (including the use of eaves) to facilitate thermal performance and minimise the use of artificial light during daylight hours.

O8. The design of residential dwellings is to demonstrate passive design principles including:

- window placement;
- building orientation;
- shading;
- insulation;
- ventilation; and
- sensitive landscaping.

Controls

C1. The use of materials shall minimise energy use over their whole lifecycle.

C2. All residential buildings, where not affected by external noise sources, shall be able to be operated in a naturally ventilated mode and achieve comfortable internal conditions.

C3. Vegetation shall be used to cool the ambient temperature within the development. Selective use of trees shall include consideration of deciduous trees to provide shading in summer and allow passive heat in winter.

C4. Buildings shall be designed to allow passive heating in winter. Selective shading shall be applied so that the high angles of sunlight in summer do not penetrate the buildings.

C5. Distances between buildings shall be designed to allow natural light to dwelling living spaces.

4.2.11 Privacy and overshadowing

Objectives

O1. Ensure the design of buildings and position of windows respects the privacy of adjoining residents.

O2. Buildings are to be sited and designed to ensure provision of daylight to habitable rooms in adjacent dwellings and neighbouring open space including the private open space associated with dwellings.

O3. Buildings are to be designed to ensure appropriate levels of privacy.

O4. Developments are to include site planning, building design and landscaping that minimises the overshadowing of adjoining properties.

Controls

C1. Windows to living areas shall face predominantly to the street and to the rear.

C2. Windows to living areas that face directly on to windows, balconies or private open space of adjoining properties shall be appropriately screened and/or have reasonable separation. A distance of 9m between openings of separate dwellings is required unless other mitigating measures are adopted.

C3. First floor balconies shall not be permitted where directly overlooking living areas of adjacent dwellings unless suitable screening is provided.

C4. At least 50% of the ground level private open space shall receive not less than 3 hours of sunlight between 9:00am and 3:00pm on June 21 for a minimum of 80% of all dwellings.

C5. At least one internal living area shall have access to a minimum of 3 hours of direct sunlight between the hours of 9:00am and 3:00pm on June 21. This shall be achieved for a minimum of 80% of all dwellings.

4.2.12 Fencing

Objectives

O1. Fencing is to:

- clearly demark the public, semi-public and private domains;
- complement the dwellings and the streetscape; and
- provide privacy where appropriate.

O2. All new dwellings to have side and rear boundary fences.

O3. Front fences, where appropriate, contribute to the streetscape and allow gardens to contribute to the public domain

O4. Front fences, where appropriate, extend alongside boundaries of corner sites back to the building line.

O5. Ensure that rear and side fencing assists in providing privacy to private open space areas.

O6. Fence height, location and design should not affect traffic sight distances at intersections.

O7. Ensure that front fences relate in proportion to the height of the building and are appropriate to the style of residence

Controls

C1. Side boundary fencing constructed behind the building alignment setback shall be a maximum height of 1.8m and be constructed from materials which complement the design of the dwelling.

C2. The front and side dividing fences where located within the front yard area shall not exceed a height of 1.2m as measured above existing ground level and shall be a minimum of 50% transparent.

C3. Front and side dividing fences where located within the front yard area shall not be constructed of solid pre-coated metal type materials such as Colorbond or similar.

C4. Front fencing that is to provide privacy screening for external living areas shall be considered up to a maximum height of 1.8m if complementary to the dwelling design.

C5. Fencing to secondary road frontages and rear vehicular access shall be a maximum of 1.8m in height at the road boundary from the rear boundary up to the line of the front of the dwelling and must be of materials and design complementary to both the streetscape and dwelling.

C6. Front fences shall be compatible with and sympathetic to the dwelling design.

C7. Fencing styles shall complement both the architectural design of the dwelling and the streetscape. Front fences should not exceed 1.2m in height unless required for provision of privacy to private open space and unless appropriately screened by landscaping and with variations in materials and alignment.

4.2.13 Waste controls

Waste requirements should be consistent with the relevant controls identified in Part G of the Cumberland DCP.

4.2.14 Parking and loading controls

Parking requirements should be consistent with the relevant controls identified in Part G of the Cumberland DCP.

NSW GOVERNMENT | Education

1 September 2021

Peter J Fitzgerald
General Manager
Cumberland Council
PO Box 42 MERRYLANDS 2160

Dear Mr Fitzgerald,

We are writing to confirm our involvement in the re-zoning planning proposal being presented to Council by the NSW Government in respective of 80 Betty Cuthbert Drive, Lidcombe.

The Department of Education (the Department) has been working collaboratively with Property Development NSW (PDNSW) and Multiple Sclerosis Limited (MSL) to develop the proposal which includes provision of land for a potential new school. Planning has included early analysis of student enrolment projections together with site specific analysis of catchment alignment, traffic and transport needs and other early phase due diligence.

Once the planned re-zoning is complete, the Department will commence more detailed service need planning to identify the timing of projected population growth and the impact of enrolments in the short and medium term on current schools in the area. A business base would then need to be developed for consideration by NSW Treasury as part the budget process. Until a business case is approved, the Department is unable to provide a firm commitment to the timing of the provision of the new school on the site.

Should you require any further information, please do not hesitate to contact Mark Harrison, Director, Infrastructure Planning at mark.harrison62@det.nsw.edu.au.

Yours sincerely,

Paul Towers
Executive Director, Infrastructure Planning

Schools Infrastructure NSW
Level 8, 259 George Street Sydney NSW 2000]
education.nsw.gov.au

URBIS

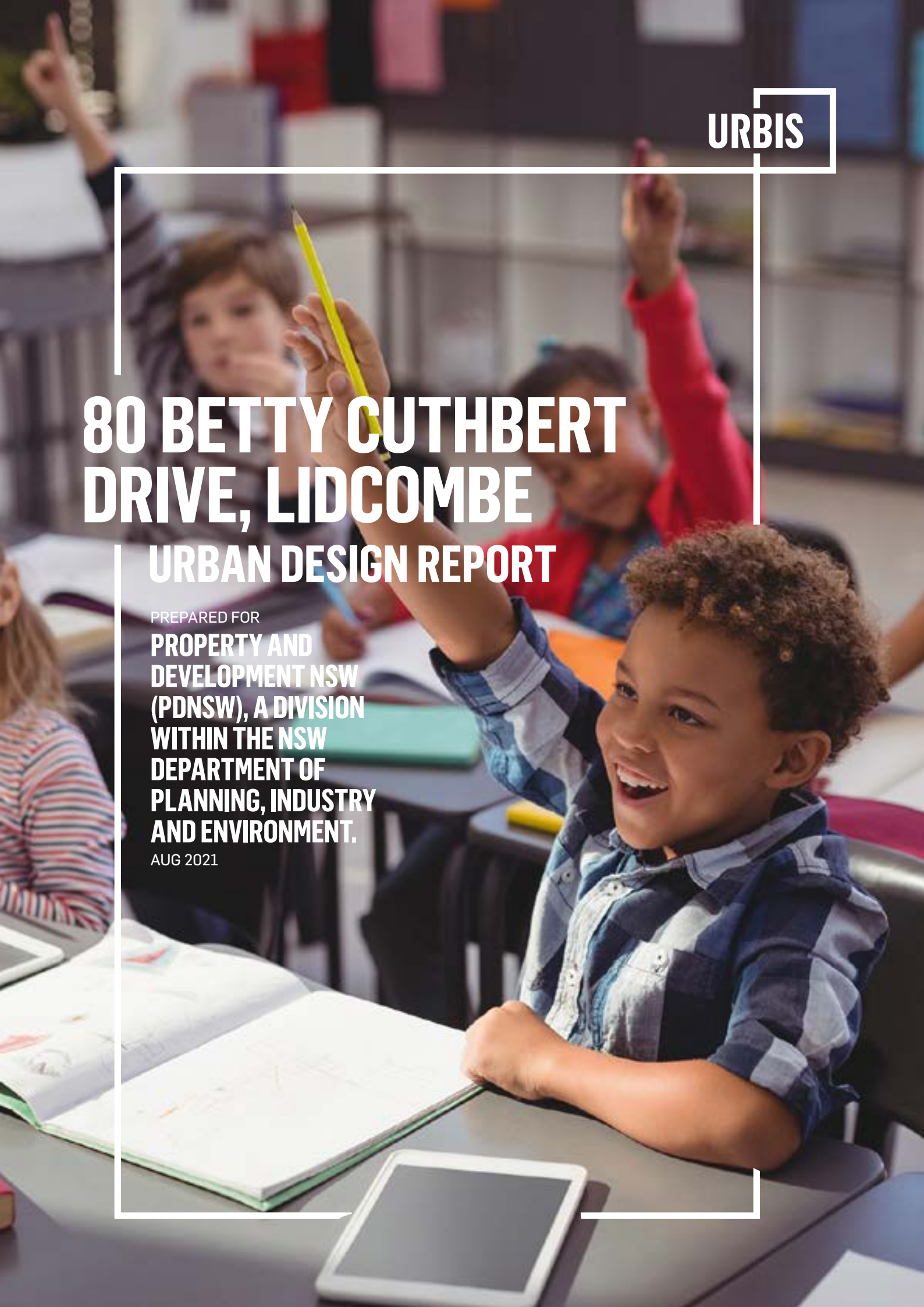
80 BETTY CUTHBERT DRIVE, LIDCOMBE

URBAN DESIGN REPORT

PREPARED FOR

PROPERTY AND DEVELOPMENT NSW (PDNSW), A DIVISION WITHIN THE NSW DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT.

AUG 2021



EXECUTIVE SUMMARY

The site at 80 Betty Cuthbert Drive, Lidcombe presents the opportunity to facilitate the development of a new multiple sclerosis facility, site suitable for residential use; and site suitable for a future educational establishment.

Multiple Sclerosis Limited (MSL) currently occupies the site with most of the land unused. The site and facilities no longer meet the requirements of MSL and is no longer fit for purpose. The 5.9 hectare subject site is adjacent to TAFE, Sydney University and the former Lidcombe Hospital precinct (Botanica) which is characterised by town houses to the south and low-rise single residential dwellings to the north.

The proposal aims to make efficient use of surplus, underutilised government land by enabling the development of a future educational establishment, a new relocated Multiple Sclerosis facility and medium density residential that sensitively transitions to the neighbourhood around it.

The health facility will be developed by Multiple Sclerosis Limited (MSL) and the future educational establishment by the Department of Education (DoE) who will respectively manage the design, development and construction of their individual facilities.

The Master Plan contained in this report is aligned with the strategic planning objectives identified in the Central City District Plan and Cumberland 2030 LSPS on housing diversity, social infrastructure provision and access to local jobs, education opportunities and care services. It establishes urban design principles and outlines the benefits of the proposal which is summarised below.



KEY OUTCOMES

AN UPGRADED & MODERN MSL FACILITY

This proposal includes a land allocation to MSL, who will be constructing a modern facility that will provide a comprehensive range of support and services for people with MS and other neurological conditions. The new MSL facility will promote better life outcomes and provide a range of medical and lifestyle management services and programs.

A FUTURE EDUCATIONAL ESTABLISHMENT

The proposal includes land allocation to the Department of Education to deliver an educational facility within a much needed local catchment. Cumberland LGA is expecting 79,000 additional people by 2036 and this growth increases demand on existing services and infrastructure such as schools.

THE MISSING MIDDLE HOUSING OFFER

Medium density housing is proposed on the surplus land not dedicated to MSL and DoE which is compatible with the adjoining residential area, maintaining the character of the locality. The form and scale of the proposed housing is similar to the housing style at Botanica.

IMPROVED PERMEABILITY AND ACTIVE TRANSPORT NETWORK

The proposed pedestrian linkage to Ironbark Walkway, new intersection at Joseph Street and pedestrian connection opportunity to Leila Street increase permeability between eastern and western communities including Berala. The direct pedestrian connection through Ironbark Walkway and Norman May Dr will also improve accessibility to more bus services and regional cycleway network at East Street.



1.0 INTRODUCTION

PURPOSE OF THIS REPORT

This Urban Design Report (UDR) has been prepared on behalf of the Property & Development NSW (PDNSW) a division of the NSW Department of Planning, Industry and Environment (DPIE). It supports the planning proposal which seeks to initiate the preparation of a Local Environmental Plan (LEP) amendment for the land identified as 80 Betty Cuthbert Drive, Lidcombe (the site). The purpose of this report is to outline the rationale of a contextually responsive plan that considers the future character of the area, unlocks surplus government land, enables the provision of social infrastructure and improves connectivity for the community to local services and destinations.

The report is structured as follows:

1.0 INTRODUCTION 4
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4.2 CONCEPT LANDSCAPE PLANT LIST 38
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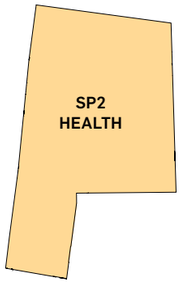
5.0 CONCLUSION 42

SUMMARY OF PLANNING PROPOSAL

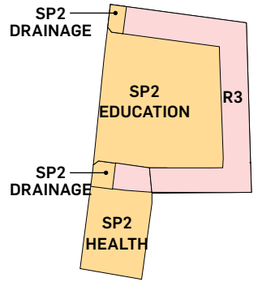
The following table and following diagram identifies the proposed planning control changes:

	EXISTING	PROPOSED
Zoning	SP2 Hospital	SP2 Education; SP2 Health; SP2 Drainage and R3 Medium Density Residential
Maximum HOB	N/A	9m within R3 zone
Maximum FSR	N/A	0.75:1 within R3 Zone

CURRENT ZONING



PROPOSED ZONING



BACKGROUND

PDNSW is seeking to obtain the necessary planning approvals for the site to enable the relocation and development of MSL, allocate the majority of the site for a future educational establishment and the remaining site for residential use. The existing health facility on site no longer meets the requirements of MSL and the remaining land is underutilised.

In 2017, PDNSW commissioned a Feasibility Study which included a concept plan that was developed and supported by MSL and the Department of Education (DoE).

The Government supports the following subdivision and use allocation (all areas are approximates):

- Approx. 1.85 ha, for a future educational establishment
- Approx. 0.95 ha, for a new health facility (MSL Land); and
- Approx. 1.8 ha, for residential.

The concept design and technical investigations have since progressed and is the subject of this planning proposal.

1.1 SITE DESCRIPTION



Figure 1 Aerial of site

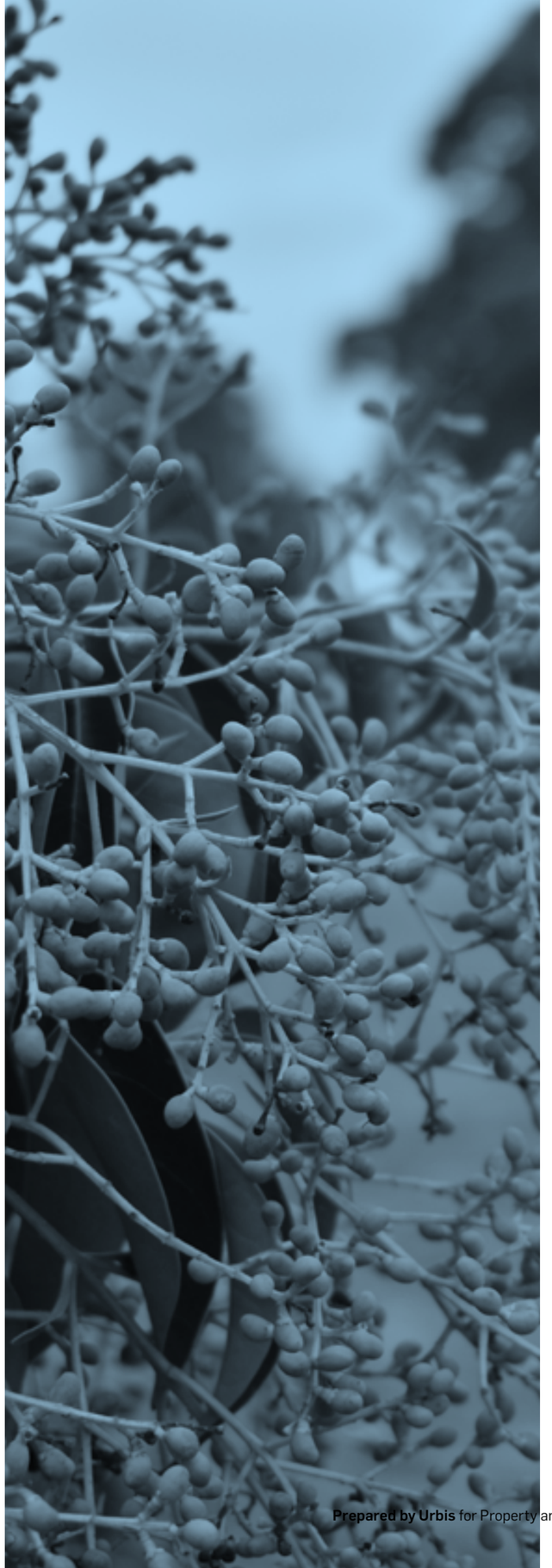
The site is located at 80 Betty Cuthbert Drive, Lidcombe. The site is approximately 58,815 sqm in size.

The site is bounded by the Joseph Street to the west, and Betty Cuthbert Drive to the south-east. To the north, east and south the site is bounded by low density detached houses.

The site is zoned SP2 Hospital, for the use of MS Ltd (MSL). The site includes one building known as the 'MS Study Centre'. This building provides office space, treatment facilities and respite care facilities to support the operations of MSL.

The existing MSL facilities (including the single building, internal roads and pathways) cover approximately 12% of the site, and the remainder of the site remains underutilised.

The current MSL building condition is considered dilapidated and no longer meets MSL requirements, hence an upgrade would be vital to the longevity of this facility.



2.0 KEY CONSIDERATIONS

The following section informs the context of which 80 Betty Cuthbert situated as follows:

- Strategic Positioning
- Urban Context
- Site Analysis:
  - Access and Movement;
  - Surrounding Land Use
  - Active Transport - Public Transport
  - Active Transport - Walking and Cycling
  - Topography
  - Civil Infrastructure and Contamination; and
  - Biodiversity
  - Summary of Site Analysis

2.1 STRATEGIC POSITIONING

2.1.1 CENTRAL CITY DISTRICT PLAN

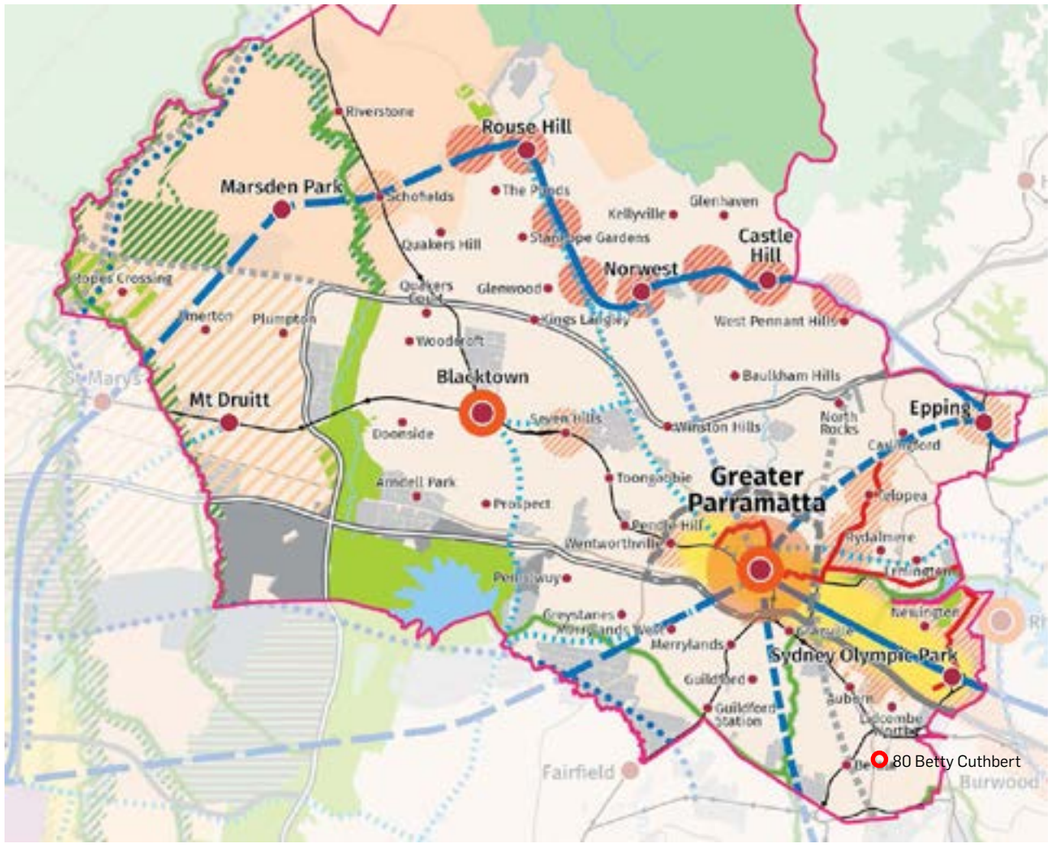


Figure 2 Central City District Plan

The Central City District Plan has identified the need to provide additional dwellings within the area close to public transport and employment generating uses. The District Plan also identifies the need to provide cohesive and socially dynamic communities which provide housing as well as new social infrastructure including schools and community services.

By 2036, Cumberland is forecast to welcome around 75,000 additional people in the community with most of the growth expected to occur in and around the centres and strategic corridors such as Lidcombe and Granville.

The Central City District Plan identifies a series of key directions that relates to 80 Betty Cuthbert, being:

- Planning Priority C1 - Planning for a City supported by Infrastructure;
- Planning Priority C3 - Providing services and social infrastructure to meet people's changing needs;
- Planning Priority C5 - Providing housing supply, choice and affordability with access to jobs, services and public transport; and
- Planning Priority C16 - Increasing urban tree canopy cover and delivering Green Grid connections.

2.1.2 CUMBERLAND LSPS



Figure 3 Cumberland 2030 LSPS - Strategic Land Use Framework

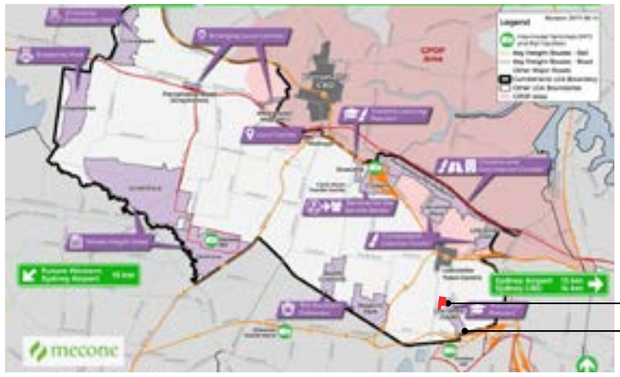


Figure 4 Cumberland 2030 LSPS - Employment and Innovation Lands Strategy

In response to the Central City District Plan key directions, The Draft Cumberland LSPS identifies a series of local planning priorities that relates to 80 Betty Cuthbert, being:

- Planning Priority 4 - Improving accessibility within our town centres;
- Planning Priority 5 - Delivering housing diversity to suit changing needs;
- Planning Priority 9 - Providing high quality, fit-for-purpose community and social infrastructure in line with growth and changing requirements;
- Planning Priority 11 - Promoting access to local jobs, education opportunities and care services; and
- Planning Priority 13 - Protecting, enhancing and increasing natural and green spaces.

TAFE Lidcombe and University of Sydney that are situated to the south east of 80 Betty Cuthbert forms the Education Precinct as one of the key employment and innovation precincts identified in Cumberland Employment and Innovation Lands Strategy.

Joseph Street that forms the western boundary of 80 Betty Cuthbert Drive also identified as one of the main key road corridors that connects to major centres such as Lidcombe and Bankstown.

Key Opportunities

- Align the site objectives to the planning priorities identified in Draft Cumberland LSPS being housing diversity, social infrastructure provision, and promoting access to local jobs, education opportunities and care services.

2.2 URBAN CONTEXT

2.2.1 LOCAL CONTEXT

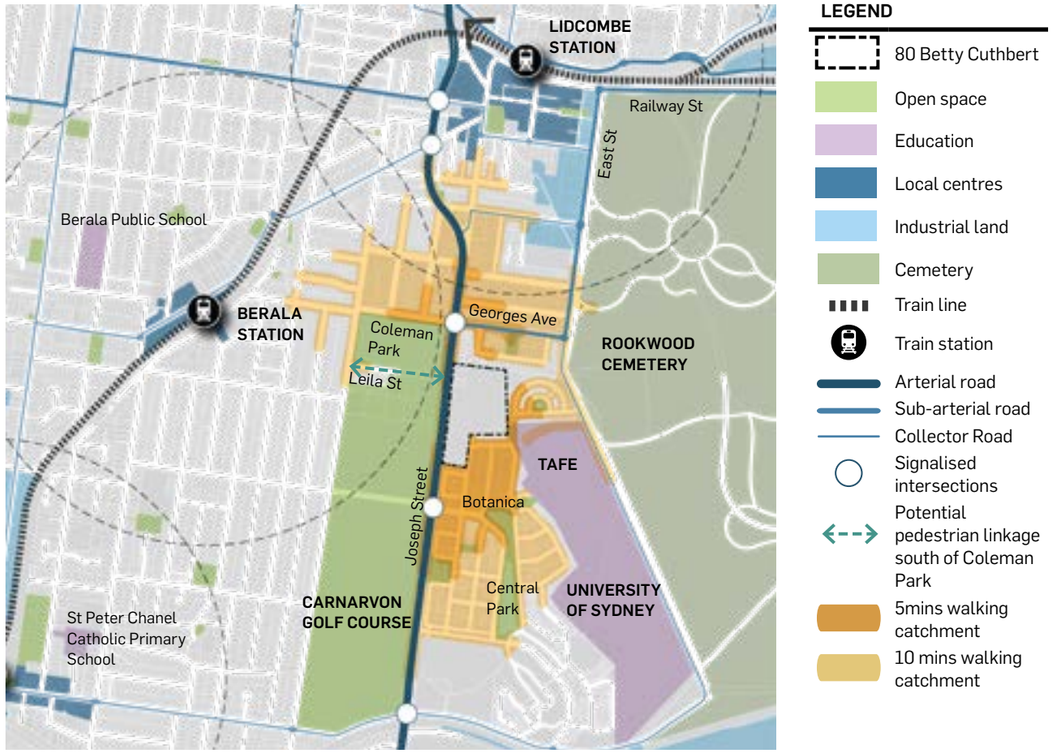


Figure 5 Regional context

The site is located along the arterial road - Joseph Street, which provides access to Bankstown, north of Lidcombe, Lidcombe and Berala Train Stations which are located approximately 1km north and west of the site respectively.

Major tertiary educational facilities including TAFE Lidcombe Campus and the University of Sydney Lidcombe Campus form an educational precinct to the south east of the site.

The site sits between two major open spaces, being the Rookwood Cemetery and the Carnarvon Golf Course.

Two primary schools are located approximately 1.5km to the west and southwest from the site being Berala Public School and St. Peter Chanel Catholic Primary School.

The pedestrian shed analysis identifies limited major destination and public transport are within 10 minutes walking catchment from the site. This includes East Street, TAFE, Coleman Park and Central Park at Botanica.

Access to Leila Street road reserve which is currently closed to pedestrians will improve the future pedestrian catchment to residential uses east of Berala Station.

Key Opportunities

- Improve the pedestrian accessibility between residential communities east of Berala Station and Education Precinct

2.3 SITE ANALYSIS

2.3.1 ACCESS AND MOVEMENT

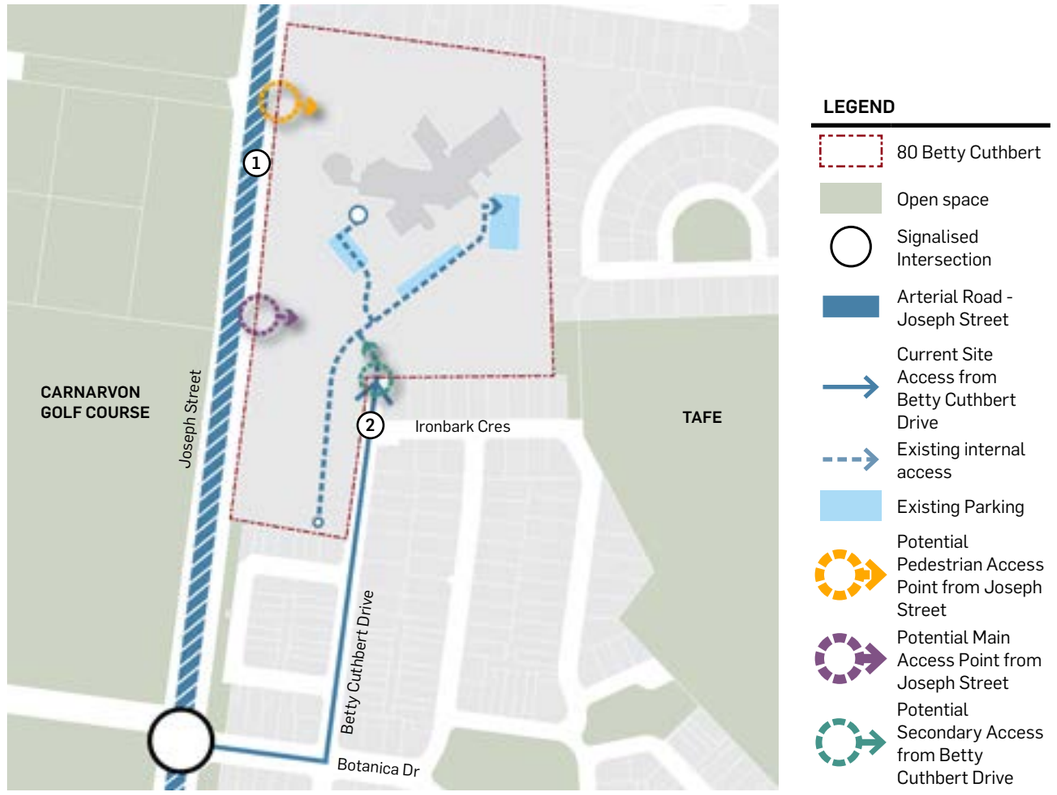


Figure 6 Access and Movement plan

There is limited vehicular accessibility to the site from the existing road network. Access to the MSL facility is available via the signalised intersection at Joseph Street and Botanica Drive 300 metres south of the site and via Betty Cuthbert Drive, a local road.

Access within the site currently connects Betty Cuthbert Drive to the internal MSL parking facilities.

Key Opportunities

- Given the residential nature of Betty Cuthbert Drive, it is not deemed appropriate that this existing route be maintained as the primary access for future development. This access route would be suitable as a secondary access.
- Provides primary vehicular access route off Joseph Street that consist of signalised intersection and/ or left in left out intersection.



Joseph Street



Betty Cuthbert Drive

2.3.2 SURROUNDING LAND USE



LEGEND

- 80 Betty Cuthbert
- Open space
- Education
- Cemetery
- Housing (1-2 storey detached and attached dwellings)
- Older housing stock (1-2 storey detached dwellings)

Figure 7 Surrounding Land Uses

The site sits within a predominately residential area, bounded by low density residential to the north, south and east. The northern residential uses are low density older housing stock with primarily 1-2 storey detached houses.

New housing stock (built in the late 2000s) are located to the east and south. These houses are also low density, 1-2 storeys in height and mixed of detached and attached homes including terrace homes.

There are a number of parks in close proximity to the site, including a series of small scale parks south of the site that are good quality and provide high amenity, including Central Park and Terpentine Park.

Given the surrounding existing residential uses with access to higher education and public open space in the vicinity there is great potential to provide a future educational establishment.

Key Opportunities

- Deliver infill social infrastructure facilities such as educational and care facilities to serve surrounding communities
- Provides residential uses as transition to adjoining neighbourhoods

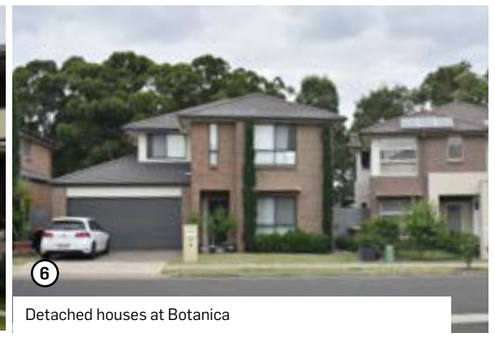

Central Park at Botanica


Lot interface with surrounding residential

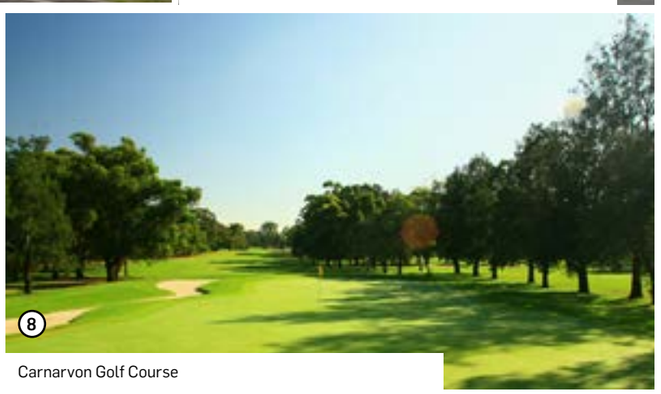

Coleman Park


Older stock detached housing at Wayland Avenue


Terrace houses at Botanica


Detached houses at Botanica


Two storeys semi detached homes at Botanica


Carnarvon Golf Course

2.3.3 ACTIVE TRANSPORT - PUBLIC TRANSPORT

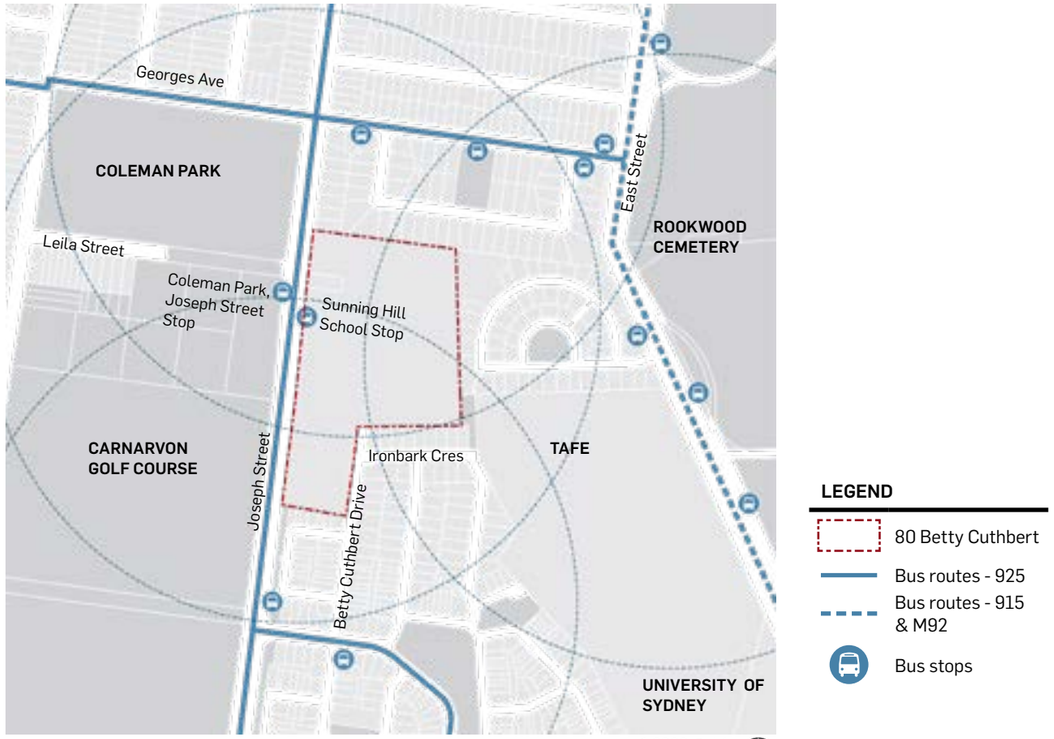


Figure 8 Public Transport

There are three bus routes located within the vicinity of the site with more frequent bus services along East Street, being:

- 925, between East Hills - Lidcombe via Joseph Street with one-two buses per hour;
- M92, between Sutherland and Parramatta via East Street with four-six buses an hour; and
- 915 , between University of Sydney and Lidcombe Station via East Street.

The two bus stops geographically closest to the site on Joseph Street, being The Sunning Hill School stop and Coleman Park Stop are both serviced by one bus route - the 925 in opposing directions.

There is no direct crossing between these two stops requiring bus users to walk an additional 400m and cross at Joseph Street/Georges Avenue intersection or an additional 900m and cross at Joseph Street/Botanica Drive intersection.

Key Opportunities

- When considering vehicular access to the site, placing a signalised intersection adjacent to the bus stops will improve its accessibility and convenience for bus users

2.3.4 ACTIVE TRANSPORT - WALKING AND CYCLING

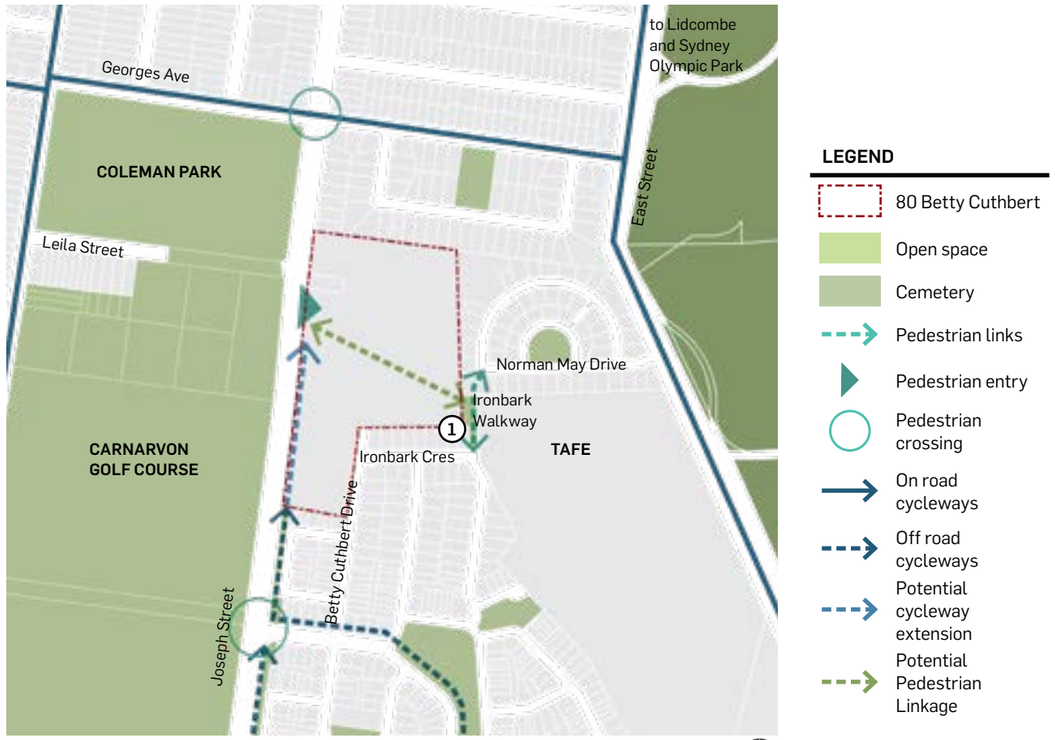


Figure 9 Walking and Cycle Plan

Pedestrian Environment

- The current pedestrian access points to the site are from Joseph Street and Betty Cuthbert Drive.
- Whilst a footpath is provided to the eastern side of Joseph Street, the walking condition is not considered to be very attractive given its location along a six-lane, 80km/hr road.
- Crossing points across Joseph Street are limited and fairly far from the site at Georges Avenue and Botanica Drive.
- A pedestrian link from Ironbark Crescent to Norman May Drive through Ironbark Walkway provides access to East Street with more frequent bus services.



Ironbark Walkway

Cycling

- East Street currently has dedicated cycle lanes as part of regional cycle network that connects to Lidcombe and Olympic Park to the north. However, these lanes run between fast traffic and parked cars that are identified as "moderately difficult" by NSW Transport Cycleway Finder.
- An off-street cycleway runs along Joseph Street at Botanica and stops at the southern boundary of 80 Betty Cuthbert.

Key Opportunities

- Improve accessibility to East Street where currently limited by providing direct pedestrian access to Ironbark Walkway
- Provide through site linkage from Joseph Street to Ironbark Walkway
- Extend current northbound cycleway along Joseph Street

2.3.5 TOPOGRAPHY

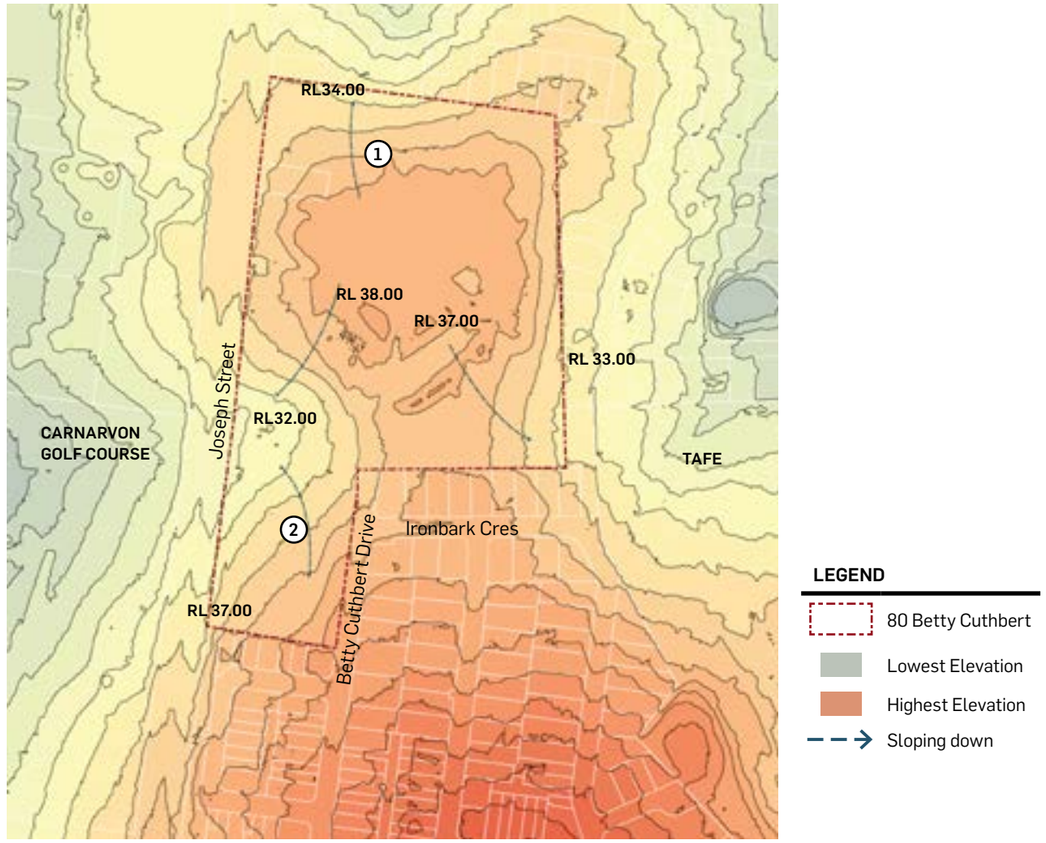


Figure 10 Topography plan

The site has relatively gentle slope with the highest point located to the centre of the site where the existing MSL building is situated and to the southern boundary next to Betty Cuthbert Drive at RL 38.00.

The site slopes predominantly to the north, east and west of the site boundary with the lowest point situated next to Joseph Street where the existing basin is located at RL32.00.



Gentle Slope Characteristic - North



Gentle Slope Characteristic - South

Key Opportunities

- Locate the future educational establishment at the highest point for visual prominence
- The proposed road follows contour lines where possible to minimise earthworks and slope compliance
- Stormwater management to utilise the sloping terrain to minimise manual intervention

2.3.6 CIVIL INFRASTRUCTURE AND CONTAMINATION

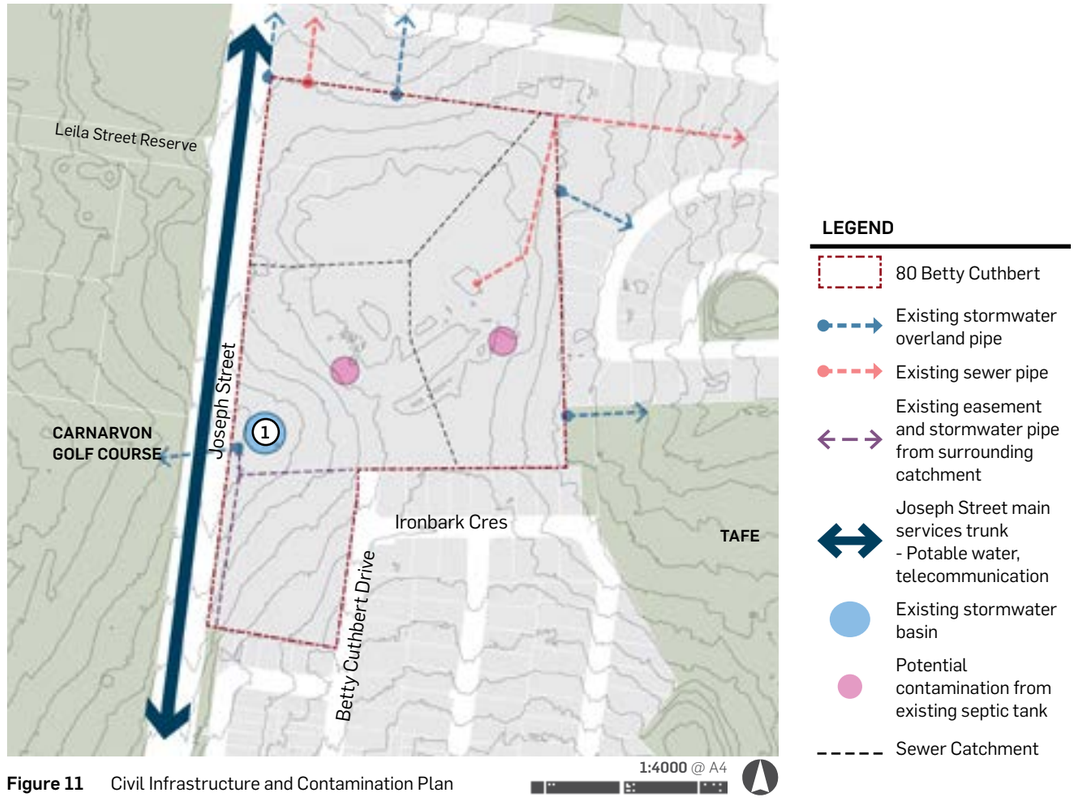


Figure 11 Civil Infrastructure and Contamination Plan

The study by Mott Macdonald identifies the following existing infrastructure services to 80 Betty Cuthbert:

- Existing stormwater main trunk at Joseph Street
- Main sewer channel connection to the north of the site
- Existing stormwater basin at the lowest point of the site
- Existing stormwater channel from residential along Ironbark Cres cutting through the site
- The site is serviced by electrical, telecommunications and gas.
- Potential contamination by two existing septic tanks situated adjacent to current MSL building subject to further assessment.



Existing vegetated stormwater basin

Key Opportunities

- Align sewer and stormwater channel to the existing main channel at the lower points to the east and north through proposed road reserve
- Accommodate the existing stormwater channel from surrounding catchment within the proposed development

2.3.7 BIODIVERSITY



Figure 12 Biodiversity plan

The site is dominated by scattered planted including tallowwood, red mahogany, red Ironbark and spotted gum. The trees are generally concentrated around the site boundary and the existing building, leaving open areas of grassland in between.

A total of 173 trees with a low retention value are not considered important for retention. A total of 294 trees with a medium retention value should be retained wherever possible, but should not be a constraint on the development.

A total of 16 trees with a high retention value are considered important for retention and should be retained and protected wherever possible.



Existing trees within the site

Key Opportunities

- All opportunities to retain these 16 high retention value trees using design modifications and tree sensitive construction techniques should be explored
- Medium value trees to be retained wherever possible

2.3.8 SITE ANALYSIS SUMMARY

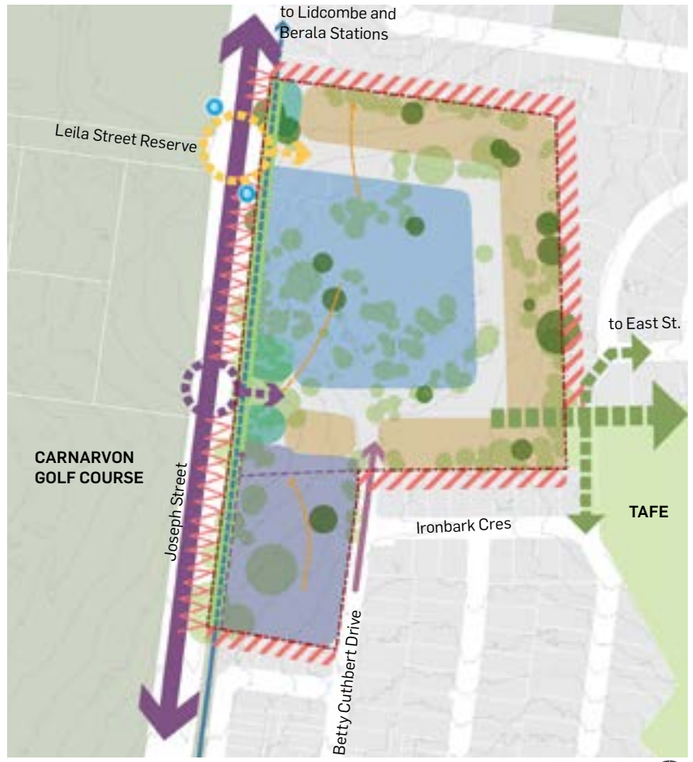


Figure 13 Opportunities and constraints plan

80 Betty Cuthbert provides opportunity to reinvigorate an underutilised surplus government site to deliver a robust plan that delivers improvements to existing health services which are currently not meeting the needs of patients, additional social infrastructure and care facilities, connectivity to the surrounding residential uses and is an overall benefit to the community.

The consolidated opportunities and constraints of 80 Betty Cuthbert are summarised on the diagram and key above that includes accessibility, biodiversity and potential land use programs.

LEGEND

80 Betty Cuthbert

ACCESSIBILITY

- Potential to extend shared path network utilising the setback to Joseph Street
- Potential new signalised intersection consolidating vehicular access to site and pedestrian crossings between bus stops
- Potential new overpass pedestrian bridge to connect to Leila Street Reserve
- Potential green link connection for pedestrian and cycleway through Ironbark Walkway to East Street and Botanica
- Secondary access from Betty Cuthbert Drive
- Joseph Street - fast moving traffic potential constraints for pedestrian and cyclists.

BIODIVERSITY

- High value trees - retain where possible
- Medium value trees - retain where possible

BUILT FORM AND LANDUSE PROGRAM

- Residential typology to respond surrounding housing types with high best use consideration
- Potential location for future educational establishment
- Potential location for MSL facility
- Potential stormwater basins within lower level of the site

CIVIL AND INFRASTRUCTURE

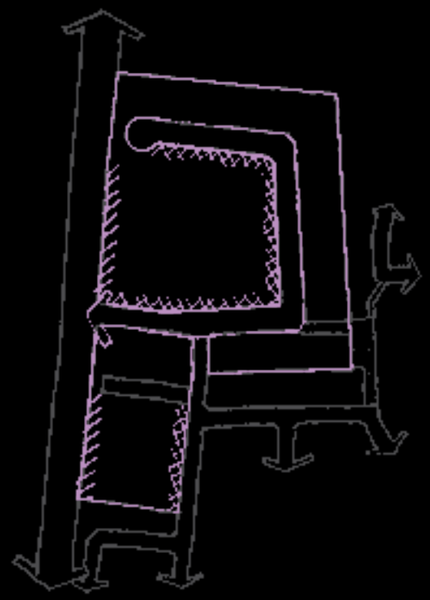
- Existing easement and stormwater pipe from surrounding catchment
- Sloping down

SURROUNDING INTERFACE

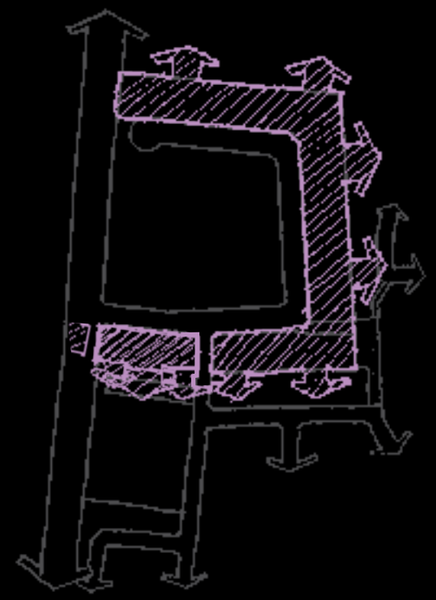
- Residential interface - potential noise and visual change impact
- Noise from traffic on Joseph Street

3.0 DESIGN PRINCIPLES

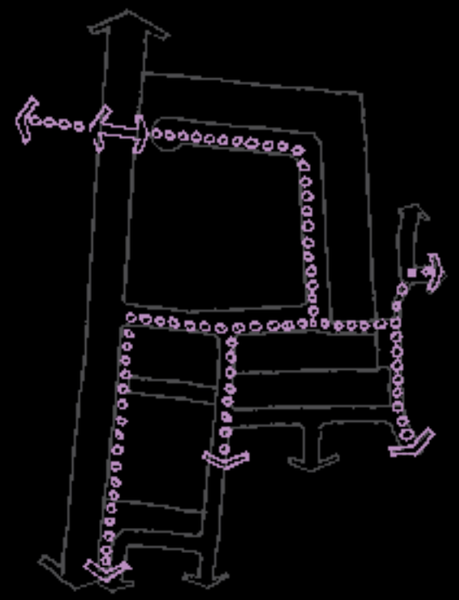
The development of 80 Betty Cuthbert has been guided by the following principles:



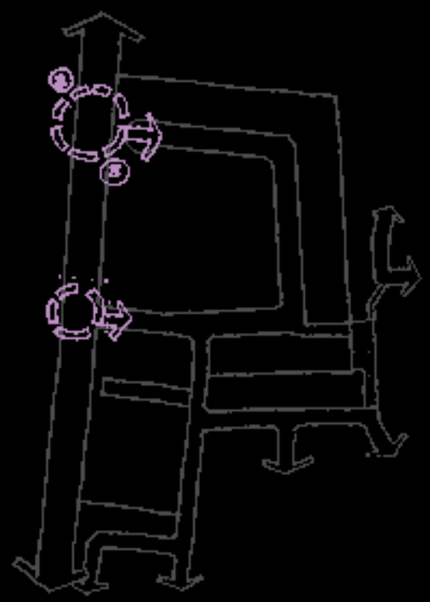
MAXIMISE STREET FRONTAGE & VISIBILITY TO NEW FACILITIES



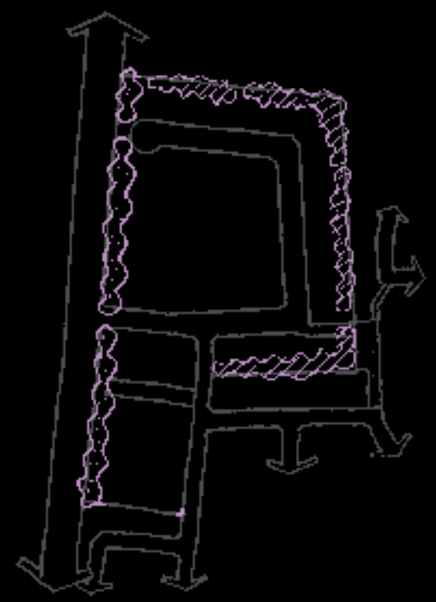
A LEGIBLE RESIDENTIAL TRANSITION ZONE & INTERFACE



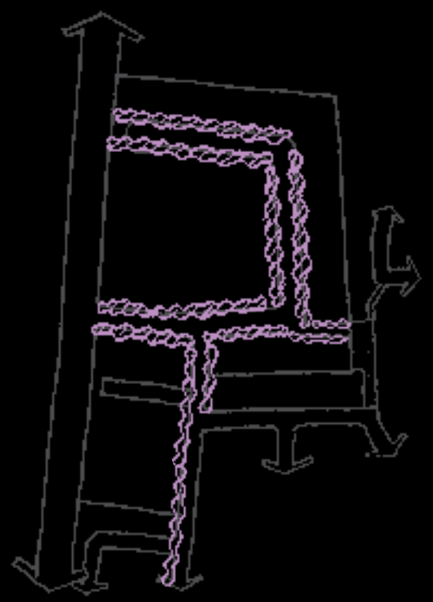
IMPROVE CONNECTIONS TO THE SURROUNDING COMMUNITY



CONSOLIDATE VEHICULAR AND PEDESTRIAN ACCESS AT JOSEPH STREET



EXTEND THE LANDSCAPE EDGE ALONG JOSEPH STREET



A COHERENT STREET HIERARCHY & LANDSCAPE TREATMENT



4.0 MASTER PLAN

The master plan has been formulated to accommodate the following uses:

- A future educational establishment allocated for the Department of Education;
- A health facility; and
- Residential uses along the site periphery.

The following figure illustrates the proposed Master Plan in 80 Betty Cuthbert Drive based on the surrounding context, site considerations and guided by design principles identified in the previous sections.

The key strategies in formulating the master plan are explained in the following section being:

- Land Use Strategy;
- Access and Movement Strategy; and
- Landscape and Public Domain Strategy.



4.1 LAND USE STRATEGY



Figure 14 Land Use Plan

PROPOSED LAND USE

The future educational establishment and MSL facilities are located along Joseph Street to address the street frontage and provide a buffer to the residential uses to the east.

Residential uses are situated along the perimeter of the northern, eastern and southern site boundaries providing transition to the surrounding residential communities as well as passive surveillance to the future educational establishment.

Two stormwater basins are located within the lower level of the site boundary as part of stormwater management strategy.

A minimum 6m buffer is proposed along Joseph Street as a continuation of the green buffer to the south within Botanica.

The following figures and table illustrates the proposed land use configuration and development summary.

DEVELOPMENT SUMMARY

LANDUSE	AREA (sqm)	AREA(ha)	%
Future Educational Establishment	18,518	1.85	32%
MSL Land	9,516	0.95	16%
Residential Land	17,777	1.78	30%
Sub Total Developable	**45,811**	**4.58**	**78%**
Basin	2,272	0.23	4%
Road Areas incl. Joseph Street additional lanes	10,731	1.07	18%
Sub Total Non Developable	**12,977**	**1.3**	**22%**
Total Site Area	**58,814**	**5.88**	**100%**

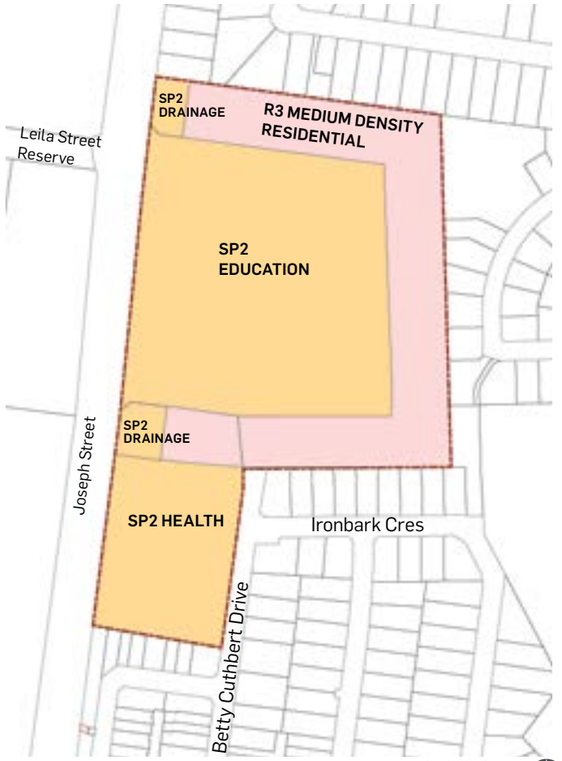


Figure 15 Proposed Zoning Plan

Key Insights

- Approximately 78% of the site area is allocated as developable land for the use of a future educational establishment, MSL facility and residential uses with the remaining 22% as non developable land including stormwater basins and road.
- The planning proposal identifies a proposed rezoning of the current SP2 Health into a mix of SP2 Education, SP2 Health, SP2 Drainage and R3 Medium Density Residential with 9m HOB and 0.75:1 FSR within R3 Zone.
- An approx. 65% of the site area is zoned as SP2.

PROPOSED ZONING

The following table and above diagram identifies the proposed planning control changes to the site:

	EXISTING	PROPOSED
Zoning	SP2 Hospital	SP2 Education; SP2 Health; SP2 Drainage and R3 Medium Density Residential
Maximum HOB	N/A	9m within R3 zone
Maximum FSR	N/A	0.75:1 within R3 Zone

PROPOSED ZONING AREA SCHEDULE

LANDUSE	AREA (sqm)	AREA (ha)	%
SP2 Education	28,494	2.84	48.4%
SP2 Health	9,763	0.97	16.5%
SP2 Drainage	2,272	0.22	3.86%
R3 Medium Density Residential	18,285	1.91	31%
Total Site Area	**58,814**	**5.88**	**100%**

4.2 EXAMPLES OF EDUCATIONAL FACILITY

We have been working with PDNSW and the Department of Education in collaboratively developing the proposal which includes provision of land for a potential new primary school. Planning has included early analysis of student enrolment projections together with site specific analysis of catchment alignment, traffic and transport needs and other early phase due diligence.

Once the planned re-zoning is complete, the Department will commence more detailed service need planning to identify the projected timing of dwelling growth and the impact of enrolments in the short and medium term on current schools in the areas.

These images are examples of what the proposed educational facility may look like in terms of bulk/scale and built form style.


BARRAMURRA PUBLIC SCHOOL


GULUNGARA PUBLIC SCHOOL






JORDAN SPRINGS PUBLIC SCHOOL




NORTHBOURNE PUBLIC SCHOOL


Jordan Springs Public School

4.3 ACCESS AND MOVEMENT STRATEGY

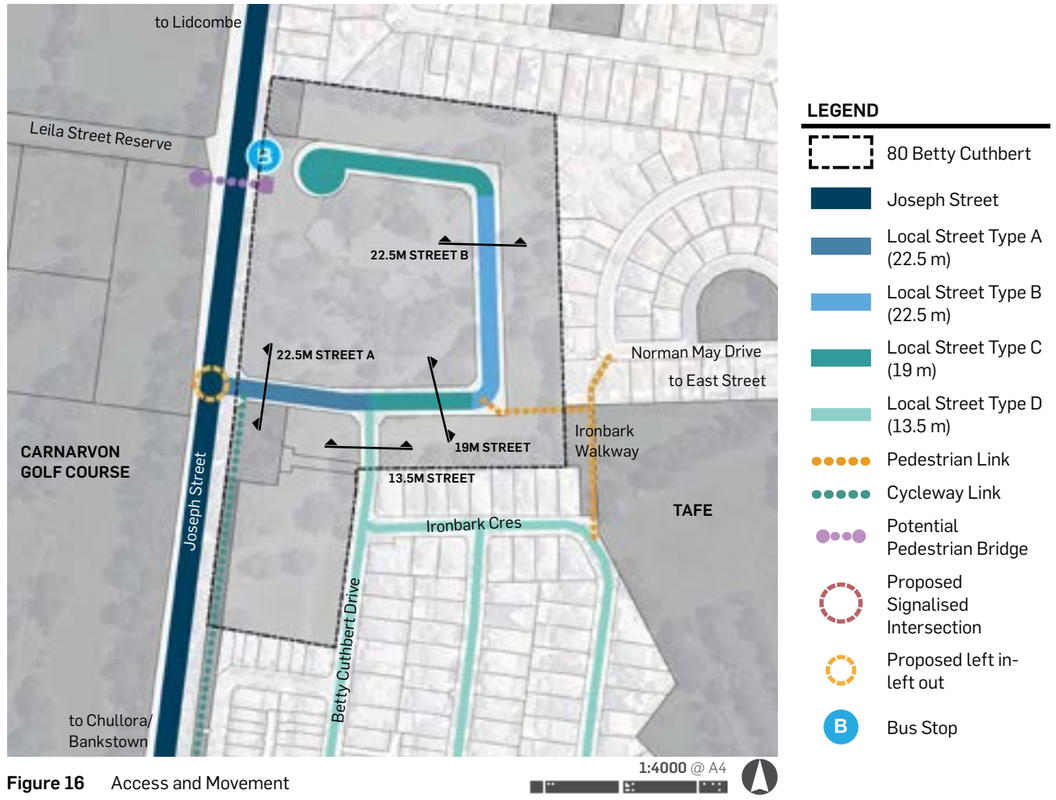


Figure 16 Access and Movement

This section illustrates the access and movement strategy including the following studies:

- Vehicular Access and Movement,
- Active Transport Network;
- Streetscape Strategy;
- Pedestrian Shed Analysis; and
- Future Educational Establishment Circulation Strategy.

DoE have also identified part of the site to provide a future educational establishment. To assist with the assessment of this proposal, the future educational establishment has been designed with consideration of a maximum capacity of 1,000 students.

Consultation with Transport for NSW has confirmed that if the future educational establishment is to be designated as a primary school in the development stage, an overpass pedestrian bridge on Joseph Street may be required for pedestrian safety.

VEHICULAR ACCESS AND MOVEMENT

Following extensive consultation with Transport for NSW (TfNSW) in 2020, the agreed road structure proposes two access points comprising of:

- A signalised intersection at the midpoint of the site fronting Joseph Street; and
- The extension of Betty Cuthbert Drive to the south.

The primary street will wrap north around the future educational establishment which provides an extended street frontage along all sides of the future educational establishment to allow better vehicular circulation within the site rather than stopping traffic on Joseph Street. A cul-de-sac terminates this street as advised by TfNSW to avoid disruption of traffic flow along Joseph Street and deceleration potential lane north of the site.

The proposed local streets comprise of three categories that will be explained further under Streetscape Strategy section. This includes:

- Local Street Type A - 22.5m
- Local Street Type B - 22.5m
- Local Street Type C - 19m
- Local Street Type D - 13.5m (Betty Cuthbert Drive)

ACTIVE TRANSPORT NETWORK

The southbound bus stop on Joseph St is required to be relocated due to the construction of the turning lane proposed as part of the signalised intersection upgrade into the site. The bus stop is proposed to be located just north of the bridge as shown in Figure 16 Access and Movement.

The existing cycleway to the south within Botanica is proposed to be extended along Joseph Street utilising the proposed buffer and connecting the wider street network.

An overpass pedestrian bridge located at the proposed signalised intersection would be required by TfNSW when a future educational establishment development occurs within the site.

STREETSCAPE STRATEGY

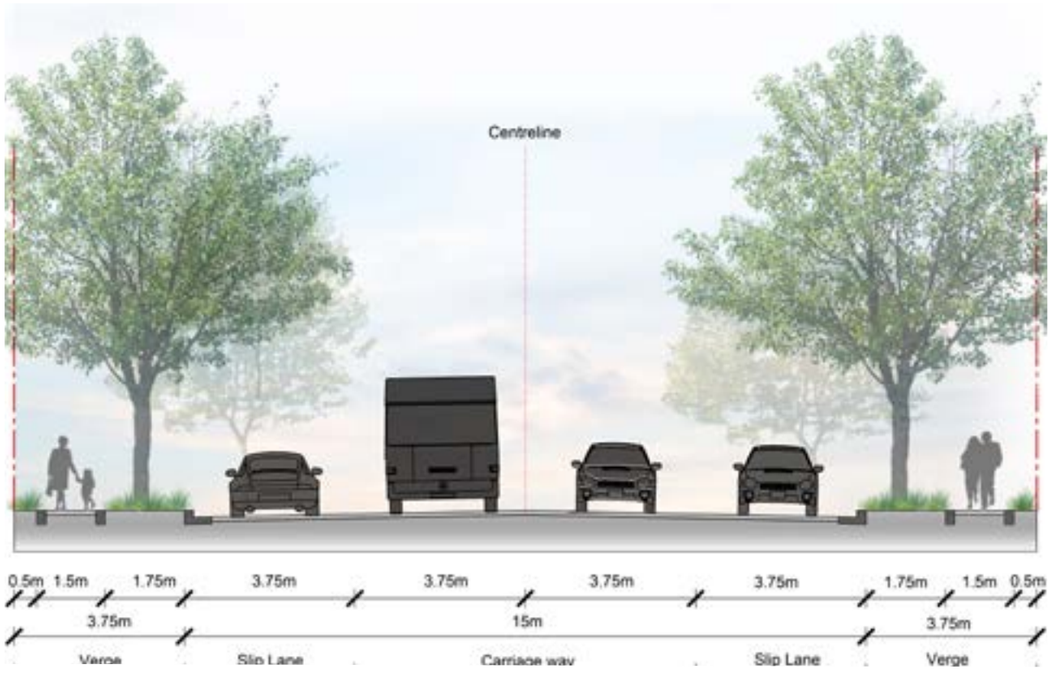
The proposed local streets typologies are based upon the standard 13m local street reserve identified in the Former Lidcombe Hospital DCP with modification to accommodate both vehicular and bus circulation.

The proposed streetscape applies 1.5m minimum footpath width in accordance with the Disability Discrimination Act (DDA) given it adjoins the future educational establishment and health facility. This also satisfies the minimum 1.2m footpath width as identified in the DCP.

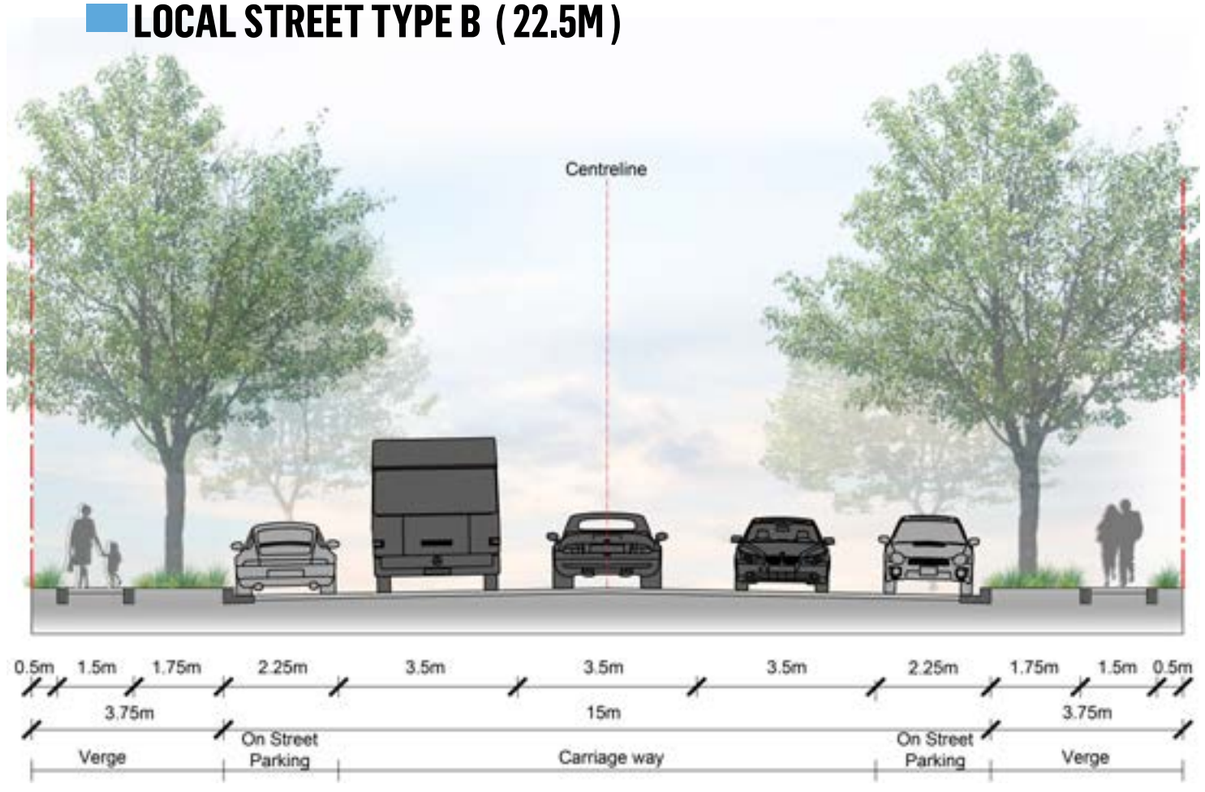
Street trees are proposed within the verge and in between on street parking with tree pits and wheel stop bar treatment where the verge could not accommodate street trees.

The following sections illustrates the three local streets typology being 13.5m, 19m and 22.5m ROW.

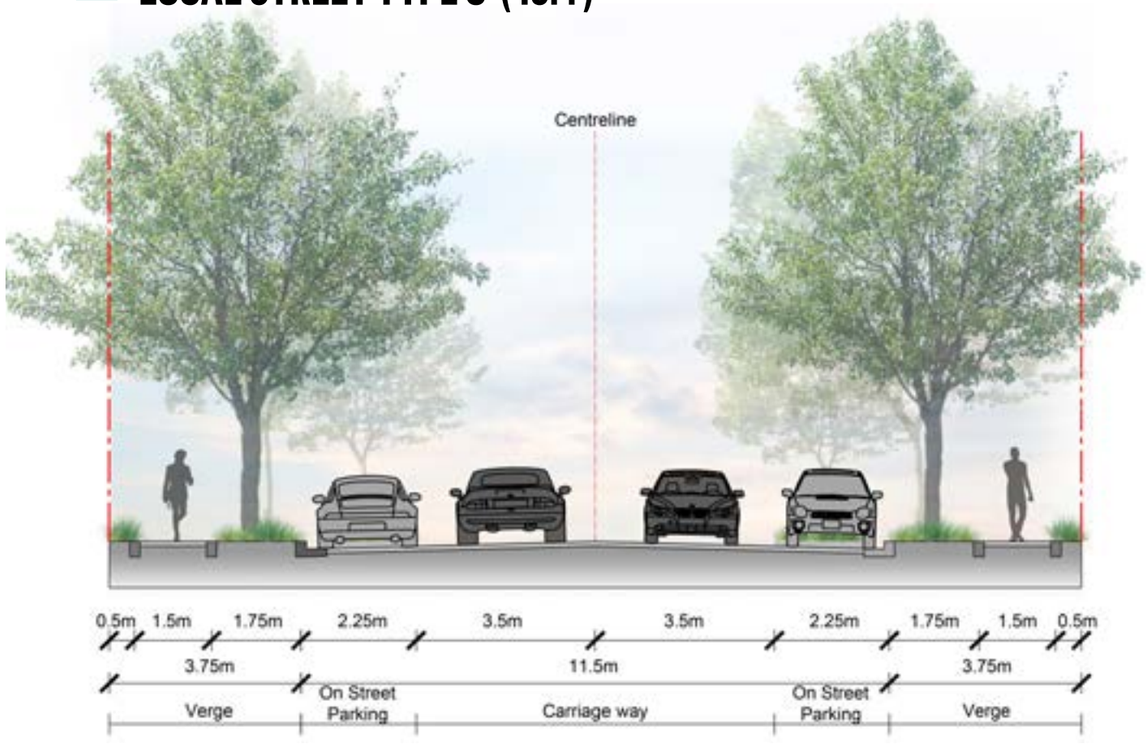
LOCAL STREET TYPE A (22.5M)



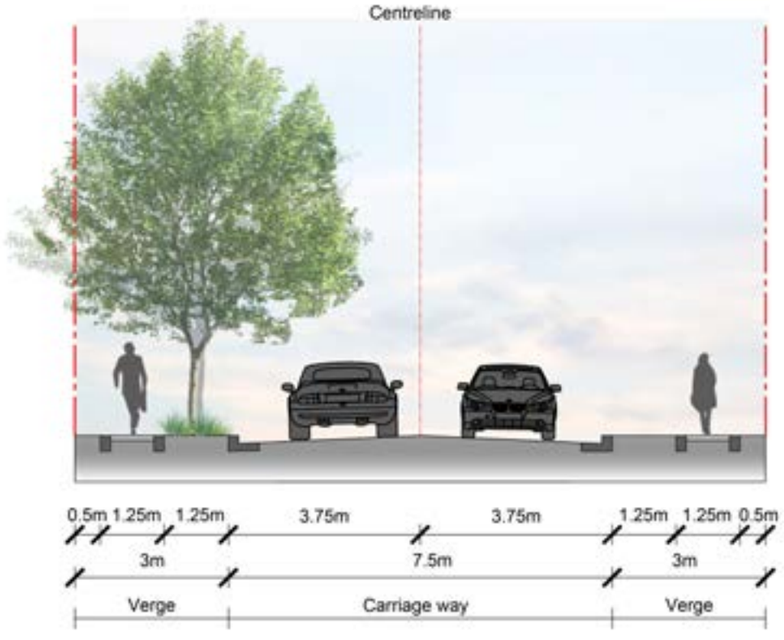
LOCAL STREET TYPE B (22.5M)



LOCAL STREET TYPE C (19M)



LOCAL STREET TYPE D (13.5M)



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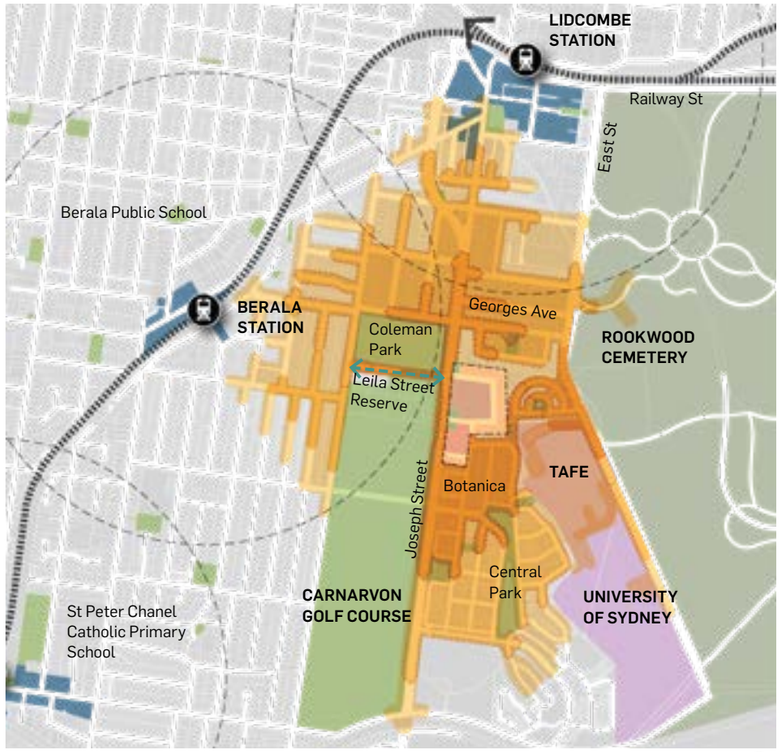


Figure 17 Pedestrian Shed Analysis

PEDESTRIAN SHED ANALYSIS

The proposed pedestrian connection to Ironbark Walkway and new signalised intersection at Joseph Street improves the pedestrian catchment from 80 Betty Cuthbert to the surrounding neighbourhood and key destinations including East Street and residential communities west of Carnarvon Golf Course with assumptions the road reserve south of Coleman Park is accessible.

The diagram above illustrates the improved pedestrian catchment resulting from the proposed master plan. This includes reduced travel time to East Street with more frequent bus services within 5 minutes of the site and University of Sydney within 10 minutes. By providing access Leila Street road reserve, it will also improve the pedestrian catchment to residential uses and services east of Berala Station.

A 20 minute walking catchment for children from the future educational establishment is calculated to equal 960m walking distance. This catchment covers most of the Botanica residential neighbourhoods including a small portion of Lidcombe and Berala Town Centres.

Key Insights

- The proposed pedestrian connection to Ironbark Walkway, signalised intersection at Joseph Street and Leila Street reserve access improves the pedestrian catchment from 80 Betty Cuthbert to surrounding neighbourhoods and key destinations including East Street, University of Sydney, and residential uses east of Berala Station.



Figure 18 Future Educational Establishment Circulation

FUTURE EDUCATIONAL ESTABLISHMENT CIRCULATION STRATEGY

A future educational establishment requires a robust pedestrian and vehicular access and movement strategy to ensure the generated traffic does not impact the surrounding network.

The perimeter street layout provides an approximately 390m of street frontage for the use of the future educational establishment which is considered an adequate length to accommodate on street parking and pick up/drop off points during peak hours.

It is assumed the future educational establishment will accommodate bus circulation internally.

Bus access and egress points to the site are proposed to occur at the Joseph Street near the proposed pedestrian bridge. Pick up/drop off and turning facilities to be accommodated within the future educational establishment site.

Vehicular ingress and egress will be expected predominantly along Joseph Street and minimum volume through Betty Cuthbert Drive.

The proposed connection through Ironbark Walkway and along Joseph Street provides a safe connection for students coming by bus and on foot to the future educational establishment. Further safety requirements will be addressed at the detailed design stage.

An future pedestrian bridge situated at the northern portion of the over Joseph Street will provided with the construction of the future educational establishment, to ensure safe passage for pedestrian and students across the main road.

Key Insights

- The perimeter street wrapping the future educational establishment provides approximately 390m of local street frontage to allows flexibility to accommodate vehicular circulation including car and buses during peak hours
- Potential overpass pedestrian bridge situated at the Joseph Street main intersection be provided, it will provide a safe passage for pedestrian and students across the main road.

PEDESTRIAN BRIDGE STANDARD DESIGN



Standard pedestrian bridge design - Forestville



Proposed Kirrawee Pedestrian Bridge

VERTICAL CIRCULATION VARIATION



Lift and stair combination - Epping



Ramp and stair combination - Sunnyholt Pedestrian Bridge

BRIDGE DESIGN VARIATION



Transparent tubular design safety screen- Pacific Highway



Covered pedestrian bridge - Lane Cove



Ramped pedestrian bridge - Brookvalle



Curved design safety screen - Falcon Street Pedestrian Bridge

4.4 LANDSCAPE AND PUBLIC DOMAIN STRATEGY



Figure 19 Landscape and Public Domain Strategy

The landscape and public domain strategy is aiming to maintain the landscape character of the site by retaining medium to high value trees where possible. Further assessment will be require in DA stage.

The street and pedestrian links identified on the previous access and movement strategy section illustrates the proposed streetscape strategy whereby the footpath, trees and verges comply with Council's development controls and infrastructure requirements whilst providing a similar street character to Botanica.

The proposed stormwater basins situated along Joseph Street are proposed for a non-recreational uses with landscape treatment.

*Note: The green buffer is to be consistent with the Botanica interface along Joseph Street to the South

Key Insights

- High and medium value trees to be retained where possible subject to future educational establishment, MSL and residential development.
- Extend streetscape character of Betty Cuthbert Drive and establish the streetscape character to the future educational establishment perimeter street.



5.0 CONCEPT LANDSCAPE PLAN

The following section identifies the concept landscape plan for 80 Betty Cuthbert with following sections:

- Landscape Design Statement;
- Concept Landscape Plant List;
- Landscape Concept Plan; and
- Typical Plan.

5.1 LANDSCAPE DESIGN STATEMENT

INTRODUCTION

Street trees are an important element in the appearance of streets and the public interface. Street trees significantly contribute to the amenity, identity and a sense of place. Trees provide a consistency of urban character and promote liveability. Trees are fundamentally important to the social, environmental and economic well-being of the Lidcombe community. This Street Tree Plan is critical to the short and long term management of trees in Lidcombe. This document also establishes direction for the future implementation and replacement of the street trees.

OBJECTIVES

- Provide a safe and beautiful suburb for the community to live, work and visit;
- Select the most appropriate street tree species, based on current knowledge, experiences and the needs of the community and environment;
- Retain existing character by reinforcing and enhancing the leafy characteristics of Lidcombe;
- Provide direction on the most appropriate species and planting techniques that are best suited to the environmental and growing conditions;
- Provide a street tree palette that is an appropriate scale;
- Minimise the heat island effect by providing continued tree canopy cover for shade and cooling of hard surfaces;
- Protect and enhance urban ecology and biodiversity for a healthy ecosystem;
- Increase tree species diversity;
- To educate the community on the values of street trees through participation and engagement;
- Guide Council decision making for planting, maintenance and management of new and existing trees

STREET TREE SELECTION

- Right tree for the right street
- Acceptable leaf and fruit fall characteristics
- Not prone to major limb drop
- Low risk of becoming an environmental weed
- Narrow footpath and verges
- Value of street tree diversity
- Low maintenance
- Proven performance record



Tree Species: Cupaniopsis anacardioides

Common Name: Tuckeroo

Location : Street type 1 & 2

Tree Dimensions: Max 6m

General Comments: Hardy to frost and drought once established; Tolerates a variety of soil types; Rounded canopy; Cream flower in autumn.



Tree Species: Flindersia australis

Common Name: Crow's Ash

Location : Street type 3

Tree Dimensions: Max 12m

General Comments: Good shade tree; Robust and hardy; Dense rounded canopy.

STREET TREE DESIGN AND PLACEMENT

The quality of street tree design and implementation is critical in the successful growth of a tree.

LOCATING STREET TREES

There are many limitations to the positioning of street trees within the verge. Distances from infrastructure elements such as intersections, light and electricity poles, stormwater inlets, underground service pits and bus stops, are important in determining final planting locations. Typically this requires individual site assessment and will be determined on a case-by-case basis. As a guide, recommended distances from infrastructure elements are:

- Bus Stop – 5 metres from determined bus stop;
- Driveway – 2 metres from driveways;
- Pedestrian Crossing – 5 metres from pedestrian crossings;
- Storm water inlet/outlet – 2 metres from storm water inlet/outlet pits;
- Street intersection – 10 metres from intersection kerb line;
- Street light pole – 3 metres from centre of light pole;
- Underground service pit - 2 metres from edge of pit.

SPACING OF THE STREET TREES

- Right tree for the right street
- Acceptable leaf and fruit fall characteristics
- Not prone to major limb drop
- Low risk of becoming an environmental weed
- Narrow footpath and verges
- Value of street tree diversity
- Low maintenance
- Proven performance record

TREE RETENTION STRATEGY

High and medium value trees to be retained where possible subject to arborist report and design development.

ACCESSIBILITY & SAFETY

Paving materials, inclusion of tactiles and other relevant measures will be implemented as part of the landscape works for compliance with the relevant standards.

SAFETY & CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

The proposal has considered the principles of Crime Prevention Through Environmental Design (CPTED) and the enhancement of personal safety throughout the site. Places of concealment have been minimised and clear signage / way-finding will be incorporated. The main thoroughfare and Internal street has direct access through the site and maintains a clear visual link to the wider context.

Planting treatments will maintain clear sight lines through the use of clear trunked trees and lower level understory species where visibility for safety is required.

LIGHTING

All external areas will be designed to meet relevant Australian Lighting Standards. Integrated landscape lighting is proposed to all the landscape elements.

WATER MANAGEMENT

Water Sensitive Urban Design (WSUD) principals have been realised into the landscape design in a way that celebrates a sustainable water cycle.

- Where possible storm water runoff will be directed to WSUD kerbs and garden beds.
- All soft landscape zones on structure will be detailed to have subsurface drainage.

MAINTENANCE NOTES:

General

- Planting maintenance period: the planting maintenance period will be 52 weeks and will commence from the date of practical completion. Of each phase of planting works (hereby specified to be a separable part of the works). It is anticipated that planting works will be undertaken in one phase
- Planting maintenance program: 2 weeks prior to practical completion, furnish a proposed planting establishment program, and amend it as required. Such proposal should contain details of the types and frequency of maintenance activities involved with the establishment of plants and grassed areas. Comply with the approved program.
- Planting maintenance log book: keep a log book recording when and what maintenance work has been done and what materials, including approved toxic materials, have been used. Log book must be signed off by the client's representative after each maintenance visit. Maintain log book in location
- Product warranty: submit the supplier's written statement certifying that plants are true to the required species and type, and are free from diseases, pests and weeds.
- Insurance: the contractor is to ensure suitable insurance cover and / or bank guarantee is in place for the theft and / or damage of all works executed under this contract for the plant maintenance period.

WATERING

If the watering regime is intended to be amended the contractor must seek written approval from the superintendent immediately prior to the deferment of watering.

Watering permits: the contractor is responsible for obtaining the necessary watering permits required to carry out the watering as specified.

PLANTING MAINTENANCE

Protection of works: provide any fencing or barriers necessary to protect the planting from damage throughout the planting establishment period.

Recurrent works: throughout the planting maintenance period, continue to carry out recurrent works of a maintenance nature all to the extent required to ensure that the plants are in the best possible condition at the end of the planting maintenance period. These activities are including but not limited to:

- weeding,
- rubbish removal,
- fertilizing,
- pest and disease control,
- adjust / replace stakes and ties
- topping up mulch,
- cultivating,
- pruning,
- keeping the site neat and tidy

Replacements: the contractor is responsible for the replacement of failed, damaged or stolen trees, shrubs and groundcovers throughout the planting establishment period.

WEEDING

Generally: regularly remove, by hand, rubbish and weed growth that may occur or recur throughout turfed, planted and mulched areas. Continue eradication throughout the course of the works and during the planting establishment periods.

Weed eradication: the contractor must make allowance for a higher level of maintenance during establishment to ensure that weeds are controlled.

Herbicide use: re-application of herbicide such as Ronstar or equivalent if required.

COMPLIANCE

- Requirement: plant maintenance shall be deemed complete subject to the following compliance with the criteria:
- Repairs to planting media completed
- Ground surfaces are covered with the specified treatment to the specified depths
- Pests, disease, or nutrient deficiencies or toxicities are not evident.
- Organic and rock mulched surfaces have been maintained in a weed free and tidy condition and to the specified depth
- Vegetation is established and well formed
- Plants have healthy root systems that have penetrated into the surrounding, undisturbed ground and not able to be lifted out of its planting hole
- Vegetation is not restricting essential sight lines and signage
- Collection and removal of litter
- All non-conformance reports and defects notifications have been closed out.
- Plant maintenance compliance schedule:

MATERIALS & QUALITY

The design strategy is to provide a durable and high quality landscaped building setting with a consistency of quality and treatments across the site selected to compliment the character of the architecture. Consideration has been given to durability and practicality for ongoing maintenance.

Proposed precast Concrete paving in the public domain will be in accordance Council's standards for public domain works. Material, finishes, furniture and fixtures will be selected with consideration to whole of life costs, detailed and installed to minimize ongoing maintenance needs.

Pruning

- Generally: tree plantings shall be left to grow in a form consistent with the growth habit of the species.
- Pruning: cut back tree canopies and groundcovers to road verges, and light poles and signs as required achieving clear sight lines when viewed along roadway.

Requirement: pruning to be undertaken by a qualified tree surgeon / arborist

Plant Material	Acceptable failure per area	Acceptable concentration of failure
Tube stock given location*	<10%	<15% in any
100-150mm given location*	<5%	<15% in any
45L	<nil	nil%
Turf	<5%	nil%
Trees (200L/ 400L/ 1000L/ Trunk)	< nil%	< nil%

Fertilising

- Generally: the fertiliser regimes have been devised to provide sufficient long-term fertility for the vegetation type and it is anticipated that all except the very high status horticultural beds such as feature plantings (entry and courtyard planting) for colour and foliage will not need regular fertiliser regimes.
- Testing: additional nitrogen may be required due to drawdown effects from composts and mulches and localised waterlogging. To compensate for this, soil testing is to be carried out after 12 months to ascertain nutrient requirements.

Completion

- Cleaning: remove temporary protective fences and tree stakes at the end of the planting maintenance period.





WSUD kerbs and garden beds.

5.2 CONCEPT LANDSCAPE PLANT LIST

PLANT CODE	BOTANICAL NAME	COMMON NAME	MATURITY HEIGHT AND SPREAD (m)	SUPPLY HEIGHT AND SPREAD (m)	CONTAINER SIZE	DENSITY/m²
		TREES				
CUP ana	*Cupaniopsis anacardioides*	Tuckeroo	12m x 3m	5.6 x 5.2	100L	as shown
FLI aus	*Flindersia australis*	Crow's Ash	12m x 5m	5.6 x 5.2	100L	as shown
TRI lau	*Tristaniopsis laurina*	Water Gum	8m x 6m	5.6 x 5.2	100L	as shown
						SUBTOTAL
		GRASSES				
DIA jes	*Dianella caerulea 'Little Jess'*	Dianella Little Jess	0.5m x 0.5m	na	150mm	4
DIA luc	*Dianella caerulea 'Lucia'*	Dianella Lucia	0.5m x 0.5m	na	150mm	4
LIR isa	*Liriope muscari 'Isabella'*	Liriope Isabella	0.5m x 0.5m	na	150mm	4
LOM eve	*Lomandra labill 'Evergreen Baby'*	Lomandra Evergreen Baby	0.5m x 0.5m	na	150mm	4
LOM luc	*Lomandra hystrix 'Lucky Stripe'*	Lomandra	0.5m x 0.5m	na	150mm	4
PEN naf	*Pennisetum alopecuroides 'Nafray'*	Pennisetum Nafray	0.6m x 0.6m	na	150mm	4
POA esk	*Poa labillardieri 'Eskdale'*	Poa	0.6m x 0.6m	na	150mm	4
POA kin	*Poa poiformis 'Kingsdale'*	Poa Kingsdale	0.5m x 0.5m	na	150mm	4
						SUBTOTAL
		GROUNDCOVERS				
CAR ram	*Carpobrotus glaucescens 'Aussie Rambler'*	Pig Face	Creeping	na	150mm	5
WES mun	*Westringia fruticosa 'Mundi'*	Westringia	Creeping	na	150mm	5
ALT lit	*Alternanthera dentata 'Little Ruby'*	Alternanthera Little Ruby	Creeping	na	150mm	5
TRA jas	*Trachelospermum jasminoides*	Star Jasmine	Creeping	na	150mm	5
WES low	*Westringia fruticosa 'Low Horizon'*	Westringia Low Horizon	Creeping	na	150mm	5



Indicative quantities subject to design development

5.3 LANDSCAPE CONCEPT PLAN



Note: Street tree location are indicative only and are subject to co-ordination with future residential driveways and future educational establishment.

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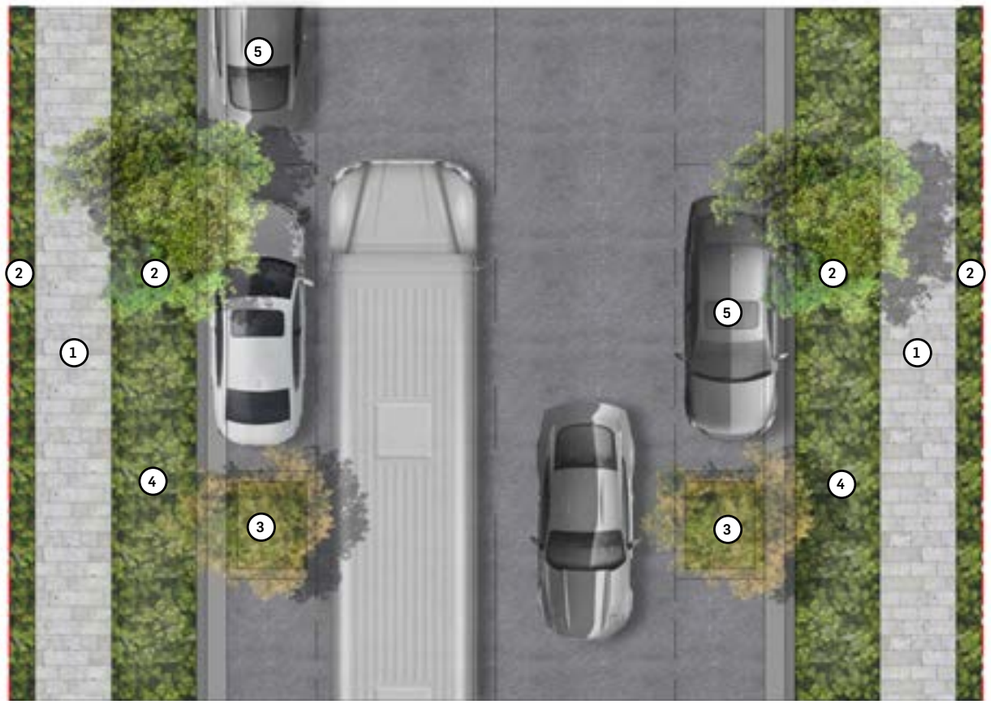
Note: Street tree location are indicative only and are subject to co-ordination with future residential driveways and future educational establishment.

1:1,500 @ A4

5.4 TYPICAL PLAN

LEGEND

1. Precast concrete footpath to Council standard
2. Planter verge refer planting schedule
3. WSUD tree pits - Tristaniopsis laurina
4. Proposed trees - Flindersia australis
5. Street parking



6.0 CONCLUSION

The planning proposal for 80 Betty Cuthbert Drive, Lidcombe has been developed in response to strategic planning directions, the surrounding urban context and existing site constraints and opportunities which resulted in the design principles outlined in this report.

The following table and page identifies 80 Betty Cuthbert proposed development outcome alignment with strategic planning objectives as well as summary of the public benefit.

	CENTRAL CITY DISTRICT PLAN	CUMBERLAND 2030 - LOCAL STRATEGIC PLANNING STATEMENT	PROPOSED OUTCOMES
HOUSING AND COMMUNITY	**Planning Priority C5** Providing housing supply, choice and affordability with access to jobs, services and public transport.	**Planning Priority 5:** Delivering housing diversity to suit changing needs.	Deliver 1.8ha residential land suitable for low-medium density housing types.
	Planning Priority C3 Providing services and social infrastructure to meet people's changing needs	**Planning Priority 9:** Providing high quality, fit-for-purpose community and social infrastructure in line with growth and changing requirements.	Deliver a future educational establishment. Deliver a health facility.
ECONOMY, EMPLOYMENT AND CENTRES	**Planning Priority** C1 Planning for a City supported by Infrastructure	**Planning Priority 4:** Improving accessibility within our town centres **Planning Priority 11:** Promoting access to local jobs, education opportunities and care services.	• Deliver new pedestrian connection to Ironbark Walkway, improving access to TAFE and University of Sydney • Deliver new signalised intersection at Joseph Street, improving the future educational establishment and MSL facility pedestrian catchment and access to regional centres such as Lidcombe and Bankstown

AN UPGRADED & MODERN MSL FACILITY

This proposal includes a land allocation to MSL, who will be constructing a modern facility that will provide a comprehensive range of support and services for people with MS and other neurological conditions. The new MSL facility will promote better life outcomes and provide a range of medical and lifestyle management services and programs.

A FUTURE EDUCATIONAL ESTABLISHMENT

The proposal includes land allocation to the Department of Education to deliver an educational facility within a much needed local catchment. Cumberland LGA is expecting 79,000 additional people by 2036 and this growth increases demand on existing services and infrastructure such as schools.

THE MISSING MIDDLE HOUSING OFFER

Medium density housing is proposed on the surplus land not dedicated to MSL and DoE which is compatible with the adjoining residential area, maintaining the character of the locality.

IMPROVED PERMEABILITY AND ACTIVE TRANSPORT NETWORK

The proposed pedestrian linkage to Ironbark Walkway, new intersection at Joseph Street and pedestrian connection opportunity to Leila Street increase permeability between eastern and western communities including Berala. The direct pedestrian connection through Ironbark Walkway and Norman May Dr will also improve accessibility to more bus services and regional cycleway network at East Street.

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MOTT MACDONALD

80 Betty Cuthbert Drive, Lidcombe Master Plan

Preliminary Environmental Assessment Report

Planning Proposal

04 August 2021

Confidential

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
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B	06/03/20	PH	JW	JW	Updated for referencing
C	24/04/20	KA	EM	JW	Updated following DPIE comments
D	05/05/20	EM	EM	JW	Updated following Urbis comments
E	18/06/21	EM	EM	JW	Updated for layout change
F	14/07/21	EM	EM	JW	Updated following PDNSW comments
G	04/08/21	JW	TL	JW	Updated following PDNSW comments
H	04/08/21	JW	TL	JW	Updated following PDNSW comments

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Information class: Standard

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1 Introduction

Mott MacDonald has been engaged by Department of Planning, Industry and Environment (DPIE), to conduct a Preliminary Environmental Assessment to guide the planning proposal for rezoning of 80 Betty Cuthbert Drive, Lidcombe (the Project). The purpose of this Preliminary Environmental Assessment report is to assist in the identification of key environmental considerations to inform the development of the project.

1.1 Regional context

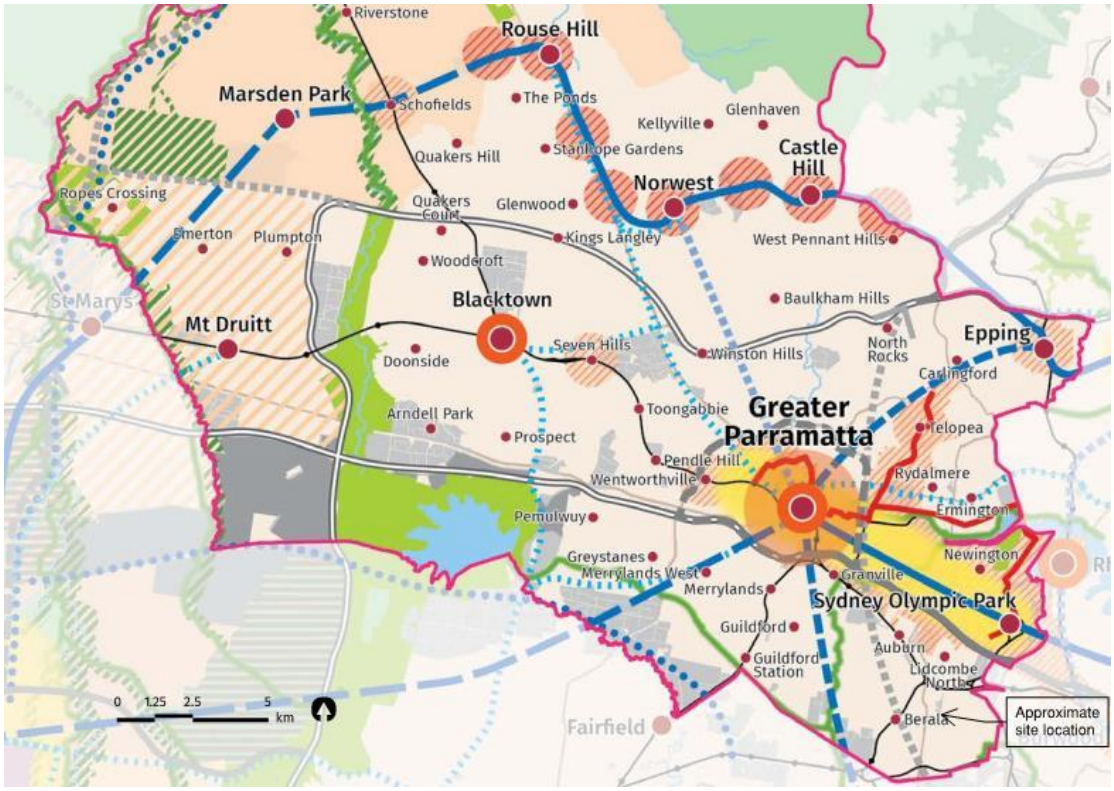
The site is located within the suburb of Lidcombe, approximately 15km west of Sydney CBD and within the Cumberland local government area. The closest major interchange station is Lidcombe Station, 1.5km north of the site, and Berala Station is the nearest station, 1.2km west of the site. The site is surrounded by a mixture of land uses and facilities, with residential land to the north, east and south, an educational site to the south east and the Carnarvon Golf Course to the west.

In March 2018 the NSW Government released the Greater Sydney Region Plan which outlined a vision of three cities; a western parkland city, a central river city and an eastern harbour city. The study area lies within the Central City District as shown in Figure 1 below. It is within close proximity to Lidcombe North and Berala local centres, which have been identified for urban renewal.

1.2 Study area

The project site is located at 80 Betty Cuthbert Drive, Lidcombe (Figure 2). It has a primary frontage to Joseph Street between Georges Avenue to the north and Botanica Drive to the south. The site is approximately 5.8ha in area. It is currently occupied by Multiple Sclerosis Limited (MSL); existing development of the site includes a 1970's circa 4,300sqm brick building that provides office space, treatment facilities and respite care facilities to support the operations of MSL. The existing MSL facilities are positioned at the high point of the site and cover approximately 12% of the site area. The remainder of the site is unused, consisting of amenity grassland with scattered trees. Existing vehicle access to the site is via the intersection of Joseph St and Botanica Drive. The existing access route then enters the site on the southern side via Betty Cuthbert Drive with an existing internal road continuing to the centre of the site where the MSL facility currently lies.

Figure 1: Central city plan



Source: Central City District Plan (Greater Sydney Commission, 2018)

Figure 2: Site overview



Source: Google Earth (2018)

1.3 Proposed development

In 2017, DPIE prepared a master plan for the site which allocated land for a future educational establishment, health facility and for residential use. The masterplan has been developed with key stakeholders, Department of Education (DE) and Multiple Sclerosis Limited (MSL). The future educational establishment will be developed by the DE and the health facility by MSL.

The future educational establishment will be located on a 1.85 ha parcel in the central western portion of the site. The education establishment, for the purpose of this assessment, has been assumed as a 1,000 student primary school, to accommodate a maximum capacity scenario for development of that land. It should be noted that this is an assumption made for this assessment and the establishment may be a different type of school.

A 0.95 ha site adjacent Joseph Street will be used for a new health facility, and the surplus land (approx. 1.78 ha) will be rezoned to medium density residential land (excluding road and drainage areas) and divested. The concept plan of the development is shown in Figure 3 below.

Figure 3: Concept Indicative Layout Plan



Source: Urbis - 80 Betty Cuthbert Drive, Lidcombe – Indicative Layout Plan (02 August 2021)

1.4 Purpose of report

The purpose of this Preliminary Environmental Assessment report is to assist in the identification of key environmental considerations to inform the planning proposal for 80 Betty Cuthbert Drive. Project considerations have been identified for both the construction and operation phase of the

project, where relevant. Recommendations are provided to address the identified project considerations and to fill any data gaps that are apparent. The areas considered in this assessment include:

- noise and vibration;
- fauna and flora biodiversity;
- landscape and visual;
- heritage;
- air quality; and
- surface and groundwater.

1.5 Investigation methodology

This Preliminary Environmental Assessment has relied on publicly available data and a site walkover carried out on 7 March 2019. The following publicly-available data sources have been reviewed:

- NSW Office of Environment and Heritage BioNet database
- NSW Office of Environment and Heritage state heritage register
- NSW Office of Environment and Heritage register of Aboriginal places
- Cumberland Local Environment Plan
- NSW Office of Environment and Heritage air quality database
- NSW Office of Environment and Heritage eSPADE
- Department of Primary Industries (Water) water monitoring database
- Water NSW water quality database

2 Planning and legal considerations

The development of the project must comply with the following planning laws and legislation:

- Environmental Planning and Assessment Act 1979
- Environmental Planning and Assessment Regulations 2000
- Cumberland Local Environment Plan
  - Auburn Local Environmental Plan (2010)
  - Parramatta Local Environmental Plan (2011)
  - Holroyd Local Environmental Plan (2013)
- Relevant State Environmental Planning Policies
- Biodiversity Conservation Act 2016
- Protection of the Environment and Operations Act 1997
- Water Management Act 2000
- Environment Protection and Biodiversity Conservation Act 1999
- Roads Act 1993
- Waste Avoidance and Resource Recovery Act 2001

3 Environmental assessment

A review of the baseline environment and how the project will interact with the environment during both construction and operation has identified the following key environmental considerations for the project:

- Noise and vibration
- Biodiversity (fauna and flora)
- Landscape and visual
- Heritage
- Air quality
- Surface and groundwater

The following subjects will be considered in stand-alone reports and therefore will not be considered in this report:

- Traffic and transport (report reference: MMD-405675-PP-RP-01)
- Utilities and infrastructure (report reference: MMD-405675-PP-RP-02)
- Flooding and water quality management (report reference: MMD-405675-PP-RP-03)
- Contamination (report reference: MMD-405675-PP-RP-04).

3.1 Noise and vibration

3.1.1 Existing environment

The project site is relatively undeveloped, dominated by trees and open grassland. It is surrounded by medium density residential properties on three sides (Figure 4) resulting in a quiet ambient noise environment over most of the site; noise sources noted during the Mott MacDonald visit on 7 March 2019 were limited to infrequent visitors to the existing MSL building, birds, and dogs barking from the adjacent properties.

Joseph Street, a 6-lane road runs along the western boundary of the project site leading to road-generated noises dominating the ambient noise environment and elevated noise levels in the western areas of the site. To the west of the road lies Coleman Park and Carnarvon golf course.

3.1.2 Considerations

The close proximity of sensitive receptors (residential properties) to the site suggests noise and vibration could be a significant issue during construction; the construction phase would utilise heavy vehicles and equipment, which would generate considerable impactful noise and vibration levels.

Once developed, the proposed project could significantly influence the local noise environment and result in an increase in vehicle movements and human-generated noises, as well as building-noise emissions.

3.1.3 Recommendations

The design and layout of the project should consider the adjacent sensitive receivers (residential properties) with the objective to avoid increasing the ambient noise levels they experience when the site has been developed.

High existing noise levels along the western side of the project should be considered in the layout of the project; noise-sensitive land uses should be positioned away from the road. Similarly, the

design and layout of buildings should be considered to minimise the noise levels experienced. Noise abatement strategies (e.g. noise walls/earth banking) should be considered to mitigate the impact of the road on the adjacent land uses.

Construction-generated noise and vibrations should be managed as part of a construction environmental management plan through the implementation of mitigation strategies to reduce the impact on surrounding sensitive receivers. Strategies should be informed by a noise impact modelling study.

Figure 4: Sensitive receivers within 100 metres of project site



3.2 Biodiversity

3.2.1 Existing environment

Figure 5 is an aerial photo showing the distribution of habitats around the site. The project site is dominated by amenity planted grassland with scattered planted trees throughout (Figure 6), including native *Eucalyptus microcorys* (tallowwood), *Eucalyptus resinifera* (red mahogany),

Eucalyptus fibrosa (red ironbark) and *Corymbia maculate* (spotted gum), and non-native *Fraxinus excelsior* (ash). The trees are generally concentrated around the site boundary and the existing building, leaving open areas of grassland in between. An on-site stormwater detention (OSD) basin (Figure 7) is located in the lowest point of the site which was found to be congested with aquatic vegetation.

Figure 5: Distribution of habitat types



Figure 6: Amenity grassland with scattered trees



Figure 7: The detention basin



The NSW Office of Environment and Heritage BioNet database was searched for species protected from harm under the *Biodiversity Conservation Act 2016 and Environment Protection and Biodiversity Conservation Act 1999* on 12 March 2019. The database held records of 42 threatened species and 208 non-threatened species within 5km of the site from the last 5 years. None of the records were a result of a species-sighting within the site. Both lists of species are provided in Appendix A.

Given the habitats present at the site, the following threatened species could utilise the site, although none were seen during the site visit.

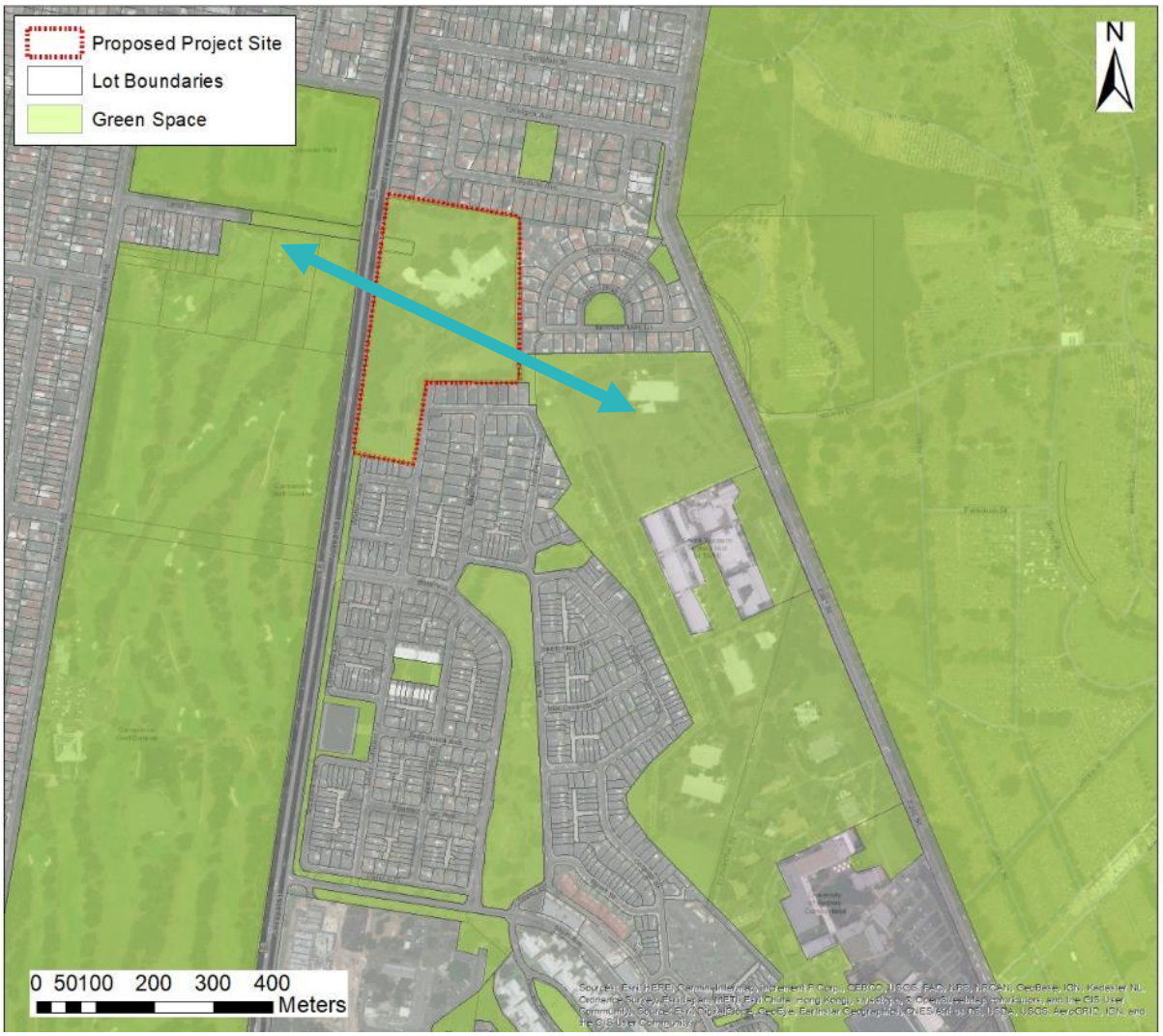
- Green and golden bell frog (*Litoria aurea*)
- Swift parrot (*Lathamus discolour*)
- Powerful owl (*Ninox strenua*)
- Grey-headed flying fox (*Pteropus poliocephalus*)
- Yellow-bellied sheathtail bat (*Saccolaimus flaviventris*)
- Eastern freetail bat (*Mormopterus norfolkensis*)
- Eastern bentwing bat ((*Miniopterus schreiberseii oceanensis*)
- Southern myotis bat (*Myotis macropus*)
- Tadgell's bluebell (*Wahlenbergia multicaulis*)
- Downy wattle (*Acacia pubescens*)

The detention basin has potential to be used for breeding for amphibians, including the threatened green and golden bell frog; 983 sightings of the species have been recorded in the BioNet database in the last five years within 5km of the project site.

Many of the trees within the site offer nesting/roosting opportunities for birds and bats, potentially including the listed threatened species. A noisey miner (*Manorina* melanocephala), protected in NSW, nest was recorded near to the existing building during the site visit. A pair of crested pigeons (*Ocyphaps lophotes*), protected in NSW, were also noted within the site. The habitats within the site will offer feeding opportunities for both birds and bats, whilst also providing a green linkage between the greenspaces of the park and golf course to the west of the project site and the Rookwood cemetery (Figure 8).

Rookwood cemetery includes two endangered ecological vegetation communities within a kilometre of the project site, identified by the NSW Office of Environment and Heritage, as shown in Figure 9. The communities include Cooks River / Castlereagh Ironbark Forest (critically endangered) and Shale Plains Woodland (critically endangered). These communities are significant habitats for a range of threatened fauna species, including, but not limited to, the grey-headed flying fox, yellow-bellied sheathtail bat, and swift parrot.

Figure 8: Biodiversity greenspace linkage



Arrow shows linkage pathway through the site connecting the greenspaces either side.

Figure 9: Endangered vegetation map within 1km of the project site



Source: NSW Office of Environment and Heritage

3.2.2 Considerations

The development of the site will require the removal of trees and lead to a reduction in total green space area in a relatively urban environment. Green space is critical to support biodiversity in an urban environment and maintain healthy populations of native species, particularly those already considered threatened.

The vegetated corridor formed by the site, linking the large areas of green space either side, could be broken by the development of the site, preventing the movement of species between the two areas. This could have negative implications on the resilience of species in the wider area and potentially lead to a reduction in biodiversity and species-abundance.

Disturbance of the site's habitats during construction could directly or indirectly impact the individuals that use the site. Potential impacts range from noise disturbance causing the displacement of individuals to death of individuals from construction activities. The site is not

considered to be of high conservation value due to the type and extent of the habitats present and its resulting low carrying capacity for species, however the potential for impact on protected species should be considered during construction.

3.2.3 Recommendations

The development of the site should look to enhance the biodiversity value of the area. To achieve this the following recommendations should be considered:

- Minimise the number of native trees removed and avoid removal of mature individuals that offer niches (e.g. cracks, crevices and lifted bark) for threatened species
- Target a net gain in the number of trees following development
- Landscape planting should focus on native species and provide complex habitat where possible, including ground-cover vegetation, mid-height bushes and trees
- Enhancement of the detention pond and other proposed water bodies for amphibians, including: pond profiling, in-water and surrounding vegetation, and connectivity with nearby habitats to offer suitable habitat for all life-stages
- Connectivity through the site should be maintained through landscape design; unbroken planting at ground and flight level that link the green spaces to the east and west of the site
- Lighting design should avoid the over-illumination of vegetated areas
- Survey of trees and the detention pond for their potential for protected species; as a minimum the study should include those that will be impacted by the development (*completed by Eco Logical dated 28/06/2019*)
- Detailed survey of the site for downy wattle (*completed by Eco Logical dated 17/06/2019*)
- Construction environmental management plan including strategies to avoid harm to protected species

It should be noted that a Preliminary Tree Assessment (ref: *19SUT-13268v1 by Eco Logical, 2019*) and Habitat Tree Assessment & Targeted Flora Survey (ref: *19SYD–13268 by Eco Logical, 2019*) have been completed for the site and are provided as part of the overall planning proposal submission.

3.3 Landscape and visual amenity

3.3.1 Existing environment

The land surrounding the project site is generally a combination of Low Density Residential (Land use code R2), Medium Density Residential (Land use code R3), Public Recreation (Land use code RE1) and Special Activities (Land use code SP1). Figure 10 provides a map showing the adjacent land uses to the project site.

The project site is located within an urban landscape setting, which is offset to a limited extent by the green spaces to the west and east. The dominance of low-rise low-medium density housing on three sides of the site provides a suburban character to the setting.

Visual receptors of the project site are limited to pedestrians and road users on adjacent roads whose views are not blocked by residential development (i.e. Joseph Street, Betty Cuthbert Drive, Wayland Avenue, Ironbark Way and Bud Greenspan Circuit) and residential properties that back onto the project site boundary.

3.3.2 Considerations

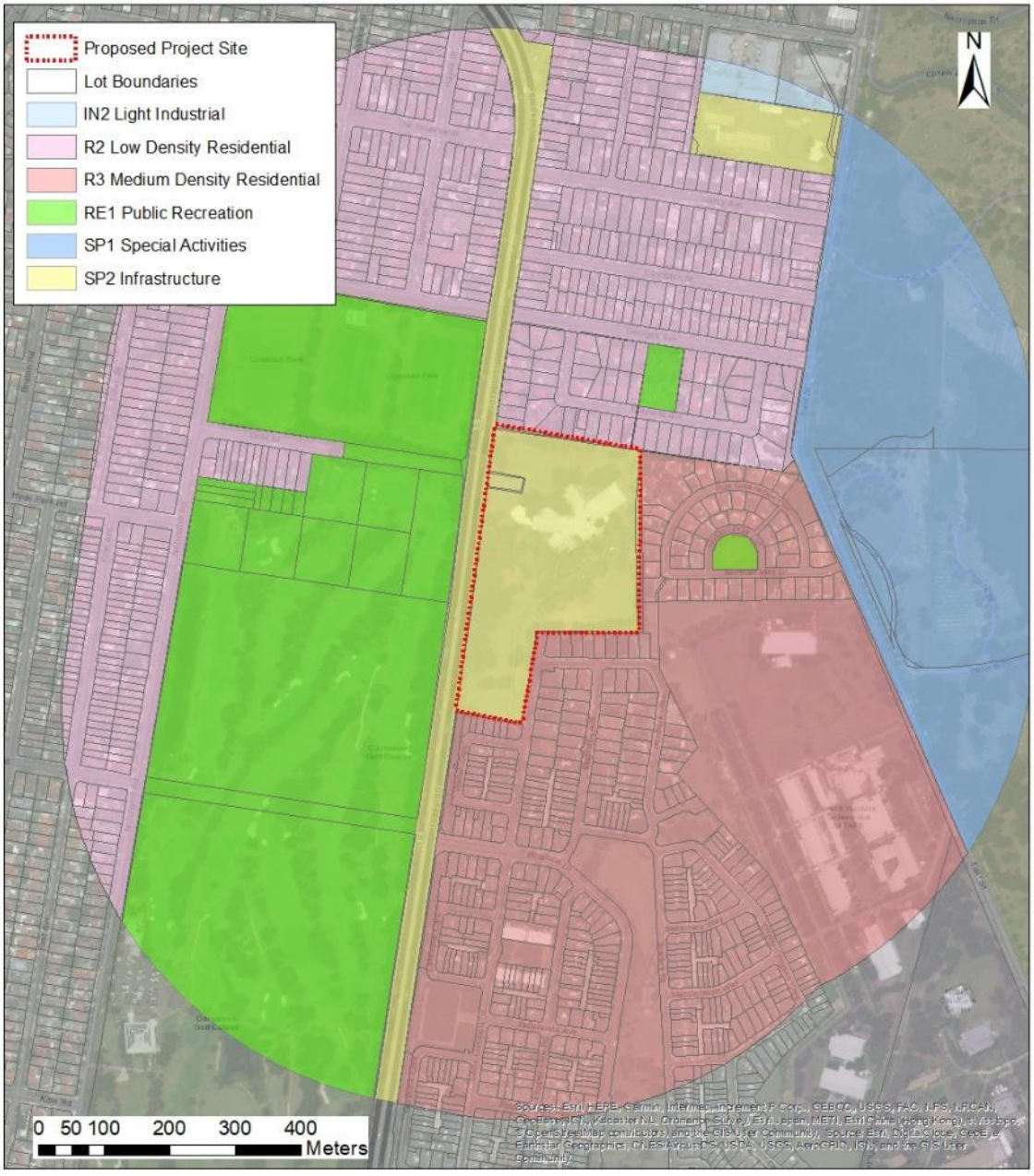
The proposed project has potential to impact the visual amenity and landscape character of the local area. By developing the site, a large area of greenspace will be lost and, as a result, the local landscape setting will appear more developed and urban. This would impact the local visual

receptors, although the impact is not considered to be significant due to the urban setting that prevails already. The view shed and therefore the number of visual receptors would be increased if the project looks to develop building heights in excess of what is currently present in the surrounding area.

3.3.3 Recommendations

Development of the project should respect and enhance the existing landscape character and visual amenity of the site through the use of sensitive building design and project layout. Strategic landscaping should also be used to mask the development from visual receptors and minimise the perceived density of the developed space. This would create a more pleasant setting for future users of the site in comparison to a more traditional residential streetscape.

Figure 10: Land use within 500m of project site



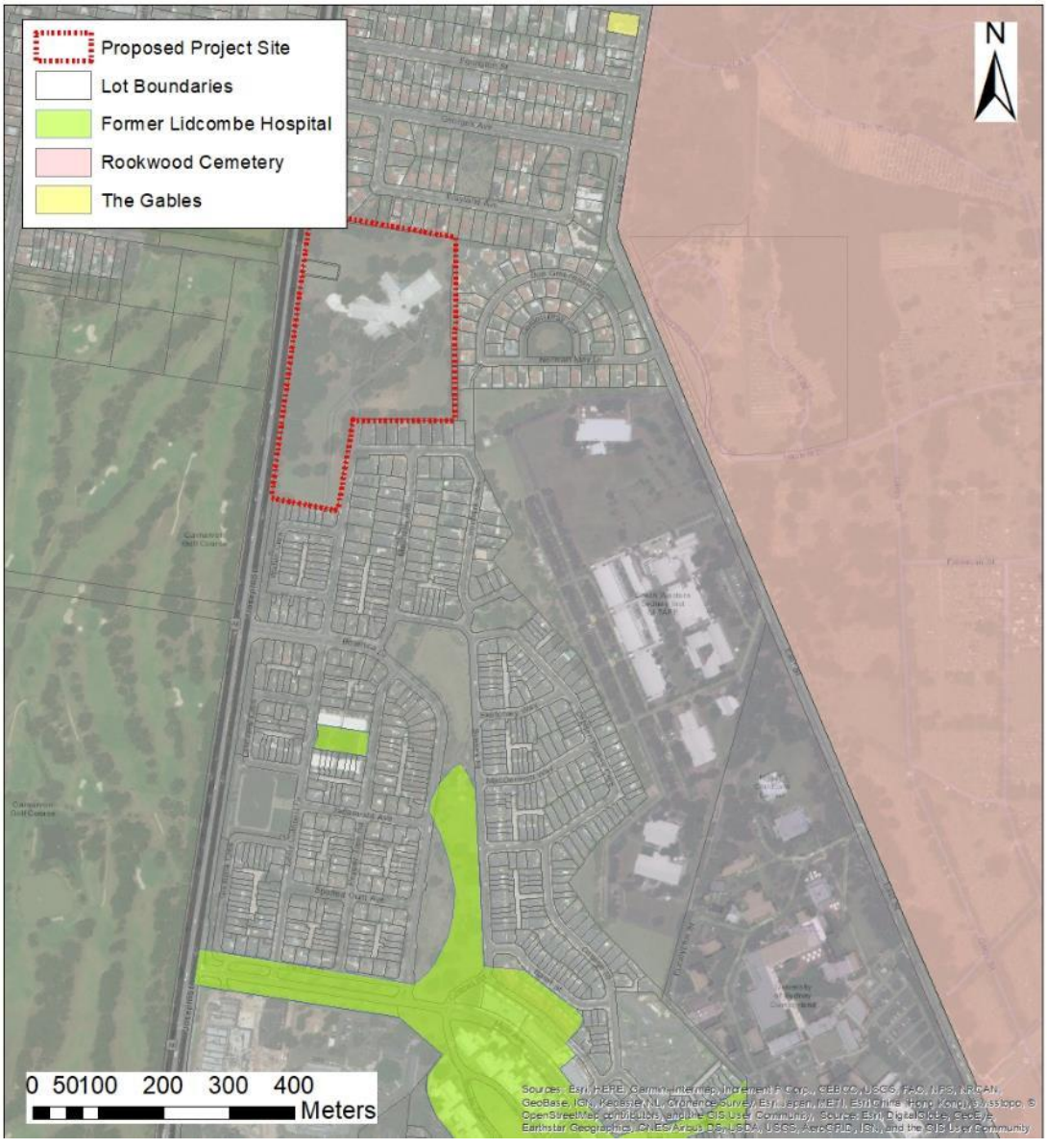
3.4 Heritage

3.4.1 Existing environment

A search using the NSW state heritage register and Cumberland LEP conducted on 14 March 2019 identified two sites of state heritage significance within 500 metres of the project site: Lidcombe hospital precinct and Rockwood cemetery and necropolis, as well as one site of local heritage significance, which is a residential building known as The Gables (Figure 11).

A search using the NSW Aboriginal places register conducted on 14 March 2019 yielded no results for sites of Aboriginal heritage in and near the project site.

Figure 11: Heritage within 500m of the project site



3.4.1.1 Lidcombe hospital precinct

The Lidcombe hospital precinct, which is located 300m to the south of the project site, was in continuous use for over 100 years. It contains a rare collection of architecture and landscapes of the Victorian, Edwardian, Interwar and late-20th Century styles.

3.4.1.2 Rookwood cemetery and necropolis

Rookwood cemetery and necropolis, located 220m east of the project site, is one of the largest burial grounds in the world and contains the largest 19th century cemetery in Australia. The scale of design, gardenesque layout, high quality and diversity of structures, monuments and details of the oldest sections of Rookwood Necropolis represent a rare surviving example of mid to late 19th century ideals for a major public cemetery.

3.4.1.3 The Gables

The Gables is a residential building of local heritage significance, located 350m north east of the project site. It became the home of Frederick Lidbury in 1892, mayor of Rookwood and significant local figure in government. It is a rare example of intact 19th century Victorian Gothic architecture in the municipality, its character and location providing evidence of the influence of transport routes and pastoral activity in the soon-to-be Auburn suburb.

3.4.2 Considerations

Heritage does not need to be considered further by the project due to the absence of heritage within or adjacent to the project site.

3.4.3 Recommendations

No recommendations are made.

3.5 Air quality

3.5.1 Existing environment

A baseline desktop study using the NSW Office of Environment and Heritage air quality database identified Chullora monitoring station as being the closest air quality monitoring station, located in a similar setting just under 2km from the project site. The annual average air quality data recorded at this station is summarised in Table 3-1 below. Air quality at the project site is considered good due to the low number of exceedances recorded since 2014.

Table 3-1: Air quality records for Chullora monitoring station

Date	Sulphur dioxide	Nitrogen dioxide	Carbon monoxide	Ozone	Particulate matter -10µm	Particulate matter - 2.5µm
Maximum standard	20pphm – 1hr average	12pphm – 1hr average	90pphm – 8hr average	10pphm– 1hr average	50µg/m³– 24hr average	25µg/m³– 24hr average
Annual average 2014 to 2018	0.1pphm – 1hr average	1.25pphm – 1hr average	0.28pphm – 1hr average	1.58pphm – 1hr average	19.4µg/m³– 24hr average	8.53 µg/m³– 24hr average
Number of exceedances of maximum standard 2014-2018	0	0	13	5	13	17

Source: NSW Office of Environment and Heritage

The main source of air pollution near the project site is considered to be the traffic along the 6-lane road, Joseph Street, which is adjacent to the western boundary of the site.

The project site is surrounded by residential properties on three sides, which would be the key air quality sensitive receivers for the project.

3.5.2 Considerations

The focus of an impact on air quality from the proposed project would be during the construction phase as the proposed land uses would not involve significant air emissions. Construction can lead to a localised increase in the concentrations of particulates in the air due to dust aerosolisation from civil works. A high density of construction equipment can also influence the local air quality from exhaust emissions.

3.5.3 Recommendations

Construction-generated air quality should be managed as part of a construction environmental management plan through the implementation of mitigation strategies to reduce the impact on surrounding sensitive receivers.

3.6 Surface and groundwater

3.6.1 Existing environment

There are no surface watercourses (i.e. creeks, rivers, etc.) within the immediate catchment of the project site. Runoff from the site is managed through the local stormwater network, including through collection in the on-site stormwater detention basin.

The project site lies within the Bankstown hydrogeological landscape. The hydrogeological landscape is characterised by low hills and rises on Triassic shale and sandstone within the Sydney Basin. It is an area of moderate to high rainfall (over 800mm per year). Groundwater systems are local with short to intermediate flow lengths and are loosely defined by topographic catchments. Water quality within these systems is brackish to saline. Water table depths are intermediate (between 2m and 6m) (NSW Office of Environment and Heritage eSPADE). In the vicinity of the project site, the general hydrogeology consists of porous, extensive aquifers of low to moderate productivity[1].

No groundwater monitoring bores were identified in the local area by undertaking an online search using the Department of Primary Industries (Water) and Water NSW databases. A single groundwater abstraction licence is held at a site 850m to the north of the project site.

3.6.2 Considerations

Due to proposed land uses, the project will likely only interact with the ground water through a pollution pathway during construction.

3.6.3 Recommendations

Construction activities should be managed as part of a construction environmental management plan to ensure groundwater is not impacted by the project.

[1] Harrington N and Cook P (2014) Groundwater in Australia, National Centre for Groundwater Research and Training, Australia

4 Environmentally sustainable design

Opportunities to enhance the site and further reduce environmental risks could be realised through the implementation of sustainability initiatives. The initiatives outlined below are provided as examples of relatively small capital investments that would contribute to reducing further the environmental impact of the proposed development and contribute to wider sustainability performance. These initiatives are all recognised by building certification schemes such as GreenStar, NABERS and the WELL building standard. Developments that are certified under these schemes are often linked with higher rental yields and property resale value.

4.1 Energy and water efficiency

Energy and water efficient design should be considered as early as possible in the design process of any proposed development on the site, but will be especially relevant to residential development, which has a high number of individual end users that could affect the site's overall consumption. By planning for high efficiency, the impact of the development on the wider energy and water networks can be reduced.

The orientation of buildings should be considered to optimise the natural warmth of the sun in the winter months and avoid the need for high usage of cooling equipment in the summer months. The use of insulation to reduce heat loss and passive ventilation design would also contribute to this objective. Additionally, window placement and sizing will also play a role in reducing the need for indoor lighting in residential dwellings, and specification of low energy white goods and LED lighting equipment will contribute to NABERS or Green Star ratings, should these be targeted.

Rainwater harvesting tanks would reduce potable water consumption by providing a recyclable alternative, saving money for the bill payer throughout the life of the development. Rain water can be stored for non-potable uses, such as flushing toilets or watering gardens, and can be returned to the system for filtering and reuse. Collecting excess rainwater can also help to slow flows in a flood event, easing pressure on the surrounding drainage system and reducing the likelihood of surface water flooding. Further water efficiency measures, including the use of greywater recycling systems and low-flow bathroom fittings, are all certifiable under the NABERS and GreenStar certification schemes and should be considered in specifications for any future developments on the site.

4.2 Renewable energy generation

The operational energy demand of the site could be met partially by renewable energy from solar, as the lowest cost renewable source on the market. With the site's position at a high point in the landscape, it will benefit from all-day sun exposure. Further study should be undertaken to identify suitable roof areas for the installation of solar panels, and the contribution that could be made to the site's overall energy demand. Renewable energy can also be provided to the site through the purchase of green power. Onsite renewable energy is also rewarded by Green Star and will support any carbon reduction targets identified for the developments on site.

4.3 Green infrastructure

Much of the existing green space on the site will be redeveloped. Green infrastructure, such as green roofs, green walls and landscaping could help to offset this loss, at the same time delivering numerous environmental benefits for the site. Green infrastructure is important in providing mitigation against climate change, by absorbing atmospheric pollutants (such as carbon dioxide) and solar heat. It also provides environmental benefits by supporting local biodiversity, and contributes to the principles of biophilic design, which is a key element of the WELL building standard.

It should be noted that any planting regime that is selected should consider the future climate conditions, which are likely to involve more extreme temperatures and prolonged periods of drought. Careful plant selection will ensure that the plants remain resilient and do not require much maintenance.

5 Conclusions

5.1 Project considerations

This preliminary environmental assessment report has identified the key environmental considerations for the planning proposal of 80 Betty Cuthbert Drive. This assessment has relied on publicly available data and a site walkover carried out on 7 March 2019. The following environmental considerations are considered key for the development of the project:

- **Noise and vibration** – The development would impact adjacent residents during both construction and operation. The development would be subject to significant noise levels from Joseph Street.
- **Biodiversity** – Development of the site would result in the reduction of total greenspace in the Lidcombe area and potentially break a green linkage between adjacent large areas of greenspace to the west and east. At a site level, the development would impact breeding and foraging opportunities for fauna species, potentially including threatened species, which are of conservation concern. Construction activities could impact protected species as listed in Section 3.2.
- **Landscape and visual** – The Project has the potential to impact the visual amenity and landscape character of the local area.
- **Heritage** - Heritage does not need to be considered further by the project due to the absence of heritage within or adjacent to the project site.
- **Air quality** - The focus of an impact on air quality from the proposed project would be during the construction phase as the proposed land uses would not involve significant air emissions.
- **Surface and groundwater** - Due to proposed land uses, the project will likely only interact with the ground water through a pollution pathway during construction.

The following subjects will be considered in stand-alone reports and therefore were not considered in this report:

- Traffic and transport (report reference: MMD-405675-PP-RP-01)
- Utilities and infrastructure (report reference: MMD-405675-PP-RP-02)
- Flooding and water quality management (report reference: MMD-405675-PP-RP-03)
- Contamination (report reference: MMD-405675-PP-RP-04).

5.2 Project development recommendations

The following recommendations are suggested to address the identified project considerations and to fill any data gaps that are apparent:

5.2.1 Noise and vibration

- The design and layout of the project should consider the adjacent sensitive receivers (residential properties) with the objective to avoid increasing the ambient noise levels they experience when the site has been developed.
- High existing noise levels along the western side of the project should be considered in the layout and design of the project.
- Noise abatement mitigation strategies should form part of a construction environmental management plan.

5.2.2 Biodiversity

- Minimise the number of native trees removed and avoid removal of mature individuals that offer niches (e.g. cracks, crevices and lifted bark) for threatened species
- Target a net gain in the number of trees following development
- Landscape planting should focus on native species and provide complex habitat where possible, including ground-cover vegetation, mid-height bushes and trees
- Enhancement of the detention pond and other proposed water bodies for amphibians, including: pond profiling, in-water and surrounding vegetation, and connectivity with nearby habitats to offer suitable habitat for all life-stages
- Connectivity through the site should be maintained through landscape design; unbroken planting at ground and flight level that link the green spaces to the east and west of the site
- Lighting design should avoid the over-illumination of vegetated areas
- Survey of trees and the detention pond for their potential for protected species; as a minimum the study should include those that will be impacted by the development (completed)
- Detailed survey of the site for downy wattle (completed)
- Construction environmental management plan including strategies to avoid harm to protected species

5.2.3 Landscape and visual amenity

- Development of the project should respect and enhance the existing landscape character and visual amenity of the site

5.2.4 Heritage

- Heritage does not need to be considered further by the project due to the absence of heritage within or adjacent to the project site.

5.2.5 Air quality

- Construction-generated air quality should be managed as part of a construction environmental management plan through the implementation of mitigation strategies to reduce the impact on surrounding sensitive receivers.

5.2.6 Surface and groundwater

- Construction activities should be managed as part of a construction environmental management plan to ensure groundwater is not impacted by the project.

5.3 Environmentally sustainable design

Opportunities to enhance the site and further reduce environmental risks could be realised through the implementation of environmentally sustainable design initiatives, including:

- Energy and water efficiency
- Renewable energy generation
- Green infrastructure

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A. OEH BioNet records

A.1 Threatened species records

Fauna

- Green and Golden Bell Frog (*Litoria aurea*) – 983 sightings
- Black Bittern (*Ixobrychus flavicollis*) – 1 sighting
- Spotted Harrier (*Circus assimilis*) – 1 sighting
- White-bellied Sea-Eagle (*Haliaeetus leucogaster*) – 26 sightings
- Little Eagle (*Hieraaetus morphnoides*) – 1 sighting
- Eastern Osprey (*Pandion cristatus*) – 1 sighting
- Australian Painted Snipe (*Rostratula australis*) – 1 sighting
- Curlew Sandpiper (*Calidris ferruginea*) – 3 sightings
- Great Knot (*Calidris tenuirostris*) – 1 sighting
- Broad-billed Sandpiper (*Limicola falcinellus*) – 1 sighting
- Black-tailed Godwit (*Limosa limosa*) – 1 sighting
- Little Tern (*Sternula albifrons*) – 1 sighting
- Swift Parrot (*Lathamus discolour*) – 1 sighting
- Powerful Owl (*Ninox strenua*) – 5 sightings
- Eastern Grass Owl (*Tyto longimembris*) – 1 sighting
- Regent Honeyeater (*Anthochaera Phrygia*) – 1 sighting
- Dusky Woodswallow (*Artamus cyanopterus cyanopterus*) – 2 sightings
- Grey-headed Flying-fox (*Pteropus poliocephalus*) – 12 sightings
- Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*) – 1 sighting
- Eastern Freetail-bat (*Mormopterus norfolkensis*) – 1 sighting
- Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*) – 32 sightings
- Southern Myotis (*Myotis Macropus*) – 10 sightings

Flora

- Tadgell's Bluebell (*Wahlenbergia multicaulis*) – 15 sightings
- Narrow-leafed Wilsonia (*Wilsonia backhousei*) – 1 sighting
- Epacris purpurascens (*Epacris purpurascens var. purpurascens*) – 1 sighting
- Downy Wattle (*Acacia pubescens*) – 53 sightings
- Magenta Lilly Pilly (*Syzygium paniculatum*) – 1 sighting
- Pomaderris prunifolia (*Pomaderris prunifolia*) – 2 sightings
- Zannichellia palustris (*Zannichellia palustris*) – 1 sighting

A.2 Non-threatened species records (top five most frequent)

Amphibia

- Eastern Dwarf Tree Frog (*Litoria fallax*) – 978 sightings
- Brown-striped Frog (*Limnodynastes peronii*) – 559 sightings
- Peron's Tree Frog (*Litoria peronii*) – 493 sightings
- Common Eastern Froglet (*Crinia signifera*) – 259 sightings

Aves

- Noisy Miner (*Manorina melanocephala*) – 732 sightings

- Superb Fairy-wren (*Malurus cyaneus*) – 726 sightings
- Australian White Ibis (*Threskiornis Molucca*) – 572 sightings
- Australian Raven (*Corvus coronoides*) – 572 sightings
- Welcome Swallow (*Hirundo neoxena*) – 501 sightings

Reptilia

- Eastern Water-skink (*Eulamprus quoyii*) – 75 sightings
- Dark-flecked Garden Sunskink (*Lampropholis delicata*) – 56 sightings
- Eastern Blue-tongue (*Tiliqua scincoides*) – 37 sightings
- Eastern Snake-necked Turtle (*Chelodina longicollis*) – 29 sightings
- Pale-flecked Garden Sunskink (*Lampropholis guichenoti*) – 26 sightings

Mammalia

- Gould's Wattled Bat (*Chalinolobus gouldii*) – 40 sightings
- White-striped Freetail-bat (*Austronomus australis*) – 34 sightings
- Lesser Long-eared Bat (*Nyctophilus geoffroyi*) – 33 sightings
- Eastern Bentwing-bat (Miniopterus schreibersii oceanensis) – 32 sightings
- Common Ringtail Possum (*Pseudocheirus peregrinus*) – 25 sightings



80 Betty Cuthbert Drive, Lidcombe – Preliminary Tree Assessment

The Department of Planning, Industry and Environment

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Template 2.8.1

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Abbreviations

Abbreviation	Description
AQF	Australian Qualifications Framework
AS	Australian Standards
DBH	Diameter at Breast Height
ELA	Eco Logical Australia
m	Metre
mm	Millimetre
NDE	Non-Destructive Excavation
NO	Number
NSW	New South Wales
SP	Species
SRZ	Structural Root Zone
TPZ	Tree Protection Zone
VTA	Visual Tree Assessment

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1. Background

1.1 Proposed activity

Eco Logical Australia Pty Ltd (ELA) was commissioned by Development and Transactions (D&T) a division of the NSW Department of Planning, Industry and Environment (DPIE) to prepare a preliminary tree assessment for trees located within the grounds of the MS Studdy Centre at Lidcombe. The centre currently operates as respite centre.

The key features of the proposed development that are likely to negatively affect the subject trees (trees within the study area) can be summarised as follows:

- excavation works
- plant movement
- changes in soil grades
- installation of underground services.

1.2 The study area

The study area is within the area of 80 Betty Cuthbert Drive at Lidcombe and covers 5.85 hectares. It is bounded by Joseph Street, Wayland Avenue and Betty Cuthbert Drive and is located within the Local Government Area of Cumberland Council. The study area is mapped in Appendix A.

1.3 Purpose of report

The purpose of this report is to:

- assess the current overall health and condition of the subject trees
- evaluate the retention value of the subject trees

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2. Method

2.1 Definitions used in this assessment

2.1.1 Definition of a tree

Cumberland Council defines a tree as being:

> *"any woody and soft wooded perennial plant over 3.6 metres in height" (Cumberland Council 2013)".*

2.1.2 Tree protection zone (TPZ)

The TPZ is the combination of crown and root area (as defined by AS 4970-2009) that requires restriction of access during the construction process. Tree sensitive construction measures must be implemented if works are to proceed within the Tree Protection Zone.

2.1.3 Structural root zone (SRZ)

The SRZ is the area of the root system (as defined by AS 4970-2009) used for stability, mechanical support and anchorage of the tree. It is critical for the support and stability of trees. Severance of roots within the SRZ is not recommended as it may lead to the destabilisation and/or decline of the tree.

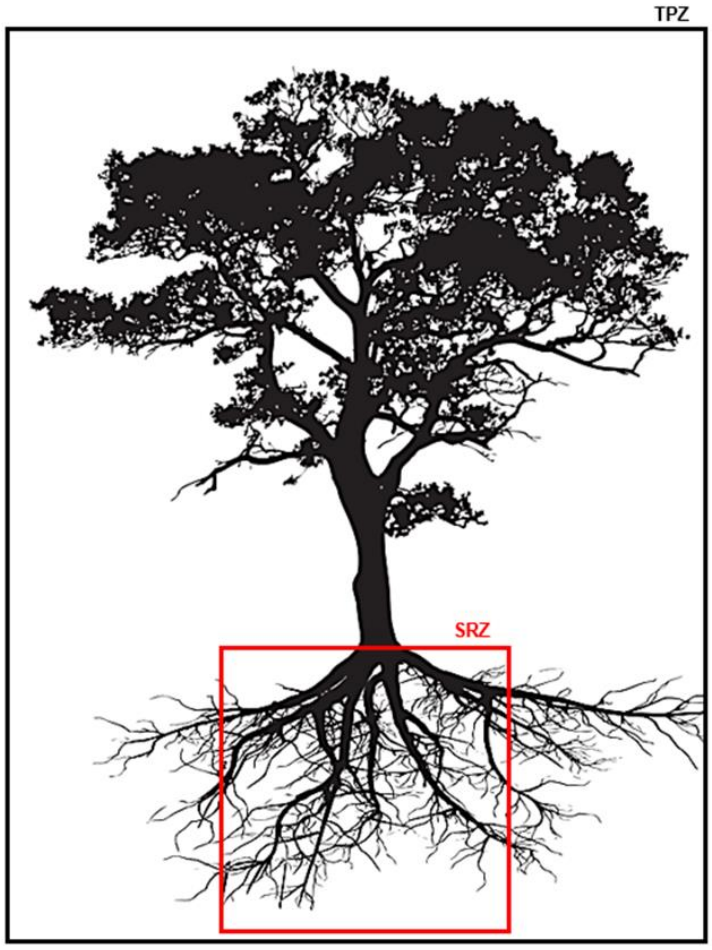


Figure 1: Indicative TPZ and SRZ

2.2 Tree assessment

The health and structure of the subject trees was assessed in accordance with a stage one visual tree assessment (VTA) as formulated by Mattheck & Breloer (1994), and practices consistent with modern arboriculture. Measurements to determine the tree protection zone were carried out in accordance with Clause 3.2 and 3.3.5 of AS4970-2000 Protection of Trees on Development Sites (Standards Australia 2009).

A total of **483** subject trees were inspected in May and June 2019 by AQF Level 5 Consulting Arborist, Elizabeth Hannon.

The following applies to this methodology:

- Trees were inspected from ground level, without the use of any invasive or diagnostic tools and testing. Trees that met the definition of a tree under Cumberland Council's provisions (2013)
- No aerial inspections or root mapping was undertaken.
- Tree heights were determined using a clinometer 15 metres from the base of the tree
- Canopy spread was determined using a measured stride out on site.
- The diameter at breast height (DBH) is a circumference measurement of the tree at 1.4 metres above ground and is done using a tape measure and placing it around the trunk of the tree. Some trees DBH have been estimated using visual assessment out on site. The DBH measurements are used to determine the area for the tree protection zone (which also incorporates the structural root zone).
- The structural root zone (SRZ) was calculated by an estimated measurement of the trunk diameter taken above the root buttress
- Tree identification to species level was based on broad taxonomical features present and visible from ground level at the time of inspection.
- The location of trees was determine using a detailed survey and provided by the client in a geo-referenced .dwg file.

2.3 Retention value

The retention value/importance of a tree or group of trees is determined using a combination of environmental, cultural, physical and social values. This tree retention assessment has been undertaken in accordance with the Institute of Australian Consulting Arboriculturists (IACA) *Significance of a Tree, Assessment Rating System (STARS©)*. The following categories were used:

- **Low**: These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
- **Medium**: These trees are moderately important for retention. Their removal should only be considered if adversely affected by the proposed works and all other alternatives have been considered and exhausted.
- **High**: These trees are considered important and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by Australian Standard AS4970 - Protection of trees on development sites.

Further details and assessment criteria are in Appendix B.

3. Results and discussion

Results of the arboricultural assessment are tabulated and mapped in Appendix A and Table 1.

3.1 Trees not worthy of retention

- **Low retention value**: A total of **173** trees with a low retention value are not considered important for retention, nor require special works or design modification to be implemented for their retention.

3.2 Trees to be retained where possible

- **Medium retention value**: A total of **294** trees with a medium retention value should be retained wherever possible but should not be a constraint on the development.

3.3 Trees recommended for retention

- **High retention value**: A total of **16** trees with a high retention value are considered important for retention and should be retained and protected wherever possible. All opportunities for retaining these subject trees using design modification and tree sensitive construction techniques should be explored.

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Table 1: Results of arboricultural assessment

Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
1	*Corymbia maculata*	13	12	Fair	Fair	**Medium**	1001	12000	3300	Sparse
2	*Eucalyptus microcorys*	10	8	Fair	Fair	**Medium**	580	7000	2600	
3	*Eucalyptus microcorys*	13	15	Good	Fair	**Medium**	1406	17000	3800	
4	*Eucalyptus microcorys*	17	16	Fair	Poor	**Low**	950	11000	3200	Co dominant
5	*Eucalyptus microcorys*	13	11	Good	Poor	**Low**	800	9600	3000	Multi trunked
6	*Eucalyptus microcorys*	13	11	Poor	Fair	**Low**	500	6000	2500	
7	*Eucalyptus microcorys*	8	7	Fair	Poor	**Low**	300	3600	2000	
8	*Eucalyptus microcorys*	12	13	Fair	Fair	**Medium**	400	4800	2300	
9	*Eucalyptus fibrosa*	20	19	Fair	Fair	**Medium**	850	10000	3100	Previous branch failures
10	*Eucalyptus microcorys*	14	12	Fair	Poor	**Low**	600	7200	2700	Multi trunked
11	*Eucalyptus fibrosa*	15	12	Poor	Fair	**Low**	550	6600	2600	
12	*Eucalyptus fibrosa*	8	7	Poor	Poor	**Low**	200	2400	1700	
13	*Eucalyptus fibrosa*	18	15	Fair	Poor	**Medium**	600	7200	2700	Previous branch failures
14	*Eucalyptus microcorys*	14	12	Fair	Fair	**Low**	400	4800	2300	Sparse
15	*Eucalyptus microcorys*	15	14	Good	Poor	**Medium**	700	8400	2800	Multi trunked
16	*Eucalyptus microcorys*	13	12	Poor	Poor	**Low**	500	6000	2500	Bottle butt
17	*Eucalyptus microcorys*	13	10	Fair	Poor	**Low**	550	6600	2600	
18	*Eucalyptus microcorys*	16	17	Fair	Poor	**Low**	600	7200	2700	Multi trunked
19	*Eucalyptus microcorys*	15	13	Poor	Poor	**Low**	500	6000	2500	
20	*Eucalyptus microcorys*	17	16	Fair	Poor	**Low**	550	6600	2600	Codominant from base
21	*Eucalyptus microcorys*	9	5	Fair	Poor	**Low**	200	2400	1700	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
22	*Eucalyptus microcorys*	15	12	Fair	Poor	**Low**	600	7200	2700	
23	*Eucalyptus microcorys*	14	13	Fair	Poor	**Low**	750	9000	2900	Burls
24	*Eucalyptus microcorys*	16	15	Fair	Poor	**Low**	850	10000	3100	Dead leader
25	*Eucalyptus microcorys*	9	8	Fair	Poor	**Medium**	900	11000	3200	Previously lopped
26	*Eucalyptus longifolia*	20	18	Good	Fair	**Medium**	700	8400	2800	Near wetland
27	*Eucalyptus microcorys*	5	3	Fair	Poor	**Low**	200	2400	1700	
28	*Eucalyptus microcorys*	13	12	Fair	Fair	**Medium**	350	4200	2100	
29	*Eucalyptus microcorys*	12	6	Poor	Fair	**Low**	250	3000	1800	
30	*Eucalyptus microcorys*	9	5	Poor	Fair	**Low**	250	3000	1800	
31	*Eucalyptus microcorys*	12	11	Fair	Poor	**Low**	250	3000	1800	
32	*Eucalyptus microcorys*	15	8	Fair	Fair	**Medium**	300	3600	2000	
33	*Casuarina cunninghamiana*	15	11	Poor	Poor	**Low**	260	3100	1900	
34	*Eucalyptus microcorys*	16	15	Poor	Poor	**Low**	1000	12000	3300	Co dominant from base
35	*Eucalyptus microcorys*	17	9	Fair	Poor	**Low**	200	2400	1700	
36	*Casuarina glauca*	12	5	Fair	Fair	**Medium**	350	4200	2100	
37	*Eucalyptus microcorys*	9	5	Poor	Poor	**Low**	300	3600	2000	
38	*Acacia sp.*	8	7	Fair	Poor	**Low**	150	2000	1500	Borers
39	*Eucalyptus fibrosa*	17	16	Good	Good	**High**	780	9400	3000	
40	*Eucalyptus fibrosa*	17	18	Fair	Poor	**Low**	700	8400	2800	Inclusion. Branch failures
41	*Eucalyptus longifolia*	7	5	Fair	Poor	**Low**	350	4200	2100	
42	*Eucalyptus microcorys*	7	5	Fair	Poor	**Low**	400	4800	2300	Multi trunked
43	*Eucalyptus microcorys*	10	9	Good	Fair	**Medium**	450	5400	2400	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
44	*Eucalyptus sideroxylon*	11	9	Good	Fair	**Medium**	350	4200	2100	
45	*Eucalyptus microcorys*	8	7	Fair	Poor	**Low**	500	6000	2500	Multi trunked
46	*Eucalyptus microcorys*	14	12	Good	Fair	**Medium**	450	5400	2400	
47	*Eucalyptus microcorys*	15	13	Good	Fair	**Medium**	550	6600	2600	
48	*Eucalyptus sp.*	12	9	Good	Fair	**Medium**	450	5400	2400	
49	*Eucalyptus microcorys*	11	7	Poor	Fair	**Low**	400	4800	2300	Sparse
50	*Melaleuca quinquenervia*	5	2	Poor	Poor	**Low**	100	2000	1500	
51	*Eucalyptus microcorys*	10	9	Poor	Fair	**Low**	480	5800	2400	
52	*Eucalyptus microcorys*	14	11	Fair	Fair	**Medium**	400	4800	2300	
53	*Eucalyptus microcorys*	12	11	Poor	Poor	**Low**	600	7200	2700	Co dominant. Sparse
54	*Eucalyptus pilularis*	7	6	Poor	Poor	**Low**	700	8400	2800	Dead leaders
55	*Eucalyptus piperita*	8	5	Fair	Poor	**Low**	350	4200	2100	Suppressed growth
56	*Eucalyptus pilularis*	12	10	Good	Fair	**Medium**	480	5800	2400	
57	*Eucalyptus microcorys*	13	13	Good	Fair	**Medium**	370	4400	2200	
58	*Eucalyptus pilularis*	13	11	Poor	Poor	**Low**	550	6600	2600	Dead leader
59	*Eucalyptus longifolia*	9	8	Good	Poor	**Low**	350	4200	2100	Co dominant
60	*Melaleuca quinquenervia*	4	2	Fair	Poor	**Low**	200	2400	1700	Suppressed
61	*Melaleuca quinquenervia*	6	3	Poor	Poor	**Low**	150	2000	1500	Suppressed
62	*Melaleuca quinquenervia*	5	3	Poor	Fair	**Low**	350	4200	2100	Suppressed
63	*Eucalyptus microcorys*	9	8	Fair	Fair	**Medium**	540	6500	2600	
64	*Eucalyptus microcorys*	8	7	Fair	Fair	**Medium**	320	3800	2100	
65	*Eucalyptus microcorys*	11	8	Good	Fair	**Medium**	520	6200	2500	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
66	*Eucalyptus sp.*	12	11	Fair	Poor	**Low**	550	6600	2600	Inclusion. Plate lift
67	*Eucalyptus sp.*	10	8	Fair	Poor	**Low**	300	3600	2000	
68	*Eucalyptus microcorys*	13	12	Fair	Good	**Medium**	740	8900	2900	
69	*Eucalyptus microcorys*	9	7	Fair	Poor	**Low**	450	5400	2400	
70	*Eucalyptus microcorys*	12	8	Fair	Fair	**Medium**	400	4800	2300	
71	*Eucalyptus longifolia*	12	7	Poor	Fair	**Low**	270	3200	1900	
72	*Eucalyptus microcorys*	12	10	Good	Fair	**Medium**	450	5400	2400	
73	*Eucalyptus pilularis*	11	10	Poor	Poor	**Low**	550	6600	2600	Dead
74	*Eucalyptus pilularis*	15	14	Good	Good	**High**	580	7000	2600	
75	*Eucalyptus longifolia*	12	11	Fair	Fair	**Medium**	540	6500	2600	
76	*Eucalyptus microcorys*	9	6	Fair	Fair	**Medium**	350	4200	2100	
77	*Eucalyptus microcorys*	12	11	Fair	Fair	**Medium**	550	6600	2600	
78	*Eucalyptus microcorys*	10	11	Fair	Poor	**Low**	650	7800	2800	Previously lopped. Sparse
79	*Eucalyptus microcorys*	11	10	Fair	Fair	**Medium**	550	6600	2600	
80	*Eucalyptus microcorys*	12	11	Fair	Fair	**Medium**	300	3600	2000	
81	*Eucalyptus microcorys*	11	12	Good	Fair	**Medium**	550	6600	2600	
82	*Melaleuca quinquenervia*	8	5	Fair	Fair	**Medium**	400	4800	2300	
83	*Eucalyptus longifolia*	9	6	Fair	Poor	**Low**	200	2400	1700	Co dominant from base
84	*Eucalyptus pilularis*	15	11	Fair	Fair	**Medium**	740	8900	2900	Minor borer
85	*Eucalyptus microcorys*	12	9	Good	Fair	**Medium**	400	4800	2300	
86	*Eucalyptus pilularis*	15	16	Good	Fair	**Medium**	970	12000	3300	
87	*Melaleuca quinquenervia*	7	5	Poor	Poor	**Low**	320	3800	2100	Sparse

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
88	*Eucalyptus microcorys*	9	8	Good	Fair	**Medium**	400	4800	2300	
89	*Eucalyptus microcorys*	10	7	Fair	Fair	**Medium**	450	5400	2400	
90	*Melaleuca quinquenervia*	6	3	Poor	Poor	**Low**	350	4200	2100	
91	*Melaleuca quinquenervia*	6	3	Poor	Fair	**Low**	270	3200	1900	
92	*Melaleuca quinquenervia*	4	3	Poor	Poor	**Low**	150	2000	1500	
93	*Eucalyptus microcorys*	11	9	Good	Fair	**Medium**	400	4800	2300	
94	*Melaleuca quinquenervia*	7	4	Fair	Fair	**Medium**	300	3600	2000	
95	*Eucalyptus pilularis*	15	14	Good	Good	**High**	1204	14000	3600	
96	*Melaleuca quinquenervia*	8	3	Poor	Fair	**Low**	400	4800	2300	
97	*Eucalyptus pilularis*	15	12	Good	Fair	**Medium**	820	9800	3000	
98	*Eucalyptus microcorys*	6	5	Fair	Poor	**Low**	400	4800	2300	Suppressed
99	*Eucalyptus microcorys*	7	6	Fair	Poor	**Low**	300	3600	2000	Co dominant
100	*Eucalyptus haemastoma*	6	4	Fair	Poor	**Low**	150	2000	1500	Co dominant
101	*Eucalyptus tereticornis*	13	9	Fair	Fair	**Medium**	390	4700	2200	
102	*Eucalyptus microcorys*	4	2	Poor	Poor	**Low**	200	2400	1700	
103	*Melaleuca quinquenervia*	4	2	Poor	Poor	**Low**	340	4100	2100	Sparse
104	*Corymbia maculata*	10	5	Fair	Fair	**Medium**	300	3600	2000	
105	*Melaleuca quinquenervia*	5	3	Fair	Fair	**Medium**	350	4200	2100	
106	*Melaleuca quinquenervia*	8	6	Fair	Fair	**Medium**	475	5700	2400	
107	*Corymbia maculata*	11	6	Fair	Fair	**Medium**	300	3600	2000	
108	*Corymbia maculata*	4	5	Fair	Fair	**Low**	200	2400	1700	
109	*Melaleuca quinquenervia*	6	4	Poor	Poor	**Low**	300	3600	2000	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
110	*Eucalyptus haemastoma*	5	4	Fair	Poor	**Low**	200	2400	1700	Suppressed
111	*Eucalyptus leucoxylon*	13	12	Good	Good	**High**	800	9600	3000	
112	*Melaleuca quinquenervia*	3	2	Poor	Poor	**Low**	300	3600	2000	Suppressed
113	*Eucalyptus leucoxylon*	13	14	Good	Good	**High**	650	7800	2800	
114	*Eucalyptus leucoxylon*	10	9	Good	Fair	**Medium**	600	7200	2700	
115	*Melaleuca quinquenervia*	5	4	Fair	Fair	**Medium**	350	4200	2100	
116	*Eucalyptus pilularis*	7	7	Poor	Poor	**Low**	650	7800	2800	Borer
117	*Melaleuca quinquenervia*	8	5	Fair	Fair	**Medium**	300	3600	2000	
118	*Melaleuca quinquenervia*	8	4	Poor	Poor	**Low**	390	4700	2200	
119	*Melaleuca quinquenervia*	6	4	Fair	Fair	**Medium**	400	4800	2300	
120	*Eucalyptus microcorys*	10	8	Fair	Poor	**Low**	450	5400	2400	Co dominant
121	*Eucalyptus pilularis*	12	7	Poor	Fair	**Low**	410	4900	2300	
122	*Eucalyptus microcorys*	10	9	Fair	Poor	**Low**	500	6000	2500	Lopped
123	*Eucalyptus microcorys*	11	9	Good	Poor	**Medium**	570	6800	2600	
124	*Eucalyptus leucoxylon*	15	11	Good	Fair	**Medium**	420	5000	2300	
125	*Melaleuca quinquenervia*	5	3	Fair	Poor	**Low**	350	4200	2100	
126	*Melaleuca quinquenervia*	6	3	Poor	Fair	**Low**	320	3800	2100	
127	*Melaleuca quinquenervia*	6	4	Fair	Fair	**Medium**	380	4600	2200	
128	*Melaleuca quinquenervia*	7	4	Good	Fair	**Medium**	370	4400	2200	
129	*Eucalyptus leucoxylon*	9	5	Fair	Fair	**Medium**	400	4800	2300	
130	*Eucalyptus pilularis*	15	14	Poor	Fair	**Low**	690	8300	2800	Sparse
131	*Melaleuca quinquenervia*	8	3	Fair	Fair	**Medium**	400	4800	2300	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
132	*Melaleuca quinquenervia*	7	5	Fair	Fair	**Medium**	380	4600	2200	
133	*Eucalyptus leucoxylon*	9	5	Fair	Poor	**Low**	370	4400	2200	Co dominant
134	*Melaleuca quinquenervia*	8	5	Fair	Poor	**Low**	500	6000	2500	Multi trunked
135	*Melaleuca quinquenervia*	5	4	Fair	Fair	**Medium**	380	4600	2200	
136	*Eucalyptus crebra*	10	9	Good	Good	**High**	620	7400	2700	
137	*Melaleuca quinquenervia*	5	3	Fair	Poor	**Low**	200	2400	1700	
138	*Eucalyptus microcorys*	11	10	Good	Fair	**Medium**	590	7100	2700	
139	*Melaleuca quinquenervia*	8	5	Poor	Fair	**Medium**	300	3600	2000	
140	*Eucalyptus longifolia*	12	11	Good	Fair	**Medium**	420	5000	2300	
141	*Melaleuca quinquenervia*	6	5	Fair	Fair	**Medium**	390	4700	2200	
142	*Eucalyptus microcorys*	6	5	Good	Fair	**Medium**	380	4600	2200	
143	*Melaleuca quinquenervia*	8	5	Fair	Fair	**Medium**	410	4900	2300	
144	*Eucalyptus saligna*	11	12	Good	Fair	**Medium**	430	5200	2300	
145	*Eucalyptus leucoxylon*	15	12	Fair	Good	**Medium**	500	6000	2500	
146	*Eucalyptus fibrosa*	12	9	Fair	Fair	**Medium**	430	5200	2300	
147	*Melaleuca quinquenervia*	7	3	Poor	Fair	**Low**	350	4200	2100	Sparse
148	*Eucalyptus microcorys*	12	10	Poor	Poor	**Low**	400	4800	2300	Epicormics
149	*Corymbia citriodora*	6	7	Fair	Poor	**Low**	350	4200	2100	Multi trunked
150	*Eucalyptus fibrosa*	12	11	Fair	Fair	**Medium**	400	4800	2300	
151	*Eucalyptus pilularis*	12	5	Poor	Fair	**Low**	280	3400	1900	Sparse
152	*Eucalyptus microcorys*	8	6	Fair	Poor	**Low**	300	3600	2000	Multi trunked
153	*Eucalyptus fibrosa*	17	16	Good	Good	**High**	900	11000	3200	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
154	*Eucalyptus fibrosa*	18	15	Poor	Poor	**Low**	910	11000	3200	Borers termites
155	*Eucalyptus fibrosa*	15	14	Good	Good	**High**	750	9000	2900	
156	*Eucalyptus fibrosa*	11	9	Good	Fair	**Medium**	400	4800	2300	
157	*Lophostemon confertus*	3	4	Poor	Fair	**Low**	400	4800	2300	
158	*Lophostemon confertus*	4	4	Fair	Poor	**Low**	450	5400	2400	Suppressed
159	*Eucalyptus fibrosa*	16	11	Poor	Fair	**Low**	650	7800	2800	Large wound at base
160	*Eucalyptus fibrosa*	14	12	Good	Good	**High**	660	7900	2800	
161	*Eucalyptus microcorys*	10	8	Fair	Poor	**Low**	300	3600	2000	
162	*Eucalyptus sideroxylon*	8	6	Fair	Poor	**Low**	250	3000	1800	Multi trunked
163	*Eucalyptus microcorys*	10	9	Good	Fair	**Medium**	400	4800	2300	
164	*Eucalyptus microcorys*	9	4	Fair	Poor	**Low**	250	3000	1800	
165	*Eucalyptus sp.*	12	8	Poor	Fair	**Low**	500	6000	2500	Wound
166	*Casuarina cunninghamiana*	7	4	Poor	Poor	**Low**	250	3000	1800	
167	*Casuarina glauca*	5	3	Poor	Poor	**Low**	110	2000	1500	
168	*Casuarina glauca*	6	5	Fair	Poor	**Low**	350	4200	2100	
169	*Casuarina glauca*	7	5	Fair	Poor	**Low**	300	3600	2000	
170	*Casuarina glauca*	7	5	Fair	Fair	**Medium**	300	3600	2000	
171	*Eucalyptus fibrosa*	9	6	Good	Fair	**Medium**	600	7200	2700	Co dominant
172	*Eucalyptus piperita*	7	5	Fair	Poor	**Low**	200	2400	1700	
173	*Eucalyptus fibrosa*	4	3	Fair	Poor	**Low**	200	2400	1700	Multi trunked
174	*Casuarina glauca*	6	3	Fair	Fair	**Medium**	200	2400	1700	
175	*Casuarina glauca*	5	3	Fair	Fair	**Medium**	250	3000	1800	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
176	*Casuarina glauca*	11	5	Fair	Fair	**Medium**	350	4200	2100	
177	*Casuarina glauca*	8	5	Fair	Fair	**Medium**	400	4800	2300	
178	*Eucalyptus microcorys*	9	4	Fair	Poor	**Low**	300	3600	2000	Suppressed
179	*Eucalyptus microcorys*	11	9	Fair	Poor	**Low**	550	6600	2600	Inclusion
180	*Eucalyptus microcorys*	14	12	Fair	Fair	**Medium**	500	6000	2500	
181	*Eucalyptus longifolia*	3	2	Fair	Poor	**Low**	125	2000	1500	Suppressed
182	*Corymbia maculata*	15	14	Fair	Fair	**Medium**	570	6800	2600	Wound
183	*Corymbia maculata*	11	5	Good	Fair	**Medium**	400	4800	2300	
184	*Corymbia maculata*	13	8	Fair	Fair	**Medium**	450	5400	2400	
185	*Corymbia maculata*	14	12	Good	Fair	**Medium**	400	4800	2300	
186	*Corymbia maculata*	13	7	Good	Fair	**Medium**	400	4800	2300	
187	*Corymbia maculata*	12	6	Good	Fair	**Medium**	410	4900	2300	
188	*Eucalyptus sideroxylon*	10	7	Fair	Fair	**Medium**	380	4600	2200	
189	*Fraxinus raywood*	4	3	Fair	Poor	**Low**	250	3000	1800	
190	*Fraxinus raywood*	5	3	Fair	Poor	**Low**	200	2400	1700	
191	*Exocarpus cuppressiformis*	5	6	Poor	Poor	**Low**	400	4800	2300	Split in middle
192	*Corymbia maculata*	10	5	Fair	Fair	**Medium**	200	2400	1700	
193	*Corymbia maculata*	13	7	Fair	Fair	**Medium**	350	4200	2100	
194	*Corymbia maculata*	14	12	Good	Fair	**Medium**	410	4900	2300	
195	*Corymbia maculata*	7	5	Poor	Fair	**Low**	200	2400	1700	Suppressed
196	*Corymbia maculata*	9	8	Good	Fair	**Medium**	400	4800	2300	
197	*Corymbia maculata*	11	8	Good	Fair	**Medium**	400	4800	2300	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
198	*Corymbia maculata*	16	14	Good	Good	**High**	520	6200	2500	
199	*Corymbia maculata*	12	9	Fair	Poor	**Low**	500	6000	2500	
200	*Eucalyptus microcorys*	17	16	Fair	Good	**Medium**	550	6600	2600	
201	*Eucalyptus haemastoma*	5	6	Fair	Poor	**Low**	150	2000	1500	
202	*Eucalyptus haemastoma*	6	5	Poor	Fair	**Low**	350	4200	2100	Wound
203	*Eucalyptus microcorys*	13	8	Fair	Fair	**Medium**	410	4900	2300	
204	*Eucalyptus sp.*	4	2	Poor	Poor	**Low**	100	2000	1500	
205	*Eucalyptus haemastoma*	8	6	Fair	Poor	**Low**	300	3600	2000	Wound
206	*Eucalyptus fibrosa*	16	17	Fair	Fair	**Medium**	1106	13000	3500	Fruiting body at base
207	*Corymbia maculata*	11	10	Good	Fair	**Medium**	450	5400	2400	
208	*Corymbia maculata*	13	11	Good	Fair	**Medium**	400	4800	2300	
209	*Araucaria heterophylla*	6	4	Fair	Poor	**Low**	150	2000	1500	
210	*Eucalyptus tereticornis*	15	12	Fair	Fair	**Medium**	520	6200	2500	
211	*Eucalyptus tereticornis*	15	12	Fair	Fair	**Medium**	900	11000	3200	
212	*Corymbia maculata*	16	12	Good	Fair	**Medium**	450	5400	2400	
213	*Eucalyptus sp.*	11	6	Fair	Poor	**Low**	250	3000	1800	Suppressed
214	*Corymbia maculata*	13	6	Fair	Poor	**Low**	250	3000	1800	
215	*Corymbia maculata*	14	11	Good	Fair	**Medium**	510	6100	2500	
216	*Corymbia maculata*	15	12	Good	Good	**High**	540	6500	2600	
217	*Corymbia maculata*	13	7	Good	Fair	**Medium**	400	4800	2300	
218	*Corymbia maculata*	15	14	Good	Good	**High**	530	6400	2500	
219	*Casuarina cunninghamiana*	12	8	Fair	Fair	**Medium**	400	4800	2300	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
220	*Fraxinus raywood*	7	5	Fair	Fair	**Medium**	309	3700	2000	
221	*Corymbia citriodora*	12	11	Fair	Fair	**Medium**	400	4800	2300	
222	*Corymbia citriodora*	12	11	Good	Fair	**Medium**	400	4800	2300	
223	*Corymbia citriodora*	11	10	Fair	Fair	**Medium**	400	4800	2300	
224	*Corymbia citriodora*	11	8	Fair	Fair	**Medium**	400	4800	2300	
225	*Eucalyptus microcorys*	12	9	Fair	Fair	**Medium**	400	4800	2300	
226	*Corymbia citriodora*	9	9	Fair	Poor	**Low**	550	6600	2600	
227	*Eucalyptus microcorys*	11	9	Fair	Fair	**Medium**	500	6000	2500	
228	*Corymbia citriodora*	11	8	Fair	Fair	**Medium**	300	3600	2000	
229	*Corymbia citriodora*	12	10	Good	Fair	**Medium**	300	3600	2000	
230	*Corymbia citriodora*	8	5	Fair	Poor	**Low**	300	3600	2000	
231	*Eucalyptus fibrosa*	9	7	Poor	Fair	**Low**	230	2800	1800	
232	*Corymbia maculata*	9	8	Good	Good	**High**	350	4200	2100	Potential amenity
233	*Corymbia citriodora*	11	6	Fair	Fair	**Medium**	490	5900	2500	
234	*Corymbia sp.*	10	9	Fair	Poor	**Low**	450	5400	2400	
235	*Corymbia citriodora*	8	7	Fair	Poor	**Low**	400	4800	2300	
236	*Eucalyptus sideroxylon*	10	6	Good	Fair	**Medium**	280	3400	1900	
237	*Corymbia maculata*	16	14	Good	Fair	**Medium**	570	6800	2600	
238	*Corymbia maculata*	15	13	Good	Fair	**Medium**	480	5800	2400	
239	*Eucalyptus sideroxylon*	10	10	Good	Fair	**Medium**	410	4900	2300	
240	*Corymbia maculata*	13	8	Fair	Fair	**Medium**	300	3600	2000	
241	*Corymbia maculata*	13	7	Fair	Poor	**Low**	380	4600	2200	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
242	*Corymbia maculata*	12	6	Good	Fair	**Medium**	400	4800	2300	
243	*Corymbia maculata*	10	5	Good	Fair	**Medium**	340	4100	2100	
244	*Corymbia maculata*	13	7	Good	Fair	**Medium**	290	3500	2000	
245	*Corymbia maculata*	10	6	Fair	Poor	**Low**	250	3000	1800	
246	*Eucalyptus haemastoma*	9	6	Fair	Fair	**Medium**	350	4200	2100	
247	*Eucalyptus tereticornis*	11	9	Good	Fair	**Medium**	580	7000	2600	
248	*Corymbia maculata*	8	5	Fair	Poor	**Low**	200	2400	1700	
249	*Corymbia maculata*	12	8	Fair	Fair	**Medium**	300	3600	2000	
250	*Corymbia maculata*	8	5	Fair	Poor	**Medium**	300	3600	2000	
251	*Corymbia maculata*	12	10	Fair	Fair	**Medium**	360	4300	2200	
252	*Corymbia maculata*	12	8	Fair	Poor	**Low**	320	3800	2100	Co dominant
253	*Corymbia maculata*	9	5	Fair	Poor	**Low**	150	2000	1500	
254	*Corymbia maculata*	13	7	Fair	Poor	**Low**	300	3600	2000	
255	*Corymbia maculata*	4	3	Fair	Poor	**Low**	150	2000	1500	
256	*Corymbia maculata*	9	6	Good	Fair	**Medium**	320	3800	2100	
257	*Eucalyptus sideroxylon*	15	11	Poor	Poor	**Low**	601	7200	2700	Fungi, wounds epicormics
258	*Corymbia maculata*	11	5	Fair	Fair	**Medium**	300	3600	2000	
259	*Corymbia maculata*	10	4	Fair	Fair	**Medium**	250	3000	1800	
260	*Corymbia maculata*	11	5	Poor	Fair	**Low**	200	2400	1700	
261	*Corymbia maculata*	13	12	Good	Good	**High**	460	5500	2400	
262	*Corymbia maculata*	13	7	Fair	Fair	**Medium**	250	3000	1800	
263	*Eucalyptus sideroxylon*	9	8	Poor	Poor	**Low**	400	4800	2300	Wounds

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
264	*Corymbia maculata*	15	11	Good	Fair	**Medium**	400	4800	2300	
265	*Corymbia maculata*	11	8	Fair	Fair	**Medium**	260	3100	1900	
266	*Corymbia maculata*	9	4	Poor	Poor	**Low**	150	2000	1500	
267	*Corymbia maculata*	5	4	Fair	Poor	**Low**	200	2400	1700	
268	*Eucalyptus haemastoma*	5	2	Poor	Poor	**Low**	100	2000	1500	
269	*Corymbia maculata*	12	9	Good	Fair	**Medium**	380	4600	2200	
270	*Corymbia maculata*	11	9	Good	Fair	**Medium**	330	4000	2100	
271	*Eucalyptus microcorys*	5	7	Poor	Fair	**Low**	200	2400	1700	
272	*Corymbia maculata*	13	8	Good	Fair	**Medium**	300	3600	2000	
273	*Corymbia maculata*	13	12	Good	Fair	**Medium**	400	4800	2300	
274	*Eucalyptus tereticornis*	13	11	Fair	Poor	**Low**	450	5400	2400	
275	*Eucalyptus sp.*	12	11	Good	Fair	**Medium**	510	6100	2500	
276	*Eucalyptus haemastoma*	5	7	Fair	Poor	**Low**	300	3600	2000	Multi trunked
277	*Eucalyptus sideroxylon*	7	5	Poor	Poor	**Low**	310	3700	2000	
278	*Eucalyptus haemastoma*	15	8	Fair	Poor	**Low**	400	4800	2300	
279	*Eucalyptus microcorys*	15	9	Fair	Poor	**Low**	600	7200	2700	Multi trunked
280	*Casuarina cunninghamiana*	12	6	Fair	Poor	**Low**	350	4200	2100	
281	*Casuarina cunninghamiana*	12	7	Fair	Poor	**Low**	350	4200	2100	
282	*Corymbia maculata*	15	9	Good	Fair	**Medium**	450	5400	2400	
283	*Corymbia maculata*	17	7	Good	Fair	**Medium**	400	4800	2300	
284	*Corymbia maculata*	15	12	Fair	Fair	**Medium**	400	4800	2300	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
285	*Corymbia maculata*	17	9	Fair	Fair	**Medium**	480	5800	2400	
286	*Corymbia maculata*	15	6	Good	Fair	**Medium**	330	4000	2100	
287	*Corymbia maculata*	15	9	Fair	Fair	**Medium**	380	4600	2200	
288	*Corymbia maculata*	15	8	Fair	Poor	**Low**	280	3400	1900	
289	*Corymbia maculata*	16	9	Good	Fair	**Medium**	420	5000	2300	
290	*Corymbia maculata*	15	6	Fair	Poor	**Low**	230	2800	1800	Suppressed
291	*Corymbia maculata*	13	11	Fair	Fair	**Medium**	300	3600	2000	
292	*Eucalyptus tereticornis*	15	9	Fair	Fair	**Medium**	480	5800	2400	
293	*Corymbia maculata*	10	4	Fair	Poor	**Low**	170	2000	1600	
294	*Corymbia maculata*	15	6	Fair	Fair	**Medium**	280	3400	1900	
295	*Corymbia maculata*	8	5	Fair	Fair	**Low**	200	2400	1700	
296	*Corymbia maculata*	9	5	Good	Fair	**Medium**	150	2000	1500	
297	*Corymbia maculata*	15	6	Poor	Poor	**Low**	230	2800	1800	
298	*Eucalyptus tereticornis*	11	6	Fair	Poor	**Low**	250	3000	1800	
299	*Eucalyptus tereticornis*	12	6	Poor	Poor	**Low**	250	3000	1800	
300	*Eucalyptus tereticornis*	5	3	Fair	Poor	**Low**	170	2000	1600	
301	*Corymbia maculata*	16	9	Good	Fair	**Medium**	320	3800	2100	
302	*Corymbia maculata*	12	4	Poor	Poor	**Low**	150	2000	1500	
303	*Corymbia maculata*	15	9	Fair	Fair	**Medium**	280	3400	1900	
304	*Corymbia maculata*	16	11	Fair	Poor	**Low**	380	4600	2200	Co dominant
305	*Corymbia maculata*	15	3	Poor	Poor	**Low**	200	2400	1700	
306	*Corymbia maculata*	12	9	Fair	Fair	**Medium**	500	6000	2500	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
307	*Corymbia maculata*	14	6	Fair	Fair	**Medium**	250	3000	1800	
308	*Corymbia maculata*	12	7	Fair	Poor	**Low**	250	3000	1800	Forks
309	*Corymbia maculata*	12	6	Fair	Fair	**Medium**	350	4200	2100	
310	*Corymbia maculata*	15	8	Good	Fair	**Medium**	400	4800	2300	
311	*Corymbia maculata*	12	7	Fair	Poor	**Low**	200	2400	1700	
312	*Corymbia maculata*	15	7	Fair	Fair	**Medium**	200	2400	1700	
313	*Corymbia maculata*	11	3	Poor	Poor	**Low**	250	3000	1800	
314	*Eucalyptus sp.*	8	9	Poor	Poor	**Low**	400	4800	2300	
315	*Corymbia maculata*	12	9	Good	Fair	**Medium**	400	4800	2300	
316	*Corymbia maculata*	12	7	Poor	Fair	**Low**	320	3800	2100	
317	*Eucalyptus haemastoma*	8	6	Fair	Poor	**Low**	200	2400	1700	
318	*Corymbia maculata*	18	15	Good	Fair	**Medium**	520	6200	2500	
319	*Corymbia maculata*	14	12	Good	Fair	**Medium**	530	6400	2500	
320	*Corymbia maculata*	12	11	Fair	Fair	**Medium**	350	4200	2100	
321	*Corymbia maculata*	12	11	Fair	Fair	**Medium**	370	4400	2200	
322	*Corymbia maculata*	9	6	Fair	Fair	**Medium**	300	3600	2000	
323	*Corymbia maculata*	15	12	Poor	Fair	**Low**	400	4800	2300	Sparse
324	*Corymbia maculata*	17	15	Fair	Fair	**Medium**	400	4800	2300	
325	*Corymbia maculata*	16	11	Good	Fair	**Medium**	470	5600	2400	
326	*Corymbia maculata*	13	11	Poor	Fair	**Low**	300	3600	2000	
327	*Corymbia maculata*	14	15	Fair	Fair	**Medium**	500	6000	2500	
328	*Corymbia maculata*	8	7	Fair	Poor	**Low**	300	3600	2000	Co dominant

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
329	*Corymbia maculata*	9	8	Fair	Fair	**Medium**	300	3600	2000	
330	*Corymbia maculata*	14	12	Good	Fair	**Medium**	520	6200	2500	
331	*Eucalyptus sideroxylon*	11	8	Fair	Fair	**Medium**	300	3600	2000	
332	*Eucalyptus sideroxylon*	12	11	Poor	Poor	**Low**	550	6600	2600	Sparse
333	*Eucalyptus sideroxylon*	12	9	Fair	Fair	**Medium**	450	5400	2400	
334	*Angophora floribunda*	8	5	Fair	Fair	**Medium**	340	4100	2100	
335	*Angophora floribunda*	5	3	Poor	Poor	**Low**	109	2000	1500	
336	*Angophora floribunda*	5	3	Poor	Poor	**Low**	100	2000	1500	
337	*Eucalyptus fibrosa*	12	11	Good	Good	**High**	650	7800	2800	
338	*Angophora floribunda*	8	6	Fair	Poor	**Low**	150	2000	1500	
339	*Angophora floribunda*	5	3	Poor	Poor	**Low**	150	2000	1500	
340	*Angophora floribunda*	10	5	Fair	Fair	**Medium**	300	3600	2000	
341	*Angophora floribunda*	8	5	Fair	Poor	**Low**	250	3000	1800	
342	*Angophora floribunda*	5	4	Fair	Poor	**Low**	250	3000	1800	
343	*Angophora floribunda*	9	5	Fair	Fair	**Medium**	340	4100	2100	
344	*Angophora floribunda*	12	11	Fair	Fair	**Medium**	500	6000	2500	
345	*Angophora floribunda*	7	4	Fair	Fair	**Medium**	200	2400	1700	
346	*Angophora floribunda*	9	6	Fair	Fair	**Medium**	200	2400	1700	
347	*Angophora floribunda*	5	3	Poor	Poor	**Low**	150	2000	1500	
348	*Angophora floribunda*	5	3	Fair	Poor	**Low**	120	2000	1500	
349	*Angophora floribunda*	8	5	Fair	Fair	**Medium**	230	2800	1800	
350	*Angophora floribunda*	6	4	Poor	Poor	**Low**	120	2000	1500	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
351	*Angophora floribunda*	6	5	Fair	Fair	**Medium**	240	2900	1800	
352	*Angophora floribunda*	5	3	Poor	Poor	**Low**	200	2400	1700	
353	*Angophora floribunda*	7	6	Fair	Fair	**Medium**	400	4800	2300	
354	*Eucalyptus fibrosa*	11	12	Good	Fair	**Medium**	550	6600	2600	
355	*Eucalyptus fibrosa*	5	4	Fair	Poor	**Low**	250	3000	1800	Suppressed
356	*Eucalyptus fibrosa*	11	13	Good	Fair	**Medium**	1001	12000	3300	Minor lean
357	*Casuarina cunninghamiana*	7	6	Fair	Poor	**Low**	300	3600	2000	
358	*Casuarina cunninghamiana*	11	8	Poor	Poor	**Low**	340	4100	2100	
359	*Eucalyptus haemastoma*	10	6	Poor	Fair	**Low**	300	3600	2000	
360	*Eucalyptus sideroxylon*	10	5	Fair	Fair	**Medium**	200	2400	1700	
361	*Eucalyptus fibrosa*	6	4	Fair	Fair	**Low**	150	2000	1500	
362	*Eucalyptus fibrosa*	4	3	Fair	Poor	**Low**	120	2000	1500	
363	*Eucalyptus microcorys*	12	13	Good	Fair	**Medium**	520	6200	2500	
364	*Eucalyptus microcorys*	6	5	Poor	Fair	**Low**	440	5300	2300	Epicormics. Lopped
365	*Eucalyptus microcorys*	8	5	Fair	Fair	**Medium**	250	3000	1800	
366	*Eucalyptus microcorys*	7	5	Fair	Fair	**Medium**	300	3600	2000	
367	*Eucalyptus microcorys*	7	5	Fair	Fair	**Medium**	300	3600	2000	
368	*Eucalyptus microcorys*	9	6	Fair	Fair	**Medium**	401	4800	2300	
369	*Eucalyptus fibrosa*	13	12	Fair	Fair	**Medium**	470	5600	2400	
370	*Eucalyptus fibrosa*	15	12	Fair	Poor	**Low**	490	5900	2500	
371	*Eucalyptus fibrosa*	15	11	Good	Fair	**Medium**	480	5800	2400	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
372	*Eucalyptus microcorys*	10	11	Good	Fair	**Medium**	460	5500	2400	
373	*Eucalyptus microcorys*	11	9	Good	Fair	**Medium**	460	5500	2400	
374	*Eucalyptus microcorys*	9	11	Fair	Fair	**Medium**	800	3013	9600	Road verge
375	*Eucalyptus microcorys*	10	9	Fair	Fair	**Medium**	400	4800	2300	
376	*Eucalyptus microcorys*	11	14	Fair	Fair	**Medium**	1100	13000	3400	
377	*Eucalyptus microcorys*	15	15	Poor	Fair	**Low**	1200	14000	3600	
378	*Eucalyptus microcorys*	8	10	Fair	Fair	**Medium**	800	9600	3000	
379	*Eucalyptus microcorys*	16	8	Fair	Fair	**Medium**	700	8400	2800	
380	*Eucalyptus microcorys*	8	3	Fair	Fair	**Medium**	150	2000	1500	
381	*Eucalyptus microcorys*	14	10	Fair	Fair	**Medium**	300	3600	2000	
382	*Eucalyptus microcorys*	9	9	Fair	Fair	**Medium**	1000	12000	3300	
383	*Eucalyptus microcorys*	10	4	Fair	Fair	**Medium**	250	3000	1800	
384	*Eucalyptus microcorys*	10	8	Fair	Fair	**Medium**	250	3000	1800	
385	*Eucalyptus microcorys*	10	8	Fair	Fair	**Medium**	200	2400	1700	
386	*Eucalyptus microcorys*	10	6	Fair	Fair	**Medium**	200	2400	1700	
387	*Eucalyptus microcorys*	12	12	Fair	Fair	**Medium**	800	9600	3000	
388	*Eucalyptus microcorys*	12	3	Fair	Fair	**Medium**	150	2000	1500	
389	*Eucalyptus microcorys*	9	7	Fair	Fair	**Medium**	200	2400	1700	
390	*Eucalyptus microcorys*	8	4	Fair	Fair	**Medium**	150	2000	1500	
391	*Eucalyptus microcorys*	9	4	Fair	Fair	**Medium**	150	2000	1500	
392	*Eucalyptus microcorys*	10	4	Fair	Fair	**Medium**	150	2000	1500	
393	*Eucalyptus microcorys*	12	10	Fair	Fair	**Medium**	400	4800	2300	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
394	*Eucalyptus microcorys*	10	6	Fair	Fair	**Medium**	250	3000	1800	
395	*Eucalyptus microcorys*	12	6	Fair	Fair	**Medium**	250	3000	1800	
396	*Eucalyptus microcorys*	9	7	Fair	Fair	**Medium**	200	2400	1700	
397	*Eucalyptus microcorys*	14	5	Fair	Fair	**Medium**	250	3000	1800	
398	*Eucalyptus microcorys*	8	4	Fair	Fair	**Medium**	200	2400	1700	
399	*Eucalyptus microcorys*	12	8	Fair	Fair	**Medium**	250	3000	1800	
400	*Eucalyptus microcorys*	14	8	Fair	Fair	**Medium**	300	3600	2000	
401	*Eucalyptus microcorys*	10	8	Fair	Fair	**Medium**	300	3600	2000	
402	*Eucalyptus microcorys*	10	6	Fair	Fair	**Medium**	250	3000	1800	
403	*Eucalyptus microcorys*	12	10	Fair	Fair	**Medium**	200	2400	1700	
404	*Eucalyptus microcorys*	4	4	Fair	Fair	**Medium**	200	2400	1700	
405	*Eucalyptus microcorys*	5	4	Fair	Fair	**Medium**	150	2000	1500	
406	*Eucalyptus microcorys*	9	8	Fair	Fair	**Medium**	300	3600	2000	
407	*Eucalyptus microcorys*	10	6	Fair	Fair	**Medium**	150	2000	1500	
408	*Eucalyptus microcorys*	12	12	Fair	Fair	**Medium**	600	7200	2700	
409	*Eucalyptus microcorys*	14	7	Fair	Fair	**Medium**	250	3000	1800	
410	*Eucalyptus microcorys*	10	5	Fair	Fair	**Medium**	250	3000	1800	
411	*Eucalyptus microcorys*	10	12	Fair	Fair	**Medium**	450	5400	2400	
412	*Eucalyptus microcorys*	12	5	Fair	Fair	**Medium**	250	3000	1800	
413	*Eucalyptus microcorys*	12	5	Fair	Fair	**Medium**	200	2400	1700	
414	*Eucalyptus microcorys*	9	4	Fair	Fair	**Medium**	150	2000	1500	
415	*Eucalyptus microcorys*	12	6	Fair	Fair	**Medium**	250	3000	1800	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
416	*Eucalyptus microcorys*	14	10	Fair	Fair	**Medium**	500	6000	2500	
417	*Eucalyptus microcorys*	5	5	Fair	Fair	**Medium**	150	2000	1500	
418	*Eucalyptus microcorys*	10	8	Fair	Fair	**Medium**	350	4200	2100	
419	*Eucalyptus microcorys*	12	8	Fair	Fair	**Medium**	200	2400	1700	
420	*Eucalyptus microcorys*	9	6	Fair	Fair	**Medium**	150	2000	1500	
421	*Eucalyptus microcorys*	8	3	Fair	Fair	**Medium**	150	2000	1500	
422	*Eucalyptus microcorys*	14	10	Fair	Fair	**Medium**	600	7200	2700	
423	*Eucalyptus microcorys*	8	8	Fair	Fair	**Medium**	150	2000	1500	
424	*Eucalyptus microcorys*	12	8	Fair	Fair	**Medium**	350	4200	2100	
425	*Eucalyptus microcorys*	8	6	Fair	Fair	**Medium**	300	3600	2000	
426	*Eucalyptus microcorys*	12	10	Fair	Fair	**Medium**	250	3000	1800	
427	*Eucalyptus microcorys*	10	5	Fair	Fair	**Medium**	200	2400	1700	
428	*Eucalyptus microcorys*	8	5	Fair	Fair	**Medium**	150	2000	1500	
429	*Eucalyptus microcorys*	14	4	Fair	Fair	**Medium**	250	3000	1800	
430	*Eucalyptus microcorys*	8	4	Fair	Fair	**Medium**	150	2000	1500	
431	*Eucalyptus microcorys*	8	6	Fair	Fair	**Medium**	200	2400	1700	
432	*Eucalyptus microcorys*	16	12	Fair	Fair	**Medium**	500	6000	2500	
433	*Eucalyptus microcorys*	8	3	Fair	Fair	**Medium**	150	2000	1500	
434	*Eucalyptus microcorys*	12	5	Fair	Fair	**Medium**	250	3000	1800	
435	*Eucalyptus microcorys*	6	6	Fair	Fair	**Medium**	150	2000	1500	
436	*Eucalyptus microcorys*	6	4	Fair	Fair	**Medium**	150	2000	1500	
437	*Eucalyptus microcorys*	16	8	Fair	Fair	**Medium**	400	4800	2300	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
438	*Eucalyptus microcorys*	9	8	Fair	Fair	**Medium**	200	2400	1700	
439	*Eucalyptus microcorys*	14	8	Fair	Fair	**Medium**	350	4200	2100	
440	*Eucalyptus microcorys*	10	5	Fair	Fair	**Medium**	250	3000	1800	
441	*Eucalyptus microcorys*	10	8	Fair	Fair	**Medium**	400	4800	2300	
442	*Eucalyptus microcorys*	14	6	Fair	Fair	**Medium**	250	3000	1800	
443	*Eucalyptus microcorys*	8	3	Fair	Fair	**Medium**	150	2000	1500	
444	*Eucalyptus microcorys*	6	4	Fair	Fair	**Medium**	150	2000	1500	
445	*Eucalyptus microcorys*	14	6	Fair	Fair	**Medium**	350	4200	2100	
446	*Eucalyptus microcorys*	12	6	Fair	Fair	**Medium**	300	3600	2000	
447	*Eucalyptus microcorys*	14	3	Fair	Fair	**Medium**	150	2000	1500	
448	*Eucalyptus microcorys*	9	5	Fair	Fair	**Medium**	200	2400	1700	
449	*Eucalyptus microcorys*	12	8	Fair	Fair	**Medium**	250	3000	1800	
450	*Eucalyptus microcorys*	12	8	Fair	Fair	**Medium**	200	2400	1700	
451	*Eucalyptus microcorys*	6	6	Fair	Fair	**Medium**	150	2000	1500	
452	*Eucalyptus microcorys*	12	12	Fair	Fair	**Medium**	250	3000	1800	
453	*Eucalyptus microcorys*	16	7	Fair	Fair	**Medium**	250	3000	1800	
454	*Eucalyptus microcorys*	10	5	Fair	Fair	**Medium**	200	2400	1700	
455	*Eucalyptus microcorys*	12	5	Fair	Fair	**Medium**	200	2400	1700	
456	*Eucalyptus microcorys*	16	18	Fair	Fair	**Medium**	300	3600	2000	
457	*Eucalyptus microcorys*	12	4	Fair	Fair	**Medium**	200	2400	1700	
458	*Eucalyptus microcorys*	12	12	Fair	Fair	**Medium**	500	6000	2500	
459	*Eucalyptus microcorys*	14	8	Fair	Fair	**Medium**	250	3000	1800	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
460	*Eucalyptus microcorys*	20	9	Fair	Fair	**Medium**	350	4200	2100	
461	*Eucalyptus microcorys*	7	8	Fair	Fair	**Medium**	250	3000	1800	
462	*Eucalyptus microcorys*	6	6	Fair	Fair	**Medium**	250	3000	1800	
463	*Eucalyptus microcorys*	9	6	Fair	Fair	**Medium**	200	2400	1700	
464	*Eucalyptus microcorys*	9	6	Fair	Fair	**Medium**	450	5400	2400	
465	*Eucalyptus microcorys*	10	7	Fair	Fair	**Medium**	250	3000	1800	
466	*Eucalyptus microcorys*	8	6	Fair	Fair	**Medium**	350	4200	2100	
467	*Eucalyptus microcorys*	12	6	Fair	Fair	**Medium**	250	3000	1800	
468	*Eucalyptus microcorys*	14	7	Fair	Fair	**Medium**	200	2400	1700	
469	*Eucalyptus microcorys*	10	7	Fair	Fair	**Medium**	250	3000	1800	
470	*Eucalyptus microcorys*	14	10	Fair	Fair	**Medium**	350	4200	2100	
471	*Eucalyptus microcorys*	9	5	Fair	Fair	**Medium**	150	2000	1500	
472	*Eucalyptus microcorys*	8	5	Fair	Fair	**Medium**	200	2400	1700	
473	*Eucalyptus microcorys*	6	4	Fair	Fair	**Medium**	150	2000	1500	
474	*Eucalyptus microcorys*	6	4	Fair	Fair	**Medium**	150	2000	1500	
475	*Eucalyptus microcorys*	8	6	Fair	Fair	**Medium**	200	2400	1700	
476	*Eucalyptus microcorys*	6	6	Fair	Fair	**Medium**	250	3000	1800	
477	*Eucalyptus microcorys*	14	10	Fair	Fair	**Medium**	250	3000	1800	
478	*Eucalyptus microcorys*	12	9	Fair	Fair	**Medium**	350	4200	2100	
479	*Eucalyptus microcorys*	12	10	Fair	Fair	**Medium**	450	5400	2400	
480	*Eucalyptus microcorys*	10	6	Fair	Fair	**Medium**	150	2000	1500	
481	*Eucalyptus microcorys*	7	6	Fair	Fair	**Medium**	150	2000	1500	

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Tree	Botanical Name	Height (m)	Spread (m)	Health	Structure	Retention Value	DBH (mm)	TPZ (mm)	SRZ (mm)	Notes
482	*Eucalyptus microcorys*	4	5	Fair	Fair	**Medium**	150	2000	1500	
483	*Eucalyptus microcorys*	14	10	Fair	Fair	**Medium**	400	4800	2300	

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4. Tree protection plan

Following the approval of a proposed building envelope, the following measures are to be implemented to protect trees to be retained:

4.1 Tree pruning and removal

- All tree work is to be carried out by an arborist with a minimum AQF Level 3 qualification in Arboriculture.
- All tree work must be in accordance with *Australian Standard AS 4373-2007, Pruning of Amenity Trees* and the *NSW WorkCover Code of Practice for the Amenity Tree Industry* (1998).
- Permission must be granted from the relevant consent authority prior to removing or pruning of any of the subject trees.

4.2 Tree protection measures

Encroachment within the TPZ must be offset with a range of mitigation measures to ensure that impacts to the subject tree(s) are reduced or restricted wherever possible. Mitigation must be increased relative to the level of encroachment within the TPZ to ensure the subject tree remains viable. Tree protection measures should be implemented by the contractor and would include:

- Tree protection fencing must be established around the perimeter of the TPZ. If the protective fencing requires temporary removal, trunk, branch and ground protection must be installed and must comply with *AS 4970-2009 - Protection of trees on development sites*. Existing fencing and site hoarding may be used as tree protection fencing.
- If temporary access for machinery is required within the TPZ, ground protection measures will be required. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Ground protection may include a permeable membrane such as geotextile fabric beneath a layer of mulch, crushed rock or rumble boards.
- Any additional construction activities within the TPZ of the subject trees must be assessed and approved by the project arborist and must comply with *AS 4970-2009 - Protection of trees on development sites*.

4.3 Hold points, inspection and certification

A copy of this report must be available on-site prior to the commencement of works, and throughout the entirety of the project. Hold points have been specified in the schedule of works below to ensure trees are adequately protected during construction. It is the responsibility of the principal contractor to complete each of the tasks.

- Pre-construction
  - Indicate clearly (with spray paint on trunks) trees marked for removal.
- During construction
  - Monthly inspection of trees by the project arborist (or other timing as agreed with the project arborist)

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    - Notification to be given prior to the commencement of work within the tree protection zone, with supervision by the project arborist of any work undertaken in this zone.
- Post-construction
    - Final inspection of trees by project arborist after all major construction has ceased and following the removal of tree protection measures.

Once each stage is reached, the work will be inspected and certified by the project arborist and the next stage may commence. Alterations to this schedule may be required due to necessity, however, this shall be through consultation with the project arborist only.

4.4 Replacement planting

Any loss of trees should be offset with replacement planting in accordance with the relevant offset policy and in consultation with the relevant consent authority.

5. References

5.1 General references

Barrell, J. 2001. 'SULE: Its use and status into the new millennium', in *Management of mature trees*, Proceedings of the 4th NAAA Tree Management Seminar, NAAA, Sydney.

Brooker M.I.H, Kleinig D.A. 2006. *Field Guide to Eucalypts. Volume 1, South-eastern Australia,* 3rd ed Bloomings Books, Melbourne

Draper, B. and Richards, P., 2009. *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

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Mattheck, C. and Breloer, H. 1994. 'Field Guide for Visual Tree Assessment' *Arboricultural Journal*, Vol 18 pp 1-23.

Mattheck, C. 2007. *Updated Field Guide for Visual Tree Assessment*. Karlsruhe: Forschungszentrum Karlsruhe.

IACA 2010. *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturalists, Australia, www.iaca.org.au.

Robinson L, 2003. *Field Guide to the Native Plants of Sydney*, 3rd ed, Kangaroo Press, East Roseville NSW

Standards Australia 2007. *Australian Standard: Pruning of amenity trees, AS 4373 (2007)*, Standards Australia, Sydney.

Standards Australia 2009. *Australian Standard: Protection of trees on development sites, AS 4970 (2009).* Standards Australia, Sydney.

5.2 Project specific references

Rygate & Company Pty Ltd, *Plan showing details and levels Lot 74 DP 1141724 No.80 Betty Cuthbert Drive*, *Revision A*, dated 12/04/2019

NSW Government, *Holroyd City Council's Local Environmental Plan (LEP) 2013 (Clause 5.9) Development Control Plan (DCP) 2013 (Part A – Section 4)*

Appendix A Maps

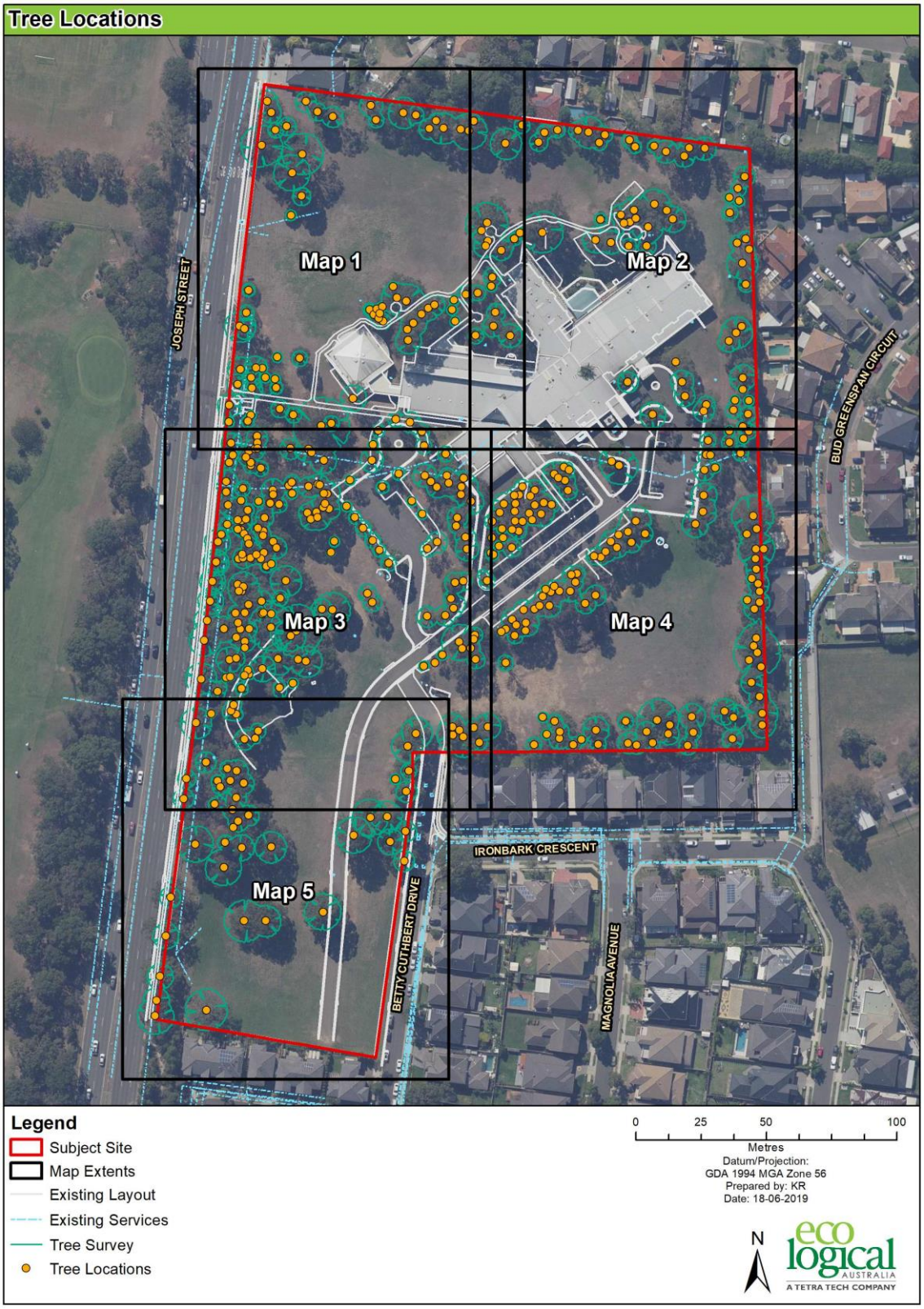


Figure 2: Tree locations map



Figure 3: Tree retention map

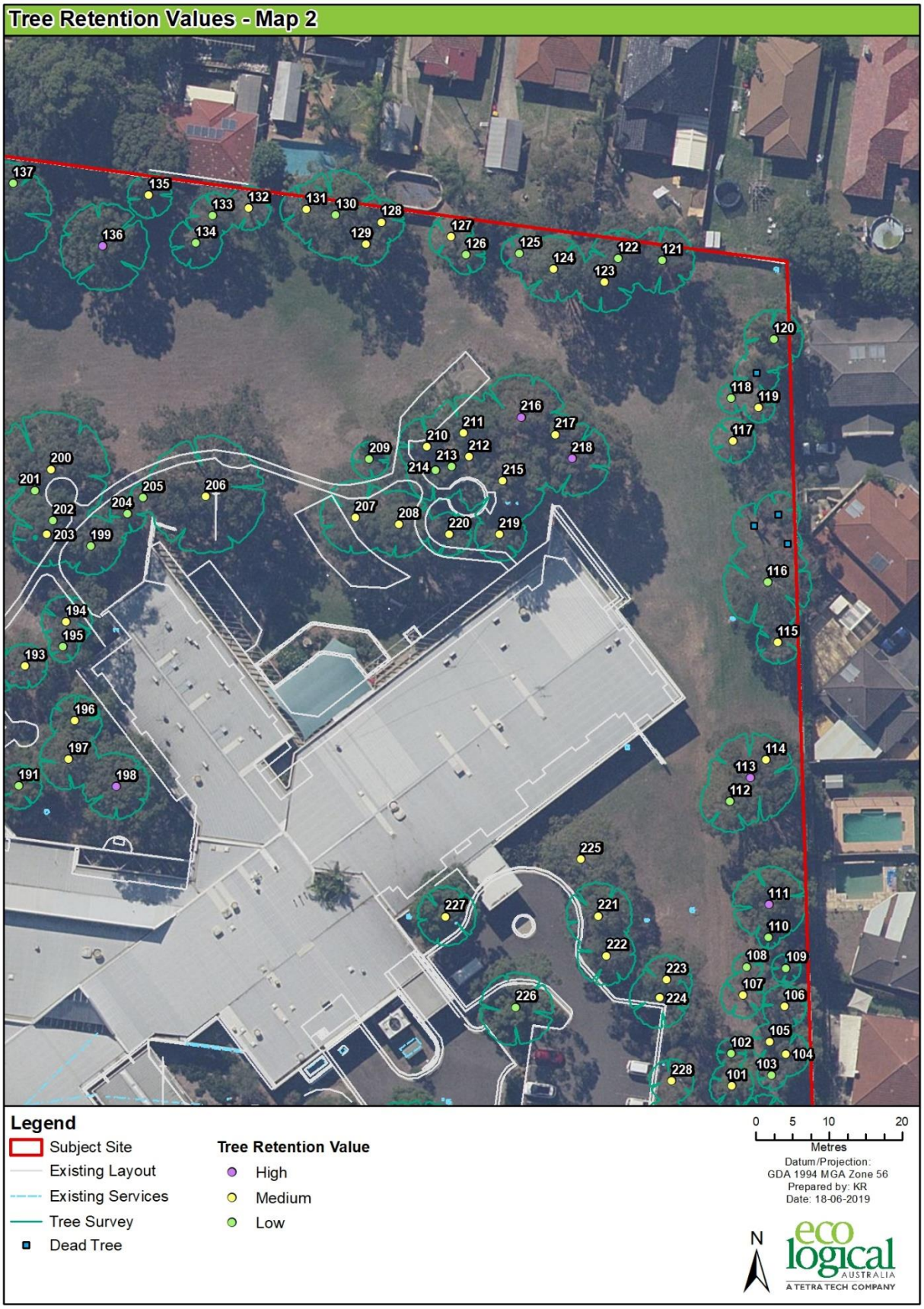


Figure 4: Tree retention map

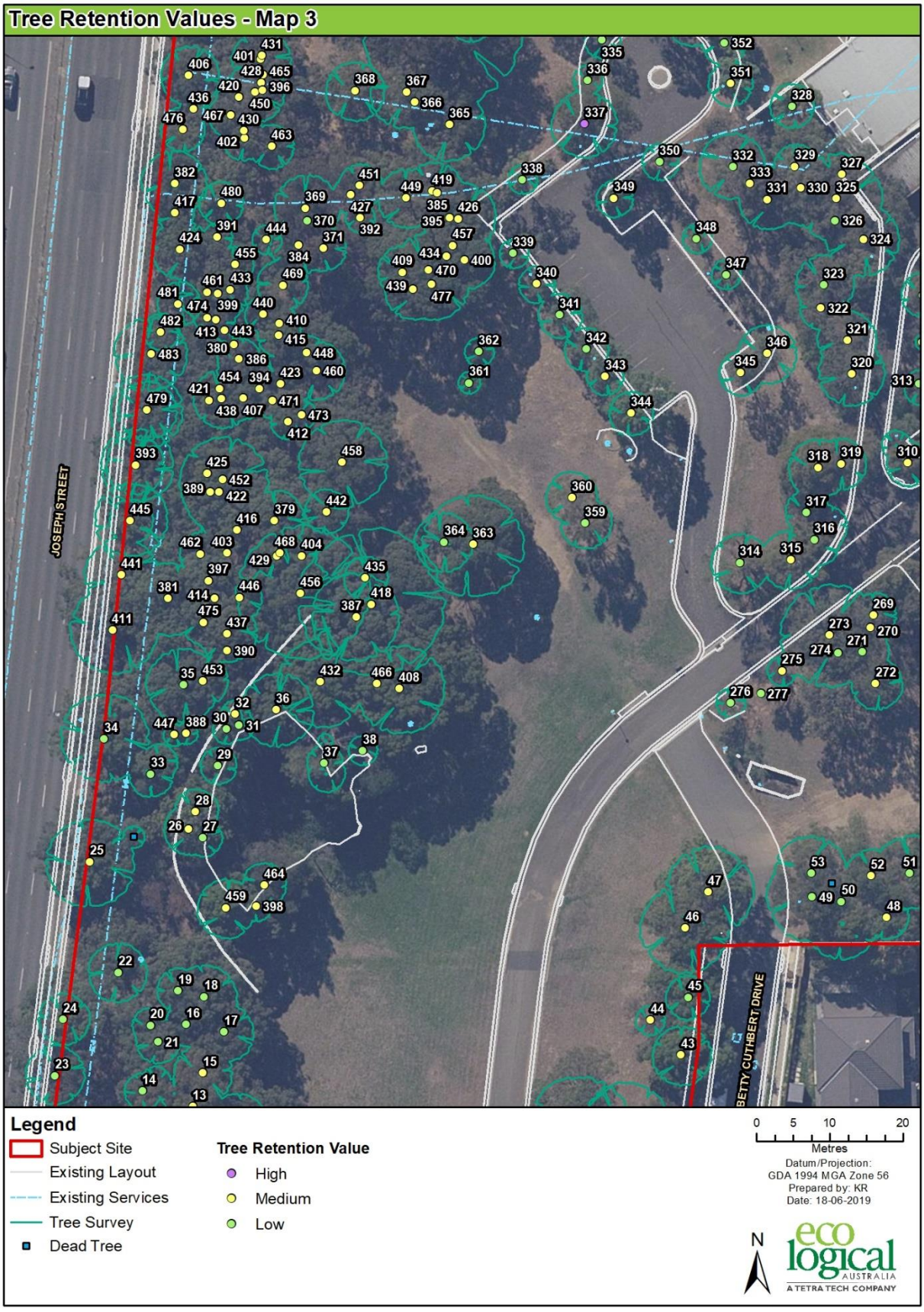


Figure 5: Tree retention map

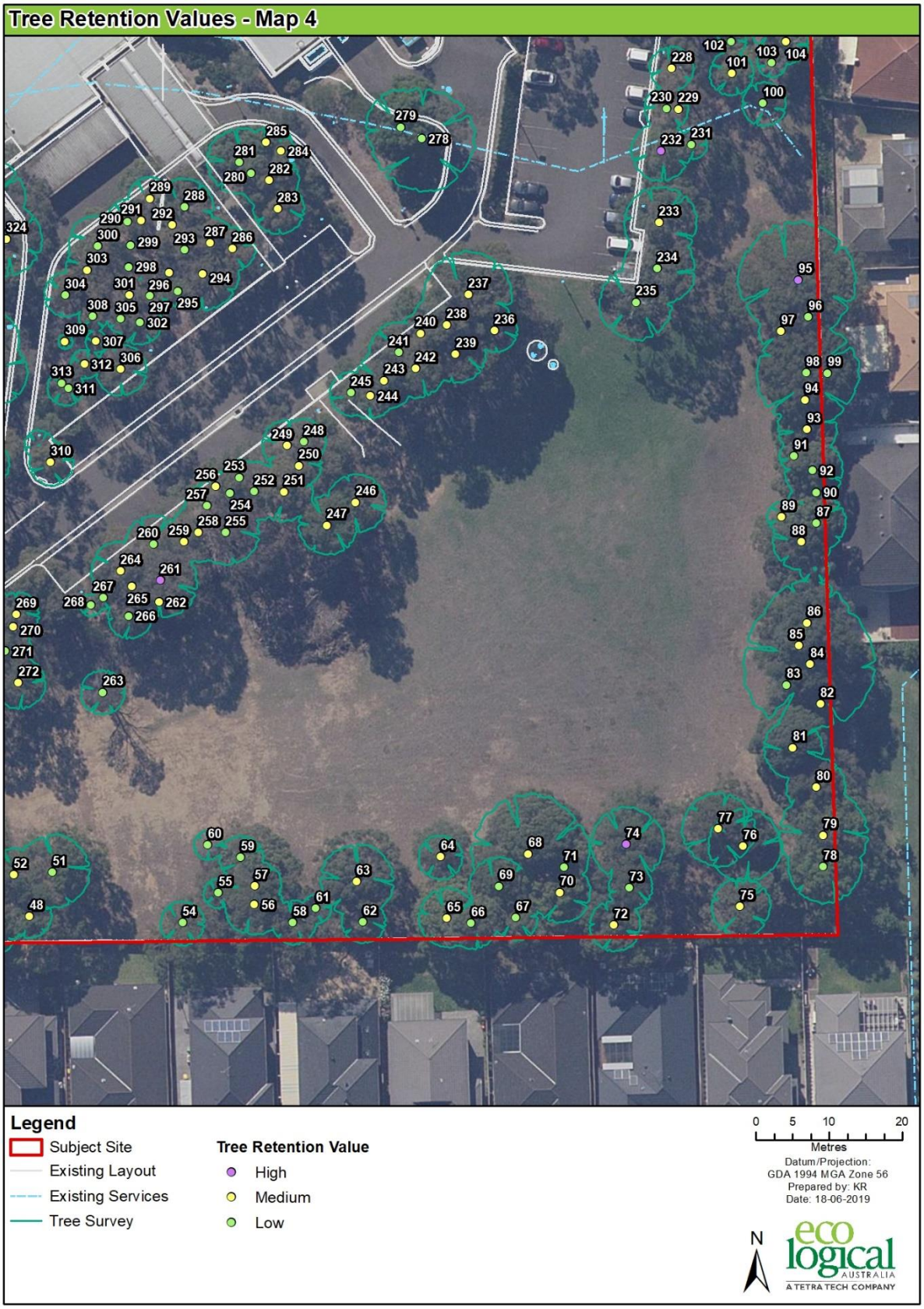


Figure 6: Tree retention map



Figure 7: Tree retention map

Appendix B Tree retention assessment method

B1 Tree Significance Assessment Criteria - STARS©

Low	Medium	High
The tree is in fair-poor condition and good or low vigour.	The tree is in fair to good condition	The tree is in good condition and good vigour
The tree has form atypical of the species	The tree has form typical or atypical of the species	The tree has a form typical for the species
The tree is not visible or is partly visible from the surrounding properties or obstructed by other vegetation or buildings	The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area	The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age.
The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area	The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street	The tree is listed as a heritage item, threatened species or part of an endangered ecological community or listed on Council's significant tree register
The tree is a young specimen which may or may not have reached dimensions to be protected by local Tree Preservation Orders or similar protection mechanisms and can easily be replaced with a suitable specimen	The tree provides a fair contribution to the visual character and amenity of the local area	The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity.
The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa in situ – tree is inappropriate to the site conditions	The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa in situ	The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values.
The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms		The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa in situ – tree is appropriate to the site conditions.
The tree has a wound or defect that has the potential to become structurally unsound.		
The tree is an environmental pest species due to its invasiveness or poisonous/allergenic properties.		
The tree is a declared noxious weed by legislation		

B2 Matrix assessment

		Tree significance				
		High	Medium	Low		
Useful Life Expectancy	Long >40 years					
	Medium 15-40 years					
	Short <1-15 years					
	Dead					

Legend:

	Priority for retention (High): Tree considered important so should be retained and protected. Design modification or re-location of structure should be considered to accommodate the setbacks as prescribed by the *Australian Standard AS4970 Protection of trees on development sites*. Tree sensitive construction measures must be implemented if works are to proceed within the Tree Protection Zone.
	Consider for retention (Medium): Tree considered less important, however**,** retention should remain priority. Removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.
	Consider for removal (Low): Tree not considered important for retention, nor requiring special works or design modification to be implemented for their retention.
	Consider for removal (Low): Tree not considered important for retention, nor requiring special works or design modification to be implemented for their retention.

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Date 17/06/2019

Our ref: 19SYD - 13268

Urbis Pty Ltd
Sent via email: cmartin@urbis.com.au

Attention: Celeste Martin

Dear Celeste,

Re: Habitat tree assessment and targeted flora survey – 80 Betty Cuthbert Drive, Lidcombe

Eco Logical Australia (ELA) was engaged by Urbis Pty Ltd to undertake a habitat tree assessment for threatened fauna, and a targeted flora survey for *Acacia pubescens* (Downy wattle) at 80 Betty Cuthbert Drive, Lidcombe. *Acacia pubescens* is listed as vulnerable under the NSW *Biodiversity Conservation Act 2016* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. The aim of these assessments are to assist the development of the masterplan for 80 Betty Cuthbert Drive, Lidcombe (the study site).

The results of the assessment found that no threatened fauna habitat trees or *Acacia pubescens* specimens were identified within the study site during the field inspection. Notably, however, the study site appears to be a popular source of food for several common nectivorous birds.

This letter report provides detail on the methodology and results of the survey work. Should you have any questions regarding the information outlined in this letter, please don't hesitate to contact me on (02) 8536 8600.

Regards,



Griffin Taylor-Dalton
Graduate ecologist

1. Methodology

The study site is located in an open woodland, situated on the grounds of the MS Study Centre, Lidcombe. The study site is shown in Appendix A, Figure 1.

1.1 Desktop assessment

Prior to undertaking the field survey, an Atlas of NSW Wildlife database search (5km radius) was conducted to determine if any *Acacia pubescens* (or other threatened flora) and threatened fauna had been previously recorded in the study site and greater locality (Appendix B Figure 4). In addition to this, the previous Arboricultural reports were reviewed to gain a better understanding of what canopy species were present within the study site (Paul Shearer Consulting 2017 and 2019).

1.2 Field survey

ELA ecologist Griffin Taylor-Dalton undertook the field survey on 7 June 2019. The aim of the field survey was to undertake a habitat tree assessment for threatened fauna, and undertake a targeted flora survey for *Acacia pubescens* (Downy wattle). In addition to this, any other features, such as water bodies and flowering Eucalypts were also noted.

1.2.1 Habitat tree assessment

All trees present within the study site were inspected during the habitat tree assessment. Specific features noted including tree hollows, fissures within the bark, hollow logs and birds' nests. To assist in these searches, a set of Bushnell 10x42 binoculars were used to survey sections of trees that were difficult to see at ground level.

Any tree habitat features observed were to be recorded spatially using a handheld GPS unit (accuracy to approx. 10m). Hollow size, number and tree species was also to be recorded.

Any birds seen or heard during the inspection were also recorded. A full species list can be found in Appendix C.

1.2.2 Targeted *Acacia pubescens* survey

The entire study site was traversed during the *Acacia pubescens* survey. Any plants detected were to be recorded spatially using a handheld GPS unit.

2. Results

2.1 Desktop Assessment

The Atlas of NSW Wildlife database search (5km radius) found no threatened flora or fauna recorded within the study site. There are however many records across the greater locality (Appendix B Figure 4). Notably, numerous *Acacia pubescens* and *Pteropus poliocephalus* (Grey-headed flying fox) records have been made within approximately 2km of the study site. Other significant species, such as *Litoria aurea* (Green and Golden Bell Frog), were recorded approximately 5km from study site.

Both previous Arboricultural reports (Paul Shearer Consulting 2017 and 2019) detail that the site has predominately been cleared of endemic species however a few large mature trees are still present.

2.2 Habitat assessment and targeted flora survey

No *Acacia pubescens* were identified within the study site during the field survey.

No habitat trees were recorded during the habitat assessment. This was largely due to the fact that most trees were not mature enough to form hollows. The few mature trees that were present within the study site appeared to have had their dead limbs lopped. Dead limbs often form into hollows. Notably, there was a lot of bird foraging activity, mainly from nectivorous species such as *Trichoglossus haematodus* (Rainbow Lorikeet) and *Manorina melanocephala* (Noisy Miner). This is likely due to the heavily flowering *Eucalyptus microcorys* (Tallowwood) which dominated the canopy of the study site (Appendix A, Figure 2)**.**

One small artificial pond was observed during the survey (Appendix A Figure 3). Artificial ponds such as these can potentially provide habitat for threatened amphibians such as *Litoria aurea* (Green and Golden Bell Frog). However, this waterbody is considered unlikely to provide suitable habitat as it is not part of a larger connecting water way and the water quality appeared to be of a poor condition. In addition to this, no records from Atlas of NSW Wildlife we located close to the study site.

3. References

Office of Environment and Heritage. (2013). *Map of the Cumberland Plain*. URL: https://www.environment.nsw.gov.au/threatenedspecies/MapOfTheCumberlandPlain.htm

Paul Shearer Consulting. (2017). *MS Studdy Centre TRA. – 20.10.2017*

Paul Shearer Consulting. (2019). *MS Studdy Centre TRA – 10.04.2019*

Appendix A Site photos



Figure 1: Study site – 80 Betty Cuthbert Drive, Lidcombe



Figure 2: Heavily flowering *Eucalyptus microcorys*. These flowers attracted a lot of attention from the Rainbow Lorikeets.



Figure 3: Small pond located within the subject site. Habitat for threatened amphibians is considered unlikely.

Appendix B Atlas of NSW Wildlife threatened species search results

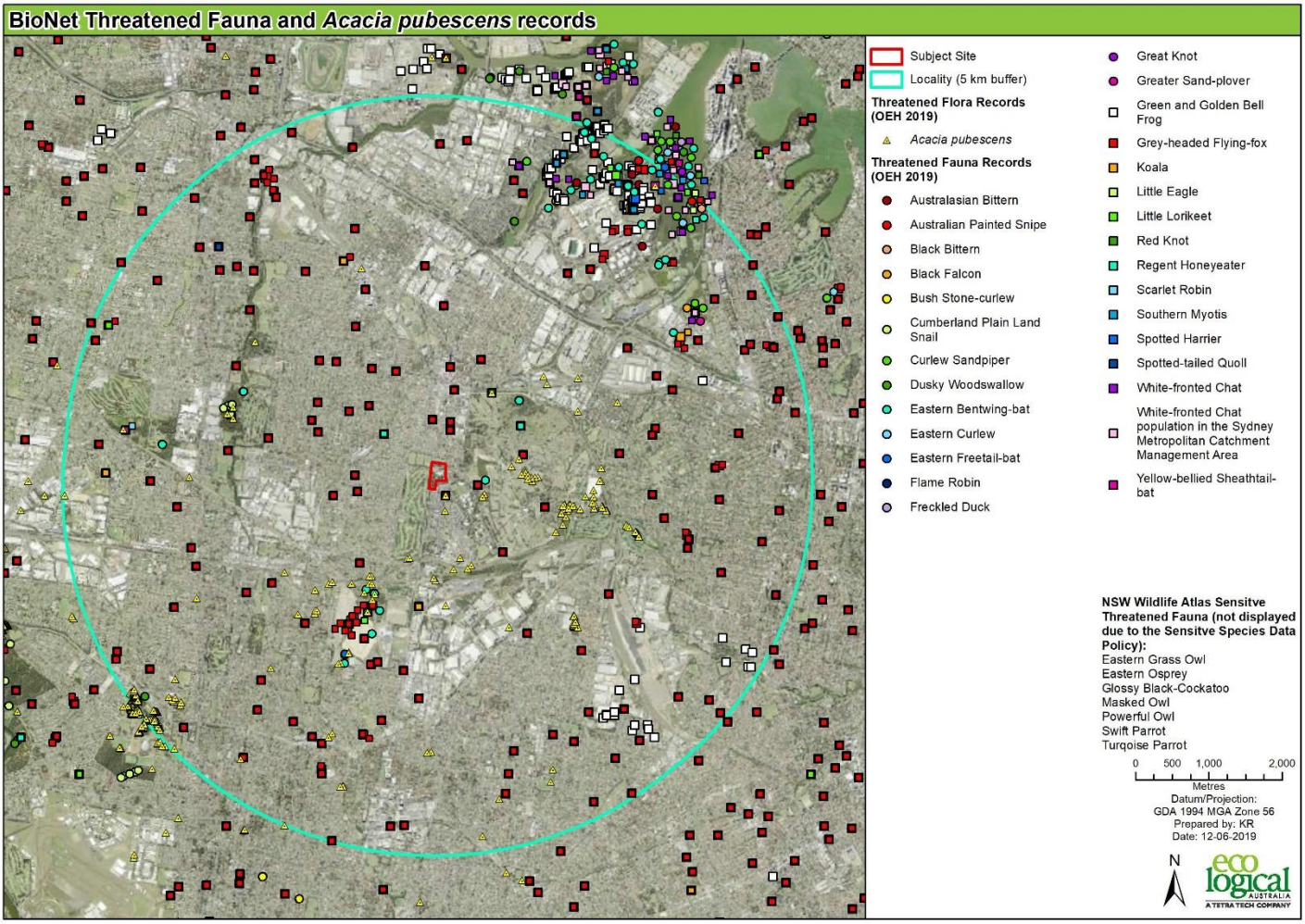


Figure 4: Atlas database search results for a 5km radius around the study site.

Appendix C Birds identified within the study site

Species	Common name	Observed	Heard
Cacatua sanguinea	Little Corella		X
Columba livia	Rock Dove	X	X
Corvus coronoides	Australian Raven	X	X
Grallina cyanoleuca	Magpie lark		X
Gymnorhina tibicen	Australian Magpie	X	X
Manorina melanocephala	Noisy Miner	X	X
Strepera graculina	Pied Currawong	X	X
Threskiornis molucca	Australian White Ibis	X	
Trichoglossus haematodus	Rainbow Lorikeet	X	X

80 Betty Cuthbert Drive, Lidcombe Master Plan

Stage 1 - Preliminary Contamination and Acid Sulfate Soils Investigation Report

Planning Proposal

04 August 2021
Confidential

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
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B	14/02/20	JW	TL	JW	Updated for DPIE comments
C	24/04/20	KA	EM	JW	Updated for DPIE comments
D	05/05/20	KA	EM	JW	Updated following Urbis comments
E	18/06/21	JW	TL	JW	Updated for lot change
F	14.07.21	JW	TL	JW	Updated for PNSW comments
G	03.08.21	JW	TL	JW	Updated referencing
H	04.08.21	JW	TL	JW	Updated referencing

Document reference: MMD-405675-PP-RP-04-H

Information class: Standard

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1 Introduction

Mott MacDonald has been engaged by Property and Development NSW (PDNSW), to conduct a Stage 1 - Preliminary Contamination and Acid Sulfate Soils Investigation to guide the planning proposal for rezoning of 80 Betty Cuthbert Drive, Lidcombe (the Project). The investigation will be used to identify opportunities, constraints and risks to be considered as part of the delivery of the project.

1.1 Regional context

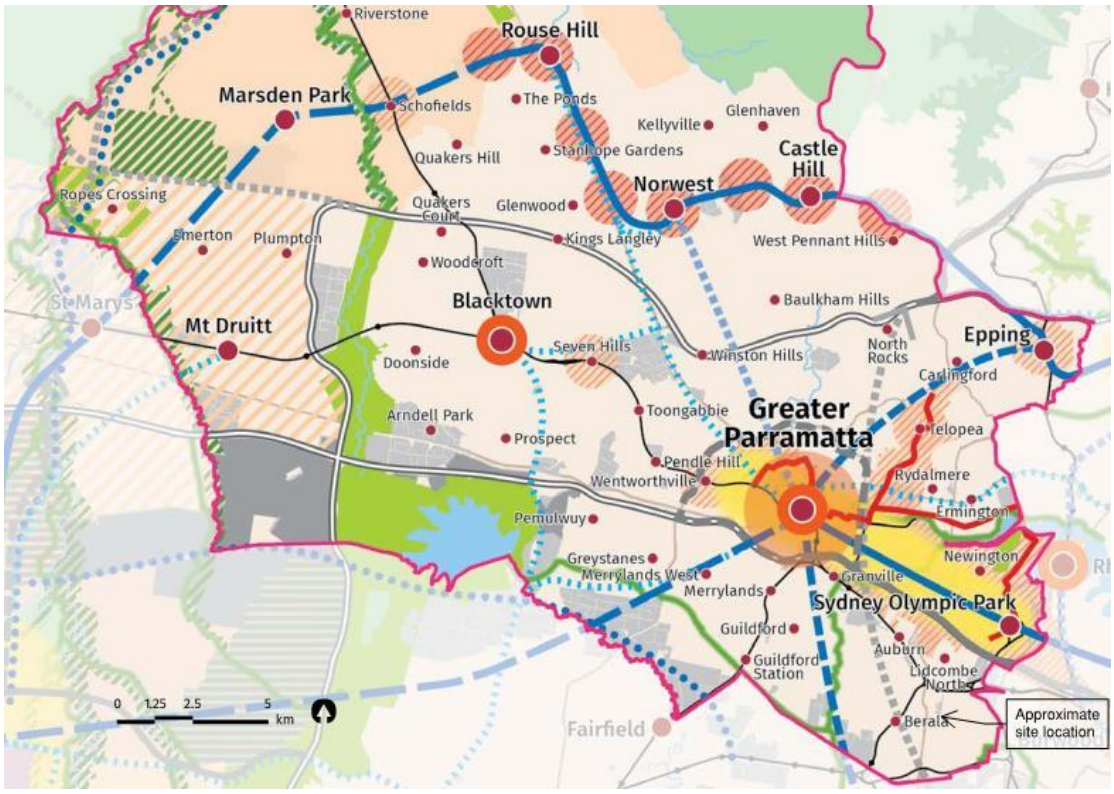
The site is located within the suburb of Lidcombe, approximately 15km west of Sydney CBD and within the Cumberland local government area. The closest major interchange station is Lidcombe Station, 1.5km north of the site, and Berala Station is the nearest station, 1.2km west of the site. The site is surrounded by a mixture of land uses and facilities, with residential land to the north, east and south, an educational site to the south east and the Carnarvon Golf Course to the west.

In March 2018, the NSW Government released the Greater Sydney Region Plan which outlined a vision of three cities; a western parkland city, a central river city and an eastern harbour city. The study area lies within the Central City District as shown in Figure 1-1 over-page. It is within close proximity to Lidcombe North and Berala local centres, which have been identified for urban renewal.

1.2 Study area

The project site is located at 80 Betty Cuthbert Drive, Lidcombe (Figure 1-2). It has a primary frontage to Joseph Street between Georges Avenue to the north and Botanica Drive to the south. The site is approximately 5.8ha in area. It is currently occupied by Multiple Sclerosis Limited (MSL); existing development of the site includes a 1970's circa 4,300sqm brick building that provides office space, treatment facilities and respite care facilities to support the operations of MSL. The existing MSL facilities are positioned at the high point of the site and cover approximately 12% of the site area. The remainder of the site is unused, consisting of amenity grassland with scattered trees. Existing vehicle access to the site is via the intersection of Joseph St and Botanica Drive. The existing access route then enters the site on the southern side via Betty Cuthbert Drive with an existing internal road continuing to the centre of the site where the MSL facility currently lies.

Figure 1-1: Central city plan



Source: Central City District Plan, Greater Sydney Commission (2018)

Figure 1-2: Site overview



Source: Google Earth (2018)

1.3 Proposed development

In 2017, DPIE prepared a master plan for the site which allocated land for a future educational establishment, health facility and for residential use. The masterplan has been developed with key stakeholders, Department of Education (DE) and Multiple Sclerosis Limited (MSL). The future educational establishment will be developed by the DE and the health facility by MSL.

The future educational establishment will be located on a 1.85 ha parcel in the central western portion of the site. The education establishment, for the purpose of this assessment, has been assumed as a 1,000 student primary school, to accommodate a maximum capacity scenario for development of that land. It should be noted that this is an assumption made for this assessment and the establishment may be a different type of school.

A 0.95 ha site adjacent Joseph Street will be used for a new health facility, and the surplus land (approx. 1.78 ha) will be rezoned to medium density residential land (excluding road and drainage areas) and divested. The concept indicative layout plan (ILP) is shown in Figure 1-3.

Figure 1-3: Proposed master plan



Source: Urbis - 80 Betty Cuthbert Drive, Lidcombe – Indicative Layout Plan (02 August 2021)

1.4 Purpose of report

The purpose of this Stage 1 – Preliminary Contamination Investigation is:

- Review of the site's potential for site contamination resulting from current or previous land uses.
- Summary of key issues that may present liabilities or constraints on future development to inform the Planning Proposal with respect to proposed land-uses.
- Recommendations for further investigation to assist with quantifying the risks and constraints for future development.

1.5 Scope of works

As part of this Stage 1 - Preliminary Contamination Investigation, Mott MacDonald has undertaken the following tasks:

- Review of the project's environmental setting, with reference to published maps and the Office of Water's monitoring well database
- Review relevant published topographical, geological and hydrological data
- Review of the acid sulfate soils map and provisions in the relevant local environment plans
- Review of historical aerial photographs
- Review of Section 149 planning certificates of major parcels of land within the investigation area
- Search of the NSW Environmental Protection Authority (EPA) public register for contamination
- Search of the NSW EPA's Protection of Environment Operations Act 1997 licence database to identify high risk land uses
- Review of historical title deeds records of a sample of land units to review historic changes in land use that could indicate a risk of contamination
- Site walkover inspection of accessible areas to assess current land use and to make observations on current conditions including identification and mapping of potential areas of environmental concern (AECs)
- Assess the potential for contamination, based on site history, a review of previous investigations and any observations made during a site inspection of accessible areas
- Provide maps that categorise sites in relation to their level of known contamination
- Provide recommendations for mitigation measures and other considerations in relation to proposed land uses
- Provide recommendations for further investigations, if required.

1.6 Investigation guidelines

The scope of works and methodology adopted for this contamination investigation were generally based on the guidance provided in the following documents:

- ANZECC/NHMRC (1992). Australian and New Zealand Guidelines for the Investigation and Management of Contaminated Sites
- NEPC (1999), National Environment Protection (Investigation of Site Contamination) Measure, December 1999 (ASC NEPM) as amended in 2013
- NSW Environmental Protection Authority (1997). Guidelines for Consultants Reporting on Contaminated Sites.

1.7 Site contamination investigation framework

Soil and groundwater contamination has the potential to impact adversely on human health and the environment. For a significant or identifiable risk to be present, there must be an exposure pathway. The exposure pathway comprises the following three components:

- The source, which is the presence of a substance that may cause harm;
- The receptor, which is the presence of an ecological or human receiver that might be harmed at an exposure point;
- The pathway, which is the existence of a means or mechanism of exposing a receptor to the source.

In the absence of a plausible exposure pathway there would be minimal risk. Therefore, the presence of 'something measurable', e.g., volumes of a chemical or presence of asbestos does not necessarily imply that there would be measurable human harm. For an impact to occur it is necessary to have a significant source of contamination, an appropriate or effective pathway for this to be presented to a receptor, and the receptor must have a negative response to this exposure.

The nature and importance of sources, receptors and exposure pathways will vary with every site, situation, intended end use and environmental setting. Management measures, design considerations and land use planning decisions can be implemented to reduce the risks associated with site contamination.

For the project, the contamination risk considerations include:

- The potential impact to workers during redevelopment works, including demolition of existing structures, disturbance of surface and near surface soils, excavation of basements and service trenches, landscaping activities and potential interception of shallow groundwater
- The potential impact to residents (particularly children and the elderly) from residual contamination, including the ingestion of soil in unsealed back yards, consumption of home-grown vegetables and poultry, or soil vapours
- The potential impact to the public, including contact with soil in public reserves and other public open spaces

1.8 State Environmental Planning Policy No 55 - Remediation of Land

State Environmental Planning Policy No 55 - Remediation of Land (SEPP 55) provides for a state-wide planning approach to the remediation of contaminated land. It aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment as per *Clause 2*:

2 - Object of this Policy

a. *by specifying when consent is required, and when it is not required, for a remediation work*
b. *by specifying certain considerations that are relevant in rezoning land and in determining development applications in general and development applications for consent to carry out a remediation work in particular*
c. *by requiring that a remediation work meet certain standards and notification requirements*

With regard to rezoning of land the following provisions are required as per Clause 6:

6 - Contamination and remediation to be considered in zoning or rezoning proposal

1. *In preparing an environmental planning instrument, a planning authority is not to include in a particular zone (within the meaning of the instrument) any land specified in subclause (4) if the inclusion of the land in that zone would permit a change of use of the land, unless:*
   a. *the planning authority has considered whether the land is contaminated, and*
   b. *if the land is contaminated, the planning authority is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for all the purposes for which land in the zone concerned is permitted to be used, and*
   c. *if the land requires remediation to be made suitable for any purpose for which land in that zone is permitted to be used, the planning authority is satisfied that the land will be so remediated before the land is used for that purpose.*

Note - In order to satisfy itself as to paragraph (c), the planning authority may need to include certain provisions in the environmental planning instrument.

2. *Before including land of a class identified in subclause (4) in a particular zone, the planning authority is to obtain and have regard to a report specifying the findings of a preliminary investigation of the land carried out in accordance with the contaminated land planning guidelines.*
3. *If a person has requested the planning authority to include land of a class identified in subclause (4) in a particular zone, the planning authority may require the person to furnish the report referred to in subclause (2).*
4. *The following classes of land are identified for the purposes of this clause:*
   a. *land that is within an investigation area,*
   b. *land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out,*
   c. *to the extent to which it is proposed to carry out development on it for residential, educational, recreational or childcare purposes, or for the purposes of a hospital—land*
      i. *in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and*
      ii. *on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge).*
5. *In this clause, planning authority has the same meaning as it has in section 145A of the Act."*

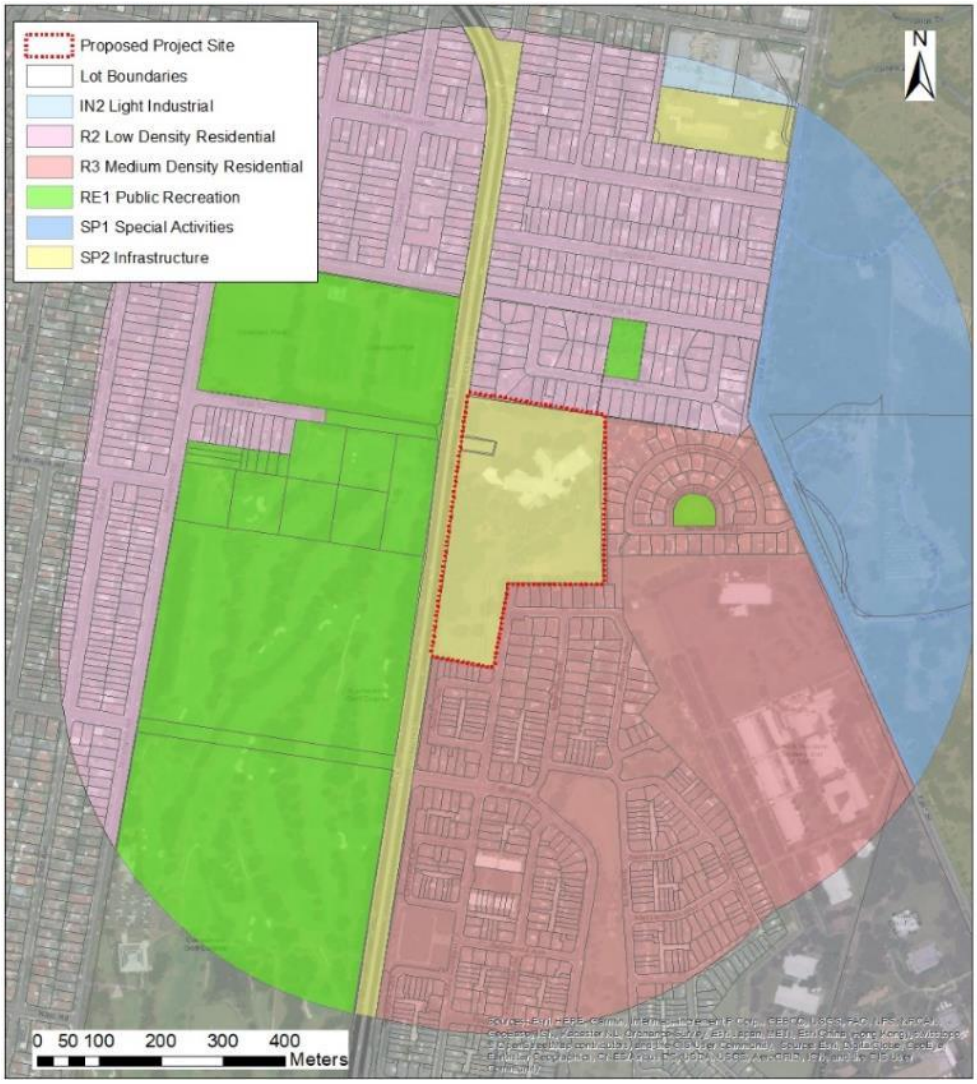
2 Desktop study

2.1 Surrounding land use

The land surrounding the project site is generally a combination of Low Density Residential (Land use code R2), Medium Density Residential (Land use code R3), Public Recreation (Land use code RE1) and Special Activities (Land use code SP1). Figure 2-1 provides a map showing the adjacent land uses to the project site.

The project site land use is designated as Infrastructure (Land use code SP2). In this land use type the use of the land is limited to the following, with consent: aquaculture, car parks, community facilities, depots, environmental facilities, freight transport facilities, funeral homes, kiosks, markets, mortuaries, passenger transport facilities, places of worship, recreation areas and roads (Auburn LEP 2010).

Figure 2-1: Surrounding land uses



Source: Auburn LEP 2010

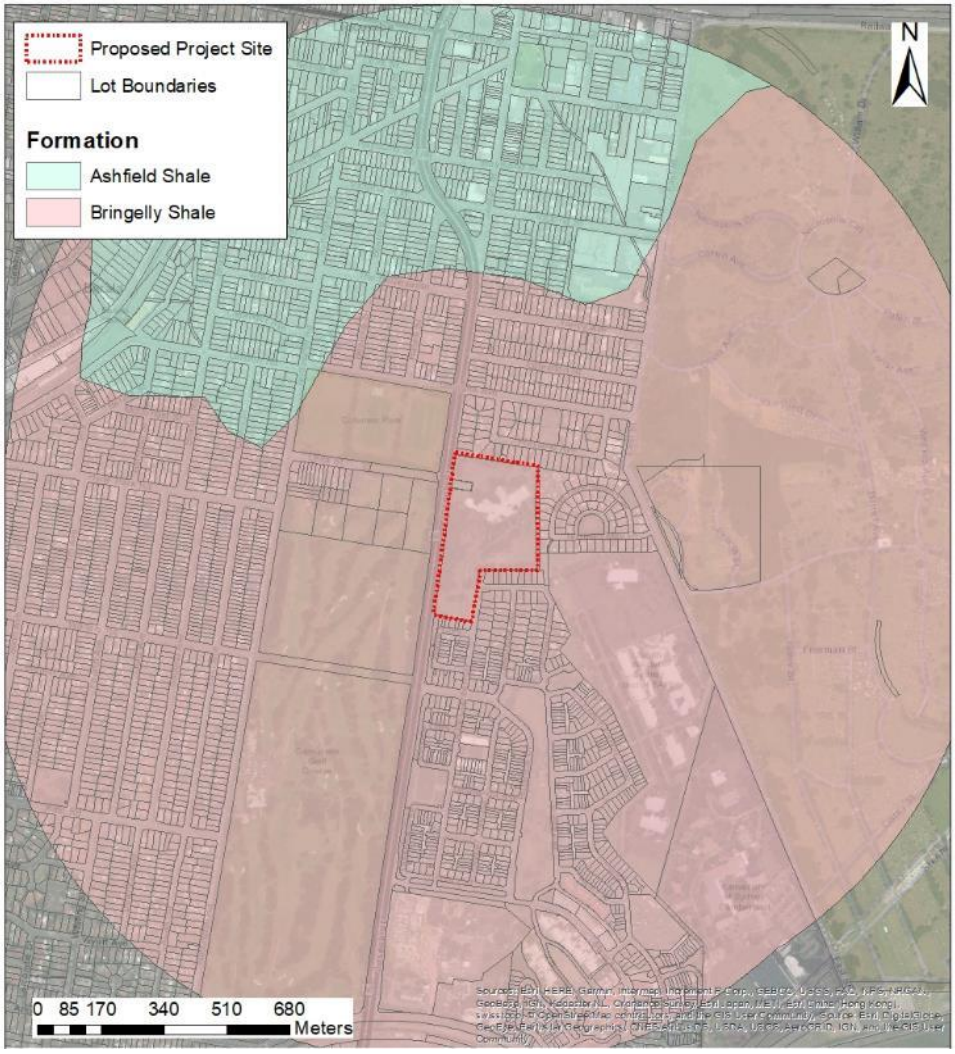
2.2 Regional soils and geology

The regional geology and hydrogeological characteristics of the area are summarised below.

2.2.1 Geology

The 1:100,000 Geology of Sydney Map (Geological Survey of NSW, 1983) indicates the regional geology (in which the project site lies) is Ashfield shale and Bringelly shale, both of which were formed in the Middle Triassic (Mesozoic period). Ashfield shale is a black to dark-gray shale and laminite of the Wianamatta group. Bringelly shale is a shale, carbonaceous claystone, laminate with fine to medium-grained lithic sandstone and rare coal also of the Wianamatta group. The project site sits within the Bringelly shale geological formation (Figure 2-2).

Figure 2-2: Regional geology



Source: NSW Department of Planning and Environment (Resource and Geoscience, 2019)

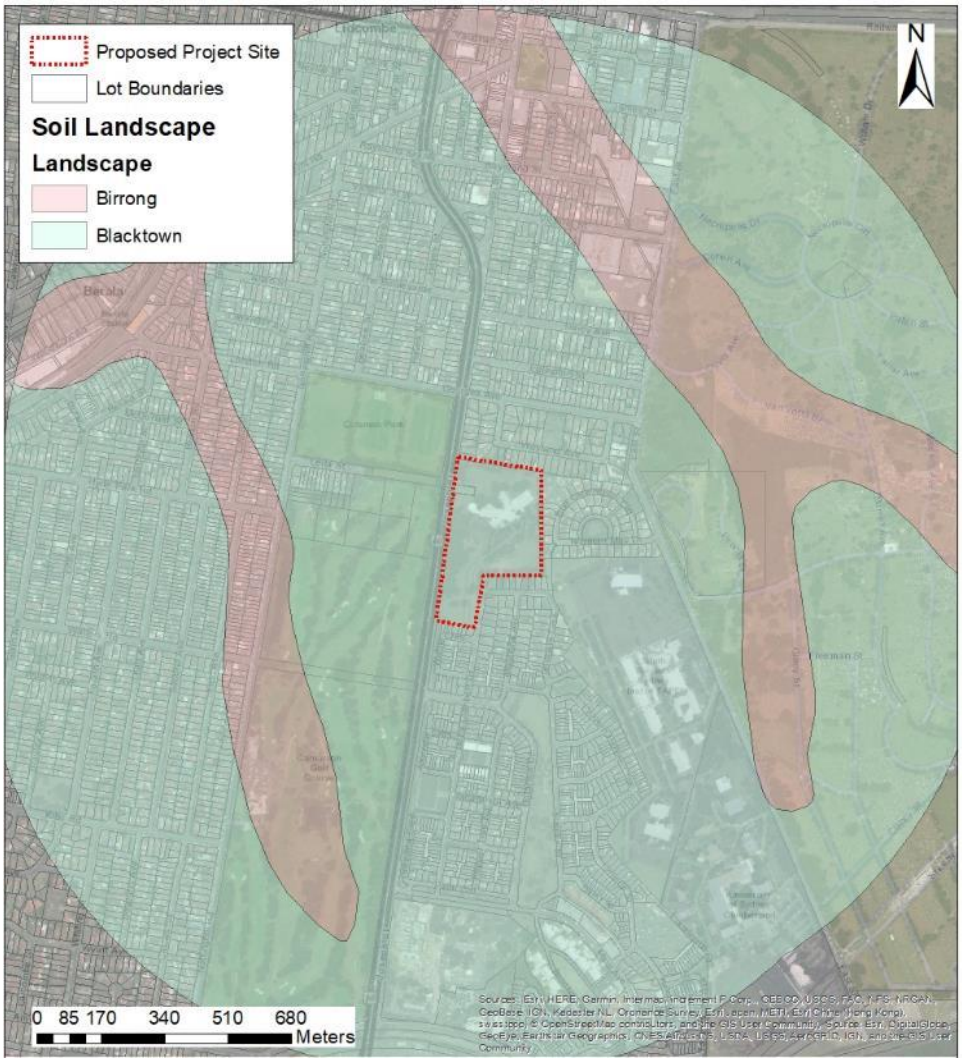
2.2.2 Soil landscape characteristics

As shown in Figure 2-3, a search using the eSPADE website (undertaken on 18 March 2019) identified that the project site is underlain by the Blacktown soil landscape unit. The landscape unit includes Ashfield shale,

consisting of laminite and dark grey siltstone, and Bringelly shale, which consists of shale with occasional calcareous claystone, laminite and coal. These are both derived from the Wianamatta group.

The topography comprises of gently undulating rises on Wianamatta shale with local relief between 10m and 30m, as well as slopes generally less than 5%, but can reach up to 10%. Crests and ridges are broad (200m to 600m) and rounded with convex upper slopes grading into concave lower slopes. Rock outcrops are absent in this soil landscape unit.

Figure 2-3: Regional soil landscape



Source: www.eSPADE.environment.nsw.gov.au (2019)

2.2.3 Acid sulfate soils

The Auburn LEP 2010 classifies the site as class 5. Class 5 land is the least onerous designation where acid sulfate soils are considered unlikely. The consideration of acid sulfate soils is only necessary, and development consent required, for works that are below 5m within 500m of adjacent class 1-4 land and by which the water table is likely to be lowered below 1m on adjacent class 1-4 land. There are no class 1-4 soils within 1km of the project site. This precludes a consent requirement for the project.

2.3 Topography and surface water features

Figure 2-4 shows the topography of the project site. The site topography falls away from the high point (37m) in the middle of the site; where the existing MSL building is located. The lowest point (32m) of the site is in the south west.

There is a single on-site stormwater detention (OSD) basin at the low point of the site (refer Figure 2-4). This collects flows from the southern half of the site.

Figure 2-4: Topography and surface water



2.4 Groundwater

The project site lies within the Bankstown hydrogeological landscape. Characteristics of this landscape were obtained through the NSW Office of Environment and Heritage eSPADE website. The hydrogeological landscape is characterised by low hills and rises on Triassic shale and sandstone within the Sydney Basin. It is an area of moderate to high rainfall (over 800mm per year). Groundwater systems are local with short to intermediate flow lengths and are loosely defined by topographic catchments. Water quality within these systems is brackish to saline. Water table depths are intermediate (between 2m and 6m).

In the project site, the general hydrogeology consists of porous, extensive aquifers of low to moderate productivity (National Centre for Groundwater Research and Training 2014[1]).

A Lidcombe contamination assessment conducted by Sullivan Environmental Sciences in 2016[2] determined that the groundwater in the area, at the time of monitoring, was approximately 2.0 - 2.8 metres below the ground surface and the groundwater flow direction was in a northerly direction.

No groundwater monitoring bores were identified in the vicinity of the project site by undertaking an online search using the Department of Primary Industries (Water) and Water NSW databases. A single groundwater abstraction licence is held at a site 850m to the north of the project site.

2.5 Section 149 planning certificates

Section 149 certificates are legal planning documents issued by Cumberland Council in accordance with the requirements of section 10.7(2) of the *Environmental Planning and Assessment Act 1979*. The certificates place restrictions and requirements on development for specific parcels of land.

2.5.1 Methodology

Mott MacDonald reviewed the planning certificate for the project site (Lot 74 DP 1141724 and 475 DP 45747) for the following clauses, which, if present, could indicate the presence of contamination or acid sulfate soils:

(3) *General Housing Code & Commercial and Industrial (New Buildings and Additions) Code:*

- *Clause 1.19(5)d.. Land that is significantly contaminated land within the meaning of the Contaminated Land Management Act 1997. (Applies only to the Commercial and Industrial (New Buildings and Additions) Code;*
- *Clause 1.19(1)c or 1.19(5)c. Has been identified as being on an Acid Sulfate Soils Map as being Class 1 or Class 2.*

(7) *Council and other public authorities policies on hazard risk restrictions:*

a. *The land is / is not affected by a policy adopted by the Council that that restricts the development of the land because of the likelihood of land slip, bushfire, flooding, tidal inundation, subsidence, acid sulphate soils or any other risk; and*
b. *The land is / is not affected by a policy adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to on planning certificate issued by Council, that restricts the development of the land because of the likelihood of land slip, bushfire, flooding, tidal inundation, subsidence, acid sulfate soils or any other risk.*

(21) *The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:*

c. *The land to which the certificate relates is / is not declared to be significantly contaminated land within the meaning of that act as at the date when the certificate is issued.*
d. *The land to which the certificate relates is / is not subject to a management order within the meaning of that act as at the date when the certificate is issued.*
e. *The land to which the certificate relates is / is not the subject of an approved voluntary management proposal within the meaning of that act at the date the certificate is issued.*
f. *The land to which the certificate relates is / is not the subject of an ongoing maintenance order within the meaning of that act as at the date when the certificate is issued.*

[1] Harrington N and Cook P (2014) Groundwater in Australia, National Centre for Groundwater Research and Training, Australia

[2] Sullivan Environmental Sciences (2016) Phase 2 Contamination Assessment report

g. *The land to which the certificate relates has / has not identified the subject of a site audit statement within the meaning of that act, a copy of which has been provided to Council.*

The reviewed certificate is provided in Appendix A for reference.

2.5.2 Review results

The planning certificate did not include reference to contamination under the *General Housing Code & Commercial and Industrial (New Buildings and Additions) Code*.

The planning certificate refers to the Auburn Local Environmental Plan 2010 for the status of the site with regards to acid sulfate soils. A review of this data source is provided in Section 2.2.3 of this report. The review concluded the project site was unlikely to contain acid sulfate soils.

The planning certificate confirmed:

- The land is not significantly contaminated land (or part of the land) within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
- The land is not subject to a management order within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
- The land is not subject on an approved voluntary management proposal within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
- The land is not subject to an ongoing maintenance order within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
- The land is subject to a site audit statement within the meaning of the *Contaminated Lands Management Act 1997*.

2.6 NSW EPA contaminated land public record database

The NSW EPA contaminated land public record is a searchable database of:

- Orders made under Part 3 of the *Contaminated Land Management Act 1997* (CLM Act)
- Approved voluntary management proposals under the CLM Act that have not been fully carried out and where the approval of the EPA has not been revoked
- Site audit statements provided to the EPA under section 53B of the CLM Act that relate to significantly contaminated land
- Where practicable, copies of anything formerly required to be part of the public record
- Actions taken by EPA under section 35 or 36 of the *Environmentally Hazardous Chemicals Act 1985* (EHC Act)
- Notices (actions taken by the EPA as written notices).

An online search for the NSW EPA contaminated land record database was undertaken on the 20 March 2019 for records that lie within or near (1km) to the project site. The search yielded no records within 1km of the site. Evidence of this search is provided in Appendix B.

2.7 NSW EPA POEO public register

The NSW EPA *Protection of Environment Operations Act 1997* (POEO) public register under Section 308 of the POEO Act records the following:

- Environment protection licences
- Applications for new licences and to transfer or vary existing licences

- Environment protection and noise control notices
- Penalty notices issued by the EPA
- Convictions in prosecutions under the POEO Act
- The results of civil proceedings
- Licence review information
- Exemptions from the provisions of the POEO Act or regulations
- Approvals granted under clause 9 of the POEO (Control of Burning) Regulation
- Approvals granted under clause 7A of the POEO (Clean Air) Regulation
- Audits required to be undertaken in relation to a licence
- Pollution studies required by a condition of a licence
- Pollution reduction programs required by a condition of a licence
- Penalty notice issued in relation to a premise.

An online search of the public register database was undertaken on the 20 March 2019 for records that lie within or near (within 1km) to the site. The search indicated that there were no properties within 1km of the site that are on the NSW EPA POEO register. Evidence of this search is provided in Appendix C.

2.8 Hazardous chemical database - SafeWork NSW

SafeWork NSW maintains a database of hazardous chemicals (under schedule 11 of *Work Health and Safety Regulations 2017*) that are stored, handled or processed on premises. The site visit and desktop review did not identify any premises where a search of this database would provide useful insight, therefore a search of the database was not carried out.

2.9 DPI&E report

Mott MacDonald was provided with a memorandum Initial Contamination Assessment report (Environmental Service Group, 2018) for the project site from DPI&E dated 23 November 2018. The initial assessment involved the review of the NSW EPA online database and online satellite imagery to study the potential for contamination at the site. The assessment concluded that the site had a moderate risk of contamination from chemicals of concern due to its use as a hospital.

2.10 Historical research

2.10.1 Aerial maps

Historic aerial maps were sourced from the Department of Finance, Services and Innovation of the NSW Government on 01 April 2019. A summary of the obvious changes within the area are presented in Table 2-1. The aerial photos reviewed are provided in Appendix D.

Table 2-1: Key changes within the project site and surrounding land

Year	Observations
1943	**Project site –** The land is undeveloped apart from a building in the north-western corner of the site. The deposited plan (DP45747) for the building identifies it as mainly of brick construction, but with fibrous cement sheets, which was historically reinforced with asbestos. **Surrounding land –** The surrounding land is undeveloped except for a building immediately south of the site.
1955	**Project site –** There was no additional development within the project site. **Surrounding land –** A residential development has been built bordering the site to north. Several large buildings are located to the south west of the project site.
1965	**Project site –** There was no additional development within the project site during 1955-1965.

Year	Observations
	Surrounding land – There are few obvious changes between 1955 and 1965, apart from a small increase in the number of large buildings to the south-west of the project site and development started on the golf course to the west.
1975	**Project site –** The site is still undeveloped. The largest change is additional trees along the western property border. **Surround land -** Between 1965 and 1975 there was again an increase in development to the south west of the project site, including a large building at the south-west corner of the project site. Development of the golf course progressed to the west of the project site.
1986	**Project site –** Between 1975 and 1986 the dwelling in the north-west corner was removed and a large building was erected on the northern end of the project site. A road was built running south to connect to other buildings outside the project site. There was also an increase in trees surrounding the building and property border **Surrounding land –** Another large building has been built to the south-west of the project site, along with more roads and a roundabout south of the project site.
1994	**Project site –** There was no real change in development within the project site between 1986 and 1994. **Surrounding land –** The key change to the surrounding land is the development of a NSW TAFE complex made up of eight buildings and parking lots to the south west of the site.
2004	**Project site –** There is no obvious change on the project site between 1994 and 2004. **Surrounding land –** The most obvious change between 1994-2004 was the residential development to the north-east of the project site. A large building was built just south of the residential development, north of the existing industrial complex.

Source: NSW Government Department of Finance, Services and Innovation (accessed 2019)

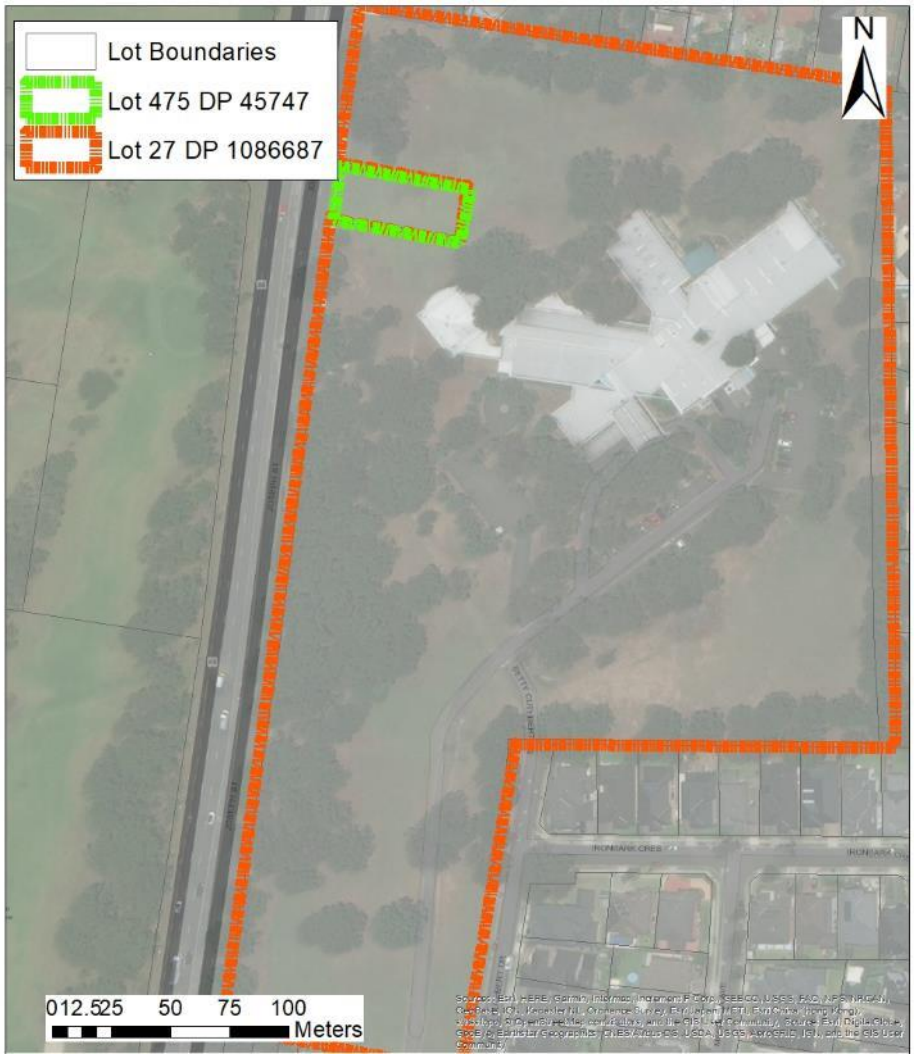
2.10.2 Review of historic title deed records

The project site includes two deposited plans (DP), as shown in Figure 2-5:

- Lot 74 DP 1141724
- Lot 475 DP 45747

The historic title deeds for the two DPs were purchased from Advance Legal Searches.

Figure 2-5: Historic title deeds assessed



Source: Advanced Legal Searches (accessed 2019)

Lot 74 DP 1141724 is owned by the State of New South Wales and was formed from two lots in 2010: Lot 474 DP 45747 and Lot 27 DP 1086687.

- Lot 474 DP 45747 was owned by State of New South Wales 2009-2010, and then Crown Land since 1908. Between 1908 and 2009 the DP was a designated hospital and asylum site.
- Lot 27 DP 1086687 was Crown Land and designated as a hospital and asylum from 1908 to 1998. After which it was owned by the State of New South Wales (1998-1999), Olympic Co-ordination Authority (1999-2004), Sydney Olympic Park Authority (2004-2006), and Australand Industrial No16 Pty - the developer of the residential area to the south of the site - most recently (2006-2010). From 1998 to 2010 the lot and DP number changed on three occasions, presumably due to changes in the extent of the lot.

Lot 475 DP 45747 was owned by Crown Land from 1908 to 2009 and designated as a hospital and asylum site. Since 2009 it has been owned by the State of New South Wales.

There is nothing on the historical title deeds to suggest there is a risk of contamination at the project site.

3 Site inspection

Jonny Steele, senior environmental consultant from Mott MacDonald conducted an inspection of the project site on 7 March 2019 to identify areas of potential or actual contamination. The site inspection comprised of a walk-through of the site to identify evidence of contamination and potential sources of contamination from current land uses. It should be noted that access to the MSL was not permitted.

The majority of the site is undeveloped, consisting of amenity grassland with scattered trees. There is a small detention pond in the south west, adjacent to the A6 road. The existing MSL building and car park dominate the high ground of the site. Two roads link the car park with the external road network, one of which is not redundant due to the development of land to the south of the site.

No evidence of contamination was evident during the site visit.

Two subterranean septic tanks were identified, as shown in Figure 3-1. No information is available on the status or condition of the tanks. There is potential for land contamination as a result of untreated sewage seeping from the tanks.

There were no obvious sources of potential contamination noted other than the car park; hydrocarbon fluids from cars could escape and cause localised ground contamination or minor contamination of the storm water system.

Figure 3-1: Septic tanks



Key: Yellow rings indicate the approximate location of the septic tanks

4 Summary of findings and recommendations

4.1 Summary of study findings

4.1.1 Acid sulfate soil risk

4.1.2 The Auburn LEP 2010 classifies the site as class 5. Class 5 land is the least onerous designation where acid sulfate soils are considered unlikely. The consideration of acid sulfate soils is only necessary, and development consent required, for works that are below 5 m within 500 m of adjacent class 1-4 land and by which the water table is likely to be lowered below 1 m on adjacent class 1-4 land. There are no class 1-4 soils within 1 km of the project site. This precludes a consent requirement for the project. Contamination

No evidence of contamination has been identified at the site. No potential sources of contamination have been noted other than hydrocarbon runoff from the car park and two subterranean septic tanks; there is potential for land contamination as a result of untreated sewage seeping from the tanks.

Apart from a small building in the north west corner, the site was undeveloped until the 1980s when the current MSL site was built. A review of the historical title deeds for the site identified nothing to suggest there is a risk of historical contamination. The current 149 planning certificates confirm the absence of contamination. An online search for the NSW EPA contaminated land record database and the NSW EPA POEO public register database yielded no records to suggest the presence of contamination on the site.

A DPI&E-provided initial contamination assessment report (Environmental Service Group, 2018) concluded that the site had a moderate risk of contamination from chemicals of concern due to its use as a hospital. The activities of the MSL building are unlikely to require hazardous substances. The site visit did not identify any potential sources of contamination from the building, although no access to the building was permitted.

The evidence to date suggests the potential for contamination of the site is low, although there are a number of knowledge gaps which could constitute contamination of the site:

- It is not clear what happened to the demolition waste from the removal of the building that was located in the north west of the project site; the building included asbestos-containing fibrous cement boards. The risk is that the waste was buried onsite.
- The contamination status of the fill used during construction of the MSL building in the late 1970s / early 1980s is unknown
- There is potential for land and groundwater contamination as a result of untreated sewage seeping from the two septic tanks located within the site

4.2 Recommendations

If no additional desk-based data can be found to address the knowledge gaps, targeted invasive soil sampling should be undertaken prior to development of the site to confirm the presence or absence of contamination.

5 Disclaimer

Mott MacDonald has prepared this report based on generally accepted practices and standards in operation at the time that it was prepared. No other warranty is made as to the professional advice included in this report. All parties should satisfy themselves that the scope of work conducted and reported herein meets their specific needs before relying on this document.

Mott MacDonald believes that its opinions have been developed according to the professional standard of care for the environmental consulting profession at the date of this document. That standard of care may change as new methods and practices of exploration, testing, analysis and remediation develop in the future, which may produce different results.

The studied environmental conditions are created by natural processes and human activity, and as such may change over time e.g. groundwater levels may rise or fall and contamination may migrate. This report therefore presents a point in time investigation of the BRC area, and as such can only be valid for the time at which the investigation was undertaken.

The methodology adopted and the sources of information used are outlined in this report. Mott MacDonald has limited its investigation to the scope agreed for this contract and as a result there is a limit to the conclusions that could be reached. Additional sampling and analysis would provide further insight and could produce different results and/or opinions. Mott MacDonald has made no independent verification of the desk-based information used beyond the agreed scope of works and assumes no responsibility for any inaccuracies or omissions.

This report does not include the investigation or consideration of hazardous building materials, including asbestos. Such materials should be assessed and managed by a qualified and licensed assessor/contractor.

Appendices

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A. Section 149 planning certificates

OUR REFERENCE C-10-06/14
CONTACT STRATEGIC PLANNING

CUMBERLAND COUNCIL

G Mott MACDONALD
LEVEL 10, 383 Kent Street
SYDNEY NSW 2000

Certificate No: 32904
Receipt No: 1433987
Date: 27 March 2019
Your Reference: 405675:35593

PLANNING CERTIFICATE

Issued under Section 10.7(2) (5) of the
Environmental Planning and Assessment Act, 1979

PROPERTY DETAILS

Address: 80 Betty Cuthbert Drive, LIDCOMBE NSW 2141

Legal Description: Lot 74 DP 1141724, 475 DP 45747

Owner(s) Name (as recorded by Council):

Crown Lands
C/- Department of Primary Industry - Lands
PO Box 2185
DANGAR NSW 2309

In accordance with the requirements of Section 10.7(2) of the *Environmental Planning and Assessment Act, 1979* (as amended), the following prescribed matters relate to the land at the date of this certificate.

Note: The information contained in Planning Certificates issued for a lot within Strata-Titled development relates to the land the development is situated on.

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1. Names of Relevant Planning Instruments and DCPs

The name of:

(a) each environmental planning instrument that applies to the carrying out of development on the land.
(b) each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Secretary has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved).
(c) each development control plan that applies to the carrying out of development on the land.

In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

1(a) State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007
Auburn Local Environmental Plan 2010 as amended
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
State Environmental Planning Policy No. 19 Bushland in Urban Areas
State Environmental Planning Policy No. 21 Caravan Parks
State Environmental Planning Policy No. 30 Intensive Agriculture
State Environmental Planning Policy No. 32 Urban Consolidation (Redevelopment of Urban Land)
State Environmental Planning Policy No. 33 Hazardous and Offensive Development
State Environmental Planning Policy No. 50 Canal Estate Development
State Environmental Planning Policy No. 55 Remediation of Land
State Environmental Planning Policy No. 62 Sustainable Aquaculture
State Environmental Planning Policy No. 64 Advertising and Signage
State Environmental Planning Policy No. 65 Design Quality of Residential Flat Development (Amendment 3)
State Environmental Planning Policy No. 70 Affordable Housing (Revised Schemes)
State Environmental Planning Policy (Affordable Rental Housing) 2009
State Environmental Planning Policy Building Sustainability Index: BASIX 2004
State Environmental Planning Policy (State Significant Precincts) 2005
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
State Environmental Planning Policy (Infrastructure) 2007
State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004
State Environmental Planning Policy (State and Regional Development) 2011

1(b) Draft State Environmental Planning Policy (Competition) 2010

1(c) Auburn Development Control Plan 2010.

2. Zoning and Land Use under relevant LEPs

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

(a) the identity of the zone, whether by reference to a name (such as "Residential Zone" or "Heritage Area") or by reference to a number (such as "Zone No. 2(a)"),
(b) the purpose for which the plan or instrument provides that development may be carried out within the zone without the need for development consent,
(c) the purposes for which the plan or instrument provides that development may not be carried out within the zone except with development consent,

(d) the purposes for which the plan or instrument provides that development is prohibited within the zone,
(e) whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed,
(f) whether the land includes or comprises critical habitat,
(g) whether the land is in a conservation area (however described),
(h) whether an item of environmental heritage (however described) is situated on the land.

(a) Zone SP2- Infrastructure (Hospital) (Auburn Local Environmental Plan 2010)

(b) Under the provisions of the Auburn Local Environmental Plan 2010, development for the purpose of the following may be carried out within the zone WITHOUT DEVELOPMENT CONSENT:

- the provisions specified under Part 2 Permitted or Prohibited Development of the Auburn Local Environmental Plan 2010, there may be certain provisions carried out without development consent.
- the provisions specified under uses permitted without consent under the Land Use Table - Zone SP2 Infrastructure of the Auburn Local Environmental Plan 2010.
- the provisions listed under exempt development which satisfies the criteria for exempt development relevant to the applicable zone under Part 3 Exempt and Complying Development of the Auburn Local Environmental Plan 2010.
- the provisions specified under Part 5 Miscellaneous Provisions of the Auburn Local Environmental Plan 2010, there may be certain provisions carried out without development consent.
- the provisions specified under Part 6 Additional Local Provisions of the Auburn Local Environmental Plan 2010, there may be certain provisions carried out without development consent.

NOTE: The certificate provides zoning information for the land that is the subject of this certificate only. The applicant must refer to the Auburn Local Environmental Plan 2010 and associated maps in order to determine detailed provisions for above when carrying out development without consent under the applicable zone. The Auburn Local Environmental Plan 2010 written instrument and maps are available on the New South Wales legislation website at www.legislation.nsw.gov.au.

(c) Under the provisions of the Auburn Local Environmental Plan 2010, development for the purpose of the following may be carried out within the zone WITH DEVELOPMENT CONSENT:

- the provisions specified under Part 2 Permitted or Prohibited Development of the Auburn Local Environmental Plan 2010, there may be certain provisions which may be carried out with development consent.
- the provisions specified under objectives of the zone of the Land Use Table - Zone SP2 Infrastructure of the Auburn Local Environmental Plan 2010, the consent authority may not grant development consent to the carrying out of development within the applicable zone unless the consent authority is of the opinion that the carrying out of the development is consistent with the objectives of the zone.
- the provisions listed under uses permitted with consent in the Land Use Table - Zone SP2 Infrastructure of the Auburn Local Environmental Plan 2010.
- the provisions listed under complying development which satisfies the criteria for complying development relevant to the applicable zone under Part 3 Exempt and Complying Development of the Auburn Local Environmental Plan 2010.
- the provisions specified under Part 5 Miscellaneous Provisions of the Auburn Local Environmental Plan 2010, there may be certain provisions carried out with development consent.

- the provisions specified under Part 6 Additional Local Provisions of the Auburn Local Environmental Plan 2010, there may be certain provisions carried out with development consent.

NOTE: The certificate provides zoning information for the land that is the subject of this certificate only. The applicant must refer to the Auburn Local Environmental Plan 2010 and associated maps in order to determine detailed provisions for above when carrying out development with consent under the applicable zone. The Auburn Local Environmental Plan 2010 written instrument and maps are available on the New South Wales legislation website at www.legislation.nsw.gov.au.

(d) Development for a purpose that is listed as being 'Prohibited' for the applicable zone is currently included under Part 2 Permitted or Prohibited Development and the Land Use Table of the Auburn Local Environmental Plan 2010.

NOTE: The certificate provides zoning information for the land that is the subject of this certificate only. The applicant must refer to the Auburn Local Environmental Plan 2010 and associated maps in order to determine detailed provisions for prohibited development under the applicable zone. The Auburn Local Environmental Plan 2010 written instrument and maps are available on the New South Wales legislation website at www.legislation.nsw.gov.au.

(e) There are no development standards applying to this land that fix a minimum land dimension for the erection of a dwelling-house.

(f) The land does not include or comprise critical habitat.

(g) The land is not located within a heritage conservation area under the provisions of Auburn Local Environmental Plan 2010.

(h) The land has not been identified as containing an item of environmental heritage significance under the Auburn Local Environmental Plan 2010.

3. Complying Development

(1) The extent to which the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

(2) The extent to which complying development may not be carried out on that land because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of that Policy and the reasons why it may not be carried out under those clauses.

General Housing Code

(1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

Rural Housing Code

(1) or (2) The land is not affected by the Rural Housing code.

Housing Alterations Code and Industrial Alterations Code

(1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the

land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

General Development Code

(1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

Commercial and Industrial (New Buildings and Additions) Code

(1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

Subdivisions Code

(1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

Demolition Code

(1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

Fire Services Code

(1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

(3) If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

(3) Council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land when a land based restriction applies to the land, but it may not apply to all of the land.

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4 and 4a – Repealed.

4b Annual charges under *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works

In relation to a coastal council—whether the owner (or any previous owner) of the land has consented in writing to the land being subject to annual charges under section 496B of the Local

Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).

Note. *"Existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as sea walls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the Local Government Act 1993.*

4b. The land is currently not affected by provisions included under this part.

5. Mine Subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of Section 15 of the Mine Subsidence Compensation Act, 1961.

The land is not located in an area proclaimed to be a mine subsidence district within the meaning of Section 15 of the Mine Subsidence Compensation Act, 1961.

6. Road Widening and Road Realignment

Whether or not the land is affected by any road widening or road realignment under:

(a) Division 2 of Part 3 of the Roads Act, 1993, or
(b) Any Environmental Planning Instrument, or
(c) Any resolution of the Council.

(a) The land is not affected by any road widening or road realignment under Division 2 of Part 3 of the Roads Act 1993.

(b) The land is not affected by any road widening or road realignment under any Environmental Planning Instrument.

(c) The land is not affected by any road widening or road realignment under a Council resolution.

7. Council and other public authority policies on Hazard Risk Restriction

Whether or not the land is affected by a policy:

(a) adopted by the Council, or
(b) adopted by any other public authority and notified to the Council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the Council.

that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

(a) Land is affected by relevant acid sulphate soil classes 1 to 5 (high to low probability of acid sulphate soils being present) under Auburn Local Environmental Plan 2010. To determine the relevant acid sulphate soils class for the land, the applicant should refer to Council's Acid Sulphate Soils Map - Auburn Local Environmental Plan 2010 which is available on the New South Wales legislation website at www.legislation.nsw.gov.au.

The land is not affected by a flood control lot under the Auburn Local Environmental Plan 2010.

(b) Council has been notified by Parramatta City Council that the following Flood Management Studies have been carried out and adopted. They are:

1. Duck River Flood Study Parramatta City Council – Final Flood Study Report (September 2006)
2. Lower Parramatta River Flood Plain Risk Management Study – Draft February 2003

For more detailed information and enquiries regarding the above flood studies and affected areas please contact Council's Works and Services Department, Engineering Division.

Council has been notified that the Department of Planning has adopted the *New South Wales Coastal Planning Guideline: Adapting to Sea Level Rise (August 2010).* The guideline can be viewed at www.planning.nsw.gov.au.

The applicant should also refer to projected sea level rise low, medium and high scenario maps on http://www.ozcoasts.org.au/climate/Map_images/Sydney/mapLevel2.jsp for further information.

7a Flood related Development Controls Information

(1) Whether or not the development on that land or part of the land for the purposes of dwellings, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.

If development on the land or part of the land for above purposes is affected by a flood control lot under Auburn Local Environmental Plan 2010, the applicant should refer to Council's Stormwater Drainage Part - Auburn Development Control Plan 2010 on the New South Wales legislation website at www.legislation.nsw.gov.au.

(2) Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls.

If development on the land or part of the land under Auburn Local Environmental Plan 2010 for any other purposes is subject to flood related development controls, the applicant should refer to Council's Stormwater Drainage Part of the Auburn Development Control Plan 2010 available on the New South Wales legislation website at www.legislation.nsw.gov.au.

(3) Words and expressions in this clause have the same meanings as in the standard instrument set out in the Standard Instrument (Local Environmental Plans) Order 2006.

Words and expressions in this clause have the same meanings as in the instrument set out in the Schedule to the Standard Instrument (Local Environmental Plans) Order 2006.

8. Land Reserved for Acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

The land is not affected by the Auburn Local Environmental Plan 2010 - Land Reservation Acquisition Map for the purposes of acquisition under the Act.

9. Contributions Plans

The name of each Contributions Plan applying to the land:

Auburn Development Contributions Plan 2007

9A Biodiversity Certified Land

If the land is biodiversity certified land under Part 8 of the Biodiversity Conservation Act 2016, a statement to that effect.

The land is not biodiversity certified land within the meaning of the above Act.

10. Biodiversity stewardship sites

If the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the Biodiversity Conservation Act 2016, a statement to that effect (but only if the council has been notified of the existence of the agreement by the Chief Executive of the Office of Environment and Heritage).

The land is not a biodiversity stewardship site under the above Act.

10A. Native vegetation clearing set asides

If the land contains a set aside under section 60ZC of the Local Land Services Act 2013, a statement to that effect (but only if the council has been notified of the existence of the set aside area by Local Land Services or it is registered in the public register under that section).

Council has not been notified of the existence of the set aside area by Local Land Services or it is registered in the public register under that section.

11. Bush Fire Prone Land

If any of the land is bush fire prone land (as defined in the Act), a statement that all or, as the case may be, some of the land is bush fire prone land. If none of the land is bush fire prone land, a statement to that effect.

The land is not bushfire prone land under the Act.

12. Property Vegetation Plans

If the land is land to which a Property Vegetation Plan under the Native Vegetation Act, 2003 applies, a statement to that effect (but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act).

The land is not affected by a Property Vegetation Plan under the *Native Vegetation Act, 2003.*

13. Orders under the Trees (Disputes Between Neighbours) Act 2006

Whether an order has been made under the Trees (Disputes Between Neighbours) Act, 2006 to carry out work in relation to a tree on the land (but only if the Council has been notified of the order).

The land is not affected by an order issued under the Trees (Disputes between Neighbours) Act 2006.

14. Directions under Part 3A (Environmental Planning and Assessment Act 1979)

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

There are no ministerial directions in force under section 75P (2) (c1) of the Environmental Planning and Assessment Act 1979.

15. Site compatibility certificates and conditions for seniors housing

If the land is land to which State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 applies:

(a) a statement of whether there is a current site compatibility certificate (seniors housing), of which the Council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(i) the period for which the certificate is current, and
(ii) that a copy may be obtained from the head office of the Department, and

(b) a statement setting out any terms of a kind referred to in clause 18 (2) of that Policy that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.

(a) & (b) The land is not subject to a site compatibility certificate.

16. Site Compatibility Certificates for Infrastructure, schools or TAFE establishments

A statement of whether there is a valid site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(a) the period for which the certificate is valid, and
(b) that a copy may be obtained from the head office of the Department.

(a) & (b) There is no site compatibility certificate issued for infrastructure, schools or TAFE establishments in respect of the land.

17. Site Compatibility Certificates and Conditions for Affordable Rental Housing

(1) A statement of whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(a) the period of which the certificate is current, and
(b) that a copy may be obtained from the head office of the Department.

(2) A statement setting out any terms of a kind referred to in clause 17 (1) or 38 (1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 that have been imposed as a condition of consent to a development application in respect of the land.

(1) & (2) There is no current site compatibility certificate (affordable rental housing) of which council is aware or a statement setting out any terms of a kind referred to in clause 17(1) or 38(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 that has been imposed as a condition of consent to a development application for the land.

18. Paper Subdivision Information

(1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.
(2) The date of any subdivision order that applies to the land.
(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

(1), (2) & (3) The land is not affected by a proposed or adopted development plan by Council or a subdivision order.

19. Site Verification Certificates

A statement of whether there is a current site verification certificate, of which the council is aware, in respect of the land and, if there is a certificate, the statement is to include:

(a) the matter certified by the certificate, and

Note. *A site verification certificate sets out the Director-General's opinion as to whether the land concerned is or is not biophysical strategic agricultural land or critical industry cluster land—see Division 3 of Part 4AA of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.*

(b) the date on which the certificate ceases to be current (if any), and

(c) that a copy may be obtained from the head office of the Department.

(a), (b) & (c) There is no site verification certificate on the land.

20. Loose-fill Asbestos Insulation

If the land includes any residential premises (within the meaning of Division 1A of Part 8 of the Home Building Act, 1989) that are listed on the register that is required to be maintained under that Division, a statement to that effect.

Council is not aware of any land being affected.

21. Affected building notices and building product rectification orders

(1) A statement of whether there is any affected building notice of which the council is aware that is in force in respect of the land.

(2) A statement of:

(a) whether there is any building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with, and

(b) whether any notice of intention to make a building product rectification order of which the council is aware has been given in respect of the land and is outstanding.

(3) In this clause:

affected building notice *has the same meaning as in Part 4 of the Building Products (Safety) Act 2017.*

building product rectification order *has the same meaning as in the Building Products (Safety) Act 2017.*

Council is not aware of the land being affected.

Note:

Section 59(2) of the Contaminated Lands Management Act 1997 prescribes the following matters that are to be specified in a Planning Certificate:

a) That the land to which the certificate relates is significantly contaminated land within the meaning of that Act – if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,

b) That the land to which the certificate relates is subject to a management order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,

c) That the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act - if it is the subject of such an approved proposal at the date when the certificate is issued,

d) That the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,

e) That the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act – if a copy of such a statement has been provided any time to the local authority issuing the certificate.

(a) The land is not significantly contaminated land (or part of the land) within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.

(b) The land is not subject to a management order within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.

(c) The land is not the subject of an approved voluntary management proposal within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.

(d) The land is not subject to an ongoing maintenance order within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.

(e) The land is subject to a site audit statement within the meaning of the *Contaminated Lands Management Act 1997.*

Section 10.7(5) Information

In accordance with the requirements of Section 10.7(5) of the *Environmental Planning and Assessment Act, 1979* (as amended), the following additional information is provided about the land to which this certificate applies.

Note: In accordance with Section 10.7(6) of the *Environmental Planning and Assessment Act, 1979* (as amended), Council will not incur any liability for the following additional information, which is provided in good faith. The absence of any matter affecting the land does not imply that the land is not affected by any matter not referred to in this Certificate.

The NSW Scientific Committee, established by the Threatened Species Conservation Act, 1995 has made a Preliminary Determination to support a proposal to list the Cumberland Plain Woodland in the Sydney Basin Bioregion as a Critically Endangered Ecological Community on Part 2 of Schedule 1A of the Act and to omit reference to Cumberland Plain Woodland from Part 3 of Schedule 1 (Endangered Ecological Communities) of the Act.

Hamish McNulty
GENERAL MANAGER

Per: Monica Cologna
Manager, Strategic Planning - PLANNING

B. EPA contaminated land record search

Home Contaminated land Record of notices

Search results

Your search for: LGA: Auburn City Council

Matched 49 notices relating to 11 sites.

Search Again Refine Search

Suburb	Address	Site Name	Notices related to this site
AUBURN	Jamieson STREET	Department of Corrective Services land adjacent to the former Auburn Landfill	1 former
AUBURN	9 Short STREET	Former Ajax chemical factory	2 former
HOMEBUSH BAY	No specific Street OTHER	Homebush Bay General Area	2 former
HOMEBUSH BAY	25 Bennelong ROAD	Timber Treatment Plant	4 former
SILVERWATER	54-58 Derby STREET	Storage Facility	2 current
SYDNEY OLYMPIC PARK	Bicentennial DRIVE	Bicentennial Park	1 current and 2 former
SYDNEY OLYMPIC PARK	Jamieson STREET	Blaxland Common Landfill	1 current and 3 former
SYDNEY OLYMPIC PARK	Sarah Durack AVENUE	Former Golf Driving Range Landfill	1 current and 6 former
SYDNEY OLYMPIC PARK	Kevin Coombes AVENUE	Kronos Hill Landfill	1 current and 13 former
SYDNEY OLYMPIC PARK	Newington ROAD	Wilson Park (Former oil gas plant site)	1 current and 9 former
SYDNEY OLYMPIC PARK	Hill ROAD	Woo-la-ra Landfill	1 current and 4 former

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C. NSW EPA POEO public register search

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Search Again

Number	Name	Location	Type	Status	Issued date
6203	A1 HARD CHROME PTY LTD	14 WETHERILL STREET, LIDCOMBE, NSW 2141	POEO licence	No longer in force	19 Jan 2000
1044571	A1 HARD CHROME PTY LTD	14 WETHERILL STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	16 Feb 2005
1573749	Con Constanti	134 John Street , LIDCOMBE, NSW 2141	s.91 Clean Up Notice	Issued	30 Jan 2019
1577507	Con Constanti	134 John Street , LIDCOMBE, NSW 2141	s.110 Variation of Clean Up Notice	Issued	26 Mar 2019
5604	HOLCIM (AUSTRALIA) PTY LTD	LOT 2 BIRNIE AVENUE, LIDCOMBE, NSW 2141	POEO licence	No longer in force	08 Dec 1999
1008890	HOLCIM (AUSTRALIA) PTY LTD	LOT 2 BIRNIE AVENUE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	06 Aug 2001
1552768	HOLCIM (AUSTRALIA) PTY LTD	40 Birnie Avenue, LIDCOMBE, NSW 2141	s.91 Clean Up Notice	Issued	04 Jun 2017
1167	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	POEO licence	Issued	09 May 2000
1021928	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	14 Apr 2003
1036773	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	12 Jul 2004
1097961	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	04 Mar 2009
1099023	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	30 Mar 2009
1502501	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	07 Dec 2011
1503601	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	06 Feb 2012
1510817	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	16 Apr 2013
1520031	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	24 Feb 2014
1529741	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	23 Apr 2015
1537162	LION-BEER, SPIRITS & WINE PTY LTD	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	15 Jan 2016
1912	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	POEO licence	No longer in force	10 Jan 2000
1027990	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	17 Jun 2003

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Number	Name	Location	Type	Status	Issued date
1044784	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	02 Apr 2005
1059552	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	23 May 2006
1067232	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	22 Dec 2006
3085777384	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Withdrawn	
2108	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	POEO licence	Issued	13 Mar 2000
1011452	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	02 Nov 2001
1021604	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	09 Apr 2003
1089935	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	03 Sep 2008
3085768043	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Issued	19 Feb 2013
1517203	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	03 Oct 2013
1525448	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	08 Oct 2014
1525545	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	13 Oct 2014
1529985	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.96 Prevention Notice	Issued	23 Apr 2015
1530304	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.110 Variation of Prevention Notice	Issued	30 Apr 2015
3085777393	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Issued	21 Aug 2015
3085777411	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Issued	21 Aug 2015
1534044	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	02 Dec 2015
1537446	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	25 Jan 2016
1540604	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	18 Jul 2016
12390	RAIL CORPORATION NEW SOUTH WALES	Bachell Avenue, LIDCOMBE, NSW 2141	POEO licence	No longer in force	15 Dec 2005

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Number	Name	Location	Type	Status	Issued date
1058873	RAIL CORPORATION NEW SOUTH WALES	Bachell Avenue, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	09 May 2006
2179	SAINT-GOBAIN ABRASIVES PTY LTD	25 NYRANG STREET, LIDCOMBE, NSW 2141	POEO licence	No longer in force	17 Jan 2000
1044018	SAINT-GOBAIN ABRASIVES PTY LTD	25 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	27 Jan 2005
3085776376	SYDNEY TRAINS	Bachell Avenue, LIDCOMBE, NSW 2141	Penalty Notice	Withdrawn	
3085776403	SYDNEY TRAINS	Bachell Avenue, LIDCOMBE, NSW 2141	Penalty Notice	Issued	02 Apr 2015

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08 April 2019

D. Historical aerial photographs

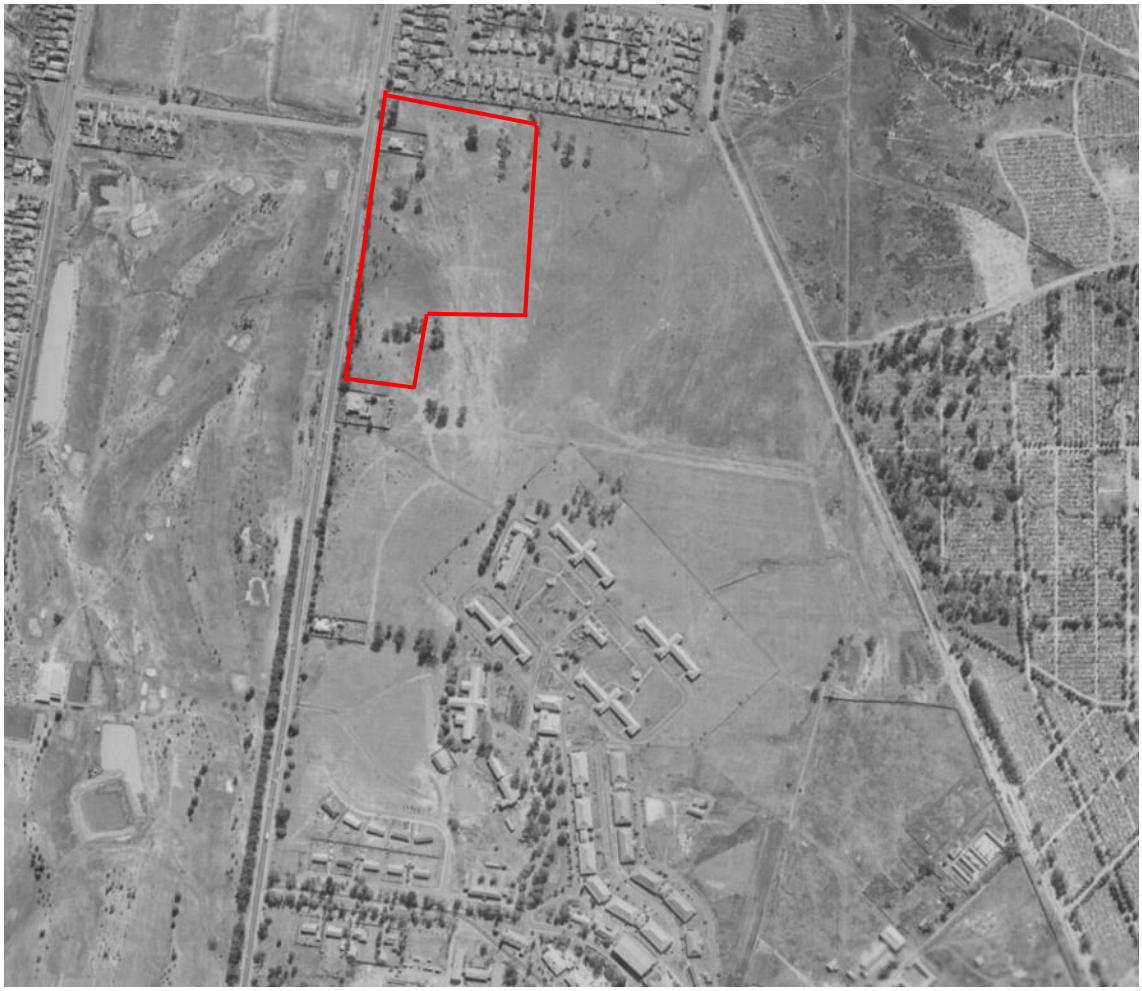
D.1 1943


WAYLAND AVENUE
BUD GREENSPAN CIRCUIT
GORDON BRAY CIRCUIT
NORMAN MAY DRIVE
JOSEPH STREET
BETTY CUTHBERT DRIVE
IRONBARK CRESCENT
MAGNOLIA AVENUE
WATTLE CRESCENT

D.2 1955



D.3 1965



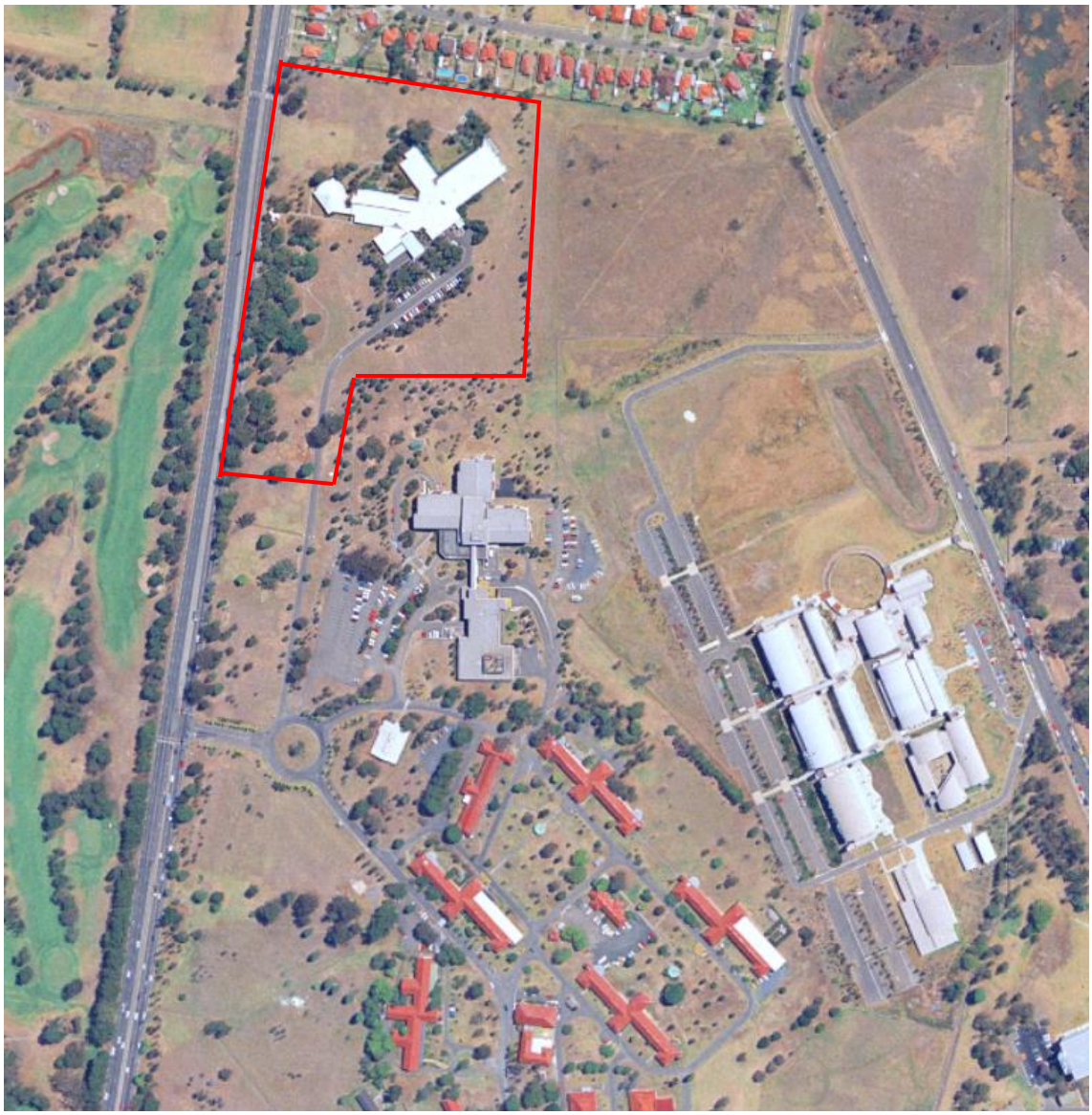
D.4 1975



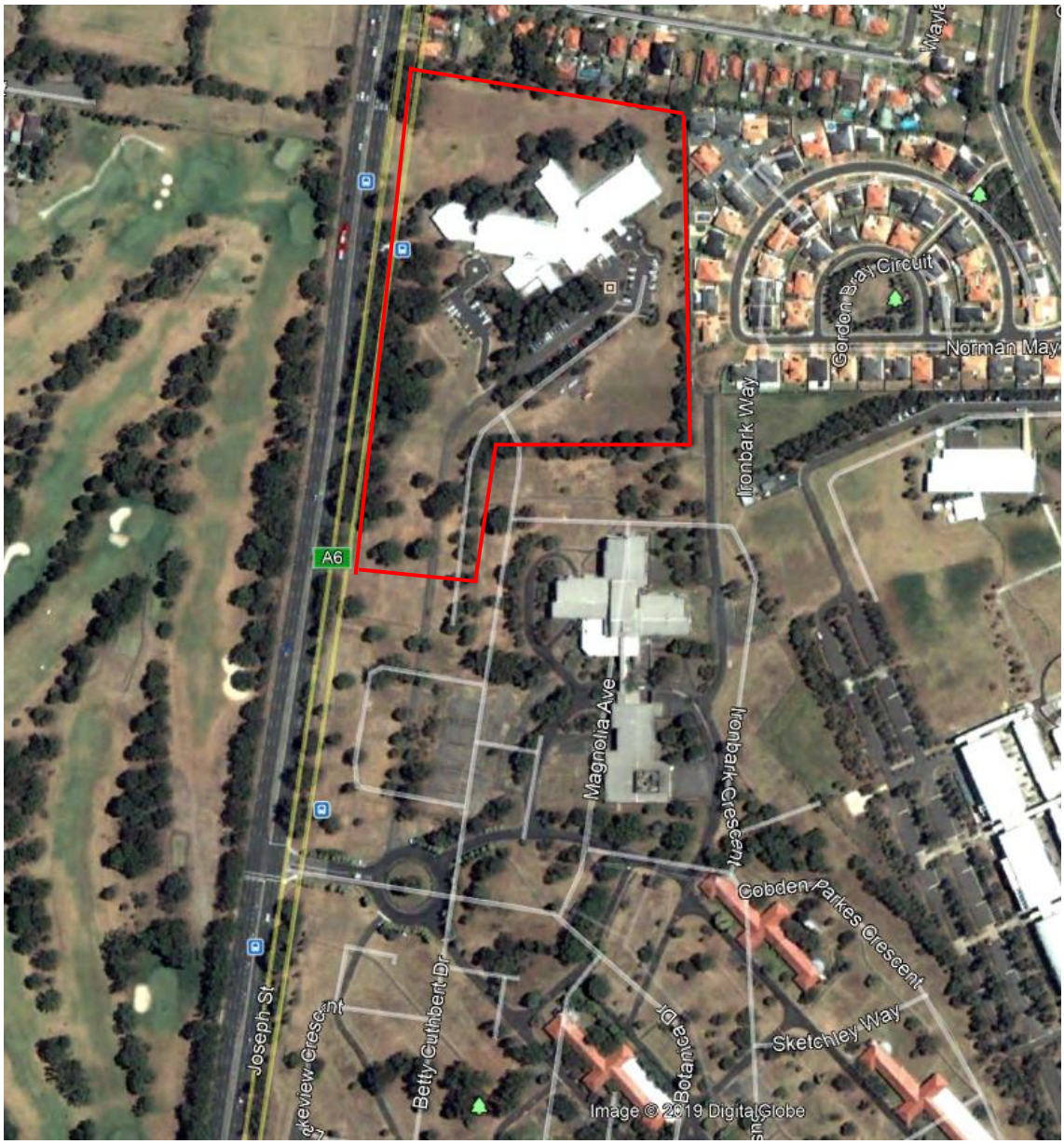
D.5 1986



D.6 1994



D.7 2004

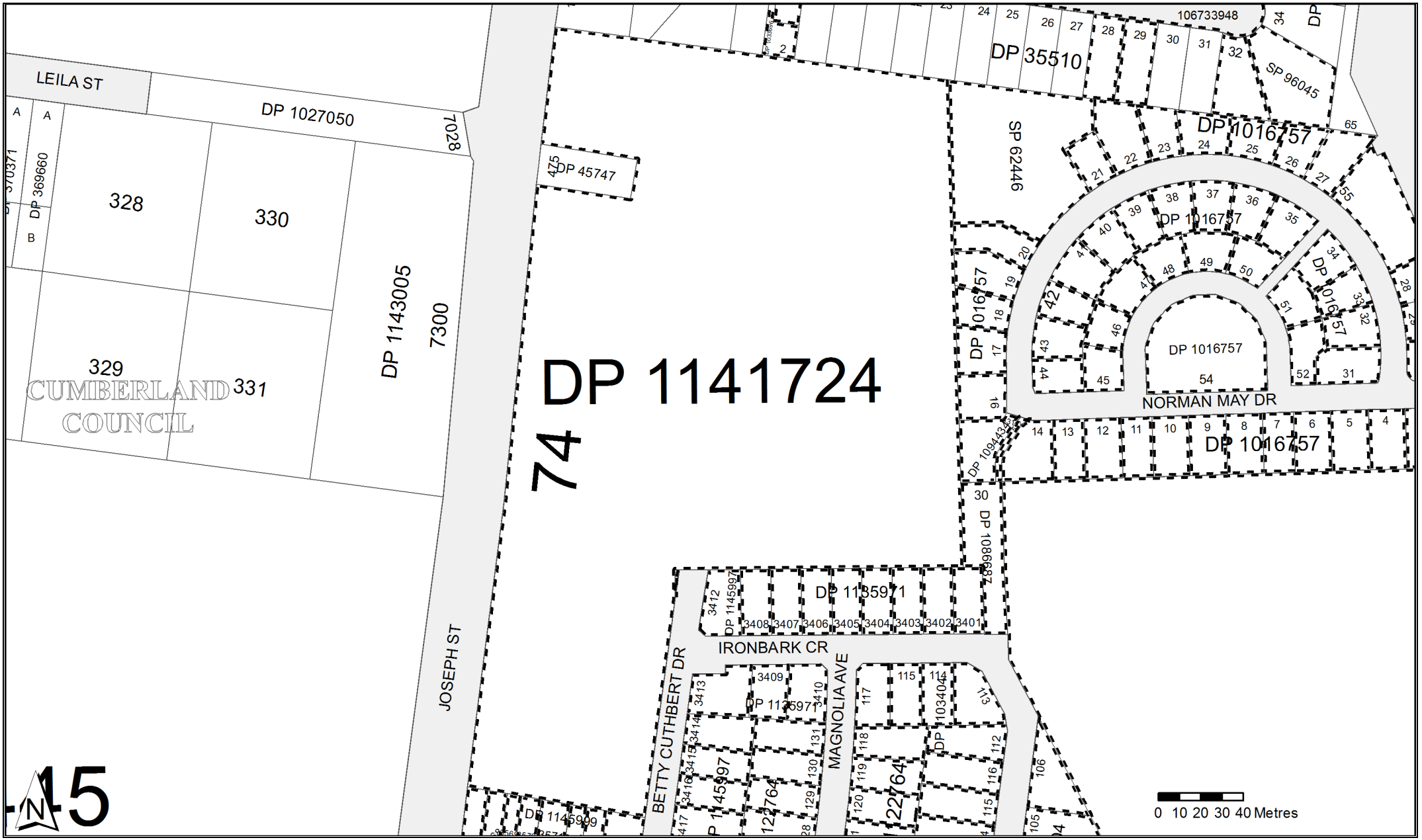

A6
Joseph St
Betty Cuthbert Dr
Magnolia Ave
Ironbark Way
Ironbark Crescent
Gordonsay Circuit
Norman May
Cobden Parkes Crescent
Sketchley Way
Image © 2019 DigitalGlobe

E. Historic title deed

Cadastral Records Enquiry Report : Lot 74 DP 1141724

Ref : NOUSER

Locality : LIDCOMBE
Parish : LIBERTY PLAINS
LGA : CUMBERLAND
County : CUMBERLAND



Report Generated 12:49:19 PM, 26 March, 2019
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This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

	Status	Surv/Comp	Purpose
DP35510			
Lot(s): 28, 29			
DP1245886	PRE-ALLOCATED	UNAVAILABLE	CONSOLIDATION
Lot(s): 32			
DP1242279	REGISTERED	SURVEY	REDEFINITION
Lot(s): 35			
DP1234486	PRE-ALLOCATED	UNAVAILABLE	CONSOLIDATION
DP48289			
Lot(s): 489			
DP1016757	REGISTERED	SURVEY	SUBDIVISION
DP1080957	REGISTERED	SURVEY	LEASE
DP1097870	REGISTERED	COMPILATION	EASEMENT
DP1131656	REGISTERED	SURVEY	EASEMENT
DP1016757			
Lot(s): 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 55			
DP876565	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
DP1029770			
Lot(s): 508			
NSW GAZ. 29-06-2001 Folio : 5057			
CHANGE OF TRUST PURSUANT TO NECROPOLIS ACT, 1901; ADDITIONAL LAND PURSUANT TO NECROPOLIS ACT, 1901			
NSW GAZ. 29-06-2001 Folio : 5057			
NECROPOLIS ACT, 1901 AFFECTING LOTS 508-511 DP1029770			
DP1033696			
Lot(s): 1, 2			
DP35510	HISTORICAL	SURVEY	UNRESEARCHED
DP1086687			
Lot(s): 30			
DP876565	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
DP1016757	HISTORICAL	SURVEY	SUBDIVISION
DP1074086	HISTORICAL	SURVEY	SUBDIVISION
DP1097870	REGISTERED	COMPILATION	EASEMENT
DP1103404	REGISTERED	SURVEY	SUBDIVISION
DP1094434			
Lot(s): 532			
DP1116962	REGISTERED	COMPILATION	EASEMENT
Lot(s): 531, 532			
DP876565	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
DP1016757	HISTORICAL	SURVEY	SUBDIVISION
DP1103404			
Lot(s): 105, 106, 112, 113, 114, 115			
DP876565	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
DP1016757	HISTORICAL	SURVEY	SUBDIVISION
DP1074086	HISTORICAL	SURVEY	SUBDIVISION
DP1086687	HISTORICAL	SURVEY	SUBDIVISION
DP1122764			
Lot(s): 114, 115, 116, 117, 118, 119, 120, 121, 128, 129, 130, 131			
DP876565	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
DP1016757	HISTORICAL	SURVEY	SUBDIVISION
DP1074086	HISTORICAL	SURVEY	SUBDIVISION
DP1086687	HISTORICAL	SURVEY	SUBDIVISION
DP1103404	HISTORICAL	SURVEY	SUBDIVISION

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	Status	Surv/Comp	Purpose
DP1135971			
Lot(s): 3401, 3402, 3403, 3404, 3405, 3406, 3407, 3408, 3409, 3410			
DP876565	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
DP1016757	HISTORICAL	SURVEY	SUBDIVISION
DP1074086	HISTORICAL	SURVEY	SUBDIVISION
DP1086687	HISTORICAL	SURVEY	SUBDIVISION
DP1103404	HISTORICAL	SURVEY	SUBDIVISION
DP1122764	HISTORICAL	SURVEY	SUBDIVISION
DP1141724			
Lot(s): 74, 75			
DP876565	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
DP1016757	HISTORICAL	SURVEY	SUBDIVISION
DP1074086	HISTORICAL	SURVEY	SUBDIVISION
DP1086687	HISTORICAL	SURVEY	SUBDIVISION
Lot(s): 74			
DP45747	HISTORICAL	SURVEY	CROWN FOLIO CREATION
DP1124647	REGISTERED	SURVEY	EASEMENT
DP1145997			
Lot(s): 3417			
DP45747	HISTORICAL	SURVEY	CROWN FOLIO CREATION
DP1141724	HISTORICAL	SURVEY	SUBDIVISION
Lot(s): 3412, 3413, 3414, 3415, 3416, 3417			
DP876565	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
DP1016757	HISTORICAL	SURVEY	SUBDIVISION
DP1074086	HISTORICAL	SURVEY	SUBDIVISION
DP1086687	HISTORICAL	SURVEY	SUBDIVISION
DP1103404	HISTORICAL	SURVEY	SUBDIVISION
DP1122764	HISTORICAL	SURVEY	SUBDIVISION
DP1135971	HISTORICAL	SURVEY	SUBDIVISION
DP1145998			
Lot(s): 3549			
DP876565	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
DP1016757	HISTORICAL	SURVEY	SUBDIVISION
DP1074086	HISTORICAL	SURVEY	SUBDIVISION
DP1086687	HISTORICAL	SURVEY	SUBDIVISION
DP1145999			
Lot(s): 3568, 3569, 3570, 3571, 3572, 3573, 3574			
DP876565	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
DP1016757	HISTORICAL	SURVEY	SUBDIVISION
DP1074086	HISTORICAL	SURVEY	SUBDIVISION
DP1086687	HISTORICAL	SURVEY	SUBDIVISION
DP1145998	HISTORICAL	SURVEY	SUBDIVISION
SP62446			
DP876565	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
DP1016757	HISTORICAL	SURVEY	SUBDIVISION
SP96045			
DP35510	HISTORICAL	SURVEY	UNRESEARCHED
DP1242279	HISTORICAL	SURVEY	REDEFINITION
Road			
Polygon Id(s): 106733948			
EX-SUR 51/11 DP982934			
Surveyed			
Polygon Id(s): 104384763			
PART OF ROOKWOOD CEMETERY CROWN RESERVE NO. 500918. FEE IS CROWN LAND. TITLE CREATION WILL AWAIT INVESTIGATION BY CROWN LANDS DIVISION NEWCASTLE AND THE REGISTRATION OF THE APPROPRIATE DEPOSITED PLAN			

Caution: This information is provided as a searching aid only. Whilst every endeavour is made the ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For **ALL ACTIVITY PRIOR TO SEPTEMBER 2002** you must refer to the RGs Charting and Reference Maps.

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Plan	Surv/Comp	Purpose
DP35510	SURVEY	UNRESEARCHED
DP45747	SURVEY	CROWN FOLIO CREATION
DP48289	SURVEY	CROWN FOLIO CREATION
DP93915	COMPILATION	DEPARTMENTAL
DP369660	COMPILATION	UNRESEARCHED
DP369661	COMPILATION	UNRESEARCHED
DP370371	COMPILATION	UNRESEARCHED
DP752036	COMPILATION	CROWN ADMIN NO.
DP1016757	SURVEY	SUBDIVISION
DP1027050	COMPILATION	DEPARTMENTAL
DP1029770	SURVEY	CROWN FOLIO CREATION
DP1033696	SURVEY	SUBDIVISION
DP1086687	SURVEY	SUBDIVISION
DP1094434	SURVEY	SUBDIVISION
DP1103404	SURVEY	SUBDIVISION
DP1122764	SURVEY	SUBDIVISION
DP1135971	SURVEY	SUBDIVISION
DP1135971	UNRESEARCHED	SUBDIVISION
DP1141724	SURVEY	SUBDIVISION
DP1141724	UNRESEARCHED	SUBDIVISION
DP1143005	COMPILATION	CROWN LAND CONVERSION
DP1145997	SURVEY	SUBDIVISION
DP1145997	UNRESEARCHED	SUBDIVISION
DP1145998	SURVEY	SUBDIVISION
DP1145998	UNRESEARCHED	SUBDIVISION
DP1145999	SURVEY	SUBDIVISION
DP1145999	UNRESEARCHED	SUBDIVISION
SP62446	COMPILATION	STRATA PLAN
SP96045	COMPILATION	STRATA PLAN
SP96045	UNRESEARCHED	STRATA PLAN

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PLAN DRAWING ONLY TO APPEAR IN THIS SPACE

* OFFICE USE ONLY

NOTES

FOR CREATION OF EASEMENT BY NOTIFICATION IN GOVT GAZ. 30.12.~~76~~ 1977 FOL. 6017. SEE MEMORANDUM T953688

M.M. D.P. 45747

STREET

RM. G.I.P. FOUND 237° 15' 0.455 VIDE C.10542-2030

OCC (0.04)

466

C 10542 - 2030

EAST

147° 460.1 13'

PEG FOUND RM GONE 31.91

OLD FENCE POST

PROPOSED LIDCOMBE AMBULANCE CENTRE SITE

15.72	15.93	29.14	29.35
36	35	34	33

32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 1

203.73

CLOUT FOUND IN BOTTOM RAIL 169° 43' 0.015 TO CORNER NOW G.I. NAIL IN BOTTOM RAIL AT CORNER

P.W.D. P.M. N° 424 FOUND 107° 12' 3.16 TO PEG FOUND

(189.91) (169° 43' 30") 229.73 169° 43' 30"

B C

260° (136.7) LINE PEG (56.585) 53'

D 170° 53' E

118.99

D.P. 35510

GEORGES AVENUE

89° 00' 30" 186.44

270° 27' 30" 46.44

00° 44' 30" 18.915

90° 20' 40" 45.89

475

SEE DIAGRAM 1

OLD SQUARE FENCE POST FOUND

RM GONE

RM GONE

358° 59' 10"

(0.13)

(OCC 0.03)

RM G.I. PIPE FOUND (VIDE D.P. 35510) UNDER CONCRETE 89° 00' 0.455

A 55.31 359° 04'

0.175

359° 04' 0.17

X 0.08

357° 05' 152.19

(2.11 OCC) 359° 00' 30" 89.52

(1.6 OCC) 358° 25' 43.87

R.M. CONC. BLOCK FOUND 88° 02' 0.5 VIDE D.P. 590984 (0.7 DOWN)

R.M. CONC. BLOCK FOUND 88° 46' 0.5 VIDE D.P. 590984

(0.01 OCC)

F 358° 25' 102.43

LOT 1 D.P. 598188

359° 01' 30" 50.67

314° 01' 2.44

R.M. CONC. BLOCK GONE R.M. DRILL HOLE & WING FOUND IN GUTTER VIDE D.P. 598188 88° 25' 4.0

43.275 269° 01'

RM DRILL HOLE & WING FOUND VIDE D.P. 256774 321° 08' 4.58

ROAD 20.115 WIDE VIDE D.P. 256774

179° 01' 20.115

(3.65)

(0.95)

358° 48' 178° 48' 124.23 134.02

(10.01) (29.13) 40'

CLOUT IN EAST FACE OF FENCE POST

271° 13' 99.59 (60.45)

PROPOSED ACCESS 10 WIDE & VARIABLE

1 2 3 4 5 6 7 8

LIDCOMBE HOSPITAL ACUTE WARD & ADMINISTRATION BLOCK

PART POR. 72

C 2338 - 2030 R

HOSPITAL AND HOME ASYLUM SITE GAZ. 9th SEPT. 1908

474

5.872 ha. INCL. PROPD EASMTS

PROPOSED EASEMENT FOR SEWERAGE PURPOSES 11.5 WIDE VIDE DIAGRAM 2 (SEPTIC TANKS)

JOSEPH STREET (VARIABLE WIDTH)

MAIN ROAD N° 190

CURVED LINES

LINE	RADIUS	ARC	CHORD BEARING	CHORD DISTANCE
1	12	18.36	134° 57'	16.62
2	26	107.08	29° 06'	45.92
3	15.62	15.97	297° 48'	15.28
4	18	113.1		
5	20	26.32	36° 30'	24.46

CONNECTIONS

LINE	BEARING	DISTANCE
G	1° 07'	26.0
7	284° 52' 30"	36.86
8	237° 05'	26.0

REFERENCE TO CORNERS

CORNER	BEARING	FROM	LENGTH	N° MARKED
	G.I. NAIL IN	TOP OF FENCE	POST AT COR.	474
A	89° 00'	G.I. PIPE FD UNDER CONC. PATH	0.455	
	89° 00'	D.H. IN CONC.	0.455	↑
B	349° 43'	G.I. PIPE	0.5	
C	80° 53'	G.I. PIPE	1.0	
D	260° 53'	G.I. PIPE	1.0	
E	271° 14'	G.I. PIPE	1.0	
F	G.I. NAIL IN	TOP OF FENCE	POST AT COR.	474
	91° 14'	D.H. IN KB.	3.76	↑
G	PEG ON	CORNER		474
H	91° 36'	PUNCH MARK IN STEEL F.P.	0.26	
	00° 44'	G.I. PIPE	1.56	
1	PUNCH HOLE	IN TOP OF	STEEL F.P.	AT CORNER
	181° 03'	G.I. PIPE	1.0	
J	PEG ON	CORNER		474

DIAGRAM 1

RATIO 1:600

I H FIBRO FIBRO EDGE OF EAVE ON BDY (FENCE 0.26)

475 875.4m²

N° 171 MAINLY BRICK COTTAGE

PROPOSED EASEMENT FOR SEWERAGE PURPOSES OVER EXISTING LINE OF PIPES APPROXIMATE POSITION INDICATED BY BROKEN LINE

D.P. 35510

A 359° 55.31 04' J 19.015 G 359° 04' 0.17 X 357° 05' 152.19

(0.17 OCC) (0.08 OCC)

RM. CONC. BLOCK FD VIDE D.P. 590984 88° 03' 0.5

JOSEPH STREET

DIAGRAM 3

RATIO 1:500

RM DH & W FOUND IN KERB 359° 01' 3.625 VIDE D.P. 256774

359° 01' 20.115 (0.95) (3.65)

ROAD 20.115 WIDE

RM DH & W FOUND IN KERB 179° 01' 3.545 VIDE D.P. 256774

DIAGRAM 2

RATIO 1:500

PROPOSED EASEMENT FOR SEWERAGE PURPOSES 11.5 WIDE

1° 14' (11.5) 40" 13' 271° (24.06) (23.5) (11.51)

358° 25' F

JOSEPH STREET

D.P. 45747 *

Registered : 16.11.1983

C.A. :

Title System : CROWN LAND

Purpose : CROWN TITLE OFFICE

Ref. Map : U0045-23#

Last Plan : C.2338-2030

PLAN OF SUBDIVISION OF CROWN LAND CREATING LOTS 474 & 475 (BEING PARTS OF PORTION 72)

REDUCTION RATIO 1 : 2000

LENGTHS ARE IN METRES

MUN. / ~~SHIRE~~ ~~CITY~~ : AUBURN

LAND DISTRICT : METROPOLITAN

LOCALITY : LIDCOMBE

PARISH : LIBERTY PLAINS

COUNTY : CUMBERLAND

~~THIS IS SHEET 1 OF MY PLAN IN SHEETS~~

(DELETE IF INAPPLICABLE)

I, BRYAN MAXWELL MASON FRANK M. MASON & CO of 2 WINSLOW STREET, MILSONS POINT,

a Surveyor registered under the Surveyor's Act, 1929 hereby certify that the survey represented in this plan

is accurate and has been made in ~~full by me~~ (2) under my immediate supervision in accordance with the Survey Practice Regulations, 1933 and the special requirements of the Department of Lands and was completed on † 1st FEBRUARY, 1983

Signature

Surveyor registered under the Surveyor's Act, 1929

*Strike out either (1) or (2) † Insert date of survey

AZIMUTH TAKEN FROM X-Y

FIELD BOOK LD1983-2 MET PAGES 1-28

PAPER NO. MN83R10

PLAN APPROVED Ron Bullock

Authorized Officer 16.9.1983

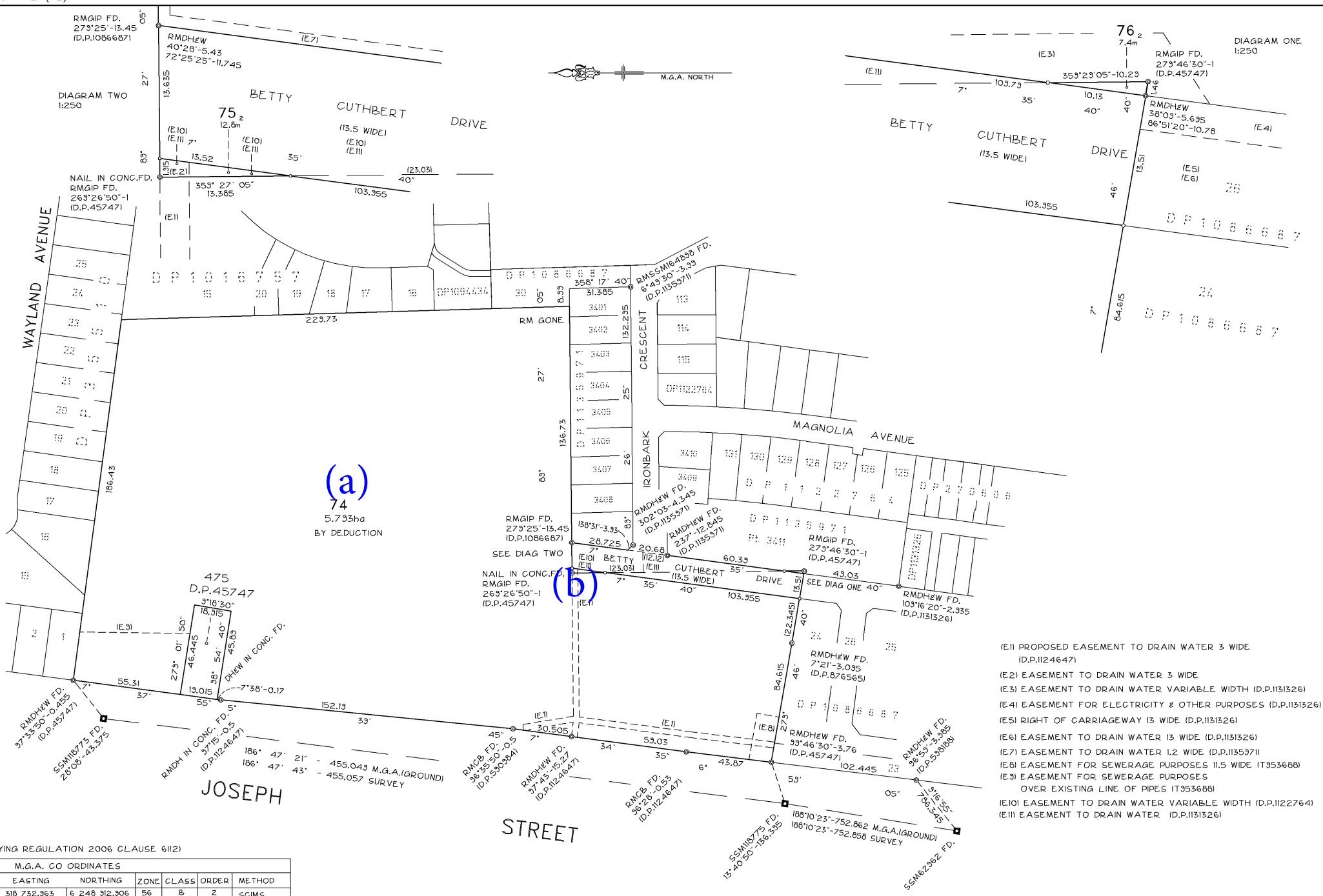
C
N 0 0 2 N I C

9-12-1994 GAZ. DATE AMENDED.

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 Table of mm 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390

WARNING : CREASING OR FOLDING WILL LEAD TO REJECTION

Req:R080705 /Doc:DP 0045747 P /Rev:21-Dec-1994 /Sts:OK.OK /Prt:19-Sep-2005 08:48 /Pgs:ALL /Seq:1 of 1
Ref:Res - Lidcombe ALSP /Src:M


WAYLAND AVENUE
BETTY CUTHBERT DRIVE (13.5 WIDE)
IRONBARK CRESCENT
MAGNOLIA AVENUE
JOSEPH STREET
M.G.A. NORTH
DIAGRAM TWO 1:250
DIAGRAM ONE 1:250
SEE DIAG TWO
SEE DIAG ONE
RM GONE
(a)
74
5.793ha
BY DEDUCTION
(b)
475 D.P.45747
NAIL IN CONC.FD. RMGIP FD. 263°26'50"-1 (D.P.45747)
RMGIP FD. 279°25'-13.45 (D.P.1086687)
RMDHEW 40°28'-5.43 72°25'25"-11.745
RMDHEW 38°03'-5.695 86°51'20"-10.78
RMGIP FD. 279°46'30"-1 (D.P.45747)
RMDHEW FD. 302°03'-4.345 (D.P.1135971)
RMDHEW FD. 237°-12.845 (D.P.1135971)
RMDHEW FD. 103°16'20"-2.335 (D.P.1131326)
RMDHEW FD. 7°21'-3.095 (D.P.876565)
RMDHEW FD. 99°46'30"-3.76 (D.P.45747)
RMDHEW FD. 96°59'-3.985 (D.P.5381888)
RMDHEW FD. 37°33'50"-0.455 (D.P.45747)
RMDHEW IN CONC. FD.
RMDH IN CONC. FD. 37°15'-0.5 (D.P.1124647)
RMCB FD. 96°35'50"-0.5 (D.P.5309841)
RMDHEW FD. 37°43'15.21 (D.P.1124647)
RMCB FD. 96°28'-0.53 (D.P.1124647)
SSM118773 FD. 28°08'-43.375
SSM118773 FD. 13°40'50"-136.385
SSM62362 FD.
RMSSM164838 FD. 6°43'30"-3.39 (D.P.1135971)
186° 47' 21" - 455.049 M.G.A.(GROUND)
186° 47' 43" - 455.057 SURVEY
188°10'23"-752.862 M.G.A.(GROUND)
188°10'23"-752.858 SURVEY
DP1094434
DP1122764
DP1131326
DP1135971
DP1086687
DP1086686
DP1086688
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DP1086724
DP1086725
DP1086726
DP1086727

Req:R973477 /Doc:DP 1141724 P /Rev:25-Feb-2010 /Sts:SC.OK /Prt:22-Jul-20
Refsals /Pgs:ALL /Seq:2 of 3

DEPOSITED PLAN ADMINISTRATION SHEET

SIGNATURES AND SEALS AND STATEMENTS of intention to dedicate public roads or to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

IT IS INTENDED TO DEDICATE THE EXTENSION OF BETTY CUTHBERT DRIVE TO THE PUBLIC AS PUBLIC ROAD. SUBJECT TO *

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919-1964 AS AMENDED IT IS INTENDED TO CREATE:-

1. EASEMENT TO DRAIN WATER 3 WIDE (E2)

* 1. EASEMENT TO DRAIN WATER VARIABLE WIDTH (E3) (D.P.1122764)

2. EASEMENT TO DRAIN WATER OVER WHOLE LOT (E11) (D.P.1131326)

Use PLAN FORM 6A
for additional certificates, signatures, seals and statements

Crown Lands NSW/Western Lands Office Approval

I, John Filocamo ..... in approving this plan certify
Authorised Officer

that all necessary approvals in regard to the allocation of the land shown hereon have been given.

Signature John Filocamo .....
Date: 23/12/09 .....
File No: MN 83 R10 Vol 3 .....
Office: Sydney Region .....

Subdivision Certificate

I certify that the provisions of s. 109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed NEW ROAD ..... set out herein

(Insert 'subdivision' or 'new road')

.....
*Authorised Person/~~General Manager/Accredited Certifier~~

Consent Authority AUBURN CITY COUNCIL
Date of endorsement 27 JANUARY 2009
Accreditation No. .....
Subdivision Certificate No. SC-25/2009
File No. SC025/09 & DA463/08

When the plan is to be lodged electronically in the Land Titles Office, it should include a signature in an electronic or digital format approved by the Registrar General.

*Delete whichever is inapplicable.

D.P.1141724

Registered: 25.2.2010 *
Title System: TORRENS
Purpose: SUBDIVISION

*OFFICE USE ONLY

PLAN OF SUBDIVISION OF
LOT 474 IN D.P.45747 AND
LOT 27 IN D.P.1086687.

L G A: AUBURN
Suburb: LIDCOMBE
Parish: LIBERTY PLAINS
County: CUMBERLAND

Survey Certificate

Surveying Regulation 2006

I, IAN VINCENT MYERS
of VINCE MORGAN SURVEYORS PTY.LTD.
Ph.47215293. Fax.47312821 email: imyers@vmsurvey.com.au
a land surveyor registered under the Surveying Act, 2002, certify that the survey represented in this plan is accurate, and has been made in accordance with the Surveying Regulation, 2006 and was completed on 17th July, 2009.

the survey relates to Lots 74, 75 & 76 (part of Lot 74 is compiled)
(here specify the land actually surveyed, or specify any land shown in the plan that is not the subject of the survey)

(Signature) ..... Dated 17th July, 2009.
Land Surveyor registered under the Surveying Act, 2002.

Orientation: SSM118775 TO SSM62962 Type: Urban

Plans used in preparation of survey.

D.P.1074086
D.P.45747
D.P.1086687
D.P.1103404

(if insufficient space use Plan Form 6A annexure sheet)

SURVEYOR'S REFERENCE: 13420-C26

Req:R973477 /Doc:DP 1141724 P /Rev:25-Feb-2010 /Sts:SC.OK /Prt:22-Jul-20
Refsale /Pgs:ALL /Seq:3 of 3

DEPOSITED PLAN ADMINISTRATION SHEET

PLAN OF SUBDIVISION OF
LOT 474 IN D.P.45747 AND
LOT 27 IN D.P.1086687.

D.P.1141724 *

Registered: 25.2.2010 *

*OFFICE USE ONLY

Subdivision Certificate No.: SC - 25/2009 Date of Endorsement: 27 JANUARY 2009

Executed on behalf of BOS International (Australia) Limited ABN 23 066 601 250 by its Attorney under power of attorney registered book 4467 no. 58 in the presence of:

Witness

MICHAEL ZHANG
Print Name

Level 27 45 Clarence St
Sydney NSW 2000
Address of Witness

Attorney

Costa Nicolenos
Print Name

Australand Industrial No. 113 Pty Ltd
Common Seal

AUSTRALAND INDUSTRIAL No. 113 PTY LIMITED
Common Seal
A.C.N.
107 355 957

MARK IVAN GLEESON
DIRECTOR

Executed on behalf of Australand Industrial No. 16 Pty. Ltd. ABN 64 097 928 713 by its Attorney under power of attorney registered book 4572 no. 456 in the presence of:

Witness

SEAN TIMMONY
Print Name

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RHODES NSW 2138
Address of Witness

Attorney

A. PIZZOLATO
Print Name

SECRETARY

SERENA NG

John Filocamo

John Filocamo
Program Manager
Land Administration
SYDNEY REGION
CROWN LANDS DIVISION

By delegation pursuant to section 150 of the Crown Lands Act 1989 and with authority under Section 13L of the Real Property Act 1900 from the Minister administering the Crown Lands Act 1989 on behalf of the State of New South Wales.

SURVEYOR'S REFERENCE: 13420-C26

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 74/1141724

SEARCH DATE	TIME	EDITION NO	DATE
26/3/2019	12:52 PM	-	-

CERTIFICATE OF TITLE HAS NOT ISSUED

LAND

LOT 74 IN DEPOSITED PLAN 1141724
AT LIDCOMBE
LOCAL GOVERNMENT AREA CUMBERLAND
PARISH OF LIBERTY PLAINS COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1141724

FIRST SCHEDULE

THE STATE OF NEW SOUTH WALES

SECOND SCHEDULE (4 NOTIFICATIONS)

* 1 THE LAND IS A RESERVE WITHIN THE MEANING OF PART 5 OF THE CROWN LANDS ACT 1989 AND THERE ARE RESTRICTIONS ON TRANSFER AND OTHER DEALINGS IN THE LAND UNDER THAT ACT, WHICH MAY REQUIRE CONSENT OF THE MINISTER.

* 2 LIMITED TITLE. LIMITATION PURSUANT TO SECTION 28T(4) OF THE REAL PROPERTY ACT, 1900. THE BOUNDARIES OF THE LAND COMPRISED HEREIN HAVE NOT BEEN INVESTIGATED BY THE REGISTRAR GENERAL.

* 3 T953688 EASEMENT FOR SEWERAGE PURPOSES OVER EXISTING LINE OF PIPES SHOWN SO BURDENED IN THE TITLE DIAGRAM

* 4 T953688 EASEMENT FOR SEWERAGE PURPOSES 11.5 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

advlegs PRINTED ON 26/3/2019

Obtained from NSW LRS on 26 March 2019 11:53 AM AEST

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NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 475/45747

SEARCH DATE	TIME	EDITION NO	DATE
26/3/2019	12:52 PM	-	-

CERTIFICATE OF TITLE HAS NOT ISSUED

LAND

LOT 475 IN DEPOSITED PLAN 45747
AT LIDCOMBE
LOCAL GOVERNMENT AREA CUMBERLAND
PARISH OF LIBERTY PLAINS COUNTY OF CUMBERLAND
TITLE DIAGRAM DP45747

FIRST SCHEDULE

THE STATE OF NEW SOUTH WALES (CA138684)

SECOND SCHEDULE (3 NOTIFICATIONS)

* 1 THE LAND IS A RESERVE WITHIN THE MEANING OF PART 5 OF THE CROWN LANDS ACT 1989 AND THERE ARE RESTRICTIONS ON TRANSFER AND OTHER DEALINGS IN THE LAND UNDER THAT ACT, WHICH MAY REQUIRE CONSENT OF THE MINISTER.
* 2 LIMITED TITLE. LIMITATION PURSUANT TO SECTION 28T(4) OF THE REAL PROPERTY ACT, 1900. THE BOUNDARIES OF THE LAND COMPRISED HEREIN HAVE NOT BEEN INVESTIGATED BY THE REGISTRAR GENERAL.
* 3 T953688 EASEMENT FOR SEWERAGE PURPOSES APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE EXISTING LINE OF PIPES SHOWN WITHIN LOT 474 IN DP45747

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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F. Contamination study results

MEMORANDUM

To: Jaime Bohm	From: Pascale Eisenmann
Position: Project Manager	Position: Graduate Officer
Division/Unit: Development and Transactions	Division/Unit: Environmental Service Group
Tel:	Tel:
Date: 23/11/2018	
Subject: Initial Contamination Assessment: 80 Betty Cuthbert Drive, Lidcombe NSW	

Purpose
The purpose of this memorandum is to outline the results of the initial assessment undertaken for 80 Betty Cuthbert Dr, Lidcombe NSW (74/-/DP1141724) and to recommend a way forward to facilitate the divestment of the site.

Summary
An initial environmental assessment was undertaken by the Environmental Service Group (ESG), which included review of the history and past uses of the site and the surrounds. A review of available NSW EPA records and of available online aerial photographs was also undertaken.

No current or historical activities have been identified which would evidence chemicals of concern (CoCs) being located on site. However, due to a lack of information on historical activities onsite and the current zoning of the site (SP2-Hospital), ESG considers the risk of COC impact to soil or groundwater to be moderate.

A Preliminary Site Investigation (PSI) is recommended prior to divestment.

Background
The site is located in a predominantly residential area of Lidcombe and is registered as the Multiple Sclerosis Centre, in operation since 1985. The site is directly bounded by Joseph Street to the West, with multiple residential lots to the North, East, and South. The Rookwood Cemetery is located approximately 400m to the East, and a golf course sits directly opposite Joseph Street to the West.

A search of the NSW EPA online data base of records did not identify the site or immediate surrounds as having any contamination records of concern related to the POEO Act or CLM Act or NSW EPA PFAS investigation areas.

Google Earth satellite imagery from 2003 onward were reviewed for the site assessment. No visible changes were apparent on the site and neighbouring properties in the past fifteen years, with the exception of the southern adjacent property. The existing southern building was demolished between 2004 and 2005, before being re-developed into a residential complex in 2009. Signs of water stress were visible in the general area in 2018.

The review of historical aerial photography evidence did not uncover any potential areas of concerns.

Conclusion
ESG considers that there is moderate risk of CoC impact to soil and / or groundwater underlying the site as a result of current and / or unknown historical land use.

The assessment did not identify any notices relating to contaminated land on or near the site which may provide an off-site source of contamination.

Recommendation
The ESG recommends the following be undertaken:

1. A Preliminary Site Investigation to the determine the potential for chemicals of concern being located on the site.

RECOMMENDED BY:

Pascale Eisenmann

Graduate Officer

ENVIRONMENT SERVICES GROUP
PORTFOLIO MANAGEMENT GROUP

Date: 29/11/2018

ENDORSED BY:

David Rohloff

Environmental Policy Advisor

ENVIRONMENT SERVICES GROUP
PORTFOLIO MANAGEMENT GROUP

Date:

Note: Chemicals of Concern include relevant organic and inorganic elements and compounds listed in Section 2.3 and Table 1A of Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013)



MOTT MACDONALD

80 Betty Cuthbert Drive, Lidcombe Master Plan

Utilities and Services Report

Planning Proposal

04 August 2021
Confidential

Property and Development NSW (PDNSW)

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	20.12.19	T. Loder	J. Taylor	J. Wukowic	Draft
B	21.02.20	T. Loder	J. Wukowic	J. Wukowic	Updated following PDNSW comments
C	24.04.20	K. Alexander	E. Melville	J. Wukowic	Updated following PDNSW comments
D	05.05.20	E. Melville	E. Melville	J. Wukowic	Updated following Urbis comments
E	18.06.21	R. McNeill	T. Loder	J. Wukowic	Updated following Lot Layout change
F	14.07.21	R. McNeill	T. Loder	J. Wukowic	Updated following PDNSW comments
G	04.08.21	J. Wukowic	T. Loder	J. Wukowic	Updated referencing
H	04.08.21	J. Wukowic	T. Loder	J. Wukowic	Updated referencing

Document reference: 405675 | MMD-405675-PP-RP-02 | H

Information class: Standard

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1 Introduction

Mott MacDonald have been engaged by Property and Development NSW (PDNSW) to undertake a utilities infrastructure study to support a Planning Proposal for the government owned site at 80 Betty Cuthbert Drive, Lidcombe.

1.1 Purpose of Report

The purpose of this report is to determine what, if any, upgrades or modifications to the existing utilities infrastructure may be required to support the Proposal.

This report will:

- Existing and proposed trunk servicing strategies (including sewer, water, electrical, telecommunications and gas);
- Review of current trunk supply (where possible);
- Available trunk capacity (where possible) which could be leveraged to supply the development;
- Key trunk constraints and opportunities to development;
- Additional demand generated by the development; and
- Adjustments/augmentations required to key infrastructure to enable development.

1.2 Limitations

The utility authorities operate under regulatory environments that require them to apply for funding to their regulator based on a business case. In some cases, this has led to a reactive planning response to development as it proceeds, and stagnant plans based on funding cycles. Consequently, they may be reticent to commit to upgrades to their networks in advance of development progressing.

Generally, they are also required to undertake network planning studies to facilitate their funding and delivery applications which include the yields provided to them as part of this study. The findings and recommendations of their more detailed network planning studies may eventually supersede this report.

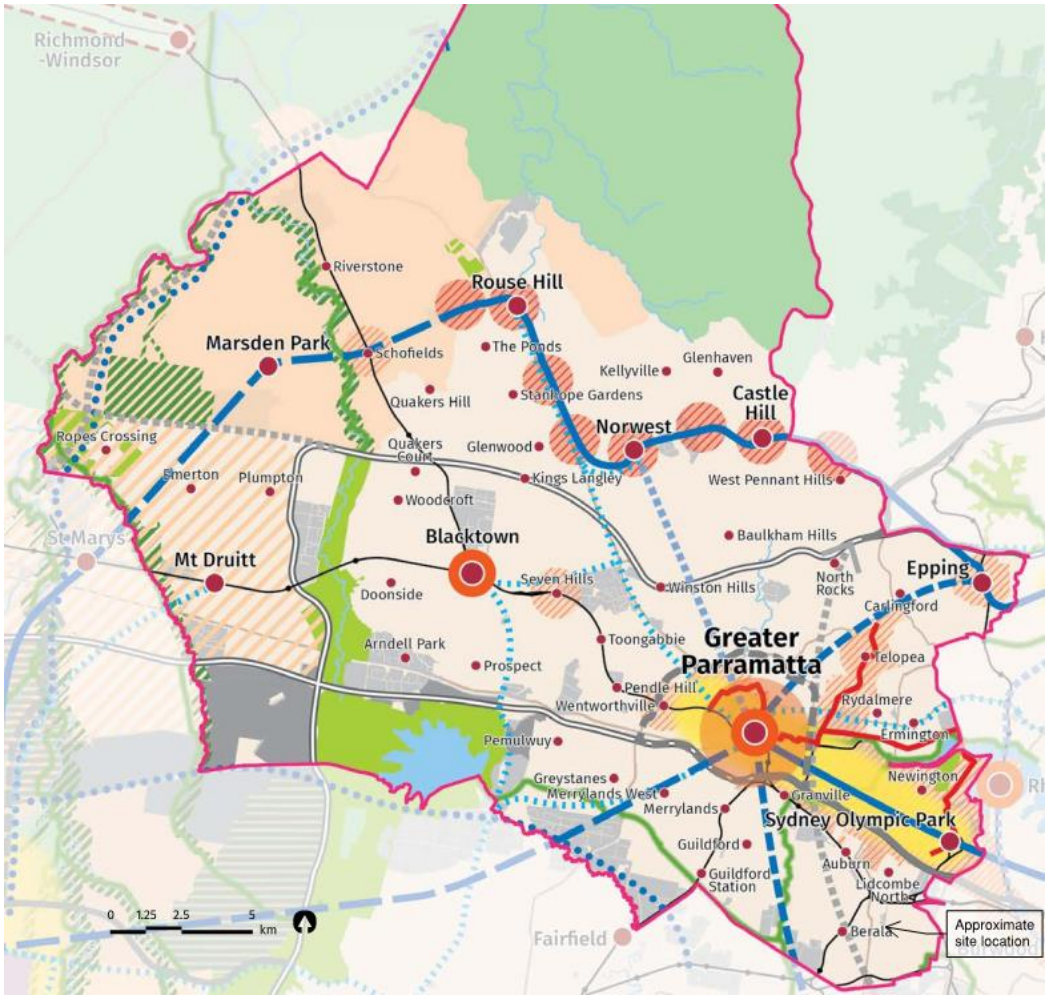
Local reticulation services will typically be provided by developers as development proceeds without significantly delaying development and depend on the form of blocks and timing of their development – which are subject to change at this phase of the process. Upgrades to these services will be important for each individual development stage but will be addressed at the individual DA stage.

1.3 Regional Context

The site is located within the suburb of Lidcombe, approximately 15km west of Sydney CBD and within the Cumberland local government area. The closest major interchange station is Lidcombe Station, 1.5km north of the site, and Berala Station is the nearest station, 1.2km west of the site. The site is surrounded by a mixture of land uses and facilities, with residential land to the north, east and south, an educational site to the south east and the Carnarvon Golf Course to the west.

In March 2018, the NSW Government released the Greater Sydney Region Plan, which outlined a vision of three cities; a western parkland city, a central river city and an eastern harbour city. The study area lies within the Central City District as shown in Figure 1 below. It is within proximity to Lidcombe North and Berala Local Centres, which have been identified for urban renewal.

Figure 1: Central City Plan



Source: Central City District Plan (Greater Sydney Commission, March 2018)

1.4 Local Context

The site is located at 80 Betty Cuthbert Drive, Lidcombe. It has a primary frontage to Joseph Street between Georges Avenue to the north and Botanica Drive to the south. The site is 5.8ha in size and is currently occupied by Multiple Sclerosis Limited (MSL). MSL provide specialist expertise in managing MS which are aimed at enhancing lifestyle, health and well-being. The site facilities include a 4,300sqm brick building (circa 1970's) that provides office space, treatment facilities and respite care facilities to support the operations of MSL. The existing MSL facilities cover approximately 12% of the site and the remainder of the site is undeveloped.

The site is surrounded by a mixture of land uses and facilities, with residential land to the north, east and south, a TAFE to the south east and the Carnarvon Golf Course to the west. Existing vehicle access to the site is via an access road off Betty Cuthbert Drive, through the existing residential subdivision located to the south of the site.

The site is heavily vegetated, with a number of trees located around the site boundary and bordering the existing MSL building. The existing MSL building is located within a high point on the site and the surrounding landscape slopes primarily towards the south-west and eastern sides of the site.

Figure 2: Site Overview



1.5 Proposed Development

In 2017, PDNSW prepared a master plan for the site which allocated land for a future educational establishment, health facility and for residential use. The masterplan has been developed with key stakeholders, Department of Education (DE) and Multiple Sclerosis Limited (MSL). The future educational establishment will be developed by the DE and the health facility by MSL.

The future educational establishment will be located on a 1.85 ha parcel in the central western portion of the site. The future education establishment, for the purpose of this assessment, has been assumed as a 1,000-student primary school, to accommodate a maximum capacity scenario for development of that land. It should be noted that this is an assumption made for this assessment and the establishment may be a different type of school.

A 0.95 ha site adjacent Joseph Street will be used for a new health facility, and the surplus land (approx. 1.78 ha) will be rezoned to medium density residential land (exclcluding road and drainage areas) and divested. The concept indicative layout plan (ILP) is shown in Figure 3 below.

Figure 3: Concept ILP



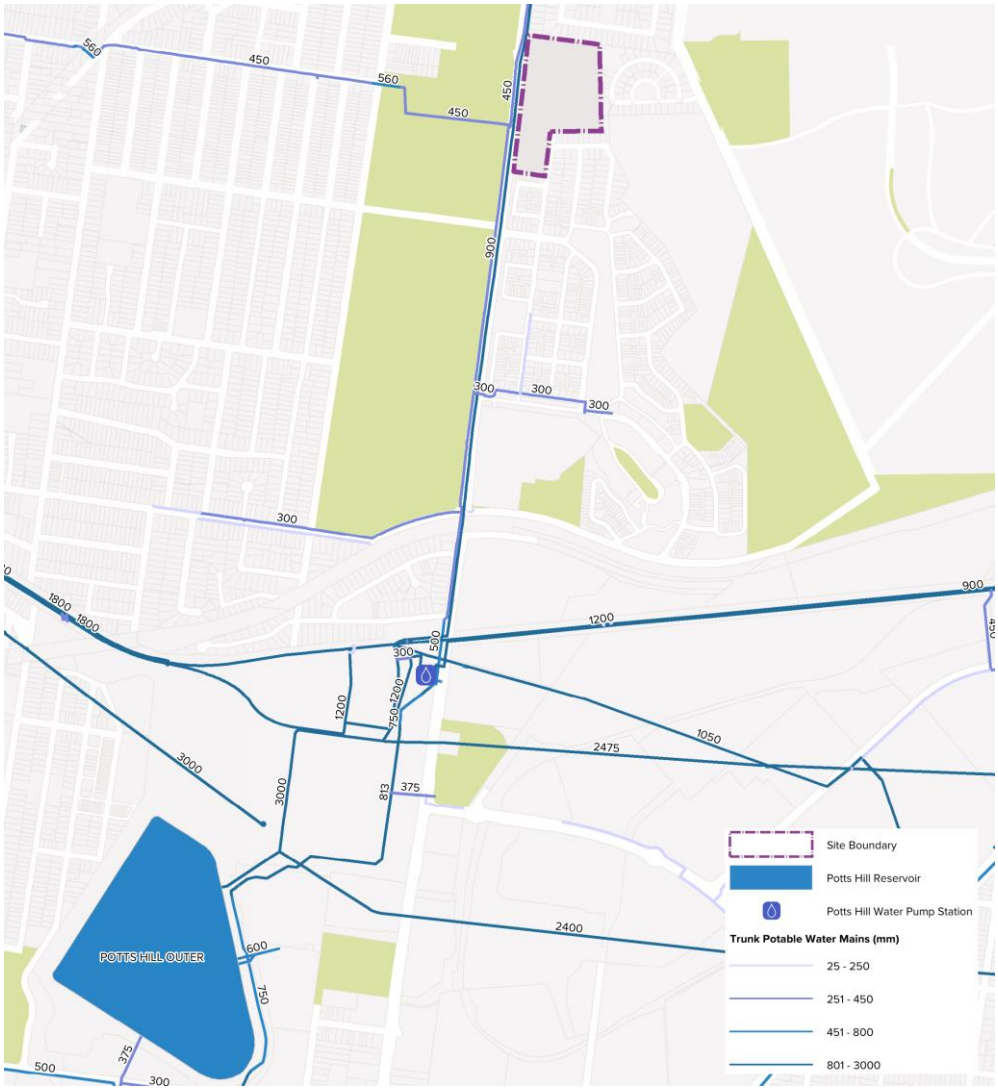
Source: Urbis – 80 Betty Cuthbert Drive, Lidcombe – Indicative Layout Plan (04 August 2021)

2 Water

2.1 Existing Network

Sydney Water currently supply potable water to the site. The site is located within the Potts Hill Water Supply Zone which forms part of the Prospect and Kurnell Delivery System. The site receives potable water from the Potts Hill Outer Reservoir (ref: WS0455), which is located approximately 2.3km to the south of the site. A potable water pump station is located 800m north east of the reservoir and assists in the transfer of potable water to the surrounding region. The regional trunk potable water network is shown on Figure 4 below.

Figure 4: Regional Potable Water Network

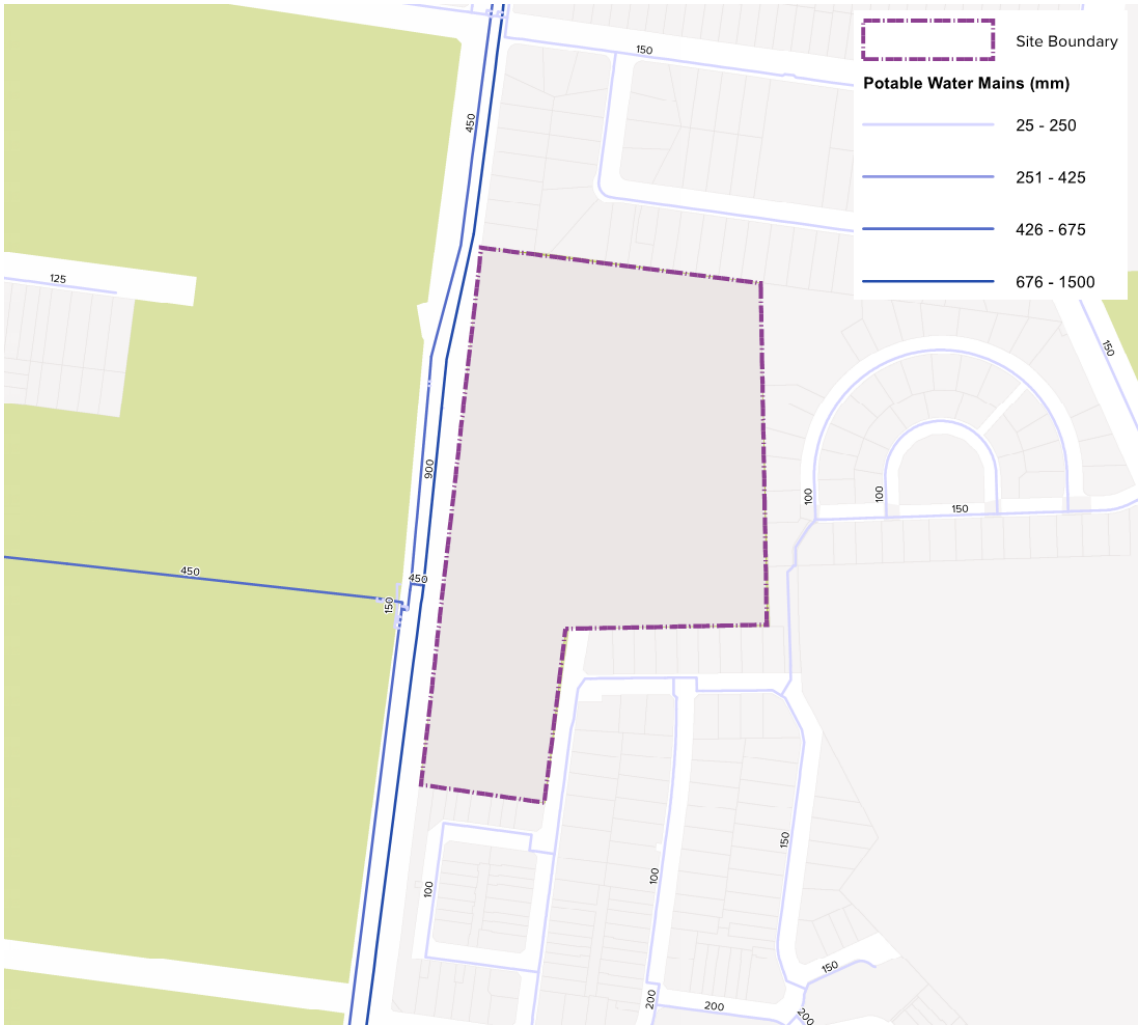


Source: Sydney Water GIS data (2019)

Water is transferred northwards from the reservoir via a 900mm and a 450mm diameter trunk main located on the western side of Joseph Street. The 900mm main transfers potable water from the Potts Hill reservoir to the Five Dock region and would not be utilised to supply the site.

The site appears to have an existing connection to the 450mm main, which crosses to the eastern side of the road corridor approximately 300m north of the Botanica Drive intersection. Assuming there is sufficient capacity in the network, this 450mm connection may be used to supply future development. The local potable water network is shown on Figure 5 below.

Figure 5: Local Potable Water Network



Source: Sydney Water GIS data (2019)

2.2 Concept Supply Assessment

Mott MacDonald have undertaken a high-level assessment to determine the servicing requirements for the site. The potable water analysis follows the procedure detailed below;

- Estimate future demand generated from the new land use yield scenario.
- Determine the ultimate infrastructure requirements for the new development yield.
- Develop, if required, interim servicing options for the Site to mitigate the identified issues.

2.2.1 Future Demand Assessment

A high-level assessment of the new potable water demands for the future growth scenarios has been undertaken using the Water Supply Code of Australia (WSA). Peak hourly demands for the Site have been estimated, refer to Table 1 for proposed land use yields for the three growth scenarios. The maximum water demand rates for each land use were extracted from Table 2.1 of the WSA, these form the basis for estimating proposed demands. It is noted that these rates may vary and are generally conservative.

Table 1: Potable Water Demand Rates per Land-Use Type

Land Use	Max Day Demand Rate (kL/Ha)
30 – 60 dwellings/ha	60
Commercial	41
Industrial	66
School (500 pupils)	90/day

The average daily demands and subsequently peak day factor were then calculated for each area for residential, commercial, industrial and retail land uses. A peak day factor of 1.5 was adopted for all land uses.

The peak hourly demand was then calculated using the average hourly demand from the peak day. A peak hour factor of 2.0 was used in this analysis. The results of assessment are provided in Table 2.

Table 2: Proposed Water Demand Calculations

Land Use	Net Area[1] (Ha)	Density (Dwell/Ha)	Max Day Rate (kL/Ha/d)	Max Day Flow (L/d)	Peak Day Flow (L/d)	Demand (L/s)
Residential	2.21	69	60	132,480	264,960	15.33
MSL – Commercial	0.29	-	41	11,711	23,421	1.36
MSL – Light Industrial	0.09	-	66	5,775	11,550	0.69
School	-	-	180[2]	180,000	360,000	20.83
Total	**-**	**-**	**-**	**329,966**	**659,931**	**38.19**

1. Clinical MSL land use assumed to operate as light industrial
2. Developable area assumed to be equivalent to 80% of net area.
3. Worst case scenario of 1,000 students equals double 90/day rate

It should be noted that that the above demands are based on a range of land use types. Daily demand profiles will vary throughout the time of day for different land use types. For example, school peak use times will differ to residential peak use times, as such the above estimates should be seen as a worst-case scenario and hence conservative. Operationally, the total demand is not entirely additional load on the network as the existing land uses have not been considered. Again, this approach has been adopted to generate a conservative result.

2.2.2 Ultimate Infrastructure Requirements

Pipe Upgrades

The following assessment is provided to estimate the minimum infrastructure sizes required to service the Site. It should be noted that a wider assessment of the Prospect and Kurnell Delivery System and detailed modelling has not been undertaken, further detailed analysis may need to be undertaken to confirm the strategies and bulk supply of water to the Site. As noted above, operational peak demand times for residential and education land uses will be different and this may reduce the minimum pipe size required for the development.

Assuming a target design velocity of 0.8-1.4m/s for the pipes, the diameter of the minimum trunk piped infrastructure required to meet the demand of the Site is 200mm. As highlighted in Section 2.1, a 450mm pipe traverses the western boundary of the site and, if possible, connection to this asset is preferred. Alternatively, supply may be sourced from the 300mm trunk main that traverses Palm Circuit, approximately 500m to the south of the Site. Adoption of this option would result in either an upgrade to the existing 100mm pipe or installation of a second 200mm pipe to service the Site.

Potable water demand for external developments has not been included in the calculations and should be considered over and above these estimates. The pipe diameters calculated are equivalents only and would be more appropriately provided as a number of cross connections through a series of pipes rather than single large connections. Refer to Figure 6 for the potential potable water servicing strategy.

In light of the above analysis, potable water servicing for the site is not expected to present a constraint for development however this would be subject to detailed design and Sydney Water approval.

Figure 6: Proposed Potable Water Servicing Strategy



Source: Mott Macdonald (2021)

2.3 Sydney Water Feasibility Investigation

A feasibility application was lodged with Sydney Water to confirm the servicing strategy for the site (ref: case number 182646). The response letter from Sydney Water is attached in Appendix C, and the following advice was given in terms of potable water infrastructure upgrades:

1. Once a development consent is obtained or submitted, a Section 73 application shall be lodged with Sydney Water and then Sydney Water will issue a Notice of Requirements / Anticipated Notice of Requirements that will be a definitive statement of Sydney Water's requirements.
2. A Water servicing Coordinator shall be engaged by the Developer to manage the design and construction of works that the Developer must provide to service the development at the Developer's costs.
3. A water main extension shall be constructed from the existing DN150 potable water main in Betty Cuthbert Drive (Bankstown supply system) to serve the development. Please refer to clause 4.1 in the Feasibility Letter (Appendix C).
4. Bonding of the adjustment / deviation asset works will be required.
5. Building Plan Approval / stamping of the DA Approved plans will be required.

3 Sewer

3.1 Site Topography & Catchments

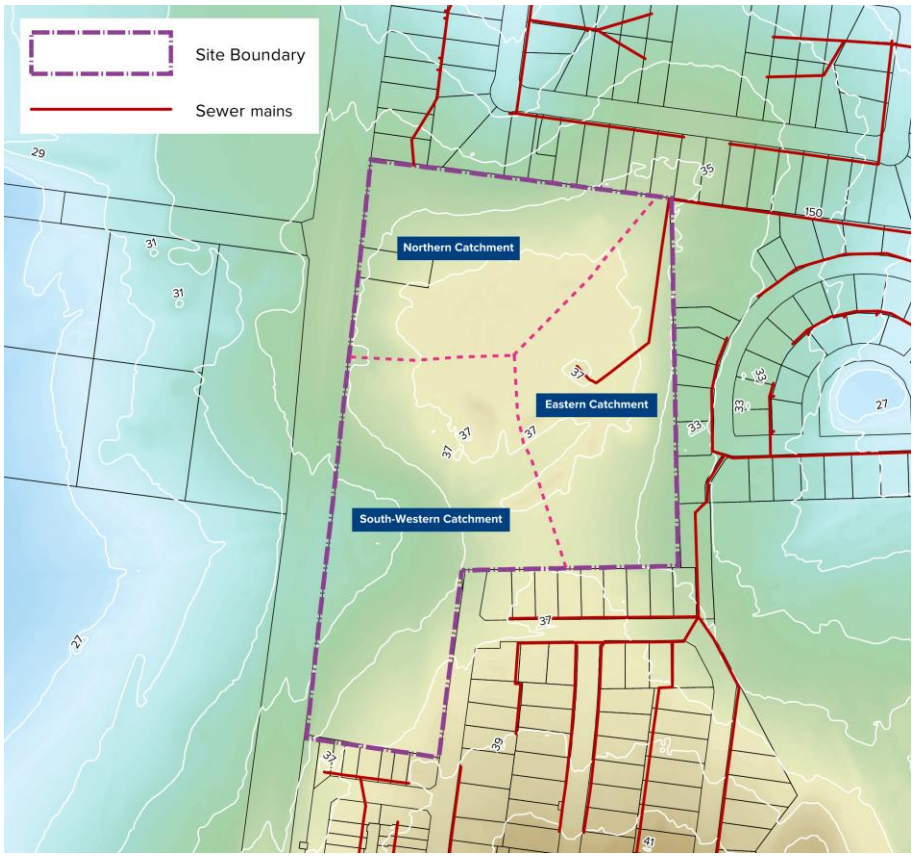
The site generally falls into three main catchments, separated by a ridgeline near the centre of the site which runs in a north-south direction, these catchments are shown in Figure 7 below. Each catchment presents a unique set of servicing opportunities and constraints based on topography and available infrastructure.

The eastern catchment generally drains to a low point in the north-eastern corner of the site. The existing MSL building within the site connects to an internal sewer main which drains to this low point and then to the east via a reticulation main to East Street, where it connects to the Sydney Water sewer network.

The northern catchment appears to drain to a low point on the northern boundary of the site. An existing Sydney Water connection point is located at this low point which services the existing dwellings to the north of the study area.

The south-western catchment drains to a low point on the western boundary of the site. Given the surrounding topography and lack of existing infrastructure, this catchment is likely to prove the most difficult to service.

Figure 7: Sewer Catchments



Source: Sydney Water GIS data (2019) & MSL Sewer Plans

3.2 Existing Network

At present there is no trunk sewer infrastructure located adjacent the site. The Berala Branch Submain is located 450m west of the site, on the western side of the rail corridor. This main is 400mm in diameter and drains to the Haslams Creek Branch Submain located approximately 1.4km north of the site.

The East Street Branch Submain is located in East Street, approximately 370m east of the study area. This main is 300mm in diameter and also drains to the 750mm diameter Haslams Creek Branch Submain. The existing site drains to the East Street Branch Submain via a series of smaller reticulation mains. The regional sewer network is shown on Figure 8 below.

Figure 8: Regional Wastewater Network



Source: Sydney Water GIS data (2019)

As discussed in Section 3.1, the site falls into three main catchments, separated by a ridgeline located through the centre of the site boundary. The northern and eastern catchments drain to the East Street Branch Submain. The existing MSL building is serviced by a 150mm sewer main which drains to the north-eastern corner of the site and connects to a Sydney Water reticulation main located in East Street, which drains to a section of the East Street Branch Submain located to the north of the site.

The south western catchment currently does not drain to the Sydney Water sewer network. Future development in this catchment may require lead in works to ensure an appropriate sewer connection can be provided. This could be achieved via a new reticulation main beneath Joseph Street which connects to the 150mm main servicing properties on Leila Street, adjacent the golf course.

Alternatively, a connection could be provided to the existing 250mm sewer main in Joseph Street, located approximately 240m south of the site. Connection to this main would require significant earthworks due to the challenging topography and is therefore not considered to be a favourable servicing option.

The sewer connection points discussed above are minor reticulation mains (150mm diameter) and therefore may not have sufficient capacity to support the proposed development. Any upgrades to the existing network required to service the site will be confirmed by Sydney Water through lodgement of a feasibility application.

Figure 9: Local Wastewater Network



Source: Sydney Water GIS data (2019)

It should be noted that two sewer easements exist within the site boundary. There is an easement in the north west corner of the site, which is noted as located over a sewer main which may have connected to the

reticulation main to the north of the site boundary. The second easement is in the south west corner of the site. PDNSW has advised that both of these easements are in the process of being extinguished.

3.3 Concept Supply Assessment

Mott MacDonald have undertaken a high-level assessment to determine the servicing requirements for the site. The wastewater analysis will follow the procedure detailed below.

- Estimate future demand generated from the new land use yield scenario.
- Determine the ultimate infrastructure requirements for the new development yield.
- Develop, if required, interim servicing options for the Site to mitigate the identified issues.

3.3.1 Future Demand Assessment

In order to determine the net increase in wastewater demand for the proposed yield growth, the Sewerage Code of Australia (SCA) was used to determine the additional demand generated by the Site. Table 3 outlines the Equivalent Population (EP) rates adopted for each land use. These rates were used to determine the population and associated sewer demand for the Site. It is acknowledged that the below values are conservative and should be seen as a worst-case scenario.

Table 3: Equivalent Population Rates

Land Use	Unit	EP/Unit
Single occupancy medium density units	Dwelling	3.0
Educational Establishment	Student	0.2
Commercial	Ha	75
Clinical[1]	Ha	450

Source: Sewerage Code of Australia
Notes: 1. Rate adopted from previous feasibility study (2018).

Although the Site is split up into three wastewater catchments, for the purpose of this assessment the catchments have been refined further. The total rates for each major land use have been calculated using the Sydney Water's Flow Schedule spreadsheet. The estimated demand rates are presented in Table 4 below. As shown, the residential development has been split up geographically to match the servicing options and ultimate infrastructure requirements explored further in the following sections.

Table 4: Future Wastewater Demand

Catchment	EP	Design Flow (L/s)
Northern Residential	69	2.9
Eastern Residential	108	4.8
Central Residential	30	1.6
MSL	61	4.0
School	200	6.1
Total	**468**	**19.4**

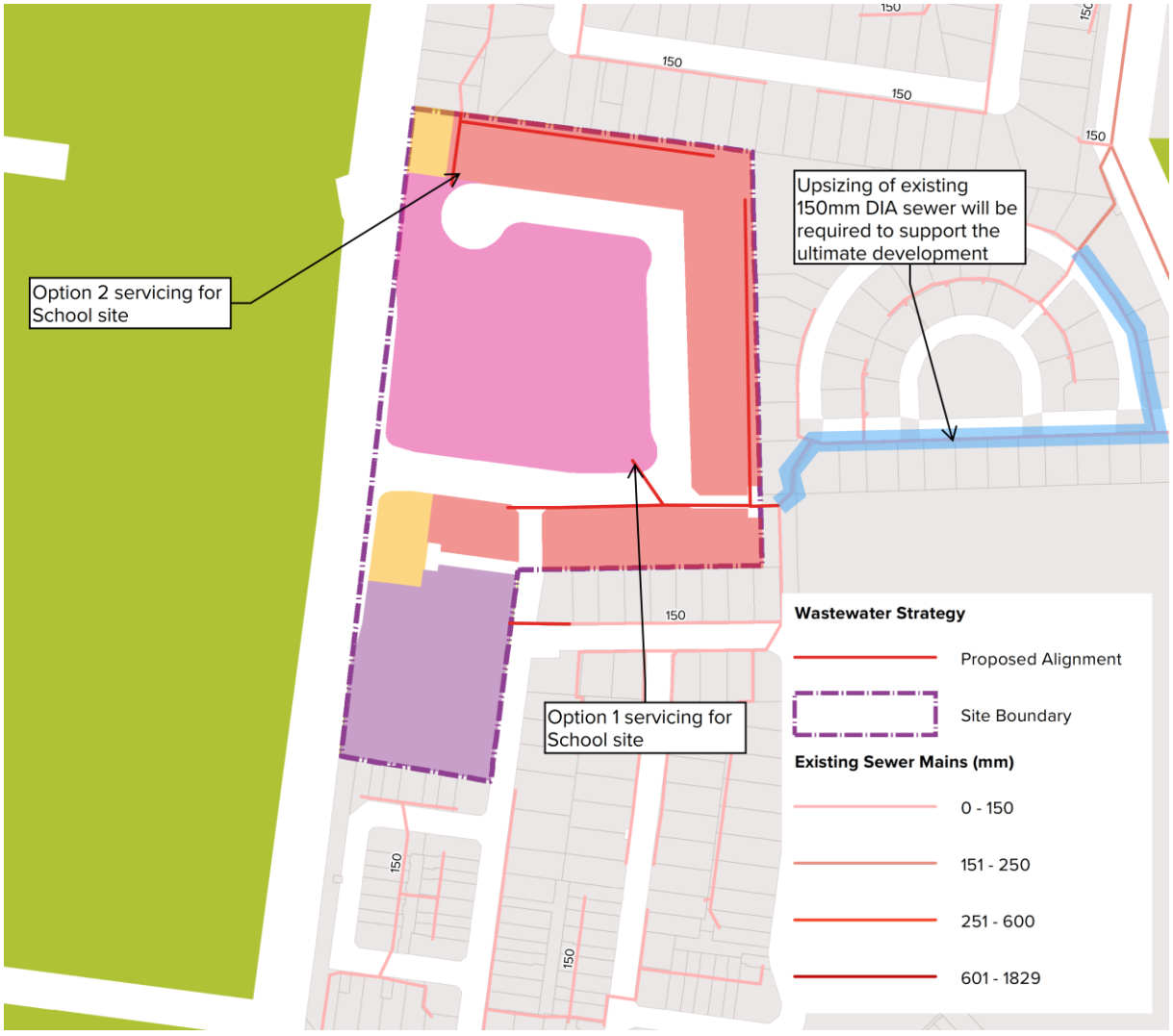
3.3.2 Servicing Options

The existing infrastructure currently servicing the Site will not have sufficient capacity to service the proposed growth. Taking this into consideration, two options have been explored to service the Site;

- Option 1 – the northern residential dwellings are proposed to be serviced via the existing connection to the north of the Site and the remaining land use is serviced via the connection in Ironbark Park, to the east (including school land). As can be seen in Table 4, the combined demand of the school site, MSL site and eastern & central residential will total 16.5L/s.
- Option 2 – this option proposes that the northern wastewater connection will service the northern residential dwellings and the school land. The eastern connection in Ironbark Park is proposed to service the remaining residential dwellings and the MSL facilities. As can be seen in Table 4, the combined demand of the MSL site and eastern & central residential will total 10.4L/s.

It should be noted that the options above have been considered under the assumption that the school land will be serviced by a single connection. Pending the final facility layout, the school land could be serviced by both the northern and eastern connections.

Figure 10: Proposed Wastewater Servicing Strategy



3.3.3 Ultimate Infrastructure Requirements

Based on the existing contributing catchments for the northern connection, there should be sufficient capacity to service either Option 1 or 2, however capacity issues for the eastern connection are outlined below.

The existing 150mm pipe that traverses the eastern boundary of the Site appears to service approximately 60 external dwellings located to the south-west of the Site. Assuming an average dwelling area of 250m^2, these lots will generate a wastewater demand of approximately 6.3 L/s.

For a 150mm pipe that is graded at 1%, its capacity is 15.5 L/s. Based on an external demand of 6.3 L/s, this leaves approximately 9.2 L/s of capacity available for the demand generated by the Site. In both Option 1 and Option 2, the MSL, eastern and central residential development will need to be serviced via this 150mm DIA connection. As identified in Section 3.3.2, this demand equates to a minimum of approximately 10.4 L/s (increasing to 16.5L/s for Option 1). Taking this into consideration, approximately 300m of the existing downstream 150mm pipe will need to be upgraded to 225mm to accommodate the increased demand (a 225mm DIA pipe at 1% has a capacity of 45.7 L/s).

This upgrade will require consent from at least 17 property owners, and approval from Sydney Water. There may be opportunity to delay the trigger point for when the upgrade will be required, however further detailed design will be required confirm with due consideration to the Sydney Water Feasibility Investigation (refer Section 3.4).

Considering the above analysis, wastewater servicing is possible for the proposed site however it should be noted that, all proposed sewer loads are subject to detailed design and Sydney Water approval. Further analysis will need to be undertaken based upon the final lot layout for the residential developments to ensure that all dwelling can be serviced via the proposed system. Assumed available capacity is also subject to Sydney Water confirmation.

3.4 Sydney Water Feasibility Investigation

A feasibility application was lodged with Sydney Water to confirm the servicing strategy for the site (ref: case number 182646). The response letter from Sydney Water is attached in Appendix C, where the following advice was given in terms of sewer infrastructure upgrades:

1. Once a development consent is obtained or submitted, a Section 73 application shall be lodged with Sydney Water and then Sydney Water will issue a Notice of Requirements / Anticipated Notice of Requirements that will be a definitive statement of Sydney Water's requirements.
2. A Water servicing Coordinator shall be engaged by the Developer to manage the design and construction of works that the Developer must provide to service the development at the Developer's costs.
3. Sydney Water preliminary site investigation indicates that the local sewer network can support the proposed development, but further investigation will be required when the Developer supplies their concept detailing servicing proposal for the site. Please refer to clause 4.2 in the Feasibility Letter (Appendix C).
4. A sewer extension shall be constructed to serve the development. The extensions to the site could be possibly taken from the North, East and South. Please refer to clause 4.2 in the Feasibility Letter (Appendix C).
5. Bonding of the adjustment / deviation asset works will be required.
6. Building Plan Approval / stamping of the DA Approved plans will be required.

4 Electricity

4.1 Existing Network

The site is located in the Ausgrid electrical supply zone and is positioned on the border of the Inner West and Canterbury-Bankstown load areas. Electricity is supplied to the site from the Potts Hill Zone Substation (ZS), located approximately 1.6km south of the site. Alternative supply could be provided by the Sefton ZS, located approximately 2.3km west of the site. Details of these substations including capacity and forecast demand are summarised in Table 5.

Table 5: Zone Substation Information

Name	Type	Distance from Site (km)	Total Capacity (MVA)	Firm Capacity (MVA)	Actual Load 2021 (MVA)	Forecast Load 2022/23 (MVA)	Forecast Available Capacity 2022/23 (MVA)
Potts Hill	132/11kV	1.6	107	54.9	43.0	43.0	11.9
Sefton	132/11kV	2.3	152.4	94.6	59.7	60.3	34.3

Source: Ausgrid Distribution & Annual Planning Report (2021)

The existing site and surrounding residential developments are serviced by a series of underground electrical cables. Existing low voltage infrastructure located within the site boundary will be decommissioned and removed where required to facilitate the development of the site.

The existing site receives power via an on-site kiosk substation which is serviced via an 11kV feeder that traverses Joseph Street from Potts Hill ZS. This existing kiosk's current load is approximately 300kVA and is likely to be able to supply electricity to the initial stages of development, however, additional kiosks will be required to service the ultimate proposed development.

There is also a risk that the demand generated by the proposed development exceeds the available capacity of the existing 11kV feeder. In this case an additional feeder from the Potts Hill ZS would be required. Alternatively, opportunities to connect to another nearby feeder could be explored.

Digital GIS data for the subject site has been requested from Ausgrid. When this information is received it will be incorporated into the detailed specifications and plans. Nevertheless, the below image has been provided for context.

Figure 11: Ausgrid Proximal Zone Substations



Source: Ausgrid Distribution & Annual Planning Report (2021)

4.2 Ausgrid Feasibility Investigation

A feasibility application has been lodged with Ausgrid to confirm the servicing strategy for the site. When this information is received it will be incorporated into the detailed specifications and plans.

4.3 Concept Supply Assessment

Mott MacDonald have undertaken a high-level assessment to determine the servicing requirements for the site. The electrical analysis follows the procedure detailed below.

- Estimate future demand generated from the new land use yield scenario.
- Determine the ultimate infrastructure requirements for the new development yield.
- Develop, if required, interim servicing options for the Site to mitigate the identified issues.

4.3.1 Future Demand Assessment

A high-level assessment of the electrical demands for the future growth scenario has been undertaken. In lieu of advice from Ausgrid, Mott MacDonald have adopted electrical demand rates previously provided for a similar project by Endeavour Energy, which are provided in Table 6 below. It should also be noted that, for the purpose of this assessment, the clinical land use of the MSL facilities has been assumed to operate as light industrial.

Table 6: Electricity Load Assumptions

Land Use	Unit Load (VA/m^2 or VA/dwelling)
Medium Density Residential - House	3,000
Commercial	100
Light Industrial	100
School	15

Source: Endeavour Energy (2018)

An evaluation of the expected electrical demands for the Site was undertaken using the rates above and include the application of a diversification factor of 0.8 to account for overestimation of the peak period demand. The results are provided in Table 7 below. These demands are indicative only and should be further refined as more information becomes available regarding final built forms. The implications of this increased demand on the existing infrastructure is explored in the following section.

Table 7: Future Electrical Demand

Scenario	Unit (sqm or dwellings)	Total Load (MVA)	Diversified Demand (MVA)	Number of 11kV Feeders Required
Medium Density Residential - House	69	0.23	0.18	0.04
Commercial	2,300	0.41	0.33	0.07
Light Industrial	700	0.07	0.06	0.01
School	11,380	0.17	0.14	0.03
Total	**-**	**1.04**	**0.71**	**0.15**

Note: Mott Macdonald have assumed, based on previous experience, an 11 kV feeder carries approximately 5 MVA.

4.3.2 Ultimate Infrastructure Requirements

Based on Ausgrid's Annual Planning Report, Potts Hill ZS is proposed to have a forecast load of approximately 45MVA by 2023. Mott Macdonald has assumed that the proposed development at Betty Cuthbert Drive has not been considered in this forecast. Taking this into consideration, there will be approximately 9.9MVA of electrical capacity available for developments similar to this Site. As outlined in Table 7, the proposed development is expected to generate an electrical demand of approximately 0.7MVA, which equates to approximately 7% of the available capacity at Potts Hill ZS. It is therefore likely that the Potts Hill ZS will have sufficient spare capacity to service the Site.

From previous experience on similar projects, if a development requires 50% of a feeder's capacity to service the site, it may require network alterations to either offload power or will require the provision of a new feeder to the site. The estimated load of 0.7MVA for the Site equates to approximately 15% of the existing 11kV feeder and therefore should not require offloading or an additional feeder.

Additionally, the existing kiosk substation has a capacity of approximately 300kVA, the 0.7MVA is likely to require two additional kiosk substations to service the site.

Should there be insufficient capacity at the Potts Hill ZS to service the development, alternative supply could originate from Sefton ZS. Feeders from Sefton would need to cross multiple train lines to reach the site, which would add a significant cost to the development. This option is therefore not a preferred method of connection for the Site.

It should be noted that capacity cannot be reserved for specific developments. Should external developments proceed ahead of the Site, the available supply will be used to service these projects first. Further engagement with Ausgrid should be prioritised to ensure future planning takes into account the density of the Site

In light of the above analysis, electrical servicing for the site is not expected to present a constraint for development, however this is subject to detailed design and Ausgrid approval for connections.

Digital GIS data for the subject site has been requested from Ausgrid. When this information is received it will be incorporated into the detailed specifications and plans.

5 Telecommunications

5.1 Existing Network

The existing site is currently serviced via the NBN Co. network, with infrastructure located within the road reserve of Joseph Street. It is expected that the existing network will be extended into the site to service future development. Any existing infrastructure located within the site boundary will be decommissioned and removed to facilitate development. The existing NBN telecommunications network is shown in Figure 12 below.

Figure 12: Existing NBN Co. Network



Source: NBN Co. DBYD data (2021)

5.2 Concept Servicing Strategy

It is expected that the NBN Co. will be able to service all future development on the Site. NBN Co. will utilise existing ducts within the shared trench of existing roads to install new telecommunications infrastructure. Developers will be expected to provide pit and pipe infrastructure, and any other required infrastructure within the site boundary. This includes providing ducts for any new roads.

New connections to the NBN network incur a charge of $600 per single dwelling unit and $400 for each multi dwelling unit (costs current at time of report). It is not anticipated that any backhaul charges will be applicable for the development.

In light of the above, telecommunications servicing for the site is not expected to present a constraint for development.

6 Gas

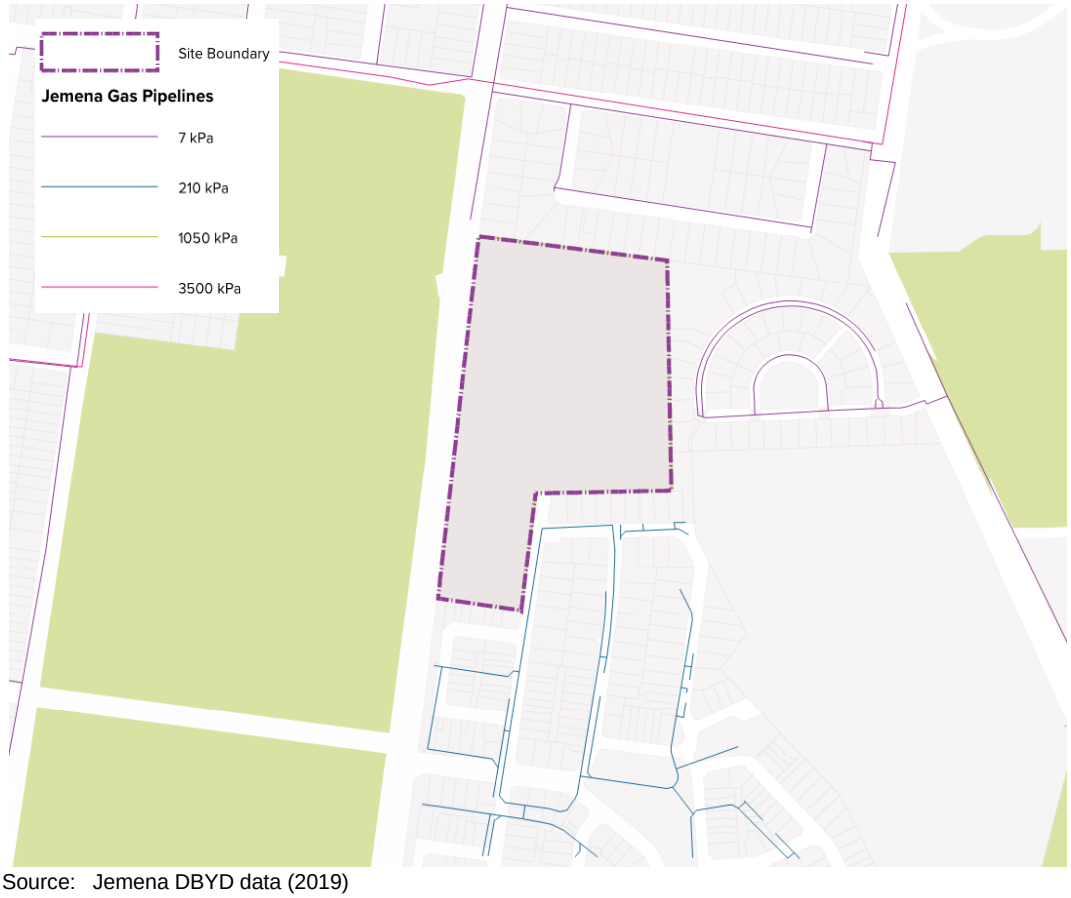
6.1 Existing Network

Gas is supplied to the site and surrounding area by Jemena. The adjacent residential developments are serviced by a series of existing network mains and the nearest trunk gas infrastructure is a 3,500 kPa primary main traversing Georges Avenue, slightly north of the site. Given the proximity of trunk gas infrastructure to the site, the provision of gas is not expected to pose a constraint to development.

Under NSW regulation, Jemena are required to ensure that any connection to the natural gas distribution system is commercially viable and therefore must assess each request for supply on an individual basis (as gas is a non-essential service). Mott MacDonald's experience is that Jemena will be able to assess the development once a final layout is prepared and firm demand is known, together with detailed design.

As there is existing gas infrastructure in the vicinity of the site, it is likely that Jemena will be able to facilitate the upgrade of infrastructure required to support the increased demand generated by the development. The existing gas network is shown on Figure 13.

Figure 13: Existing Gas Infrastructure



Source: Jemena DBYD data (2019)

6.2 Concept Servicing Strategy

The Site is generally well serviced by existing gas trunk infrastructure. There is currently a primary gas main running along Georges Avenue, and this will be the key feeder for the Site. It is not expected that there will be any gas supply issues and it is noted that Jemena is required to ensure that any connection to the natural gas distribution system is commercially viable and therefore must assess each request for supply on an individual basis (as gas supply is a non-essential service). It is expected that with an increase in residential yield, gas supply will become more favourable and will also help reduce electrical demand in the Site. Additional pipe upgrades may be required as development occurs but are expected to be monitored and managed by Jemena. Gas mains will be constructed within the standard trench allocation of the road reserve.

Gas servicing for the site is not expected to present a constraint for development.

6.3 Jemena Feasibility Investigation

A feasibility application has been lodged with Jemena to confirm the servicing strategy for the site. When this information is received it will be incorporated into the detailed specifications and plans.

Appendix A: Existing Services Plans

LIDCOMBE MASTER PLAN

SEWER CATCHMENTS

Site Boundary

Sewer Pipes

Northern Catchment

Eastern Catchment

South-Western Catchment

0 0.025 0.05 0.075 0.1 km

19.03.19 | REF: MMD-00-U-GIS-0101

NSW GOVERNMENT Planning, Industry & Environment

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LIDCOMBE MASTER PLAN

EXISTING LOCAL POTABLE WATER NETWORK



Site Boundary

Potable Water Mains (mm)

25 - 250

251 - 425

426 - 675

676 - 1500

0 0.025 0.05 0.075 0.1 km

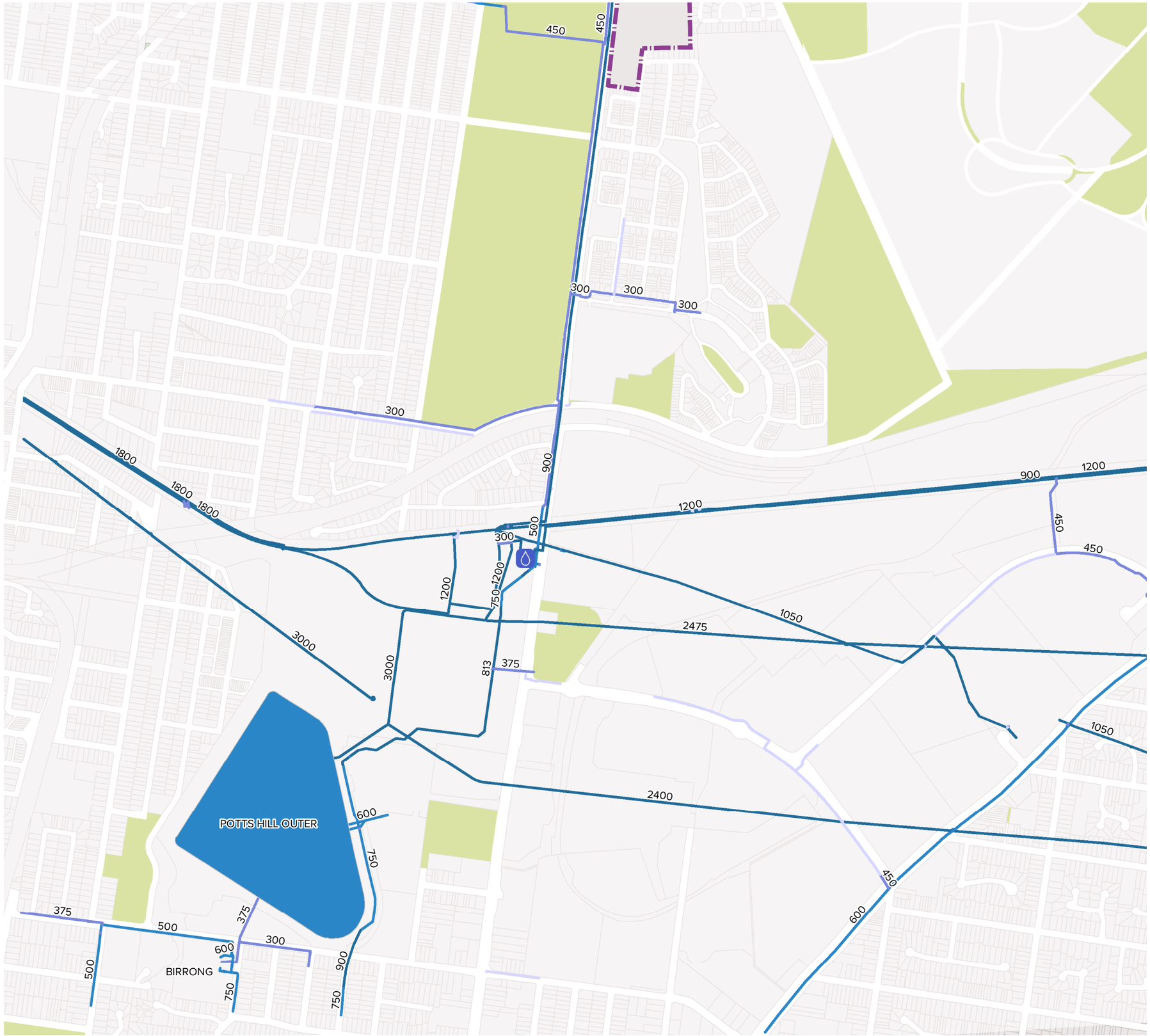
19.03.19 | REF: MMD-00-U-GIS-0102

NSW GOVERNMENT Planning, Industry & Environment

MOTT MACDONALD

LIDCOMBE MASTER PLAN

EXISTING REGIONAL POTABLE WATER NETWORK



Site Boundary

Potts Hill Water Pump Station

Potts Hill Reservoir

Trunk Potable Water Mains (mm)

25 - 250

251 - 450

451 - 800

801 - 3000

19.03.19 | REF: MMD-00-U-GIS-0102

NSW GOVERNMENT Planning, Industry & Environment

MOTT MACDONALD

Appendix B: Proposed Servicing Strategies

LIDCOMBE MASTER PLAN

PROPOSED POTABLE WATER STRATEGY

Potable Water Strategy

- Proposed Alignment
- Site Boundary

Existing Potable Water Mains (mm)

- 25 - 250
- 251 - 425
- 426 - 675
- 676 - 1500

0 0.025 0.05 0.075 0.1 km

18.06.21 | REF: MMD-00-U-GIS-0112

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LIDCOMBE MASTER PLAN

PROPOSED WASTEWATER STRATEGY

Wastewater Strategy

- Proposed Alignment
- Site Boundary

Existing Sewer Mains (mm)

- 0 - 150
- 151 - 250
- 251 - 600
- 601 - 1829

0 0.025 0.05 0.075 0.1 km

18.06.21 | REF: MMD-00-U-GIS-0113

MOTT MACDONALD

Appendix C: Sydney Water Feasibility Letter

Case Number: **182646**

12 March 2020

DEPARTMENT OF PLANNING AND ENVIRONMENT
c/- MOTT MACDONALD AUSTRALIA

FEASIBILITY LETTER

Developer:	**DEPARTMENT OF PLANNING AND ENVIRONMENT**
Your reference:	**405675**
Development:	**(Lot 74 DP1141724), No. 80 Betty Cuthbert Dr, Lidcombe**
Development Description:	**Redevelopment of existing MSL Facilities. The site improvements aims to provide a Mix between Residential, Education and Special Infrastructure Land Uses**
Your application date:	**17 December 2019**

Note: **Level 1 water restrictions are now in place**, which limits how and when water can be used outdoors. This can impact you and your contractors in the activities they need to undertake for this proposal.

Using water to suppress dust is not restricted, but this does mean that you/your contractors will need to apply for an exemption permit to use water for most outdoor uses including:

- Cleaning equipment and the exterior of new buildings
- Drilling and boring, and
- Batching concrete on-site

Fines for deliberate breaches of restriction rules apply from 1 September 2019.

For more information on the restrictions and for applying for an exemption, visit our web site at http://www.sydneywater.com.au/SW/water-the-environment/what-we-re-doing/water-restrictions/index.htm

The more water everyone saves, the longer we can stave off the progression to stricter restrictions or emergency measures.

Please provide this information to your contractors and delivery partners to inform them of their obligations.

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Developer Works Deed (Deed) or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:

- if you change your proposed development eg the development description or the plan/ site layout, after today, the requirements in this Letter could change when you submit your new application; and

- if you decide to do your development in stages then you must submit a new application (and pay another application fee) for each stage.

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

What You Must Do To Get A Section 73 Certificate In The Future.

To get a Section 73 Certificate you must do the following things. You can also find out about this process by visiting www.sydneywater.com.au > Plumbing, building & developing > Developing > Land development.

1. **Obtain Development Consent from the consent authority for your development proposal.**

2. **Engage a Water Servicing Coordinator (Coordinator).**

   You must engage your current or another authorised Coordinator to manage the design and construction of works that you must provide, at your cost, to service your development. If you wish to engage another Coordinator (at any point in this process) you must write and tell Sydney Water.

   For a list of authorised Coordinators, either visit www.sydneywater.com.au > Plumbing, building & developing > Developing > Providers > Lists or call **13 20 92.**

   The Coordinator will be your point of contact with Sydney Water. They can answer most questions that you might have about the process and developer charges and can give you a quote or information about costs for services/works (including Sydney Water costs).

3. **Developer Works Deed**

   After the Coordinator has submitted your new application, they will receive the Sydney Water Notice and Developer Works Deed. You and your accredited Developer Infrastructure Providers (Providers) will need to sign and lodge both copies of the Deed with your nominated Coordinator. After Sydney Water has signed the documents, one copy will be returned to the Coordinator.

   The Deed sets out for this project:

   - your responsibilities;
   - Sydney Water's responsibilities; and
   - the Provider's responsibilities.

   You must do all the things that we ask you to do in that Deed. This is because your development does not have water and sewer services and you must construct and pay for the following works extensions under this Deed to provide these services.

   Note: The Coordinator must be fully authorised by us for the whole time of the agreement.

4. **Water and Sewer Works**

   4.1 **Water**

   Your development must have a frontage to a water main that is the right size and can be used for connection.

Sydney Water has assessed your application and found that:

- **You must construct a water main extension from the existing 150mm main in Betty Cuthbert Dr (Bankstown supply system) to serve your development**. These works must be constructed by a constructor with the appropriate capability. Your Coordinator will be able to provide further advice about this.

- **Reticulation sizing will be to code.**

4.2 **Sewer**

Your development must have a sewer main that is the right size and can be used for connection. That sewer must also have a connection point within your development's boundaries.

Sydney Water has assessed your application and found that:

- **At the desktop level the site could possibly be serviced by extensions from the North, East and South.**

- **You must construct a waste water main extension to serve your development**. The terms of the Deed define this extension as 'Major Works'.

Capacity assessment:

Capacity assessment is indicative only as the WSC did not provide a concept PW and WW servicing proposal.

Sewer requirements:

Preliminary investigation indicates that the local network can support the proposed development, however, further investigation will be required when the developer supplies a detailed detail concept servicing proposal for the site.

•

Additional Information:

Application should have included a concept servicing plan. Additional details can only be provided at the Sec 73 Application.

- Because your development requires adjustment/deviation of a "live" wastewater main you must work with your Water Service Coordinator to ensure that:

  - Your Building Plans are approved prior to temporary pipework and excavation,

  - You submit your temporary pipework design (if required) with your permanent

wastewater deviation design for approval,

- Accept in writing to bonding conditions that will be provided in the Bond Agreement,
- Submit your Bond and signed Bond Agreement,
- Submit the Construction Commencement Notice for construction of the temporary pipework,
- Have your temporary pipework constructed by a listed provider, and then
- Complete your permanent deviation works

5. Ancillary Matters

5.1 Asset adjustments

After Sydney Water issues this Notice (and more detailed designs are available), Sydney Water may require that the water main/sewer main/stormwater located in the footway/your property needs to be adjusted/deviated. If this happens, you will need to do this work as well as the extension we have detailed above at your cost. The work must meet the conditions of this Notice and you will need to complete it **before we can issue the Certificate**. Sydney Water will need to see the completed designs for the work and we will require you to lodge a security. The security will be refunded once the work is completed.

5.2 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have the written permission of the relevant property owners and tenants. You must use Sydney Water's **Permission to Enter** form(s) for this. You can get copies of these forms from your Coordinator or the Sydney Water website. Your Coordinator can also negotiate on your behalf. Please make sure that you address all the items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce their impacts. You will be responsible for all costs of mediation involved in resolving any disputes. Please allow enough time for entry issues to be resolved.

5.3 Costs

Construction of these **future** works will require you to pay project management, survey, design and construction costs **directly to your suppliers**. Additional costs payable to Sydney Water may include:

- water main shutdown and disinfection;
- connection of new water mains to Sydney Water system(s);
- design and construction audit fees;
- contract administration, Operations Area Charge & Customer Redress prior to project finalisation;

- creation or alteration of easements etc; and
- water usage charges where water has been supplied for building activity purposes prior to disinfection of a newly constructed water main.

Note: Payment for any Goods and Services (including Customer Redress) provided by Sydney Water will be required prior to the issue of the Section 73 Certificate or release of the Bank Guarantee or Cash Bond.

Your Coordinator can tell you about these costs.

6. Approval of your Building Plans

You must have your building plans approved **before the Certificate can be issued. Building construction work MUST NOT commence until Sydney Water has granted approval.** Approval is needed because construction/building works may affect Sydney Water's assets (e.g. water and sewer mains).

Your Coordinator can tell you about the approval process including:

- Your provision, if required, of a "Services Protection Report" (also known as a "pegout"). This is needed to check whether the building and engineering plans show accurately where Sydney Water's assets are located in relation to your proposed building work. Your Coordinator will then either approve the plans or make requirements to protect those assets before approving the plans;
- Possible requirements;
- Costs; and
- Timeframes.

You can also find information about this process (including technical specifications) if you either:

- visit www.sydneywater.com.au > Plumbing, building & developing > Building > Building over or next to assets. Here you can find Sydney Water's *Technical guidelines - Building over and adjacent to pipe assets*; or
- call 13 20 92.

Notes:

- **The Certificate will not be issued until the plans have been approved and, if required, Sydney Water's assets are altered or deviated;**
- **You can only remove, deviate or replace any of Sydney Water's pipes using temporary pipework if you have written approval from Sydney Water's Urban Growth Business. You must engage your Coordinator to arrange this approval; and**
- **You must obtain our written approval before you do any work on Sydney Water's systems. Sydney Water will take action to have work stopped on the site if you do not have that approval. We will apply Section 44 of the *Sydney Water Act 1994*.**

7. Special Requirements

- More information on water services can be provided at the Sec 73 Application

Visit www.sydneywater.com.au > Plumbing, Building & Developing > Plumbing > Meters & metered standpipes to see the *Multi-level individual metering guide* and find out more.

OTHER THINGS YOU MAY NEED TO DO

Shown below are other things you need to do that are NOT a requirement for the Certificate. They may well be a requirement of Sydney Water in the future because of the impact of your development on our assets. You must read them before you go any further.

Disused Sewerage Service Sealing

Please do not forget that you must pay to disconnect all disused private sewerage services and seal them at the point of connection to a Sydney Water sewer main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed drainer. The licensed drainer must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Soffit Requirements

Please be aware that floor levels must be able to meet Sydney Water's soffit requirements for property connection and drainage.

Requirements for Business Customers for Commercial and Industrial Property Developments

If this property is to be developed for Industrial or Commercial operations, it may need to meet the following requirements:

Trade Wastewater Requirements

If this development is going to generate trade wastewater, the property owner must submit an application requesting permission to discharge trade wastewater to Sydney Water's sewerage system. You must wait for approval of this permit before any business activities can commence.

The permit application should be emailed to Sydney Water's Business Customer Services at businesscustomers@sydneywater.com.au

It is illegal to discharge Trade Wastewater into the Sydney Water sewerage system without permission.

A **Boundary Trap** is required for all developments that discharge trade wastewater where arrestors and special units are installed for trade wastewater pre-treatment.

If the property development is for Industrial operations, the wastewater may discharge into a

sewerage area that is subject to wastewater reuse. Find out from Business Customer Services if this is applicable to your development.

Backflow Prevention Requirements

Backflow is when there is unintentional flow of water in the wrong direction from a potentially polluted source into the drinking water supply.

All properties connected to Sydney Water's supply must install a testable **Backflow Prevention Containment Device** appropriate to the property's hazard rating. Property with a high or medium hazard rating must have the backflow prevention containment device tested annually. Properties identified as having a low hazard rating must install a non-testable device, as a minimum.

Separate hydrant and sprinkler fire services on non-residential properties, require the installation of a testable double check detector assembly. The device is to be located at the boundary of the property.

Before you install a backflow prevention device:

1. Get your hydraulic consultant or plumber to check the available water pressure versus the property's required pressure and flow requirements.
2. Conduct a site assessment to confirm the hazard rating of the property and its services. Contact PIAS at NSW Fair Trading on **1300 889 099**.

For installation you will need to engage a licensed plumber with backflow accreditation who can be found on the Sydney Water website:
http://www.sydneywater.com.au/Plumbing/BackflowPrevention/

Water Efficiency Recommendations

Water is our most precious resource and every customer can play a role in its conservation. By working together with Sydney Water, business customers are able to reduce their water consumption. This will help your business save money, improve productivity and protect the environment.

Some water efficiency measures that can be easily implemented in your business are:

- Install water efficiency fixtures to help increase your water efficiency, refer to WELS (Water Efficiency Labelling and Standards (WELS) Scheme, http:// www.waterrating.gov.au/
- Consider installing rainwater tanks to capture rainwater runoff, and reusing it, where cost effective. Refer to http://www.sydneywater.com.au/Water4Life/InYourBusiness/ RWTCalculator.cfm
- Install water-monitoring devices on your meter to identify water usage patterns and leaks.
- Develop a water efficiency plan for your business.

It is cheaper to install water efficiency appliances while you are developing than retrofitting them later.

Contingency Plan Recommendations

Under Sydney Water's customer contract Sydney Water aims to provide Business Customers with a continuous supply of clean water at a minimum pressure of 15meters head at the main tap. This is equivalent to 146.8kpa or 21.29psi to meet reasonable business usage needs.

Sometimes Sydney Water may need to interrupt, postpone or limit the supply of water services to your property for maintenance or other reasons. These interruptions can be planned or unplanned.

Water supply is critical to some businesses and Sydney Water will treat vulnerable customers, such as hospitals, as a high priority.

Have you thought about a **contingency plan** for your business? Your Business Customer Representative will help you to develop a plan that is tailored to your business and minimises productivity losses in the event of a water service disruption.

For further information please visit the Sydney Water website at: http:// www.sydneywater.com.au/OurSystemsandOperations/TradeWaste/ or contact Business Customer Services on **1300 985 227** or businesscustomers@sydneywater.com.au

Fire Fighting

Definition of fire fighting systems is the responsibility of the developer and is not part of the Section 73 process. It is recommended that a consultant should advise the developer regarding the fire fighting flow of the development and the ability of Sydney Water's system to provide that flow in an emergency. Sydney Water's Operating Licence directs that Sydney Water's mains are only required to provide domestic supply at a minimum pressure of 15 m head.

A report supplying modelled pressures called the Statement of Available pressure can be purchased through Sydney Water Tap in™ and may be of some assistance when defining the fire fighting system. The Statement of Available pressure, may advise flow limits that relate to system capacity or diameter of the main and pressure limits according to pressure management initiatives. If mains are required for fire fighting purposes, the mains shall be arranged through the water main extension process and not the Section 73 process.

Large Water Service Connection

A water main will be available, once you have completed your drinking water main construction to provide your development with a domestic supply. The size of your development means that you will need a connection larger than the standard domestic 20 mm size.

To get approval for your connection, you will need to lodge an application with Sydney Water Tap in™. You, or your hydraulic consultant, may need to supply the following:

- A plan of the hydraulic layout;
- A list of all the fixtures/fittings within the property;
- A copy of the fireflow pressure inquiry issued by Sydney Water;

- A pump application form (if a pump is required);
- All pump details (if a pump is required).

You will have to pay an application fee.

Sydney Water does not consider whether a water main is adequate for fire fighting purposes for your development. We cannot guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

Disused Water Service Sealing

You must pay to disconnect all disused private water services and seal them at the point of connection to a Sydney Water water main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed plumber. The licensed plumber must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

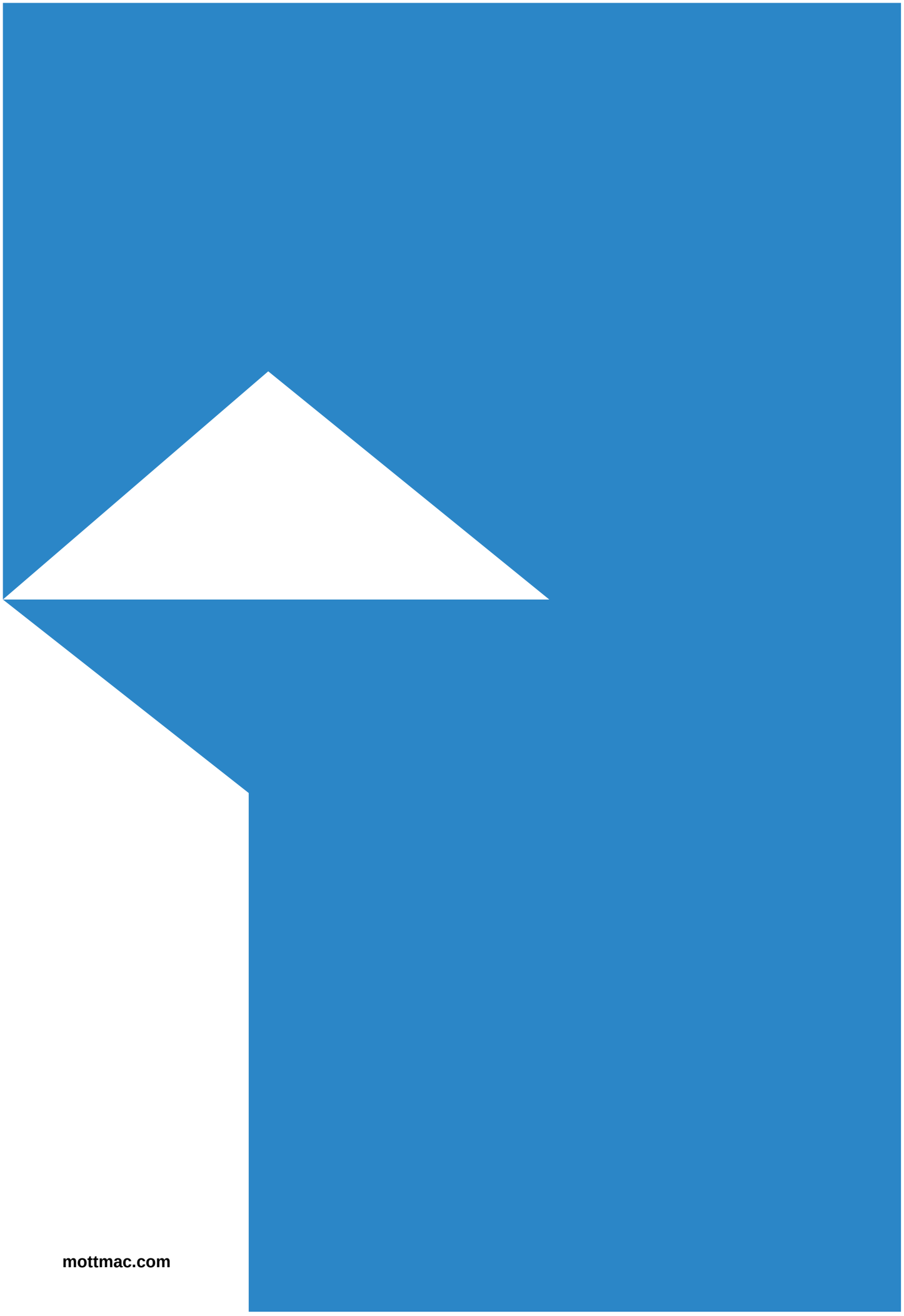
Other fees and requirements

The requirements in this Notice relate to your Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements. These include:

- plumbing and drainage inspection costs;
- the installation of backflow prevention devices;
- trade waste requirements;
- large water connections and
- council fire fighting requirements. (It will help you to know what the fire fighting requirements are for your development as soon as possible. Your hydraulic consultant can help you here.)

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

END



MOTT MACDONALD

80 Betty Cuthbert Drive, Lidcombe Master Plan

Traffic and Transport Assessment Report

Planning Proposal

15 March 2022

Confidential

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Property and Development NSW (PDNSW)

80 Betty Cuthbert Drive, Lidcombe Master Plan

Traffic and Transport Assessment Report

Planning Proposal

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Confidential

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1 Introduction

Mott MacDonald has been engaged to prepare a Traffic and Transport Study to assist Property and Development NSW (PDNSW) in finalising a master plan and obtaining the necessary planning proposal approvals for the government owned site at 80 Betty Cuthbert Drive, Lidcombe. This report will assess the current traffic and transport operation of the Site and its surroundings. It will provide parking requirements and assess the future traffic conditions and intersection performance following development of the proposed master plan.

1.1 Purpose of Report

The purpose of this report is to review existing traffic and transport infrastructure at and surrounding 80 Betty Cuthbert Drive, Lidcombe (the Site) and assess future traffic and transport operations and parking requirements.

To assist in preparation of the master plan, Mott MacDonald has undertaken the following tasks:

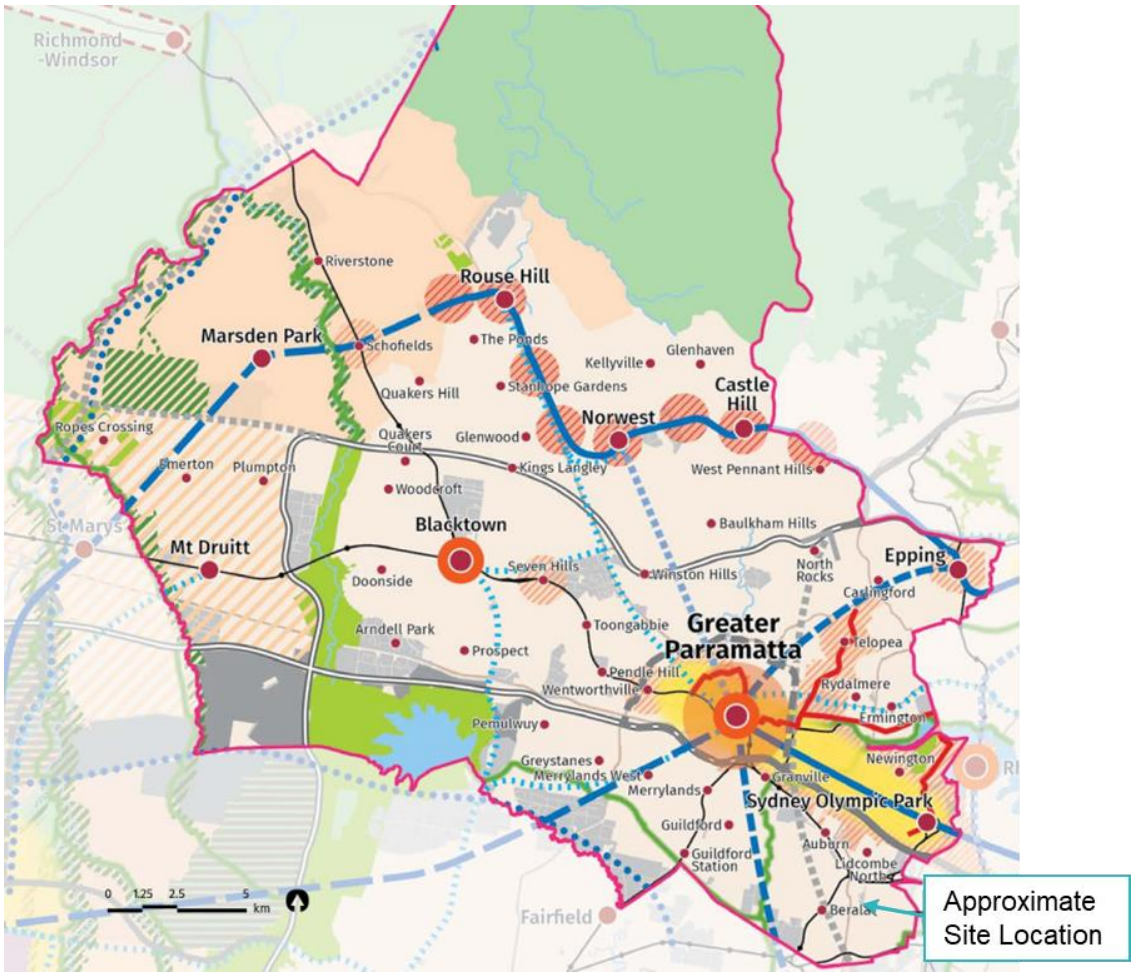
- Review of existing site access and surrounding road network;
- Identification of current parking availability and restrictions;
- Study of existing bus and rail services and facilities and walking and cycling facilities;
- Analysis of travel behaviours including a review of current journey to work mode shares, origins and destinations;
- Assessment of crash data in the vicinity of the Site;
- Determining recommended on-site parking and traffic generation numbers for the preferred master plan option;
- Provision of mode shift/travel demand management strategies for the development; and
- Modelling using SIDRA to assess intersection and road performance and confirm impact of upgrades.

1.2 Regional Context

The site is located within the suburb of Lidcombe, approximately 15 km west of Sydney CBD and within the Cumberland local government area. The closest major interchange station is Lidcombe Station, 1.5 km north of the site, and Berala Station is the nearest station, 1.2 km west of the site. The site is surrounded by a mixture of land uses and facilities, with residential land to the north, east and south, an educational site to the south east and the Carnarvon Golf Course to the west.

In March 2018 the NSW Government released the Greater Sydney Region Plan which outlined a vision of three cities; a Western Parkland City, a Central River City and an Eastern Harbour City. The study area lies within the Central City District as shown in Figure 1.1 below. It is within close proximity to Lidcombe North and Berala Local Centres, which have been identified for urban renewal.

Figure 1.1: Central City Plan



Source: Central City District Plan, Greater Sydney Commission

1.3 Local Context

The site is located at 80 Betty Cuthbert Drive, Lidcombe. It has a primary frontage to Joseph Street between Georges Avenue to the north and Botanica Drive to the south. The site is approximately 5.98 ha in size and is currently occupied by Multiple Sclerosis Limited (MSL). The site includes a 1970's circa 4,300 m^2 brick building that provides office space, treatment facilities and respite care facilities to support the operations of MSL. The existing MSL facilities cover approximately 12 percent of the site and the remainder of the site is underutilised.

The site is surrounded by a mixture of land uses and facilities, with residential land to the north, east and south, an educational site to the south east and the Carnarvon Golf Course to the west. Existing vehicle access to the site is via the intersection of Joseph Street and Botanica Drive. An access road extends from Betty Cuthbert Drive, through the existing residential subdivision located to the south of the site.

The site is heavily vegetated, with several trees located around the site boundary and bordering the existing MSL building. The existing MSL building is located within a high point on the site and the surrounding landscape slopes primarily towards the south-west and eastern sides of the site. An overview of the site location is provided in Figure 1.2.

Figure 1.2: Site Overview



Source: Google Earth

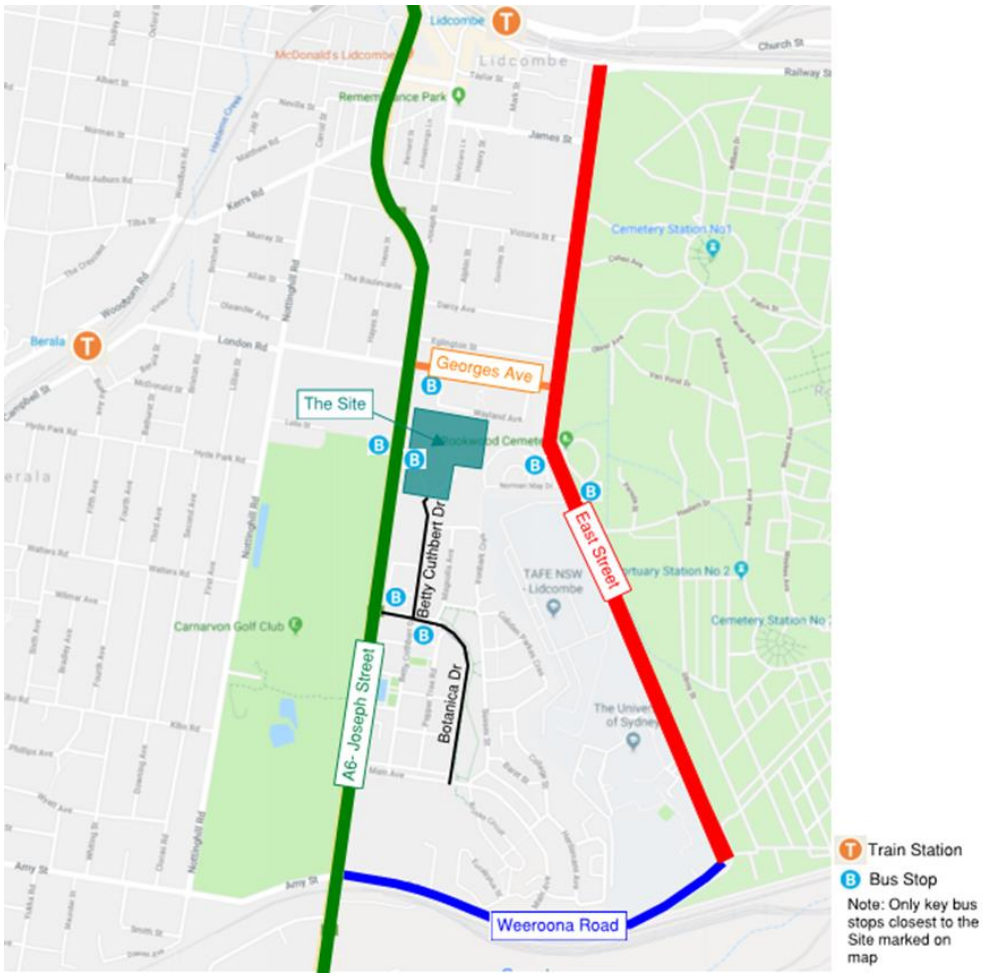
2 Existing Conditions

This section presents the existing traffic and transport conditions of the Site and surrounding areas, including analysis of current travel behaviour, identification of existing transport networks and a review of the crash and casualty statistics.

2.1 Existing Road Network

The existing road network in the vicinity of the Site is illustrated in Figure 2.1 and described in further detail below.

Figure 2.1: Existing Road Network Surrounding the Site



Source: Google Maps (2018) combined with Mott MacDonald notations (2019)

- Joseph Street: a major TfNSW classified State Road directly to the west of the site, with three lanes in each direction, and a speed limit of 80 km/hr, slowing to 70 km/hr at the northern end prior to the Georges Avenue intersection. The road links to the A22 Hume Highway in the south and the A44 Great Western Highway and M4 Western Motorway in the north.
- East Street and Weeroona Road: TfNSW classified Regional Roads to the east and far south of the site, with one lane in each direction, parking and on-road cycle lanes on both sides of the road and a 60 km/hr speed limit.
- Georges Avenue: a local road to the north of the site, with one lane in each direction, parking on both sides of the road and a 50 km/hr speed limit.

- A network of local roads, generally low-speed and serving residences, including Botanica Drive and Betty Cuthbert Drive, which also provide vehicular access to the current Site.

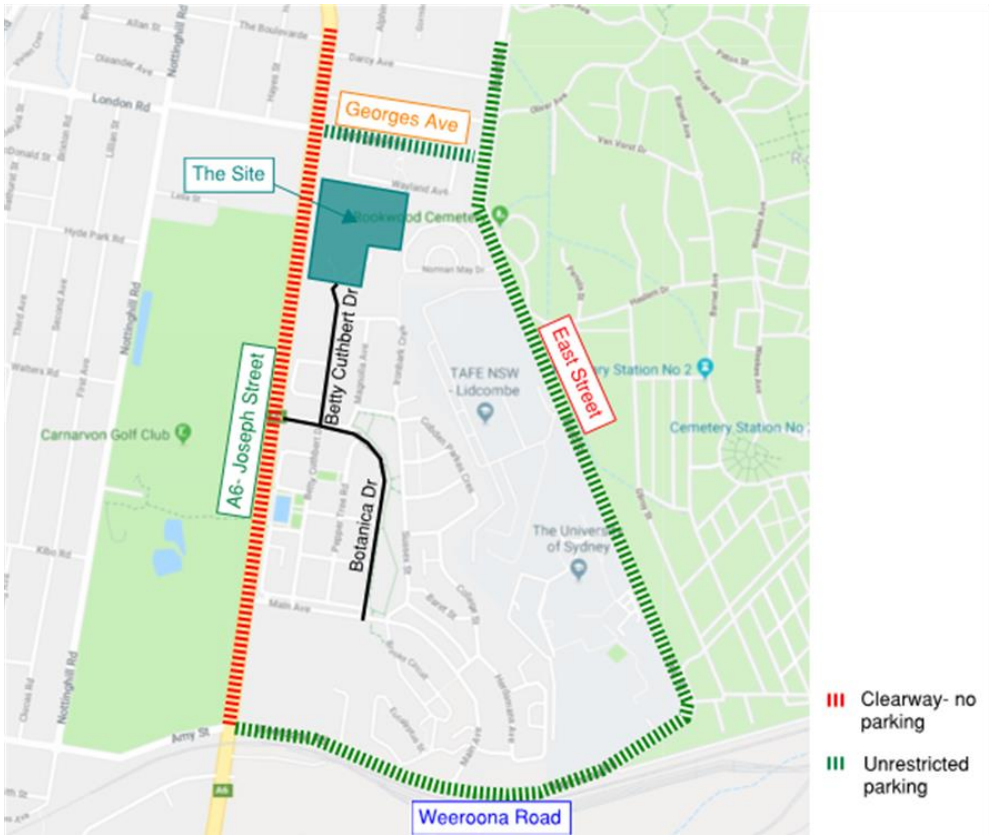
2.2 Site Access

Existing vehicle access to the Site is via the intersection of Joseph Street and Botanica Drive. The access route then enters the Site on the southern side via Betty Cuthbert Drive, with an existing internal road continuing to the centre of the site where the MSL facility currently lies. There is also currently pedestrian access from Joseph Street.

2.3 Parking

There are currently significant opportunities for parking on and surrounding the Site. The MSL Facility has its own at-grade parking and there is also unrestricted on-street parking on the local roads in residential areas surrounding the site including Betty Cuthbert Drive and Botanica Drive. Joseph Street has a clearway with no parking permitted, while other major roads surrounding the Site, East Street, Weeroona Road and Georges Avenue, have unrestricted parking on both sides of the road, as shown in Figure 2.2. The popularity and availability of these parking facilities is not known.

Figure 2.2: Existing Parking on Major Roads Surrounding the Site



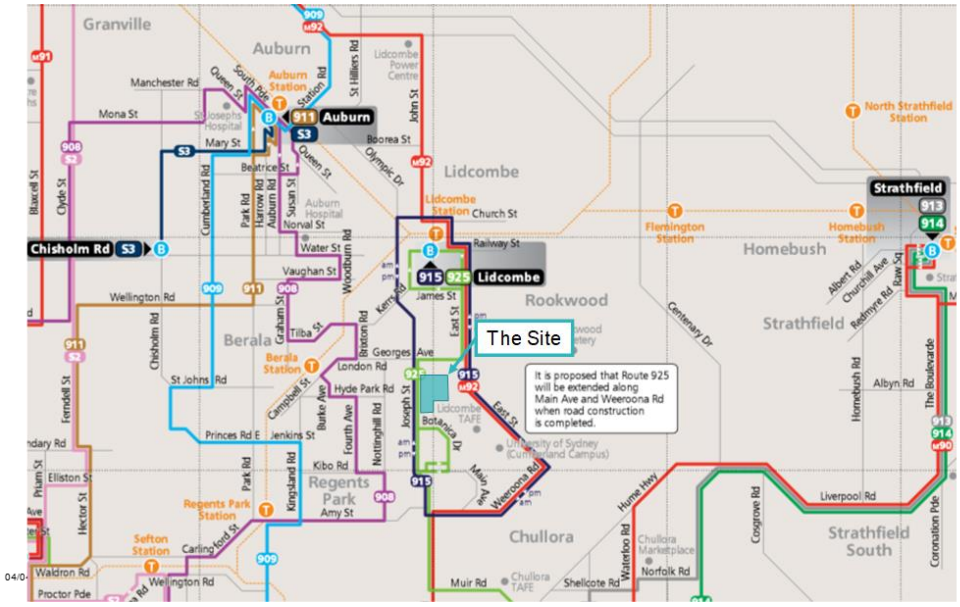
Source: Google Maps (2018) combined with Mott MacDonald notations (2019)

2.4 Bus Services and Facilities

There are three bus routes located within the vicinity of the site. The 925 bus service, which runs between East Hills and Lidcombe via Bankstown, operates on Joseph Street and Botanica Drive, so is currently the most accessible from the Site. It has a frequency of two buses an hour during the AM and PM commuter peak periods, and one bus per hour in the middle of the day. The 915 bus route is primarily targeted at University of Sydney staff and students, operating Mondays to Thursdays during University semesters between the University and Lidcombe Station. The M92 bus operates along East Street and Weeroona Road and provides

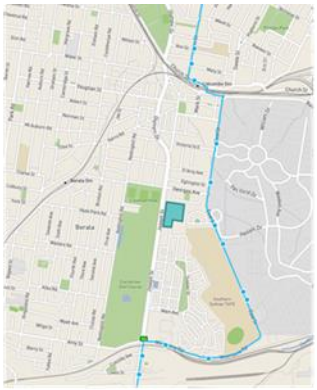
a service between Sutherland and Parramatta operating four to six buses per hour. The bus routes are illustrated in Figure 2.3 and Figure 2.4.

Figure 2.3: Broader Bus Network

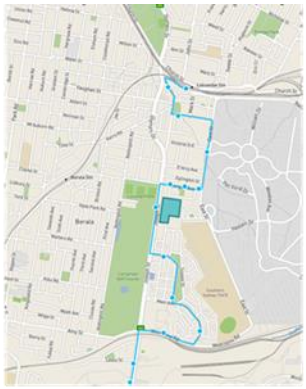


Source: www.transdevnsw.com.au

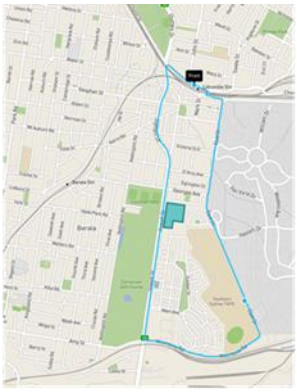
Figure 2.4: Bus Services Within Proximity of the Site



M92: Sutherland to Parramatta



925: East Hills to Lidcombe via Bankstown

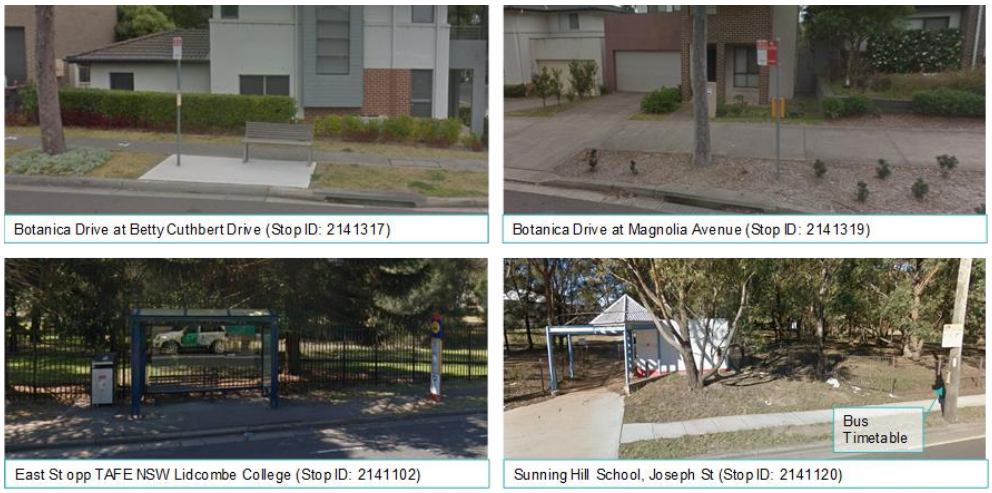


915: Lidcombe to U Sydney Lidcombe Campus (Loop Service)

Source: https://transportnsw.info/routes/bus

As shown in Figure 2.5, the infrastructure at bus stops in this area varies from posts only, to a bench and post to high quality shelters.

Figure 2.5: Bus Stop Infrastructure



Source: Google Maps (2018)

The two bus stops geographically closest to the Site, on Joseph Street, provide the most basic infrastructure of just a post. The Sunning Hill School stop, servicing southbound traffic, is located directly in front of the Site. The equivalent northbound stop is opposite the Site, but as there is no crossing at this point, to access it, bus users must walk an additional 400 m and cross at Joseph Street/Georges Avenue or an additional 900 m and cross at Joseph Street/Botanica Drive. When travelling northbound, the preceding stop in Botanica Drive, or proceeding stop in Georges Avenue may present more attractive options for walking, despite being geographically further from the Site.

2.5 Rail Services and Facilities

The two closest stations to the Site are Berala Station at 1.2 km to the west and Lidcombe Station at 1.5 km to the north, both a reasonably significant walking distance from the Site (15-20 minute walk).

Lidcombe Station is the more major interchange, with the T1, T2, T3 and T7 lines servicing the station. The T1, T2 and T3 lines provide a combined service of approximately 20 trains to the city during the AM peak hour and the T7 line operates an express service between Lidcombe and the Olympic Park.

Berala Station is serviced by the T3 line, with four trains an hour in the AM and PM commuter peaks.

The facilities available at each station are presented in Table 2.1. Both stations are wheelchair accessible and encourage arrivals and departures from the station by other public transport modes, with no general parking available. Both provide bike racks, and bike lockers are provided at Lidcombe Station, which should assist the attractiveness of cycling.

Table 2.1: Station Facilities

Element	Lidcombe Station	Berala Station
Mobility		
Stairs	✓	✓
Lift	✓	✓
Accessibility		
Hearing loop	✗	✗
PA system for announcements	✓	✓
Platform tactile tiles	✓	✓
Portable boarding ramp	✓	✗
Wheelchair accessible toilet	✓	✗
Wheelchair accessible car space/s	✓	✗
General Facilities		
Opal top up machine	✓	✓
Opal single trip ticket machine	✓	✓
Toilet	✓	✓
Payphone	✓	✓
Help point	✓	✓
Transport Interchanges		
Bus stop	✓	✓
Taxi rank	✓	✓
Bike racks or bike lockers	✓	✓
Kiss and ride	✓	✓
Car park	✗	✗

Source: https://transportnsw.info

2.6 Walking and Cycling

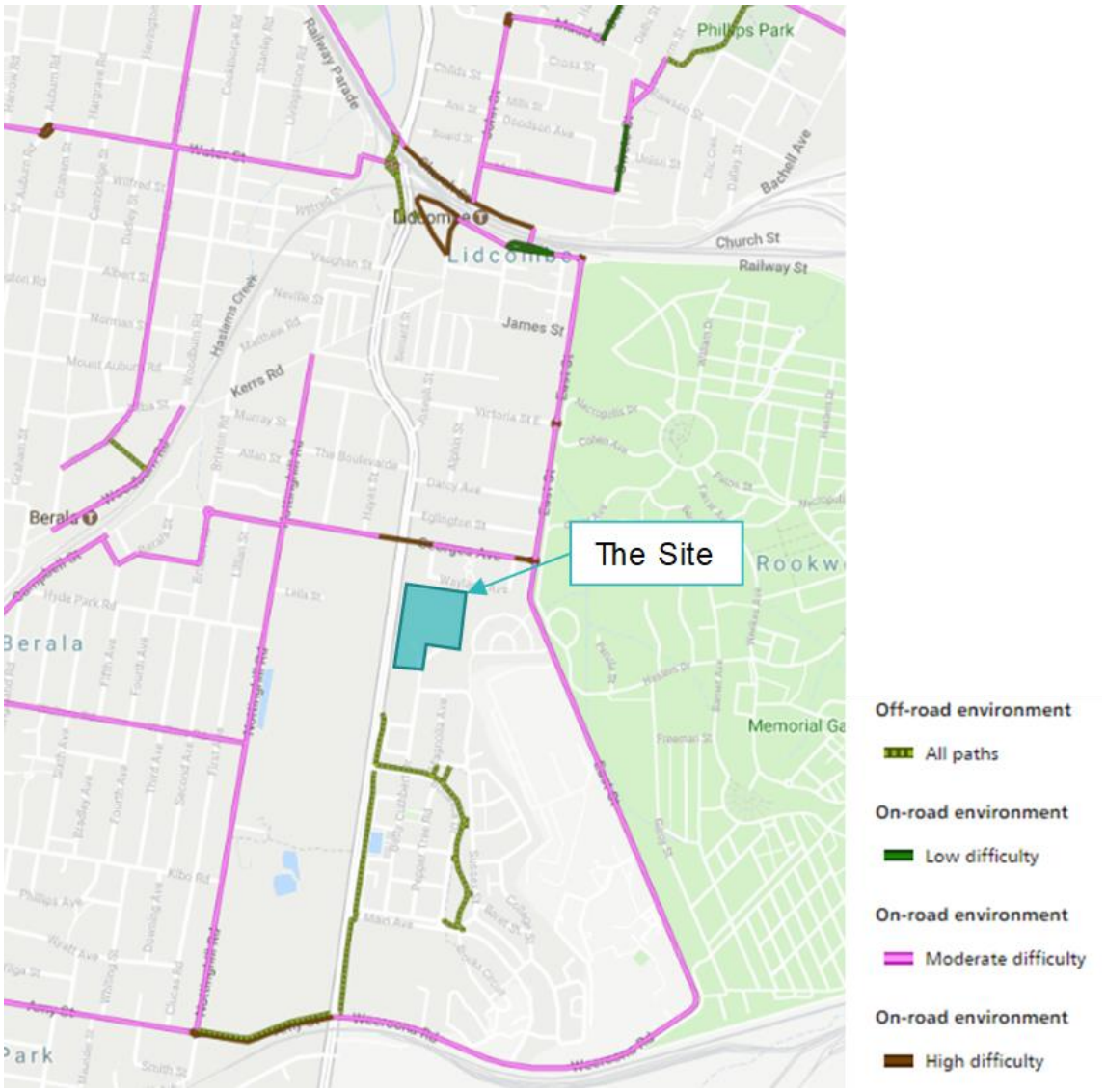
The current pedestrian point of access to the MSL Facility is from Joseph Street. A footpath is provided on the eastern side of the street, but walking conditions are not considered to be very attractive given that:

- The footpath is adjacent to a six-lane, 80 km/hr road so is likely to suffer from high air and noise pollution;
- There is no pavement on the eastern side; and
- Crossing points are limited and fairly far from the Site, at Georges Avenue (250 m) and Botanica Drive (400 m).

The local residential streets in the vicinity of the Site include an extensive network of footpaths on both sides of the street including on Georges Avenue. A pedestrian link from Ironbark Crescent to Norman May Drive provides access to East Street, which has a footpath on the western side of the street only. The ability to use these streets by people going to and from the MSL Facility are limited, however, as access to the Facility from Betty Cuthbert Drive does not include pedestrian footpaths.

The existing cycling network in the area is presented in Figure 2.6.

Figure 2.6: Cycleway Map



Source: https://www.rms.nsw.gov.au/maps/cycleway_finder

The local roads to the south of the site are likely to be accessible to cyclists even without specific infrastructure as they mostly serve residential purposes with low speed limits and traffic volumes.

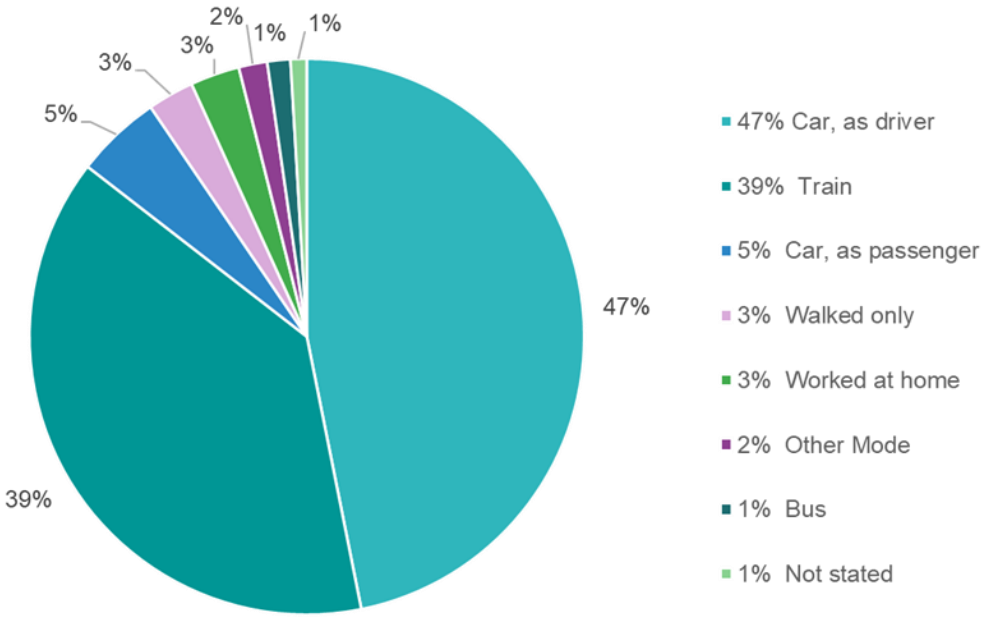
East Street and Weeroona Road have dedicated cycle lanes, but these run between the fast-moving traffic and parked cars, increasing the risk of 'dooring' incidents. It is unlikely that Joseph Street would be utilised by cyclists aside from on the shared eastern pavement with pedestrians.

2.7 Travel Behaviours

2.7.1 Commuter Mode Share

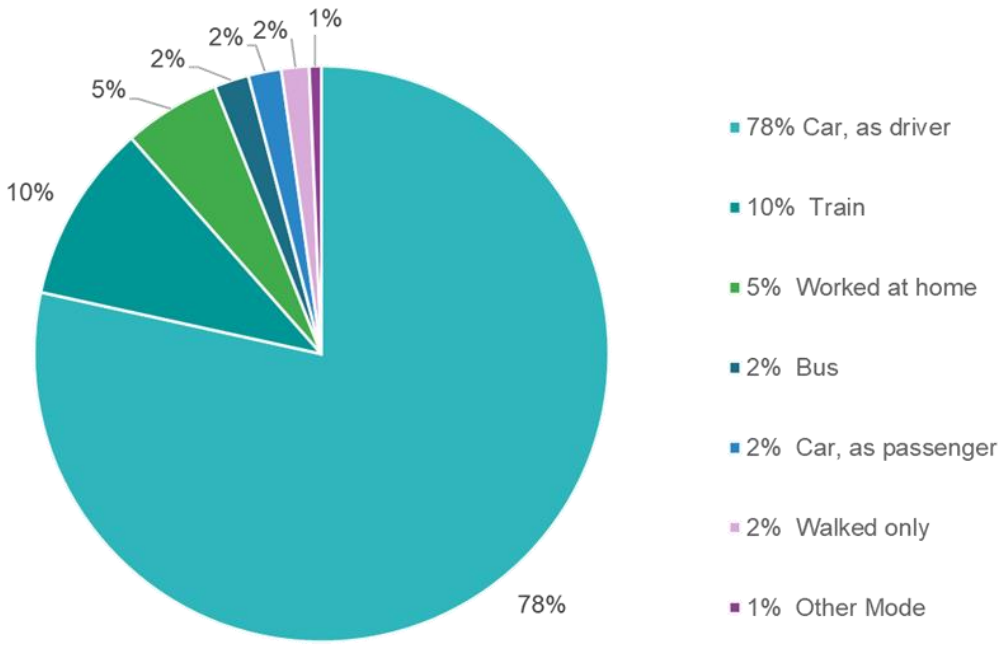
The Australian Bureau of Statistics (ABS) 2016 census data has been extracted to inform the current modes of travel used by commuters in the area. Figure 2.7 illustrates the modes of travel used by residents of Lidcombe (Statistical Area 2, 125011586) to commute to work. Figure 2.8 illustrates the modes of travel used by people to travel to work within the Site area (Destination Zone 115860007).

Figure 2.7: 2016 Journey to Work Outbound (How Residents Living in Lidcombe Commute)



Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

Figure 2.8: 2016 Journey to Work Inbound (How Workers Employed in the Area Commute)



Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

The data indicates that travel by private car is the dominant travel mode for journeys made in Lidcombe and the Site area, with 47 percent of outbound commuter journey's and 78 percent of inbound journey's being made by car drivers. A large proportion of outbound travel is made by train (39 percent), with a lower proportion of inbound travel made by train (10 percent). The proportion of active transport use (walking and cycling) is very low, although it is acknowledged that public transport trips generally have a walking component.

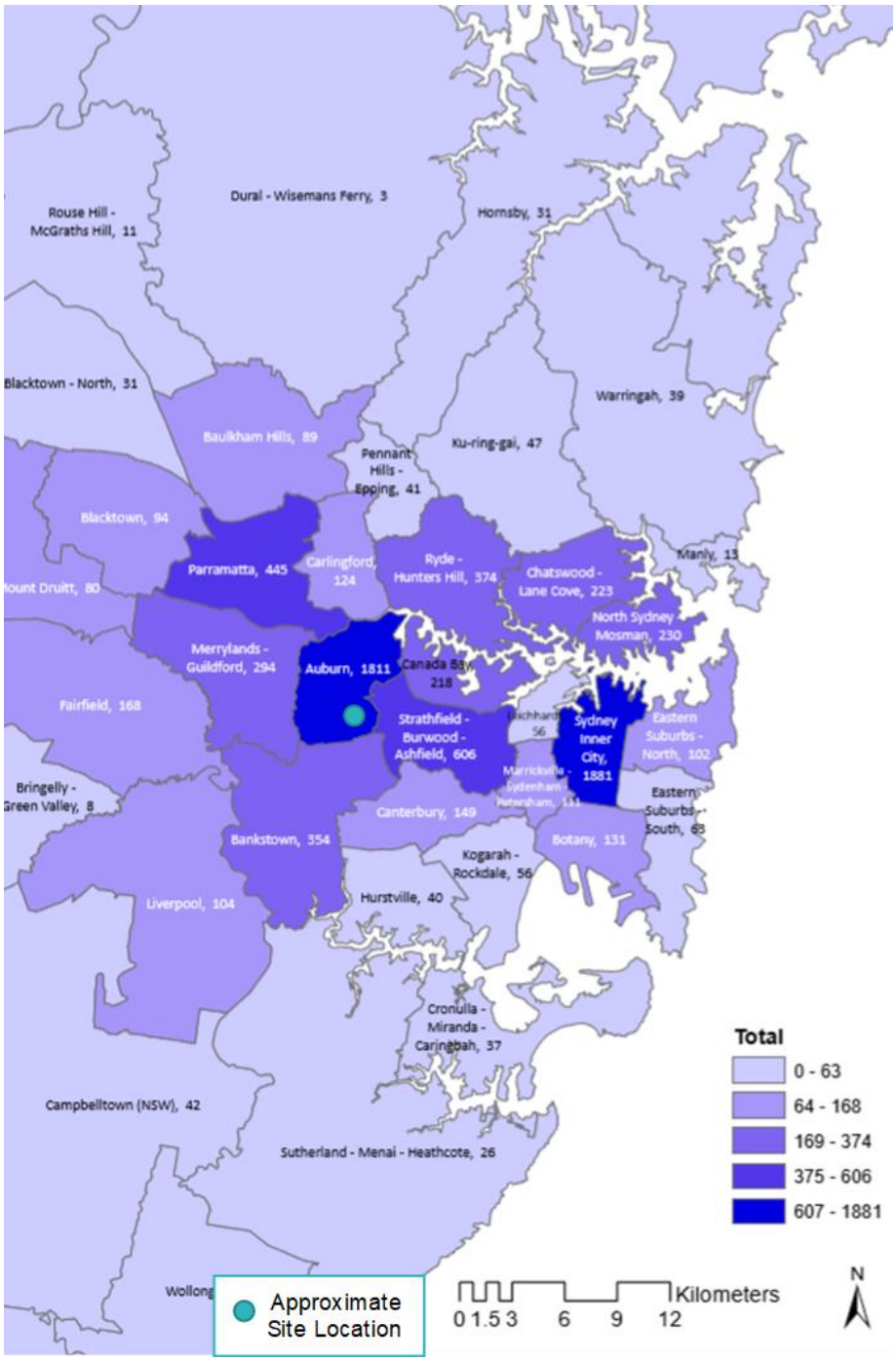
TAFE and The University of Sydney are major employers in the Site area and are likely to skew the lower proportion of train travel for inbound journeys. Although both facilities encourage the use of public transport on their websites, they are a 20-30-minute walk from the nearest Lidcombe station and there is substantial

unrestricted parking along East Street adjacent to the campus'. Additionally, both institutions offer casual or permit parking on campus.

2.7.2 Commuter Origins and Destinations

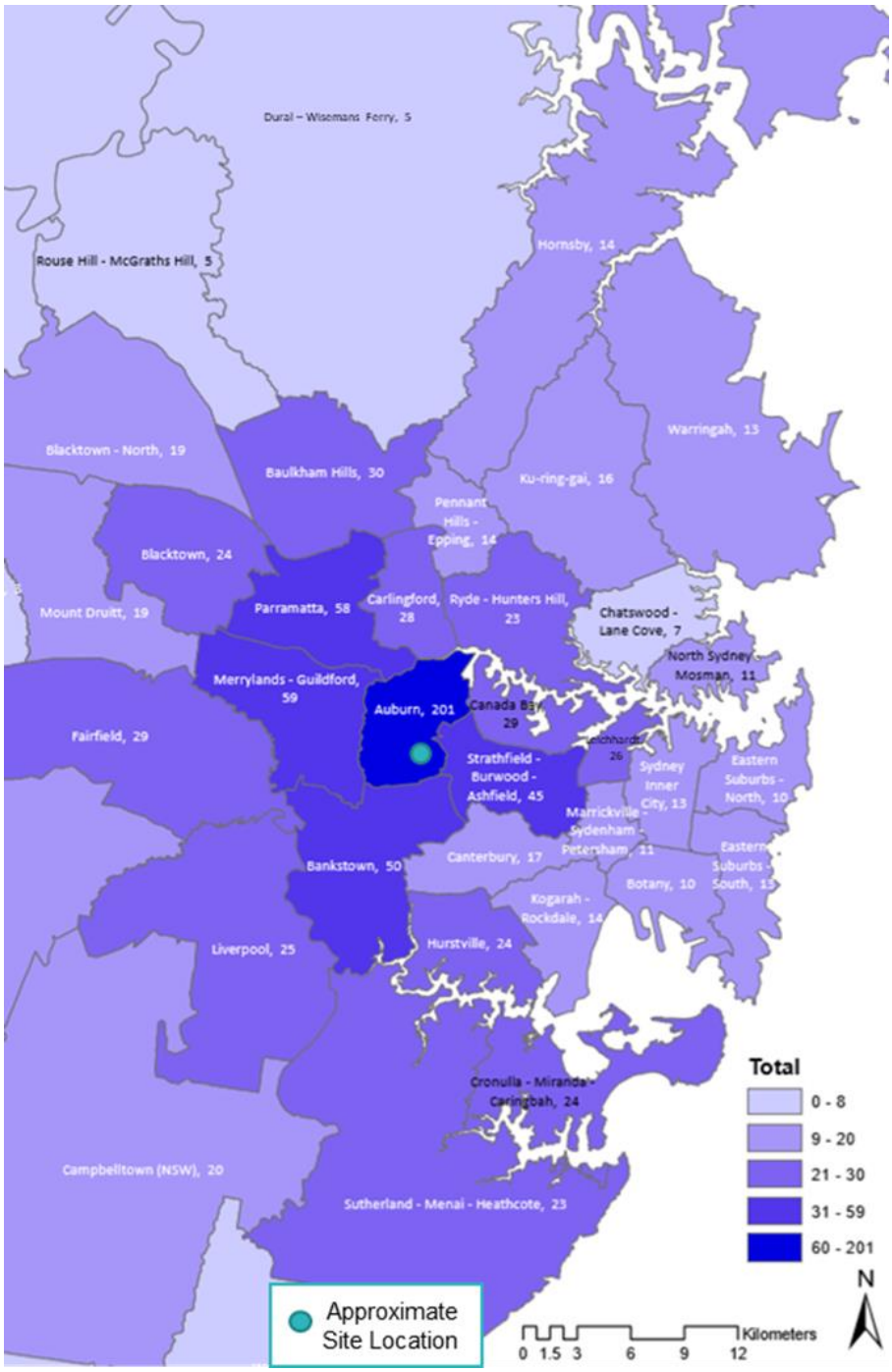
The ABS data was also analysed to determine the geographical travel patterns for residents and workers in the area surrounding the Site (by Statistical Area 3). Figure 2.9 and Figure 2.10 illustrate the destinations and origins of outbound and inbound workers, respectively.

Figure 2.9: 2016 Journey to Work Outbound (Where Residents Living in Lidcombe Commute)



Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

Figure 2.10: 2016 Journey to Work Inbound (Where Workers Employed in the Area Commute)



Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

Figure 2.9 shows that most residents commuting from Lidcombe work in Sydney Inner City and Auburn, which contains Lidcombe itself. Nearby areas of Strathfield, Parramatta and Ryde are other key destinations, with the remaining proportion of workers dispersing across multiple suburbs with less than five percent of demand to each.

Figure 2.10 shows that most workers commuting to the Site zone travel from the Auburn area (which contains Lidcombe). All other trips are made from various geographical destinations around Sydney and further afield in New South Wales.

2.8 Crash Data Analysis

Crash data was obtained for a five-year period from 1 October 2013 to 30 September 2018 to understand the crash history in the area surrounding the site. The data sourced from TfNSW included Joseph Street, Georges Avenue, East Street, Weeroona Road and local roads around the site, including Botanica Drive and Betty Cuthbert Drive. A summary is presented in Appendix A and the data sets used in the analysis are as follows:

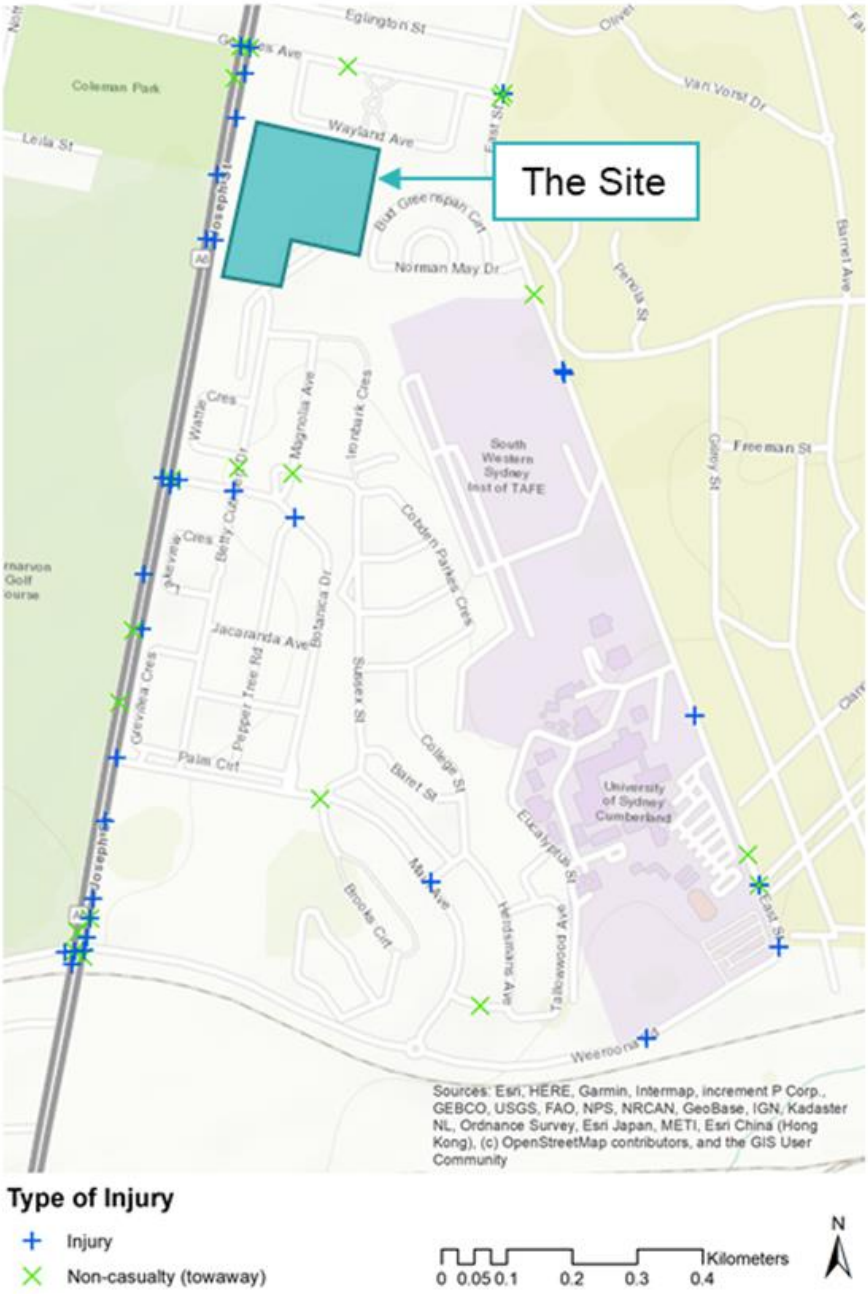
- Crash dataset 9172 - Joseph Street, between Georges Avenue and Weeroona Road;
- Crash dataset 9172 - Georges Avenue, between Joseph Street and East Street;
- Crash dataset 9172 - East Street and Weeroona Road, south of Georges Avenue; and
- Crash dataset 9172 - Internal local roads, including Botanica Drive and Betty Cuthbert Drive.

The key findings of the analysis are:

- A total of 73 crashes were recorded in the time period, of which 49 (67 percent) occurred on Joseph Street;
- The rate of crashes did not notably increase during any particular time of day, with 40 percent of crashes occurred in the morning, and 60 percent after midday;
- Most crashes, 38 percent, happened at intersections, with the highest rate at the Joseph Street/Georges Avenue intersection;
- Weather and visibility conditions did not appear to affect crash rates, with most crashes occurring in daylight during fine weather with dry conditions;
- Cars were the key vehicle in 59 percent of crashes, while light trucks were the key vehicle in 10% of crashes; and
- No fatal injuries occurred in the five-year period. Moderate and minor injuries accounted for 77 percent of all injuries. The average number of casualties was 0.78 per crash.

Figure 2.11 displays the location of the crashes and level of injury for all recorded crashes in the five-year period.

Figure 2.11: Crash Location and Type of Injury



Source: Data provided by Roads and Maritime Services

3 Future Traffic Conditions

3.1 Future Development

In 2017, PDNSW prepared a master plan for the site which allocated land for an educational establishment, health facility and for residential use. The masterplan has been developed with key stakeholders, Department of Education (DE) and Multiple Sclerosis Limited (MSL). The educational establishment will be developed by the DE and the health facility by MSL.

The future educational establishment will be located on a 1.85 ha parcel in the central western portion of the site. The education facility, for the purpose of this assessment, has been assumed as a 1,000-student primary school, to accommodate a maximum capacity scenario for development of that land. It should be noted that this is an assumption made for this assessment and the establishment may be a different type of school.

A 0.95 ha site adjacent Joseph Street will be used for a new health facility, and the surplus land (approx. 1.78 ha) will be rezoned to medium density residential land (excluding road and drainage areas) and divested. The concept indicative layout plan (ILP) is shown in Figure 3.1 below.

Figure 3.1: Concept ILP



Source: 80 Betty Cuthbert Drive, Lidcombe – Indicative Layout Plan (02 August 2021)

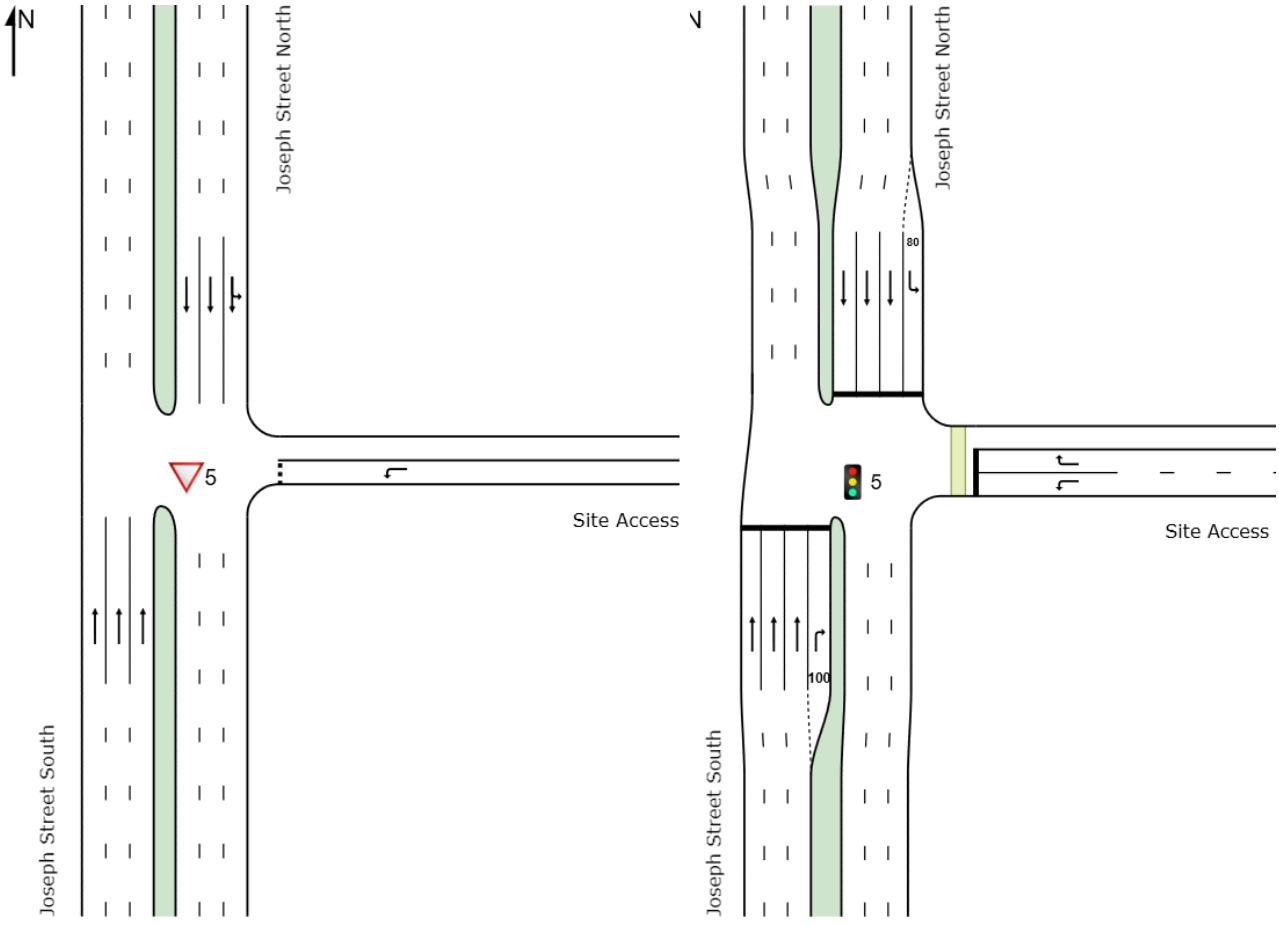
Traffic generated by the proposed development is described in Section 0.

3.2 Future Road Network

The Concept ILP provided in Figure 3.1 identifies several new intersections and an internal road network that is required to accommodate future growth in the Site. These include:

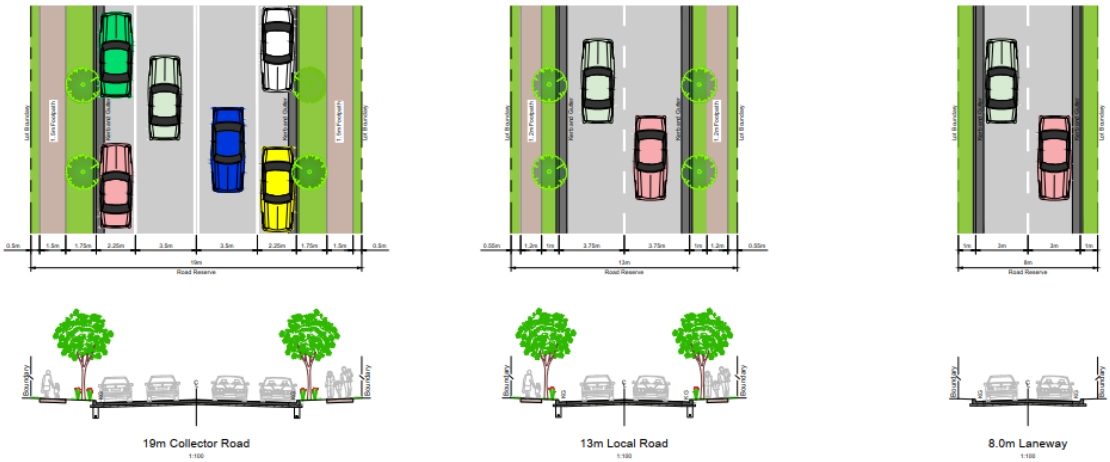
- Introduction of a priority-controlled intersection off Betty Cuthbert Drive to provide vehicular access to the southern-most residential development and the MSL land;
- Prior to development of the future educational establishment, which generates most of the traffic from the site, construction of an interim left-in left-out intersection connecting the Site to Joseph Street via the southbound lanes only (refer to Figure 3.2).
- Upon development of the future education establishment, the construction of a new signalised intersection, replacing the left-in left-out intersection, connecting to Joseph Street allowing access to the Site from both the northbound and southbound travel lanes (refer Figure 3.2). The turn bay facilities will require road widening and property acquisition on both approaches to this access, with the lane length requirements being governed by Austroads deceleration and lateral shift requirements;
- Access driveways and circulation roadways shall be designed to comply with sight distance requirements specified in 'AS 2890 – Parking Facilities';
- An internal road network consisting of three different sized road reserves are proposed for the Site. These proposed cross sections are illustrated in Figure 3.3; and
- A pedestrian bridge across Joseph Street is proposed for the future educational establishment, following advice from TfNSW. A schematic drawing of this bridge is provided in Appendix B.

Figure 3.2: Proposed Joseph Street Site Access Intersection (Interim [left] and Ultimate [right] layouts)



Source: SIDRA 9

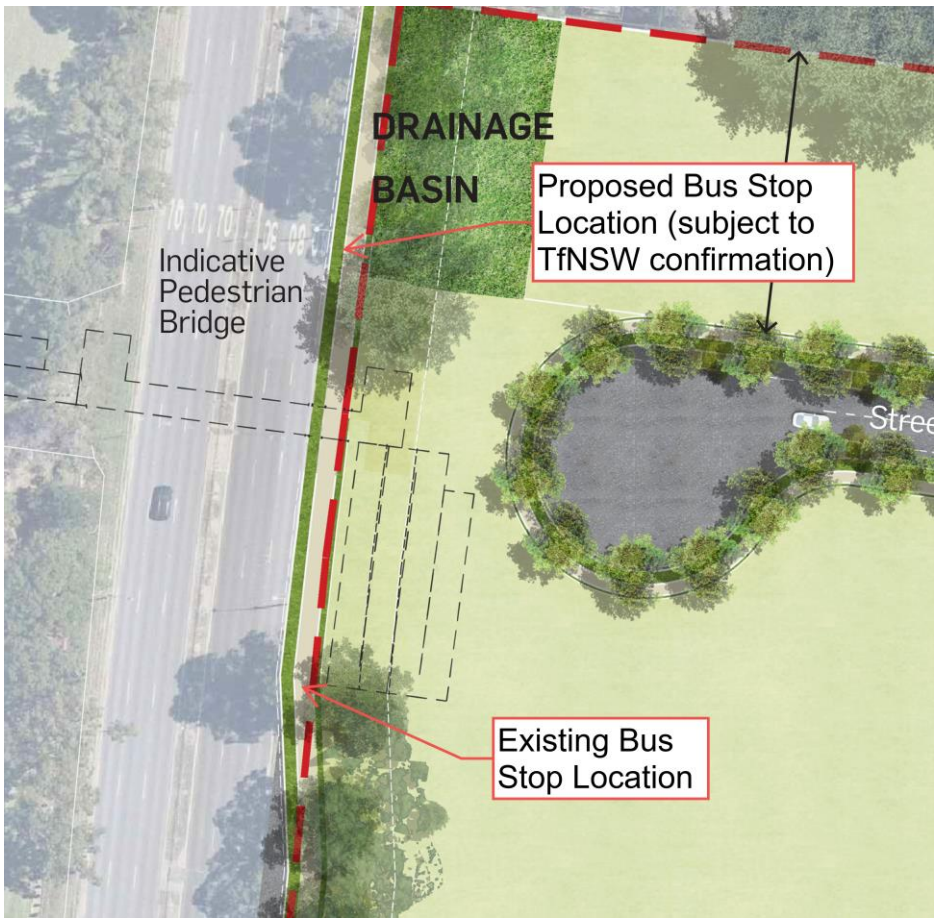
Figure 3.3: Proposed Road Reserves



3.3 Proposed Relocation of Bus Stop

The southbound bus stop (Sunning Hill School) on Joseph St (ID: 2141120) is required to be relocated due to the construction of the turning lane proposed as part of the signalised intersection upgrade into the site. The bus stop is proposed to be located just north of the bridge as shown in Figure 3.4.

Figure 3.4: Bus Stop Relocation



4 Parking Requirements

Proposed parking rates are based on the Cumberland Development Control Plan (DCP) 2021 that came into effect on 5 November 2021. The rates are provided in Table 4.1 below. No parking is proposed as part of early works and while the overall design has considered parking requirements, car spaces will form part of a future application.

Table 4.1: Proposed Parking Rates

Land Use	Minimum Requirement
Dwelling houses/dual occupancy	1 covered space per dwelling
Educational Establishment (Primary School)	1 space per 1 staff + 1 visitor parking space per 100 students.
MSL Centre	Based on site requirements

Source: Cumberland Development Control Plan (DCP) 2021

5 Traffic Assessment

This section presents the traffic assessment undertaken to evaluate the impact of the proposed development on the surrounding road network. It should be noted that the future educational establishment, for the purpose of this assessment, has been assumed as a 1,000-student primary school, to accommodate a maximum capacity scenario for the site. The future education establishment could be a different type of school.

5.1 Model Study Area and Scenarios

A SIDRA[1] model has been developed to provide a traffic assessment for the following scenarios:

Existing Conditions

- **Scenario 1:** This scenario represents the existing road network with **2017** traffic volumes (obtained from traffic surveys carried out in August 2017). Traffic generated by future developments are **not** included in this scenario.

Year 2023

A growth rate of 1.5 percent per annum was applied to the 2017 background traffic data to generate 2023 (assumed MSL / residential completion date) background volumes – resulting in a total growth of 9.34%.

- **Scenario 2:** This scenario represents the **2023** road network conditions with the proposed minimum interventions plus traffic generated by the MSL and residential land uses assuming the school has not been developed. The network does not include the proposed Site access point off Joseph Street.

Year 2026

A growth rate of 1.5 percent per annum was applied to the 2017 traffic data to generate 2026 (assumed school completion date) background volumes - resulting in a total growth of 14.34%.

The Site access point is provided off Joseph Street as an interim left-in left-out intersection and a pedestrian bridge over Joseph Street.

- **Scenario 3.1:** This scenario represents the **2026** road network conditions with the proposed minimum interventions plus traffic generated by the MSL and residential land uses assuming the school has not been developed.
- **Scenario 3.2:** As per Scenario 3.1 but assuming the school has been developed by **2026**.

Year 2036 (No upgrade of Joseph Street)

A growth rate of 1.5 percent per annum was applied to the 2017 traffic data to generate 2036 background volumes – resulting in a total growth of 32.7%.

The Site access point off Joseph Street is converted from the interim left-in left-out arrangement to a signalised intersection.

- **Scenario 4.0 (Base Case):** This scenario represents the **2036** road network base case conditions without the minimum interventions and development traffic.
- **Scenario 4.1:** This scenario represents the **2036** road network conditions with the proposed minimum interventions plus traffic generated by the MSL and residential land uses but assuming the school has not been developed.
- **Scenario 4.2:** As per Scenario 4.1 but assuming the school has been developed by **2036**.
- **Scenario 4.3:** As per Scenario 4.2 including the proposed mitigation measures.
- **Scenario 4.4:** As per Scenario 4.3 but assuming the PM school peak falls within the network peak.

[1] SIDRA is a modelling software with the capability to undertake detailed assessment of intersections.

Year 2036 (Upgrade of Joseph Street to four lanes in each direction)

- **Scenario 5.1:** As per Scenario 4.1 and with Joseph Street upgrade
- **Scenario 5.2:** As per Scenario 4.2 and with Joseph Street upgrade
- **Scenario 5.3:** As per Scenario 5.2 including the proposed mitigation measures.
- **Scenario 5.4:** As per Scenario 5.3 but assuming the PM school peak falls within the network peak.

5.2 Minimum Interventions

The following minimum network interventions have been proposed and adopted for the purpose of the SIDRA modelling:

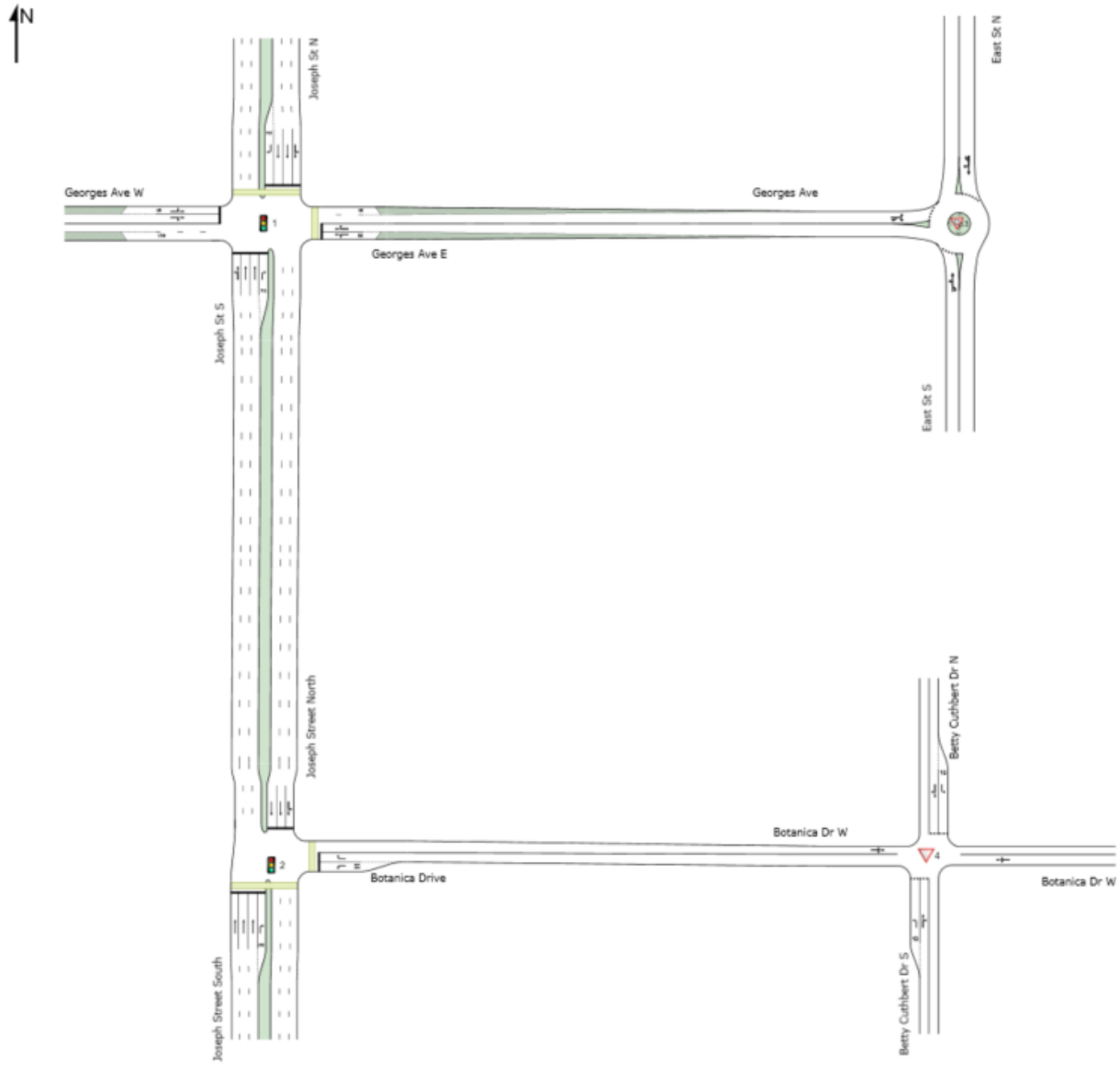
- Prohibit on-street parking along Georges Avenue between Nottinghill Road and Wayland Avenue during peak hours. Currently, on-street parking is permitted on George Street. Therefore, only one lane in each direction is provided at the mid-block sections. On-street parking is prohibited near the intersection of Joseph St with Georges Avenue resulting in two approach lanes approximately 45m (west approach) and 88 (east approach) ahead of the intersection.
- Banning on-street parking along Georges Avenue will extend the length of the two-lane intersection approaches on Georges Avenue to approximately 300 m on each side.

5.3 Modelling Methodology and Assumptions

The following modelling assumptions have been made:

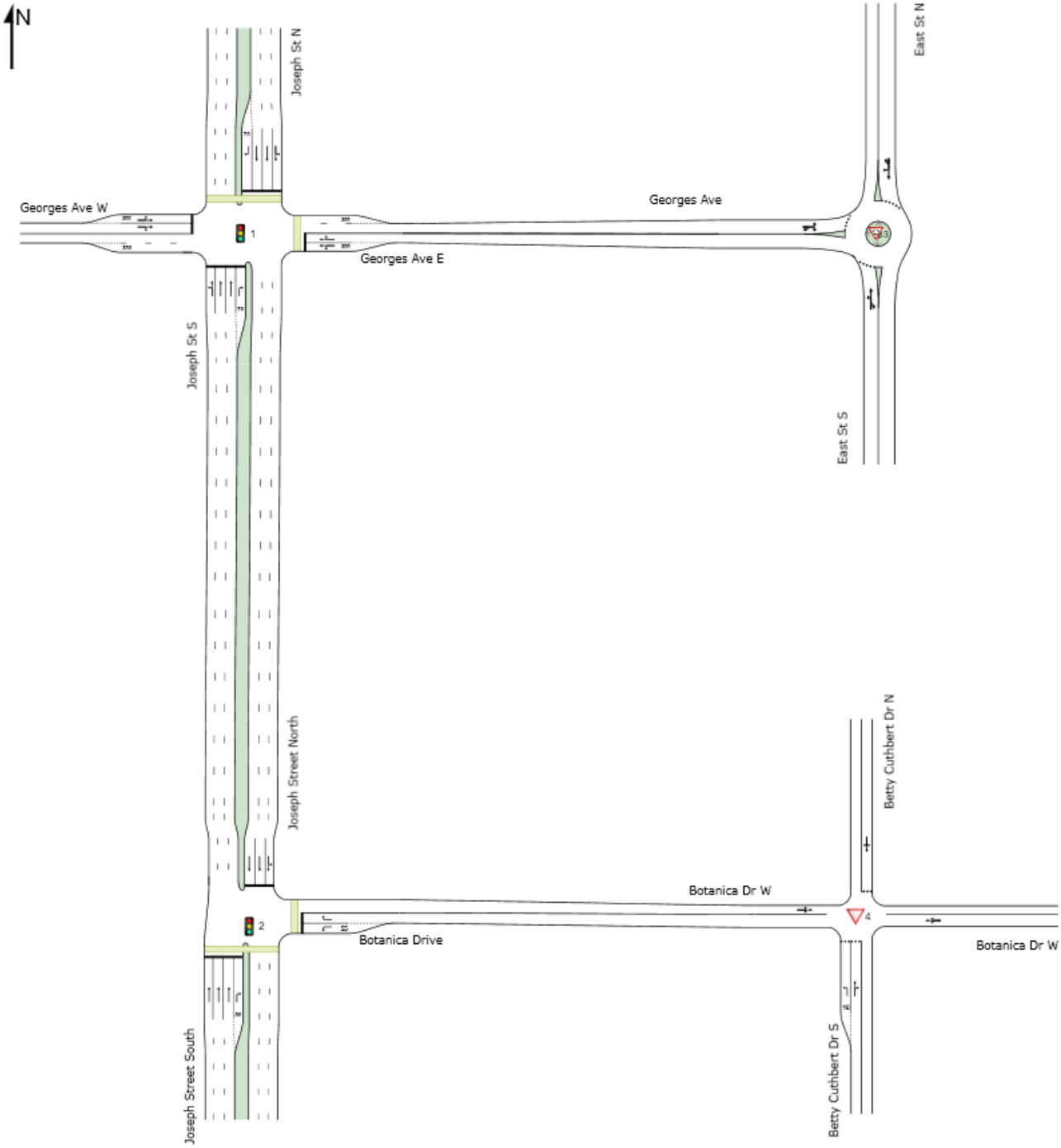
- The AM and PM peak modelled time periods are 08:00-09:00 and 17:00-18:00. These were identified as the network peak hours from intersection surveys.
- The proportion of heavy vehicles used in the SIDRA models has been derived from the 2017 surveys at each intersection.
- The MSL peak operating periods are 09:30-15:30, which lie outside the network peak periods and therefore the vehicular traffic generated by this development has been excluded from the assessment. Similarly, the afternoon peak period for the school is assumed to be 15:30-16:30 and therefore, no PM vehicular volumes have been included in this assessment. However, a sensitivity test has been carried out (Section 5.8.4) analysing the Site access off Joseph Street assuming the school afternoon peak falls into the PM network peak (17:00-18:00).
- The TfNSW guidelines do not contain any information regarding school trip rates, so a rate has been derived from four other significant school developments in Sydney.
- The intersections modelled in SIDRA for Scenarios 1 to 5 are illustrated in Figure 5.1 to Figure 5.5Figure 5.3.

Figure 5.1: Modelled Intersections, Scenario 1



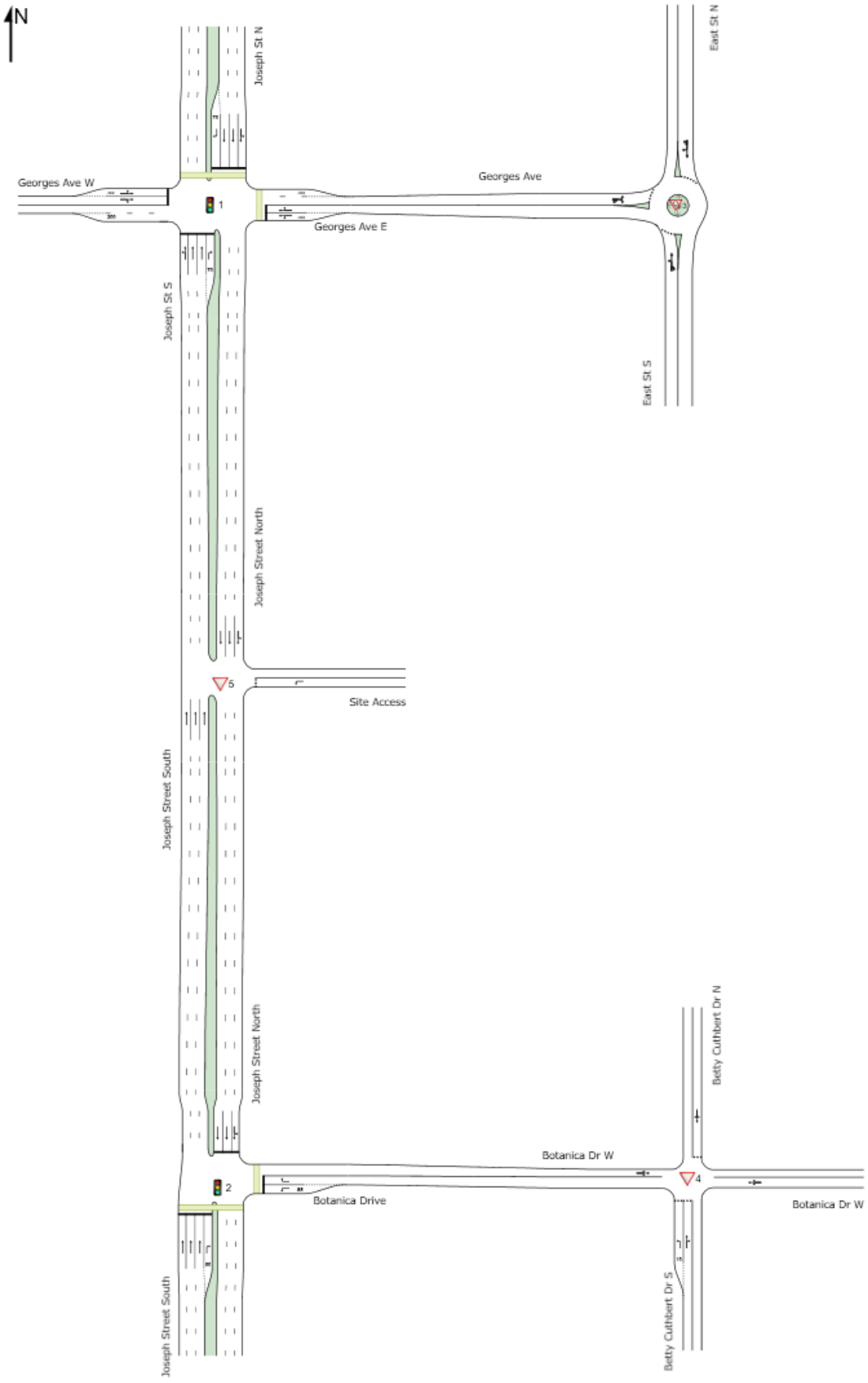
Source: SIDRA 9

Figure 5.2: Modelled Intersections, Scenario 2



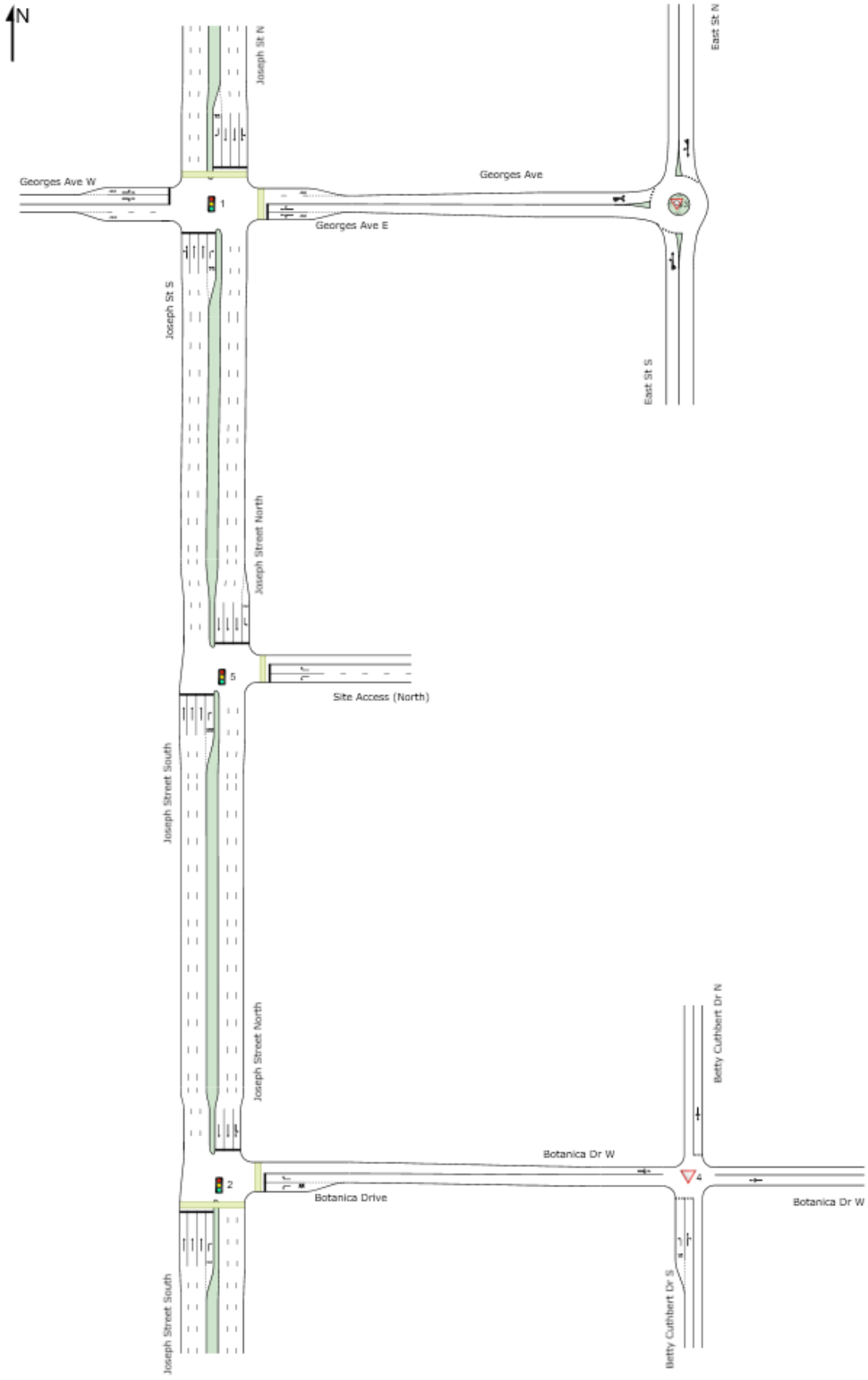
Source: SIDRA 9

Figure 5.3: Modelled Intersections, Scenario 3 (Site access: left-in left-out)



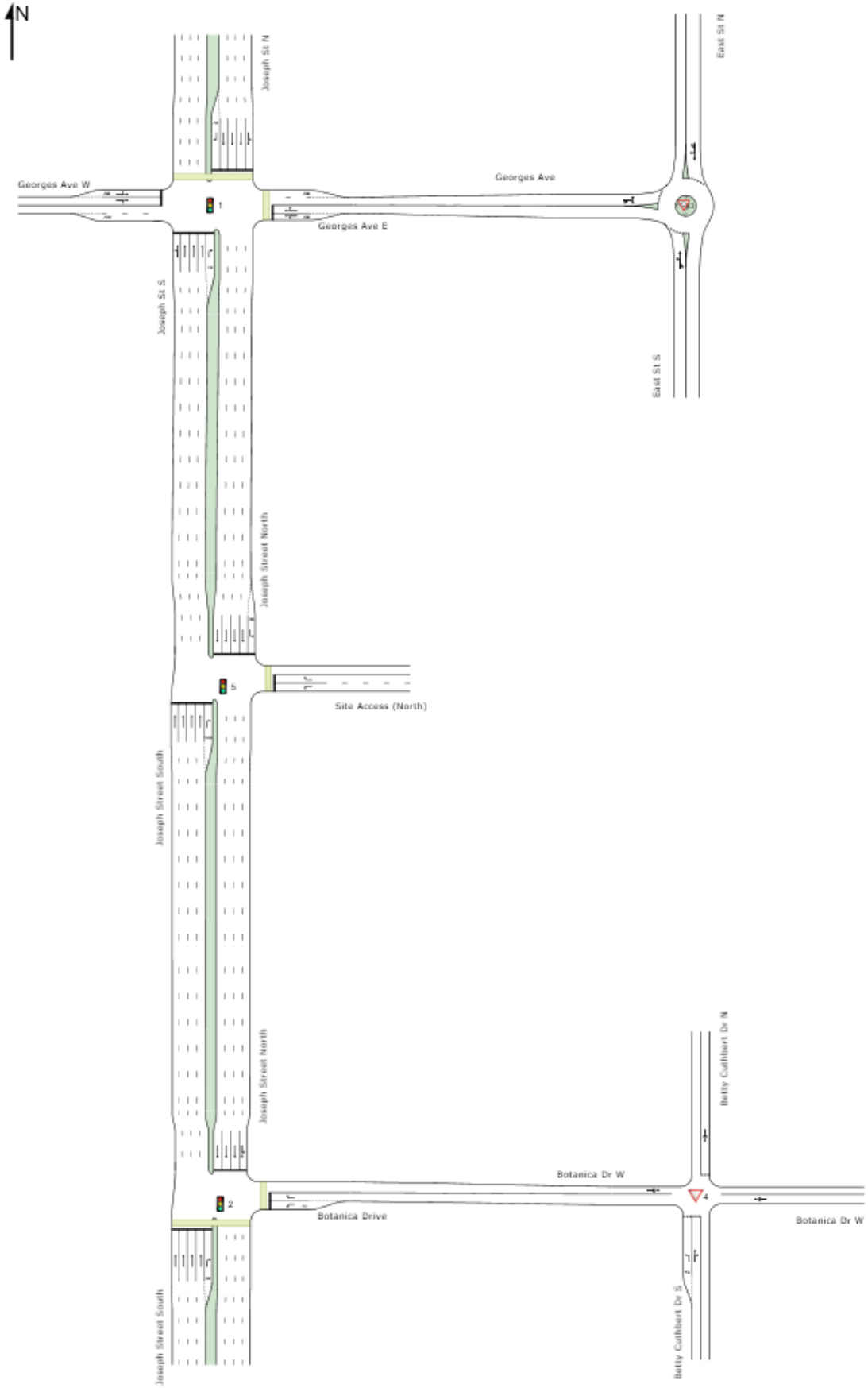
Source: SIDRA 9

Figure 5.4: Modelled Intersections, Scenario 4 (Site access: signalised)



Source: SIDRA 9

Figure 5.5: Modelled Intersections, Scenario 5 (Joseph St upgrade and Site Access Signalised)



Source: SIDRA 9

5.4 Traffic Generation

The trip rates and directional splits assumed for this traffic and transport assessment are provided in Table 5.1 and Table 5.2.

As the TfNSW guidelines do not provide a trip rate for schools, this has been derived by Urbis from four other significant school developments in Sydney:

- Penshurst (upgrade)
- Kyeemagh (upgrade)
- Kellyville North (new)
- Wentworthville (upgrade)

Table 5.1: Proposed Trip Rates

Land Use	Unit	Proposed Peak Hour Trip Rates		Source
		AM	PM	
Dwelling Houses	per dwelling	0.84	0.85	TfNSW Technical Direction, Guide to Traffic Generating Developments, TDT 2013/04a
Schools	per student	0.75	0.00	Based on four other significant school developments in Sydney

Notes:
1. A dwelling house commuter trip is defined as a 1-way trip (in or out).
2. A school trip is defined as a 2-way trip (in and out) in the same peak.

Table 5.2: Proposed Directional Splits

Land Use	AM Proposed In/Out Splits		PM Proposed In/Out Splits	
	AM	PM	AM	PM
Dwelling Houses	20 %	80 %	80 %	20 %
Schools	50 %	50 %	0 %	0 %

5.5 The Proposed Development

The application of the trip rates above to the proposed development, results in the traffic generation shown in Table 5.3.

Table 5.3: Traffic Generated by the Proposed Development

Location	AM			PM		
	Inbound	Outbound	Total	Inbound	Outbound	Total
The Site	422	391	**813**	16	47	**63**

NOTE: Inbound and outbound trips have been rounded up.

5.6 Traffic Distribution

The traffic distribution used in the SIDRA analysis is provided in section 5.6.1 and 5.6.2. Refer to Appendix C for traffic volume maps used in the modelling.

5.6.1 Commuter Distribution

Assumptions for the traffic distribution to and from the proposed development will be based on ABS commuter travel data as shown in Table 5.4 and Table 5.5.

Table 5.4: Outbound Traffic Distribution

Journey to Work Destination	No. Trips	% of Total	Driver Mode Share	Vehicle Trips	Vehicle Distribution Factoring of Total Vehicle Trips %	Travel Direction from Proposed Site
Sydney Inner City	1,881	23	12%	232	6	East
Auburn	1,811	22	53%	963	25	North
Strathfield - Burwood - Ashfield	606	7	59%	360	9	East
Parramatta	445	5	47%	211	5	North
Ryde - Hunters Hill	374	5	64%	238	6	North
Bankstown	354	4	73%	257	7	South
Merrylands - Guildford	294	4	74%	219	6	North
Chatswood - Lane Cove	223	3	33%	74	2	North
Canada Bay	218	3	66%	144	4	East
North Sydney - Mosman	230	3	11%	25	1	East
Other N	698	8	72%	501	13	North
Other E	167	2	52%	87	2	East
Other S	937	11	58%	546	14	South
Other W	12	0	67%	8	0	West

Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

Table 5.5: Inbound Traffic Distribution

Journey to Work Destination	No. Trips	% of Total	Driver Mode Share	Vehicle Trips	Vehicle Distribution Factoring of Total Vehicle Trips %	Travel Direction from Proposed Site
Auburn	201	20	53%	107	16	North
Merrylands - Guildford	59	6	88%	52	8	North
Parramatta	58	6	71%	41	6	North
Bankstown	50	5	94%	47	7	South
Strathfield - Burwood - Ashfield	45	4	87%	39	6	East
Other N	276	27	59%	162	24	North
Other E	90	9	40%	36	5	East
Other S	232	23	77%	179	26	South
Other W	14	1	100%	14	2	West

Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

For journeys east and west, it is assumed that half the demand will travel north on Joseph Street and half the demand will travel south on Joseph Street. The corresponding traffic distribution is summarised graphically in Figure 5.6.

Figure 5.6: Commuter Traffic Distribution



Source: Google Maps (2018) combined with Mott MacDonald notations (2019)

5.6.2 School Distribution

An approximate school catchment area was provided by DE and used by Urbis, alongside PDNSW aged based forecasts, to derive origins and destinations of school trips, as illustrated in Figure 5.7.

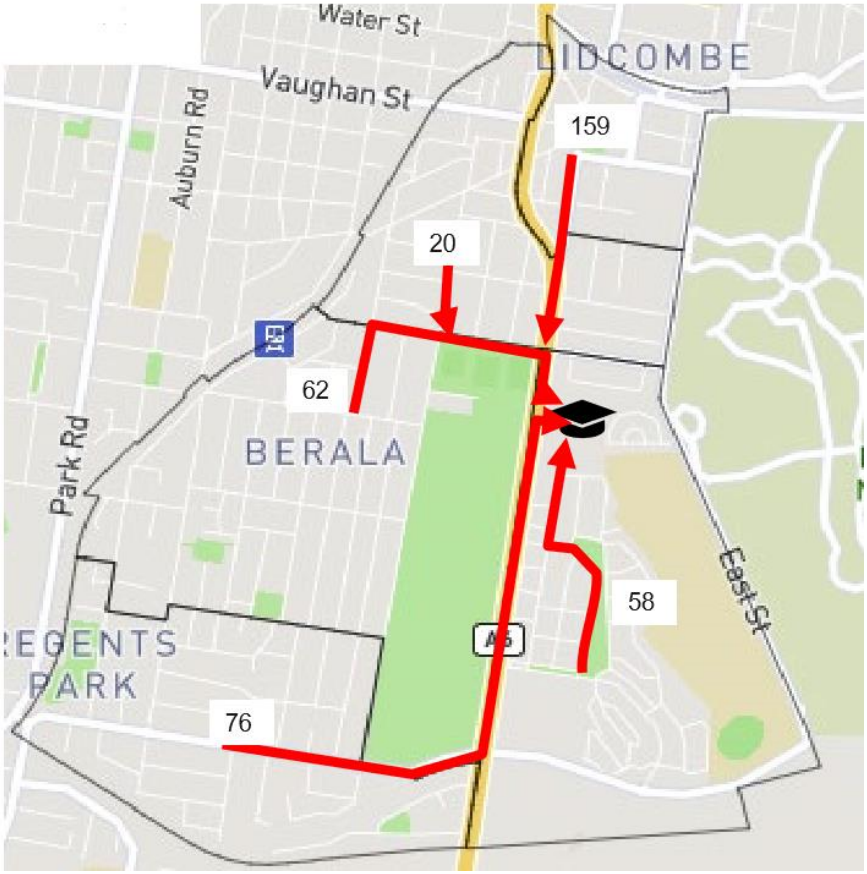
Figure 5.7: Assumed School Catchment



Source: Google Maps (2019) combined with Urbis notations (2019)

Based on the trip rates in Table 5.1 and the catchment area in Figure 5.7, the traffic distribution illustrated in Figure 5.8 was derived for the AM peak period.

Figure 5.8: School Traffic Distribution - AM peak period



Source: Google Maps (2019) combined with Urbis notations (2019)

5.7 Peak Period Intersection Performance

Intersection performance for Scenarios 1 to 3 is presented in Table 5.6 for the AM peak (08:00-09:00) and Table 5.7 for the PM peak (17:00-1800).

The results presented for all intersections are 'network' results rather than 'isolated' intersection results. The effect of any queues blocking back from an upstream intersection to one downstream are therefore modelled and accounted for in the results.

For signalised intersections, the average intersection Degree of Saturation (DoS) and Level of Service (LoS) has been reported (as per TfNSW Guidelines[2]). For roundabouts and priority control intersections, the reported DoS and LoS are for the movements with the highest delay.

The SIDRA modelling outputs are provided in Appendix D.

5.7.1 AM Peak Performance

The AM peak modelling results in Table 5.6 indicate the following:

- In **Scenario 1** (existing conditions), the DoS of the Joseph Street / Georges Avenue intersection is 1.00 and the Level of Service is F. This indicates that the intersection operates at capacity based on existing conditions during the morning peak period. All other intersections operate at LoS B or better.
- In **Scenario 2**, the DoS of the Joseph Street / Georges Avenue intersection improves to DOS 0.92 and LoS C due to the proposed minimum interventions. All other intersections operate at LoS B or better.

[2] RTA Guide to Traffic Generating Developments, 2002. Available online at: https://www.rms.nsw.gov.au/business-industry/partners-suppliers/documents/guides-manuals/guide-to-generating-traffic-developments.pdf

- In **Scenario 3.1**, the DoS of the Joseph Street / Georges Avenue intersection deteriorates to 0.96 and LoS is D. All other intersections operate at LoS B or better.
- In **Scenario 3.2**, the DoS of the Joseph Street / Georges Avenue intersection deteriorates to 1.00 and LoS is F. All other intersections operate at LoS C or better.
- In **Scenario 4.0 (Base Case)**, the DoS of the Joseph Street / Georges Avenue is 1.22, the LoS is F.
- In **Scenario 4.1**, the DoS of the Joseph Street / Georges Avenue intersection is 1.05, the LoS is F. The DoS of the signalised intersection of Joseph St / Botanica Dr is 0.97 and the LoS is D. The remaining intersections operate at LoS A.
- In **Scenario 4.2**, the DoS of the Joseph Street / Georges Avenue is 1.06, the LoS is F. The DoS of the signalised intersection of Joseph St / Botanica Dr deteriorates to 1.05 and the LoS is F. The remaining intersections operate at LoS A or B.
- In **Scenario 5.1**, widening Joseph St to four lanes results in an improved DoS of 0.91 at the Joseph Street / Georges Avenue intersection, the LoS is C. The remaining intersections operate at LoS A or B.
- In **Scenario 5.2**, the DoS of the Joseph Street / Georges Avenue is 1.05, the LoS is F. The remaining intersections operate at LoS C or better.

5.7.2 PM Peak Performance

The PM peak modelling results in Table 5.7 indicate the following:

- In **Scenario 1** (existing conditions), the DoS of the Joseph Street / Georges Avenue intersection is 0.91 and the Level of Service is D. This indicates that the intersection operates close to capacity based on existing conditions during the afternoon peak period. All other intersections operate at LoS A.
- In **Scenario 2**, the DoS of the Joseph Street / Georges Avenue intersection is 0.96 and the Level of Service is E. All other intersections operate at LoS A.
- In **Scenario 3.1**, the DoS of the Joseph Street / Georges Avenue intersection deteriorates to 0.98 and the LoS is E. The remaining intersections operate at LoS D or better.
- In **Scenario 3.2**, the DoS of the Joseph Street / Georges Avenue intersection deteriorates to 0.99 and the LoS is E. The remaining intersections operate at LoS B or better.
- In **Scenario 4.0 (Base Case)**, the DoS of the Joseph Street / Georges Avenue is 1.23, the LoS is F.
- In **Scenario 4.1**, the DoS of the Joseph Street / Georges Avenue intersection is 1.06, the LoS is F. The George Av / East St roundabout operates at LOS F, and the remaining intersections operate at LoS C or better.
- In **Scenario 4.2**, the DoS of the Joseph Street / Georges Avenue is 1.05, the LoS is F. The George Av / East St roundabout operates at LOS F, and the remaining intersections operate at LoS A.
- In **Scenario 5.1**, widening Joseph St to four lanes results in an improved DoS of 0.99 at the Joseph Street / Georges Avenue intersection, the LoS is F. The remaining intersections operate at LoS A.
- In **Scenario 5.2**, the DoS of the Joseph Street / Georges Avenue is 0.98, the LoS is F. The remaining intersections operate at LoS A.

Table 5.6: Intersection Performance, AM Peak

Intersection	Governance	Scenario 1					Scenario 2					Scenario 3.1					Scenario 3.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	5564	1.00	82	F	774 South	6136	0.92	36.9	C	400 South	6406	0.96	51.6	D	555 South	6647	1.00	78.1	F	555 South
2-Joseph St / Botanica Dr	Signalised	4672	0.75	15.6	B	309 South	5180	0.80	24.7	B	374 South	5382	0.82	24.8	B	387 South	5775	0.96	34.7	C	495 South
3-Georges Ave / East St	Roundabout	1412	0.67	6.7	A	42 West	1561	0.76	7.7	A	61 West	1629	0.80	8.4	A	73 West	1787 N1	0.81	8.6	A	76 West
4-Botanica Dr / Betty Cuthb Dr	Priority	271	0.07	1.8	A	1 South	376	0.08	2.4	A	1 North	345	0.09	2.1	A	1 South	537	0.11	3.2	A	4 East
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					Intersection not modelled in this Scenario					5370	0.71	0.3	A	22	6004	0.69	1.2	A	313

Intersection	Governance	Scenario 4.0					Scenario 4.1					Scenario 4.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	6229 N1	1.22	296.4	F	1311 North	6276 N1	1.05	99.6	F	674 North	6537 N1	1.06	120.6	F	875 North
2-Joseph St / Botanica Dr	Signalised	5855 N1	1.20	284.6	F	2396 South	6077 N1	0.97	44.9	D	655 South	6229 N1	1.05	103.1	F	1350 South
3-Georges Ave / East St	Roundabout	1634 N1	0.72	7.7	A	52 West	1752 N1	0.84	9.3	A	86 West	1982 N1	0.92	12.3	A	140 West
4-Botanica Dr / Betty Cuthb Dr	Priority	362 N1	0.19	2	A	1 South	369 N1	0.11	2	A	1 South	486 N1	0.21	2.7	A	3 East
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					4967 N1	0.58	3.5	A	93 South	5339 N1	0.69	19.5	B	282 North

Intersection	Governance	Scenario 5.1					Scenario 5.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7436	0.91	42.4	C	346 North	7242 N1	1.05	101.9	F	591 North
2-Joseph St / Botanica Dr	Signalised	6228	0.73	25.2	B	307 South	6286 N1	0.83	24.8	B	369 South
3-Georges Ave / East St	Roundabout	1888	0.98	20.6	B	253 West	2083 N1	1.03	41.5	C	474 West
4-Botanica Dr / Betty Cuthb Dr	Priority	373	0.11	2	A	1 South	486 N1	0.19	2.7	A	3 East
5-Joseph St / Site Access	Signalised	6222	0.59	1.8	A	74 North	6387 N1	0.66	17.7	B	248 South

Table 5.7: Intersection Performance, PM Peak

Intersection	Governance	Scenario 1					Scenario 2					Scenario 3.1					Scenario 3.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	5469	0.91	49.7	D	495 North	6033	0.96	62	E	633 North	6275	0.98	66.3	E	657 North	6275	0.99	66.7	E	662 North
2-Joseph St / Botanica Dr	Signalised	4577	0.78	8.3	A	192 North	5074	0.86	10.3	A	275 North	5103 N1	0.99	49.3	D	506 North	4754 N1	0.90	20.9	B	346 North
3-Georges Ave / East St	Roundabout	1510	0.64	6.4	A	43 North	1668	0.72	7	A	56 North	1740	0.75	7.2	A	65 North	1736 N1	0.98	9.5	A	103 North
4-Botanica Dr / Betty Cuthb Dr	Priority	231	0.07	1.9	A	1 West	332	0.09	2.6	A	1 North	281 N1	0.08	2.1	A	1 West	269 N1	0.07	2.1	A	1 West
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					Intersection not modelled in this Scenario					5259	0.58	0.3	A	160	4802 N1	0.58	0.3	A	3

Intersection	Governance	Scenario 4.0					Scenario 4.1					Scenario 4.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7175 N1	1.23	298.7	F	1960 North	7061 N1	1.06	127.3	F	1186 North	7040 N1	1.05	111.9	F	1149 North
2-Joseph St / Botanica Dr	Signalised	5302 N1	0.90	14.3	A	306 North	4744 N1	0.76	11.7	A	179 North	5124 N1	0.85	12.7	A	265 North
3-Georges Ave / East St	Roundabout	1985 N1	1.09	123.9	F	1642 North	1995 N1	1.47	552	F	4341 North	1993 N1	1.39	461.6	F	3895 North
4-Botanica Dr / Betty Cuthb Dr	Priority	293 N1	0.08	2	A	1 West	276 N1	0.07	2.1	A	1 West	280 N1	0.07	2.1	A	1 West
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					4830 N1	0.95	29.9	C	429 South	5211 N1	0.73	5	A	133 South

Intersection	Governance	Scenario 5.1					Scenario 5.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7311	0.99	79.1	F	648 North	7311	0.98	77.1	F	627 North
2-Joseph St / Botanica Dr	Signalised	6101	0.86	8.2	A	260 North	6101	0.86	7.9	A	254 North
3-Georges Ave / East St	Roundabout	2018	0.91	9.3	A	128 North	2018	0.93	9.4	A	128 North
4-Botanica Dr / Betty Cuthb Dr	Priority	319	0.09	2	A	1 West	319	0.09	2	A	1 West
5-Joseph St / Site Access	Signalised	6094	0.69	4.2	A	173 North	6094	0.69	4.3	A	178 North

5.8 Proposed Mitigation Measures

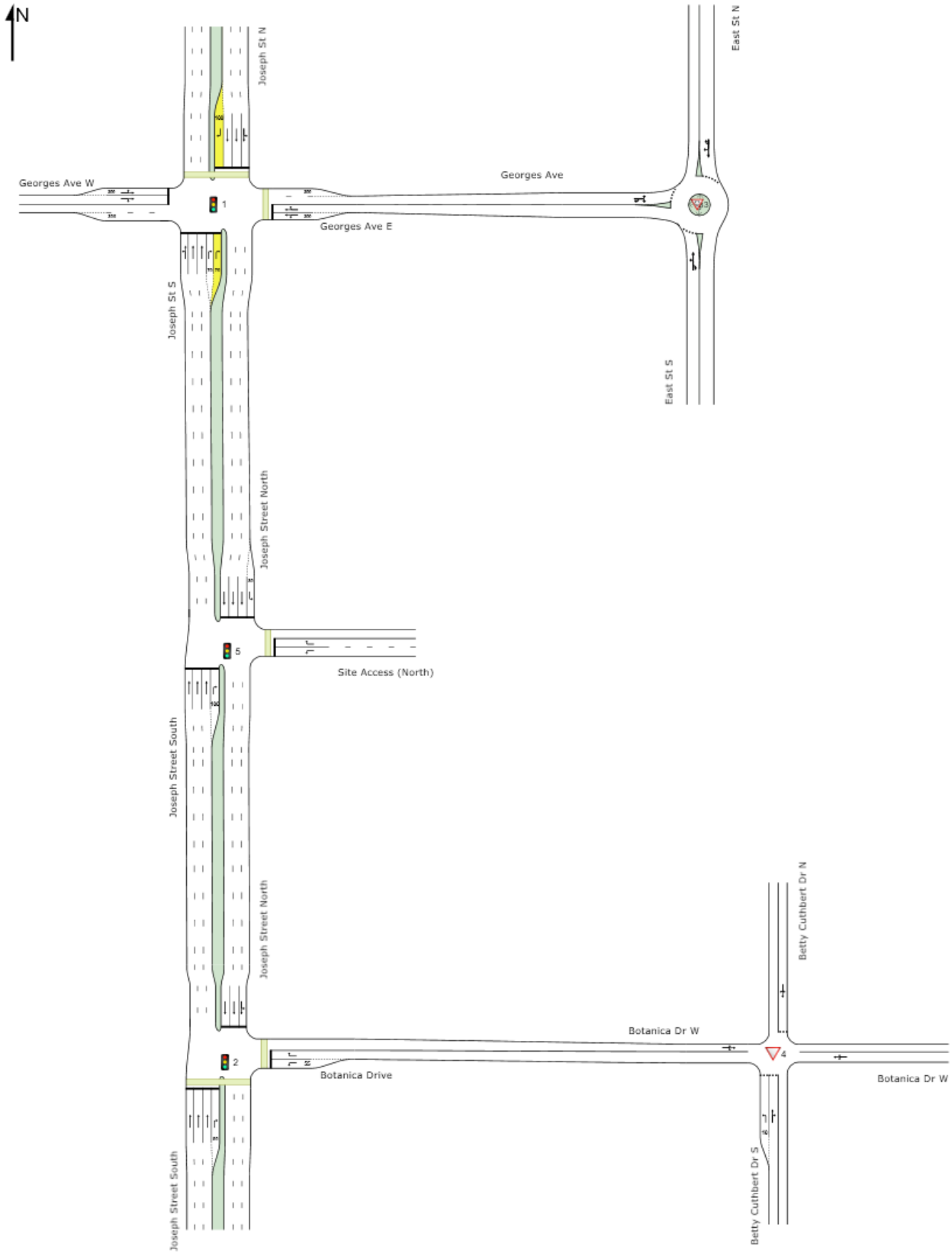
The modelling results indicate that the intersection of Joseph Street with Georges Avenue performs slightly over capacity in Scenario 4.2 during the morning and evening peak periods and in Scenario 5.2 during the morning peak.

Therefore, physical mitigation measures are proposed at the intersection of Joseph Street with Georges Avenue to increase capacity and reduce queue lengths. The measures include:

- the provision of an additional short right-turn lane (same storage length as the existing right-turn lane) on the south approach (Joseph Street South to Georges Avenue East).
- lengthening the short right-turn lane on the north approach (Joseph Street North to Georges Avenue West) to 100m.

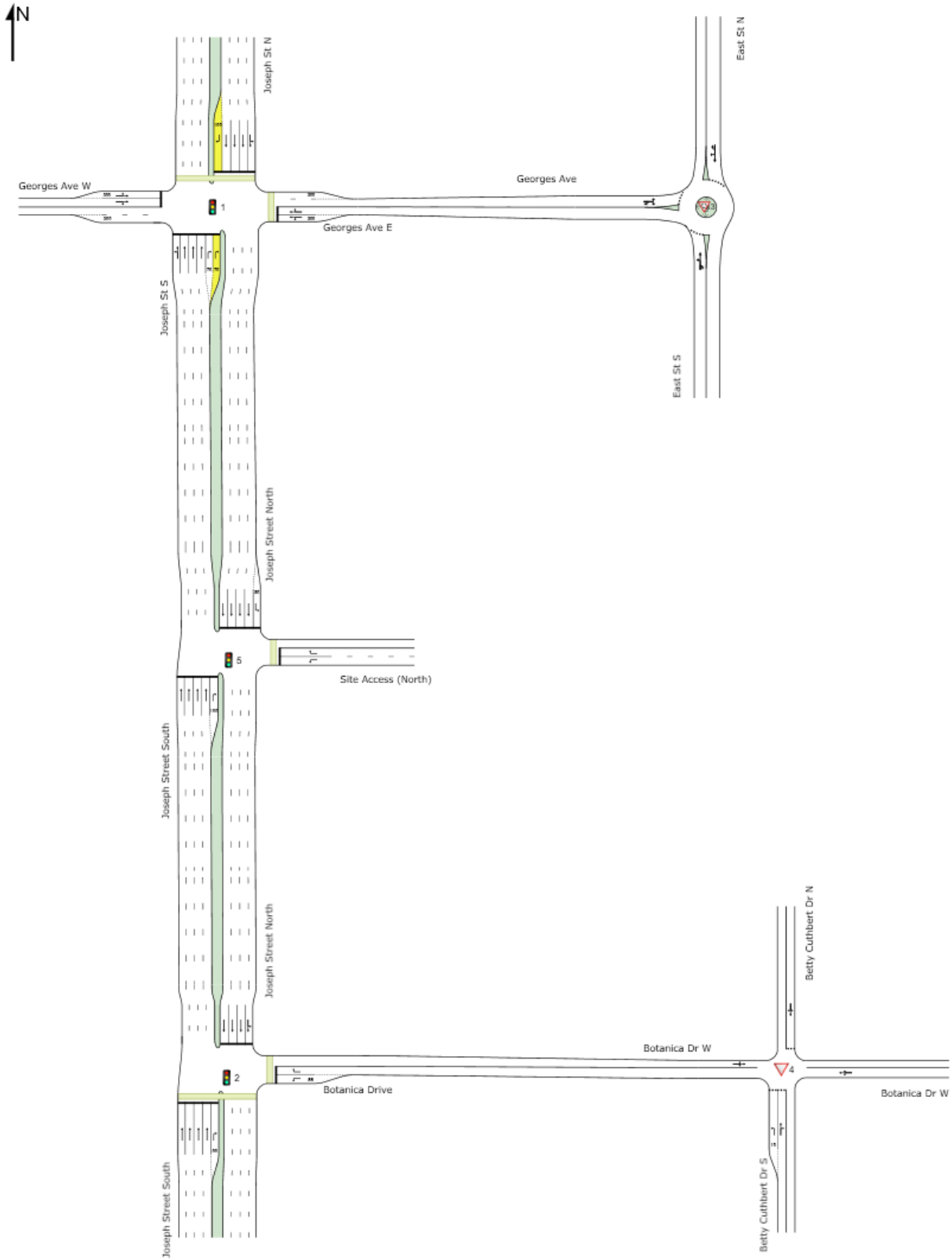
The layouts with the proposed measures (highlighted in yellow), as modelled in SIDRA, are illustrated in Figure 5.9 (Scenario 4.3) and Figure 5.10 (Scenario 5.3).

Figure 5.9: Modelled Intersections, Scenario 4.3 with Mitigation Measures



Source: SIDRA 9

Figure 5.10: Modelled Intersections, Scenario 5.3 with Mitigation Measures



Source: SIDRA 9

5.8.1 Peak Period Intersection Performance with Mitigation Measures

Intersection performance based on the proposed mitigation measures under Scenario 4.3 and 5.3 is presented in Table 5.8 for the AM peak (08:00-09:00) and Table 5.9 for the PM peak (17:00-18:00).

The SIDRA modelling outputs are provided in Appendix D.

5.8.2 AM Peak Performance with Mitigation Measures

The AM peak modelling results in Table 5.8 indicate the following:

- In **Scenario 4.3**, the DoS of the Joseph Street / Georges Avenue is 0.96, the LoS is E, and the remaining intersections operate at LoS C or better.
- In **Scenario 5.3**, the DoS of the Joseph Street / Georges Avenue is 0.92, the LoS is E, and the remaining intersections operate at LoS C apart from the roundabout at George Av with East St.

5.8.3 PM Peak Performance with Mitigation Measures

The PM peak modelling results in Table 5.9 indicate the following:

- In **Scenario 4.3**, the DoS of the Joseph Street / Georges Avenue is 1.02, the LoS is F, and the remaining intersections operate at LoS A apart from the roundabout at George Av with East St.
- In **Scenario 5.3**, the DoS of the Joseph Street / Georges Avenue is 0.96, the LoS is E, and the remaining intersections operate at LoS A.

Table 5.8: Intersection Performance with Mitigation Measures, AM Peak

Intersection	Governance	Scenario 4.0 (Base Case)					Scenario 4.2 (without Mitigation Measures)					Scenario 4.3 (with Mitigation Measures)				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	6229 N1	1.22	296.4	F	1311 North	6537 N1	1.06	120.6	F	875 North	6548 N1	0.96	57.7	E	554 North
2-Joseph St / Botanica Dr	Signalised	5855 N1	1.20	284.6	F	2396 South	6229 N1	1.05	103.1	F	1350 South	6380	0.96	40.8	C	803 South
3-Georges Ave / East St	Roundabout	1634 N1	0.72	7.7	A	52 West	1982 N1	0.92	12.3	A	140 West	2030 N1	0.97	18.1	B	228 West
4-Botanica Dr / Betty Cuthb Dr	Priority	362 N1	0.19	2	A	1 South	486 N1	0.21	2.7	A	3 East	489	0.21	2.7	A	3 East
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					5339 N1	0.69	19.5	B	282 North	5614 N1	0.71	15.5	B	245 South

Intersection	Governance	Scenario 5.2 (without Mitigation Measures)					Scenario 5.3 (with Mitigation Measures)				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7242 N1	1.05	101.9	F	591 North	7337 N1	0.92	59.8	E	451 South
2-Joseph St / Botanica Dr	Signalised	6286 N1	0.83	24.8	B	369 South	6380	0.84	24.1	B	391 South
3-Georges Ave / East St	Roundabout	2083 N1	1.03	41.5	C	474 West	2142 N1	1.09	87.3	F	900 West
4-Botanica Dr / Betty Cuthb Dr	Priority	486 N1	0.19	2.7	A	3 East	489	0.21	2.7	A	3 East
5-Joseph St / Site Access	Signalised	6387 N1	0.66	17.7	B	248 South	6185 N1	0.75	13.8	A	321 South

Table 5.9: Intersection Performance with Mitigation Measures, PM Peak

Intersection	Governance	Scenario 4.0 (Base Case)					Scenario 4.2 (without Mitigation Measures)					Scenario 4.3 (with Mitigation Measures)				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7175 N1	1.23	298.7	F	1960 North	7040 N1	1.05	111.9	F	1149 North	7063 N1	1.02	95.5	F	1017 North
2-Joseph St / Botanica Dr	Signalised	5302 N1	0.90	14.3	A	306 North	5124 N1	0.85	12.7	A	265 North	4881 N1	0.76	11.3	A	214 North
3-Georges Ave / East St	Roundabout	1985 N1	1.09	123.9	F	1642 North	1993 N1	1.39	461.6	F	3895 North	2009 N1	1.47	554.3	F	4344 North
4-Botanica Dr / Betty Cuthb Dr	Priority	293 N1	0.08	2	A	1 West	280 N1	0.07	2.1	A	1 West	281 N1	0.07	2.1	A	1 West
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					5211 N1	0.73	5	A	133 South	5011 N1	0.75	4	A	128 South

Intersection	Governance	Scenario 5.2 (without Mitigation Measures)					Scenario 5.3 (with Mitigation Measures)				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7311	0.98	77.1	F	627 North	7311	0.96	66	E	561 North
2-Joseph St / Botanica Dr	Signalised	6101	0.86	7.9	A	254 North	6101	0.87	9	A	285 North
3-Georges Ave / East St	Roundabout	2018	0.93	9.4	A	128 North	2018	0.87	9.2	A	128 North
4-Botanica Dr / Betty Cuthb Dr	Priority	319	0.09	2	A	1 West	319	0.09	2	A	1 West
5-Joseph St / Site Access	Signalised	6094	0.69	4.3	A	178 North	6094	0.66	3.5	A	147 North

5.8.4 PM Peak Performance with Mitigation Measures (PM School Peak)

The intersection providing the site access (Site 5 - Joseph St / Site Access) has also been tested under a worst-case scenario assuming the unlikely event that school peak operation in the afternoon (15:30-16:30) occurs at the same time as the network peak (17:00-1800).

The DoS (Scenario 4.4) of Site 5 is 1.17 and the LoS is F indicating that the intersection would operate over capacity. This is because of insufficient capacity along Joseph Street.

Scenario 5.4 shows that Site 5 would operate well in case of upgrading Joseph Street to eight lanes. The DoS would be 0.96 and the LoS D in this scenario.

6 Summary and Conclusions

6.1 Summary

This Traffic Impact Assessment has been prepared in close consultation with TfNSW to assist PDNSW in finalising a master plan for the government owned site at 80 Betty Cuthbert Drive (the Site). The key features of this study are as follows:

- The Site is in Lidcombe approximately 15 km west of Sydney CBD within the Cumberland local government area. Currently the Site is occupied by Multiple Sclerosis Limited (MSL) whose facility occupies approximately 12 percent of the Site and the remainder is undeveloped.
- The Site is bounded on its western side by a major TfNSW classified State Road (Joseph Street). Public and active transport options are limited at the Site with the closest stations, Berala and Lidcombe, over 1 km away. Three bus routes operate in the vicinity of the Site but accessibility to bus stops is limited.
- The proposed master plan facilitates the development of a future educational establishment and a privately built and owned health facility, with the remainder of the land for residential use – 69 dwellings are assumed in the assessment. A 1,000-student primary school has been assumed for the purposes of this assessment, to accommodate a maximum capacity scenario for the site. The future education establishment could be a different type of school.
- The estimated traffic generation for the development is 813 trips in the AM peak (08:00-09:00) and 63 trips in the PM peak (17:00-18:00).
- The concept layout for the master plan includes the introduction of an interim left-in left-out connection to Joseph Street by 2023. This connection is to be converted to a signalised intersection at a later stage. It also includes modifications to the internal road network to provide access to the various uses on the Site.

A network model using SIDRA was developed for the intersections surrounding the proposed Site. The modelling demonstrates that:

- **Existing conditions (2017):** The worst performing intersection assessed is Joseph Street / Georges Avenue with no or very little capacity. The Degree of Saturation (DoS) is 1.00 and 0.91 in the AM and PM peak, respectively. The Level of Service (LoS) is F and D.
- **Year 2023:** The capacity of the intersection of Joseph Street / Georges Avenue is exceeded. Therefore, it is recommended to ban on-street parking on George Avenue (minimum interventions) to provide additional capacity on the approaches. This measure would result in some spare intersection capacity.
- **Year 2026:** The intersection still has spare capacity assuming the school has not been developed yet. The intersection would operate at-capacity if the school operation commences. To prevent further deterioration in traffic performance in this case, it is recommended to introduce mitigation measures that can accommodate future traffic growth.
- **Year 2036:** The intersection (with the mitigation measures) operates slightly over-capacity (Degree of Saturation is 102%) in the PM peak and with some spare capacity in the AM peak.
  The surrounding traffic network becomes saturated due to the increase in background traffic. Volumes along Joseph Street are significant and might make it necessary to widen Joseph Street to eight lanes. This assessment has been included in the report.

As mentioned, TfNSW were consulted on several occasions throughout the development of this assessment. Several meetings were held to discuss the project as well as a formal review of the Traffic and Transport Report and SIDRA modelling files. Reference should be made to Appendix E for TfNSW letter of advice.

6.2 Conclusions

Although the proposed master plan development at the Site results in an increase of traffic volumes and a reduced intersection performance, the SIDRA modelling indicates that the critical intersection of Joseph Street / Georges Avenue is already at capacity under existing conditions. An upgrade of this intersection and other measures are therefore recommended to improve the operational performance.

In addition, the requirement for converting the site access off Joseph Street to a signalised intersection will not be triggered until such time that the future education establishment becomes operational, due to most trips generated from the site originating from this source. As such, it is anticipated that an interim intersection treatment via a left-in left-out arrangement would be appropriate in the initial phase of the development to service the residential component of the site.

6.3 Recommendations

Physical interventions and intersection widening of the Joseph Street / George Avenue intersection are recommended to increase capacity and reduce the queue length forecast. These proposed interventions include:

- Provision of an additional short right-turn lane (same storage length as the existing right-turn lane) on the south approach (Joseph Street South to Georges Avenue East).
- Lengthening the short right-turn lane on the north approach (Joseph Street North to Georges Avenue West) to 100m.
- Prohibit on-street parking along Georges Avenue between Nottinghill Road and Wayland Avenue during peak hours

To minimise the impact of the development on the road network, it would also be recommended to encourage a greater mode share of public and active transport. Where new residents or students will be brought to the area, it is important to make these modes of transport immediately attractive to instil a culture of its use before people become accustomed to using private vehicles. The proposed provision of a pedestrian bridge across Joseph Street will improve pedestrian connections to bus services on Joseph Street by shortening travel distances and improving safety.

Other opportunities for the promotion of active and public transport include:

- Improved amenities and infrastructure at bus stops to make the mode more attractive (e.g. covered seating areas)
- Provision of Disability Discrimination Act (DDA) compliant footpaths to access the Site and nearby public transport facilities
- Dedicated cycle lanes or shared cycling paths linking to existing infrastructure (e.g. East Street) around the Site in addition to east-west linkages to Berala Station
- Delivering high-standard cycle parking and end-of-trip facilities compliant with AS2890.3 - Bicycle Parking Facilities at the educational and health facility
- Promoting use of public transport with new users of the area through use of campaigns
- Provision of Kiss-and-ride facilities for the proposed educational and health facility

Appendices

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A. Crash Data Analysis (Oct 2013-Sep 2018)

Detailed Crash Report

NOTES: 9172 - Joseph St between Georges Ave and Weerona Rd Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors	S	F
Sydney Region																											
Cumberland LGA																											
Lidcombe																											
Amy St																											
1061444	P	07/03/2015	Sat	19:10	15 m	W	JOSEPH DR	2WY	CRV	Fine	Dry	50	3	CAR	F45	E in AMY ST	50	Incorrect side	MC	0	0	1	1	0			
E57225412								RUM	20	Head on				CAR	F58	W in AMY ST	45	Proceeding in lane									
														CAR	M59	W in AMY ST	40	Proceeding in lane									
1054923	S	01/11/2014	Sat	14:00		at	JOSEPH ST	XJN	STR	Fine	Dry	50	3	CAR	M37	E in AMY ST	Unk	Proceeding in lane	NC	0	0	0	0	0			
E58975586								RUM	30	Rear end				CAR	F22	E in AMY ST	Unk	Proceeding in lane									
														CAR	F40	E in AMY ST	Unk	Proceeding in lane									
Botanica Dr																											
1083755	S	28/10/2015	Wed	08:10	12 m	E	JOSEPH ST	2WY	STR	Fine	Dry	50	2	CAR	M19	W in BOTANICA DR	Unk	Proceeding in lane	OC	0	0	0	2	0			
E59101724								RUM	30	Rear end				4WD	F46	W in BOTANICA DR	0	Stationary									
Joseph St																											
1071945	P	14/05/2015	Thu	10:00		at	AMY ST	XJN	STR	Fine	Dry	80	1	CAR	F50	E in AMY ST	Unk	Other reversing	MC	0	0	1	0	0			
E198538898								RUM	90	Fell in/from vehicle																	
1105584	P	11/05/2016	Wed	12:40		at	AMY ST	XJN	STR	Fine	Dry	80	2	CAR	M55	E in AMY ST	10	Turning left	MC	0	0	1	1	0			
E63025487								RUM	16	Left near				CAR	M83	N in JOSEPH ST	70	Proceeding in lane									
1130302	P	13/11/2016	Sun	00:10		at	AMY ST	XJN	STR	Fine	Dry	80	2	CAR	M74	S in JOSEPH ST	20	Turning right	OC	0	0	0	1	0			
E63127566								RUM	21	Right through				CAR	M43	N in JOSEPH ST	40	Proceeding in lane									
1123184	S	20/12/2016	Tue	18:30		at	AMY ST	XJN	STR	Raining	Wet	80	2	4WD	M52	E in AMY ST	Unk	Proceeding in lane	OC	0	0	0	1	0			
E63460164								RUM	30	Rear end				CAR	F34	E in AMY ST	0	Stationary									
1167889	P	26/03/2018	Mon	13:00		at	AMY ST	XJN	STR	Fine	Dry	80	2	TRK	M51	N in JOSEPH ST	Unk	Proceeding in lane	MC	0	0	1	0	0			
E69908388								RUM	30	Rear end				CAR	M36	N in JOSEPH ST	0	Stationary									
1116314	P	05/10/2016	Wed	14:45	20 m	N	AMY ST	DIV	STR	Fine	Dry	80	2	LOR	M35	S in JOSEPH ST	40	Veering left	OC	0	0	0	1	0			
E62533057								RUM	35	Lane change left				CAR	F53	S in JOSEPH ST	40	Proceeding in lane									
1041899	P	17/08/2014	Sun	23:40	30 m	N	AMY ST	DIV	STR	Raining	Wet	80	1	CAR	M31	N in JOSEPH ST	80	Proceeding in lane	NC	0	0	0	0	0			
E55802931								RUM	71	Off rd left => obj				Other fixed object													
1174510	S	22/06/2018	Fri	11:40	50 m	N	AMY ST	DIV	STR	Fine	Dry	80	3	TRK	M51	S in JOSEPH ST	Unk	Proceeding in lane	NC	0	0	0	0	0			
E71037067								RUM	71	Off rd left => obj				TRK	F38	S in JOSEPH ST	0	Parked									
														CAR		S in JOSEPH ST	Unk	Proceeding in lane									
1076497	S	05/08/2015	Wed	07:50	500 m	N	AMY ST	DIV	STR	Fine	Dry	80	2	CAR	M23	N in JOSEPH ST	Unk	Proceeding in lane	NC	0	0	0	0	0			
E59234171								RUM	30	Rear end				TRK	M63	N in JOSEPH ST	0	Stationary									

Detailed Crash Report

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type		Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors
																										S F
1040393	P	17/03/2014	Mon	07:15	10 m	S	AMY ST	XJN		STR	Fine	Dry	80	3	CAR	F28	S in JOSEPH ST	50	Proceeding in lane	NC	0	0	0	0	0	
E54442838								RUM	30	Rear end					CAR	M35	S in JOSEPH ST	0	Stationary							
															TRK	M19	S in JOSEPH ST	0	Parked							
1013572	P	22/02/2014	Sat	10:20		at	BOTANICA DR	TJN		STR	Fine	Dry	80	3	BUS	M49	S in JOSEPH ST	25	Turning left	OC	0	0	0	2	0	
E54863039								RUM	37	Left turn sideswipe					CAR	M35	S in JOSEPH ST	80	Proceeding in lane							
															CAR	F26	E in BOTANICA DR	0	Waiting turn left							
1057128	P	28/12/2014	Sun	11:00		at	BOTANICA DR	TJN		STR	Fine	Dry	80	2	CAR	M30	W in BOTANICA DR	30	Turning right	NC	0	0	0	0	0	
E243645794								RUM	13	Right near					CAR	M38	S in JOSEPH ST	70	Proceeding in lane							
1103255	S	01/06/2016	Wed	22:30		at	BOTANICA DR	TJN		STR	Overcast	Wet	80	2	CAR	F41	N in JOSEPH ST	Unk	Turning right	NC	0	0	0	0	0	
E64014381								RUM	21	Right through					CAR	M U	S in JOSEPH ST	Unk	Proceeding in lane							
1121205	P	28/09/2016	Wed	00:45		at	BOTANICA DR	TJN		STR	Fine	Dry	80	2	CAR	M19	S in JOSEPH ST	30	Veering right	SC	0	1	0	0	0	
E62198036								RUM	34	Lane change right					CAR	F19	S in JOSEPH ST	30	Proceeding in lane							
1123951	P	28/09/2016	Wed	00:45		at	BOTANICA DR	TJN		STR	Fine	Dry	80	1	CAR	F23	S in JOSEPH ST	60	Proceeding in lane	MC	0	0	1	0	0	
E62198036								RUM	73	Off rd rght => obj					Signal pole											
1139517	S	03/06/2017	Sat	11:00		at	BOTANICA DR	TJN		STR	Fine	Dry	80	2	SEM	M35	N in JOSEPH ST	Unk	Other forward	OC	0	0	0	1	0	
E64632826								RUM	39	Other same direction					4WD	F U	N in JOSEPH ST	0	Stationary							
1072593	P	19/06/2015	Fri	18:10	10 m	S	BOTANICA DR	TJN		STR	Fine	Dry	80	3	CAR	M28	S in JOSEPH ST	50	Proceeding in lane	OC	0	0	0	1	0	
E57818125								RUM	62	Accident					4WD	M51	S in JOSEPH ST	0	Broken down							
															OMV	M U	S in JOSEPH ST	0	Stationary							
1109468	S	28/07/2016	Thu	15:20	150 m	S	BOTANICA DR	DIV		STR	Fine	Dry	80	2	WAG	M67	N in JOSEPH ST	Unk	Proceeding in lane	OC	0	0	0	1	0	
E945658790								RUM	30	Rear end					WAG	F35	N in JOSEPH ST	0	Stationary							
1056235	S	27/01/2015	Tue	18:20	350 m	S	BOTANICA DR	DIV		STR	Raining	Wet	80	2	CAR	M54	N in JOSEPH ST	Unk	Proceeding in lane	NC	0	0	0	0	0	
E57335058								RUM	30	Rear end					4WD	M46	N in JOSEPH ST	Unk	Proceeding in lane							
1012591	P	01/02/2014	Sat	11:25		at	GEORGES AVE	XJN		STR	Fine	Dry	50	5	CAR	M52	W in GEORGES AVE	40	Proceeding in lane	OC	0	0	0	2	0	S
E54297429								RUM	10	Cross traffic					WAG	F40	N in JOSEPH ST	60	Proceeding in lane							
															TRK	M52	S in GEORGES AVE	0	Stationary							
															CAR	M22	S in JOSEPH ST	0	Stationary							
															WAG	F50	S in GEORGES AVE	0	Stationary							
1031510	P	29/04/2014	Tue	13:45		at	GEORGES AVE	XJN		STR	Fine	Dry	50	3	CAR	M22	S in JOSEPH ST	70	Proceeding in lane	MC	0	0	1	0	0	S
E55458008								RUM	10	Cross traffic					CAR	F28	E in GEORGES AVE	20	Proceeding in lane							
															TRK	M55	W in GEORGES AVE	0	Stationary							
1027803	P	08/05/2014	Thu	17:40		at	GEORGES AVE	XJN		STR	Fine	Dry	70	2	CAR	F21	N in JOSEPH ST	50	Proceeding in lane	NC	0	0	0	0	0	
E54462732								RUM	30	Rear end					SEM	M33	N in JOSEPH ST	15	Proceeding in lane							
1027390	P	06/06/2014	Fri	18:02		at	GEORGES AVE	XJN		STR	Fine	Dry	50	2	TRK	M67	N in JOSEPH ST	65	Proceeding in lane	NC	0	0	0	0	0	S
E55784965								RUM	32	Right rear					CAR	F35	N in JOSEPH ST	0	Wait turn right							

Detailed Crash Report

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors
																									S F
1033212	P	01/07/2014	Tue	17:55		at	GEORGES AVE	XJN	STR	Fine	Dry	50	2	CAR	M24	W in GEORGES AVE	25	Turning right	MC	0	0	1	0	0	
E57028487								RUM	21	Right through				CAR	M60	E in GEORGES AVE	40	Proceeding in lane							
1038717	P	14/08/2014	Thu	16:22		at	GEORGES AVE	XJN	STR	Fine	Dry	50	2	CAR	F39	W in GEORGES AVE	20	Turning right	NC	0	0	0	0	0	
E57317882								RUM	21	Right through				CAR	F37	E in GEORGES AVE	30	Proceeding in lane							
1056741	P	03/12/2014	Wed	11:30		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	LOR	M42	S in JOSEPH ST	70	Proceeding in lane	MC	0	0	1	0	0	
E340159092								RUM	30	Rear end				CAR	F38	S in JOSEPH ST	0	Stationary							
1069797	P	13/03/2015	Fri	05:48		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	CAR	F57	W in GEORGES AVE	40	Proceeding in lane	SC	0	1	0	0	0	
E59958283								RUM	0	Ped nearside				PED	M20	N in JOSEPH ST		Walk across carriageway							
1065264	P	09/04/2015	Thu	22:35		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	CAR	M29	W in GEORGES AVE	Unk	Turning right	NC	0	0	0	0	0	
E112037702								RUM	21	Right through				CAR	M25	E in GEORGES AVE	Unk	Proceeding in lane							
1092036	S	30/01/2016	Sat	17:00		at	GEORGES AVE	XJN	STR	Raining	Wet	70	2	4WD	F30	S in JOSEPH ST	Unk	Proceeding in lane	OC	0	0	0	1	0	
E62811983								RUM	30	Rear end				CAR	M28	S in JOSEPH ST	Unk	Proceeding in lane							
1099267	P	21/03/2016	Mon	06:30		at	GEORGES AVE	XJN	STR	Raining	Wet	50	2	OMV	U U	W in GEORGES AVE	Unk	Turning right	OC	0	0	0	1	0	
E60383514								RUM	21	Right through				VAN	M38	E in GEORGES AVE	20	Proceeding in lane							
1120298	P	17/08/2016	Wed	18:07		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	CAR	F31	W in GEORGES AVE	20	Turning right	SC	0	1	0	0	0	
E61877112								RUM	2	Ped far side				PED	F62	W in JOSEPH ST		Walk across carriageway							
1113766	S	06/09/2016	Tue	03:00		at	GEORGES AVE	XJN	STR	Fine	Dry	70	1	CAR	M73	S in JOSEPH ST	Unk	Proceeding in lane	NC	0	0	0	0	0	
E64421389								RUM	73	Off rd rght => obj				S/Barrier - Wrope/brifen											
1129023	S	24/02/2017	Fri	07:40		at	GEORGES AVE	XJN	STR	Fine	Dry	70	3	CAR	F30	W in GEORGES AVE	Unk	Turning right	OC	0	0	0	1	0	
E63495917								RUM	21	Right through				CAR	M31	E in GEORGES AVE	Unk	Proceeding in lane							
														CAR	M39	W in GEORGES AVE	Unk	Proceeding in lane							
1143349	S	01/07/2017	Sat	09:25		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	TRK	M73	S in JOSEPH ST	Unk	Proceeding in lane	OC	0	0	0	1	0	
E66893885								RUM	30	Rear end				CAR	M28	S in JOSEPH ST	0	Stationary							
1147600	S	03/09/2017	Sun	13:00		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	CAR	F32	S in JOSEPH ST	Unk	Turning right	MC	0	0	1	0	0	
E64569309								RUM	21	Right through				WAG	F54	N in JOSEPH ST	Unk	Proceeding in lane							
1157587	P	29/10/2017	Sun	19:00		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	CAR	M35	N in JOSEPH ST	60	Turning right	SC	0	1	0	0	0	
E66414743								RUM	23	Right/left				CAR	M19	S in JOSEPH ST	60	Turning left							
1101226	P	01/04/2016	Fri	19:00	40 m	S	GEORGES AVE	DIV	STR	Fine	Dry	70	2	M/C	M27	S in JOSEPH ST	50	Proceeding in lane	SC	0	1	0	0	0	
E118411102								RUM	30	Rear end				CAR	F23	S in JOSEPH ST	50	Proceeding in lane							
1001932	P	03/11/2013	Sun	16:40	50 m	S	GEORGES AVE	DIV	STR	Fine	Dry	70	1	CAR	M20	S in JOSEPH ST	70	Proceeding in lane	NC	0	0	0	0	0	F
E52885213								RUM	71	Off rd left => obj				S/Barrier - Guardrail											

Detailed Crash Report

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors
																									S F
1100117	P	01/04/2016	Fri	19:15	110 m	S	GEORGES AVE	DIV	STR	Fine	Dry	80	4	CAR	M41	S in JOSEPH ST	40	Veering right	SC	0	1	0	0	0	
E302653993								RUM	34	Lane change right				ATKR	M64	S in JOSEPH ST	50	Proceeding in lane							
														TRK	M33	S in JOSEPH ST	0	Parked							
														PED		JOSEPH ST		Stand on carriageway							
1002397	P	17/10/2013	Thu	21:23	200 m	S	GEORGES AVE	DIV	STR	Fine	Dry	80	2	VAN	M25	N in JOSEPH ST	35	Proceeding in lane	OC	0	0	0	1	0	
E55577786								RUM	30	Rear end				CAR	M22	N in JOSEPH ST	0	Stationary							
1135725	P	05/04/2017	Wed	16:59	300 m	S	GEORGES AVE	DIV	STR	Fine	Dry	80	2	MSC	M22	S in JOSEPH ST	60	Proceeding in lane	MC	0	0	1	0	0	
E64162946								RUM	30	Rear end				TRK	M40	S in JOSEPH ST	20	Proceeding in lane							
1152521	S	09/10/2017	Mon	08:00	300 m	S	GEORGES AVE	DIV	STR	Fine	Dry	80	2	CAR	F U	N in JOSEPH ST	Unk	Other forward	OC	0	0	0	1	0	
E66049538								RUM	39	Other same direction				CAR	F26	N in JOSEPH ST	Unk	Proceeding in lane							
1183322	P	10/09/2018	Mon	12:35		at	MAIN AVE	TJN	STR	Fine	Dry	80	2	CAR	M27	W in MAIN AVE	7	Turning left	MC	0	0	1	0	0	
E69570708								RUM	16	Left near				CAR	M20	S in JOSEPH ST	80	Veering left							
1084665	S	23/08/2015	Sun	14:40		at	WEEROONA RD	XJN	STR	Fine	Dry	50	2	BDBL	M33	S in JOSEPH ST	Unk	Other forward	MC	0	0	1	0	0	
E203579798								RUM	39	Other same direction				CAR	M24	S in JOSEPH ST	Unk	Other forward							
1095280	S	09/03/2016	Wed	08:20		at	WEEROONA RD	XJN	STR	Fine	Dry	80	2	CAR	F U	N in JOSEPH ST	Unk	Proceeding in lane	NC	0	0	0	0	0	
E59865909								RUM	30	Rear end				UTE	M54	N in JOSEPH ST	0	Stationary							
1009024	P	17/12/2013	Tue	08:45	50 m	N	WEEROONA RD	DIV	STR	Fine	Wet	80	3	CAR	F25	S in JOSEPH ST	60	Proceeding in lane	SC	0	1	0	0	0	
E53490948								RUM	30	Rear end				CAR	F26	S in JOSEPH ST	5	Proceeding in lane							
														CAR	M51	S in JOSEPH ST	0	Stationary							
1025125	P	04/05/2014	Sun	15:40	80 m	N	WEEROONA RD	DIV	STR	Fine	Dry	80	2	OMV	U U	S in JOSEPH ST	Unk	Veering left	SC	0	1	0	1	0	
E55156871								RUM	35	Lane change left				CAR	M37	S in JOSEPH ST	60	Proceeding in lane							
1146955	S	30/08/2017	Wed	08:30	200 m	N	WEEROONA RD	DIV	STR	Fine	Dry	80	3	4WD	M43	S in JOSEPH ST	Unk	Proceeding in lane	OC	0	0	0	1	0	
E65671633								RUM	30	Rear end				4WD	M57	S in JOSEPH ST	0	Stationary							
														CAR	F61	S in JOSEPH ST	0	Stationary							
1027016	P	18/03/2014	Tue	14:45	500 m	N	WEEROONA RD	DIV	STR	Fine	Dry	80	2	OMV	U U	S in JOSEPH ST	Unk	Proceeding in lane	SC	0	1	0	0	0	
E54688328								RUM	33	Lane sideswipe				4WD	M56	S in JOSEPH ST	80	Proceeding in lane							
Regents Park																									
Rookwood Rd																									
1084261	S	24/10/2015	Sat	14:30	20 m	S	AMY ST	DIV	STR	Fine	Dry	80	2	TRK	M54	N in ROOKWOOD RD	Unk	Veering right	MC	0	0	1	0	0	
E59572148								RUM	34	Lane change right				CAR	M26	N in ROOKWOOD RD	Unk	Proceeding in lane							

Report Totals: Crashes: 53 Fatal Crashes(FC): 0 Serious Injury Crashes(SC): 9 Moderate Injury Crashes(MC): 13 Minor/Other Injury Crashes(OC): 16 Uncategorised Injury Crashes(UC): 0 Non-Casualty Crashes(NC): 15

Killed(K): 0 Seriously Injured(S): 9 Moderately Injured(M): 13 Minor/Other Injured(O): 22 Uncategorised Injured(U): 0

Detailed Crash Report

Crash No.	Data Source	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors	S	F

Crashid dataset 9172 - Joseph St between Georges Ave and Weerona Rd Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Note: *Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.*

Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data. Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Summary Crash Report

# Crash Type		
Car Crash	52	98.1%
Light Truck Crash	11	20.8%
Rigid Truck Crash	2	3.8%
Articulated Truck Crash	4	7.5%
'Heavy Truck Crash	(6)	(11.3%)
Bus Crash	1	1.9%
"Heavy Vehicle Crash	(7)	(13.2%)
Emergency Vehicle Crash	1	1.9%
Motorcycle Crash	2	3.8%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	3	5.7%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	34	64.2%
Non intersection	19	35.8%

* Up to 10 metres from an intersection

Collision Type		
Single Vehicle	5	9.4%
Multi Vehicle	48	90.6%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	0	0.0%
Other Classified Road	51	96.2%
Unclassified Road	2	3.8%

Contributing Factors		
Speeding	3	5.7%
Fatigue	1	1.9%

Weather		
Fine	47	88.7%
Rain	5	9.4%
Overcast	1	1.9%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	7	13.2%
Dry	46	86.8%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	1	1.9%
Daylight	32	60.4%
Dusk	5	9.4%
Darkness	15	28.3%

Crash Movement		
Intersection, adjacent approaches	5	9.4%
Head-on (not overtaking)	1	1.9%
Opposing vehicles; turning	9	17.0%
U-turn	0	0.0%
Rear-end	19	35.8%
Lane change	6	11.3%
Parallel lanes; turning	1	1.9%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	2	3.8%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	5	9.4%
Out of control on straight	0	0.0%
Off road, on curve	0	0.0%
Off road on curve, hit object	0	0.0%
Out of control on curve	0	0.0%
Other crash type	5	9.4%

Speed Limit				
40 km/h or less	0	0.0%	80 km/h zone	30	56.6%
50 km/h zone	10	18.9%	90 km/h zone	0	0.0%
60 km/h zone	0	0.0%	100 km/h zone	0	0.0%
70 km/h zone	13	24.5%	110 km/h zone	0	0.0%

~ 07:30-09:30 or 14:30-17:00 on school days	~ 40km/h or less		~ School Travel Time Involvement	
	0	0.0%	11	20.8%

Day of the Week												
Monday	5	9.4%	Wednesday	12	22.6%	Friday	7	13.2%	Sunday	8	15.1%	WEEKEND	16	30.2%
Tuesday	7	13.2%	Thursday	6	11.3%	Saturday	8	15.1%	WEEKDAY	37	69.8%			

CRASHES	53	
Fatal	0	0.0%
Serious inj.	9	17.0%
Moderate inj.	13	24.5%
Minor/Other inj.	16	30.2%
Uncategorised inj.	0	0.0%
Non-casualty	15	28.3%

CASUALTIES	44	
Killed	0	0.0%
Seriously inj.	9	20.5%
Moderately inj.	13	29.5%
Minor/Other inj.	22	50.0%
Uncategorised inj.	0	0.0%
^ Unrestrained	1	2.3%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Self Reported Crash	19	35.85%

Time Group		% of Day	
00:01 - 02:59	3	5.7%	12.5%
03:00 - 04:59	1	1.9%	8.3%
05:00 - 05:59	1	1.9%	4.2%
06:00 - 06:59	1	1.9%	4.2%
07:00 - 07:59	3	5.7%	4.2%
08:00 - 08:59	5	9.4%	4.2%
09:00 - 09:59	1	1.9%	4.2%
10:00 - 10:59	2	3.8%	4.2%
11:00 - 11:59	5	9.4%	4.2%
12:00 - 12:59	2	3.8%	4.2%
13:00 - 13:59	3	5.7%	4.2%
14:00 - 14:59	5	9.4%	4.2%
15:00 - 15:59	2	3.8%	4.2%
16:00 - 16:59	3	5.7%	4.2%
17:00 - 17:59	3	5.7%	4.2%
18:00 - 18:59	5	9.4%	4.2%
19:00 - 19:59	4	7.5%	4.2%
20:00 - 21:59	1	1.9%	8.3%
22:00 - 24:00	3	5.7%	8.3%

Street Lighting Off/Nil		% of Dark
0	of 15	in Dark 0.0%

Crashes		Casualties
3	2018	2
8	2017	8
15	2016	13
10	2015	9
14	2014	10
3	2013	2

McLean Periods		% Week	
A	11	20.8%	17.9%
B	0	0.0%	7.1%
C	9	17.0%	17.9%
D	6	11.3%	3.5%
E	3	5.7%	3.6%
F	5	9.4%	10.7%
G	7	13.2%	7.1%
H	5	9.4%	7.1%
I	4	7.5%	12.5%
J	3	5.7%	10.7%

#Holiday Periods																		
New Year	0	0.0%	Easter	0	0.0%	Queen's BD	1	1.9%	Christmas	1	1.9%	Easter SH	1	1.9%	Sept./Oct. SH	3	5.7%	
Aust. Day	0	0.0%	Anzac Day	0	0.0%	Labour Day	0	0.0%	January SH	0	0.0%	June/July SH	2	3.8%	December SH	1	1.9%	

Crashid dataset 9172 - Joseph St between Georges Ave and Weerona Rd Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Note: *Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.*
Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data.
Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Detailed Crash Report

NOTES: 9172 - Georges Avenue, between Joseph Street and East Street Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Crash No.	Data Source	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors
																								S F
Sydney Region																								
Cumberland LGA																								
Lidcombe																								
Georges Ave																								
1151614	P	11/08/2017	Fri	01:10	at	NUMBER 31 HN	2WY	STR	Fine	Dry	50	4	CAR	U U	E in GEORGES AVE	70	Proceeding in lane	NC	0	0	0	0	0	S
E64916804							RUM	71	Off rd left => obj				CAR		E in GEORGES AVE	0	Parked							
													TRK		E in GEORGES AVE	0	Parked							
													M/C		E in GEORGES AVE	0	Parked							

Report Totals: Crashes: 1 Fatal Crashes(FC): 0 Serious Injury Crashes(SC): 0 Moderate Injury Crashes(MC): 0 Minor/Other Injury Crashes(OC): 0 Uncategorised Injury Crashes(UC): 0 Non-Casualty Crashes(NC): 1

Killed(K): 0 Seriously Injured(S): 0 Moderately Injured(M): 0 Minor/Other Injured(O): 0 Uncategorised Injured(U): 0

Crashid dataset 9172 - Georges Avenue, between Joseph Street and East Street Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)
Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data.
Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Summary Crash Report

# Crash Type		
Car Crash	1	100.0%
Light Truck Crash	1	100.0%
Rigid Truck Crash	0	0.0%
Articulated Truck Crash	0	0.0%
'Heavy Truck Crash	*(0)*	*(0.0%)*
Bus Crash	0	0.0%
"Heavy Vehicle Crash	*(0)*	*(0.0%)*
Emergency Vehicle Crash	0	0.0%
Motorcycle Crash	1	100.0%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	0	0.0%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	0	0.0%
Non intersection	1	100.0%

* Up to 10 metres from an intersection

Collision Type		
Single Vehicle	0	0.0%
Multi Vehicle	1	100.0%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	0	0.0%
Other Classified Road	0	0.0%
Unclassified Road	1	100.0%

Contributing Factors		
Speeding	1	100.0%
Fatigue	0	0.0%

Weather		
Fine	1	100.0%
Rain	0	0.0%
Overcast	0	0.0%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	0	0.0%
Dry	1	100.0%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	0	0.0%
Daylight	0	0.0%
Dusk	0	0.0%
Darkness	1	100.0%

Crash Movement		
Intersection, adjacent approaches	0	0.0%
Head-on (not overtaking)	0	0.0%
Opposing vehicles; turning	0	0.0%
U-turn	0	0.0%
Rear-end	0	0.0%
Lane change	0	0.0%
Parallel lanes; turning	0	0.0%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	0	0.0%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	1	100.0%
Out of control on straight	0	0.0%
Off road, on curve	0	0.0%
Off road on curve, hit object	0	0.0%
Out of control on curve	0	0.0%
Other crash type	0	0.0%

Speed Limit				
40 km/h or less	0	0.0%	80 km/h zone	0 0.0%
50 km/h zone	1	100.0%	90 km/h zone	0 0.0%
60 km/h zone	0	0.0%	100 km/h zone	0 0.0%
70 km/h zone	0	0.0%	110 km/h zone	0 0.0%

~ 07:30-09:30 or 14:30-17:00 on school days	~ 40km/h or less	0	0.0%	~ School Travel Time Involvement	0	0.0%

Day of the Week												
Monday	0	0.0%	Wednesday	0	0.0%	Friday	1	**********	Sunday	0	0.0%	WEEKEND	0	0.0%
Tuesday	0	0.0%	Thursday	0	0.0%	Saturday	0	0.0%	WEEKDAY	1	**********			

CRASHES	1	
Fatal	0	0.0%
Serious inj.	0	0.0%
Moderate inj.	0	0.0%
Minor/Other inj.	0	0.0%
Uncategorised inj.	0	0.0%
Non-casualty	1	100.0%

Self Reported Crash	0	0%

Time Group			% of Day
00:01 - 02:59	1	**********	12.5%
03:00 - 04:59	0	0.0%	8.3%
05:00 - 05:59	0	0.0%	4.2%
06:00 - 06:59	0	0.0%	4.2%
07:00 - 07:59	0	0.0%	4.2%
08:00 - 08:59	0	0.0%	4.2%
09:00 - 09:59	0	0.0%	4.2%
10:00 - 10:59	0	0.0%	4.2%
11:00 - 11:59	0	0.0%	4.2%
12:00 - 12:59	0	0.0%	4.2%
13:00 - 13:59	0	0.0%	4.2%
14:00 - 14:59	0	0.0%	4.2%
15:00 - 15:59	0	0.0%	4.2%
16:00 - 16:59	0	0.0%	4.2%
17:00 - 17:59	0	0.0%	4.2%
18:00 - 18:59	0	0.0%	4.2%
19:00 - 19:59	0	0.0%	4.2%
20:00 - 21:59	0	0.0%	8.3%
22:00 - 24:00	0	0.0%	8.3%

Street Lighting Off/Nil		% of Dark
0	of 1	in Dark 0.0%

CASUALTIES	0	
Killed	0	0.0%
Seriously inj.	0	0.0%
Moderately inj.	0	0.0%
Minor/Other inj.	0	0.0%
Uncategorised inj.	0	0.0%
^ Unrestrained	0	0.0%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Crashes	Casualties
1	0

2017	

McLean Periods			% Week
A	0	0.0%	17.9%
B	0	0.0%	7.1%
C	0	0.0%	17.9%
D	0	0.0%	3.5%
E	0	0.0%	3.6%
F	0	0.0%	10.7%
G	0	0.0%	7.1%
H	0	0.0%	7.1%
I	0	0.0%	12.5%
J	1	100.0%	10.7%

#Holiday Periods																		
New Year	0	0.0%	Easter	0	0.0%	Queen's BD	0	0.0%	Christmas	0	0.0%	Easter SH	0	0.0%	Sept./Oct. SH	0	0.0%	
Aust. Day	0	0.0%	Anzac Day	0	0.0%	Labour Day	0	0.0%	January SH	0	0.0%	June/July SH	0	0.0%	December SH	0	0.0%	

Crashid dataset 9172 - Georges Avenue, between Joseph Street and East Street Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Note: Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data. Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Detailed Crash Report

NOTES: 9172 - East Street and Weerona Road south of Georges Avenue Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors	S	F
Sydney Region																											
Cumberland LGA																											
Lidcombe																											
East St																											
1000363	P	17/11/2013	Sun	22:00		at	GEORGES AVE	TJN	STR	Raining	Wet	60	2	CAR	F42	W in GEORGES AVE	50	Proceeding in lane	NC	0	0	0	0	0			
E53534077								RUM	30	Rear end				CAR	M34	W in GEORGES AVE	30	Proceeding in lane									
1130786	S	28/12/2016	Wed	06:50		at	GEORGES AVE	RDB	STR	Fine	Dry	60	1	WAG	M54	S in EAST ST	Unk	Proceeding in lane	MC	0	0	1	0	0			
E63693457								RUM	71	Off rd left => obj				Tree/bush													
1177587	S	31/07/2018	Tue	08:40		at	GEORGES AVE	RDB	STR	Fine	Dry	60	2	4WD	M U	S in EAST ST	Unk	Other forward	NC	0	0	0	0	0			
E71089783								RUM	39	Other same direction				CAR	F31	S in EAST ST	Unk	Proceeding in lane									
1033188	P	17/06/2014	Tue	11:50	1 km	S	GEORGES AVE	2WY	STR	Fine	Dry	60	6	TRK	M40	S in EAST ST	50	Veering left	MC	0	0	1	0	0		F	
E55057126								RUM	71	Off rd left => obj				CAR	F24	S in EAST ST	0	Parked									
														CAR		S in EAST ST	0	Parked									
														CAR		S in EAST ST	0	Parked									
														CAR		S in EAST ST	0	Parked									
														CAR		S in EAST ST	0	Parked									
1039587	P	27/08/2014	Wed	16:30	50 m	S	NORMAN MAY DR	2WY	STR	Overcast	Wet	60	1	CAR	M20	N in EAST ST	15	Turning left	NC	0	0	0	0	0	S		
E55794561								RUM	85	Off rt/lft bnd=>obj				Utility pole													
1089020	P	12/12/2015	Sat	22:40	175 m	S	NORMAN MAY DR	2WY	STR	Fine	Dry	60	1	M/C	M29	S in EAST ST	50	Proceeding in lane	SC	0	1	0	0	0			
E61668987								RUM	71	Off rd left => obj				Traffic island etc													
1155363	P	05/09/2017	Tue	06:50		at	TAFE NSW OT	2WY	STR	Fine	Dry	60	2	LOR	M46	S in EAST ST	30	Proceeding in lane	SC	0	1	0	0	0			
E64983905								RUM	30	Rear end				TRK	M52	S in EAST ST	25	Proceeding in lane									
1042266	P	02/09/2014	Tue	16:40	100 m	N	WEEROONA RD	2WY	STR	Fine	Dry	60	3	PAN	F49	S in EAST ST	55	Proceeding in lane	OC	0	0	0	1	0		F	
E56370874								RUM	71	Off rd left => obj				4WD		S in EAST ST	0	Parked									
														CAR		S in EAST ST	0	Parked									
1138125	S	02/06/2017	Fri	13:45	100 m	N	WEEROONA RD	2WY	STR	Fine	Dry	60	2	CAR	F23	N in EAST ST	Unk	Proceeding in lane	NC	0	0	0	0	0			
E67259986								RUM	30	Rear end				TRK	M51	N in EAST ST	Unk	Proceeding in lane									
1035164	P	04/08/2014	Mon	15:18	150 m	N	WEEROONA RD	2WY	STR	Fine	Dry	60	2	WAG	M38	S in EAST ST	60	Proceeding in lane	NC	0	0	0	0	0			
E54998825								RUM	30	Rear end				CAR	M22	S in EAST ST	0	Stationary									
Weeroona Rd																											
1100538	P	09/04/2016	Sat	19:30	250 m	W	EAST ST	2WY	STR	Fine	Dry	60	1	CAR	M71	W in WEEROONA RD	40	Proceeding in lane	MC	0	0	1	0	0			
E60310715								RUM	71	Off rd left => obj				Utility pole													
Rookwood																											
East St																											

Detailed Crash Report

Crash No.	Data Source	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors
																								S F
1086255	P	22/11/2015	Sun	13:25	at	WEEROONA RD	LJN	CRV	Fine	Dry	60	1	CAR	M32	E in WEEROONA RD	100	Proceeding in lane	MC	0	0	1	0	0	S
E59588503							RUM	85	Off rt/lft bnd=>obj				Fence											

Report Totals: Crashes: 12 Fatal Crashes(FC): 0 Serious Injury Crashes(SC): 2 Moderate Injury Crashes(MC): 4 Minor/Other Injury Crashes(OC): 1 Uncategorised Injury Crashes(UC): 0 Non-Casualty Crashes(NC): 5

Killed(K): 0 Seriously Injured(S): 2 Moderately Injured(M): 4 Minor/Other Injured(O): 1 Uncategorised Injured(U): 0

Crashid dataset 9172 - East Street and Weerona Road south of Georges Avenue Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Note: *Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.*

Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data. Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Summary Crash Report

# Crash Type		
Car Crash	10	83.3%
Light Truck Crash	3	25.0%
Rigid Truck Crash	1	8.3%
Articulated Truck Crash	0	0.0%
'Heavy Truck Crash	*(1)*	*(8.3%)*
Bus Crash	0	0.0%
"Heavy Vehicle Crash	*(1)*	*(8.3%)*
Emergency Vehicle Crash	0	0.0%
Motorcycle Crash	1	8.3%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	0	0.0%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	3	25.0%
Non intersection	9	75.0%

* Up to 10 metres from an intersection

Collision Type		
Single Vehicle	5	41.7%
Multi Vehicle	7	58.3%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	0	0.0%
Other Classified Road	12	100.0%
Unclassified Road	0	0.0%

Contributing Factors		
Speeding	2	16.7%
Fatigue	2	16.7%

Weather		
Fine	10	83.3%
Rain	1	8.3%
Overcast	1	8.3%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	2	16.7%
Dry	10	83.3%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	1	8.3%
Daylight	7	58.3%
Dusk	1	8.3%
Darkness	3	25.0%

Crash Movement		
Intersection, adjacent approaches	0	0.0%
Head-on (not overtaking)	0	0.0%
Opposing vehicles; turning	0	0.0%
U-turn	0	0.0%
Rear-end	4	33.3%
Lane change	0	0.0%
Parallel lanes; turning	0	0.0%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	0	0.0%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	5	41.7%
Out of control on straight	0	0.0%
Off road, on curve	0	0.0%
Off road on curve, hit object	1	8.3%
Out of control on curve	0	0.0%
Other crash type	2	16.7%

Speed Limit				
40 km/h or less	0	0.0%	80 km/h zone	0	0.0%
50 km/h zone	0	0.0%	90 km/h zone	0	0.0%
60 km/h zone	12	100.0%	100 km/h zone	0	0.0%
70 km/h zone	0	0.0%	110 km/h zone	0	0.0%

~ 07:30-09:30 or 14:30-17:00 on school days	~ 40km/h or less	0	0.0%	~ School Travel Time Involvement	4	33.3%

Day of the Week												
Monday	1	8.3%	Wednesday	2	16.7%	Friday	1	8.3%	Sunday	2	16.7%	WEEKEND	4	33.3%
Tuesday	4	33.3%	Thursday	0	0.0%	Saturday	2	16.7%	WEEKDAY	8	66.7%			

CRASHES	12	
Fatal	0	0.0%
Serious inj.	2	16.7%
Moderate inj.	4	33.3%
Minor/Other inj.	1	8.3%
Uncategorised inj.	0	0.0%
Non-casualty	5	41.7%

Self Reported Crash	3	25%

Time Group		% of Day	
00:01 - 02:59	0	0.0%	12.5%
03:00 - 04:59	0	0.0%	8.3%
05:00 - 05:59	0	0.0%	4.2%
06:00 - 06:59	2	16.7%	4.2%
07:00 - 07:59	0	0.0%	4.2%
08:00 - 08:59	1	8.3%	4.2%
09:00 - 09:59	0	0.0%	4.2%
10:00 - 10:59	0	0.0%	4.2%
11:00 - 11:59	1	8.3%	4.2%
12:00 - 12:59	0	0.0%	4.2%
13:00 - 13:59	2	16.7%	4.2%
14:00 - 14:59	0	0.0%	4.2%
15:00 - 15:59	1	8.3%	4.2%
16:00 - 16:59	2	16.7%	4.2%
17:00 - 17:59	0	0.0%	4.2%
18:00 - 18:59	0	0.0%	4.2%
19:00 - 19:59	1	8.3%	4.2%
20:00 - 21:59	0	0.0%	8.3%
22:00 - 24:00	2	16.7%	8.3%

Street Lighting Off/Nil		% of Dark
0	of 3	in Dark 0.0%

CASUALTIES	7	
Killed	0	0.0%
Seriously inj.	2	28.6%
Moderately inj.	4	57.1%
Minor/Other inj.	1	14.3%
Uncategorised inj.	0	0.0%
^ Unrestrained	1	14.3%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Crashes		Casualties
1	2018	0
2	2017	1
2	2016	2
2	2015	2
4	2014	2
1	2013	0

McLean Periods		% Week	
A	3	25.0%	17.9%
B	0	0.0%	7.1%
C	2	16.7%	17.9%
D	0	0.0%	3.5%
E	1	8.3%	3.6%
F	3	25.0%	10.7%
G	0	0.0%	7.1%
H	1	8.3%	7.1%
I	1	8.3%	12.5%
J	1	8.3%	10.7%

#Holiday Periods																	
New Year	0	0.0%	Easter	0	0.0%	Queen's BD	0	0.0%	Christmas	1	8.3%	Easter SH	1	8.3%	Sept./Oct. SH	0	0.0%
Aust. Day	0	0.0%	Anzac Day	0	0.0%	Labour Day	0	0.0%	January SH	0	0.0%	June/July SH	0	0.0%	December SH	1	8.3%

Crashid dataset 9172 - East Street and Weerona Road south of Georges Avenue Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Note: *Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.*
Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data.
Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.
Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Detailed Crash Report

NOTES: 9172 - Internal local roads, including Botanica Drive and Betty Cuthbert Drive Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors	S	F
Sydney Region																											
Cumberland LGA																											
Lidcombe																											
Betty Cuthbert Dr																											
1151670	S	17/08/2017	Thu	11:45		at	BOTANICA DR	XJN	STR	Fine	Dry	50	2	CAR	F23	N in BETTY CUTHBERT DR	Unk	Proceeding in lane	MC	0	0	1	2	0			
E67297385								RUM: 10		Cross traffic				CAR	M65	E in BOTANICA DR	Unk	Proceeding in lane									
1024371	P	02/05/2014	Fri	22:20	20 m	S	WATTLE CRES	2WY	STR	Fine	Dry	50	3	CAR	M30	S in BETTY CUTHBERT DR	10	Proceeding in lane	NC	0	0	0	0	0			
E56417882								RUM: 71		Off rd left => obj				CAR		S in BETTY CUTHBERT DR	0	Parked									
														CAR		N in BETTY CUTHBERT DR	0	Parked									
Botanica Dr																											
1098956	S	12/04/2015	Sun	12:30		at	PEPPER TREE RD	TJN	STR	Fine	Dry	50	2	4WD	F29	N in PEPPER TREE RD	Unk	Turning right	OC	0	0	0	2	0			
E118728102								RUM: 11		Right far				CAR	F32	E in BOTANICA DR	Unk	Proceeding in lane									
Chapel Rd																											
854642	P	11/10/2013	Fri	11:30		at	MAIN AVE	XJN	STR	Overcast	Wet	50	1	CAR	M25	S in CHAPEL RD	50	Turning right	NC	0	0	0	0	0	S		
E54603780								RUM: 83		Off rt/rt bnd=>obj				Tree/bush													
College St																											
1026412	P	09/02/2014	Sun	20:40		at	MAIN AVE	RDB	CRV	Fine	Dry	50	1	M/C	M31	S in COLLEGE ST	50	Turning right	OC	0	0	0	1	0			
E53873612								RUM: 90		Fell in/from vehicle																	
Herdsmans Ave																											
1053804	S	24/12/2014	Wed	21:00		at	NUMBER 31 HN	2WY	CRV	Fine	Dry	50	2	CAR	M17	E in HERDSMANS AVE	Unk	Proceeding in lane	NC	0	0	0	0	0	S		
E56753456								RUM: 87		Off lft/lft bnd=>obj				CAR		HERDSMANS AVE	0	Parked									
Ironbark Cres																											
1041043	P	06/07/2014	Sun	19:40		at	MAGNOLIA AVE	TJN	STR	Fine	Dry	50	3	TRK	M35	N in MAGNOLIA AVE	20	Proceeding in lane	NC	0	0	0	0	0			F
E106902001								RUM: 71		Off rd left => obj				4WD		N in MAGNOLIA AVE	0	Parked									
														CAR		S in MAGNOLIA AVE	0	Parked									

Report Totals: Crashes: 7 Fatal Crashes(FC): 0 Serious Injury Crashes(SC): 0 Moderate Injury Crashes(MC): 1 Minor/Other Injury Crashes(OC): 2 Uncategorised Injury Crashes(UC): 0 Non-Casualty Crashes(NC): 4

Killed(K): 0 Seriously Injured(S): 0 Moderately Injured(M): 1 Minor/Other Injured(O): 5 Uncategorised Injured(U): 0

Crashid dataset 9172 - Internal local roads, including Botanica Drive and Betty Cuthbert Drive Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)
Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data.
Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Summary Crash Report

# Crash Type		
Car Crash	6	85.7%
Light Truck Crash	1	14.3%
Rigid Truck Crash	0	0.0%
Articulated Truck Crash	0	0.0%
'Heavy Truck Crash	*(0)*	*(0.0%)*
Bus Crash	0	0.0%
"Heavy Vehicle Crash	*(0)*	*(0.0%)*
Emergency Vehicle Crash	0	0.0%
Motorcycle Crash	1	14.3%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	0	0.0%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	5	71.4%
Non intersection	2	28.6%

* Up to 10 metres from an intersection

Collision Type		
Single Vehicle	2	28.6%
Multi Vehicle	5	71.4%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	0	0.0%
Other Classified Road	0	0.0%
Unclassified Road	7	100.0%

Contributing Factors		
Speeding	2	28.6%
Fatigue	1	14.3%

Weather		
Fine	6	85.7%
Rain	0	0.0%
Overcast	1	14.3%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	1	14.3%
Dry	6	85.7%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	0	0.0%
Daylight	3	42.9%
Dusk	1	14.3%
Darkness	3	42.9%

Crash Movement		
Intersection, adjacent approaches	2	28.6%
Head-on (not overtaking)	0	0.0%
Opposing vehicles; turning	0	0.0%
U-turn	0	0.0%
Rear-end	0	0.0%
Lane change	0	0.0%
Parallel lanes; turning	0	0.0%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	0	0.0%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	2	28.6%
Out of control on straight	0	0.0%
Off road, on curve	0	0.0%
Off road on curve, hit object	1	14.3%
Out of control on curve	0	0.0%
Other crash type	2	28.6%

Speed Limit				
40 km/h or less	0	0.0%	80 km/h zone	0	0.0%
50 km/h zone	7	100.0%	90 km/h zone	0	0.0%
60 km/h zone	0	0.0%	100 km/h zone	0	0.0%
70 km/h zone	0	0.0%	110 km/h zone	0	0.0%

~ 07:30-09:30 or 14:30-17:00 on school days	~ 40km/h or less	0	0.0%	~ School Travel Time Involvement	0	0.0%

Day of the Week												
Monday	0	0.0%	Wednesday	1	14.3%	Friday	2	28.6%	Sunday	3	42.9%	WEEKEND	3	42.9%
Tuesday	0	0.0%	Thursday	1	14.3%	Saturday	0	0.0%	WEEKDAY	4	57.1%			

CRASHES	7	
Fatal	0	0.0%
Serious inj.	0	0.0%
Moderate inj.	1	14.3%
Minor/Other inj.	2	28.6%
Uncategorised inj.	0	0.0%
Non-casualty	4	57.1%

CASUALTIES	6	
Killed	0	0.0%
Seriously inj.	0	0.0%
Moderately inj.	1	16.7%
Minor/Other inj.	5	83.3%
Uncategorised inj.	0	0.0%
^ Unrestrained	0	0.0%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Self Reported Crash	3	42.86%

Time Group		% of Day	
00:01 - 02:59	0	0.0%	12.5%
03:00 - 04:59	0	0.0%	8.3%
05:00 - 05:59	0	0.0%	4.2%
06:00 - 06:59	0	0.0%	4.2%
07:00 - 07:59	0	0.0%	4.2%
08:00 - 08:59	0	0.0%	4.2%
09:00 - 09:59	0	0.0%	4.2%
10:00 - 10:59	0	0.0%	4.2%
11:00 - 11:59	2	28.6%	4.2%
12:00 - 12:59	1	14.3%	4.2%
13:00 - 13:59	0	0.0%	4.2%
14:00 - 14:59	0	0.0%	4.2%
15:00 - 15:59	0	0.0%	4.2%
16:00 - 16:59	0	0.0%	4.2%
17:00 - 17:59	0	0.0%	4.2%
18:00 - 18:59	0	0.0%	4.2%
19:00 - 19:59	1	14.3%	4.2%
20:00 - 21:59	2	28.6%	8.3%
22:00 - 24:00	1	14.3%	8.3%

Street Lighting Off/Nil		% of Dark
0	of 3	in Dark 0.0%

Crashes		Casualties
1	2017	3
1	2015	2
4	2014	1
1	2013	0

McLean Periods			% Week
A	0	0.0%	17.9%
B	0	0.0%	7.1%
C	2	28.6%	17.9%
D	0	0.0%	3.5%
E	1	14.3%	3.6%
F	0	0.0%	10.7%
G	0	0.0%	7.1%
H	2	28.6%	7.1%
I	1	14.3%	12.5%
J	1	14.3%	10.7%

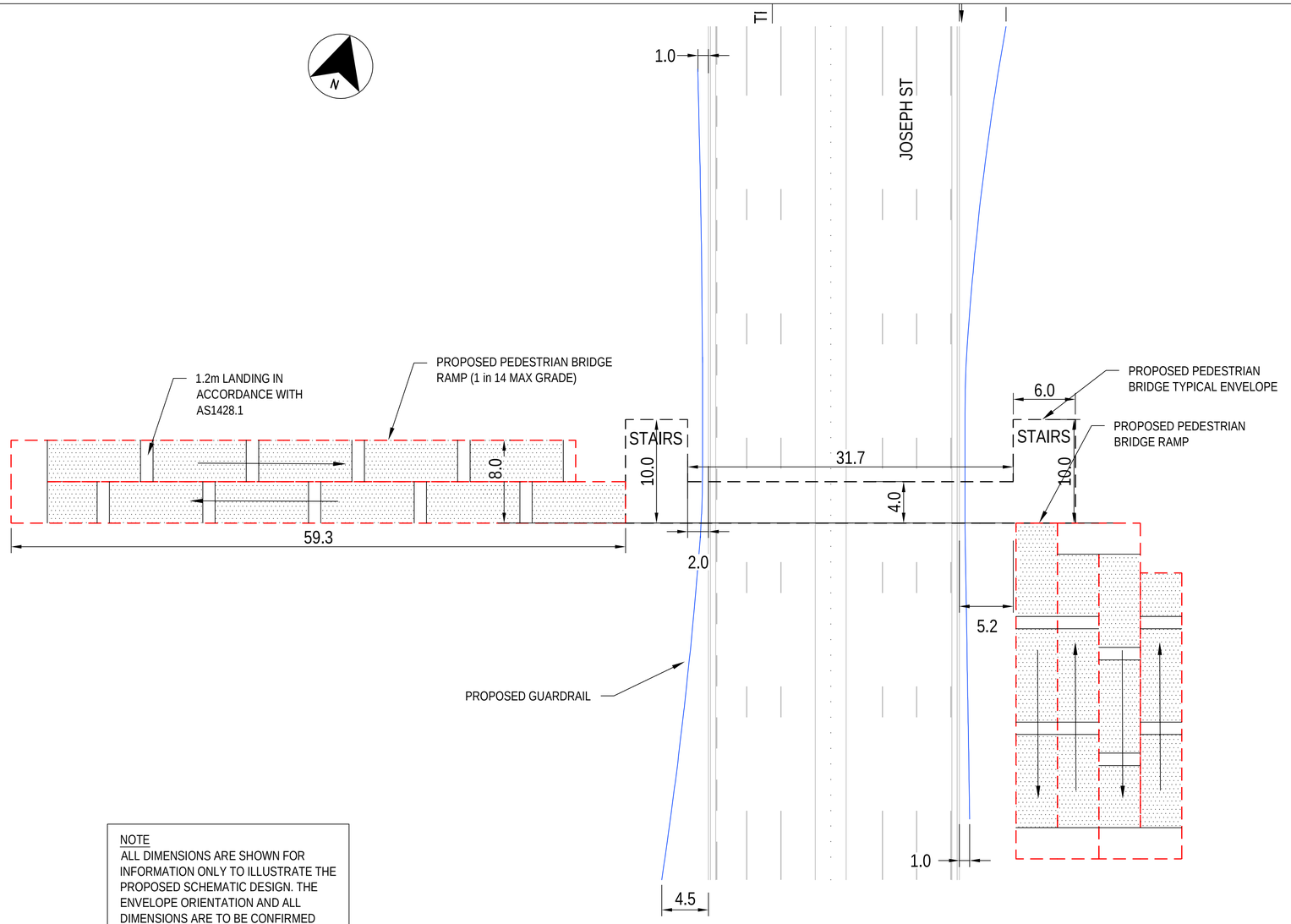
#Holiday Periods														
New Year	0	0.0%	Easter	0	0.0%	Queen's BD	0	0.0%	Christmas	1	14.3%	Easter SH	1	14.3%	Sept./Oct. SH	0	0.0%
Aust. Day	0	0.0%	Anzac Day	0	0.0%	Labour Day	0	0.0%	January SH	0	0.0%	June/July SH	1	14.3%	December SH	1	14.3%

Crashid dataset 9172 - Internal local roads, including Botanica Drive and Betty Cuthbert Drive Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

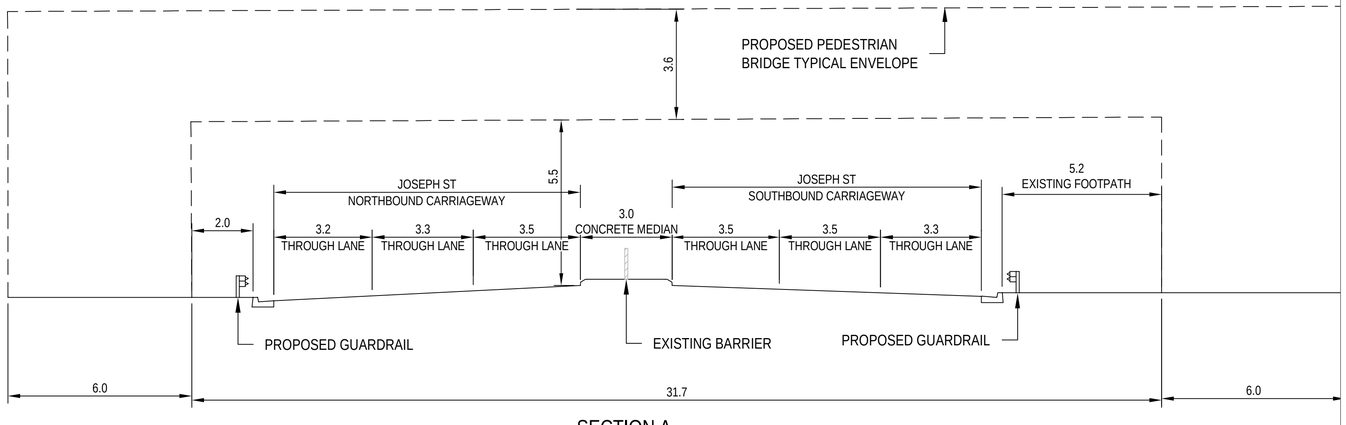
Note: Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data. Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

B. Proposed Pedestrian Bridge Schematic Drawing- Joseph Street, Lidcombe



NOTE
ALL DIMENSIONS ARE SHOWN FOR INFORMATION ONLY TO ILLUSTRATE THE PROPOSED SCHEMATIC DESIGN. THE ENVELOPE ORIENTATION AND ALL DIMENSIONS ARE TO BE CONFIRMED ONCE GEOTECHNICAL CONDITIONS CAN INFORM THE STRUCTURAL DESIGN.



SECTION A
PROPOSED PEDESTRIAN BRIDGE AT JOSEPH STREET, LIDCOMBE
SCALE 1 : 200

Notes

LEGEND
- EXISTING KERB
- GUARDRAIL
- PROPOSED PEDESTRIAN BRIDGE
- PROPOSED PEDESTRIAN BRIDGE RAMP

PRELIMINARY

NOT FOR CONSTRUCTION

Rev	Date	Drawn	Description	Ch'k'd	App'd
P2	12/02/21	JW	ISSUED FOR INFORMATION	VS	N/A

Status Stamp

MOTT MACDONALD
Level 10
383 Kent Street
Sydney NSW 2000
PO Box Q1678, QVB Sydney, NSW 1230
Australia
T +61 (0)2 9098 6800
F +61 (0)2 9098 6810
W https://www.mottmac.com/

Client
NSW GOVERNMENT Transport Roads & Maritime Services

Title
JOSEPH ST, LIDCOMBE
PROPOSED PEDESTRIAN BRIDGE
TYPICAL ENVELOPE SCHEMATIC
(RAMP OPTION)
Sheet 1 of 1

Designed	J.WUKOWIC		Eng check	V.SOFREVSKI	
Drawn	D.KUMAR		Coordination		
Dwg check			Approved		

MMD Project Number	Scale at A3	Security
405675	1:500	STD

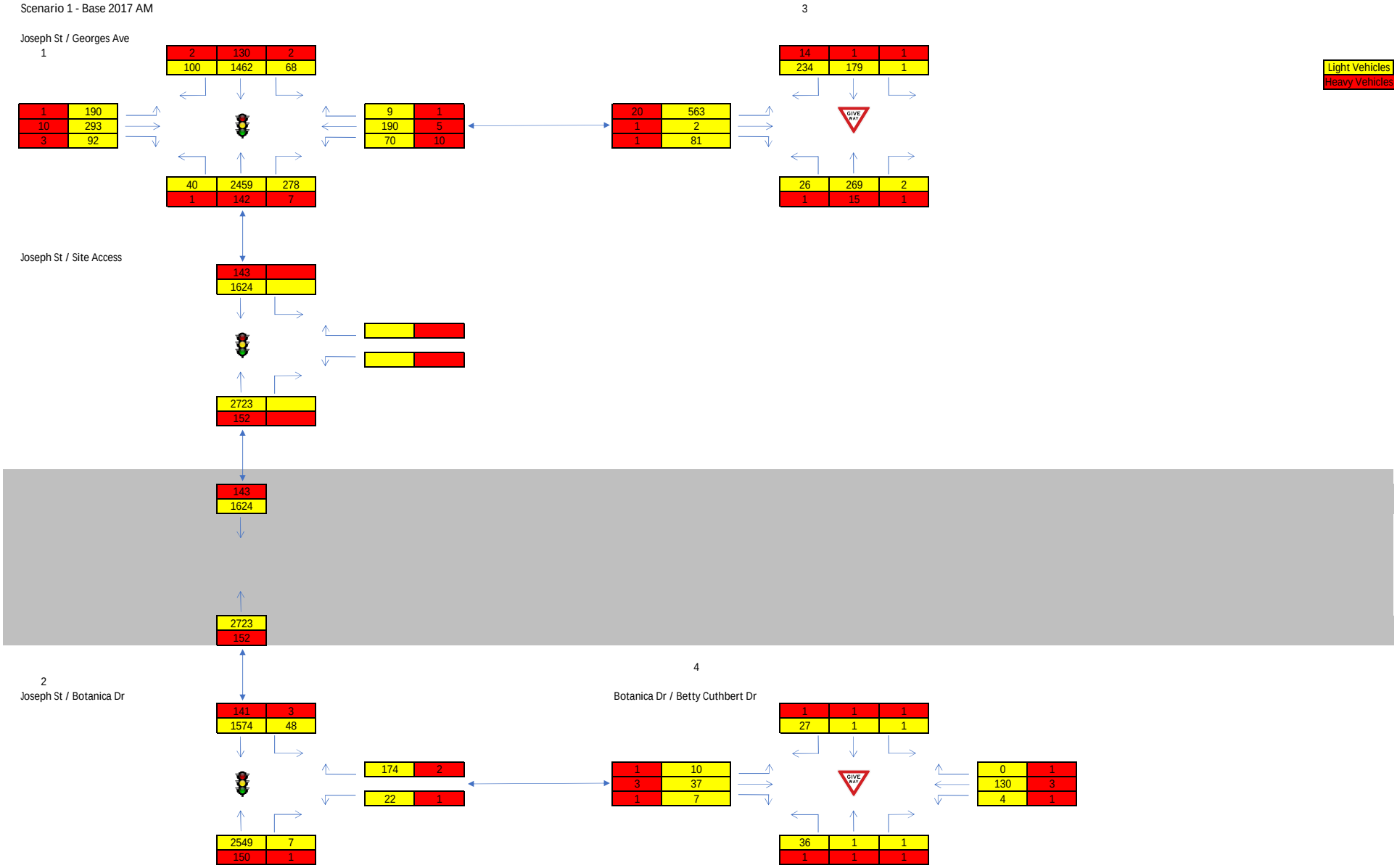
Suitability Description	Suit. Code
For Information	S0

Drawing Number	Revision
405675-00-00-SK-RD-0001	P2

C. Traffic Volume Maps

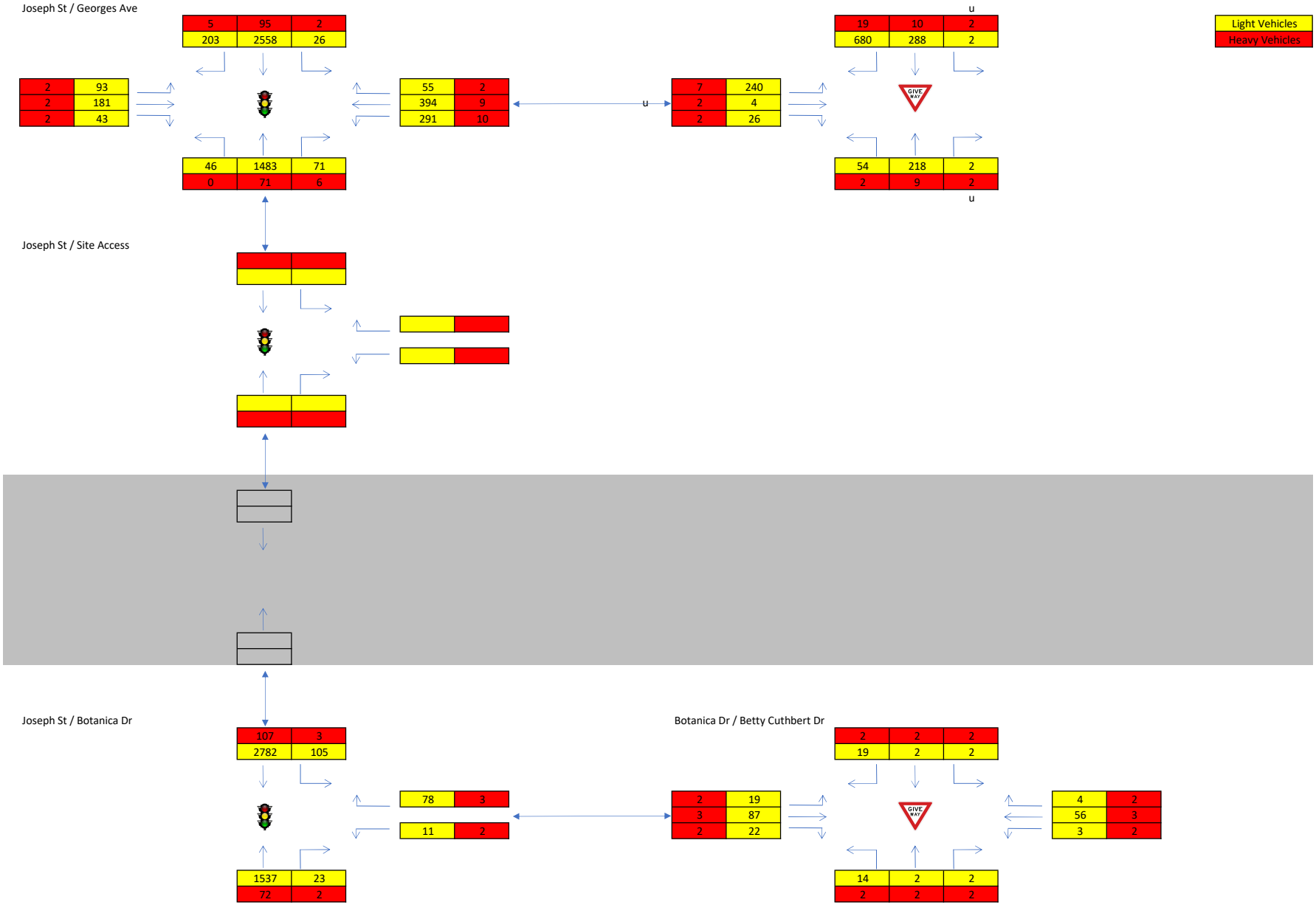
Traffic Volumes

Scenario 1 - Base 2017 AM



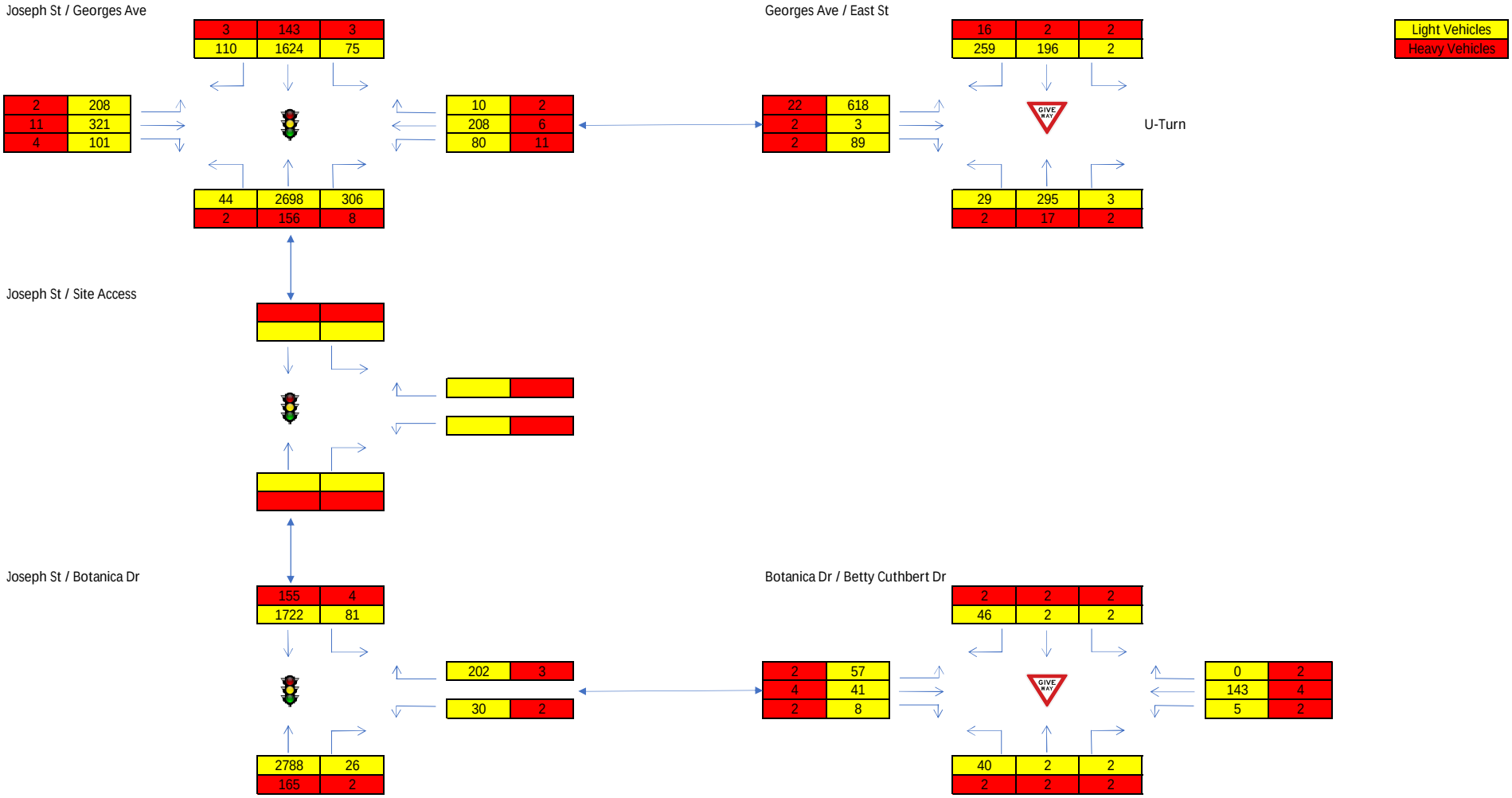
Traffic Volumes

Scenario 1 - Existing 2019 PM



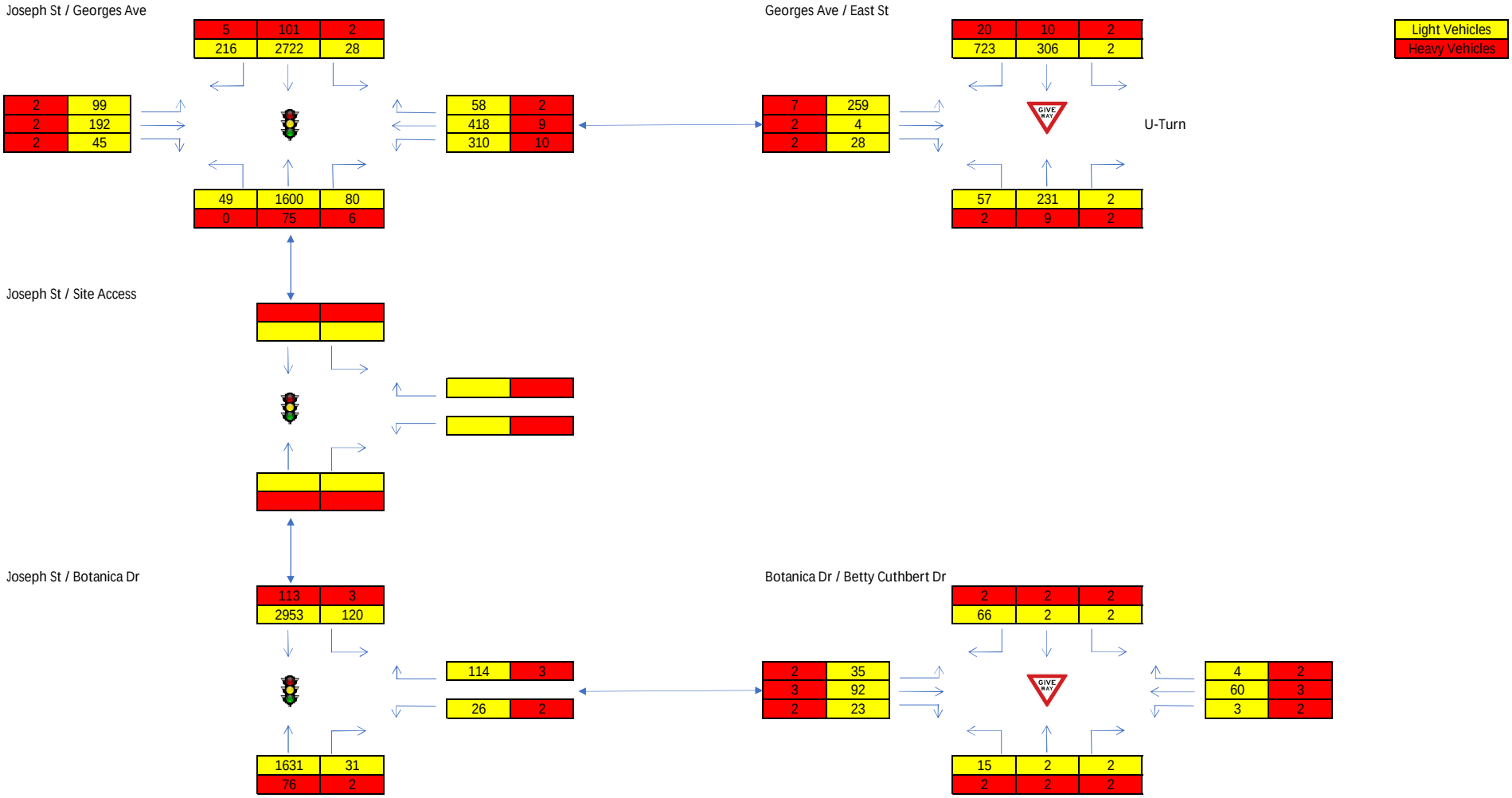
Traffic Volumes

Scenario 2 - 2023 AM with MSL and Residential impact



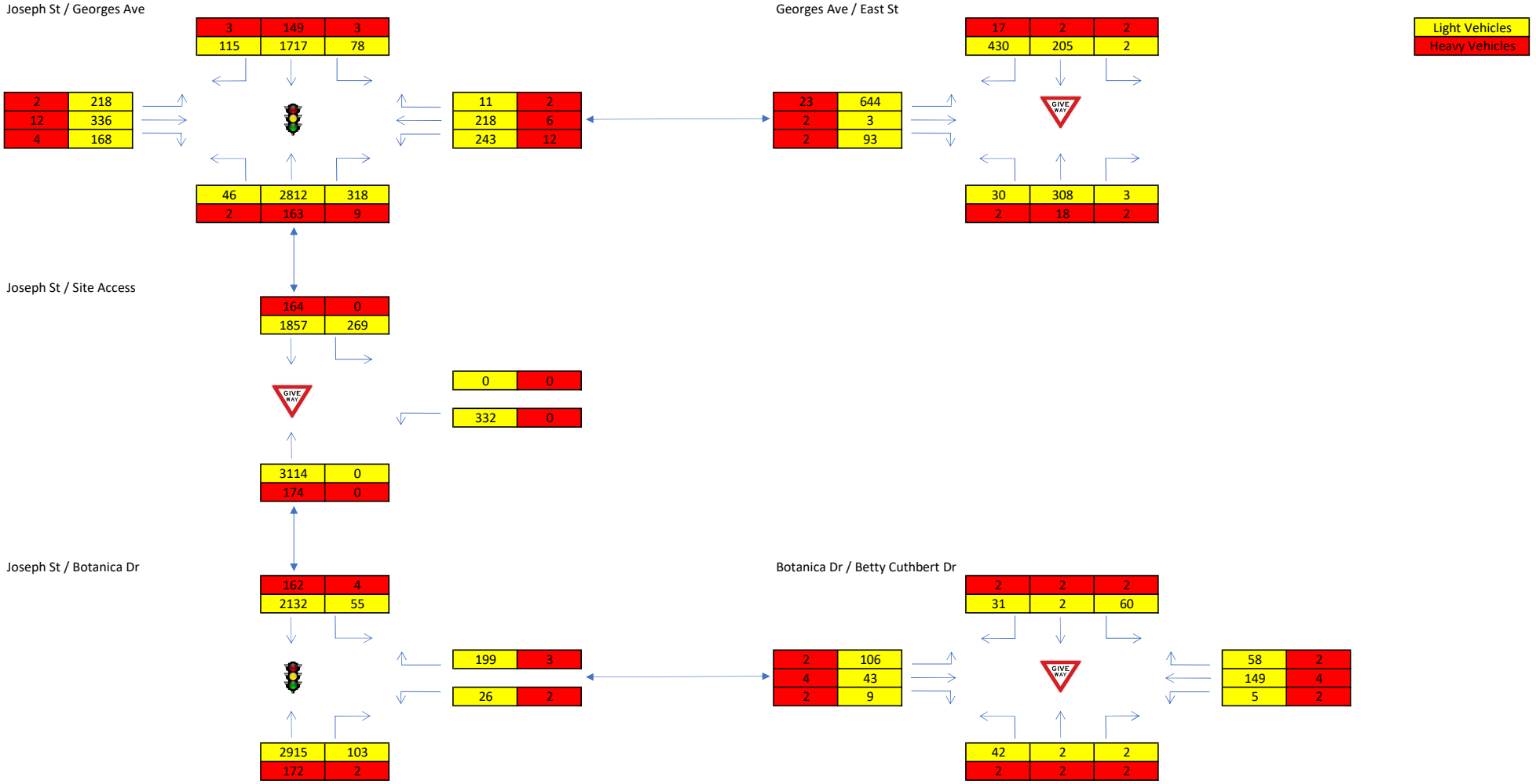
Traffic Volumes

Scenario 2 - 2023 PM with MSL and Residential impact

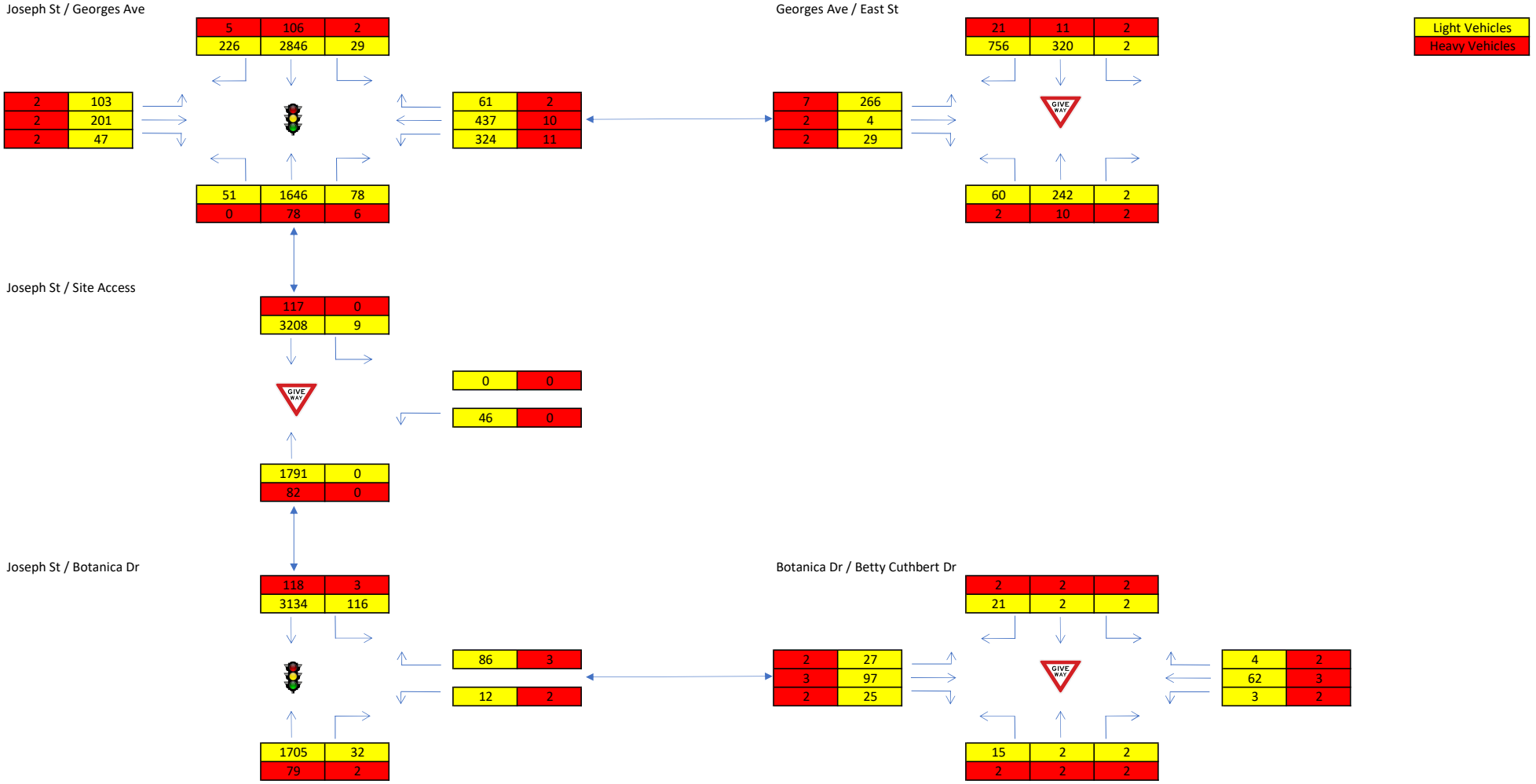


Traffic Volumes

Scenario 3.2 - 2026 AM

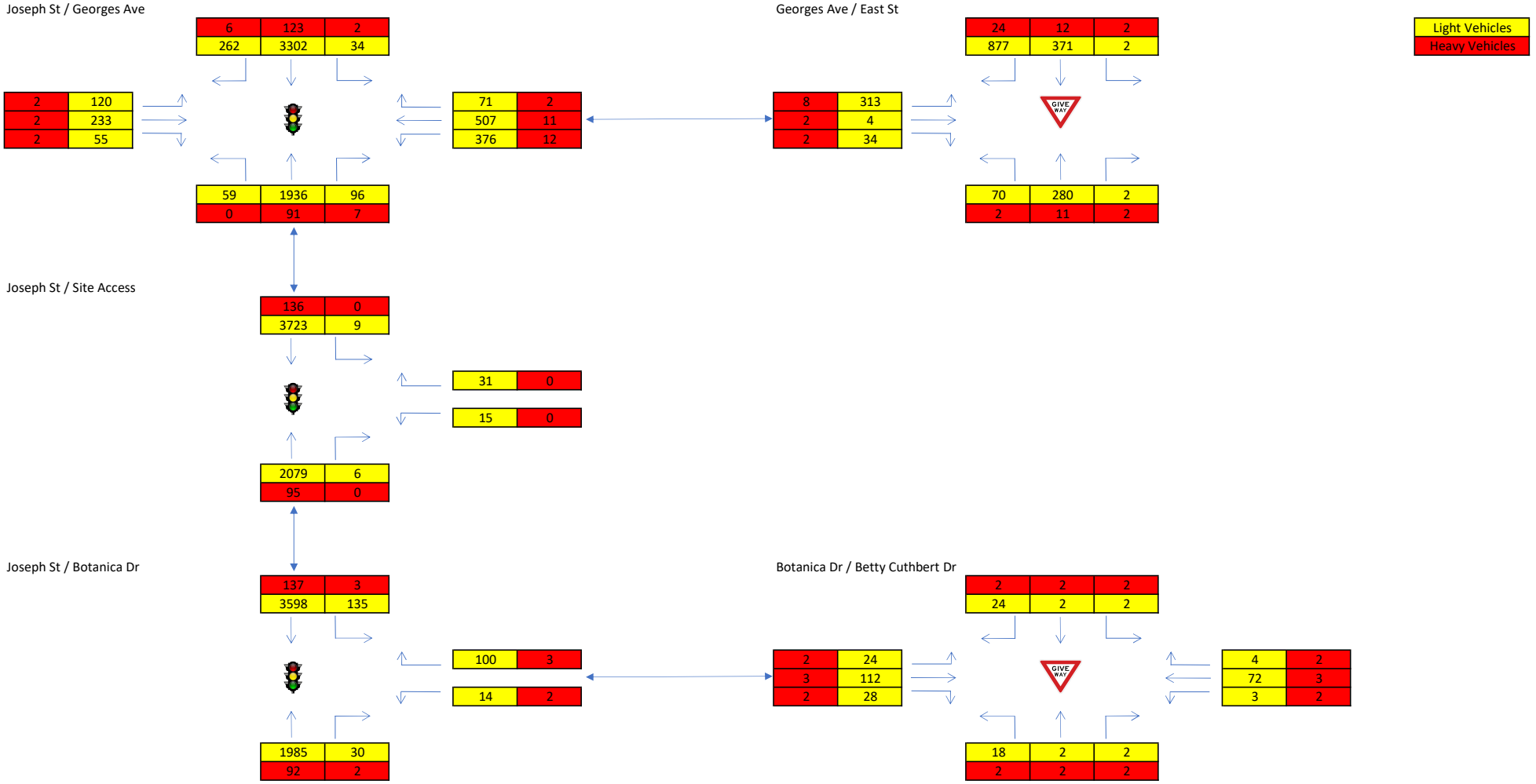


Traffic Volumes
Scenario 3.2 - 2026 PM



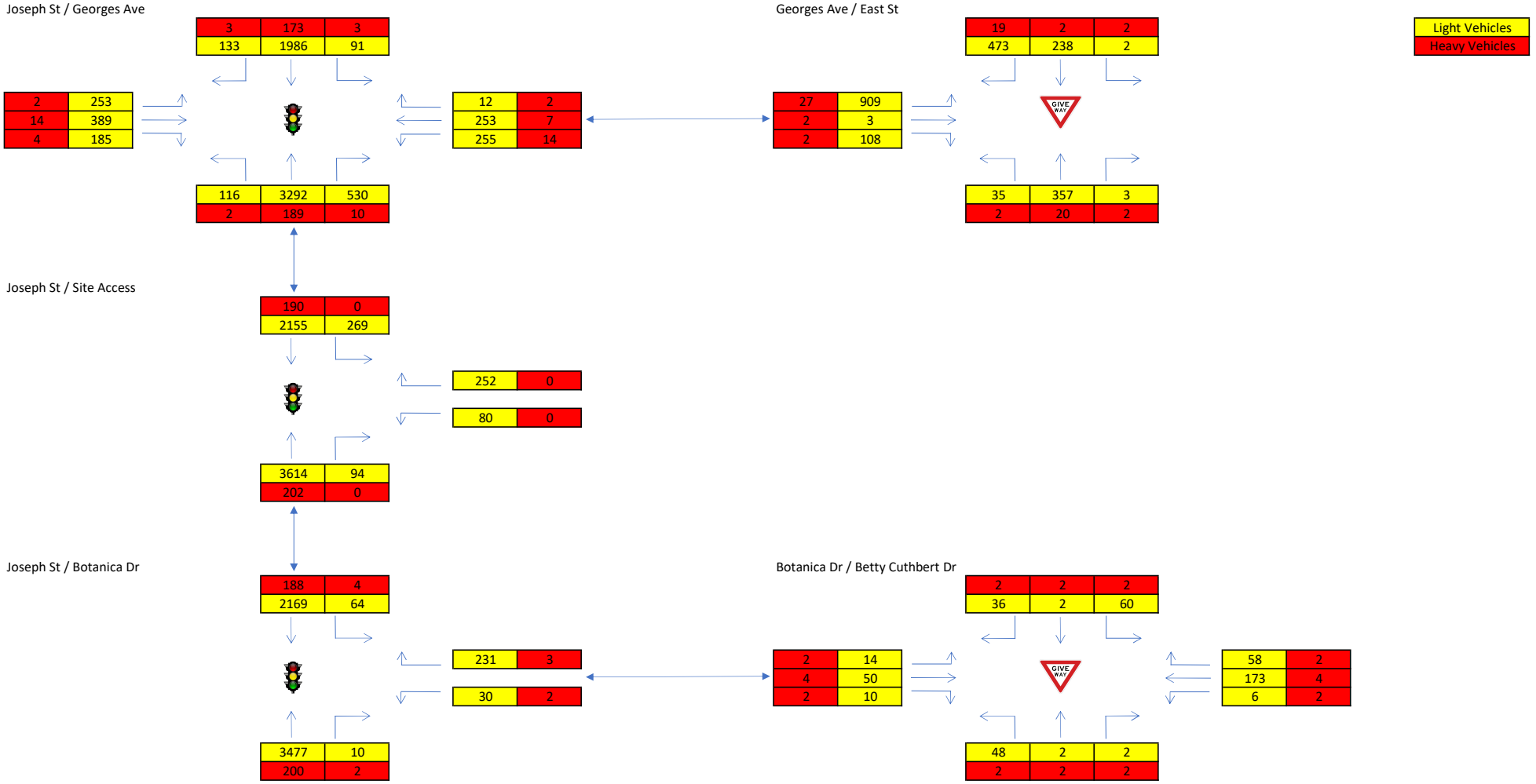
Traffic Volumes

Scenario 4.2 - 2036 PM



Traffic Volumes

Scenario 4.2 - 2036 AM



D. SIDRA Modelling Outputs

MOTT MACDONALD

80 Betty Cuthbert Drive, Lidcombe Master Plan

Traffic and Transport Assessment Report (Appendix D: SIDRA OUTPUTS)

11/03/2022

Confidential

Contents

1 Joseph St / Georges Ave **Error! Bookmark not defined.**

1.1 AM – Existing 1
1.2 PM – Existing 4
1.3 AM – Scenario 2 7
1.4 PM – Scenario 2 10
1.5 AM – Scenario 3 13
1.6 PM – Scenario 3 16
1.7 AM – Scenario 3 with improvements 20
1.8 PM – Scenario 3 with improvements 23

2 Joseph Street / Botanica Drive **Error! Bookmark not defined.**

2.1 AM – Existing **Error! Bookmark not defined.**
2.2 PM – Existing **Error! Bookmark not defined.**
2.3 AM – Scenario 2 **Error! Bookmark not defined.**
2.4 PM - Scenario 2 **Error! Bookmark not defined.**
2.5 AM – Scenario 3 **Error! Bookmark not defined.**
2.6 PM - Scenario 3 **Error! Bookmark not defined.**
2.7 AM - Scenario 3 with Improvements **Error! Bookmark not defined.**
2.8 PM - Scenario 3 with Improvements **Error! Bookmark not defined.**

3 Georges Avenue / East Street **Error! Bookmark not defined.**

3.1 AM – Existing **Error! Bookmark not defined.**
3.2 PM – Existing **Error! Bookmark not defined.**
3.3 AM – Scenario 2 **Error! Bookmark not defined.**
3.4 PM - Scenario 2 **Error! Bookmark not defined.**
3.5 AM – Scenario 3 **Error! Bookmark not defined.**
3.6 PM - Scenario 3 **Error! Bookmark not defined.**

4 Botanica Drive / Betty Cuthbert Drive **Error! Bookmark not defined.**

4.1 AM – Existing **Error! Bookmark not defined.**
4.2 PM – Existing **Error! Bookmark not defined.**
4.3 AM – Scenario 2 **Error! Bookmark not defined.**
4.4 PM - Scenario 2 **Error! Bookmark not defined.**
4.5 AM – Scenario 3 **Error! Bookmark not defined.**
4.6 PM - Scenario 3 **Error! Bookmark not defined.**

5 Joseph Street / Site Access **Error! Bookmark not defined.**

5.1 AM – Scenario 3 **Error! Bookmark not defined.**
5.2 PM - Scenario 3 **Error! Bookmark not defined.**

5.3 AM - Scenario 3 with Improvements **Error! Bookmark not defined.**
5.4 PM - Scenario 3 with Improvements **Error! Bookmark not defined.**

1 SIDRA Outputs

1.1 AM – Existing

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 1 (Site Folder: General)] **Network: 1 [Scenario 1 - AM - Existing (Network Folder: General)]**

Joseph Street / Georges Avenue
Scenario 1 - Existing
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	41	2.4	41	2.4	1.004	96.4	LOS F	103.3	756.3	1.00	1.29	1.46	26.0
2	T1	2601	5.5	2601	5.5	* 1.004	94.2	LOS F	105.6	774.1	0.97	1.27	1.44	27.2
3	R2	285	2.5	285	2.5	0.872	48.4	LOS D	12.8	91.6	1.00	0.90	1.18	29.0
Approach		2927	5.1	2927	5.1	1.004	89.8	LOS F	105.6	774.1	0.98	1.24	1.42	27.3
East: Georges Ave E														
4	L2	80	12.5	80	12.5	0.222	39.5	LOS C	6.8	50.8	0.73	0.69	0.73	22.1
5	T1	195	2.6	195	2.6	0.355	47.7	LOS D	9.2	66.1	0.85	0.72	0.85	28.8
6	R2	10	10.0	10	10.0	0.355	57.3	LOS E	9.2	66.1	0.89	0.74	0.89	29.0
Approach		285	5.6	285	5.6	0.355	45.7	LOS D	9.2	66.1	0.81	0.71	0.81	27.5
North: Joseph St N														
7	L2	69	1.4	69	1.4	0.908	73.0	LOS F	45.7	340.0	1.00	1.04	1.19	19.8
8	T1	1592	8.2	1592	8.2	0.908	65.6	LOS E	47.3	354.6	0.99	1.04	1.19	20.1
9	R2	102	2.0	102	2.0	* 0.933	102.8	LOS F	8.9	63.1	1.00	1.02	1.65	22.1
Approach		1763	7.5	1763	7.5	0.933	68.0	LOS E	47.3	354.6	0.99	1.04	1.21	20.3
West: Georges Ave W														
10	L2	191	0.5	191	0.5	0.343	40.2	LOS C	11.3	79.5	0.76	0.75	0.76	34.8
11	T1	303	3.3	303	3.3	* 1.000	129.7	LOS F	43.9	315.6	0.98	1.36	1.67	11.2
12	R2	95	3.2	95	3.2	1.000	143.7	LOS F	43.9	315.6	1.00	1.42	1.76	10.6
Approach		589	2.4	589	2.4	1.000	103.0	LOS F	43.9	315.6	0.91	1.17	1.39	16.4
All Vehicles		5564	5.6	5564	5.6	1.004	82.0	LOS F	105.6	774.1	0.97	1.14	1.32	24.3

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 1 (Site Folder: General)] Network: 1 [Scenario 1 - AM - Existing (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 1 - Existing
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2699	5.6	2699	5.6	* 0.746	11.4	LOS A	42.1	308.5	0.62	0.58	0.62	59.5
3	R2	8	12.5	8	12.5	0.119	86.5	LOS F	0.6	4.6	0.99	0.67	0.99	22.2
Approach		2707	5.6	2707	5.6	0.746	11.6	LOS A	42.1	308.5	0.62	0.58	0.62	59.2
East: Botanica Drive														
4	L2	23	4.3	23	4.3	0.068	53.6	LOS D	1.4	9.9	0.85	0.68	0.85	30.1
6	R2	176	1.1	176	1.1	0.607	67.1	LOS E	12.1	85.3	0.98	0.82	0.98	5.1
Approach		199	1.5	199	1.5	0.607	65.6	LOS E	12.1	85.3	0.96	0.80	0.96	8.8
North: Joseph Street North														
7	L2	51	5.9	51	5.9	* 0.485	25.1	LOS B	24.6	184.0	0.66	0.63	0.66	49.2
8	T1	1715	8.2	1715	8.2	0.485	15.7	LOS B	25.5	191.0	0.63	0.58	0.63	63.7
Approach		1766	8.2	1766	8.2	0.485	16.0	LOS B	25.5	191.0	0.63	0.58	0.63	63.5
All Vehicles		4672	6.4	4672	6.4	0.746	15.6	LOS B	42.1	308.5	0.64	0.59	0.64	58.5

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 1 (Site Folder: General)] Network: 1 [Scenario 1 - AM - Existing (Network Folder: General)]

Georges Avenue / East Street
Scenario 1 - Existing
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	27	3.7	27	3.7	0.312	5.6	LOS A	1.7	12.3	0.46	0.58	0.46	43.1
2	T1	284	5.3	284	5.3	0.312	5.3	LOS A	1.7	12.3	0.46	0.58	0.46	46.2
3u	U	3	33.3	3	33.3	0.312	10.3	LOS A	1.7	12.3	0.46	0.58	0.46	45.9

Approach		314	5.4	314	5.4	0.312	5.4	LOS A	1.7	12.3	0.46	0.58	0.46	46.0
North: East St N														
8	T1	180	0.6	180	0.6	0.334	4.1	LOS A	1.9	13.6	0.25	0.56	0.25	46.0
9	R2	248	5.6	248	5.6	0.334	7.1	LOS A	1.9	13.6	0.25	0.56	0.25	42.8
9u	U	2	50.0	2	50.0	0.334	9.0	LOS A	1.9	13.6	0.25	0.56	0.25	45.4
Approach		430	3.7	430	3.7	0.334	5.8	LOS A	1.9	13.6	0.25	0.56	0.25	44.6
West: Georges Ave														
10	L2	583	3.4	583	3.4	0.665	7.6	LOS A	5.9	42.2	0.54	0.72	0.61	43.8
12	R2	82	1.2	82	1.2	0.665	10.2	LOS A	5.9	42.2	0.54	0.72	0.61	44.3
12u	U	3	33.3	3	33.3	0.665	12.7	LOS A	5.9	42.2	0.54	0.72	0.61	39.2
Approach		668	3.3	668	3.3	0.665	8.0	LOS A	5.9	42.2	0.54	0.72	0.61	43.8
All Vehicles		1412	3.9	1412	3.9	0.665	6.7	LOS A	5.9	42.2	0.44	0.64	0.47	44.6

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 1 (Site Folder: General)]

Network: 1 [Scenario 1 - AM - Existing (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 1 - Existing
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Betty Cuthbert Dr S														
1	L2	37	2.7	37	2.7	0.026	5.0	LOS A	0.1	0.7	0.22	0.50	0.22	43.6
2	T1	2	50.0	2	50.0	0.003	4.0	LOS A	0.0	0.1	0.21	0.49	0.21	46.1
3	R2	2	50.0	2	50.0	0.003	5.5	LOS A	0.0	0.1	0.21	0.49	0.21	45.3
Approach		41	7.3	41	7.3	0.026	5.0	LOS A	0.1	0.7	0.22	0.50	0.22	43.9
East: Botanica Dr W														
4	L2	5	20.0	5	20.0	0.071	4.8	LOS A	0.0	0.1	0.00	0.02	0.00	49.1
5	T1	133	2.3	133	2.3	0.071	0.0	LOS A	0.0	0.1	0.00	0.02	0.00	49.7
6	R2	1	100.0	1	100.0	0.071	5.8	LOS A	0.0	0.1	0.00	0.02	0.00	47.0
Approach		139	3.6	139	3.6	0.071	0.2	NA	0.0	0.1	0.00	0.02	0.00	49.6
North: Betty Cuthbert Dr N														
7	L2	2	50.0	2	50.0	0.023	5.2	LOS A	0.1	0.5	0.17	0.54	0.17	45.6
8	T1	2	50.0	2	50.0	0.023	4.1	LOS A	0.1	0.5	0.17	0.54	0.17	45.8
9	R2	28	3.6	28	3.6	0.023	5.0	LOS A	0.1	0.5	0.17	0.54	0.17	43.9
Approach		32	9.4	32	9.4	0.023	4.9	LOS A	0.1	0.5	0.17	0.54	0.17	44.3
West: Botanica Dr W														
10	L2	11	9.1	11	9.1	0.033	4.8	LOS A	0.0	0.4	0.07	0.17	0.07	47.1
11	T1	40	7.5	40	7.5	0.033	0.1	LOS A	0.0	0.4	0.07	0.17	0.07	48.1
12	R2	8	12.5	8	12.5	0.033	5.0	LOS A	0.0	0.4	0.07	0.17	0.07	46.8
Approach		59	8.5	59	8.5	0.033	1.6	NA	0.0	0.4	0.07	0.17	0.07	47.7

All Vehicles	271	5.9	271	5.9	0.071	1.8	NA	0.1	0.7	0.07	0.19	0.07	47.5

1.2 PM – Existing

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 1 (Site Folder: General)]

Network: 2 [Scenario 1 - PM - Existing (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 1 - Existing
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	44	0.0	44	0.0	0.736	62.6	LOS E	35.9	260.0	1.00	0.89	1.00	32.9
2	T1	1507	4.5	1507	4.5	0.736	51.2	LOS D	36.5	265.7	0.99	0.88	0.99	37.7
3	R2	73	6.8	73	6.8	* 0.888	96.9	LOS F	6.1	45.0	1.00	0.95	1.54	18.3
Approach		1624	4.5	1624	4.5	0.888	53.6	LOS D	36.5	265.7	0.99	0.89	1.02	36.5
East: Georges Ave E														
4	L2	291	3.1	291	3.1	0.564	46.4	LOS D	20.4	146.2	0.86	0.81	0.86	19.6
5	T1	390	2.1	390	2.1	* 0.902	66.4	LOS E	30.9	219.9	0.95	1.01	1.18	24.7
6	R2	54	1.9	54	1.9	0.902	74.9	LOS F	30.9	219.9	0.97	1.04	1.23	25.5
Approach		735	2.4	735	2.4	0.902	59.1	LOS E	30.9	219.9	0.92	0.93	1.06	23.4
North: Joseph St N														
7	L2	26	3.8	26	3.8	0.910	51.4	LOS D	67.4	486.0	0.99	0.99	1.08	25.9
8	T1	2574	3.6	2574	3.6	* 0.910	44.6	LOS D	68.5	494.5	0.95	0.96	1.05	26.1
9	R2	201	2.0	201	2.0	0.720	42.2	LOS C	8.3	58.9	1.00	0.83	1.05	34.8
Approach		2801	3.5	2801	3.5	0.910	44.5	LOS D	68.5	494.5	0.95	0.95	1.05	27.0
West: Georges Ave W														
10	L2	91	1.1	91	1.1	0.230	40.8	LOS C	7.3	51.7	0.75	0.70	0.75	34.9
11	T1	176	0.6	176	0.6	0.672	56.4	LOS D	11.6	82.1	0.92	0.80	0.93	19.7
12	R2	42	2.4	42	2.4	0.672	69.5	LOS E	11.6	82.1	0.99	0.84	1.01	18.2
Approach		309	1.0	309	1.0	0.672	53.6	LOS D	11.6	82.1	0.88	0.77	0.89	24.2
All Vehicles		5469	3.5	5469	3.5	0.910	49.7	LOS D	68.5	494.5	0.95	0.92	1.03	29.7

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 1 (Site Folder: General)] Network: 2 [Scenario 1 - PM - Existing (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 1 - Existing
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	1560	4.4	1560	4.4	0.371	7.0	LOS A	13.1	94.9	0.38	0.34	0.38	66.1
3	R2	23	4.3	23	4.3	* 0.324	87.7	LOS F	1.8	12.7	1.00	0.71	1.00	22.0
Approach		1583	4.4	1583	4.4	0.371	8.1	LOS A	13.1	94.9	0.39	0.35	0.39	64.2
East: Botanica Drive														
4	L2	11	9.1	11	9.1	0.034	53.0	LOS D	0.6	4.8	0.84	0.66	0.84	29.8
6	R2	77	2.6	77	2.6	0.244	62.4	LOS E	4.9	34.9	0.90	0.76	0.90	5.5
Approach		88	3.4	88	3.4	0.244	61.2	LOS E	4.9	34.9	0.90	0.75	0.90	9.6
North: Joseph Street North														
7	L2	103	1.9	103	1.9	* 0.776	14.6	LOS B	23.7	171.1	0.39	0.42	0.39	62.5
8	T1	2803	3.7	2803	3.7	0.776	6.5	LOS A	26.6	191.9	0.36	0.35	0.36	72.2
Approach		2906	3.6	2906	3.6	0.776	6.8	LOS A	26.6	191.9	0.36	0.35	0.36	72.0
All Vehicles		4577	3.9	4577	3.9	0.776	8.3	LOS A	26.6	191.9	0.38	0.36	0.38	68.6

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 1 (Site Folder: General)] Network: 2 [Scenario 1 - PM - Existing (Network Folder: General)]

Georges Avenue / East Street
Scenario 1 - Existing
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	53	1.9	53	1.9	0.370	8.7	LOS A	2.2	15.6	0.72	0.81	0.72	40.7
2	T1	219	3.7	219	3.7	0.370	8.5	LOS A	2.2	15.6	0.72	0.81	0.72	44.7
3u	U	2	50.0	2	50.0	0.370	14.9	LOS B	2.2	15.6	0.72	0.81	0.72	44.2

Approach		274	3.6	274	3.6	0.370	8.6	LOS A	2.2	15.6	0.72	0.81	0.72	44.3
North: East St N														
8	T1	297	6.1	297	6.1	0.642	4.0	LOS A	5.9	42.5	0.21	0.55	0.21	45.8
9	R2	669	1.3	669	1.3	0.642	6.9	LOS A	5.9	42.5	0.21	0.55	0.21	42.6
9u	U	2	50.0	2	50.0	0.642	8.8	LOS A	5.9	42.5	0.21	0.55	0.21	45.3
Approach		968	2.9	968	2.9	0.642	6.0	LOS A	5.9	42.5	0.21	0.55	0.21	44.0
West: Georges Ave														
10	L2	238	2.5	238	2.5	0.266	5.4	LOS A	1.3	9.7	0.36	0.59	0.36	45.2
12	R2	26	3.8	26	3.8	0.266	8.1	LOS A	1.3	9.7	0.36	0.59	0.36	45.6
12u	U	4	25.0	4	25.0	0.266	9.9	LOS A	1.3	9.7	0.36	0.59	0.36	41.8
Approach		268	3.0	268	3.0	0.266	5.7	LOS A	1.3	9.7	0.36	0.59	0.36	45.2
All Vehicles		1510	3.0	1510	3.0	0.642	6.4	LOS A	5.9	42.5	0.33	0.60	0.33	44.3

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 1 (Site Folder: General)]

Network: 2 [Scenario 1 - PM - Existing (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 1 - Existing
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	14	7.1	14	7.1	0.009	4.8	LOS A	0.0	0.3	0.14	0.49	0.14	43.9
2	T1	2	50.0	2	50.0	0.003	4.0	LOS A	0.0	0.1	0.20	0.49	0.20	46.1
3	R2	2	50.0	2	50.0	0.003	5.4	LOS A	0.0	0.1	0.20	0.49	0.20	45.4
Approach		18	16.7	18	16.7	0.009	4.8	LOS A	0.0	0.3	0.15	0.49	0.15	44.6
East: Botanica Dr W														
4	L2	3	33.3	3	33.3	0.033	5.0	LOS A	0.0	0.3	0.04	0.06	0.04	48.6
5	T1	56	3.6	56	3.6	0.033	0.0	LOS A	0.0	0.3	0.04	0.06	0.04	49.2
6	R2	4	25.0	4	25.0	0.033	5.1	LOS A	0.0	0.3	0.04	0.06	0.04	48.1
Approach		63	6.3	63	6.3	0.033	0.6	NA	0.0	0.3	0.04	0.06	0.04	49.1
North: Betty Cuthbert Dr N														
7	L2	2	50.0	2	50.0	0.017	5.4	LOS A	0.0	0.4	0.18	0.53	0.18	45.5
8	T1	2	50.0	2	50.0	0.017	4.0	LOS A	0.0	0.4	0.18	0.53	0.18	45.8
9	R2	19	5.3	19	5.3	0.017	4.9	LOS A	0.0	0.4	0.18	0.53	0.18	43.8
Approach		23	13.0	23	13.0	0.017	4.9	LOS A	0.0	0.4	0.18	0.53	0.18	44.4
West: Botanica Dr W														
10	L2	19	5.3	19	5.3	0.067	4.7	LOS A	0.1	0.9	0.06	0.17	0.06	47.2
11	T1	86	2.3	86	2.3	0.067	0.0	LOS A	0.1	0.9	0.06	0.17	0.06	48.1
12	R2	22	4.5	22	4.5	0.067	4.7	LOS A	0.1	0.9	0.06	0.17	0.06	47.1
Approach		127	3.1	127	3.1	0.067	1.5	NA	0.1	0.9	0.06	0.17	0.06	47.8

All Vehicles	231	6.1	231	6.1	0.067	1.9	NA	0.1	0.9	0.07	0.20	0.07	47.5

1.3 AM – Scenario 2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 2.3 (Site Folder: General)] **Network: 1 [Scenario 2.3 - AM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]**

Joseph Street / Georges Avenue
Scenario 2 - MSL and Residential
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	46	4.3	46	4.3	0.923	22.0	LOS B	46.7	342.0	0.57	0.61	0.64	48.4
2	T1	2854	5.5	2854	5.5	* 0.923	19.6	LOS B	54.6	400.2	0.57	0.60	0.66	52.7
3	R2	314	2.5	314	2.5	0.854	47.5	LOS D	16.2	115.9	1.00	0.89	1.13	29.3
Approach		3214	5.2	3214	5.2	0.923	22.4	LOS B	54.6	400.2	0.61	0.63	0.70	50.3
East: Georges Ave E														
4	L2	91	12.1	91	12.1	0.562	59.2	LOS E	14.2	104.7	0.94	0.80	0.94	17.2
5	T1	214	2.8	214	2.8	0.562	61.4	LOS E	14.2	104.7	0.96	0.80	0.96	25.7
6	R2	12	16.7	12	16.7	0.562	75.9	LOS F	6.9	50.0	1.00	0.78	1.00	24.5
Approach		317	6.0	317	6.0	0.562	61.3	LOS E	14.2	104.7	0.96	0.80	0.96	23.8
North: Joseph St N														
7	L2	78	3.8	78	3.8	0.811	47.3	LOS D	39.5	294.6	0.95	0.87	0.96	27.4
8	T1	1767	8.1	1767	8.1	0.811	39.4	LOS C	40.7	304.8	0.93	0.85	0.94	28.1
9	R2	113	2.7	113	2.7	* 0.922	98.9	LOS F	9.6	68.5	1.00	1.01	1.59	22.6
Approach		1958	7.6	1958	7.6	0.922	43.1	LOS D	40.7	304.8	0.93	0.86	0.98	27.3
West: Georges Ave W														
10	L2	210	1.0	210	1.0	0.891	78.1	LOS F	28.7	204.6	1.00	1.01	1.24	25.8
11	T1	332	3.3	332	3.3	0.891	76.3	LOS F	28.7	204.6	1.00	1.03	1.26	16.3
12	R2	105	3.8	105	3.8	* 0.891	82.1	LOS F	23.4	169.0	1.00	1.04	1.28	16.1
Approach		647	2.6	647	2.6	0.891	77.8	LOS F	28.7	204.6	1.00	1.03	1.26	19.8
All Vehicles		6136	5.7	6136	5.7	0.923	36.9	LOS C	54.6	400.2	0.77	0.75	0.86	37.4

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 2.3 (Site Folder: General)] Network: 1 [Scenario 2.3 - AM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 2 - MSL and Residential
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2953	5.6	2953	5.6	* 0.803	18.8	LOS B	51.0	374.0	0.78	0.73	0.78	51.0
3	R2	28	7.1	28	7.1	0.397	87.2	LOS F	2.1	15.7	1.00	0.72	1.00	22.1
Approach		2981	5.6	2981	5.6	0.803	19.5	LOS B	51.0	374.0	0.78	0.73	0.78	50.3
East: Botanica Drive														
4	L2	32	6.3	32	6.3	0.067	43.2	LOS D	1.7	12.3	0.77	0.68	0.77	33.4
6	R2	205	1.5	205	1.5	0.434	53.9	LOS D	12.3	87.5	0.89	0.80	0.89	6.2
Approach		237	2.1	237	2.1	0.434	52.5	LOS D	12.3	87.5	0.87	0.79	0.87	11.2
North: Joseph Street North														
7	L2	85	4.7	85	4.7	* 0.620	37.6	LOS C	35.1	261.8	0.86	0.81	0.86	38.9
8	T1	1877	8.3	1877	8.3	0.620	28.8	LOS C	37.5	280.8	0.86	0.79	0.86	54.6
Approach		1962	8.1	1962	8.1	0.620	29.2	LOS C	37.5	280.8	0.86	0.79	0.86	54.1
All Vehicles		5180	6.4	5180	6.4	0.803	24.7	LOS B	51.0	374.0	0.82	0.76	0.82	50.5

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 2.3 (Site Folder: General)] Network: 1 [Scenario 2.3 - AM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Georges Avenue / East Street
Scenario 2 - MSL and Residential
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	31	6.5	31	6.5	0.356	6.0	LOS A	2.0	14.9	0.51	0.61	0.51	42.9
2	T1	312	5.4	312	5.4	0.356	5.6	LOS A	2.0	14.9	0.51	0.61	0.51	46.0
3u	U	5	40.0	5	40.0	0.356	10.9	LOS A	2.0	14.9	0.51	0.61	0.51	45.6
Approach		348	6.0	348	6.0	0.356	5.7	LOS A	2.0	14.9	0.51	0.61	0.51	45.9

North: East St N														
8	T1	198	1.0	198	1.0	0.377	4.2	LOS A	2.2	16.2	0.29	0.56	0.29	45.9
9	R2	275	5.8	275	5.8	0.377	7.2	LOS A	2.2	16.2	0.29	0.56	0.29	42.6
9u	U	4	50.0	4	50.0	0.377	9.2	LOS A	2.2	16.2	0.29	0.56	0.29	45.3
Approach		477	4.2	477	4.2	0.377	5.9	LOS A	2.2	16.2	0.29	0.56	0.29	44.5
West: Georges Ave														
10	L2	640	3.4	640	3.4	0.758	9.5	LOS A	8.5	61.2	0.63	0.80	0.78	42.7
12	R2	91	2.2	91	2.2	0.758	12.1	LOS A	8.5	61.2	0.63	0.80	0.78	43.2
12u	U	5	40.0	5	40.0	0.758	15.1	LOS B	8.5	61.2	0.63	0.80	0.78	37.3
Approach		736	3.5	736	3.5	0.758	9.9	LOS A	8.5	61.2	0.63	0.80	0.78	42.7
All Vehicles		1561	4.3	1561	4.3	0.758	7.7	LOS A	8.5	61.2	0.50	0.69	0.57	43.9

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 2.3 (Site Folder: General)]

Network: 1 [Scenario 2.3 - AM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 2 - MSL and Residential
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	42	4.8	42	4.8	0.031	5.1	LOS A	0.1	0.9	0.24	0.51	0.24	43.5
2	T1	4	50.0	4	50.0	0.007	4.2	LOS A	0.0	0.2	0.24	0.51	0.24	46.0
3	R2	4	50.0	4	50.0	0.007	5.6	LOS A	0.0	0.2	0.24	0.51	0.24	45.3
Approach		50	12.0	50	12.0	0.031	5.0	LOS A	0.1	0.9	0.24	0.51	0.24	44.1
East: Botanica Dr W														
4	L2	7	28.6	7	28.6	0.083	5.0	LOS A	0.0	0.3	0.01	0.03	0.01	48.9
5	T1	147	2.7	147	2.7	0.083	0.0	LOS A	0.0	0.3	0.01	0.03	0.01	49.6
6	R2	2	100.0	2	100.0	0.083	6.1	LOS A	0.0	0.3	0.01	0.03	0.01	47.0
Approach		156	5.1	156	5.1	0.083	0.3	NA	0.0	0.3	0.01	0.03	0.01	49.5
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.043	5.2	LOS A	0.1	1.0	0.18	0.55	0.18	45.5
8	T1	4	50.0	4	50.0	0.043	4.2	LOS A	0.1	1.0	0.18	0.55	0.18	45.8
9	R2	48	4.2	48	4.2	0.043	5.1	LOS A	0.1	1.0	0.18	0.55	0.18	43.8
Approach		56	10.7	56	10.7	0.043	5.0	LOS A	0.1	1.0	0.18	0.55	0.18	44.3
West: Botanica Dr W														
10	L2	59	3.4	59	3.4	0.064	4.7	LOS A	0.1	0.5	0.05	0.31	0.05	46.0
11	T1	45	8.9	45	8.9	0.064	0.1	LOS A	0.1	0.5	0.05	0.31	0.05	46.8
12	R2	10	20.0	10	20.0	0.064	5.2	LOS A	0.1	0.5	0.05	0.31	0.05	45.4
Approach		114	7.0	114	7.0	0.064	2.9	NA	0.1	0.5	0.05	0.31	0.05	46.2

All Vehicles	376	7.4	376	7.4	0.083	2.4		NA	0.1	1.0	0.08	0.26	0.08	46.8

1.4 PM – Scenario 2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 2.3 (Site Folder: General)]

Network: 2 [Scenario 2.3 - PM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 2 - MSL and Residential
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	49	0.0	49	0.0	0.822	61.2	LOS E	40.9	296.1	1.00	0.92	1.02	33.3
2	T1	1675	4.5	1675	4.5	0.822	51.7	LOS D	41.5	302.0	0.99	0.91	1.02	37.5
3	R2	86	7.0	86	7.0	0.904	97.0	LOS F	7.2	53.0	1.00	0.98	1.57	18.3
Approach		1810	4.5	1810	4.5	0.904	54.1	LOS D	41.5	302.0	0.99	0.91	1.05	36.3
East: Georges Ave E														
4	L2	320	3.1	320	3.1	* 0.955	95.8	LOS F	46.7	334.6	1.00	1.13	1.41	11.9
5	T1	427	2.1	427	2.1	0.955	96.3	LOS F	46.7	334.6	1.00	1.19	1.47	20.1
6	R2	60	3.3	60	3.3	0.955	103.5	LOS F	29.6	211.3	1.00	1.24	1.52	20.8
Approach		807	2.6	807	2.6	0.955	96.6	LOS F	46.7	334.6	1.00	1.17	1.45	17.4
North: Joseph St N														
7	L2	30	6.7	30	6.7	0.951	66.3	LOS E	86.2	622.3	1.00	1.09	1.20	21.5
8	T1	2823	3.6	2823	3.6	* 0.951	59.7	LOS E	87.7	632.9	0.96	1.06	1.17	21.5
9	R2	221	2.3	221	2.3	0.642	38.2	LOS C	8.7	62.0	0.97	0.82	0.97	36.1
Approach		3074	3.5	3074	3.5	0.951	58.2	LOS E	87.7	632.9	0.96	1.04	1.15	22.7
West: Georges Ave W														
10	L2	101	2.0	101	2.0	0.578	52.6	LOS D	18.1	128.2	0.91	0.80	0.91	31.7
11	T1	194	1.0	194	1.0	0.578	48.2	LOS D	18.1	128.2	0.91	0.80	0.91	21.6
12	R2	47	4.3	47	4.3	0.891	94.7	LOS F	3.8	27.9	1.00	0.95	1.61	14.2
Approach		342	1.8	342	1.8	0.891	55.9	LOS D	18.1	128.2	0.92	0.82	1.01	23.7
All Vehicles		6033	3.6	6033	3.6	0.955	62.0	LOS E	87.7	632.9	0.97	1.01	1.15	26.2

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 2.3 (Site Folder: General)]

Network: 2 [Scenario 2.3 - PM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 2 - MSL and Residential
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	1707	4.5	1707	4.5	0.407	7.3	LOS A	14.8	107.9	0.40	0.36	0.40	65.5
3	R2	33	6.1	33	6.1	* 0.464	87.5	LOS F	2.5	18.5	1.00	0.72	1.00	22.0
Approach		1740	4.5	1740	4.5	0.464	8.8	LOS A	14.8	107.9	0.41	0.37	0.41	63.1
East: Botanica Drive														
4	L2	28	7.1	28	7.1	0.084	52.9	LOS D	1.6	12.2	0.85	0.69	0.85	30.0
6	R2	117	2.6	117	2.6	0.365	62.8	LOS E	7.5	53.6	0.93	0.78	0.93	5.4
Approach		145	3.4	145	3.4	0.365	60.9	LOS E	7.5	53.6	0.91	0.77	0.91	11.6
North: Joseph Street North														
7	L2	123	2.4	123	2.4	* 0.858	17.5	LOS B	38.1	274.8	0.58	0.59	0.58	58.0
8	T1	3066	3.7	3066	3.7	0.858	8.5	LOS A	38.1	274.8	0.53	0.51	0.53	70.1
Approach		3189	3.6	3189	3.6	0.858	8.9	LOS A	38.1	274.8	0.53	0.51	0.53	69.9
All Vehicles		5074	3.9	5074	3.9	0.858	10.3	LOS A	38.1	274.8	0.50	0.47	0.50	66.2

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 2.3 (Site Folder: General)]

Network: 2 [Scenario 2.3 - PM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Georges Avenue / East Street
Scenario 2 - MSL and Residential
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	59	3.4	59	3.4	0.451	10.9	LOS A	3.1	22.8	0.80	0.93	0.91	38.9
2	T1	240	3.8	240	3.8	0.451	10.6	LOS A	3.1	22.8	0.80	0.93	0.91	43.6
3u	U	4	50.0	4	50.0	0.451	17.3	LOS B	3.1	22.8	0.80	0.93	0.91	43.1
Approach		303	4.3	303	4.3	0.451	10.7	LOS A	3.1	22.8	0.80	0.93	0.91	43.0

North: East St N														
8	T1	316	3.2	316	3.2	0.716	4.1	LOS A	7.8	56.0	0.29	0.54	0.29	45.7
9	R2	743	2.7	743	2.7	0.716	7.0	LOS A	7.8	56.0	0.29	0.54	0.29	42.3
9u	U	4	50.0	4	50.0	0.716	9.0	LOS A	7.8	56.0	0.29	0.54	0.29	45.1
Approach		1063	3.0	1063	3.0	0.716	6.2	LOS A	7.8	56.0	0.29	0.54	0.29	43.8
West: Georges Ave														
10	L2	266	2.6	266	2.6	0.310	5.6	LOS A	1.7	11.9	0.40	0.61	0.40	45.0
12	R2	30	6.7	30	6.7	0.310	8.3	LOS A	1.7	11.9	0.40	0.61	0.40	45.4
12u	U	6	33.3	6	33.3	0.310	10.4	LOS A	1.7	11.9	0.40	0.61	0.40	41.5
Approach		302	3.6	302	3.6	0.310	6.0	LOS A	1.7	11.9	0.40	0.61	0.40	45.0
All Vehicles		1668	3.4	1668	3.4	0.716	7.0	LOS A	7.8	56.0	0.40	0.62	0.42	43.9

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 2.3 (Site Folder: General)]

Network: 2 [Scenario 2.3 - PM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 2 - MSL and Residential
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	17	11.8	17	11.8	0.012	4.9	LOS A	0.0	0.4	0.15	0.49	0.15	43.9
2	T1	4	50.0	4	50.0	0.007	4.1	LOS A	0.0	0.2	0.22	0.50	0.22	46.1
3	R2	4	50.0	4	50.0	0.007	5.5	LOS A	0.0	0.2	0.22	0.50	0.22	45.3
Approach		25	24.0	25	24.0	0.012	4.8	LOS A	0.0	0.4	0.17	0.50	0.17	44.7
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.040	5.2	LOS A	0.1	0.5	0.06	0.08	0.06	48.4
5	T1	63	4.8	63	4.8	0.040	0.1	LOS A	0.1	0.5	0.06	0.08	0.06	49.0
6	R2	6	33.3	6	33.3	0.040	5.3	LOS A	0.1	0.5	0.06	0.08	0.06	47.9
Approach		74	9.5	74	9.5	0.040	0.8	NA	0.1	0.5	0.06	0.08	0.06	48.8
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.055	5.4	LOS A	0.2	1.2	0.21	0.55	0.21	45.5
8	T1	4	50.0	4	50.0	0.055	4.1	LOS A	0.2	1.2	0.21	0.55	0.21	45.7
9	R2	68	2.9	68	2.9	0.055	5.0	LOS A	0.2	1.2	0.21	0.55	0.21	43.7
Approach		76	7.9	76	7.9	0.055	5.0	LOS A	0.2	1.2	0.21	0.55	0.21	44.1
West: Botanica Dr W														
10	L2	37	5.4	37	5.4	0.085	4.7	LOS A	0.1	1.1	0.06	0.20	0.06	46.9
11	T1	95	3.2	95	3.2	0.085	0.0	LOS A	0.1	1.1	0.06	0.20	0.06	47.8
12	R2	25	8.0	25	8.0	0.085	4.8	LOS A	0.1	1.1	0.06	0.20	0.06	46.7
Approach		157	4.5	157	4.5	0.085	1.9	NA	0.1	1.1	0.06	0.20	0.06	47.4
All Vehicles		332	7.8	332	7.8	0.085	2.6	NA	0.2	1.2	0.10	0.28	0.10	46.7

1.5 AM – Scenario 3.2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - AM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	48	4.2	48	4.2	1.001	75.2	LOS F	75.7	554.9	1.00	1.25	1.40	24.8
2	T1	2975	5.5	2975	5.5	* 1.001	74.7	LOS F	75.7	554.9	0.90	1.18	1.32	25.9
3	R2	327	2.8	327	2.8	0.840	45.6	LOS D	15.9	114.1	1.00	0.90	1.14	20.1
Approach		3350	5.2	3350	5.2	1.001	71.9	LOS F	75.7	554.9	0.91	1.15	1.30	25.6
East: Georges Ave E														
4	L2	255	4.7	255	4.7	0.641	52.2	LOS D	21.4	155.5	0.92	0.83	0.92	18.3
5	T1	224	2.7	224	2.7	0.641	60.2	LOS E	21.4	155.5	0.97	0.82	0.97	25.8
6	R2	13	15.4	13	15.4	0.641	72.8	LOS F	10.5	76.0	1.00	0.82	1.01	25.2
Approach		492	4.1	492	4.1	0.641	56.4	LOS D	21.4	155.5	0.95	0.83	0.95	22.7
North: Joseph St N														
7	L2	81	3.7	81	3.7	0.932	76.7	LOS F	56.8	422.9	1.00	1.08	1.23	19.1
8	T1	1866	8.0	1866	8.0	0.932	69.1	LOS E	58.8	439.4	0.99	1.08	1.23	19.4
9	R2	118	2.5	118	2.5	0.969	115.9	LOS F	11.1	79.1	1.00	1.09	1.81	20.4
Approach		2065	7.5	2065	7.5	0.969	72.0	LOS F	58.8	439.4	0.99	1.08	1.26	19.5
West: Georges Ave W														
10	L2	220	0.9	220	0.9	* 1.002	137.9	LOS F	50.0	356.8	1.00	1.33	1.71	18.2
11	T1	348	3.4	348	3.4	1.002	135.4	LOS F	50.0	356.8	1.00	1.34	1.75	10.7
12	R2	172	2.3	172	2.3	1.002	141.5	LOS F	33.6	241.2	1.00	1.36	1.80	10.6
Approach		740	2.4	740	2.4	1.002	137.5	LOS F	50.0	356.8	1.00	1.34	1.75	13.2
All Vehicles		6647	5.5	6647	5.5	1.002	78.1	LOS F	75.7	554.9	0.95	1.13	1.31	21.6

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - AM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3087	5.6	3087	5.6	* 0.896	27.9	LOS B	67.5	494.8	0.89	0.87	0.93	43.4
3	R2	105	1.9	105	1.9	0.964	113.9	LOS F	9.7	68.8	1.00	1.06	1.81	18.1
Approach		3192	5.5	3192	5.5	0.964	30.7	LOS C	67.5	494.8	0.90	0.87	0.96	41.4
East: Botanica Drive														
4	L2	28	7.1	28	7.1	0.051	38.2	LOS C	1.4	10.0	0.73	0.67	0.73	35.3
6	R2	202	1.5	202	1.5	0.407	51.8	LOS D	11.9	84.5	0.87	0.80	0.87	6.4
Approach		230	2.2	230	2.2	0.407	50.1	LOS D	11.9	84.5	0.85	0.78	0.85	11.2
North: Joseph Street North														
7	L2	59	6.8	59	6.8	* 0.787	44.2	LOS D	47.2	350.0	0.95	0.89	0.95	22.3
8	T1	2294	7.1	2294	7.1	0.787	38.5	LOS C	51.8	384.9	0.97	0.90	0.97	43.9
Approach		2353	7.1	2353	7.1	0.787	38.7	LOS C	51.8	384.9	0.97	0.90	0.97	43.5
All Vehicles		5775	6.0	5775	6.0	0.964	34.7	LOS C	67.5	494.8	0.92	0.88	0.96	41.4

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - AM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	32	6.3	32	6.3	0.428	7.3	LOS A	2.6	19.2	0.66	0.74	0.66	42.1
2	T1	326	5.5	326	5.5	0.428	7.0	LOS A	2.6	19.2	0.66	0.74	0.66	45.6
3u	U	5	40.0	5	40.0	0.428	12.6	LOS A	2.6	19.2	0.66	0.74	0.66	45.2
Approach		363	6.1	363	6.1	0.428	7.1	LOS A	2.6	19.2	0.66	0.74	0.66	45.4
North: East St N														

8	T1	207	1.0	207	1.0	0.510	4.3	LOS A	3.7	26.4	0.35	0.58	0.35	45.6
9	R2	447	3.8	447	3.8	0.510	7.2	LOS A	3.7	26.4	0.35	0.58	0.35	42.1
9u	U	4	50.0	4	50.0	0.510	9.3	LOS A	3.7	26.4	0.35	0.58	0.35	45.0
Approach		658	3.2	658	3.2	0.510	6.3	LOS A	3.7	26.4	0.35	0.58	0.35	43.7
West: Georges Ave														
10	L2	667	3.4	667	3.4	0.810	10.9	LOS A	10.6	76.2	0.70	0.87	0.93	41.9
12	R2	95	2.1	95	2.1	0.810	13.5	LOS A	10.6	76.2	0.70	0.87	0.93	42.4
12u	U	5	40.0	5	40.0	0.810	16.6	LOS B	10.6	76.2	0.70	0.87	0.93	36.0
Approach		767	3.5	766 N1	3.5	0.810	11.3	LOS A	10.6	76.2	0.70	0.87	0.93	42.0
All Vehicles		1788	3.9	1787 N1	3.9	0.810	8.6	LOS A	10.6	76.2	0.57	0.74	0.66	43.3

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - AM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	44	4.5	44	4.5	0.031	5.1	LOS A	0.1	0.9	0.25	0.51	0.25	43.5
2	T1	4	50.0	4	50.0	0.008	4.6	LOS A	0.0	0.2	0.30	0.53	0.30	45.9
3	R2	4	50.0	4	50.0	0.008	5.9	LOS A	0.0	0.2	0.30	0.53	0.30	45.2
Approach		52	11.5	52	11.5	0.031	5.1	LOS A	0.1	0.9	0.25	0.51	0.25	44.0
East: Botanica Dr W														
4	L2	7	28.6	7	28.6	0.112	5.3	LOS A	0.5	3.5	0.19	0.16	0.19	47.7
5	T1	153	2.6	153	2.6	0.112	0.2	LOS A	0.5	3.5	0.19	0.16	0.19	47.3
6	R2	60	3.3	60	3.3	0.112	5.1	LOS A	0.5	3.5	0.19	0.16	0.19	47.5
Approach		220	3.6	220	3.6	0.112	1.7	NA	0.5	3.5	0.19	0.16	0.19	47.4
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.070	4.7	LOS A	0.3	2.2	0.09	0.52	0.09	46.4
8	T1	4	50.0	4	50.0	0.070	4.5	LOS A	0.3	2.2	0.09	0.52	0.09	45.9
9	R2	33	6.1	33	6.1	0.070	5.3	LOS A	0.3	2.2	0.09	0.52	0.09	44.1
Approach		99	6.1	99	6.1	0.070	4.9	LOS A	0.3	2.2	0.09	0.52	0.09	45.9
West: Botanica Dr W														
10	L2	108	1.9	108	1.9	0.093	4.6	LOS A	0.1	0.6	0.04	0.37	0.04	45.6
11	T1	47	8.5	47	8.5	0.093	0.1	LOS A	0.1	0.6	0.04	0.37	0.04	46.3
12	R2	11	18.2	11	18.2	0.093	5.2	LOS A	0.1	0.6	0.04	0.37	0.04	45.0
Approach		166	4.8	166	4.8	0.093	3.4	NA	0.1	0.6	0.04	0.37	0.04	45.7

All Vehicles	537	5.2	537	5.2	0.112	3.2	NA	0.5	3.5	0.13	0.33	0.13	46.3

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - AM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3288	5.3	3288	5.3	0.686	0.3	LOS A	42.8	313.0	0.00	0.00	0.00	68.8
Approach		3288	5.3	3288	5.3	0.686	0.3	NA	42.8	313.0	0.00	0.00	0.00	68.8
East: Site Access														
4	L2	332	0.0	332	0.0	0.496	9.8	LOS A	3.0	20.8	0.62	0.92	0.89	38.7
Approach		332	0.0	332	0.0	0.496	9.8	LOS A	3.0	20.8	0.62	0.92	0.89	38.7
North: Joseph Street North														
7	L2	363	0.0	363	0.0	0.532	6.5	LOS A	0.0	0.0	0.00	0.26	0.00	61.6
8	T1	2021	8.1	2021	8.1	0.532	0.2	LOS A	0.0	0.0	0.00	0.07	0.00	66.7
Approach		2384	6.9	2384	6.9	0.532	1.1	NA	0.0	0.0	0.00	0.10	0.00	65.1
All Vehicles		6004	5.6	6004	5.6	0.686	1.2	NA	42.8	313.0	0.03	0.09	0.05	63.7

1.6 PM – Scenario 3.2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - PM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 107 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS	ARRIVAL FLOWS	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. Speed

		[Total	HV]	[Total	HV]				[Veh.	Dist]			Aver. No. Cycles	
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	51	0.0	51	0.0	0.788	38.6	LOS C	28.8	209.0	0.96	0.89	1.00	35.3
2	T1	1724	4.5	1724	4.5	0.788	31.5	LOS C	29.5	214.7	0.95	0.88	0.99	40.7
3	R2	84	7.1	84	7.1	0.852	70.3	LOS E	5.0	37.2	1.00	0.93	1.51	14.5
Approach		1859	4.5	1859	4.5	0.852	33.4	LOS C	29.5	214.7	0.96	0.88	1.01	39.2
East: Georges Ave E														
4	L2	335	3.3	335	3.3	* 0.980	97.0	LOS F	37.3	267.7	1.00	1.30	1.76	11.7
5	T1	447	2.2	447	2.2	0.980	92.9	LOS F	37.3	267.7	1.00	1.42	1.79	20.6
6	R2	63	3.2	63	3.2	0.980	97.1	LOS F	31.3	223.8	1.00	1.46	1.80	21.7
Approach		845	2.7	845	2.7	0.980	94.9	LOS F	37.3	267.7	1.00	1.38	1.78	17.6
North: Joseph St N														
7	L2	31	6.5	31	6.5	0.988	90.6	LOS F	89.9	649.1	1.00	1.38	1.58	16.7
8	T1	2952	3.6	2952	3.6	* 0.988	84.0	LOS F	91.8	662.4	0.97	1.37	1.56	16.8
9	R2	231	2.2	231	2.2	0.849	40.3	LOS C	8.8	63.1	1.00	0.92	1.30	35.4
Approach		3214	3.5	3214	3.5	0.988	80.9	LOS F	91.8	662.4	0.97	1.33	1.54	18.0
West: Georges Ave W														
10	L2	105	1.9	105	1.9	0.710	45.3	LOS D	15.0	106.4	0.97	0.86	1.00	33.8
11	T1	203	1.0	203	1.0	0.710	41.1	LOS C	15.0	106.4	0.97	0.86	1.00	23.5
12	R2	49	4.1	49	4.1	0.710	66.3	LOS E	3.0	21.4	1.00	0.83	1.25	18.1
Approach		357	1.7	357	1.7	0.710	45.8	LOS D	15.0	106.4	0.97	0.85	1.04	26.2
All Vehicles		6275	3.6	6275	3.6	0.988	66.7	LOS E	91.8	662.4	0.97	1.18	1.39	23.0

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - PM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 107 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph Street South														
2	T1	1784	4.4	1784	4.4	0.470	8.9	LOS A	14.7	107.0	0.52	0.47	0.52	63.1
3	R2	34	5.9	34	5.9	* 0.346	63.4	LOS E	1.8	13.5	1.00	0.73	1.00	27.5
Approach		1818	4.5	1818	4.5	0.470	9.9	LOS A	14.7	107.0	0.53	0.47	0.53	61.6
East: Botanica Drive														

4	L2	14	14.3	14	14.3	0.036	33.2	LOS C	0.5	4.2	0.80	0.66	0.80	36.2
6	R2	89	3.4	89	3.4	0.228	42.3	LOS C	3.9	27.9	0.87	0.75	0.87	7.7
Approach		103	4.9	103	4.9	0.228	41.0	LOS C	3.9	27.9	0.86	0.74	0.86	13.5
North: Joseph Street North														
7	L2	119	2.5	100	2.5	* 0.904	37.0	LOS C	45.8	329.9	0.89	0.94	1.01	25.7
8	T1	3252	3.6	2733	3.6	* 0.904	26.9	LOS B	47.9	346.0	0.87	0.90	0.99	50.7
Approach		3371	3.6	2833 N1	3.6	0.904	27.2	LOS B	47.9	346.0	0.87	0.90	0.99	50.2
All Vehicles		5292	3.9	4754 N1	4.4	0.904	20.9	LOS B	47.9	346.0	0.74	0.73	0.81	52.5

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - PM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	62	3.2	62	3.2	0.536	12.8	LOS A	3.9	28.2	0.84	1.02	1.07	37.3
2	T1	252	4.0	252	4.0	0.536	12.5	LOS A	3.9	28.2	0.84	1.02	1.07	42.6
3u	U	4	50.0	4	50.0	0.536	19.4	LOS B	3.9	28.2	0.84	1.02	1.07	42.1
Approach		318	4.4	318	4.4	0.536	12.7	LOS A	3.9	28.2	0.84	1.02	1.07	41.9
North: East St N														
8	T1	331	3.3	331	3.3	0.983	7.5	LOS A	14.3	102.8	0.32	0.55	0.35	44.2
9	R2	777	2.7	777	2.7	0.983	10.4	LOS A	14.3	102.8	0.32	0.55	0.35	39.9
9u	U	4	50.0	4	50.0	0.983	12.4	LOS A	14.3	102.8	0.32	0.55	0.35	43.7
Approach		1112	3.1	1112	3.1	0.983	9.5	LOS A	14.3	102.8	0.32	0.55	0.35	41.8
West: Georges Ave														
10	L2	273	2.6	269	2.5	0.321	5.7	LOS A	1.7	12.4	0.41	0.62	0.41	45.0
12	R2	31	6.5	31	6.4	0.321	8.4	LOS A	1.7	12.4	0.41	0.62	0.41	45.4
12u	U	6	33.3	6	33.0	0.321	10.5	LOS A	1.7	12.4	0.41	0.62	0.41	41.4
Approach		310	3.5	306 N1	3.5	0.321	6.1	LOS A	1.7	12.4	0.41	0.62	0.41	45.0
All Vehicles		1740	3.4	1736 N1	3.4	0.983	9.5	LOS A	14.3	102.8	0.43	0.65	0.49	42.4

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - PM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	17	11.8	17	11.8	0.012	4.9	LOS A	0.0	0.4	0.15	0.49	0.15	43.9
2	T1	4	50.0	4	50.0	0.007	4.1	LOS A	0.0	0.2	0.21	0.50	0.21	46.1
3	R2	4	50.0	4	50.0	0.007	5.5	LOS A	0.0	0.2	0.21	0.50	0.21	45.3
Approach		25	24.0	25	24.0	0.012	4.8	LOS A	0.0	0.4	0.17	0.49	0.17	44.7
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.041	5.1	LOS A	0.1	0.5	0.06	0.08	0.06	48.4
5	T1	65	4.6	65	4.6	0.041	0.1	LOS A	0.1	0.5	0.06	0.08	0.06	49.0
6	R2	6	33.3	6	33.3	0.041	5.3	LOS A	0.1	0.5	0.06	0.08	0.06	47.9
Approach		76	9.2	76	9.2	0.041	0.8	NA	0.1	0.5	0.06	0.08	0.06	48.8
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.023	5.4	LOS A	0.1	0.6	0.19	0.53	0.19	45.6
8	T1	4	50.0	4	50.0	0.023	4.1	LOS A	0.1	0.6	0.19	0.53	0.19	45.8
9	R2	23	8.7	23	8.7	0.023	5.0	LOS A	0.1	0.6	0.19	0.53	0.19	43.9
Approach		31	19.4	31	19.4	0.023	4.9	LOS A	0.1	0.6	0.19	0.53	0.19	44.6
West: Botanica Dr W														
10	L2	29	6.9	25	7.3	0.073	4.7	LOS A	0.1	1.0	0.06	0.19	0.06	47.0
11	T1	100	3.0	88	3.2	0.073	0.0	LOS A	0.1	1.0	0.06	0.19	0.06	48.0
12	R2	27	7.4	24	7.9	0.073	4.8	LOS A	0.1	1.0	0.06	0.19	0.06	46.9
Approach		156	4.5	137 N1	4.8	0.073	1.7	NA	0.1	1.0	0.06	0.19	0.06	47.6
All Vehicles		288	9.0	269 N1	9.7	0.073	2.1	NA	0.1	1.0	0.08	0.22	0.08	47.2

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access PM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - PM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed

		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph Street South														
2	T1	1873	4.4	1873	4.4	0.329	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.8
Approach		1873	4.4	1873	4.4	0.329	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.8
East: Site Access														
4	L2	46	0.0	46	0.0	0.117	12.4	LOS A	0.4	2.8	0.69	0.86	0.69	36.5
Approach		46	0.0	46	0.0	0.117	12.4	LOS A	0.4	2.8	0.69	0.86	0.69	36.5
North: Joseph Street North														
7	L2	15	0.0	13	0.0	0.578	6.5	LOS A	0.0	0.0	0.00	0.01	0.00	65.1
8	T1	3325	3.5	2870	3.5	0.578	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	69.2
Approach		3340	3.5	2883 N1	3.5	0.578	0.2	NA	0.0	0.0	0.00	0.00	0.00	69.1
All Vehicles		5259	3.8	4802 N1	4.1	0.578	0.3	NA	0.4	2.8	0.01	0.01	0.01	68.6

1.7 AM – Scenario 3.3

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - AM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	48	4.2	48	4.2	0.972	48.8	LOS D	75.7	554.9	0.89	1.02	1.12	31.6
2	T1	2975	5.5	2975	5.5	* 0.972	46.4	LOS D	75.7	554.9	0.83	0.96	1.07	34.0
3	R2	327	2.8	327	2.8	0.658	44.3	LOS D	7.7	55.3	1.00	0.81	1.01	20.6
Approach		3350	5.2	3350	5.2	0.972	46.2	LOS D	75.7	554.9	0.85	0.95	1.06	33.1
East: Georges Ave E														
4	L2	255	4.7	255	4.7	0.638	52.0	LOS D	21.5	155.8	0.92	0.83	0.92	18.4
5	T1	224	2.7	224	2.7	0.638	60.4	LOS E	21.5	155.8	0.97	0.82	0.97	25.8
6	R2	13	15.4	13	15.4	0.638	73.2	LOS F	10.6	76.4	1.00	0.81	1.01	25.1
Approach		492	4.1	492	4.1	0.638	56.4	LOS D	21.5	155.8	0.94	0.83	0.94	22.8
North: Joseph St N														
7	L2	81	3.7	81	3.7	0.793	43.2	LOS D	40.5	301.6	0.92	0.84	0.92	29.1
8	T1	1866	8.0	1866	8.0	0.793	35.3	LOS C	41.9	313.1	0.90	0.82	0.90	29.9
9	R2	118	2.5	118	2.5	0.975	120.4	LOS F	11.3	81.1	1.00	1.10	1.84	19.9

Approach		2065	7.5	2065	7.5	0.975	40.5	LOS C	41.9	313.1	0.90	0.83	0.95	28.4
West: Georges Ave W														
10	L2	220	0.9	220	0.9	* 0.974	112.5	LOS F	44.8	319.1	1.00	1.22	1.54	20.8
11	T1	348	3.4	348	3.4	0.974	110.3	LOS F	44.8	319.1	1.00	1.23	1.57	12.6
12	R2	172	2.3	172	2.3	0.974	117.2	LOS F	30.7	220.3	1.00	1.26	1.63	12.3
Approach		740	2.4	740	2.4	0.974	112.5	LOS F	44.8	319.1	1.00	1.23	1.57	15.3
All Vehicles		6647	5.5	6647	5.5	0.975	52.6	LOS D	75.7	554.9	0.89	0.94	1.08	27.6

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - AM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3087	5.6	3087	5.6	* 0.894	28.0	LOS B	67.6	495.6	0.90	0.87	0.93	43.3
3	R2	105	1.9	105	1.9	0.970	117.8	LOS F	9.9	70.4	1.00	1.07	1.84	17.6
Approach		3192	5.5	3192	5.5	0.970	31.0	LOS C	67.6	495.6	0.90	0.87	0.96	41.3
East: Botanica Drive														
4	L2	28	7.1	28	7.1	0.050	37.3	LOS C	1.3	9.9	0.72	0.67	0.72	35.7
6	R2	202	1.5	202	1.5	0.383	50.4	LOS D	11.8	83.4	0.85	0.79	0.85	6.6
Approach		230	2.2	230	2.2	0.383	48.8	LOS D	11.8	83.4	0.83	0.78	0.83	11.4
North: Joseph Street North														
7	L2	59	6.8	59	6.8	* 0.802	45.3	LOS D	48.0	356.0	0.96	0.89	0.96	21.9
8	T1	2294	7.1	2294	7.1	0.802	39.6	LOS C	52.5	389.5	0.98	0.91	0.98	43.3
Approach		2353	7.1	2353	7.1	0.802	39.7	LOS C	52.5	389.5	0.98	0.90	0.98	43.0
All Vehicles		5775	6.0	5775	6.0	0.970	35.2	LOS C	67.6	495.6	0.93	0.88	0.96	41.1

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - AM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	32	6.3	32	6.3	0.428	7.3	LOS A	2.6	19.2	0.66	0.74	0.66	42.1
2	T1	326	5.5	326	5.5	0.428	7.0	LOS A	2.6	19.2	0.66	0.74	0.66	45.6
3u	U	5	40.0	5	40.0	0.428	12.6	LOS A	2.6	19.2	0.66	0.74	0.66	45.2
Approach		363	6.1	363	6.1	0.428	7.1	LOS A	2.6	19.2	0.66	0.74	0.66	45.4
North: East St N														
8	T1	207	1.0	207	1.0	0.510	4.3	LOS A	3.7	26.3	0.35	0.58	0.35	45.6
9	R2	447	3.8	447	3.8	0.510	7.2	LOS A	3.7	26.3	0.35	0.58	0.35	42.1
9u	U	4	50.0	4	50.0	0.510	9.3	LOS A	3.7	26.3	0.35	0.58	0.35	45.0
Approach		658	3.2	658	3.2	0.510	6.3	LOS A	3.7	26.3	0.35	0.58	0.35	43.7
West: Georges Ave														
10	L2	667	3.4	667	3.4	0.810	11.0	LOS A	10.6	76.5	0.70	0.87	0.93	41.9
12	R2	95	2.1	95	2.1	0.810	13.5	LOS A	10.6	76.5	0.70	0.87	0.93	42.3
12u	U	5	40.0	5	40.0	0.810	16.6	LOS B	10.6	76.5	0.70	0.87	0.93	36.0
Approach		767	3.5	767	3.5	0.810	11.3	LOS A	10.6	76.5	0.70	0.87	0.93	41.9
All Vehicles		1788	3.9	1788	3.9	0.810	8.6	LOS A	10.6	76.5	0.57	0.74	0.66	43.3

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - AM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	44	4.5	44	4.5	0.031	5.1	LOS A	0.1	0.9	0.25	0.51	0.25	43.5
2	T1	4	50.0	4	50.0	0.008	4.6	LOS A	0.0	0.2	0.30	0.53	0.30	45.9
3	R2	4	50.0	4	50.0	0.008	5.9	LOS A	0.0	0.2	0.30	0.53	0.30	45.2
Approach		52	11.5	52	11.5	0.031	5.1	LOS A	0.1	0.9	0.25	0.51	0.25	44.0
East: Botanica Dr W														
4	L2	7	28.6	7	28.6	0.112	5.3	LOS A	0.5	3.5	0.19	0.16	0.19	47.7
5	T1	153	2.6	153	2.6	0.112	0.2	LOS A	0.5	3.5	0.19	0.16	0.19	47.3

6	R2	60	3.3	60	3.3	0.112	5.1	LOS A	0.5	3.5	0.19	0.16	0.19	47.5
Approach		220	3.6	220	3.6	0.112	1.7	NA	0.5	3.5	0.19	0.16	0.19	47.4
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.070	4.7	LOS A	0.3	2.2	0.09	0.52	0.09	46.4
8	T1	4	50.0	4	50.0	0.070	4.5	LOS A	0.3	2.2	0.09	0.52	0.09	45.9
9	R2	33	6.1	33	6.1	0.070	5.3	LOS A	0.3	2.2	0.09	0.52	0.09	44.1
Approach		99	6.1	99	6.1	0.070	4.9	LOS A	0.3	2.2	0.09	0.52	0.09	45.9
West: Botanica Dr W														
10	L2	108	1.9	108	1.9	0.093	4.6	LOS A	0.1	0.6	0.04	0.37	0.04	45.6
11	T1	47	8.5	47	8.5	0.093	0.1	LOS A	0.1	0.6	0.04	0.37	0.04	46.3
12	R2	11	18.2	11	18.2	0.093	5.2	LOS A	0.1	0.6	0.04	0.37	0.04	45.0
Approach		166	4.8	166	4.8	0.093	3.4	NA	0.1	0.6	0.04	0.37	0.04	45.7
All Vehicles		537	5.2	537	5.2	0.112	3.2	NA	0.5	3.5	0.13	0.33	0.13	46.3

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - AM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3288	5.3	3288	5.3	0.657	0.2	LOS A	13.6	99.4	0.00	0.00	0.00	69.0
Approach		3288	5.3	3288	5.3	0.657	0.2	NA	13.6	99.4	0.00	0.00	0.00	69.0
East: Site Access														
4	L2	332	0.0	332	0.0	0.511	10.0	LOS A	3.0	20.9	0.62	0.93	0.92	38.5
Approach		332	0.0	332	0.0	0.511	10.0	LOS A	3.0	20.9	0.62	0.93	0.92	38.5
North: Joseph Street North														
7	L2	363	0.0	363	0.0	0.540	6.5	LOS A	0.0	0.0	0.00	0.26	0.00	61.6
8	T1	2021	8.1	2021	8.1	0.540	0.2	LOS A	0.0	0.0	0.00	0.07	0.00	66.7
Approach		2384	6.9	2384	6.9	0.540	1.1	NA	0.0	0.0	0.00	0.10	0.00	65.1
All Vehicles		6004	5.6	6004	5.6	0.657	1.1	NA	13.6	99.4	0.03	0.09	0.05	63.7

1.8 PM – Scenario 3.3

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - PM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	51	0.0	51	0.0	0.859	65.3	LOS E	43.6	315.9	1.00	0.94	1.06	27.0
2	T1	1724	4.5	1724	4.5	0.859	56.6	LOS E	44.5	323.3	1.00	0.94	1.06	30.6
3	R2	84	7.1	84	7.1	0.610	89.4	LOS F	3.3	24.4	1.00	0.77	1.09	11.9
Approach		1859	4.5	1859	4.5	0.859	58.3	LOS E	44.5	323.3	1.00	0.93	1.06	29.6
East: Georges Ave E														
4	L2	335	3.3	335	3.3	* 0.974	109.0	LOS F	53.2	381.5	1.00	1.18	1.49	10.8
5	T1	447	2.2	447	2.2	0.974	109.2	LOS F	53.2	381.5	1.00	1.25	1.56	18.7
6	R2	63	3.2	63	3.2	0.974	116.2	LOS F	33.3	237.8	1.00	1.31	1.60	19.2
Approach		845	2.7	845	2.7	0.974	109.6	LOS F	53.2	381.5	1.00	1.23	1.54	16.0
North: Joseph St N														
7	L2	31	6.5	31	6.5	0.985	93.2	LOS F	108.3	782.0	1.00	1.22	1.36	16.4
8	T1	2952	3.6	2952	3.6	* 0.985	86.7	LOS F	110.4	796.3	0.96	1.19	1.33	16.4
9	R2	231	2.2	231	2.2	0.657	38.2	LOS C	9.0	64.3	0.98	0.82	0.98	36.1
Approach		3214	3.5	3214	3.5	0.985	83.3	LOS F	110.4	796.3	0.97	1.17	1.31	17.7
West: Georges Ave W														
10	L2	105	1.9	105	1.9	0.583	52.3	LOS D	19.0	134.8	0.91	0.80	0.91	31.8
11	T1	203	1.0	203	1.0	0.583	47.9	LOS D	19.0	134.8	0.91	0.80	0.91	21.7
12	R2	49	4.1	49	4.1	0.941	100.9	LOS F	4.2	30.3	1.00	1.03	1.82	13.6
Approach		357	1.7	357	1.7	0.941	56.4	LOS D	19.0	134.8	0.92	0.83	1.03	23.5
All Vehicles		6275	3.6	6275	3.6	0.985	77.9	LOS F	110.4	796.3	0.98	1.09	1.25	20.8

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - PM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	1784	4.4	1784	4.4	0.424	7.4	LOS A	15.8	114.9	0.40	0.37	0.40	65.4
3	R2	34	5.9	34	5.9	* 0.484	88.8	LOS F	2.6	19.3	1.00	0.73	1.00	21.8
Approach		1818	4.5	1818	4.5	0.484	8.9	LOS A	15.8	114.9	0.41	0.37	0.41	63.0
East: Botanica Drive														
4	L2	14	14.3	14	14.3	0.044	53.4	LOS D	0.8	6.5	0.84	0.67	0.84	29.1
6	R2	89	3.4	89	3.4	0.283	62.9	LOS E	5.7	41.0	0.91	0.77	0.91	5.4
Approach		103	4.9	103	4.9	0.283	61.6	LOS E	5.7	41.0	0.90	0.75	0.90	9.8
North: Joseph Street North														
7	L2	119	2.5	119	2.5	* 0.900	23.5	LOS B	54.1	390.2	0.72	0.73	0.74	36.6
8	T1	3252	3.6	3252	3.6	* 0.900	13.0	LOS A	54.1	390.2	0.66	0.65	0.68	62.4
Approach		3371	3.6	3371	3.6	0.900	13.4	LOS A	54.1	390.2	0.67	0.65	0.68	61.9
All Vehicles		5292	3.9	5292	3.9	0.900	12.8	LOS A	54.1	390.2	0.58	0.56	0.59	60.8

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - PM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	62	3.2	62	3.2	0.496	12.2	LOS A	3.7	27.1	0.84	0.99	1.02	37.8
2	T1	252	4.0	252	4.0	0.496	11.9	LOS A	3.7	27.1	0.84	0.99	1.02	42.9
3u	U	4	50.0	4	50.0	0.496	18.7	LOS B	3.7	27.1	0.84	0.99	1.02	42.4

Approach		318	4.4	318	4.4	0.496	12.0	LOS A	3.7	27.1	0.84	0.99	1.02	42.3
North: East St N														
8	T1	331	3.3	331	3.3	0.765	4.1	LOS A	9.0	64.5	0.32	0.53	0.32	45.6
9	R2	777	2.7	777	2.7	0.765	7.1	LOS A	9.0	64.5	0.32	0.53	0.32	42.2
9u	U	4	50.0	4	50.0	0.765	9.1	LOS A	9.0	64.5	0.32	0.53	0.32	45.1
Approach		1112	3.1	1112	3.1	0.765	6.2	LOS A	9.0	64.5	0.32	0.53	0.32	43.7
West: Georges Ave														
10	L2	273	2.6	273	2.6	0.322	5.7	LOS A	1.7	12.6	0.41	0.62	0.41	45.0
12	R2	31	6.5	31	6.5	0.322	8.4	LOS A	1.7	12.6	0.41	0.62	0.41	45.4
12u	U	6	33.3	6	33.3	0.322	10.5	LOS A	1.7	12.6	0.41	0.62	0.41	41.4
Approach		310	3.5	310	3.5	0.322	6.1	LOS A	1.7	12.6	0.41	0.62	0.41	45.0
All Vehicles		1740	3.4	1740	3.4	0.765	7.2	LOS A	9.0	64.5	0.43	0.63	0.46	43.6

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - PM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	17	11.8	17	11.8	0.012	4.9	LOS A	0.0	0.4	0.15	0.49	0.15	43.9
2	T1	4	50.0	4	50.0	0.007	4.1	LOS A	0.0	0.2	0.22	0.50	0.22	46.1
3	R2	4	50.0	4	50.0	0.007	5.5	LOS A	0.0	0.2	0.22	0.50	0.22	45.3
Approach		25	24.0	25	24.0	0.012	4.9	LOS A	0.0	0.4	0.17	0.49	0.17	44.7
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.041	5.2	LOS A	0.1	0.5	0.06	0.08	0.06	48.4
5	T1	65	4.6	65	4.6	0.041	0.1	LOS A	0.1	0.5	0.06	0.08	0.06	49.0
6	R2	6	33.3	6	33.3	0.041	5.3	LOS A	0.1	0.5	0.06	0.08	0.06	47.9
Approach		76	9.2	76	9.2	0.041	0.8	NA	0.1	0.5	0.06	0.08	0.06	48.8
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.024	5.4	LOS A	0.1	0.6	0.20	0.53	0.20	45.5
8	T1	4	50.0	4	50.0	0.024	4.1	LOS A	0.1	0.6	0.20	0.53	0.20	45.8
9	R2	23	8.7	23	8.7	0.024	5.1	LOS A	0.1	0.6	0.20	0.53	0.20	43.8
Approach		31	19.4	31	19.4	0.024	5.0	LOS A	0.1	0.6	0.20	0.53	0.20	44.5
West: Botanica Dr W														
10	L2	29	6.9	29	6.9	0.084	4.7	LOS A	0.2	1.1	0.06	0.19	0.06	47.0
11	T1	100	3.0	100	3.0	0.084	0.0	LOS A	0.2	1.1	0.06	0.19	0.06	48.0
12	R2	27	7.4	27	7.4	0.084	4.8	LOS A	0.2	1.1	0.06	0.19	0.06	46.9

Approach	156	4.5	156	4.5	0.084	1.7	NA	0.2	1.1	0.06	0.19	0.06	47.6
All Vehicles	288	9.0	288	9.0	0.084	2.1	NA	0.2	1.1	0.09	0.22	0.09	47.2

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access PM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - PM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	1873	4.4	1873	4.4	0.330	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.8
Approach		1873	4.4	1873	4.4	0.330	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.8
East: Site Access														
4	L2	46	0.0	46	0.0	0.159	13.7	LOS A	0.4	3.1	0.73	0.87	0.73	35.5
Approach		46	0.0	46	0.0	0.159	13.7	LOS A	0.4	3.1	0.73	0.87	0.73	35.5
North: Joseph Street North														
7	L2	15	0.0	15	0.0	0.742	6.7	LOS A	0.0	0.0	0.00	0.01	0.00	64.3
8	T1	3325	3.5	3325	3.5	0.742	0.4	LOS A	0.0	0.0	0.00	0.00	0.00	68.2
Approach		3340	3.5	3340	3.5	0.742	0.5	NA	0.0	0.0	0.00	0.00	0.00	68.2
All Vehicles		5259	3.8	5259	3.8	0.742	0.4	NA	0.4	3.1	0.01	0.01	0.01	68.0

1.9 AM – Scenario 4.2

MOVEMENT SUMMARY

Network: 1 [Scenario 4.2 - AM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 4.2 (Site Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	118	1.7	79	1.6	0.871	30.1	LOS C	47.7	348.1	0.80	0.77	0.82	38.9
2	T1	3481	5.4	2320	5.2	0.871	23.8	LOS B	50.0	365.4	0.73	0.70	0.76	45.3
3	R2	540	1.9	360	1.8	* 1.051	161.5	LOS F	36.4	258.5	1.00	1.22	2.03	5.9
Approach		4139	4.9	2759 N1	4.7	1.051	42.0	LOS C	50.0	365.4	0.77	0.77	0.93	32.3
East: Georges Ave E														
4	L2	269	5.2	269	5.1	0.679	51.6	LOS D	23.6	171.4	0.93	0.84	0.93	18.5
5	T1	260	2.7	260	2.7	0.679	59.6	LOS E	23.6	171.4	0.97	0.84	0.99	25.9
6	R2	14	14.3	14	14.1	0.679	72.7	LOS F	11.9	85.6	1.00	0.84	1.03	25.2
Approach		543	4.2	542 N1	4.2	0.679	56.0	LOS D	23.6	171.4	0.95	0.84	0.96	23.1
North: Joseph St N														
7	L2	94	3.2	94	3.2	1.061	208.3	LOS F	112.5	837.7	1.00	1.70	2.06	8.0
8	T1	2159	8.0	2159	8.0	* 1.061	201.8	LOS F	116.9	874.7	1.00	1.74	2.06	8.0
9	R2	136	2.2	136	2.2	0.857	88.7	LOS F	10.8	77.2	1.00	0.92	1.32	24.1
Approach		2389	7.5	2389	7.5	1.061	195.6	LOS F	116.9	874.7	1.00	1.69	2.02	8.6
West: Georges Ave W														
10	L2	255	0.8	255	0.8	1.056	206.6	LOS F	72.1	513.7	1.00	1.59	2.10	13.4
11	T1	403	3.5	403	3.5	* 1.056	204.1	LOS F	72.1	513.7	1.00	1.60	2.13	7.6
12	R2	189	2.1	189	2.1	1.056	209.8	LOS F	48.5	347.6	1.00	1.62	2.18	7.6
Approach		847	2.4	847	2.4	1.056	206.1	LOS F	72.1	513.7	1.00	1.60	2.14	9.5
All Vehicles		7918	5.3	6537 N1	6.5	1.061	120.6	LOS F	116.9	874.7	0.90	1.22	1.49	15.0

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - AM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3677	5.4	3677	5.4	* 1.046	158.2	LOS F	184.2	1349.5	1.00	1.61	1.82	13.7
3	R2	12	16.7	12	16.7	0.182	86.7	LOS F	0.9	7.2	0.99	0.68	0.99	22.2
Approach		3689	5.5	3689	5.5	1.046	158.0	LOS F	184.2	1349.5	1.00	1.60	1.81	13.8
East: Botanica Drive														
4	L2	32	6.3	32	6.3	0.081	49.4	LOS D	1.8	13.3	0.82	0.69	0.82	31.3
6	R2	234	1.3	234	1.3	0.747	66.8	LOS E	16.6	117.1	0.99	0.87	1.05	5.1
Approach		266	1.9	266	1.9	0.747	64.7	LOS E	16.6	117.1	0.97	0.85	1.03	9.0
North: Joseph Street North														
7	L2	68	5.9	64	5.8	* 0.658	27.3	LOS B	30.9	230.5	0.65	0.62	0.65	32.9
8	T1	2357	8.0	2211	7.9	0.658	18.4	LOS B	33.2	247.9	0.65	0.61	0.65	57.3
Approach		2425	7.9	2274 N1	7.9	0.658	18.7	LOS B	33.2	247.9	0.65	0.61	0.65	56.9
All Vehicles		6380	6.3	6229 N1	6.4	1.046	103.1	LOS F	184.2	1349.5	0.87	1.21	1.36	20.9

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - AM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	37	5.4	37	5.4	0.512	8.7	LOS A	3.8	27.6	0.73	0.84	0.82	40.8
2	T1	377	5.3	377	5.3	0.512	8.4	LOS A	3.8	27.6	0.73	0.84	0.82	44.8
3u	U	5	40.0	5	40.0	0.512	14.1	LOS A	3.8	27.6	0.73	0.84	0.82	44.4
Approach		419	5.7	419	5.7	0.512	8.5	LOS A	3.8	27.6	0.73	0.84	0.82	44.6
North: East St N														
8	T1	240	0.8	240	0.8	0.561	4.2	LOS A	4.4	31.9	0.37	0.57	0.37	45.6
9	R2	492	3.9	492	3.9	0.561	7.2	LOS A	4.4	31.9	0.37	0.57	0.37	42.1
9u	U	4	50.0	4	50.0	0.561	9.3	LOS A	4.4	31.9	0.37	0.57	0.37	45.0

Approach		736	3.1	736	3.1	0.561	6.3	LOS A	4.4	31.9	0.37	0.57	0.37	43.8
West: Georges Ave														
10	L2	936	2.9	736	3.1	0.924	19.4	LOS B	19.5	140.1	0.88	1.19	1.60	37.8
12	R2	110	1.8	86	2.0	0.924	21.9	LOS B	19.5	140.1	0.88	1.19	1.60	38.2
12u	U	5	40.0	4	41.8	0.924	25.5	LOS B	19.5	140.1	0.88	1.19	1.60	29.8
Approach		1051	2.9	827 N1	3.2	0.924	19.7	LOS B	19.5	140.1	0.88	1.19	1.60	37.8
All Vehicles		2206	3.5	1982 N1	3.9	0.924	12.3	LOS A	19.5	140.1	0.66	0.89	0.98	41.1

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - AM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	50	4.0	50	4.0	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.4
2	T1	4	50.0	4	50.0	0.008	4.4	LOS A	0.0	0.2	0.29	0.53	0.29	45.9
3	R2	4	50.0	4	50.0	0.008	6.0	LOS A	0.0	0.2	0.29	0.53	0.29	45.2
Approach		58	10.3	58	10.3	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.9
East: Botanica Dr W														
4	L2	8	25.0	8	25.0	0.211	5.0	LOS A	0.4	3.0	0.10	0.15	0.10	48.0
5	T1	177	2.3	177	2.3	0.211	0.1	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
6	R2	60	3.3	60	3.3	0.211	4.8	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
Approach		245	3.3	245	3.3	0.211	1.4	NA	0.4	3.0	0.10	0.15	0.10	47.9
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.100	4.8	LOS A	0.3	2.1	0.11	0.53	0.11	46.3
8	T1	4	50.0	4	50.0	0.100	4.5	LOS A	0.3	2.1	0.11	0.53	0.11	45.9
9	R2	38	5.3	38	5.3	0.100	5.3	LOS A	0.3	2.1	0.11	0.53	0.11	44.1
Approach		104	5.8	104	5.8	0.100	5.0	LOS A	0.3	2.1	0.11	0.53	0.11	45.8
West: Botanica Dr W														
10	L2	16	12.5	15	12.7	0.045	4.9	LOS A	0.1	0.6	0.10	0.17	0.10	46.8
11	T1	54	7.4	52	7.5	0.045	0.1	LOS A	0.1	0.6	0.10	0.17	0.10	47.9
12	R2	12	16.7	12	16.9	0.045	5.2	LOS A	0.1	0.6	0.10	0.17	0.10	46.6
Approach		82	9.8	79 N1	9.9	0.045	1.8	NA	0.1	0.6	0.10	0.17	0.10	47.5
All Vehicles		489	5.7	486 N1	5.8	0.211	2.7	NA	0.4	3.0	0.12	0.28	0.12	46.8

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - AM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3816	5.3	2466	5.3	0.678	13.1	LOS A	36.1	264.2	0.62	0.58	0.62	39.1
3	R2	94	0.0	61	0.0	* 0.612	85.5	LOS F	4.6	32.3	1.00	0.78	1.06	20.7
Approach		3910	5.2	2527 N1	5.2	0.678	14.9	LOS B	36.1	264.2	0.63	0.59	0.63	37.2
East: Site Access (North)														
4	L2	80	0.0	80	0.0	0.140	44.0	LOS D	4.1	29.0	0.76	0.73	0.76	21.6
6	R2	252	0.0	252	0.0	* 0.679	62.9	LOS E	17.0	118.8	0.98	0.84	0.98	17.5
Approach		332	0.0	332	0.0	0.679	58.3	LOS E	17.0	118.8	0.92	0.81	0.92	18.3
North: Joseph Street North														
7	L2	269	0.0	255	0.0	0.193	10.6	LOS A	4.6	31.9	0.41	0.71	0.41	46.8
8	T1	2345	8.1	2224	8.1	* 0.692	20.0	LOS B	37.6	281.5	0.72	0.66	0.72	33.3
Approach		2614	7.3	2479 N1	7.2	0.692	19.1	LOS B	37.6	281.5	0.69	0.67	0.69	35.4
All Vehicles		6856	5.7	5339 N1	7.3	0.692	19.5	LOS B	37.6	281.5	0.68	0.64	0.68	33.7

1.10 PM – Scenario 4.2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - PM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development

PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	59	0.0	59	0.0	0.840	45.1	LOS D	41.1	297.8	0.99	0.93	1.03	32.8
2	T1	2027	4.5	2027	4.5	0.840	37.2	LOS C	41.9	304.5	0.98	0.92	1.02	37.8
3	R2	103	6.8	103	6.8	* 1.044	177.8	LOS F	11.7	86.6	1.00	1.32	2.55	6.5
Approach		2189	4.5	2189	4.5	1.044	44.0	LOS D	41.9	304.5	0.98	0.94	1.09	34.3
East: Georges Ave E														
4	L2	388	3.1	280	3.1	0.974	102.7	LOS F	34.4	246.4	1.00	1.24	1.67	11.2
5	T1	518	2.1	374	2.1	* 0.974	99.2	LOS F	34.4	246.4	1.00	1.35	1.70	19.8
6	R2	73	2.7	53	2.8	0.974	103.7	LOS F	28.1	200.7	1.00	1.39	1.72	20.8
Approach		979	2.6	708 N1	2.6	0.974	100.9	LOS F	34.4	246.4	1.00	1.31	1.69	16.9
North: Joseph St N														
7	L2	36	5.6	36	5.6	1.049	168.5	LOS F	155.8	1124.4	1.00	1.74	2.02	9.8
8	T1	3425	3.6	3425	3.6	* 1.049	163.3	LOS F	159.2	1148.9	1.00	1.76	2.03	9.7
9	R2	268	2.2	268	2.2	0.877	62.3	LOS E	13.1	93.1	1.00	1.03	1.30	29.2
Approach		3729	3.5	3729	3.5	1.049	156.1	LOS F	159.2	1148.9	1.00	1.70	1.98	10.7
West: Georges Ave W														
10	L2	122	1.6	122	1.6	0.961	94.7	LOS F	30.0	211.7	1.00	1.28	1.61	23.3
11	T1	235	0.9	235	0.9	0.961	90.3	LOS F	30.0	211.7	1.00	1.28	1.61	14.5
12	R2	57	3.5	57	3.5	0.961	94.2	LOS F	4.5	32.7	1.00	1.13	2.04	14.2
Approach		414	1.4	414	1.4	0.961	92.1	LOS F	30.0	211.7	1.00	1.26	1.67	17.4
All Vehicles		7311	3.6	7040 N1	3.7	1.049	111.9	LOS F	159.2	1148.9	0.99	1.40	1.65	16.0

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - PM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS	ARRIVAL FLOWS	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. Speed

		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m			Aver. No. Cycles	km/h
South: Joseph Street South														
2	T1	2077	4.4	2077	4.4	0.523	9.1	LOS A	19.5	141.9	0.51	0.46	0.51	62.7
3	R2	32	6.3	32	6.3	* 0.381	73.9	LOS F	2.0	15.0	1.00	0.72	1.00	24.8
Approach		2109	4.5	2109	4.5	0.523	10.1	LOS A	19.5	141.9	0.52	0.47	0.52	61.2
East: Botanica Drive														
4	L2	16	12.5	16	12.5	0.043	41.0	LOS C	0.7	5.7	0.82	0.66	0.82	33.3
6	R2	103	2.9	103	2.9	0.283	50.6	LOS D	5.4	38.5	0.89	0.77	0.89	6.6
Approach		119	4.2	119	4.2	0.283	49.3	LOS D	5.4	38.5	0.88	0.75	0.88	11.7
North: Joseph Street North														
7	L2	138	2.2	103	2.2	* 0.850	22.8	LOS B	36.7	264.9	0.69	0.69	0.71	37.5
8	T1	3735	3.7	2792	3.7	0.850	12.8	LOS A	36.7	264.9	0.65	0.62	0.66	62.6
Approach		3873	3.6	2896 N1	3.7	0.850	13.1	LOS A	36.7	264.9	0.65	0.63	0.66	62.2
All Vehicles		6101	3.9	5124 N1	4.7	0.850	12.7	LOS A	36.7	264.9	0.60	0.56	0.61	60.5

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - PM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	72	2.8	72	2.8	0.700	14.3	LOS A	6.0	43.5	0.93	1.12	1.28	36.2
2	T1	291	3.8	291	3.8	0.700	14.0	LOS A	6.0	43.5	0.93	1.12	1.28	41.9
3u	U	4	50.0	4	50.0	0.700	20.6	LOS B	6.0	43.5	0.93	1.12	1.28	41.4
Approach		367	4.1	367	4.1	0.700	14.2	LOS A	6.0	43.5	0.93	1.12	1.28	41.2
North: East St N														
8	T1	383	3.1	383	3.1	1.388	706.4	LOS F	542.7	3894.7	1.00	2.75	6.13	4.7
9	R2	901	2.7	901	2.7	1.388	709.3	LOS F	542.7	3894.7	1.00	2.75	6.13	2.5
9u	U	4	50.0	4	50.0	1.388	712.1	LOS F	542.7	3894.7	1.00	2.75	6.13	4.7
Approach		1288	3.0	1288	3.0	1.388	708.4	LOS F	542.7	3894.7	1.00	2.75	6.13	3.2
West: Georges Ave														
10	L2	321	2.5	299	2.3	0.371	6.0	LOS A	2.1	15.0	0.45	0.64	0.45	44.8
12	R2	36	5.6	33	5.1	0.371	8.7	LOS A	2.1	15.0	0.45	0.64	0.45	45.2
12u	U	6	33.3	5	31.6	0.371	10.9	LOS A	2.1	15.0	0.45	0.64	0.45	41.0

Approach	363	3.3	338 N1	3.1	0.371	6.4	LOS A	2.1	15.0	0.45	0.64	0.45	44.8
All Vehicles	2018	3.2	1993 N1	3.3	1.388	461.6	LOS F	542.7	3894.7	0.89	2.09	4.28	5.3

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - PM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	20	10.0	20	10.0	0.014	4.9	LOS A	0.1	0.4	0.16	0.49	0.16	43.8
2	T1	4	50.0	4	50.0	0.007	4.1	LOS A	0.0	0.2	0.22	0.50	0.22	46.1
3	R2	4	50.0	4	50.0	0.007	5.5	LOS A	0.0	0.2	0.22	0.50	0.22	45.3
Approach		28	21.4	28	21.4	0.014	4.9	LOS A	0.1	0.4	0.18	0.50	0.18	44.6
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.046	5.1	LOS A	0.1	0.5	0.05	0.07	0.05	48.5
5	T1	75	4.0	75	4.0	0.046	0.0	LOS A	0.1	0.5	0.05	0.07	0.05	49.2
6	R2	6	33.3	6	33.3	0.046	5.3	LOS A	0.1	0.5	0.05	0.07	0.05	48.0
Approach		86	8.1	86	8.1	0.046	0.7	NA	0.1	0.5	0.05	0.07	0.05	48.9
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.026	5.4	LOS A	0.1	0.6	0.20	0.53	0.20	45.5
8	T1	4	50.0	4	50.0	0.026	4.1	LOS A	0.1	0.6	0.20	0.53	0.20	45.8
9	R2	26	7.7	26	7.7	0.026	5.0	LOS A	0.1	0.6	0.20	0.53	0.20	43.8
Approach		34	17.6	34	17.6	0.026	5.0	LOS A	0.1	0.6	0.20	0.53	0.20	44.5
West: Botanica Dr W														
10	L2	26	7.7	20	8.7	0.071	4.8	LOS A	0.1	1.0	0.07	0.17	0.07	47.1
11	T1	115	2.6	89	3.0	0.071	0.1	LOS A	0.1	1.0	0.07	0.17	0.07	48.1
12	R2	30	6.7	23	7.6	0.071	4.8	LOS A	0.1	1.0	0.07	0.17	0.07	47.0
Approach		171	4.1	132 N1	4.7	0.071	1.6	NA	0.1	1.0	0.07	0.17	0.07	47.7
All Vehicles		319	8.2	280 N1	9.3	0.071	2.1	NA	0.1	1.0	0.09	0.22	0.09	47.3

MOVEMENT SUMMARY

Network: 1 [Scenario 4.2 - PM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Site: 5 [5 Joseph St / Site Access PM - Scenario 4.2 (Site Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2174	4.4	2174	4.4	0.724	4.6	LOS A	18.4	133.3	0.43	0.40	0.43	54.9
3	R2	6	0.0	6	0.0	* 0.068	70.6	LOS F	0.4	2.6	0.98	0.65	0.98	23.3
Approach		2180	4.4	2180	4.4	0.724	4.7	LOS A	18.4	133.3	0.43	0.40	0.43	54.4
East: Site Access (North)														
4	L2	15	0.0	15	0.0	0.044	49.5	LOS D	0.7	5.2	0.85	0.68	0.85	20.2
6	R2	31	0.0	31	0.0	0.294	65.6	LOS E	1.9	13.2	0.97	0.74	0.97	17.0
Approach		46	0.0	46	0.0	0.294	60.4	LOS E	1.9	13.2	0.93	0.72	0.93	17.9
North: Joseph Street North														
7	L2	9	0.0	7	0.0	* 0.006	8.7	LOS A	0.1	0.4	0.19	0.62	0.19	48.3
8	T1	3859	3.5	2978	3.5	* 0.725	4.3	LOS A	17.2	123.9	0.31	0.29	0.31	56.6
Approach		3868	3.5	2985 N1	3.5	0.725	4.3	LOS A	17.2	123.9	0.30	0.29	0.30	56.6
All Vehicles		6094	3.8	5211 N1	4.4	0.725	5.0	LOS A	18.4	133.3	0.36	0.34	0.36	54.3

1.11 AM – Scenario 4.3

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 4.3 (Site Folder: General)]

Network: 1 [Scenario 4.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	118	1.7	79	1.6	0.857	26.2	LOS B	41.1	300.0	0.73	0.70	0.74	41.1
2	T1	3481	5.4	2329	5.2	0.857	22.7	LOS B	42.7	312.4	0.74	0.70	0.76	46.0
3	R2	540	1.9	362	1.8	* 0.794	55.5	LOS D	8.7	61.8	1.00	0.90	1.15	17.5
Approach		4139	4.9	2769 N1	4.7	0.857	27.1	LOS B	42.7	312.4	0.77	0.73	0.81	41.9
East: Georges Ave E														
4	L2	269	5.2	269	5.2	0.653	49.7	LOS D	23.4	169.8	0.91	0.83	0.91	19.0
5	T1	260	2.7	260	2.7	0.653	58.0	LOS E	23.4	169.8	0.96	0.83	0.97	26.3
6	R2	14	14.3	14	14.2	0.653	72.0	LOS F	11.4	82.6	1.00	0.82	1.01	25.4
Approach		543	4.2	542 N1	4.2	0.653	54.3	LOS D	23.4	169.8	0.94	0.83	0.94	23.5
North: Joseph St N														
7	L2	94	3.2	94	3.2	0.959	86.9	LOS F	71.7	533.9	1.00	1.15	1.31	17.4
8	T1	2159	8.0	2159	8.0	* 0.959	78.7	LOS F	74.0	553.9	0.99	1.15	1.30	17.6
9	R2	136	2.2	136	2.2	0.928	100.1	LOS F	11.7	83.6	1.00	1.01	1.57	22.4
Approach		2389	7.5	2389	7.5	0.959	80.2	LOS F	74.0	553.9	0.99	1.14	1.32	18.0
West: Georges Ave W														
10	L2	255	0.8	255	0.8	* 0.955	96.1	LOS F	46.7	332.5	1.00	1.14	1.41	23.0
11	T1	403	3.5	403	3.5	0.955	94.6	LOS F	46.7	332.5	1.00	1.16	1.44	14.0
12	R2	189	2.1	189	2.1	0.955	102.2	LOS F	33.9	242.6	1.00	1.18	1.49	13.7
Approach		847	2.4	847	2.4	0.955	96.8	LOS F	46.7	332.5	1.00	1.16	1.44	17.0
All Vehicles		7918	5.3	6548 N1	6.5	0.959	57.7	LOS E	74.0	553.9	0.90	0.94	1.09	25.5

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3677	5.4	3677	5.4	* 0.963	50.4	LOS D	109.6	802.8	0.99	1.09	1.18	31.7
3	R2	12	16.7	12	16.7	0.182	86.7	LOS F	0.9	7.2	0.99	0.68	0.99	22.2
Approach		3689	5.5	3689	5.5	0.963	50.5	LOS D	109.6	802.8	0.99	1.09	1.17	31.6
East: Botanica Drive														
4	L2	32	6.3	32	6.3	0.087	51.0	LOS D	1.8	13.6	0.84	0.69	0.84	30.7
6	R2	234	1.3	234	1.3	0.730	67.0	LOS E	16.4	116.0	0.99	0.86	1.04	5.1
Approach		266	1.9	266	1.9	0.730	65.1	LOS E	16.4	116.0	0.97	0.84	1.01	9.0
North: Joseph Street North														
7	L2	68	5.9	68	5.9	* 0.687	29.2	LOS C	39.4	294.6	0.77	0.74	0.77	31.3
8	T1	2357	8.0	2357	8.0	0.687	23.1	LOS B	46.6	348.8	0.81	0.76	0.81	53.5
Approach		2425	7.9	2425	7.9	0.687	23.3	LOS B	46.6	348.8	0.81	0.76	0.81	53.2
All Vehicles		6380	6.3	6380	6.3	0.963	40.8	LOS C	109.6	802.8	0.92	0.95	1.03	38.0

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 4.3 (Site Folder: General)]

Network: 1 [Scenario 4.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	37	5.4	37	5.4	0.514	8.7	LOS A	3.8	27.8	0.74	0.84	0.83	40.8
2	T1	377	5.3	377	5.3	0.514	8.4	LOS A	3.8	27.8	0.74	0.84	0.83	44.8
3u	U	5	40.0	5	40.0	0.514	14.1	LOS A	3.8	27.8	0.74	0.84	0.83	44.4
Approach		419	5.7	419	5.7	0.514	8.5	LOS A	3.8	27.8	0.74	0.84	0.83	44.6
North: East St N														

8	T1	240	0.8	240	0.8	0.567	4.3	LOS A	4.5	32.5	0.39	0.58	0.39	45.6
9	R2	492	3.9	492	3.9	0.567	7.2	LOS A	4.5	32.5	0.39	0.58	0.39	42.0
9u	U	4	50.0	4	50.0	0.567	9.3	LOS A	4.5	32.5	0.39	0.58	0.39	45.0
Approach		736	3.1	736	3.1	0.567	6.3	LOS A	4.5	32.5	0.39	0.58	0.39	43.7
West: Georges Ave														
10	L2	936	2.9	779	3.1	0.973	32.4	LOS C	31.7	227.6	0.96	1.57	2.43	32.8
12	R2	110	1.8	91	1.9	0.973	34.9	LOS C	31.7	227.6	0.96	1.57	2.43	33.1
12u	U	5	40.0	4	41.6	0.973	38.7	LOS C	31.7	227.6	0.96	1.57	2.43	23.5
Approach		1051	2.9	875 N1	3.1	0.973	32.7	LOS C	31.7	227.6	0.96	1.57	2.43	32.8
All Vehicles		2206	3.5	2030 N1	3.8	0.973	18.1	LOS B	31.7	227.6	0.71	1.06	1.36	38.1

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	50	4.0	50	4.0	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.4
2	T1	4	50.0	4	50.0	0.008	4.4	LOS A	0.0	0.2	0.30	0.53	0.30	45.9
3	R2	4	50.0	4	50.0	0.008	6.0	LOS A	0.0	0.2	0.30	0.53	0.30	45.2
Approach		58	10.3	58	10.3	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.9
East: Botanica Dr W														
4	L2	8	25.0	8	25.0	0.211	5.0	LOS A	0.4	3.1	0.11	0.15	0.11	48.0
5	T1	177	2.3	177	2.3	0.211	0.1	LOS A	0.4	3.1	0.11	0.15	0.11	47.8
6	R2	60	3.3	60	3.3	0.211	4.8	LOS A	0.4	3.1	0.11	0.15	0.11	47.8
Approach		245	3.3	245	3.3	0.211	1.4	NA	0.4	3.1	0.11	0.15	0.11	47.8
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.101	4.8	LOS A	0.3	2.1	0.11	0.53	0.11	46.3
8	T1	4	50.0	4	50.0	0.101	4.5	LOS A	0.3	2.1	0.11	0.53	0.11	45.9
9	R2	38	5.3	38	5.3	0.101	5.3	LOS A	0.3	2.1	0.11	0.53	0.11	44.1
Approach		104	5.8	104	5.8	0.101	5.0	LOS A	0.3	2.1	0.11	0.53	0.11	45.8
West: Botanica Dr W														
10	L2	16	12.5	16	12.5	0.046	4.9	LOS A	0.1	0.6	0.10	0.17	0.10	46.9
11	T1	54	7.4	54	7.4	0.046	0.1	LOS A	0.1	0.6	0.10	0.17	0.10	47.9
12	R2	12	16.7	12	16.7	0.046	5.2	LOS A	0.1	0.6	0.10	0.17	0.10	46.6
Approach		82	9.8	82	9.8	0.046	1.8	NA	0.1	0.6	0.10	0.17	0.10	47.5

All Vehicles	489	5.7	489	5.7	0.211	2.7	NA	0.4	3.1	0.13	0.28	0.13	46.8

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 4.3 (Site Folder: General)]

Network: 1 [Scenario 4.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3816	5.3	2605	5.3	0.653	11.4	LOS A	33.5	245.0	0.58	0.54	0.58	41.6
3	R2	94	0.0	64	0.0	* 0.647	86.0	LOS F	4.9	34.2	1.00	0.79	1.09	20.6
Approach		3910	5.2	2669 N1	5.2	0.653	13.1	LOS A	33.5	245.0	0.59	0.55	0.59	39.4
East: Site Access (North)														
4	L2	80	0.0	80	0.0	0.151	46.5	LOS D	4.3	29.9	0.78	0.74	0.78	21.0
6	R2	252	0.0	252	0.0	* 0.697	65.4	LOS E	17.2	120.7	0.99	0.84	1.00	17.0
Approach		332	0.0	332	0.0	0.697	60.8	LOS E	17.2	120.7	0.94	0.82	0.94	17.8
North: Joseph Street North														
7	L2	269	0.0	269	0.0	0.185	8.3	LOS A	2.2	15.3	0.12	0.64	0.12	48.6
8	T1	2345	8.1	2345	8.1	* 0.714	12.5	LOS A	31.5	235.7	0.49	0.45	0.49	41.5
Approach		2614	7.3	2614	7.3	0.714	12.1	LOS A	31.5	235.7	0.45	0.47	0.45	42.8
All Vehicles		6856	5.7	5614 N1	7.0	0.714	15.5	LOS B	33.5	245.0	0.54	0.53	0.55	37.5

1.12 PM – Scenario 4.3

MOVEMENT SUMMARY

Network: 1 [Scenario 4.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 4.3 (Site Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 129 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	59	0.0	59	0.0	0.884	55.6	LOS D	45.5	330.0	1.00	0.98	1.09	29.7
2	T1	2027	4.5	2027	4.5	0.884	46.1	LOS D	46.5	337.8	0.99	0.98	1.09	34.1
3	R2	103	6.8	103	6.8	0.642	77.6	LOS F	3.5	25.8	1.00	0.78	1.12	13.4
Approach		2189	4.5	2189	4.5	0.884	47.8	LOS D	46.5	337.8	1.00	0.97	1.09	33.0
East: Georges Ave E														
4	L2	388	3.1	290	3.1	* 1.001	128.8	LOS F	40.5	290.8	1.00	1.34	1.84	9.4
5	T1	518	2.1	387	2.2	1.001	124.9	LOS F	40.5	290.8	1.00	1.46	1.87	17.2
6	R2	73	2.7	54	2.8	1.001	129.2	LOS F	33.7	240.2	1.00	1.51	1.88	17.9
Approach		979	2.6	731 N1	2.6	1.001	126.8	LOS F	40.5	290.8	1.00	1.42	1.86	14.5
North: Joseph St N														
7	L2	36	5.6	36	5.6	1.022	129.2	LOS F	138.0	996.5	1.00	1.50	1.71	12.4
8	T1	3425	3.6	3425	3.6	* 1.022	123.9	LOS F	140.9	1016.8	1.00	1.51	1.72	12.3
9	R2	268	2.2	268	2.2	0.731	37.2	LOS C	10.9	77.8	0.99	0.85	1.04	36.5
Approach		3729	3.5	3729	3.5	1.022	117.8	LOS F	140.9	1016.8	1.00	1.46	1.67	13.5
West: Georges Ave W														
10	L2	122	1.6	122	1.6	0.958	94.7	LOS F	30.5	215.7	1.00	1.25	1.57	23.3
11	T1	235	0.9	235	0.9	0.958	90.3	LOS F	30.5	215.7	1.00	1.25	1.57	14.6
12	R2	57	3.5	57	3.5	0.958	95.5	LOS F	4.5	32.6	1.00	1.11	2.00	14.1
Approach		414	1.4	414	1.4	0.958	92.3	LOS F	30.5	215.7	1.00	1.23	1.63	17.4
All Vehicles		7311	3.6	7063 N1	3.7	1.022	95.5	LOS F	140.9	1016.8	1.00	1.29	1.51	18.0

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 129 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2077	4.4	2077	4.4	0.517	8.8	LOS A	19.5	141.8	0.49	0.45	0.49	63.1
3	R2	32	6.3	32	6.3	* 0.393	76.3	LOS F	2.1	15.5	1.00	0.72	1.00	24.3
Approach		2109	4.5	2109	4.5	0.517	9.9	LOS A	19.5	141.8	0.50	0.46	0.50	61.6
East: Botanica Drive														
4	L2	16	12.5	16	12.5	0.045	43.1	LOS D	0.8	6.0	0.82	0.67	0.82	32.6
6	R2	103	2.9	103	2.9	0.292	52.8	LOS D	5.6	40.0	0.90	0.77	0.90	6.3
Approach		119	4.2	119	4.2	0.292	51.5	LOS D	5.6	40.0	0.89	0.76	0.89	11.3
North: Joseph Street North														
7	L2	138	2.2	95	2.2	* 0.763	21.8	LOS B	29.6	213.8	0.62	0.61	0.62	38.6
8	T1	3735	3.7	2558	3.7	0.763	10.2	LOS A	29.6	213.8	0.50	0.48	0.50	65.4
Approach		3873	3.6	2653 N1	3.7	0.763	10.7	LOS A	29.6	213.8	0.51	0.48	0.51	64.9
All Vehicles		6101	3.9	4881 N1	4.9	0.763	11.3	LOS A	29.6	213.8	0.51	0.48	0.51	62.0

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 4.3 (Site Folder: General)]

Network: 1 [Scenario 4.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	72	2.8	72	2.8	0.680	13.0	LOS A	5.5	39.9	0.90	1.08	1.21	37.2
2	T1	291	3.8	291	3.8	0.680	12.7	LOS A	5.5	39.9	0.90	1.08	1.21	42.5
3u	U	4	50.0	4	50.0	0.680	19.2	LOS B	5.5	39.9	0.90	1.08	1.21	42.0
Approach		367	4.1	367	4.1	0.680	12.9	LOS A	5.5	39.9	0.90	1.08	1.21	41.9

North: East St N														
8	T1	383	3.1	383	3.1	1.472	856.9	LOS F	605.2	4343.5	1.00	3.22	7.14	3.9
9	R2	901	2.7	901	2.7	1.472	859.8	LOS F	605.2	4343.5	1.00	3.22	7.14	2.1
9u	U	4	50.0	4	50.0	1.472	862.6	LOS F	605.2	4343.5	1.00	3.22	7.14	3.9
Approach		1288	3.0	1288	3.0	1.472	859.0	LOS F	605.2	4343.5	1.00	3.22	7.14	2.7
West: Georges Ave														
10	L2	321	2.5	313	2.4	0.389	6.1	LOS A	2.2	15.9	0.45	0.65	0.45	44.7
12	R2	36	5.6	35	5.5	0.389	8.8	LOS A	2.2	15.9	0.45	0.65	0.45	45.2
12u	U	6	33.3	6	32.9	0.389	11.0	LOS A	2.2	15.9	0.45	0.65	0.45	41.0
Approach		363	3.3	354 N1	3.2	0.389	6.4	LOS A	2.2	15.9	0.45	0.65	0.45	44.8
All Vehicles		2018	3.2	2009 N1	3.2	1.472	554.3	LOS F	605.2	4343.5	0.88	2.37	4.88	4.5

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	20	10.0	20	10.0	0.014	4.9	LOS A	0.1	0.4	0.16	0.49	0.16	43.8
2	T1	4	50.0	4	50.0	0.007	4.1	LOS A	0.0	0.2	0.22	0.50	0.22	46.1
3	R2	4	50.0	4	50.0	0.007	5.5	LOS A	0.0	0.2	0.22	0.50	0.22	45.3
Approach		28	21.4	28	21.4	0.014	4.9	LOS A	0.1	0.4	0.18	0.50	0.18	44.6
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.046	5.1	LOS A	0.1	0.5	0.05	0.07	0.05	48.5
5	T1	75	4.0	75	4.0	0.046	0.0	LOS A	0.1	0.5	0.05	0.07	0.05	49.2
6	R2	6	33.3	6	33.3	0.046	5.3	LOS A	0.1	0.5	0.05	0.07	0.05	48.0
Approach		86	8.1	86	8.1	0.046	0.7	NA	0.1	0.5	0.05	0.07	0.05	48.9
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.026	5.4	LOS A	0.1	0.6	0.20	0.53	0.20	45.5
8	T1	4	50.0	4	50.0	0.026	4.1	LOS A	0.1	0.6	0.20	0.53	0.20	45.8
9	R2	26	7.7	26	7.7	0.026	5.0	LOS A	0.1	0.6	0.20	0.53	0.20	43.8
Approach		34	17.6	34	17.6	0.026	5.0	LOS A	0.1	0.6	0.20	0.53	0.20	44.5
West: Botanica Dr W														
10	L2	26	7.7	20	8.7	0.071	4.8	LOS A	0.1	1.0	0.07	0.17	0.07	47.1
11	T1	115	2.6	89	3.0	0.071	0.1	LOS A	0.1	1.0	0.07	0.17	0.07	48.1
12	R2	30	6.7	23	7.6	0.071	4.8	LOS A	0.1	1.0	0.07	0.17	0.07	47.0

Approach	171	4.1	133 N1	4.7	0.071	1.6	NA	0.1	1.0	0.07	0.17	0.07	47.7
All Vehicles	319	8.2	281 N1	9.2	0.071	2.1	NA	0.1	1.0	0.09	0.22	0.09	47.3

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access PM - Scenario 4.3 (Site Folder: General)]

Network: 1 [Scenario 4.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 129 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2174	4.4	2174	4.4	* 0.751	3.6	LOS A	17.6	128.0	0.42	0.39	0.42	57.5
3	R2	6	0.0	6	0.0	0.070	72.8	LOS F	0.4	2.7	0.98	0.65	0.98	22.8
Approach		2180	4.4	2180	4.4	0.751	3.8	LOS A	17.6	128.0	0.42	0.39	0.42	57.0
East: Site Access (North)														
4	L2	15	0.0	15	0.0	0.058	56.6	LOS E	0.8	5.8	0.90	0.69	0.90	18.6
6	R2	31	0.0	31	0.0	* 0.575	77.3	LOS F	2.1	15.0	1.00	0.77	1.11	15.2
Approach		46	0.0	46	0.0	0.575	70.6	LOS F	2.1	15.0	0.97	0.74	1.04	16.2
North: Joseph Street North														
7	L2	9	0.0	6	0.0	0.005	8.7	LOS A	0.1	0.4	0.15	0.62	0.15	48.2
8	T1	3859	3.5	2778	3.5	0.634	3.1	LOS A	17.2	124.3	0.22	0.21	0.22	59.9
Approach		3868	3.5	2785 N1	3.5	0.634	3.1	LOS A	17.2	124.3	0.22	0.21	0.22	59.8
All Vehicles		6094	3.8	5011 N1	4.6	0.751	4.0	LOS A	17.6	128.0	0.31	0.29	0.31	56.7

1.13 AM – Scenario 5.2

MOVEMENT SUMMARY

Network: 1 [Scenario 5.2 - AM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 5.2 (Site Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 141 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	118	1.7	99	1.7	0.848	24.5	LOS B	37.1	270.7	0.71	0.69	0.72	41.8
2	T1	3481	5.4	2913	5.4	0.848	19.8	LOS B	38.4	280.8	0.70	0.66	0.72	48.2
3	R2	540	1.9	452	1.8	* 1.034	148.8	LOS F	43.7	310.8	1.00	1.25	2.00	6.5
Approach		4139	4.9	3464 N1	4.8	1.034	36.7	LOS C	43.7	310.8	0.74	0.74	0.89	34.8
East: Georges Ave E														
4	L2	269	5.2	269	5.2	0.653	47.6	LOS D	21.9	159.1	0.91	0.83	0.91	19.5
5	T1	260	2.7	260	2.7	0.653	55.2	LOS D	21.9	159.1	0.96	0.83	0.97	27.0
6	R2	14	14.3	14	14.2	0.653	67.8	LOS E	11.2	80.6	1.00	0.82	1.01	26.4
Approach		543	4.2	542 N1	4.2	0.653	51.7	LOS D	21.9	159.1	0.94	0.83	0.94	24.1
North: Joseph St N														
7	L2	94	3.2	94	3.2	1.046	189.8	LOS F	73.8	548.5	1.00	1.66	2.06	8.7
8	T1	2159	8.0	2159	8.0	* 1.046	182.4	LOS F	79.0	590.8	1.00	1.68	2.05	8.8
9	R2	136	2.2	136	2.2	0.811	81.2	LOS F	10.0	71.3	1.00	0.89	1.23	25.5
Approach		2389	7.5	2389	7.5	1.046	176.9	LOS F	79.0	590.8	1.00	1.63	2.00	9.4
West: Georges Ave W														
10	L2	255	0.8	255	0.8	1.047	189.0	LOS F	68.4	487.9	1.00	1.57	2.08	14.4
11	T1	403	3.5	403	3.5	* 1.047	187.3	LOS F	68.4	487.9	1.00	1.59	2.11	8.3
12	R2	189	2.1	189	2.1	1.047	193.9	LOS F	44.4	317.7	1.00	1.63	2.18	8.2
Approach		847	2.4	847	2.4	1.047	189.3	LOS F	68.4	487.9	1.00	1.59	2.12	10.2
All Vehicles		7918	5.3	7242 N1	5.8	1.047	101.9	LOS F	79.0	590.8	0.87	1.14	1.40	17.3

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - AM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 141 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3677	5.4	3677	5.4	* 0.828	23.4	LOS B	50.4	369.0	0.86	0.80	0.86	46.8
3	R2	12	16.7	12	16.7	0.173	82.2	LOS F	0.8	6.8	0.99	0.68	0.99	23.1
Approach		3689	5.5	3689	5.5	0.828	23.6	LOS B	50.4	369.0	0.86	0.80	0.86	46.7
East: Botanica Drive														
4	L2	32	6.3	32	6.3	0.055	35.1	LOS C	1.5	10.7	0.71	0.67	0.71	36.8
6	R2	234	1.3	234	1.3	0.429	45.8	LOS D	12.7	90.0	0.84	0.80	0.84	7.3
Approach		266	1.9	266	1.9	0.429	44.5	LOS D	12.7	90.0	0.83	0.78	0.83	12.4
North: Joseph Street North														
7	L2	68	5.9	65	5.9	* 0.616	31.4	LOS C	22.8	169.8	0.66	0.63	0.66	29.3
8	T1	2357	8.0	2266	8.0	0.616	24.2	LOS B	28.3	212.0	0.71	0.65	0.71	52.7
Approach		2425	7.9	2331 N1	7.9	0.616	24.4	LOS B	28.3	212.0	0.71	0.65	0.71	52.3
All Vehicles		6380	6.3	6286 N1	6.3	0.828	24.8	LOS B	50.4	369.0	0.80	0.74	0.80	47.7

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - AM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	37	5.4	37	5.4	0.515	8.7	LOS A	3.8	28.0	0.74	0.85	0.83	40.8
2	T1	377	5.3	377	5.3	0.515	8.4	LOS A	3.8	28.0	0.74	0.85	0.83	44.8
3u	U	5	40.0	5	40.0	0.515	14.2	LOS A	3.8	28.0	0.74	0.85	0.83	44.4
Approach		419	5.7	419	5.7	0.515	8.5	LOS A	3.8	28.0	0.74	0.85	0.83	44.6
North: East St N														
8	T1	240	0.8	240	0.8	0.572	4.3	LOS A	4.6	32.8	0.41	0.58	0.41	45.5
9	R2	492	3.9	492	3.9	0.572	7.3	LOS A	4.6	32.8	0.41	0.58	0.41	42.0

9u	U	4	50.0	4	50.0	0.572	9.4	LOS A	4.6	32.8	0.41	0.58	0.41	44.9
Approach		736	3.1	736	3.1	0.572	6.3	LOS A	4.6	32.8	0.41	0.58	0.41	43.7
West: Georges Ave														
10	L2	936	2.9	827	3.0	1.029	84.1	LOS F	65.9	473.6	1.00	2.73	4.99	21.5
12	R2	110	1.8	97	1.9	1.029	86.7	LOS F	65.9	473.6	1.00	2.73	4.99	21.7
12u	U	5	40.0	4	40.8	1.029	90.4	LOS F	65.9	473.6	1.00	2.73	4.99	12.7
Approach		1051	2.9	928 N1	3.0	1.029	84.4	LOS F	65.9	473.6	1.00	2.73	4.99	21.5
All Vehicles		2206	3.5	2083 N1	3.7	1.029	41.5	LOS C	65.9	473.6	0.74	1.59	2.53	29.4

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - AM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	50	4.0	50	4.0	0.064	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.4
2	T1	4	50.0	4	50.0	0.008	4.4	LOS A	0.0	0.2	0.29	0.53	0.29	45.9
3	R2	4	50.0	4	50.0	0.008	6.0	LOS A	0.0	0.2	0.29	0.53	0.29	45.2
Approach		58	10.3	58	10.3	0.064	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.9
East: Botanica Dr W														
4	L2	8	25.0	8	25.0	0.189	5.0	LOS A	0.4	3.0	0.10	0.15	0.10	48.0
5	T1	177	2.3	177	2.3	0.189	0.1	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
6	R2	60	3.3	60	3.3	0.189	4.8	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
Approach		245	3.3	245	3.3	0.189	1.4	NA	0.4	3.0	0.10	0.15	0.10	47.9
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.094	4.8	LOS A	0.3	2.1	0.11	0.53	0.11	46.3
8	T1	4	50.0	4	50.0	0.094	4.5	LOS A	0.3	2.1	0.11	0.53	0.11	45.9
9	R2	38	5.3	38	5.3	0.094	5.3	LOS A	0.3	2.1	0.11	0.53	0.11	44.1
Approach		104	5.8	104	5.8	0.094	5.0	LOS A	0.3	2.1	0.11	0.53	0.11	45.8
West: Botanica Dr W														
10	L2	16	12.5	15	12.7	0.045	4.9	LOS A	0.1	0.6	0.10	0.17	0.10	46.8
11	T1	54	7.4	52	7.5	0.045	0.1	LOS A	0.1	0.6	0.10	0.17	0.10	47.9
12	R2	12	16.7	12	16.9	0.045	5.2	LOS A	0.1	0.6	0.10	0.17	0.10	46.6
Approach		82	9.8	79 N1	9.9	0.045	1.8	NA	0.1	0.6	0.10	0.17	0.10	47.5
All Vehicles		489	5.7	486 N1	5.8	0.189	2.7	NA	0.4	3.0	0.12	0.28	0.12	46.8

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - AM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 141 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3816	5.3	3460	5.3	* 0.663	11.6	LOS A	33.9	247.9	0.56	0.52	0.56	41.2
3	R2	94	0.0	85	0.0	0.542	75.7	LOS F	5.9	41.1	1.00	0.78	1.00	22.4
Approach		3910	5.2	3545 N1	5.2	0.663	13.2	LOS A	33.9	247.9	0.57	0.52	0.57	39.3
East: Site Access (North)														
4	L2	80	0.0	80	0.0	0.129	39.2	LOS C	3.8	26.4	0.73	0.72	0.73	23.0
6	R2	252	0.0	252	0.0	* 0.660	60.3	LOS E	16.1	112.4	0.98	0.83	0.98	18.0
Approach		332	0.0	332	0.0	0.660	55.3	LOS D	16.1	112.4	0.92	0.81	0.92	19.0
North: Joseph Street North														
7	L2	269	0.0	258	0.0	0.208	12.0	LOS A	5.4	37.7	0.48	0.72	0.48	45.7
8	T1	2345	8.1	2251	8.1	0.541	19.8	LOS B	25.2	189.0	0.69	0.63	0.69	33.5
Approach		2614	7.3	2510 N1	7.3	0.541	19.0	LOS B	25.2	189.0	0.67	0.64	0.67	35.4
All Vehicles		6856	5.7	6387 N1	6.1	0.663	17.7	LOS B	33.9	247.9	0.63	0.58	0.63	35.2

1.14 PM – Scenario 5.2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - PM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 134 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	59	0.0	59	0.0	0.908	69.9	LOS E	38.5	278.4	1.00	1.02	1.18	25.9
2	T1	2027	4.5	2027	4.5	0.908	61.7	LOS E	39.4	286.5	1.00	1.02	1.18	29.1
3	R2	103	6.8	103	6.8	0.979	107.5	LOS F	8.8	64.9	1.00	1.09	1.84	10.3
Approach		2189	4.5	2189	4.5	0.979	64.0	LOS E	39.4	286.5	1.00	1.03	1.22	28.0
East: Georges Ave E														
4	L2	388	3.1	388	3.1	* 0.976	101.1	LOS F	57.2	410.0	1.00	1.20	1.52	11.5
5	T1	518	2.1	518	2.1	0.976	101.6	LOS F	57.2	410.0	1.00	1.29	1.59	19.6
6	R2	73	2.7	73	2.7	0.976	108.5	LOS F	36.0	256.7	1.00	1.35	1.64	20.3
Approach		979	2.6	979	2.6	0.976	101.9	LOS F	57.2	410.0	1.00	1.26	1.57	16.9
North: Joseph St N														
7	L2	36	5.6	36	5.6	0.978	91.5	LOS F	85.0	613.5	1.00	1.25	1.42	16.6
8	T1	3425	3.6	3425	3.6	* 0.978	84.8	LOS F	86.9	626.7	0.98	1.24	1.40	16.7
9	R2	268	2.2	268	2.2	0.760	37.5	LOS C	9.3	66.2	1.00	0.86	1.07	36.6
Approach		3729	3.5	3729	3.5	0.978	81.5	LOS F	86.9	626.7	0.98	1.21	1.38	18.0
West: Georges Ave W														
10	L2	122	1.6	122	1.6	0.589	43.4	LOS D	19.1	135.2	0.88	0.79	0.88	34.5
11	T1	235	0.9	235	0.9	0.589	39.1	LOS C	19.1	135.2	0.88	0.79	0.88	24.2
12	R2	57	3.5	57	3.5	0.976	101.6	LOS F	4.7	33.6	1.00	1.12	2.06	13.5
Approach		414	1.4	414	1.4	0.976	49.0	LOS D	19.1	135.2	0.90	0.83	1.04	25.5
All Vehicles		7311	3.6	7311	3.6	0.979	77.1	LOS F	86.9	626.7	0.98	1.14	1.34	20.9

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - PM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 134 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														

2	T1	2077	4.4	2077	4.4	0.397	9.1	LOS A	14.1	102.3	0.46	0.41	0.46	62.7
3	R2	32	6.3	32	6.3	* 0.408	79.4	LOS F	2.2	16.1	1.00	0.72	1.00	23.7
Approach		2109	4.5	2109	4.5	0.408	10.2	LOS A	14.1	102.3	0.46	0.42	0.46	61.2
East: Botanica Drive														
4	L2	16	12.5	16	12.5	0.041	42.5	LOS D	0.8	6.1	0.80	0.66	0.80	32.8
6	R2	103	2.9	103	2.9	0.262	51.6	LOS D	5.6	40.2	0.87	0.76	0.87	6.6
Approach		119	4.2	119	4.2	0.262	50.4	LOS D	5.6	40.2	0.86	0.75	0.86	11.6
North: Joseph Street North														
7	L2	138	2.2	138	2.2	* 0.855	20.3	LOS B	35.2	253.8	0.64	0.65	0.65	40.3
8	T1	3735	3.7	3735	3.7	0.855	4.8	LOS A	35.2	253.8	0.31	0.31	0.32	72.3
Approach		3873	3.6	3873	3.6	0.855	5.4	LOS A	35.2	253.8	0.32	0.32	0.33	71.6
All Vehicles		6101	3.9	6101	3.9	0.855	7.9	LOS A	35.2	253.8	0.38	0.36	0.39	66.9

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - PM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	72	2.8	72	2.8	0.720	22.4	LOS B	7.8	56.8	1.00	1.27	1.62	31.3
2	T1	291	3.8	291	3.8	0.720	22.1	LOS B	7.8	56.8	1.00	1.27	1.62	38.3
3u	U	4	50.0	4	50.0	0.720	29.5	LOS C	7.8	56.8	1.00	1.27	1.62	37.9
Approach		367	4.1	367	4.1	0.720	22.2	LOS B	7.8	56.8	1.00	1.27	1.62	37.4
North: East St N														
8	T1	383	3.1	383	3.1	0.932	4.5	LOS A	17.8	128.0	0.54	0.50	0.54	45.2
9	R2	901	2.7	901	2.7	0.932	7.4	LOS A	17.8	128.0	0.54	0.50	0.54	41.5
9u	U	4	50.0	4	50.0	0.932	9.5	LOS A	17.8	128.0	0.54	0.50	0.54	44.6
Approach		1288	3.0	1288	3.0	0.932	6.5	LOS A	17.8	128.0	0.54	0.50	0.54	43.1
West: Georges Ave														
10	L2	321	2.5	321	2.5	0.396	6.1	LOS A	2.4	16.9	0.48	0.66	0.48	44.7
12	R2	36	5.6	36	5.6	0.396	8.8	LOS A	2.4	16.9	0.48	0.66	0.48	45.2
12u	U	6	33.3	6	33.3	0.396	11.0	LOS A	2.4	16.9	0.48	0.66	0.48	40.9
Approach		363	3.3	363	3.3	0.396	6.5	LOS A	2.4	16.9	0.48	0.66	0.48	44.7
All Vehicles		2018	3.2	2018	3.2	0.932	9.4	LOS A	17.8	128.0	0.61	0.67	0.73	42.0

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - PM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	20	10.0	20	10.0	0.014	4.9	LOS A	0.1	0.4	0.16	0.49	0.16	43.8
2	T1	4	50.0	4	50.0	0.007	4.2	LOS A	0.0	0.2	0.24	0.51	0.24	46.0
3	R2	4	50.0	4	50.0	0.007	5.6	LOS A	0.0	0.2	0.24	0.51	0.24	45.3
Approach		28	21.4	28	21.4	0.014	4.9	LOS A	0.1	0.4	0.18	0.50	0.18	44.6
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.046	5.2	LOS A	0.1	0.5	0.06	0.07	0.06	48.4
5	T1	75	4.0	75	4.0	0.046	0.1	LOS A	0.1	0.5	0.06	0.07	0.06	49.1
6	R2	6	33.3	6	33.3	0.046	5.4	LOS A	0.1	0.5	0.06	0.07	0.06	47.9
Approach		86	8.1	86	8.1	0.046	0.7	NA	0.1	0.5	0.06	0.07	0.06	48.9
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.026	5.5	LOS A	0.1	0.6	0.22	0.54	0.22	45.5
8	T1	4	50.0	4	50.0	0.026	4.2	LOS A	0.1	0.6	0.22	0.54	0.22	45.7
9	R2	26	7.7	26	7.7	0.026	5.1	LOS A	0.1	0.6	0.22	0.54	0.22	43.7
Approach		34	17.6	34	17.6	0.026	5.0	LOS A	0.1	0.6	0.22	0.54	0.22	44.4
West: Botanica Dr W														
10	L2	26	7.7	26	7.7	0.091	4.7	LOS A	0.2	1.2	0.07	0.17	0.07	47.1
11	T1	115	2.6	115	2.6	0.091	0.1	LOS A	0.2	1.2	0.07	0.17	0.07	48.1
12	R2	30	6.7	30	6.7	0.091	4.8	LOS A	0.2	1.2	0.07	0.17	0.07	47.0
Approach		171	4.1	171	4.1	0.091	1.6	NA	0.2	1.2	0.07	0.17	0.07	47.7
All Vehicles		319	8.2	319	8.2	0.091	2.0	NA	0.2	1.2	0.09	0.21	0.09	47.3

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access PM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - PM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development

PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 134 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2174	4.4	2174	4.4	0.348	2.4	LOS A	7.9	57.4	0.20	0.18	0.20	61.0
3	R2	6	0.0	6	0.0	* 0.073	75.7	LOS F	0.4	2.8	0.99	0.65	0.99	22.4
Approach		2180	4.4	2180	4.4	0.348	2.7	LOS A	7.9	57.4	0.21	0.19	0.21	60.3
East: Site Access (North)														
4	L2	15	0.0	15	0.0	0.047	54.2	LOS D	0.8	5.7	0.86	0.68	0.86	19.1
6	R2	31	0.0	31	0.0	0.203	68.3	LOS E	2.0	13.7	0.97	0.72	0.97	16.6
Approach		46	0.0	46	0.0	0.203	63.7	LOS E	2.0	13.7	0.93	0.71	0.93	17.3
North: Joseph Street North														
7	L2	9	0.0	9	0.0	* 0.007	9.3	LOS A	0.1	0.6	0.24	0.63	0.24	47.8
8	T1	3859	3.5	3859	3.5	* 0.686	4.4	LOS A	24.6	177.5	0.29	0.27	0.29	56.2
Approach		3868	3.5	3868	3.5	0.686	4.5	LOS A	24.6	177.5	0.28	0.27	0.28	56.2
All Vehicles		6094	3.8	6094	3.8	0.686	4.3	LOS A	24.6	177.5	0.26	0.24	0.26	56.2

1.15 AM – Scenario 5.3

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	118	1.7	101	1.7	0.919	53.9	LOS D	59.6	434.5	0.97	0.98	1.08	30.0
2	T1	3481	5.4	2993	5.4	* 0.919	47.6	LOS D	61.5	450.8	0.95	0.96	1.06	33.5
3	R2	540	1.9	464	1.8	0.905	74.4	LOS F	18.5	131.4	1.00	1.04	1.38	14.0
Approach		4139	4.9	3558 N1	4.8	0.919	51.3	LOS D	61.5	450.8	0.95	0.97	1.11	30.9
East: Georges Ave E														
4	L2	269	5.2	269	5.2	0.581	43.7	LOS D	21.8	158.1	0.85	0.80	0.85	20.6
5	T1	260	2.7	260	2.7	0.581	53.1	LOS D	21.8	158.1	0.92	0.80	0.92	27.4
6	R2	14	14.3	14	14.2	0.581	68.1	LOS E	10.9	78.9	0.98	0.80	0.98	26.4
Approach		543	4.2	542 N1	4.2	0.581	48.8	LOS D	21.8	158.1	0.89	0.80	0.89	24.9
North: Joseph St N														
7	L2	94	3.2	94	3.2	0.917	76.6	LOS F	46.2	343.7	1.00	1.06	1.22	19.2
8	T1	2159	8.0	2159	8.0	0.917	68.0	LOS E	48.3	361.4	1.00	1.06	1.22	19.6
9	R2	136	2.2	136	2.2	0.851	87.8	LOS F	10.7	76.4	1.00	0.92	1.31	24.4
Approach		2389	7.5	2389	7.5	0.917	69.5	LOS E	48.3	361.4	1.00	1.05	1.22	20.0
West: Georges Ave W														
10	L2	255	0.8	255	0.8	* 0.909	72.6	LOS F	43.6	311.2	1.00	1.03	1.21	27.0
11	T1	403	3.5	403	3.5	0.909	72.4	LOS F	43.6	311.2	1.00	1.05	1.25	16.9
12	R2	189	2.1	189	2.1	0.909	84.6	LOS F	27.1	194.3	1.00	1.09	1.34	15.7
Approach		847	2.4	847	2.4	0.909	75.2	LOS F	43.6	311.2	1.00	1.05	1.26	20.1
All Vehicles		7918	5.3	7337 N1	5.8	0.919	59.8	LOS E	61.5	450.8	0.97	0.99	1.15	25.3

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3677	5.4	3677	5.4	* 0.842	19.7	LOS B	53.3	390.5	0.82	0.77	0.82	50.1
3	R2	12	16.7	12	16.7	0.181	86.3	LOS F	0.9	7.1	0.99	0.68	0.99	22.4

Approach		3689	5.5	3689	5.5	0.842	19.9	LOS B	53.3	390.5	0.82	0.77	0.83	49.9
East: Botanica Drive														
4	L2	32	6.3	32	6.3	0.070	44.7	LOS D	1.7	12.6	0.78	0.68	0.78	32.9
6	R2	234	1.3	234	1.3	0.795	67.5	LOS E	17.2	121.4	1.00	0.92	1.12	5.2
Approach		266	1.9	266	1.9	0.795	64.7	LOS E	17.2	121.4	0.97	0.89	1.08	9.1
North: Joseph Street North														
7	L2	68	5.9	68	5.9	* 0.558	28.6	LOS C	25.2	187.8	0.67	0.64	0.67	31.6
8	T1	2357	8.0	2357	8.0	0.558	26.0	LOS B	35.5	265.4	0.81	0.74	0.81	51.4
Approach		2425	7.9	2425	7.9	0.558	26.1	LOS B	35.5	265.4	0.81	0.74	0.81	51.1
All Vehicles		6380	6.3	6380	6.3	0.842	24.1	LOS B	53.3	390.5	0.82	0.77	0.83	48.3

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	37	5.4	37	5.4	0.516	8.7	LOS A	3.8	28.2	0.74	0.85	0.83	40.8
2	T1	377	5.3	377	5.3	0.516	8.4	LOS A	3.8	28.2	0.74	0.85	0.83	44.8
3u	U	5	40.0	5	40.0	0.516	14.2	LOS A	3.8	28.2	0.74	0.85	0.83	44.4
Approach		419	5.7	419	5.7	0.516	8.5	LOS A	3.8	28.2	0.74	0.85	0.83	44.6
North: East St N														
8	T1	240	0.8	240	0.8	0.575	4.3	LOS A	4.6	32.9	0.41	0.58	0.41	45.5
9	R2	492	3.9	492	3.9	0.575	7.3	LOS A	4.6	32.9	0.41	0.58	0.41	42.0
9u	U	4	50.0	4	50.0	0.575	9.4	LOS A	4.6	32.9	0.41	0.58	0.41	44.9
Approach		736	3.1	736	3.1	0.575	6.3	LOS A	4.6	32.9	0.41	0.58	0.41	43.7
West: Georges Ave														
10	L2	936	2.9	879	3.0	1.089	180.7	LOS F	125.3	899.9	1.00	4.67	9.23	13.1
12	R2	110	1.8	103	1.9	1.089	183.3	LOS F	125.3	899.9	1.00	4.67	9.23	13.2
12u	U	5	40.0	5	40.6	1.089	186.9	LOS F	125.3	899.9	1.00	4.67	9.23	6.9
Approach		1051	2.9	987 N1	3.0	1.089	181.0	LOS F	125.3	899.9	1.00	4.67	9.23	13.1
All Vehicles		2206	3.5	2142 N1	3.6	1.089	87.3	LOS F	125.3	899.9	0.75	2.52	4.56	20.3

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	50	4.0	50	4.0	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.4
2	T1	4	50.0	4	50.0	0.008	4.4	LOS A	0.0	0.2	0.30	0.53	0.30	45.9
3	R2	4	50.0	4	50.0	0.008	6.0	LOS A	0.0	0.2	0.30	0.53	0.30	45.2
Approach		58	10.3	58	10.3	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.9
East: Botanica Dr W														
4	L2	8	25.0	8	25.0	0.211	5.0	LOS A	0.4	3.0	0.10	0.15	0.10	48.0
5	T1	177	2.3	177	2.3	0.211	0.1	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
6	R2	60	3.3	60	3.3	0.211	4.8	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
Approach		245	3.3	245	3.3	0.211	1.4	NA	0.4	3.0	0.10	0.15	0.10	47.8
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.101	4.8	LOS A	0.3	2.1	0.11	0.53	0.11	46.3
8	T1	4	50.0	4	50.0	0.101	4.5	LOS A	0.3	2.1	0.11	0.53	0.11	45.9
9	R2	38	5.3	38	5.3	0.101	5.3	LOS A	0.3	2.1	0.11	0.53	0.11	44.1
Approach		104	5.8	104	5.8	0.101	5.0	LOS A	0.3	2.1	0.11	0.53	0.11	45.8
West: Botanica Dr W														
10	L2	16	12.5	16	12.5	0.046	4.9	LOS A	0.1	0.6	0.10	0.17	0.10	46.8
11	T1	54	7.4	54	7.4	0.046	0.1	LOS A	0.1	0.6	0.10	0.17	0.10	47.9
12	R2	12	16.7	12	16.7	0.046	5.2	LOS A	0.1	0.6	0.10	0.17	0.10	46.6
Approach		82	9.8	82	9.8	0.046	1.8	NA	0.1	0.6	0.10	0.17	0.10	47.5
All Vehicles		489	5.7	489	5.7	0.211	2.7	NA	0.4	3.0	0.13	0.28	0.13	46.8

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
AM Peak Hour Volumes

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3816	5.3	3162	5.3	* 0.754	11.8	LOS A	43.8	320.7	0.60	0.57	0.60	40.9
3	R2	94	0.0	78	0.0	0.520	79.4	LOS F	5.6	39.4	1.00	0.77	1.00	21.8
Approach		3910	5.2	3240 N1	5.2	0.754	13.5	LOS A	43.8	320.7	0.61	0.57	0.61	39.0
East: Site Access (North)														
4	L2	80	0.0	80	0.0	0.142	44.3	LOS D	4.1	29.0	0.76	0.73	0.76	21.5
6	R2	252	0.0	252	0.0	* 0.744	68.2	LOS E	17.7	124.1	1.00	0.87	1.05	16.6
Approach		332	0.0	332	0.0	0.744	62.5	LOS E	17.7	124.1	0.94	0.83	0.98	17.6
North: Joseph Street North														
7	L2	269	0.0	269	0.0	0.191	7.9	LOS A	1.5	10.5	0.09	0.63	0.09	48.9
8	T1	2345	8.1	2345	8.1	0.520	8.0	LOS A	19.3	144.4	0.28	0.26	0.28	48.6
Approach		2614	7.3	2614	7.3	0.520	8.0	LOS A	19.3	144.4	0.26	0.30	0.26	48.6
All Vehicles		6856	5.7	6185 N1	6.3	0.754	13.8	LOS A	43.8	320.7	0.48	0.47	0.49	39.3

1.16 PM – Scenario 5.3

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 131 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed

		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	59	0.0	59	0.0	0.898	68.4	LOS E	36.6	264.7	1.00	1.01	1.17	26.5
2	T1	2027	4.5	2027	4.5	0.898	58.9	LOS E	37.5	272.4	1.00	1.01	1.17	29.9
3	R2	103	6.8	103	6.8	0.652	78.9	LOS F	3.5	26.2	1.00	0.78	1.10	13.3
Approach		2189	4.5	2189	4.5	0.898	60.1	LOS E	37.5	272.4	1.00	1.00	1.16	29.0
East: Georges Ave E														
4	L2	388	3.1	388	3.1	* 0.944	78.7	LOS F	48.7	349.0	1.00	1.11	1.36	13.9
5	T1	518	2.1	518	2.1	0.944	79.9	LOS F	48.7	349.0	1.00	1.17	1.42	22.5
6	R2	73	2.7	73	2.7	0.944	87.1	LOS F	32.3	230.6	1.00	1.21	1.46	23.3
Approach		979	2.6	979	2.6	0.944	80.0	LOS F	48.7	349.0	1.00	1.15	1.40	19.8
North: Joseph St N														
7	L2	36	5.6	36	5.6	0.961	77.1	LOS F	76.0	548.9	1.00	1.18	1.33	19.1
8	T1	3425	3.6	3425	3.6	* 0.961	70.1	LOS E	77.7	560.5	0.98	1.17	1.31	19.2
9	R2	268	2.2	268	2.2	0.804	39.8	LOS C	9.7	69.1	1.00	0.88	1.13	35.7
Approach		3729	3.5	3729	3.5	0.961	68.0	LOS E	77.7	560.5	0.98	1.15	1.30	20.4
West: Georges Ave W														
10	L2	122	1.6	122	1.6	0.576	41.6	LOS C	18.5	130.6	0.87	0.78	0.87	35.1
11	T1	235	0.9	235	0.9	0.576	37.2	LOS C	18.5	130.6	0.87	0.78	0.87	24.8
12	R2	57	3.5	57	3.5	0.954	92.4	LOS F	4.4	31.5	1.00	1.08	1.94	14.5
Approach		414	1.4	414	1.4	0.954	46.1	LOS D	18.5	130.6	0.89	0.82	1.02	26.3
All Vehicles		7311	3.6	7311	3.6	0.961	66.0	LOS E	77.7	560.5	0.98	1.08	1.26	23.2

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 131 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2077	4.4	2077	4.4	0.401	9.3	LOS A	14.1	102.4	0.47	0.42	0.47	62.4
3	R2	32	6.3	32	6.3	* 0.399	77.6	LOS F	2.1	15.8	1.00	0.72	1.00	24.1
Approach		2109	4.5	2109	4.5	0.401	10.3	LOS A	14.1	102.4	0.47	0.42	0.47	60.9
East: Botanica Drive														
4	L2	16	12.5	16	12.5	0.040	40.9	LOS C	0.8	5.9	0.79	0.66	0.79	33.4

6	R2	103	2.9	103	2.9	0.256	50.0	LOS D	5.4	39.1	0.87	0.76	0.87	6.8
Approach		119	4.2	119	4.2	0.256	48.7	LOS D	5.4	39.1	0.86	0.75	0.86	11.9
North: Joseph Street North														
7	L2	138	2.2	138	2.2	* 0.868	23.8	LOS B	39.6	285.4	0.71	0.72	0.74	35.9
8	T1	3735	3.7	3735	3.7	0.868	6.5	LOS A	39.6	285.4	0.35	0.34	0.36	70.0
Approach		3873	3.6	3873	3.6	0.868	7.1	LOS A	39.6	285.4	0.36	0.36	0.38	69.3
All Vehicles		6101	3.9	6101	3.9	0.868	9.0	LOS A	39.6	285.4	0.41	0.39	0.42	65.4

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	72	2.8	72	2.8	0.705	21.6	LOS B	7.7	55.6	1.00	1.25	1.58	31.8
2	T1	291	3.8	291	3.8	0.705	21.3	LOS B	7.7	55.6	1.00	1.25	1.58	38.7
3u	U	4	50.0	4	50.0	0.705	28.7	LOS C	7.7	55.6	1.00	1.25	1.58	38.3
Approach		367	4.1	367	4.1	0.705	21.4	LOS B	7.7	55.6	1.00	1.25	1.58	37.8
North: East St N														
8	T1	383	3.1	383	3.1	0.869	4.5	LOS A	17.8	127.8	0.54	0.50	0.54	45.2
9	R2	901	2.7	901	2.7	0.869	7.4	LOS A	17.8	127.8	0.54	0.50	0.54	41.5
9u	U	4	50.0	4	50.0	0.869	9.5	LOS A	17.8	127.8	0.54	0.50	0.54	44.6
Approach		1288	3.0	1288	3.0	0.869	6.5	LOS A	17.8	127.8	0.54	0.50	0.54	43.1
West: Georges Ave														
10	L2	321	2.5	321	2.5	0.396	6.1	LOS A	2.4	16.9	0.48	0.66	0.48	44.7
12	R2	36	5.6	36	5.6	0.396	8.8	LOS A	2.4	16.9	0.48	0.66	0.48	45.2
12u	U	6	33.3	6	33.3	0.396	11.0	LOS A	2.4	16.9	0.48	0.66	0.48	40.9
Approach		363	3.3	363	3.3	0.396	6.5	LOS A	2.4	16.9	0.48	0.66	0.48	44.7
All Vehicles		2018	3.2	2018	3.2	0.869	9.2	LOS A	17.8	127.8	0.61	0.66	0.72	42.1

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	20	10.0	20	10.0	0.014	4.9	LOS A	0.1	0.4	0.16	0.49	0.16	43.8
2	T1	4	50.0	4	50.0	0.007	4.2	LOS A	0.0	0.2	0.24	0.51	0.24	46.0
3	R2	4	50.0	4	50.0	0.007	5.6	LOS A	0.0	0.2	0.24	0.51	0.24	45.3
Approach		28	21.4	28	21.4	0.014	4.9	LOS A	0.1	0.4	0.18	0.50	0.18	44.6
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.046	5.2	LOS A	0.1	0.5	0.06	0.07	0.06	48.4
5	T1	75	4.0	75	4.0	0.046	0.1	LOS A	0.1	0.5	0.06	0.07	0.06	49.1
6	R2	6	33.3	6	33.3	0.046	5.4	LOS A	0.1	0.5	0.06	0.07	0.06	47.9
Approach		86	8.1	86	8.1	0.046	0.7	NA	0.1	0.5	0.06	0.07	0.06	48.9
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.026	5.5	LOS A	0.1	0.7	0.22	0.54	0.22	45.5
8	T1	4	50.0	4	50.0	0.026	4.2	LOS A	0.1	0.7	0.22	0.54	0.22	45.7
9	R2	26	7.7	26	7.7	0.026	5.1	LOS A	0.1	0.7	0.22	0.54	0.22	43.7
Approach		34	17.6	34	17.6	0.026	5.0	LOS A	0.1	0.7	0.22	0.54	0.22	44.4
West: Botanica Dr W														
10	L2	26	7.7	26	7.7	0.091	4.7	LOS A	0.2	1.2	0.07	0.17	0.07	47.1
11	T1	115	2.6	115	2.6	0.091	0.1	LOS A	0.2	1.2	0.07	0.17	0.07	48.1
12	R2	30	6.7	30	6.7	0.091	4.8	LOS A	0.2	1.2	0.07	0.17	0.07	47.0
Approach		171	4.1	171	4.1	0.091	1.6	NA	0.2	1.2	0.07	0.17	0.07	47.8
All Vehicles		319	8.2	319	8.2	0.091	2.0	NA	0.2	1.2	0.09	0.21	0.09	47.3

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access PM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 131 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2174	4.4	2174	4.4	0.334	1.7	LOS A	6.6	47.6	0.20	0.18	0.20	63.4
3	R2	6	0.0	6	0.0	* 0.071	74.0	LOS F	0.4	2.7	0.99	0.65	0.99	22.7
Approach		2180	4.4	2180	4.4	0.334	1.9	LOS A	6.6	47.6	0.20	0.18	0.20	62.7
East: Site Access (North)														
4	L2	15	0.0	15	0.0	0.059	57.7	LOS E	0.8	5.9	0.90	0.69	0.90	18.4
6	R2	31	0.0	31	0.0	* 0.364	74.3	LOS F	2.1	14.4	1.00	0.72	1.00	15.7
Approach		46	0.0	46	0.0	0.364	68.9	LOS E	2.1	14.4	0.97	0.71	0.97	16.5
North: Joseph Street North														
7	L2	9	0.0	9	0.0	0.006	8.9	LOS A	0.1	0.6	0.17	0.63	0.17	48.1
8	T1	3859	3.5	3859	3.5	* 0.657	3.6	LOS A	20.4	146.8	0.25	0.24	0.25	58.5
Approach		3868	3.5	3868	3.5	0.657	3.6	LOS A	20.4	146.8	0.25	0.24	0.25	58.5
All Vehicles		6094	3.8	6094	3.8	0.657	3.5	LOS A	20.4	146.8	0.24	0.22	0.24	58.3

E. TfNSW Advice

TfNSW Operational Traffic Modelling Team Review and Comments

80 Betty Cuthbert Drive

Review of models for 2019, 2023 and 2026 design years with interim and final stages of development and mitigation options.

17/12/2020

The following sections comprise a summary of TfNSW operational traffic modelling team's review of 80 Betty Cuthbert Drive SIDRA models prepared by Mott MacDonald (Australia) PTY LTD.

The specific documents and traffic model(s) provided for the review are outlined in Table 1.

Table 1: Reviewed material

Material	File name	File description	Received date
SIDRA models	MM_BettyCuthbert_201113_V2.sip8	SIDRA Modelling	27/11/2020
Reports	MMD-405675-PP-RP-01-Traffic Engineering Report-RevE 200505.pdf	Traffic & Transport Assessment	27/11/2020
	R02595-LT01-80-Betty-Cuthbert-Dr-SIDRA-Modelling-Outcomes-of-Proposed-Option-C1-(201118-signed).pdf	Traffic Modelling Results	27/11/2020

Table 2 provides a summary of review comments for the Traffic and Parking Impact Assessment Report and Traffic Modelling Results Report.

Table 2: Summary of review comments

Item	Section	Comment	Priority
Traffic and Parking Impact Assessment Report			
1.	5.2	The TIAR details that the peak periods assessed are 8:00 - 9:00 and 17:00 – 18:00. Given that a 1,000 student school is proposed, with an afternoon peak of 15:30 – 16:30 and the MSL peak operating periods are 9:30 – 15:30, the assumption to model only the PM road network peak period may not reflect the 'worst case' operating conditions for the proposed site access point (north) in Scenario 3.	Medium

		It is recommended that an additional modelling period be considered to ensure that the site access point is able to accommodate the peak egress demand.	
2.	5.6	It is noted that the results presented in the report have been superseded by the ones presented in the “Traffic Modelling Results” report and should not be referred to. It is expected that the report will be updated in due course.	Note
3.	Table 5.8	It is noted that Table 5.8 presents results for 6 intersections, yet there are only 5 intersections modelled in the supplied SIDRA files and discussed in the “Traffic Modelling Results” report. Although the reviewer is not aware of the project history, it would typically be expected that all proposed site access points are modelled to ensure that the adopted layout is adequate.	Note
Traffic Modelling Results			
No comments for ‘Traffic Modelling Results’ report			

Table 3 provides a summary of general model review comments.

Table 3: Summary of review comments – General

Item	Section	Comment	Priority
4.	Geometry – Lane Widths	Many intersections have a default lane width of 3.3m. However, a review of aerial photography shows that in many cases the existing conditions models should have lanes which are either much narrower or wider then specified.	Note
5.	Pedestrian Priorities	Pedestrian priorities have not been applied. Failure to include this can have a major impact on model throughput. All models should be assessed for appropriate pedestrian priorities and updated accordingly.	Medium
6.	Signal Phasing – Undetected Movements	No movements have been defined as ‘Undetected’ movements. Failure to define undetected movements can mean that movements can push for additional green time and therefore changing queue lengths. This is particularly important for left turn overlap phases. It is recommended that this is reviewed and corrected where applicable.	Minor
7.	Signal Phasing – Phase Transitions	Phase transitions have not been used for all signalised sites. Failure to set this up correctly increases the amount of green time being provided for the left turn movement and therefore can overestimate the operation of the movement. It is recommended that this is reviewed and corrected where applicable.	Minor

8.	Signal Timing Data	The “Traffic Modelling Results” report states that “Extensive calibration has been done on the existing model since submission of the May 2020 reports. This was done to improve the likeness of the model to the actual performance of the intersection and queue lengths.” The existing conditions models have been processed using the Optimal Cycle Time, with an upper limit of 140 seconds. From this, it is unclear whether the operational cycle time has been matched to existing signal timing data obtained from TfNSW. Furthermore, in the AM peak the Joseph St / Georges Ave intersection has a DOS greater than 1, which does not meet the modelling guidelines (refer to Item 18) and indicates that the phase splits or model calibration is not totally correct. This may mean that the “existing conditions” results are not representative and therefore a net comparison of the differences inaccurate.	Major
9.	Signal Coordination – Arrival Type	A signal coordination arrival type of 5 has been used for northbound and southbound movements along Joseph Street in the models, in addition to allowing Signal Offsets to be calculated by SIDRA. Using signal coordination in a network can overstate the impact of linking and present better results than in reality. It is recommended that the signal coordination arrival time is set to program for the movements internal to the network at minimum. If queue lengths on the outer extremities of the network were calibrated then applying signal coordination to these approaches may be appropriate, however it is generally recommended that these remain as program.	Major
10.	Green Split Priority	The Green Split Priority has been set to ‘Coordinated Movements’ in the phasing options for all signalised sites in the AM peak models only. Models for TfNSW typically adopt the Optimal Cycle Time feature in order to balance delays within the network. However, the Green Split priority feature results in unequal degrees of saturation to critical movements as it assigns spare green time to the “coordinated movements”. This can mean that minor roads or non-critical movements experience longer delays, and presents worse results, which is unlikely to occur under SCATS control. If the adopted phase splits are accurate with SCATS data then the models may be fit for purpose, however generally it is recommended that Green Split Priority is set to “None” for all models and movements. Calibration of phase splits should be undertaken by either adopting User Given Phase Times, or by limiting maximum and minimum green times within the vehicle movement data tab to match the phase times.	Medium

11.	Signal Offsets	Within the AM existing conditions model, the Network Signal Offsets are set to be determined by the Program, yet in all other models it is set as User. It is recommended that this is updated for consistency.	Medium

Table 4 provides a summary of the site specific review comments.

Table 4: Summary of review comments – Site Specific

Item	Section	Comment	Priority
Site 1 – Joseph Street / Georges Avenue			
12.	Gap Acceptance – Critical Gap and Follow-up Headway	The Critical Gap and Follow-up Headway settings have been changed significantly for the right turn movements in all models. In particular the east and west approach right turn movements have been changed from the SIDRA default of 4.5 and 2.6 to 2.0 and 1.0, which suggests that drivers are having to undertake very risky turning movements. Furthermore, it is noted that changes have been made to the Critical Gap and Follow-up Headway settings for the north and south approach right turns, yet these movements are fully controlled in the adopted phasing and this change should have no effect. It is therefore recommended that these changes are reviewed and/or removed and any changes to the default settings detailed and justified in the final report.	Major
13.	Gap Acceptance – End Departures	The ‘End Departure’ Gap Acceptance setting is increased from 2.2veh (default) to 3.5veh for all right turn movements in the AM peak models for Scenarios 3.2 and 3.3. It is poor practice to apply an increase in “End Departures” to a future conditions model as this is effectively suggesting that drivers would need to run the intergreen to operate “satisfactorily” rather than addressing any capacity limitations through traffic signal phasing changes or geometric changes. As such the default SIDRA value of 2.2veh should be used in all models.	Major
14.	Phase Naming	The phase names adopted in the AM and PM models are different for the Georges Avenue phase and the Joseph Street right turn phase. It is recommended that a consistent naming convention is used and that it matches the TCS plan.	Note
15.	Signal Phasing – Diamond Phasing	The phasing arrangement should include the variable sub-phases for the north / south approach diamond right turn movement (E phase AM, D phase PM) for all models. This is particularly important for the future models where the traffic	Minor

		patterns and demands may change and alter the phasing sequence.	
16.	Lane Movements	The east approach left turn is directed to exit to lane 2 and 3 with a 50/50 split. As a result, the curb side exit lane, lane 1, is underutilised and increases the number of midblock lane changes. It is recommended that the turn distribution is re-assessed to reduce the number of lane changes.	Minor
17.	Results – Existing Conditions	A DOS of greater than 1 and LOS D is produced for the Existing Conditions AM model. In accordance with the RMS Traffic Modelling Guidelines (Feb 2013), existing conditions models must have a DOS less than 1.0. It is possible that the DOS may be improved if the recommendations above are considered and implemented. However, it is recommended that the existing conditions model is reassessed and recalibrated.	Major
18.	Results – Future Conditions	A DOS of greater than 1 is shown on at least one approach in the Scenario 3.1 and 3.2 models, with exception to the Scenario 3.1 AM model. It is possible that the DOS may be improved if the recommendations above are considered and implemented. However, consideration could also be given to proposing alternative phasing to address the demands of the east and west approaches.	Note
Site 2 – Joseph Street / Botanica Drive			
19.	Vehicle Movement Data	The east approach exit speeds onto Joseph Street from Botanica Drive are 70km/h yet the exit speeds for vehicles on Joseph Street are 80km/h. It is recommended this is updated for consistency.	Minor
20.	Phasing	A phase contains the south approach right turn filtered movement. A review of Google street view indicates that at some points in the day, a red arrow is applied during the A phase and therefore not allowing the filtered movement. A review of SCATS also shows that this right turn movement does not operate at the same time with through opposing movements. It is recommended to review the phasing of this intersection to ensure that the correct phasing is coded for the adopted time periods.	Medium
Site 3 – Georges Avenue / East Street			
21.	Vehicle Movement Data	The speed limit along Georges Avenue is 50km/h yet the SIDRA default speed limit of 60km/h remains in the models. It is recommended that this is updated for accuracy.	Note

Site 4 – Botanica Drive / Betty Cuthbert Drive			
22.	Lane Geometry	For Scenario 3.2, different approach lengths are used for the north and south approaches, compared to all other models. Although queue lengths are nowhere near reaching the end of the model extents, it is recommended the approach lengths are reviewed and updated accordingly for consistency.	Note
23.	Gap acceptance – Critical Gap and Follow-up Headway	The Critical Gap and Follow-up Headway settings have been changed in all models, in addition to leaving the "Apply TWSC Calibration" boxes checked. Although the Critical Gap and Follow-up Headway values may seem higher that older SIDRA tables and Austroads, SIDRA has since either SIDRA 6.1 or SIDRA 7 used these values and then deducts from these based on the intersection geometry and method of control as shown in the Two-Way Sign Control Tab. The applied parameters can be seen in the Detailed Output Gap Acceptance Parameters Table. There is no mention of gap surveys having been conducted in the report and therefore it is expected that the default parameters should be used and the "Apply TWSC Calibration" boxes checked. However, if gap surveys were undertaken the Critical Gap and Follow-up Headway values can be changed but the "Apply TWSC Calibration" boxes should be un-checked to ensure that there is not a further reduction to the applied parameters.	Medium
Site 5 – Joseph Street / Site Access			
24.	Lane Movements	The east approach right turn movement is distributed across the three exit lanes. This distribution has not been applied to the left turn, unlike at the Joseph Street / Botanica Drive intersection, and is only applied in the AM models. It is recommended that a consistent distribution is used across all models and sites for consistency.	Note
25.	Signal Phase Sequence	The adopted traffic signal phasing at this site has a leading right turn phase from the south approach, whereas the intersection of Joseph Street / Botanica Drive has a lagging right turn phase. It is recommended that the same phase sequence is adopted as the Joseph Street / Botanica Drive intersection to allow for linking and platooning to be reflected in the models.	Medium

Item	Section	Comment Date	TfNSW Comment	Priority	DPIE PDNSW Comment Response	TfNSW Comment (26 Oct 2021)	Status
1	5.2	15/06/2021	The initial TIAR details on page 28 that Scenarioo 3 considers all development of the site, including the MSL and school sites, yet the report does not quanitfy the development yeilds of the residetial land uses or the floor area of MSL. The initial peer review recommended that a PM school peak period should be modelled to determine the ultimate impact on the site access. Mott MacDonald have since responded that analysis of the MSL TIA report supporting their development application. However, the imcomplete information makes it difficult for the reviewer to be confident that the AM peak site generated demands for ingress and gress movements are representative of the worst case demands for the PM peak, and subsequently that the proposed turning lanes are sufficient to accommodate anticipated queue lengths. It is recommended that either a school PM peak period model scenario is completes for Site 5 only to demonstrate suitability, or a peak traffic generation graph produced for the sitre accross time of day along with two-way volumes on Joseph Drive to demonstrate that the AM peak period is the worst peak.	Medium	An additional scenario has been included in the report testing Site 5 (Scenario 4) assuming that the school afternoon peak falls into network PM peak period summarised. The results are summarised in Section 5.7.4. The test demonstrates that the intersection would operate well (LOS A) in this scenario.	Scenario 4 provided	Closed
2	Geometry	15/06/2021	The intersection pof Betty Cuthbert Drive / Botanica Drive has been modelled with one full length shared through and right turn lanes plus a 10 m long left turn late on the north and south approachs. Based on aerial photography, the width of Betty Cuthbert Drive is only 7.5 m at a distance 10 m from the give way line and therefore there is not enough space to store two cars next to each other. It is recommended that the model geometry is updated, however, it should be noted that this intersection is not demonstrated to be experiencing capacity constraints under any of the scenarios and therefore will not change the overall acceptance of the intersection.	Noted	As per the recommendations, the intersection geometry has been updated and any minor changes to results have been documented in the report.	Geometry updated. However incorrect movement at Betty Cuthbert Drive south approach in Scenario 1 PM model. (See figure 1)	Addressed in current revision
3	Geometry	15/06/2021	The Georges Ave / East St roundabout North Exit Lane 1 has different lane widths in the AM and PM Scenario 1 models. It is recommended that the AM Scenario 1 lane width is updated to 3.9 m to reflect the current lay-out and ensure consistency.	Noted	As per the recommendations, the intersection geometry has been updated and any minor changes to results have been documented in the report.	Geometry updated.	Closed
4	Signal Phasing - Phase Tra	15/06/2021	Mott MacDonald have updated phase transitions since the initial peer review, but they still have not been used correctly for all signalised sites. In particular, phase transition should be applied in the following intersections: Site 1 Joseph / Georges - apply to the east and west approach left turns in D phase Site 2 Joseph / Botanica - apply to east approach left turn in B phase and north approach left turn in C phase. Site 5 Joseph / Site Access - apply to east approach left tunr in B phase and north approach left turn in C Phase.	Minor	Site 1 Joseph / Georges - our understanding is that this is not appropriate for a diamond overlap. Site 2 Joseph / Botanica - phase transitions have been updated as per the comments. Site 5 Joseph / Site Access - phase transition have been updated for north approach only. The east approach has not been updated as there is no conflicting pedestrian crossing.	Partly addressed. However it is expected to have minimal impact on results and model analysis and wonn't impact the model outcome.	Closed
5	Signal Timing Data	15/06/2021	Intersection 1 & 2 have adopted a Site User-Given Cycle Time of 150 seconds in response to the initial peer review. However, in the proposed scenarios Intersection 5 has a Site Practical Cycle Time of 90 seconds. For the future scenario network, it is recommended that Site 5 is included as a connected site in the network modelling and therefore run with a 150 seconds User-Given Cycle Time as well, or, a Site User Given Cycle Time of 75 seconds to allow it to operate with a half cycle time and enable TfNSW to implement linking in the future.	Medium	Site 5 is a connected site and the cycle time is coordinated with Site 1 and 2. Unfortuntately, a User-Given Cycle Time of 150 seconds is unworkable. Therefore, an optimal cycle length has been adopted.	Network cycle time applied to all coordinated sites. Optimal cycle time had been used for all Secnarios 3 and 4	Closed
6	Signal Coordination	15/06/2021	The initial peer review recommended that all signal coordination types for movements internal to the network were reset to Program to allow SIDRA to calculate the benefits of offsets and linking. Mott MacDonald states that this has been updated, however, a review of the models shows that this has been applied inconsistently. Specifically: The North and South approach of Intersection 1 (Joseph St/Georges Ave) still have a signal coordination arrival types of 5 for all AM scenarios, with AM Scenario 1 only the North Approach haveing a signal coordination arrival type of 5. The PM scenarios for this intersection have been set to 'Program' for all movements. Both North and South APproach of Intersection 2 (Joseph St/Botanica Dr) still have a signal coordination arrival types of 5 for all AM scenarios. The PM scenarios for this intersection have been set to 'Program'. Both North and South Approach of Intersection 5 (Joseph St/Site Access) still have a signal coordination arrival types of 5 for all AM and PM scenarios.	Major	Coordination arrival type of 5 has been removed at all sites and scenarios.	Coordination updated	Closed

7	Gap Acceptance	15/06/2021	The initial peer review recommended that all gap acceptance and follow-up headway parameters were reset to default and that SIDRA be allowed to calculate changes via the "TWSC" tickbox. Mott MacDonald states that this has been updated, however a review of the models shows that this has been applied inconsistently. Specifically For Intersection 1, all scenarios except scenario 1, North and South Approach Right Turns still have a gap acceptance of 3.00 and 1.50, well below the default setting. East & West Approach right-turn is still set at 2.00 and 1.00. For intersection 2, all turns on all approaches have a gap acceptance set at 3.50 and 2.00. For Intersection 4, the right-turn East and West Approach gap acceptance has been set to 4.00 and 2.00. Futhermore, all other movements have been set to 5.00 and 3.00 with the Apply TWSC Calibration box checked which further reduces the gaps and is incorrect. For intersection 5, the right-turn South Approach gap acceptance has been set to default, North approach left-turn gap acceptance has been set to 4.00 and 2.40. It is recommended that all models and all sites are reset to defaults.	Major	All gap acceptance and follow-up headway parameters have been set to default values.	Reset to default values	Closed
8	Speed Limits	15/06/2021	The speed limit along Georges Avenue is 50km/h yet the SIDRA default speed of 60km/hr remains in the models. The initial peer review recommended that speed limit alomg Georges Avenue was corrected. The speeds on Georges Avenue have only been updated for Scenario 1. All other scenarios still have 60km/hr for St Georges Rd, as well as other inconsistencies regarding to speed compared to Scenario 1. It is therefore recommended that this is further reviewed.	Note	All model speeds have been reviewed and updated.	Speed updated	Closed
9	Lane Geometry	15/06/2021	In all network models there is a network configuaration issue where there is a difference in midblock lengths between Sites 2 and Site 4. The east approach to Site 2 has a 90m length, yet the west approach to Site 4 has a 500m length. It is recommended that this is updated in all models.	Moderate	All midblock lengths have been reviewed and updated to align with correct conditions.	Midblock length updated	Closed
10	Results - Existing Condition	15/06/2021	A DOS of 1.004 is produced for the Existing Conditions AM model. In accordance with the RMS Traffic Modelling Guidelines (Feb 2013), existing conditions models must have a DOS less than 1.0. The proponent has responded that models were updated to provide DOS less than 1.0 so it is possible that a minor difference has occured between update versions of SIDRA. As such, it is noted that the current intersection configuration is at capacity and therefore mitigation measures would be required to accommodate additional demands.	Medium	Changes requested in these comments have resulted in the DOS service reducing to 0.97, below the maximum 1.0 provided in the comment below. No further changes or mitigation measures have been proposed.	The DOS still at 1.004 (see figure 2) in the model (filename:MM_BettyCuthbert_210910). As the DOS only slightly higher than 1 which will not impact on project outcome and decision process. However correction should be undertaken.	Closed
11	General	15/06/2021	From an overall review perspective, the proposed mitigation measures provide an improvement for the area and mitigate the 2026 post development scenario (Scenario 3.3) to a DOS of 0.98 which is slightly less than the existing conditions DOS of 1.0. Please provide justification on why the design year is only 2026 and not 10 years post development?	Note	Unfortunately, timing of school opening is not available.	Response not quite address the concern. 2026 post development scenario (with proposed mitigation) shown that the network will be close to / at capacity. Mitigation measure should consider longer time in horizon (ie 2036)	Addressed in current revision
12	General	15/06/2021	SCATS data has provided (Tab 1 attached) of the intersection of Joseph St/ Botanic Drive with the data to suggest that during AM peak, although the northbound direction of Joseph St has a higher peak than PM hours, the southbound direction has lower traffic volume than that observed during 3-4 PM. A further assessment of the site access during the 'worst case' operating conditions as per item/comment - 1 is recommended	Note	An additional scenario has been included in the report testing Site 5 (Scenario 4) assuming that the school afternoon peak falls into network PM peak period summarised. The results are summarised in Section 5.7.4. The test demonstrates that the intersection would operate well (LOS A) in this scenario.	Additional scenario provided. Although the intersection would operate at LoS A, long queue (approx 250m) is expecting at northern approach	Closed
13	General	15/06/2021	The TCS plan will show, the proposed signal phasing and geometry as required. The concept plan to-scale on aerial overlay, will also show the amount of land to be dedicated as public road.	Note	This level of detail should be asessed as part of later stage of design. Land take requirements have been provided as part of the civil design pack and concept signal phasing provided within SIDRA analysis.	Agreed.	Closed



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11 November 2022

Daniel Cavallo
Director Environment and Planning
Cumberland City Council
PO Box 42, Merrylands NSW 2160

Dear Daniel,

BETTY CUTHBERT DRIVE – RESPONSE TO POST-GATEWAY EXHIBITION COMMENTS

This letter has been prepared on behalf of Property & Development NSW (**PDNSW**), in response to correspondence from Cumberland Council in relation the outcomes of the post gateway consultation of the current Planning Proposal for 80 Betty Cuthbert Drive, Lidcombe.

Council sought additional information in response to the public submissions received during the post gateway public exhibition and to assist Council in finalising the report on the Planning Proposal. The key issues in the submissions relate to educational establishment traffic and drop off / pick up, details around the delivery of the educational establishment and vegetation. A response to these matters is included in the table below, with supplementary information enclosed in:

- **Appendix A** – Technical Memorandum prepared by Mott MacDonald
- **Appendix B** – Correspondence from Schools Infrastructure NSW
- **Appendix C** – Extract of Draft DCP lodged with Planning Proposal

The Planning Proposal facilitates a future educational establishment, a health facility, and residential land. Council have requested further information on the future educational establishment. Previous correspondence has been provided to Council confirming that the Department of Education (DoE) has been working collaboratively with PDNSW and Multiple Sclerosis Limited (MSL) to develop the proposal which includes provision of land for a potential new school.

For assessment purposes, the Planning Proposal made an assumption that the future educational facility could be a 1,000 student primary school as maximum capacity from a traffic perspective. This assumption is conceptual only and the final type and capacity of the future educational establishment is subject to detailed service need planning and business case approval from NSW Treasury. All information provided in response to Council's request for further information is based on data collected and analysed by Mott MacDonald, and is based on the assumptions noted in the Technical Memo enclosed in **Appendix A**. PDNSW consulted with DoE in responding to Council. However, DoE has no further information or data to provide at this time. DoE has provided a formal letter to Council which is enclosed in **Appendix B**.

The development of the future educational establishment will be subject to development approval following the rezoning. As part of any future approval, further information will be prepared by DoE and provided to Council including a range of technical assessments based on the type of educational establishment, overall configuration, and traffic arrangements. There is no further information to provide on the educational establishment at this point in time.

It is not intended or implied that the responses provided to Council's queries in this letter or supporting documentation binds DoE to any of the potential solutions or indicative outcomes, particularly noting that the final future educational establishment is yet to be confirmed. The information provided as part of this response is for Council's information purposes only and is not intended for public distribution has been provided in confidence.

PDNSW have made every effort to address the queries raised by Council, however the level of detail requested is unusual noting the Planning Proposal is simply addressing the rezoning of the site and does not seek consent for any physical works including the future educational establishment.

Should you require any additional information or clarification please do not hesitate to contact the Alaine Roff or the undersigned.

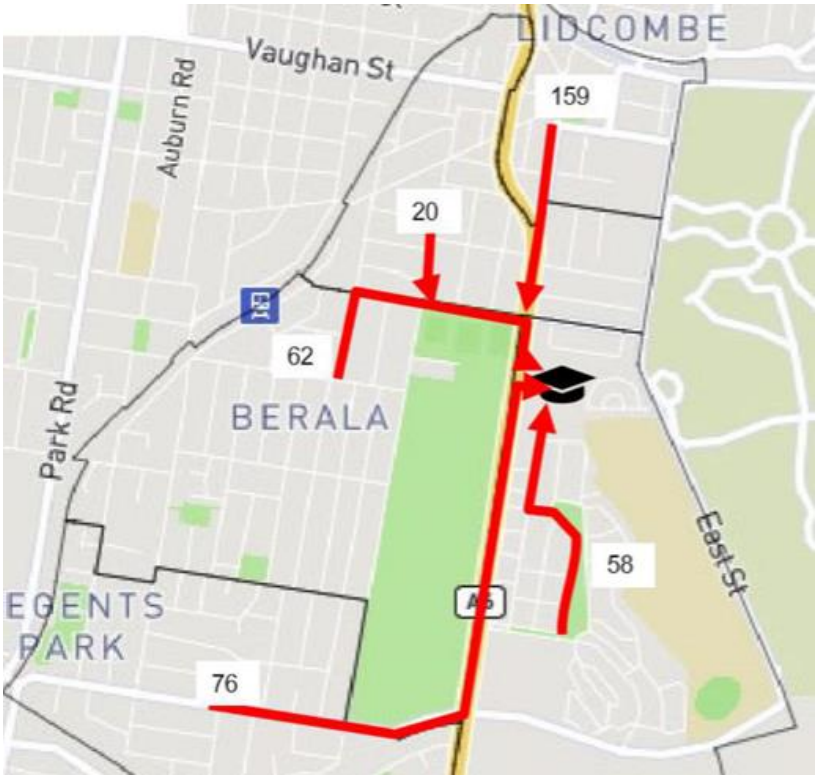
Kind regards,

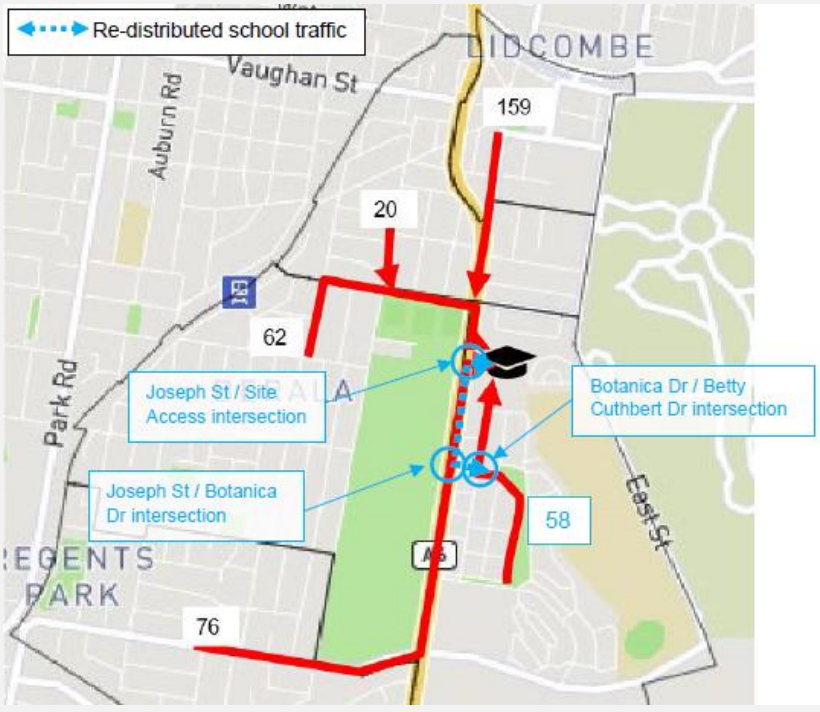


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URBIS

RESPONSE TO COUNCIL REQUEST FOR FURTHER INFORMATION

Council Comment	Response
Traffic, Transport and Access	
Provide information on the ability for Betty Cuthbert Drive to restrict access between the proposed school and the existing residential area	In response to Council's comments, a Technical Memo has been prepared by Mott Macdonald and is enclosed in **Appendix A**. From a traffic perspective it is not considered a positive outcome to constrain movements between the new local access street and Betty Cuthbert Drive for the following reasons: As noted in the Traffic and Engineering Report prepared as part of the Planning Proposal package, only 58 trips are anticipated from within the Botanica Estate during the AM Peak (refer to **Figure 1**). Restriction would require any trips from the south to be made via Joseph Street which would increase traffic movement along the sub-arterial. Figure 1 School Traffic Distribution - AM peak period  *Source: Mott Macdonald (Appendix F – Traffic and Engineering Report)*

Council Comment	Response
	Outside of school hours, the local road provides additional connections with the local road network for residents. The current design of Betty Cuthbert Drive provides parking on both sides of the road. As a result, there are sections that only allow for a single vehicle passageway, which would act as a traffic calming measure. This would mitigate the risk of vehicles travelling at high speeds, as well the potential use as a 'rat run' alternative to Joseph Street. A potential alternative solution considered the project team was to restrict vehicular access from Betty Cuthbert Drive during school peaks hours only. However, this would not eliminate the possibility for vehicles to use that link outside of those hours and would require enforcement to ensure compliance.
Undertake further analysis to understand the implications from a traffic modelling perspective should traffic distribution be modified to access the proposed school. In particular Council is seeking to better understand the implications of redistribution of traffic generation from the existing Betty Cuthbert Drive via Joseph Street and the new access road to the proposed school, as well as the redistribution of traffic generation from the Berala area to Leila Street (where students and or staff would use the proposed pedestrian overpass to access the proposed school.	Further analysis has been prepared by Mott Macdonald as part of the Technical Memo enclosed in **Appendix A**. As noted in **Figure 2**, the traffic generated to and from Betty Cuthbert Drive remains at 58 vehicles in the AM Peak. Figure 2 Redistributed School Traffic Distribution - AM peak period  *Source: Mott Macdonald*

Council Comment	Response
Document the operation of Leila Street as an option for a kiss and drop area, as well as providing commentary on the implications on street and local traffic access to this location.	Consideration of the operation of Leila Street as a kiss and drop for the proposed educational establishment and potential implications on street layout and access has been considered as part of the Technical Memo enclosed in **Appendix A**. Based on the assessment by Mott MacDonald, approximately 18 spaces would be anticipated to be free on an average day, which would be well in excess of the expected demand for kiss and drop. Overall, the option to have Leila Street as a kiss and drop area is anticipated to have a negligible impact for local traffic access during school days. It would also be expected to have no impact during weekends, when sporting events are expected to increase parking utilisation in the area.
Document the traffic management arrangements outside the proposed school using the proposed new access road to the school. The should include proposed kiss and drop locations, staff parking, school bus drop off and pick up, active transport access and general traffic circulation for the proposed school.	Traffic management arrangements outside of the school are shown indicatively in **Figure 3**. This shows vehicular and active travel access and circulation at a high-level. The indicative kiss and drop locations on the new local street are expected to be located on the northern and eastern frontages, as well as potentially on the eastern end of Leila Street as per **Figure 3**. The school bus pick-up and drop-off is expected to take place along the eastern frontage due to vehicle and bay length requirements. Further details in terms of cycling infrastructure including parking are anticipated to be provided as part of a future planning application for the school in due course. Staff parking is assumed to be accommodated within the school site (not on-street). The future application for the school site would confirm staff parking requirements and provisions to be made onsite.

Council Comment	Response
Figure 3 Proposed vehicular and active access and circulation  *Source: Urbis*	
Provide further information on the footprint required for the proposed pedestrian overpass for both sides of Joseph Street, as well as the location of new footpaths to access the proposed pedestrian overpass.	The indicative footprint for the pedestrian overpass and associated connected outside of the school are shown indicatively in **Figure 3** above. A schematic for the pedestrian overpass has been previously provided as part of the Planning Proposal package with further information included in the Technical Memo enclosed in **Appendix A**.
Providing commentary on any positive or negative implications on traffic generation and movement for the proposed school, for the following scenarios:	As noted in the Technical Memo enclosed in **Appendix A**, while reducing the maximum capacity on site to 500 or 750 students would likely result in minor improvements to traffic generation, this could fluctuate depending on whether families with multiple children were allocated a space at this school or had to travel to multiple schools in the surrounding locality.

Council Comment	Response
1. Maximum capacity of 500 students, 2. Maximum capacity of 750 students.	A negative implication would be the actual reduction in school capacity. This could affect some of the residents in the wider area, requiring them to travel to other schools, with the potential for some of those trips to still be made within the surrounding road network. However, any potential impact related to this could not be determined at this stage.
<u>Proposed School</u>	
1. Provide further information on the footprint and design parameters for the proposed school, using benchmark information for recent schools	Discussions have occurred between PDNSW and the Department of Education (DoE) and Schools Infrastructure NSW (SINSW) to confirm any further information on the future educational establishment. In response to these discussions, a letter has been provided to Cumberland Council (enclosed in **Appendix B**). The correspondence notes: *Once the planned re-zoning is complete, the Department will commence more detailed service need planning to identify the timing of projected population growth and the impact of enrolments in the short and medium term on current schools in the area and this would involve detailed consultation with council on all aspects of the potential new school including traffic, bulk and scale of buildings and any staging required.* Nevertheless, DoE released the draft '*Master planning guidelines for schools'* in October 2020 and the draft '*School Site Selection and Development Guidelines'* in March 2021. Based on these guidelines, **<u>if</u>** a primary school was to be located on site, the following guidelines would apply: Maximum capacity: 1,000 students Minimum open space: 10sqm per student (approximately 1 hectare) Floor space distribution: Between 8,000m² and 10,000m² Built form: typically up to 4 storeys in height, with open space provided at grade only This is **<u>indicative only</u>** and would be confirmed as part of future planning undertaken by DoE and SINSW.
Provide information on indicative staging	As noted above and in **Appendix B**, once the site is rezoned, DoE will commence more detailed service need planning to identify the

Council Comment	Response
regarding the capacity of the school. Council is seeking to understand the lead time required should a school of 1000 students be required on the site	timing of projected population growth and the impact of enrolments in the short and medium term on current schools in the area. Further consultation with Council will occur as part of future planning undertaken by DoE and SINSW.
Seek clarification from Schools Infrastructure NSW regarding the status of the project, including funding commitments and planning work undertaken	As noted above, discussions have occurred between PDNSW and the Department of Education (DoE) and Schools Infrastructure NSW (SINSW) to confirm any further information on the future educational establishment. In response to these discussions, a letter has been provided to Cumberland Council (enclosed in **Appendix B**).
<u>Preservation of existing vegetation</u>	
1. Provide information regarding the ability for loss of vegetation to be further minimised when compared to the reports provided	Section 3.5 of the Draft DCP prepared in consultation with Cumberland Council incorporates tree retention mapping prepared by Ecological. The specific extract from the DCP is enclosed in **Appendix C**. Control C4 states: *Based on the preliminary tree retention mapping in Figures 10 – 15.* *'medium retention value trees' should be retained wherever possible but should not be a constraint on the development.* *'high retention value trees' are considered important for retention and should be retained and protected wherever possible. All opportunities for retaining these subject trees using design modification and tree sensitive construction techniques should be explored.* In accordance with the DCP, all future applications for the site will require consideration of tree removal.
Provide information as to whether offsets for the loss of vegetation can	While offsets have not been specified in the DCP, it is anticipated that tree replacement strategies will be incorporated as part of any application to remove trees on site. It would be acceptable to add a separate control into Section 3.5 of the DCP which reads:

Council Comment	Response
be provided within the broader site.	*C7. Where tree removal proposed, a tree replacement strategy must be incorporated*

Appendix A

MOTT MACDONALD

Technical Memorandum

Subject	**80 Betty Cuthbert Drive, Lidcombe Master Plan – Planning Proposal – Traffic and Transport Assessment Report Addendum**
Our reference	MMD-405675-PP-TM-01
Date	14/11/2022
Author	Ayyappa Janga / Oliver Kao
Checker	Cesar Calvo Moran
Approver	Thomas Loder

1 Introduction and Purpose

Mott MacDonald was engaged to prepare a Traffic and Transport Study to assist Property and Development NSW (PDNSW) in finalising a master plan and obtaining the necessary planning proposal approvals for the government owned site at 80 Betty Cuthbert Drive, Lidcombe. A traffic engineering report was produced to review existing traffic and transport infrastructure at and surrounding 80 Betty Cuthbert Drive, Lidcombe (the Site), and assess future traffic and transport operations and parking requirements.

The Planning Proposal facilitates a future educational establishment, a health facility, and residential. For assessment purposes, the traffic engineering report assumed that the future educational facility could be a 1,000-student primary school. This assumption is conceptual only and the final type and capacity of the future educational establishment is subject to detailed service need planning and business case approval from NSW Treasury.

PDNSW consulted with DoE in responding to Council. However, DoE has no further information or data to provide at this time. All information provided is based on data collected by Mott McDonald based on assumptions developed to address Council's questions only and are based on a maximum capacity usage of the site as a primary school. The development of the future proposed educational facility will be subject to a development application (DA) and traffic impact studies to the area will be considered as part of that proposal once the type of educational establishment and configuration of that educational facility are designed and presented in the DA. It is not intended or implied that the information provided in this document binds DoE to any of these potential solutions, and is simply provided to address the questions raised by Council.

Following feedback from Cumberland City Council (Council) on 14 October 2022, additional analysis over the traffic and transport assessment previously undertaken was required. This technical memorandum (Memo) builds upon the latest revision of that report (the “Traffic Report” – ref: MMD-405675-PP-RP-01, Traffic and Transport Assessment Report, Rev N, 06 May 2022), providing a response to the queries raised by Council.

The Council feedback relevant to the scope of this Memo is listed below. These queries are addressed in turn within the subsequent sections below.

1. *Provide information on the ability for Betty Cuthbert Drive to restrict access between the proposed school and the existing residential area.*

2. *Undertake further analysis to understand the implications from a traffic modelling perspective should traffic distribution be modified to access the proposed school. In particular Council is seeking to better understand the implications of redistribution of traffic generation from the existing Betty Cuthbert Drive via Joseph Street and the new access road to the proposed school, as well as the redistribution of traffic generation from the Berala area to Leila Street (where students and/or staff would use the proposed pedestrian overpass to access the proposed school.*
3. *Document the operation of Leila Street as an option for a kiss and drop area, as well as providing commentary on the implications on street and local traffic access to this location.*
4. *Document the traffic management arrangements outside the proposed school using the proposed new access road to the school. They should include proposed kiss and drop locations, staff parking, school bus drop off and pick up, active transport access and general traffic circulation for the proposed school.*
5. *Provide further information on the footprint required for the proposed pedestrian overpass for both sides of Joseph Street, as well as the location of new footpaths to access the proposed pedestrian overpass.*
6. *Providing commentary on any positive or negative implications on traffic generation and movement for the proposed school, for the following scenarios; 1. Maximum capacity of 500 students and 2. Maximum capacity of 750 students.*

2 Betty Cuthbert Drive Access – Response to Query #1

This section provides commentary on the ability for restriction of access to the site via Betty Cuthbert Drive (BCD) between the education facility site and residential area.

Should an access restriction be sought between BCD and the proposed education facility, then trips to and from the proposed education facility travelling from that direction (southeast) would need to be made via Joseph Street and the new site access / local street.

This could be achieved by restricting vehicular access on BCD, south of the new local street, near its intersection with Ironbark Crescent. A connection should be maintained for active transport to ensure pedestrian network permeability, with a potential opportunity to convert the closed section into a shared path.

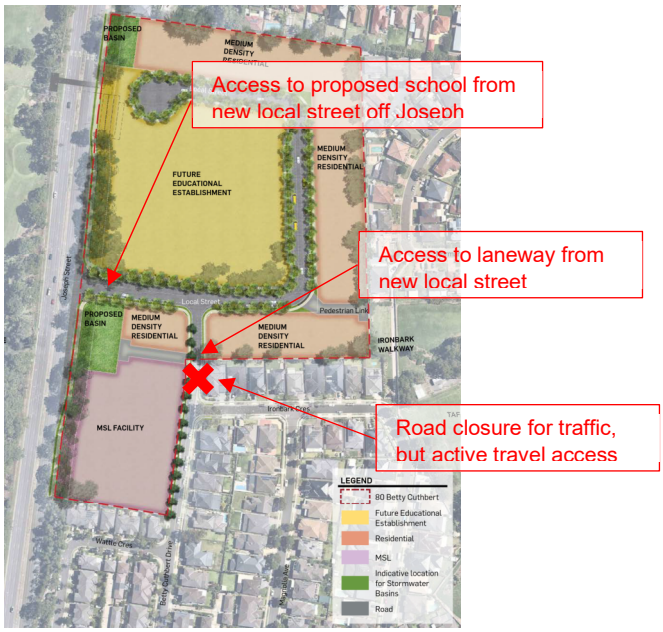
Such closure should be located south of the proposed laneway linked to the medium density residential component on the western side of BCD (see Figure 1). This would ensure that new trips to the site are made via the proposed new site access and local street. Trips to the Multiple Sclerosis Limited (MSL) facility would be retained along BCD as per the existing situation, noting however that users of this facility would be unable to use the new site access and local street to access it. It is also noted that, depending on the final location of the closure, a turnaround facility may be required to the south of it to allow vehicles on BCD to turn back.

A potential alternative solution would be to restrict vehicular access from BCD during the peak hours of the education facility only. However, this would not eliminate the possibility for vehicles to use that link outside of those hours and would require enforcement to ensure compliance. As a positive outcome, this would provide an additional access route for residents in the area.

Further to the above, it is worth highlighting that BCD is a local road with parking allowed on both sides. As a result, there are sections that only allow for a single vehicle passageway, which would act as a traffic calming measure. This would assist in reducing the ability for traffic to travel at high speeds, as well as the desire for its use as a rat running alternative to Joseph Street in the future if a link is created with Botanica Drive. Trips to the education facility would be considered local in nature and, as such, it would be appropriate for these to use the local road network to travel instead of using the arterial network and adding to any congestion on Joseph Street. A link between the new access and BCD would also increase connectivity opportunities for the residents in the area, reducing local traffic accessing from the southern side of BCD.

Overall, it would not be considered a positive outcome to constrain movements between the new local access street as part of the proposals and BCD.

Figure 1: Concept Indicative Layout Plan – Potential Measures to Restrict Traffic Movements on BCD



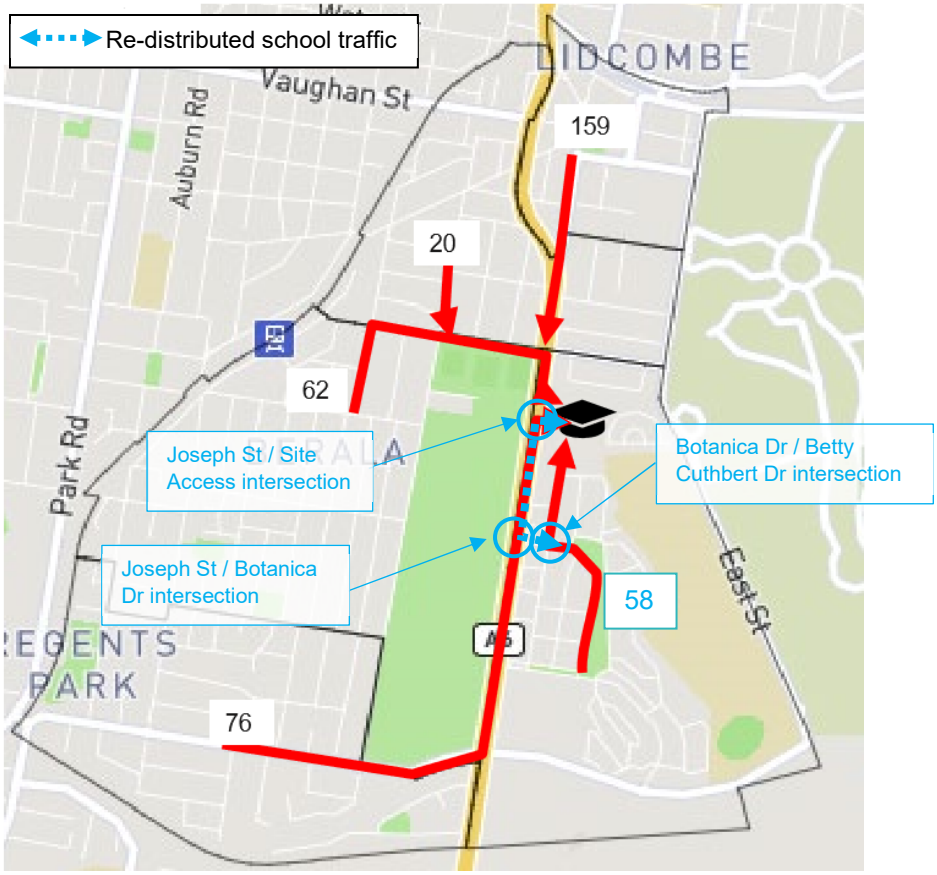
Source: Figure 3.1 of the Traffic Report plus markup.

3 Additional SIDRA Modelling – Response to Query #2

This section provides a review of implications from an all-vehicle movement ban from BCD to the site. As such, an update to the distribution for the education facility has been assumed and tested over the AM peak hour for Scenario 4.3 of the SIDRA traffic model (2036 with all development traffic plus mitigation measures but excluding upgrade to Joseph Street) as presented in the Traffic Report. It is noted however that, while commentary and analysis is provided in the next section regarding likely percentage of trips from the Berala area which are expected to use Leila Street drop off instead of accessing the site, the redistribution of this traffic has been excluded from the traffic model test to represent a worst case. In addition, it has been assumed that there are no changes to wider traffic volumes or previous assumptions to traffic generation, all modelling assumptions and caveats for previous models are carried over to this assessment. The latter includes any calibration / validation, which are understood to have taken place as part of the previous modelling exercise that informed the Traffic Report.

Traffic generating from the existing BCD is re-distributed to the proposed education facility via Joseph Street and the new access proposed for the education facility from Joseph Street. The traffic generated to / from BCD to education facility is 58 vehicles in the AM Peak. For the purpose of this modelling test, this traffic is diverted to / from Botanica Drive / BCD intersection to Joseph Street / Site Access intersection via Joseph Street / Botanica Drive intersection. An update to Figure 5.7 of the Traffic Report is included below in Figure 2 to highlight this change in traffic distribution.

Figure 2: Education Facility Traffic Distribution - AM peak period



The change in traffic distribution is limited to the three intersections highlighted in blue in the figure above. This change in flows would represent less than 2 % of the overall traffic travelling through each of the intersections on Joseph Street for that peak hour and scenario, which represents a lower value than daily fluctuations (generally considered to be within 10 %). Therefore, to better understand any potential change in intersection performance, the SIDRA models for these intersections have been run individually with the new flows.

The results from this exercise are summarised in Table 1 below, noting that this new modelling scenario is referred to as Scenario 4.5 for consistency with those in the Traffic Report. Intersection numbers are also kept in line with the Traffic Report. The SIDRA modelling outputs are provided in Appendix A.

Table 1: Intersection Performance, AM Peak (Scenario 4.5)

Intersection	Governance	Scenario 4.5 (Scenario 4.3 with diverted traffic)				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
2 - Joseph St / Botanica Dr	Signalised	6,496	0.90	20.5	B	507 South
4 - Botanica Dr / Betty Cuthbert Dr	Priority	489	0.13 West	6.3 West RT	A	1 South
5 - Joseph St / Site Access	Signalised	6,972	0.92	22.4	B	555 South

Note: Outputs for the priority intersection are for the worst-performing movement.

The results presented in the above table indicate that all intersections would be able to discharge all traffic within the peak hour, with minimal delays overall and Levels of Service (LoS) A and B. The degree of saturation (DoS) for the Joseph Street / Site Access intersection would be 0.92. This is slightly above the maximum practical DoS of 0.9 for intersection capacity as per the Transport for New South Wales (TfNSW,

Road and Maritime Services - RMS) Modelling Guidelines (version 1.0, 2013). The 95th percentile queues are shown to be over 500 for the southern approaches to the intersections on Joseph Street. This is in line with what was presented in the Traffic Report, albeit noting that results were reported as part of a network then, and thus queues to the Joseph Street / Site Access intersection where constrained by the outer intersections to the network. Therefore, this analysis focuses on the DoS for that intersection, noting that TfNSW do review and provide feedback on results provided.

A potential mitigation measure has been tested to reduce the DoS for the Joseph Street / Site Access intersection to an acceptable level as per TfNSW's Modelling guidelines. This is shown in Figure 3 below. In the current proposed design, the western approach has one lane for the left turn and one lane for the right turn into Joseph Street. This has been modified into two right turn lanes, with the southern lane being shared for left and right turn movements. This is a simple change to the intersection proposed as part of the development which results in a DoS reduction from 0.92 to 0.87 as shown in the Table 2, which suggests that the traffic redistribution tested for this scenario would be acceptable to TfNSW in terms of intersection capacity, subject to network constraints at the outer intersections in terms of queueing as shown in the Traffic Report.

Figure 3: Potential Mitigation Measure for Joseph Street / Site Access Intersection – Scenario 4.5

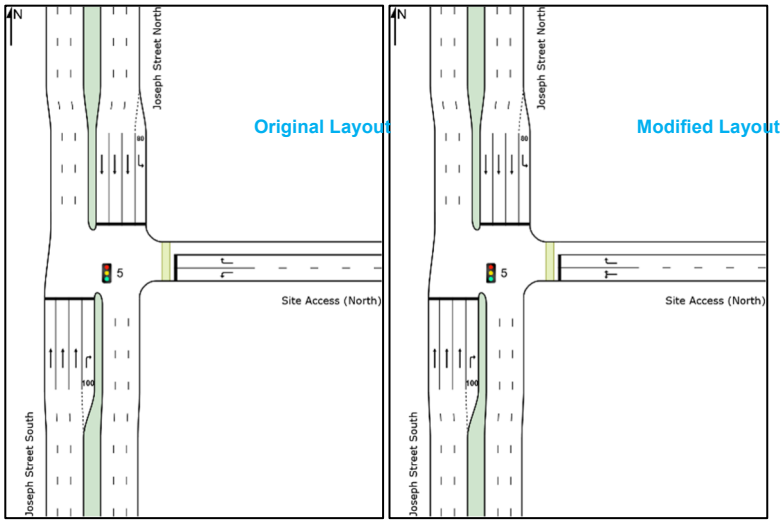


Table 2: Intersection Performance, AM Peak – Scenario 4.5 with Potential Mitigation

Intersection	Governance	Scenario 4.5 with Potential Mitigation				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
5 - Joseph St / Site Access	Signalised	6,972	0.87	17.6	B	447 South

4 Leila Street Parking Assessment – Response to Query #3

Commentary is provided in this section in regard to the operation of Leila Street as an option for kiss and drop for the proposed education facility and potential implications on street layout and access. This is in response to an assumed percentage being diverted from generated traffic in the Berala area, reviewing existing provisions and likely usage.

While providing a reasonable alternative for residents in the Berala area to bypass potential traffic delay along Georges Avenue and Joseph Street, it is noted that there would still be a notable distance from Leila Street to the proposed education facility (assumed in excess of 300 m one-way plus stairs / ramps, equating to approximately four to five minutes walking distance each direction). Therefore, it is anticipated that the majority of traffic generation from the Berala area, as identified in the Traffic Report, would drive from Georges Avenue and connect to the proposed new access road via Joseph Street. For the purpose of this analysis, it has been assumed that approximately 10 to 20 % of the trips generated in this area would divert

to Leila Steet to use as a kiss and drop area. This would result in up to approximately 13 trips in and out (total of 26 trips). Staff parking is expected to be accommodated onsite.

Measurements from aerial photos suggest a total on-street parking capacity for around 22 spaces on the northern side (assuming 6 m per space and 130 m in length), and around 14 spaces on the southern side (85 m of available frontage) for Leila Street as shown in Figure 4. This would total approximately 36 spaces along the street.

Figure 4: Aerial view of Leila Street with approximate measurements (Source: Nearmap)



Observations from Google Street View imagery across several years between December 2007 and October 2020 indicate that there generally is ample spare capacity, with low levels of parking occupancy during the day. This is expected given that parking on the area should mainly be residential in nature, with most of the houses having their own private parking or driveway, and some of those using their cars for commuting purposes. Notwithstanding this, for the purpose of this assessment, it has been assumed that 50 % of the parking would be used by residents, with the remaining 50 % being available for kiss and drop activities related to the education facility.

Taking the above into account, approximately 18 spaces would be anticipated to be free on an average day, which would be well in excess of the expected demand for kiss and drop. Moreover, while some students would require to be accompanied into education facility and thus need to park for a longer period, a proportion of trips would involve a single drop-off, which would require less than one to two minutes. Parking spaces for the latter type of drop-off would be shared between users, with a single space likely to allow between five and10 drop-offs during the morning peak (assuming it occurs within approximately a 10-minute window).

To assist in directing traffic to the nearest side of the street to the education facility, on the easternmost end, a section of the street could be demarcated for kiss and drop only (2-minute parking) during peak times. This could be made to accommodate two vehicles at any one time, approximately 12 m long (or up to 16 m long if higher turnover is expected, 8 m each). Parents requiring a longer stay could utilise a free parking space along the street.

A review of peak time traffic conditions on Google Maps indicates that there would typically be no congestion along Nottinghill Road in the vicinity of its intersection with Leila Street. Therefore, given the low number of additional traffic movements at that intersection (assumed 26 trips total), these would be expected to generate no congestion or noticeable queuing, and thus would have no impact on its operation.

Overall, the option to have Leila Street as a kiss and drop area is anticipated that would have a negligible impact for local traffic access. It would also be expected to have no impact during weekends, when sporting events are expected to increase parking utilisation in the area. Observed parking capacity and usage trends

from various available aerials and imagery (including Google and Nearmap) indicate that there is enough parking capacity on Leila Street to cater for this activity.

Further to the above, should additional on-street parking be required over time, then the configuration of the street could be rearranged to provide angled parking on the northern side. A more detailed assessment would be required to provide appropriate scaled sketches, however, as Leila Street appears to be over 12 m wide, a range of angled parking arrangements could be investigated. These could include 90-degree parking on the northern side only or a combination of 30 or 45-degree parking on the northern side and parallel parking on the southern side.

5 Traffic Management Arrangements – Response to Query #4

Traffic management arrangements outside of the education facility are shown indicatively in Figure 5. This shows vehicular and active travel access and circulation at a high-level.

The proposed kiss and drop locations on the new local street are expected to be located on the northern and eastern frontages, as well as potentially on the eastern end of Leila Street as per the plan. The bus pick-up and drop-off is expected to take place along the eastern frontage due to vehicle and bay length requirements.

Active travel access would be as shown in the plan. Further details in terms of cycling infrastructure including parking are anticipated to be provided as part of a future planning application for the education facility in due course.

Staff parking is assumed to be accommodated within the education facility site (not on-street). The future application for the education facility site would confirm staff parking requirements and provisions to be made onsite.

Figure 5: Proposed vehicular and active travel access and circulation (Source: Urbis with annotations)



6 Pedestrian Overpass Commentary – Response to Query #5

This section provides information on footprint of, and access to, the proposed pedestrian overpass. It is noted that this is subject to a future planning application for the education facility which will be submitted in due course.

Figure 6 shows a plan of the proposed pedestrian overpass and the footprint required. This is an extract from the plan included in Appendix B of the Traffic Report, which presents the typical envelope schematic.

The connection to the existing footpath on the eastern side of Joseph Street is shown in Figure 7 (Figure 3.4 of the Traffic Report). Wider connectivity to the west for the pedestrian overpass would be achieved via a new proposed pedestrian link from Leila Street as shown in Figure 5. The typology and width of this link would be determined at a later date.

Figure 6: Proposed Pedestrian Bridge – Typical Envelope Schematic (Ramp Option)

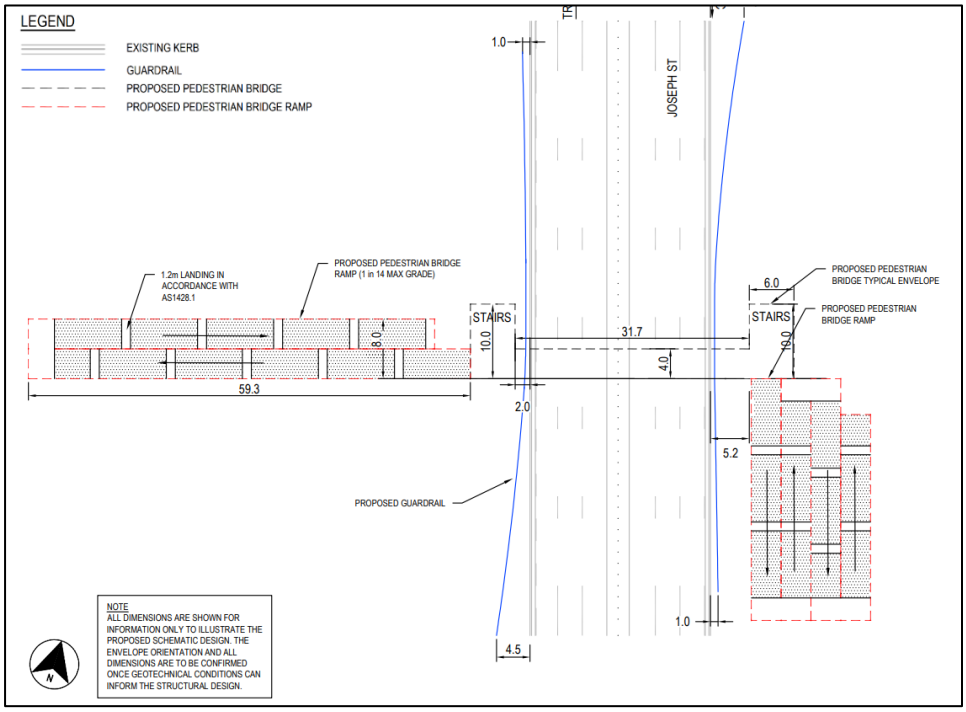
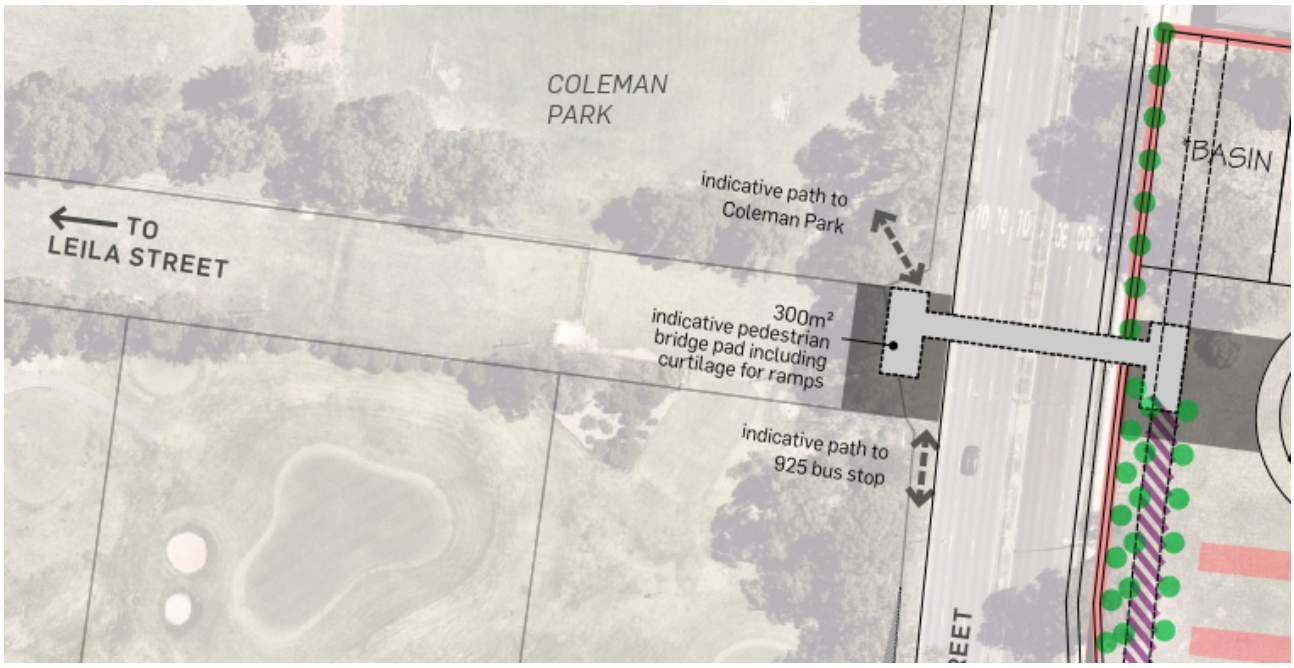


Figure 7: Indicative Pedestrian Bridge Connection



7 Education Facility Capacity Reduction Review – Response to Query #6

This section provides commentary of potential implications of reducing capacity proposals to a maximum of 500 and 750 students respectively, from a transport planning perspective.

A seemingly positive implication of a reduced capacity for the school would be a direct decrease in overall traffic generation to / from this education facility. For the scenario with a reduced capacity of 500 students, if taken as average, this could mean a 50 % reduction in trips. This could fluctuate depending on whether families with multiple children were allocated a space at this education facility or had to travel to other one in the vicinity. Similarly, on average, a 25 % reduction could be achieved when the capacity is 750 students from the initial 1,000 students assumed. This could have an impact on the morning peak traffic conditions in terms of intersection / network operation.

The assessment undertaken in support of the planning application for this Site is presented in the Traffic Report. This assumed a primary school with a capacity of 1,000 students for testing purposes only, noting that the final education facility type and capacity are subject to change. As such, the tested capacity would represent a worst-case scenario from a transport planning perspective. It is therefore considered that any lower capacity should result in relative improvements to the study network and require no further analysis.

A negative implication would be the actual reduction in capacity. This could affect some of the residents in the wider area, requiring them to travel to other education facilities, with the potential for some of those trips to still be made within the study network. However, any potential impact related to this could not be determined at this stage.

A. SIDRA Modelling Outputs

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 4.5 (Site Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3677	200	3677	5.4	* 0.898	16.5	LOS B	69.2	506.6	0.85	0.81	0.85	59.2
3	R2	12	2	12	16.7	0.184	87.3	LOS F	0.9	7.2	1.00	0.68	1.00	23.3
Approach		3689	202	3689	5.5	0.898	16.7	LOS B	69.2	506.6	0.85	0.81	0.85	59.0
East: Botanica Drive														
4	L2	32	2	32	6.3	0.090	52.4	LOS D	1.9	13.8	0.84	0.69	0.84	30.3
6	R2	292	3	292	1.0	0.883	80.5	LOS F	23.4	165.5	1.00	0.97	1.25	14.2
Approach		324	5	324	1.5	0.883	77.8	LOS F	23.4	165.5	0.98	0.94	1.21	15.7
North: Joseph Street North														
7	L2	126	4	126	3.2	* 0.697	27.2	LOS B	36.9	274.4	0.71	0.70	0.71	34.4
8	T1	2357	188	2357	8.0	0.697	18.2	LOS B	38.4	287.3	0.70	0.66	0.70	57.4
Approach		2483	192	2483	7.7	0.697	18.7	LOS B	38.4	287.3	0.70	0.66	0.70	56.6
All Vehicles		6496	399	6496	6.1	0.898	20.5	LOS B	69.2	506.6	0.80	0.76	0.81	54.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Joseph Street South												
P1	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	104.5	45.8	0.44
East: Botanica Drive												
P2	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	94.5	32.8	0.35
All Pedestrians		100	100	69.3	LOS F	0.2	0.2	0.96	0.96	99.5	39.3	0.39

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 4.5 (Site Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	50	2	50	4.0	0.039	5.4	LOS A	0.2	1.1	0.32	0.54	0.32	43.3
2	T1	4	2	4	50.0	0.008	4.6	LOS A	0.0	0.2	0.31	0.54	0.31	45.9
3	R2	4	2	4	50.0	0.008	6.1	LOS A	0.0	0.2	0.31	0.54	0.31	45.1
Approach		58	6	58	10.3	0.039	5.4	LOS A	0.2	1.1	0.32	0.54	0.32	43.8
East: Botanica Dr W														
4	L2	8	2	8	25.0	0.126	5.0	LOS A	0.0	0.2	0.01	0.02	0.01	49.0
5	T1	235	4	235	1.7	0.126	0.0	LOS A	0.0	0.2	0.01	0.02	0.01	49.8
6	R2	2	2	2	100.0	0.126	6.3	LOS A	0.0	0.2	0.01	0.02	0.01	47.0
Approach		245	8	245	3.3	0.126	0.2	NA	0.0	0.2	0.01	0.02	0.01	49.7
North: Betty Cuthbert Dr N														
7	L2	4	2	4	50.0	0.038	5.5	LOS A	0.1	0.9	0.28	0.58	0.28	45.4
8	T1	4	2	4	50.0	0.038	4.7	LOS A	0.1	0.9	0.28	0.58	0.28	45.6
9	R2	38	2	38	5.3	0.038	5.4	LOS A	0.1	0.9	0.28	0.58	0.28	42.9
Approach		46	6	46	13.0	0.038	5.4	LOS A	0.1	0.9	0.28	0.58	0.28	43.6
West: Botanica Dr W														
10	L2	16	2	16	12.5	0.078	5.0	LOS A	0.1	0.8	0.09	0.10	0.09	47.5
11	T1	112	4	112	3.6	0.078	0.1	LOS A	0.1	0.8	0.09	0.10	0.09	48.6
12	R2	12	2	12	16.7	0.078	5.5	LOS A	0.1	0.8	0.09	0.10	0.09	47.3
Approach		140	8	140	5.7	0.078	1.1	NA	0.1	0.8	0.09	0.10	0.09	48.4
All Vehicles		489	28	489	5.7	0.126	1.6	NA	0.2	1.1	0.09	0.16	0.09	47.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 4.5 (Site Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3816	202	3816	5.3	* 0.915	16.9	LOS B	75.8	554.8	0.81	0.79	0.83	46.8
3	R2	152	0	152	0.0	0.726	79.0	LOS F	11.2	78.7	1.00	0.84	1.08	21.7
Approach		3968	202	3968	5.1	0.915	19.3	LOS B	75.8	554.8	0.82	0.79	0.84	44.5
East: Site Access (North)														
4	L2	138	0	138	0.0	0.242	46.0	LOS D	7.5	52.3	0.79	0.76	0.79	28.5
6	R2	252	0	252	0.0	* 0.885	84.0	LOS F	20.5	143.3	1.00	0.98	1.28	21.2
Approach		390	0	390	0.0	0.885	70.6	LOS F	20.5	143.3	0.93	0.90	1.11	23.2
North: Joseph Street North														
7	L2	269	0	269	0.0	0.199	12.3	LOS A	5.7	39.8	0.32	0.69	0.32	45.6
8	T1	2345	190	2345	8.1	0.729	20.6	LOS B	41.5	310.9	0.73	0.68	0.73	43.6
Approach		2614	190	2614	7.3	0.729	19.8	LOS B	41.5	310.9	0.69	0.68	0.69	43.8
All Vehicles		6972	392	6972	5.6	0.915	22.4	LOS B	75.8	554.8	0.78	0.76	0.80	41.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Site Access (North)												
P2	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	93.8	31.9	0.34
All Pedestrians		50	50	69.3	LOS F	0.2	0.2	0.96	0.96	93.8	31.9	0.34

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 4.5_Modified (Site Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3816	202	3816	5.3	* 0.870	9.3	LOS A	61.1	447.4	0.67	0.64	0.67	55.0
3	R2	152	0	152	0.0	0.686	77.0	LOS F	11.0	77.2	1.00	0.83	1.04	22.1
Approach		3968	202	3968	5.1	0.870	11.9	LOS A	61.1	447.4	0.69	0.65	0.69	51.6
East: Site Access (North)														
4	L2	138	0	138	0.0	0.839	80.1	LOS F	16.6	116.2	1.00	0.93	1.20	21.1
6	R2	252	0	252	0.0	* 0.839	82.0	LOS F	16.6	116.2	1.00	0.93	1.23	21.5
Approach		390	0	390	0.0	0.839	81.3	LOS F	16.6	116.2	1.00	0.93	1.22	21.4
North: Joseph Street North														
7	L2	269	0	269	0.0	0.201	12.6	LOS A	5.8	40.8	0.33	0.69	0.33	45.3
8	T1	2345	190	2345	8.1	0.688	17.2	LOS B	37.5	280.8	0.67	0.62	0.67	46.6
Approach		2614	190	2614	7.3	0.688	16.7	LOS B	37.5	280.8	0.63	0.63	0.63	46.4
All Vehicles		6972	392	6972	5.6	0.870	17.6	LOS B	61.1	447.4	0.68	0.66	0.70	45.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Site Access (North)												
P2	Full	50	50	69.3	LOS F	0.2	0.2	0.96	0.96	93.8	31.9	0.34
All Pedestrians		50	50	69.3	LOS F	0.2	0.2	0.96	0.96	93.8	31.9	0.34

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Appendix B

NSW GOVERNMENT | Education

4 November 2022

Daniel Cavallo
Director Environment and Planning
Cumberland City Council
PO Box 42, Merrylands NSW 2160

Dear Mr Cavallo,

We are writing to reiterate and confirm our involvement in the re-zoning planning proposal being presented to Council by the NSW Government in respect of 80 Betty Cuthbert Drive, Lidcombe.

The Department of Education (the Department) has continued to work collaboratively with Property Development NSW (PDNSW) and Multiple Sclerosis Limited (MSL) to develop the proposal which includes provision of land for a potential new school. Planning has included early analysis of student enrolment projections together with site specific analysis of catchment alignment, traffic and transport needs and other early phase due diligence.

Once the planned re-zoning is complete, the Department will commence more detailed service need planning to identify the timing of projected population growth and the impact of enrolments in the short and medium term on current schools in the area and this would involve detailed consultation with council on all aspects of the potential new school including traffic, bulk and scale of buildings and any staging required.

As previously noted, a business case would then need to be developed for consideration by NSW Treasury as part the budget process. Until a business case is approved, the Department is unable to provide a firm commitment to the timing of the provision of the potential new school on the site.

Should you require any further information, please do not hesitate to contact Ryan Thoroughgood, Director, Infrastructure Planning at ryan.thoroughgood7@det.nsw.edu.au.

Yours sincerely,

Paul Towers
Executive Director, Infrastructure Planning

SCHOOL INFRASTRUCTURE NSW
259 George Street Sydney NSW 2000 PO Box 33 Sydney NSW 2001 T 9273 9200
education.nsw.gov.au

Appendix C

3.5 Landscape and Public Domain

Objectives

O1. Retain high and medium value trees where possible subject to future educational establishment, MSL and residential development.

O2. Extend streetscape character of Betty Cuthbert Drive and establish the streetscape character to the future educational establishment perimeter street.

O3. Provide a consistent landscape buffer along Joseph Street to reflect the Botanica interface.

Controls

C1. All development is to be consistent with the Landscape and Public Domain Strategy in **Figure 9**.

C2. Retention of trees shall consider:

- the safe useful life expectancy (assessed by a qualified arborist) and estimated future lifespan;
- the current and future amenity and contribution to the landscape that the tree provides;
- management and safety issues associated with retention
- preliminary tree retention mapping in **Figures 10 – 15.**

C3. Landscape design of private lots and retained existing trees shall contribute to the landscape amenity of the neighbourhood and precinct landscape framework.

C4. Based on the preliminary tree retention mapping in **Figures 10 – 15.**

- 'medium retention value trees' should be retained wherever possible but should not be a constraint on the development.
- 'high retention value trees' are considered important for retention and should be retained and protected wherever possible. All opportunities for retaining these subject trees using design modification and tree sensitive construction techniques should be explored.

C5. Street patterns and street tree planting shall be strong components of the landscape framework.

C6. Streetscape planting shall ensure the coherence of new plantings and continuity with key elements and themes of the existing landscape mand surrounding residential developments.

Figure 9 Landscape and Public Domain Strategy



Figure 10 Tree Retention Value Reference Map

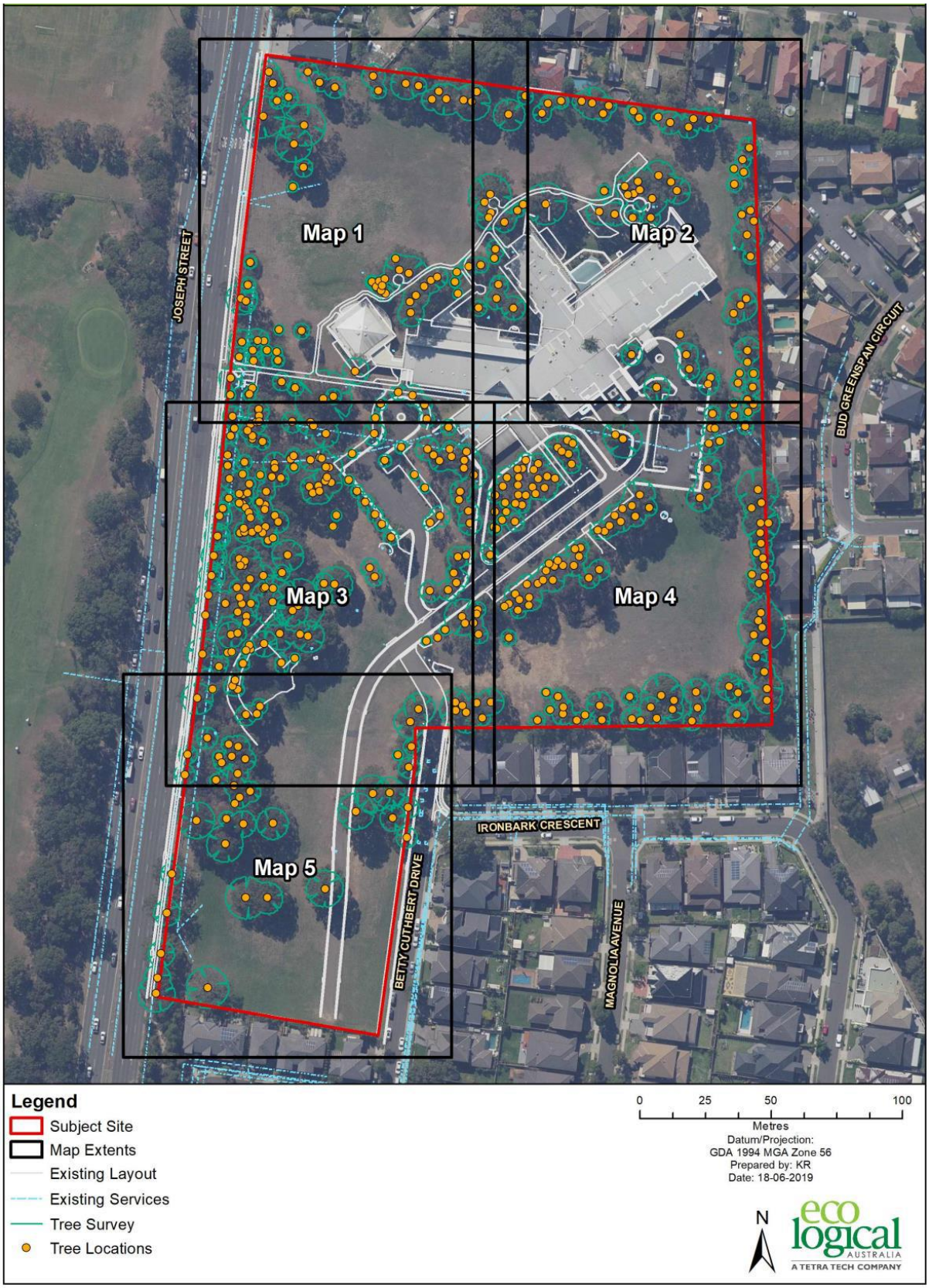


Figure 11 Tree Retention Values – Map 1

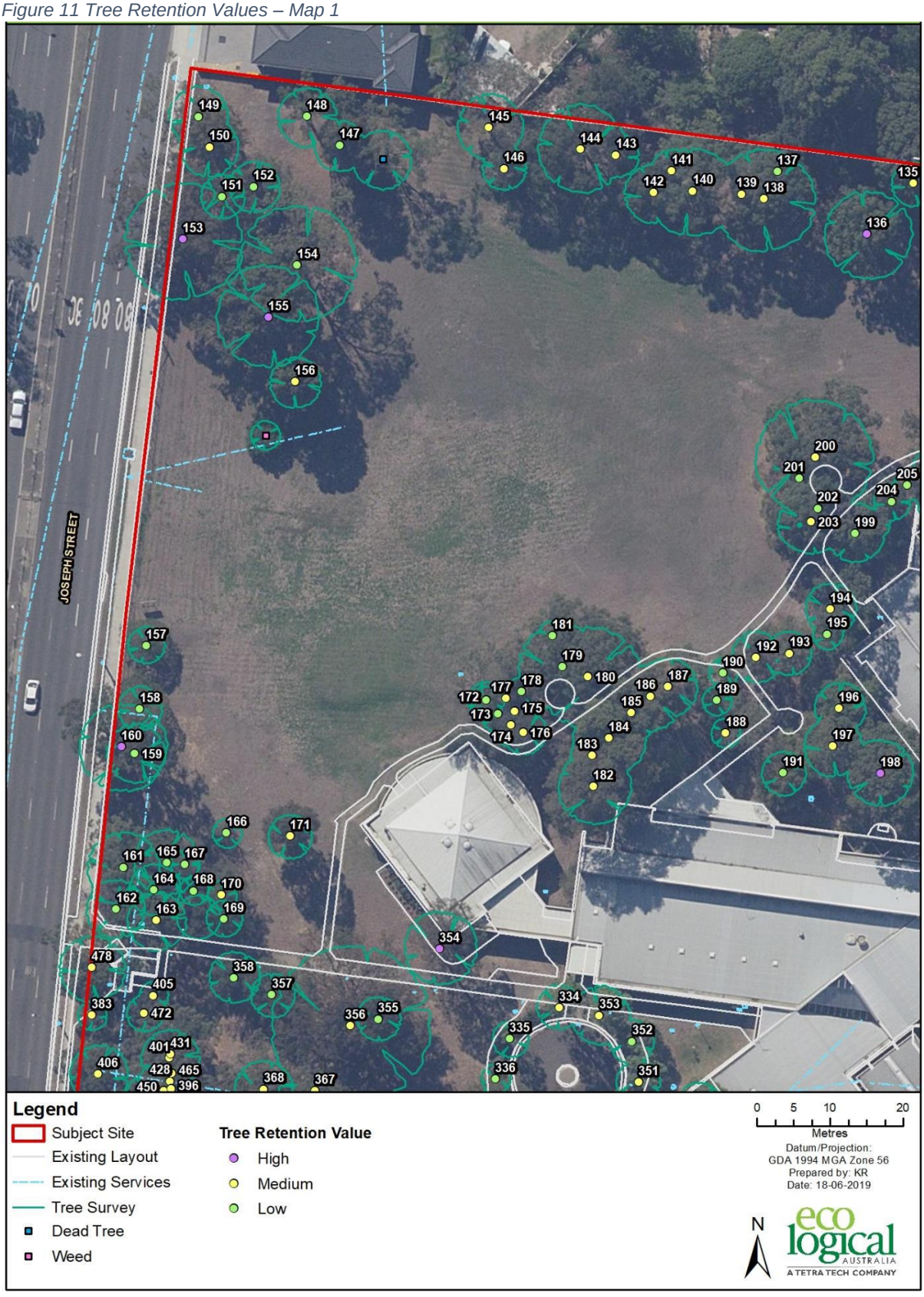


Figure 12 Tree Retention Values – Map 2

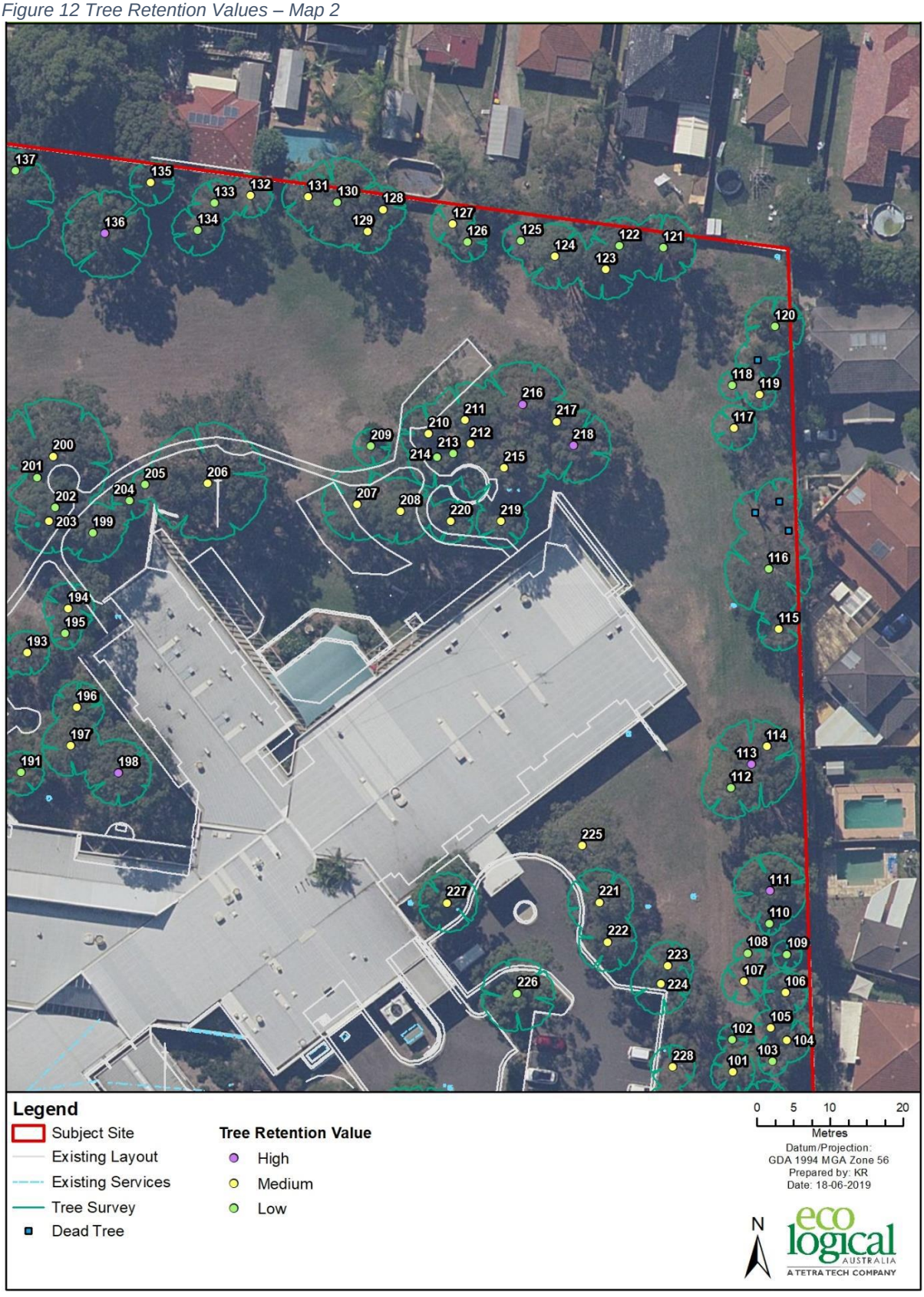


Figure 13 Tree Retention Values – Map 3

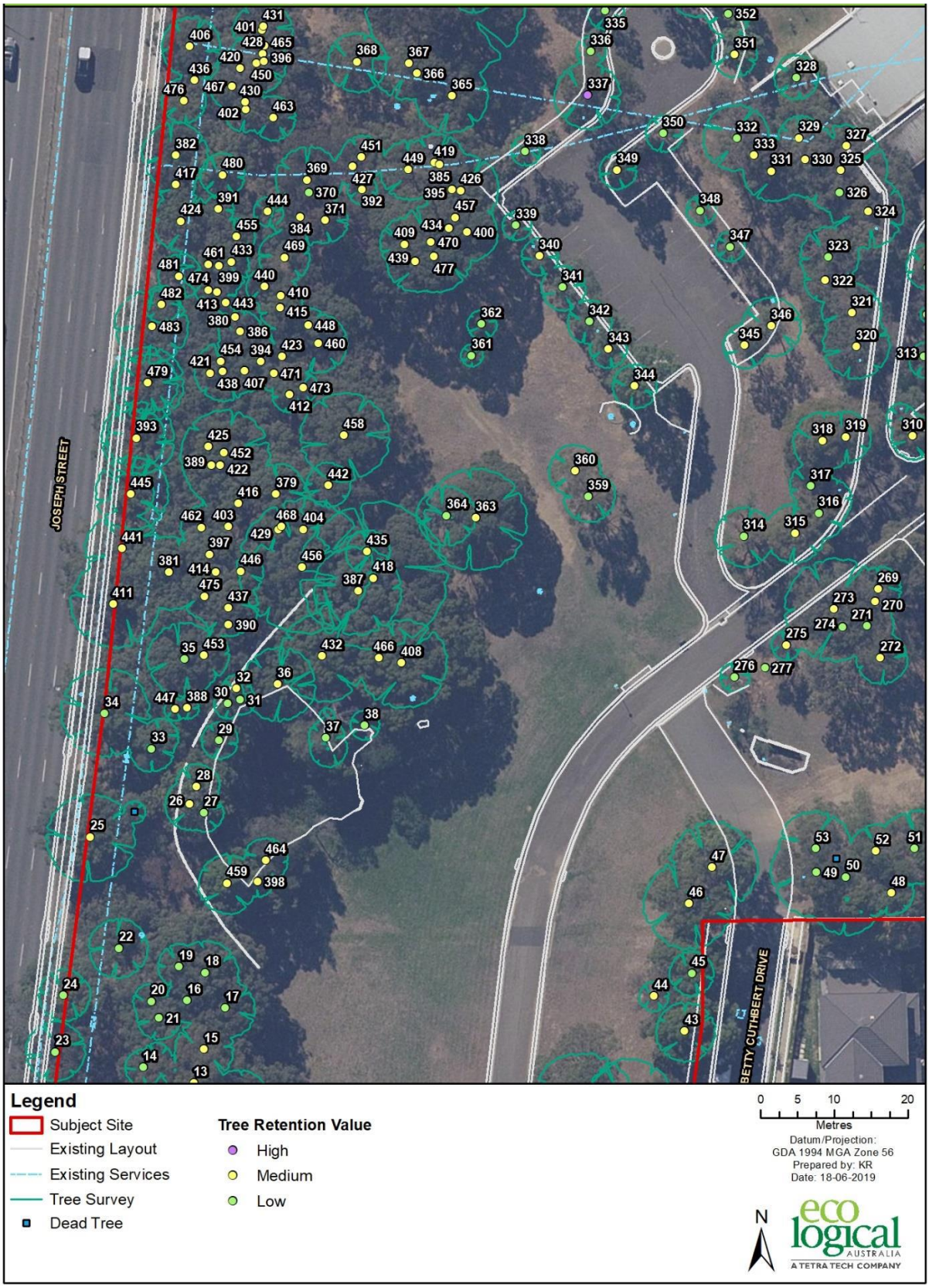


Figure 14 Tree Retention Values – Map 4

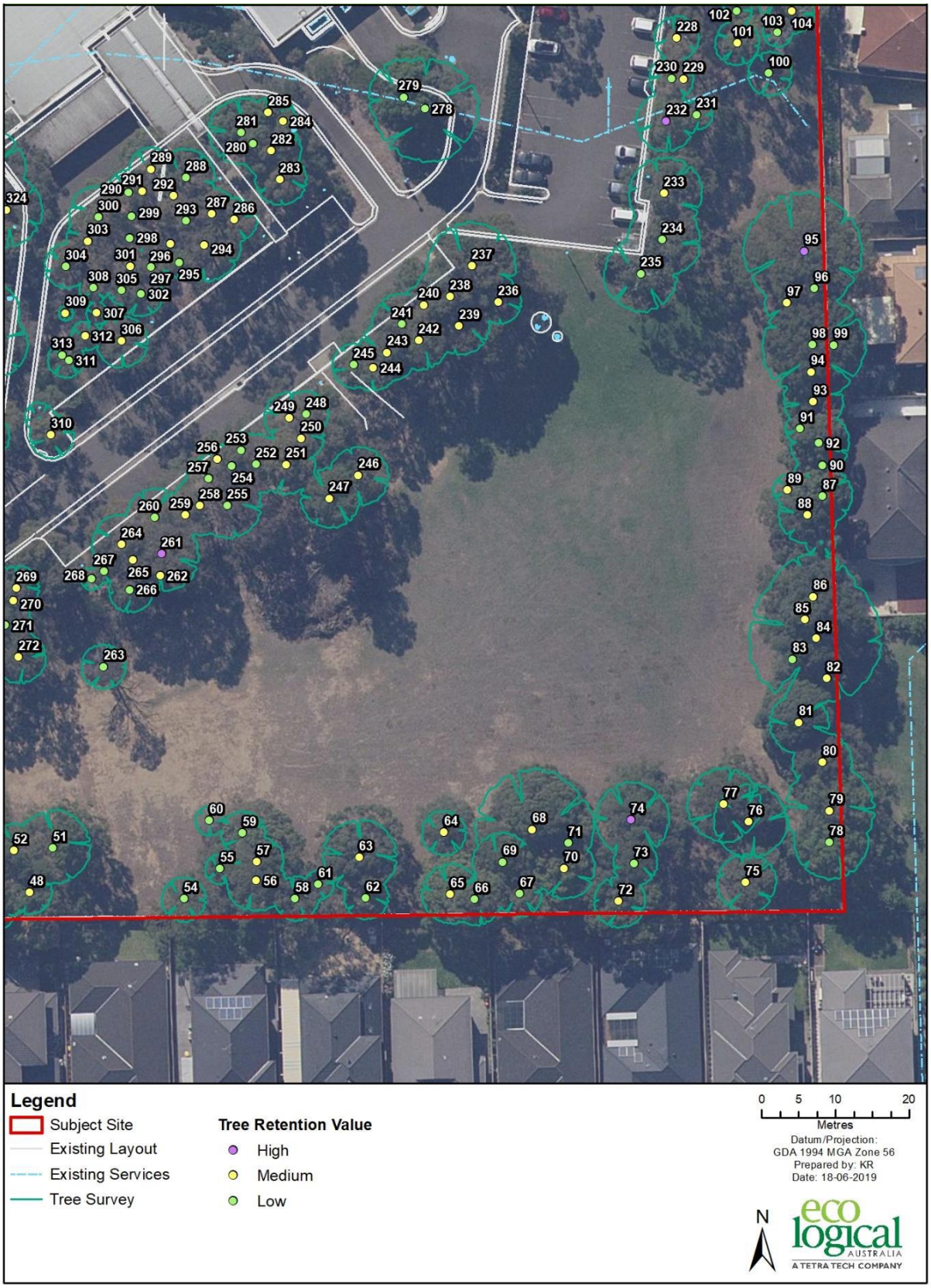


Figure 15 Tree Retention Values – Map 5

