Kaleen Group Centre
Stage 1 Site Investigation Report

Prepared for:

Environment, Planning and Sustainable Development Directorate (EPSDD)

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Executive Summary

JPS Engineering Consultants, commissioned by the Environment, Planning and Sustainable Development Directorate (EPSDD), conducted a Stage 1 Site Investigation Report for the Kaleen Group Centre. The site, which spans approximately 28,427m^2, is occupied by various businesses, car parking, and an open space area within Block 33 Section 28 Kaleen. The site is zoned for commercial, community facility, and open space uses in line with the Territory Plan (2024).

This report assesses the suitability of the site for potential development or redevelopment in alignment with the latest Territory Plan objectives for revitalising group centres for the Kaleen Group Centre.

Considering the comprehensive evaluation of constraints and associated risk ratings, the subject site possesses some constraints and information to inform a future development. Consequently, the subject site is considered viable for a potential future development, pending the recommendations provided in the following section that respond to the above risks.

Based on the level of risk, recommendations have been listed in order of priority, to assist in programming the recommended works. The priority listing has been developed by assessing the importance of the additional investigations recommended and the effect that this work would have on other reports. A summary of the recommendations and necessary actions required to enable this site for development with the associated risk colour coded to that which is presented in section 8 of this report is provided below:

- **Contamination Management:** As no investigations are available on the potential of site contamination, an initial environmental study should be undertaken. This study will determine whether further studies are warranted, based on a potential development in the site. Measures should be taken as recommended in the environmental investigation to manage and remediate any potential contamination on site. EPA regulations and guidelines are to be strictly followed to ensure that development potential is not restricted by environmental conditions.

- **Heritage Assessment:** Undertake a full heritage assessment to understand the extent of heritage values, particularly within Block 33 Section 28 Kaleen. Present the findings of the heritage assessment to the ACT Heritage Council so that this constraint to development can be fully mapped and any coordination with RAOs can be undertaken.

- **Trees and Vegetation:** Commission a tree survey and qualified arborist to assess the existing trees to ensure the protection of regulated trees on or near the subject site. Validate the tree assessment with the ACT Urban Treescapes Unit (TCCS) and the Conservator of Flora and Fauna, before proceeding with any activities that could impact existing trees. Furthermore, if trees are proposed to be removed to accommodate a proposed development, replacement trees at a ratio and location agreed to with TCCS, the Conservator and EPSDD Climate Change and Energy will need to be considered.

- **Ecological Assessment:** Liaise with the Conservator of Flora and Fauna to establish a scope of work to address likely ecological constraints to development on the site during the planning phase. Preliminary consultation with the Conservator of Flora and Fauna have advised that an ecological impact assessment should be completed for the site.

- **Urban Planning and Impact Study:** Undertake detailed urban planning design to comprehensively assess the impact and demand of any proposed development on services and infrastructure. This should also include an evaluation of how the development may interact with the adjacent residential, commercial and community facility properties to ensure holistic compatibility. The proposal is to be made in accordance with EPSDD's Development Application process.

- **Stormwater Management:** Undertake a stormwater hydrological and hydraulic analysis for any proposed development in line with TCCS MIS documents. This includes the catchment and capacity analysis of the south/south east area that appears to drain through the southern car park within the site. Validate whether the size and grade of the existing DN450 stormwater mains in Georgina Crescent (east and west) and the trunk DN1600 and twin DN1350 receiving stormwater mains in Maribyrnong Avenue have sufficient capacity to accommodate a potential development's stormwater flows. As part of this analysis of the potential development's drainage needs any on site detention/retention initiatives should be considered.

- **Geotechnical Investigation:** Given the variable surface levels in comparison to the surrounding levels, and development timeframe of the group centre, a detailed geotechnical investigation should be undertaken, which is tailored to a proposed development. A geotechnical assessment is particularly important if basement parking is proposed. This will provide accurate data for foundation/pavement design and construction planning.

- **Electrical Service:** Determine the best connection point to service the site, once development demands are calculated. Address any necessary upgrades to the electrical infrastructure to service a potential development/redevelopment. This is to be undertaken through collaborative consultation with Evoenergy. If vulnerable use is proposed on the site, seek advice from Evoenergy as to whether a step and touch potential test needs to be undertaken due to the nearby pad mounted substations, central, south west and east of the site.

- **Easements:** An appropriate easement width and protection zone is to be determined for the sewer, telecommunications, gas and electricity mains that runs through Block 2, 9, 10 and 14 Section 88 Kaleen. This is to be confirmed with the relevant service authority. Once this is done, if these service mains are intended to remain within the blocks, a new deposited plan is to be produced showing the appropriate easements.

- **Traffic Impact:** In accordance with the TCCS Guidelines for Transport Impact Assessment, either a Transport Effects Form (TEF) or Transport Assessment Report (TAR), will be required to be undertaken, depending on the scale and intended use of a future potential development. Evaluate the potential impact of increased traffic on the existing transport network and parking supply in the group centre as part of this work.

- **Potable Water Supply:** For a potable water connection to a potential development within the site, work closely with Icon Water to establish a connection to their existing DN150 main network. This is to be established once the development and its potable water demand is known. Determine best locations for additional hydrants on existing mains to meet the Fire Risk Type of the development. Ensure compliance with all requirements and standards set by Icon Water and ACT Fire & Rescue throughout the preliminary and detailed design process.

- **Sewer Service:** For a sewer service to a potential development within the site, work closely with Icon Water to establish a connection to their existing DN150 or downstream DN225 sewer main network. The connection point will likely be to one of the existing manholes over these mains. The sewer connection point is to be established once the development is known, demand calculated, and detailed survey information available. Ensure compliance with all requirements and standards set by Icon Water throughout the preliminary and detailed design process.

- **Service Location Confirmation:** Confirm the exact locations of existing services to ensure accurate planning and prevent any conflicts during the development process. This is to be undertaken using non-destructive methods by the developer.

- **Telecommunications Service:** Liaise with NBN for a telecommunications service connection to a potential development, if required.

This site investigation report is produced for information only. Developers are required to undertake their own assessment of the site prior to lodging a Development Application with EPSDD.

1 Introduction

JPS Engineering Consultants have been commissioned by the Environment, Planning and Sustainable Development Directorate (EPSDD) to undertake a Stage 1 Site Investigation Report for the Kaleen Group Centre, hereafter referred to as the 'subject site' or simply the 'site'. The purpose of this investigation is to provide a comprehensive understanding of the site's characteristics and development opportunities. This will then inform a strategy to enhance the group centre's activation and revitalisation, aligning with the district strategy implementation as an important community meeting place that requires strategic planning to ensure its ongoing viability within the broader network.

The subject site, is occupied by various businesses, car parking and an open space area, all of which spans approximately 28,427m^2 in total. The site is flanked by Maribyrnong Avenue to the north and Georgina Crescent east west and south around the group centre. Rubicon Street is also within the south west portion of the site, intersecting with Georgina Crescent.

Refer to Figure 1 for an aerial photograph showing the area of this study outlined and shaded in red with red place marker.

Figure 1 – Locality Plan of Subject Site (ACTmapi, 2024)

The purpose of this Site Investigation Report is to evaluate the suitability of various areas within the subject site for future development or redevelopment, in alignment with the latest Territory Plan objectives for revitalising group centres. This report aims to offer comprehensive information to both the ACT Government and any potential developers, identifying areas that are appropriate for development. The primary objectives of this report therefore are as follows:

1. Establish Effective Communication: Initiate engagement with relevant stakeholders to establish clear communication channels. This will enable to gain an initial understanding of the site's condition and the requirements necessary to support any proposed development within the subject site area.
2. Evaluate Site Constraints: Identify any limitations imposed by current site conditions. This includes considering data from proposed infrastructure capital works, as well as assessing road, stormwater, and service requirements gathered through stakeholder consultations and available data.

3. Recommend Necessary Works: Identify both on site and off site work that should be undertaken prior to any proposed development within the subject site. Provide recommendations for effectively addressing these requirements, in line with latest standards and guidelines.
4. Assess Further Investigations: Identify any additional investigations through a gap analysis that may be necessary to ensure a comprehensive understanding of the site and its implications for any future development within the subject site area.
5. Determine Infrastructure and Services Requirements: Evaluate the infrastructure and services required to allow any portion of the site's release. Additionally, outline any associated risks related to these components.

A detailed scope of works can be found in Section 4 of this report, outlining the specific tasks and activities that will be undertaken to achieve these objectives.

2 Land Use and Planning Framework

The subject site consists of two sections – Section 88 and part Section 28 Kaleen with two internal public road corridors that allows access to parking areas. Section 88 comprises of CZ1: Core Zone, whilst part Section 28 has a PRZ1: Urban Open Space land use under the Territory Plan (2024).

An excerpt of the Territory Plan map is shown in Figure 2, which depicts these zones within and surrounding the subject site area.

Figure 2 – Territory Plan Land Use Map (ACTmapi, 2024)

The following appreciation of the land use and planning framework is based on the ACT Legislation Register website, Territory Plan 2023, and the Planning Act 2023. As the subject site is predominantly commercial, based on the ACT Legislation Register website, the following zone policy outcomes are applicable to the commercial components of the subject site:

1. Commercial zones primarily serve commercial developments, emphasising economic activity and providing land for commercial services. In areas not designated as mixed-use, other complementary uses are allowed but should not detract from the zone's commercial nature.
2. Development should align with the zone hierarchy in scale and character.

Specifically regarding CZ1 – Core Zone, the following policy outcomes are to be achieved:

1. Maintain a mix of predominantly commercial land uses to foster a diverse and dynamic environment.
2. Ensure convenient access to a variety of retail and service outlets.
3. Foster vibrant and engaging street fronts, promoting activity during evenings and weekends.
4. Create an appealing, safe, and well-lit pedestrian environment with easy access to public transportation.
5. Uphold high standards of urban design using sustainable materials, ensuring design consistency and compatibility among buildings.
6. Support business investment and job creation.
7. Encourage the development of cultural and community identity relevant to the area.
8. Enhance public spaces by promoting active uses on ground floors that connect with open spaces, pedestrian paths, and cycling networks to encourage active lifestyles.

Reference is made to the Territory Plan 2023, specifically, the Part E Zone Policies, E2 – Commercial Zones Policy. The land uses/development types listed in Figure 3 below require a development application unless they meet the 'exempt development' definition of the Planning Act 2023. Uses not listed in Figure 3 are prohibited and additional land uses specified as prohibited development are in District Policies. Development of prohibited uses may be considered under certain limited circumstances as outlined under Part 7.3 of the Planning Act 2023.

Land Use / Development Type	CZ1	CZ2	CZ3	CZ4	CZ5	CZ6
ancillary use	Y	Y	Y	Y	Y	Y
animal care facility	-	-	Y	Y	-	-
aquatic recreation facility	-	-	-	-	-	Y
boarding house	-	-	-	-	Y	-
bulky goods retailing	Y	Y	Y	Y	Y	-
business agency	Y	Y	Y	Y	Y	-
café	Y	Y	Y	Y	Y	Y
car park	Y	Y	Y	Y	Y	Y
caravan park/camping ground	-	-	-	-	-	Y
caretakers' residence	-	-	-	-	-	Y
civic administration	Y	Y	Y	-	-	-
club	Y	Y	Y	Y	-	Y
co-housing	Y	Y	Y	Y	Y	-

Land Use / Development Type	CZ1	CZ2	CZ3	CZ4	CZ5	CZ6
commercial accommodation use	Y	Y	Y	-	-	Y
communications facility	Y	Y	Y	Y	Y	-
community activity centre	Y	Y	Y	Y	Y	Y
Community housing	Y	Y	Y	Y	Y	-
community theatre	Y	Y	Y	Y	Y	Y
complementary use	Y	Y	Y	Y	Y	Y
cultural facility	Y	Y	Y	Y	Y	Y
consolidation	Y	Y	Y	Y	Y	Y
craft workshop	Y	Y	Y	Y	-	Y
demolition	Y	Y	Y	Y	Y	Y
drink establishment	Y	Y	Y	Y	Y	Y
drive-in cinema	-	-	-	-	-	Y
early childhood education and care	Y	Y	Y	Y	Y	Y
educational establishment	Y	Y	Y	Y	Y	Y
emergency services facility	Y	Y	Y	-	Y	-
financial establishment	Y	Y	Y	Y	Y	-
freight transport facility	-	-	Y	-	-	-
funeral parlour	-	-	Y	-	-	-
group or organised camp	-	-	-	-	-	Y
guest house	Y	Y	Y	Y	Y	Y
health facility	Y	Y	Y	Y	Y	Y
home business	Y	Y	Y	Y	Y	-
hotel / motel	Y	Y	Y	-	Y	Y
hospital	Y	Y	Y	Y	Y	Y
indoor entertainment facility	Y	Y	Y	Y	Y	Y
indoor recreation facility	Y	Y	Y	Y	Y	Y
industrial trades	-	-	Y	Y	-	-
light industry	Y	-	Y	Y	-	-
light rail	Y	Y	Y	-	Y	Y
minor road	Y	Y	Y	Y	Y	Y
minor use	Y	Y	Y	Y	Y	Y
municipal depot	-	-	Y	Y	-	-
multi-unit housing	Y	Y	Y	Y	Y	-
office	Y	Y	Y	Y	Y	-
outdoor recreation facility	Y	Y	Y	-	Y	Y
overnight camping area	-	-	-	-	-	Y
parkland	Y	Y	Y	Y	Y	Y
pedestrian plaza	Y	Y	Y	Y	Y	Y
personal service	Y	Y	Y	Y	Y	Y
place of assembly	Y	Y	Y	-	Y	Y
place of worship	Y	Y	Y	Y	Y	Y
produce market	-	-	Y	Y	-	-
public agency	Y	Y	Y	Y	Y	-
recyclable materials collection	Y	Y	Y	Y	-	-
religious associated use	Y	Y	Y	Y	Y	Y
residential care accommodation	Y	Y	Y	Y	Y	-
restaurant	Y	Y	Y	Y	Y	Y
retail plant nursery	Y	Y	Y	Y	Y	Y

Land Use / Development Type	CZ1	CZ2	CZ3	CZ4	CZ5	CZ6
retirement village	Y	Y	Y	Y	Y	-
secondary residence	Y	Y	Y	Y	Y	-
service station	Y		Y	Y	-	-
shop	Y	Y	Y	Y	Y	Y
sign	Y	Y	Y	Y	Y	Y
single dwelling housing	Y	Y	Y	Y	Y	-
Storage facility	-	-	Y	-	-	-
subdivision	Y	Y	Y	Y	Y	Y
supermarket	Y	Y	Y	Y	Y	Y
supportive housing	Y	Y	Y	Y	Y	-
take-away food shop	Y	Y	Y	Y	Y	Y
temporary use	Y	Y	Y	Y	Y	Y
tourist facility	Y	Y	Y	-	-	Y
tourist resort	Y	Y	Y	-	-	Y
transport facility	Y	Y	Y	Y	Y	Y
varying a lease	Y	Y	Y	Y	Y	Y
vehicle sales	-	-	Y	-	-	-
veterinary clinic	Y	Y	Y	Y	Y	Y
veterinary hospital	-	-	Y	Y	-	-
warehouse	-	-	Y	-	-	-
zoological facility	-	-	-	-	-	Y

Figure 3 – Permissible Land Uses and Development Types in Commercial Zones (Territory Plan, 2024)

Relevant to the PRZ1: Urban Open Space zoned area within part Section 28 of the subject site, the following zone policy outcomes are to be achieved:

1. Provide a high-quality, well-distributed network of parks and open spaces that address the recreational and social needs of the community.
2. Establish diverse settings that support a range of recreational and leisure activities while protecting flora and fauna habitats, ecological corridors, natural and cultural features, healthy waterways, and landscape character.
3. Facilitate stormwater drainage and protect water quality, stream flows, and stream environments in a sustainable and environmentally responsible manner, offering opportunities for safe community interaction with and interpretation of the natural environment.
4. Allow ancillary uses that support the care, management, and enjoyment of open spaces, including park maintenance depots and small-scale community activity centres.
5. Promote development that does not adversely affect the landscape or scenic quality, ecological connectivity, cultural values, adequacy of open space for other purposes, access to open space, or the amenity of adjoining residents.
6. Ensure integrated land and water planning and management.
7. Provide safe and convenient pedestrian and cycling access to urban open spaces to promote active living.

Reference is made to the Territory Plan, specifically, the Part E Zone Policies, E5 – Parks and Recreation Zones Policy. The land uses/development types listed in Figure 4 below require a development application unless they meet the 'exempt development' definition of the Planning Act 2024. Uses not listed in Figure 4 are prohibited and additional land uses specified as prohibited development are in District Policies.

Land Use / Development Type	PRZ1	PRZ2
ancillary use	Y	Y
aquatic recreation facility	Y	Y
carpark	-	Y
club	-	Y
communications facility	Y	Y
community activity centre	Y	Y
complementary Use	Y	Y
consolidation	Y	Y
demolition	Y	Y
distribution reservoir	Y	Y
guest house	-	Y
hotel	-	Y
indoor recreation facility	-	Y
major electricity storage facility	Y	Y
major electricity sub-station	Y	Y
major gross pollutant trap	Y	Y
major pump station	Y	Y
major road	Y	Y
major service conduits	Y	Y
minor road	Y	Y
minor use	Y	Y
motel	-	Y
municipal depot	Y	-
outdoor recreation facility	Y	Y
parkland	Y	Y
playing field	Y	Y
power generation station	Y	Y
public agency	-	Y
sign	Y	Y
subdivision	Y	Y
temporary use	Y	Y
treatment plant	Y	Y
urban lake, pond and/or retardation basin	Y	Y
utility hydrogen production facility	Y	Y
varying a lease where not prohibited.	Y	Y
water storage dam	Y	Y

Figure 4 – Permissible Land Uses and Development Types in Parks and Recreation Zones (Territory Plan 2023)

A review of Part D District Policies, D8 – Belconnen District Policy, provides additional types of development and land uses that are assessable and prohibited in the area of the subject site. These

assessable developments are relevant to CZ1 zoned blocks, which are outlined in Figure 5 below. These assessment requirements are mandatory development controls that must be met for any future development on the site.

Building height and setback restrictions were also noted in the district policy for Block 4 Section 89, adjacent to the subject site as indicated in Figure 6 (Figure 17).

There was also mention in the district policy that a desired outcome to be achieved in Kaleen is to increase naturalised storm water infrastructure.

Locality	Zone	Additional assessable development	Additional prohibited development	Relevant parcel or Figure
Kaleen	CZ1	industrial trades, municipal depot, store.	Nil	Blocks 2, 9-14 Section 88

Figure 5 – Belconnen District Policy Additional Assessable Development for Kaleen (Belconnen District Policy, 2024)

Figure 6 – Block 4 Section 89 Kaleen Additional Assessable Development Criteria Map (Belconnen District Policy, 2024)

3 Proposed Development

EPSDD Development and Implementation do not currently have any proposed indicative development scenario within the subject site. EPSDD is currently reviewing existing group and local centres in the Belconnen district to enhance their activation and revitalisation, in alignment with the district strategy implementation. The subject site in the Kaleen Group Centre is therefore being evaluated for potential development or redevelopment, given its current zoning and development capabilities, discussed in the previous section of this report.

There have been no upgrades or master planning recently undertaken for the Kaleen Group Centre (Section 88 Kaleen) that would suggest any proposed revitalisation or renewal. As mentioned in the previous section of this report, Block 4 Section 89 has planning controls that formed as part of a Development Application submission for the upgrade of the Eastlake Football Club in 2022.

4 Investigation Scope

The scope and deliverables of this engagement will include the following:

- Introduction including site description and location in the site investigation report.
- Aerial photograph and site locality figure.
- Site zoning figure and Territory Plan review.
- Potential development/redevelopment review.
- Summary of any available relevant background reports regarding the site or surrounds.
- Existing site servicing and constraints based on Before You Dig Australia (BYDA) Plans, ACTmapi and correspondence with authorities as required. Schematic existing services excerpts will be produced to reflect these findings.
    - Stormwater (TCCS Stormwater Database and non-intrusive site inspection)
    - Overland flow and flood information (ACTmapi and/or EPSDD flood modelling information)
    - Sewer (BYDA and non-intrusive site inspection)
    - Water (BYDA and non-intrusive site inspection)
    - Electricity (Evoenergy and BYDA)
    - Telecommunication BYDA (BYDA and relevant authorities)
    - Natural gas supply (BYDA and Zinfra/Jemena)
    - Verge works including driveway and pedestrian access
    - Traffic review (TCCS Canberra Strategic Transport Model)
    - Parking (Aerial imagery)
    - Bushfire (ACTmapi/ACT Fire & Rescue)
    - Heritage (ACTmapi/ACT Heritage Council)
    - Environmental review (EPA historic data)
    - Tree Assessment (visual only)
    - Ecological (protected flora or fauna species)
    - Geotechnical
        - Review of any available geotechnical reports
        - On site non-intrusive inspection and geological mapping review
    - Other potential constraints identified
- Future site servicing guidance to latest standards and guidelines, based on existing services and infrastructure.
- Summary of opportunity and constraints in a risk assessment format.
- Recommendations for further studies in an itemised risk assessment format.
- Correspondence with all authorities.

It is understood that the outcomes of this study will lead EPSDD to understand the feasibility of development or redevelopment within the site to achieve the overarching intentions of the latest Territory Plan and more specifically, the District Policy. The report will also inform of the requirement of any further specialist studies needed to complete the due diligence on the site.

5 Site Description and Location

The subject site is situated within the suburb of Kaleen in the district of Belconnen. The subject site is flanked by Maribyrnong Avenue to the north and Georgina Crescent east west and south around the group centre. Two east west internal roads in the site connect to Georgina Crescent, which provide access to the northern and southern car park areas. Rubicon Street is also within the south west portion of the site, intersecting with Georgina Crescent. With an approximate area of 28,427m^2, the site is occupied by various businesses, car parking and an open space area. A list of each of the block and sections, their respective block area, and current Territory Plan zoning is provided in Table 1 below. To determine the available land that is present within the group centre, the current block usage has been investigated. This table provides a comprehensive list of all blocks within the subject site area and shows areas that are potentially underutilised.

As part of the Belconnen District Strategy, it is a strategic intention to strengthen the economic and employment role of group centres in the region. The role and function of existing group and local centres, particularly in north and west Belconnen, should be considered, with a focus on supporting local enterprise and community life. Investigations in these and other centres are recommended to enhance community development. From a review of block usage across the Kaleen Group Centre, there appear to be several areas that can benefit from development/redevelopment to meet this district strategy. Development within the site in areas that are not best utilised will provide for ongoing, on site employment.

During a site inspection, it was observed that the topography of the site is relatively consistent falling from its south east corner to the north west corner of the site. The site has an average approximate grade of 4%, with some flatter areas in car parks. The highly developed nature of the site, along with the varying grades in different sections compared to surrounding areas, suggests that significant earthworks may have been carried out on the site.

Regarding vegetation, the majority of the site is cleared and developed, with several large mature trees scattered throughout the group centre and within islands in the car parks. Several medium to large trees are present surrounding the site within Georgina Crescent, and some newly planted trees were observed during the site inspection near Maribyrnong Avenue. Several existing trees within the site meet the definition of a regulated tree as described in the Urban Forest Act 2023.

Table 1 – Kaleen Group Centre Block Areas, Zoning and Current Land Use

Block, Section and District	Block Area (m2)	Territory Plan – Land Use Zoning	Current Block Usage
Block 02 Section 88 Kaleen	8,189	CZ1: CORE ZONE	Carpark
Block 09 Section 88 Kaleen	637	CZ1: CORE ZONE	ACT Home Improvements (Tradesmen), Real estate agency
Block 10 Section 88 Kaleen	5,161	CZ1: CORE ZONE	Shopping mall, Coles, Australia Post, Bakery, Butcher, Pharmacy, ATM
Block 11 Section 88 Kaleen	288	CZ1: CORE ZONE	TAB
Block 12 Section 88 Kaleen	437	CZ1: CORE ZONE	Bottle Shop and Liquor Store
Block 13 Section 88 Kaleen	698	CZ1: CORE ZONE	Jesus Is Lord Church
Block 14 Section 88 Kaleen	6,941	CZ1: CORE ZONE	Carpark
P/Block 33 Section 28 Kaleen	6,076	PRZ1: URBAN OPEN SPACE	Georgina Crescent Playground, Open space
Total Site Area	**28,427**		

The photos taken in Figure 7, Figure 8, and Figure 9 provide a general overview of the group centre from different visual aspects. The photos show the site's condition, current infrastructure, topographical features, car parks, and some of the existing trees present within and surrounding the site.

Figure 7 – General Site Photo taken from Georgina Crescent (east) Looking West

Figure 8 – General Site Photo of Southern Car Park

Figure 9 – General Site Photo of Kaleen Plaza

6 Existing Site Servicing

6.1 General

In this section, a detailed summary of the existing services information has been compiled for the subject site. This information is based on received data from Before You Dig Australia (BYDA) enquiries, work as executed (WAE) records, correspondence with service authorities, and a visual site inspection. Additionally, services that are proposed to be constructed and those to be relocated have also been considered.

While every effort has been made to ensure the accuracy of the provided information, the detailed dimensions and alignments of existing services included within the report should be treated as indicative only and the accuracy of the information cannot be warranted. It is essential that all services be accurately verified through on site potholing before commencing any development activities. Additionally, the verification of services may be required to facilitate future design efforts for the site.

All existing services described under this section are indicatively shown on drawing 20240333-DRG-CIV-UT-100 within Appendix A. All relevant correspondence with service authorities and Before You Dig Australia information is included within Appendix C and Appendix D, respectively.

6.2 Sewer

The assessment of the existing sewer infrastructure involved gathering information from multiple sources, including Before You Dig Australia (BYDA) data, records from Work as Executed (WAE) drawings, and an on site inspection.

The Icon Water BYDA information indicates that a sewer network runs within Georgina Crescent (east and west), servicing individual blocks in the group centre and developments to the east. All sewer mains on the site are DN150 and are predominantly located within the Georgina Crescent road reserve. However, a sewer main extends along the southern internal road to provide service to the development on Block 13 Section 88. Additionally, a small DN150 main extends along the northern internal road to provide service to Block 10 Section 88 (Kaleen Plaza). Easements over these DN150 main extensions through Block 9 Section 88 and Block 14 Section 88 are not shown on ACTmapi. Refer to Figure 14 and Figure 16 for photos of manholes over the sewer extension into the northern access road and Figure 15 for a photo of a manhole over the sewer through the southern access road opposite Block 13 Section 88.

The DN150 mains on either side of the site within Georgina Crescent connect to a DN225 sewer main in the northern verge of Maribyrnong Avenue. Figure 12 shows a photo of the receiving manhole for the site flows in Maribyrnong Avenue. The west crossing of Maribyrnong Avenue also upsizes from the DN150 main in Georgina Crescent to a DN225 main. See Figure 11 for a photo of manhole at the junction of the DN150 and DN225 main crossing Maribyrnong Street within the north west corner of the site.

Easements are not shown in ACTmapi to be over the DN150 mains that traverse through the northern and southern local access roads (Block 2 and 14 Section 88) to service Block 10 and 13, respectively.

For further details on existing sewer infrastructure within and surrounding the site, refer to Figure 10, which is extracted from the BYDA information.

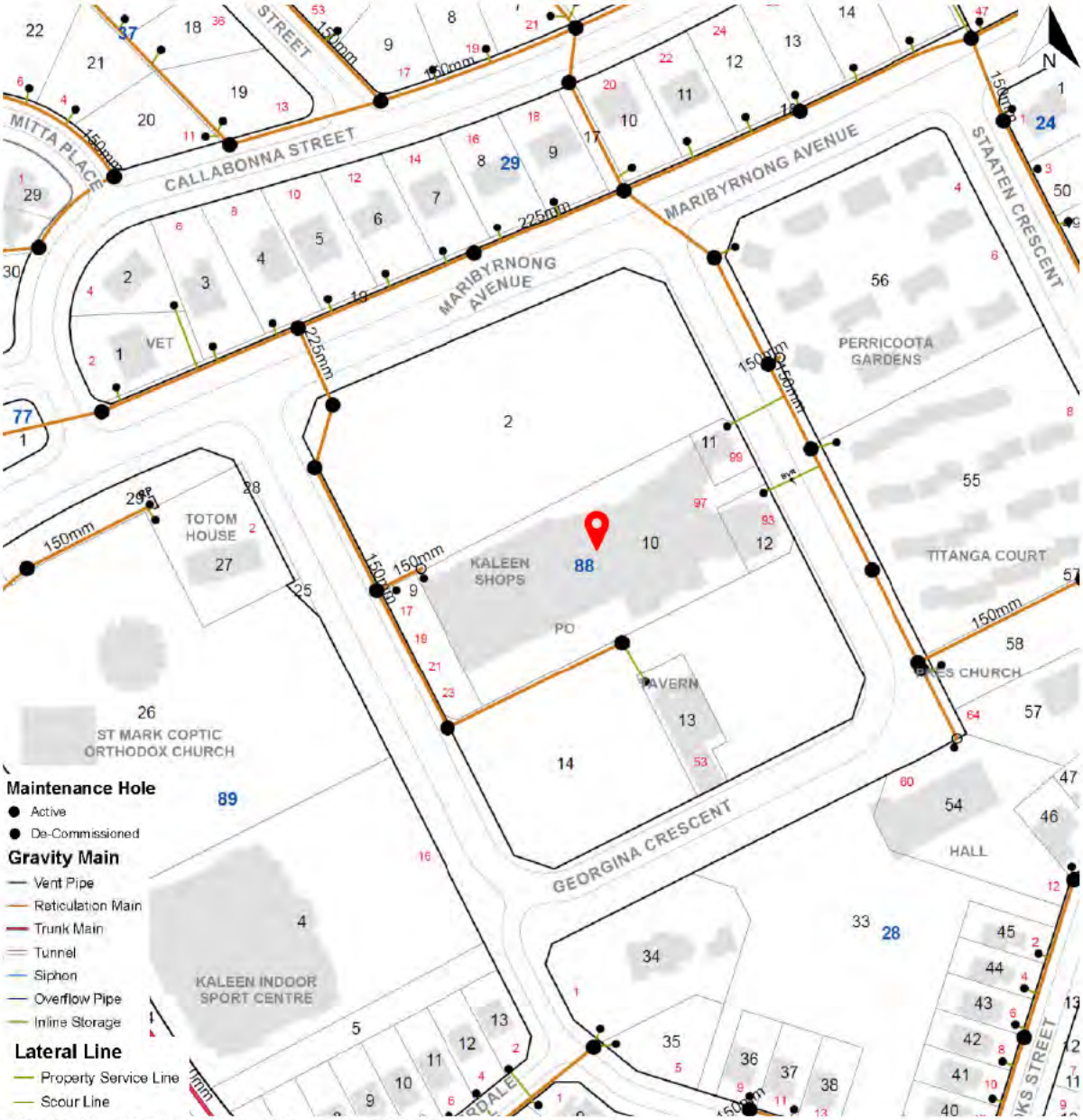


Figure 10 – Sewer BYDA Information (Icon Water, 2024)

Figure 11 – Sewer Manhole in North West Corner of Site

Figure 13 – Sewer Manhole in Georgina Crescent (east) at Intersection with Northern Internal Road

Figure 12 – Receiving Sewer Manhole on DN225 Main in Maribyrnong Avenue

Figure 14 – Sewer Manhole over Main Extension through Northern Internal Road from Georgina Crescent (west)

Figure 15 – Sewer Manhole in Southern Internal Road

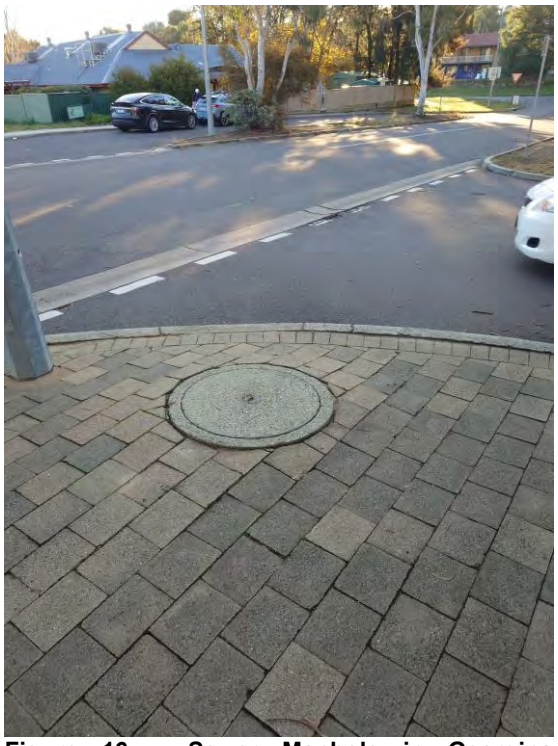


Figure 16 – Sewer Manhole in Georgina Crescent (west) at Intersection with Northern Internal Road

6.3 Water Supply

The existing water supply service information was compiled from Before You Dig Australia (BYDA) information.

The subject site is surrounded by potable water mains, namely:

- A DN150 water main is within the southern verge of Maribyrnong Avenue, which has hydrants spaced between approximately 80m and 105m along the main. See below Figure 19 and Figure 20 for hydrants identified on site over this main.
- A DN150 water main loops around the site, connecting to the above DN150 main in Maribyrnong Avenue. The DN150 loop main is situated in the east verge of Georgina Crescent (east), south verge of Georgina Crescent (south), and in the west verge of Georgina Crescent (west). The hydrants on this loop main are spaced between approximately 45m and 95m along the length of this main. A double hydrant is situated in the south east corner of the site on this main. See below Figure 18, Figure 21, Figure 22, and Figure 23 for hydrants and stop valves identified on site over this main.
- A DN100 water main extends from the abovementioned DN150 main in Georgina Crescent into Rubicon Street with a hydrant approximately 35m from the intersection.
- Two fire service connections to Block 10 Section 88 are shown off the DN150 mains in Georgina Crescent (west and east).

For further details on existing water infrastructure in and surrounding the subject site, refer to Figure 17, which is extracted from the Icon Water BYDA information.

Figure 17 – Existing Water Infrastructure Near the Subject Site (Icon Water, 2024)

Figure 18 – Stop Valve over DN150 Water Main at Intersection of Maribyrnong Avenue and Georgina Crescent (west)

Figure 19 – Fire Hydrant at Intersection of Maribyrnong Avenue and Georgina Crescent (west)

Figure 20 – Existing Fire Hydrant in Maribyrnong Avenue

Figure 21 – Fire Hydrant in Georgina Crescent (east)

Figure 22 – Stop Valve in Georgina Crescent (east)

Figure 24 – Fire Hydrant in Georgina Crescent (west)

Figure 23 – Existing Fire Hydrant in Georgina Crescent (east)

6.4 Stormwater Drainage

The existing stormwater infrastructure information was compiled from the TCCS Stormwater Database, and observations made during a site inspection.

A network of stormwater pipes and sumps are present within the subject site. This public stormwater infrastructure mainly drains the northern and southern car parks of the group centre, Georgina Crescent, and ties to individual blocks within the site. The internal ties drain stormwater from roofs and plaza areas. A small stormwater catchment to the south and east of the subject site is also conveyed through the stormwater network.

Key stormwater infrastructure within and surrounding the subject site is as follows:

- DN300 stormwater pipes drain the southern car park, capturing both kerbside sumps and runoff from adjacent buildings. The eastern portion of the southern car park drains through a DN300 pipe in the southern internal road's verge toward a DN450 stormwater pipe running along the west verge of Georgina Crescent (east). This DN450 main continues north toward Maribyrnong Avenue, capturing roadside sumps and upsizing to a DN525 stormwater pipe.
- The stormwater pipes in Georgina Crescent (east) connect to a trunk DN1650 stormwater main that runs along the centreline of Maribyrnong Avenue.
- The western portion of the southern car park drains via a DN300 pipe, servicing the development on Block 13 Section 88 and capturing kerbside sumps within the southern car park. The DN300 main crosses Georgina Crescent (west) and continues north in the west verge.
- A DN375 stormwater pipe drains the commercial development blocks within Block 9 and Block 10, connecting to the stormwater main in Georgina Crescent, where the main increases to a DN450 pipe.
- The DN450 pipe in Georgina Crescent (west) crosses the road and connects to a DN300 main that predominantly drains the northern car park.
- At the junction of these two mains, the stormwater pipe increases in size to a DN525 pipe before discharging into the trunk main in Maribyrnong Avenue.
- Where the west catchment of the site drains into the trunk stormwater main in the centre of Maribyrnong Avenue, the DN1650 main increases in capacity to twin DN1350 stormwater pipes that continue toward the south west.

Several stormwater kerb side sumps were observed during a site inspection along the roads within and surrounding the subject site of varying condition from poor to good. Photos of some sumps are provided in Figure 26, Figure 28, and Figure 27 below.

For visual reference, refer to the excerpt from the existing services drawing, provided in Figure 25 below. This map displays the indicative positions of these stormwater pipes (depicted in orange and brown linework) and drainage easements in blue. The combination of these elements contributes to the existing stormwater infrastructure in the vicinity of the subject site.

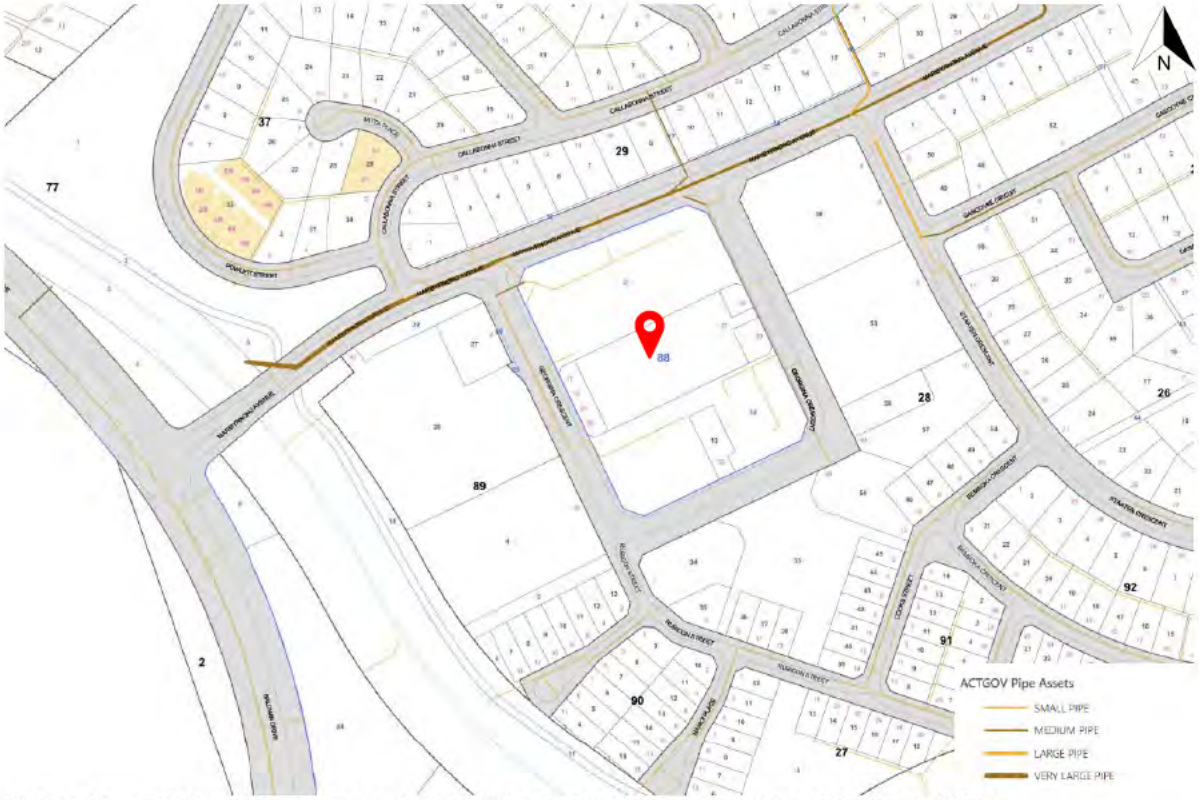


Figure 25 – Existing Stormwater Infrastructure in Proximity of the Site (ACTmapi, 2024)

Figure 26 –Stormwater Sump in Northern Car Park

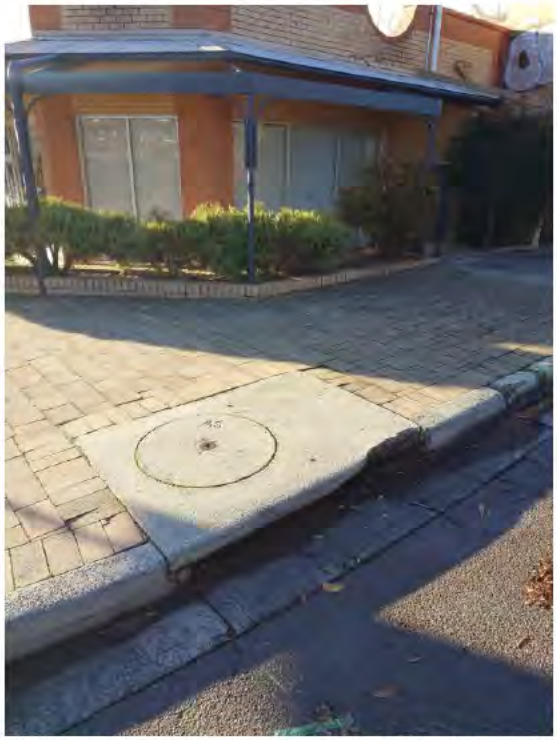


Figure 27 – Stormwater Kerb Side Sump in Southern Access Road near Georgina Crescent (west)

Figure 28 – Stormwater Kerb Side Sumps at Intersection of Georgina Crescent (east) and Maribyrnong Avenue

6.5 Overland Flow and Flooding

After a thorough site inspection and review of the site contours, it has been determined that the subject site mainly consists of one catchment area. This is based on the assumption that roads external to the site, such as Maribyrnong Avenue and Georgina Crescent (east) for the east catchment and Georgina Crescent (south) for the south east catchment, intercept overland flows and prevent them from entering the site. Observations indicate that runoff generally follows a north west trajectory through the site.

The southeast catchment directing runoff toward Georgina Crescent channels the flow west and then north on Georgina Crescent (west) toward Maribyrnong Avenue. There appears to be a high point approximately 40m south of Georgina Crescent (south). Some overland flow may traverse the site, particularly near Block 14 Section 88, where there is an entrance to the southern car park.

A review of the contours and site inspection observations indicate that stormwater overland flows travel through the site to the northwest corner. Flows intercepted by Georgina Crescent continue west along Maribyrnong Avenue. The stormwater flows on Maribyrnong Avenue, combined with the trunk stormwater pipes under the road (discussed in the previous section of this report), culminate in the concrete lined channel in the west verge of Baldwin Drive. These stormwater flows continue northwest and ultimately discharge into Ginninderra Creek and Lake Ginninderra. See Figure 31 and Figure 32 for photos of the concrete lined channel west of the subject site in Baldwin Drive.

These preliminary assumptions regarding stormwater runoff are subject to confirmation through a detailed site survey encompassing the immediate surroundings and a subsequent hydrological and hydraulic analysis in accordance with the ACT Government TCCS MIS 08 document. This detailed assessment will provide accurate insights into the extent and behaviour of overland flow and flooding on the subject site.

Refer to Figure 29 for an indication of the stormwater overland flow directions within and surrounding the subject site depicted with blue arrows.

Figure 29 – Stormwater Overland Flow Diagram

The current flood mapping on ACTmapi indicates that the subject site is situated away from the 1% Annual Exceedance Probability (AEP) flood modelling footprint. This flood extent is shown in the mapping to be within the concrete lined floodway along the eastern verge of the Baldwin Drive road reserve.

Refer to Figure 30 for an image of the 1% AEP flood extent that is located to the west in relation to the subject site's location, shown in blue highlight and red place marker.

Figure 30 – 1% AEP Flood Extent and Waterways (ACTmapi, 2024)

Figure 31 – Concrete Lined Channel in Baldwin Drive and Bridge over Maribyrnong Avenue Looking North

Figure 32 – Concrete Lined Channel in Baldwin Drive Looking South

6.6 Telecommunication Services

The following telecommunication infrastructure information has been compiled from BYDA information, and a site inspection.

6.6.1 Telstra

BYDA information indicates that Telstra infrastructure is present as underground conduits within and surrounding the site. All of these conduits within the subject site area are shown to be occupied by other carriers.

A Telstra P80 conduit extends north from Rubicon Street along the west verge of Georgina Crescent (west). This line branches into Block 4 and Block 26 Section 89 with P50 and P20 conduits, respectively. See Figure 35 for a photo of a Telstra pit in Georgina Crescent (west). The P80 conduit crosses Georgina Crescent (west) and continues east along the northern verge of the southern internal road to the west verge of Georgina Crescent (east), although it does not have a telecommunications easement as shown on ACTmapi. Refer to Figure 34 and Figure 36 for photos of Telstra pits identified in the northern verge of the southern access road and Figure 38 for the pit near Georgina Crescent (east).

The P80 conduit run in the southern internal access road services Block 10 Section 88 via a P100 conduit and Block 13 and Block 9 via a P35 conduit. Figure 37 shows a photo of a Telstra pit adjacent Block 13 Section 88. In the west verge of Georgina Crescent (east), the conduit is shown as a P35 conduit and branches off to provide service lines to Block 11 and Block 12 Section 88. See Figure 39 for a pit identified in the west verge of Georgina Crescent (east).

A Telstra conduit also runs through and terminates in Block 33 Section 28, located in the southern portion of the site.

Additionally, a P20 conduit run is present in the northern verge of Maribyrnong Avenue, providing service connections to each residential property in Section 29 Kaleen.

Refer to Telstra BYDA information that has been produced from digital data provided in Figure 33 below.

Figure 33 – Telstra BYDA Information in Proximity of the Subject Site (Telstra, 2024)

Figure 34 – Telstra Pit in Southern Internal Access Road

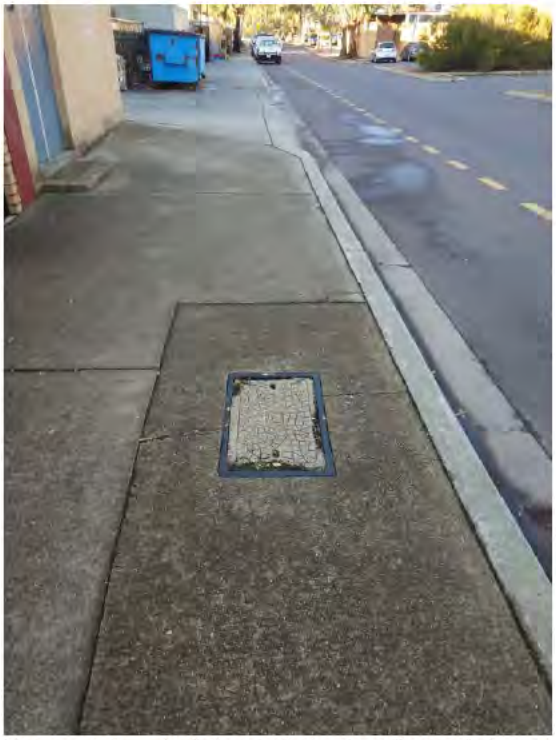


Figure 36 – Telstra Pit in Southern Internal Access Road

Figure 35 – Telstra Pit in West Verge of Georgina Crescent (west)

Figure 37 – Telstra Pit Near Block 13 Section 88

Figure 38 – Telstra Pit in Southern Access Road Near Georgina Crescent (east)

Figure 39 – Telstra Pit in West Verge of Georgina Crescent (east)

6.6.2 NBN

BYDA information indicates that the subject site has several NBN services present through the previously mentioned Telstra conduits. This can be seen from the alignment of the NBN service in Figure 40 below.

The BYDA information also shows that NBN services are currently installed independent of the Telstra conduits in the south west car park within the site and also further north in the west verge of Georgina Crescent (west).

Figure 40 – NBN BYDA Information Near the Subject Site

6.6.3 TPG Telecom

TPG Telecom DBYD information indicates that a TPG owned TransACT service runs along the south verge of Georgina Crescent (south) and the west verge of Georgina Crescent (west). This southern TPG asset branches off Georgina Crescent (south) and extends north past Block 13 to Block 10 Section 88, with an additional branch off this line servicing Block 13 Section 88. Additionally, the TPG service branches off the southern line in the west verge of Rubicon Street to continue south west. It is assumed that most of these services are within the previously mentioned Telstra conduits as some follow a similar alignment and TPG/TransACT labelled pits were not identified during a site inspection.

See below Figure 41 for the location of these service line within and surrounding the site, which are shown in red line type.

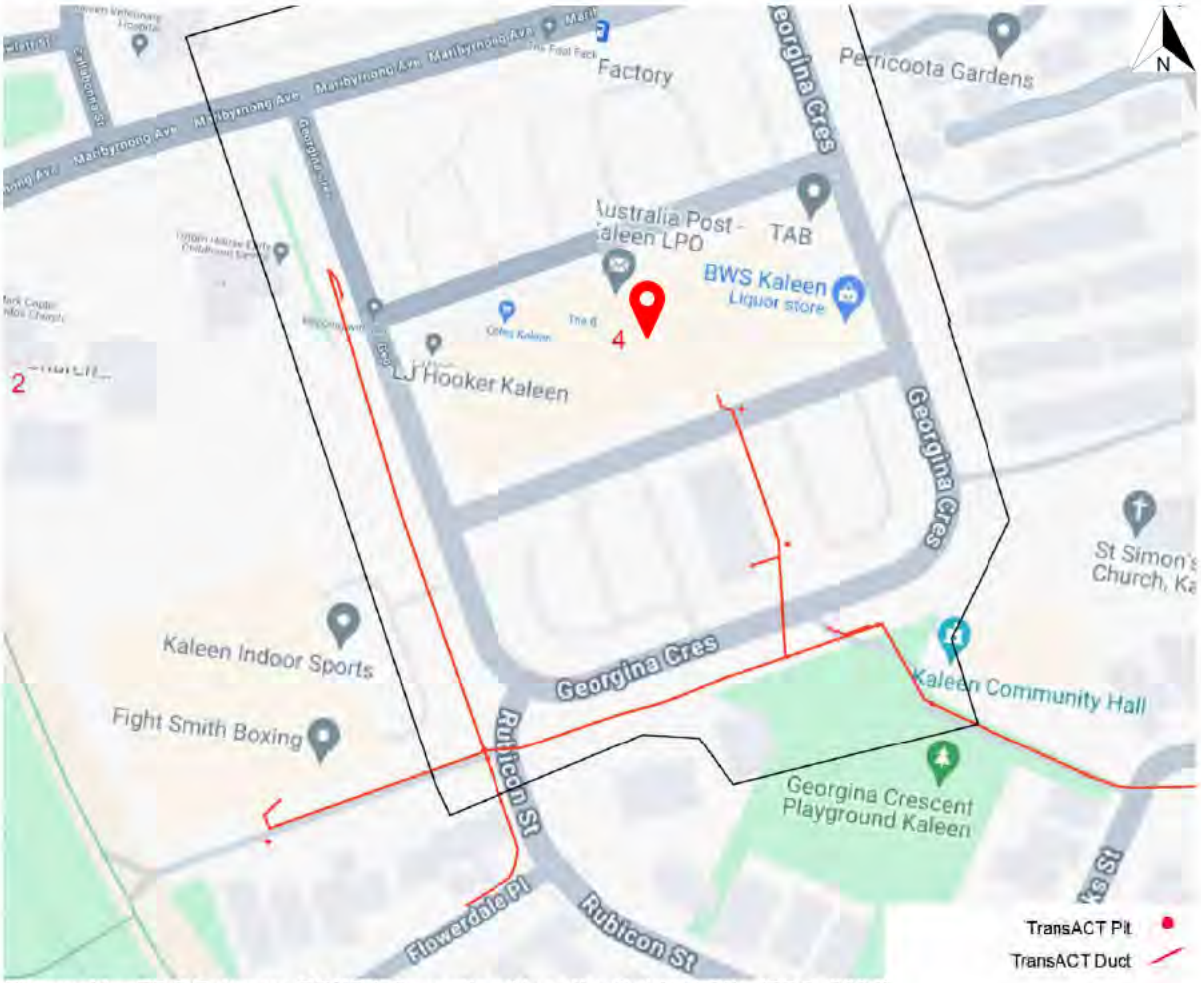


Figure 41 – TPG Telecom DBYD Information Near the Subject Site (TPG, 2024)

6.7 Gas Supply

BYDA information indicates that there is a comprehensive gas network within and surrounding the site. A summary of this infrastructure is as follows:

- A DN110 210kPa polyethylene distribution gas main runs along the north verge of Maribyrnong Avenue.
- A DN32 210kPa nylon gas network runs along the east verge of Georgina Crescent (east) that continues in the southern verge of Georgina Crescent (south) and then further to the south in the east verge of Rubicon Street. The DN32 main in Georgina Crescent (east) connects to the abovementioned DN110 gas main in Maribyrnong Avenue.
- Another DN32 210kPa nylon gas main branches off the main in Georgina Crescent (east) into the southern internal access road and terminates near Block 13 Section 88. No easement is currently registered over this gas main. See below Figure 43 for a photo of a gas marker over the main in the southern internal access road.
- Three service ties branch off the DN32 gas main in the southern internal access road to Block 10 and Block 13 Section 88 Kaleen. Refer to Figure 44 for a photo of an isolation valve to the eastern service tie to Block 10.
- Another DN32 210kPa nylon gas main is within the west verge of Rubicon Street, which extends to the north in the west verge of Georgina Crescent (west) to Block 4 Section 89.
- Beyond Block 4 Section 89, the gas main increases to a DN50 210kPa polyethylene distribution gas main. This main continues north and connects to the abovementioned DN110 gas main in Maribyrnong Avenue.

For a visual representation of these gas main locations and their proximity to the subject site, refer to Figure 42 below, which is an excerpt from the BYDA information.

Figure 42 – Gas BYDA Information in Proximity of the Subject Site

Figure 43 – Gas Marker in the Southern Internal Access Road

Figure 44 – Gas Isolation Valve in the Southern Internal Access Road

6.8 Electrical Supply and Streetlighting

Information received from Evoenergy and TCCS through BYDA was confirmed through a visual site inspection. Based on this, the streetlight infrastructure within the subject site and its immediate vicinity has been identified as follows:

- Streetlights and interconnecting low voltage (LV) lines are present across several roads and car parks within and surrounding the subject site, including:
    - The northern verge of Maribyrnong Avenue, with one streetlight in the southern verge
    - The east verge of Georgina Crescent (east)
    - The south verge of Georgina Crescent (south)
    - The west verge of Georgina Crescent (west)
    - The west verge of Rubicon Street
    - Within the northern and southern car parking lots in the group centre. See Figure 46 and Figure 47 for photos of streetlights in the northern and southern car parks, respectively.

See Figure 45 below for the location of the abovementioned streetlight assets as provided by TCCS in BYDA information within the vicinity of the subject site.

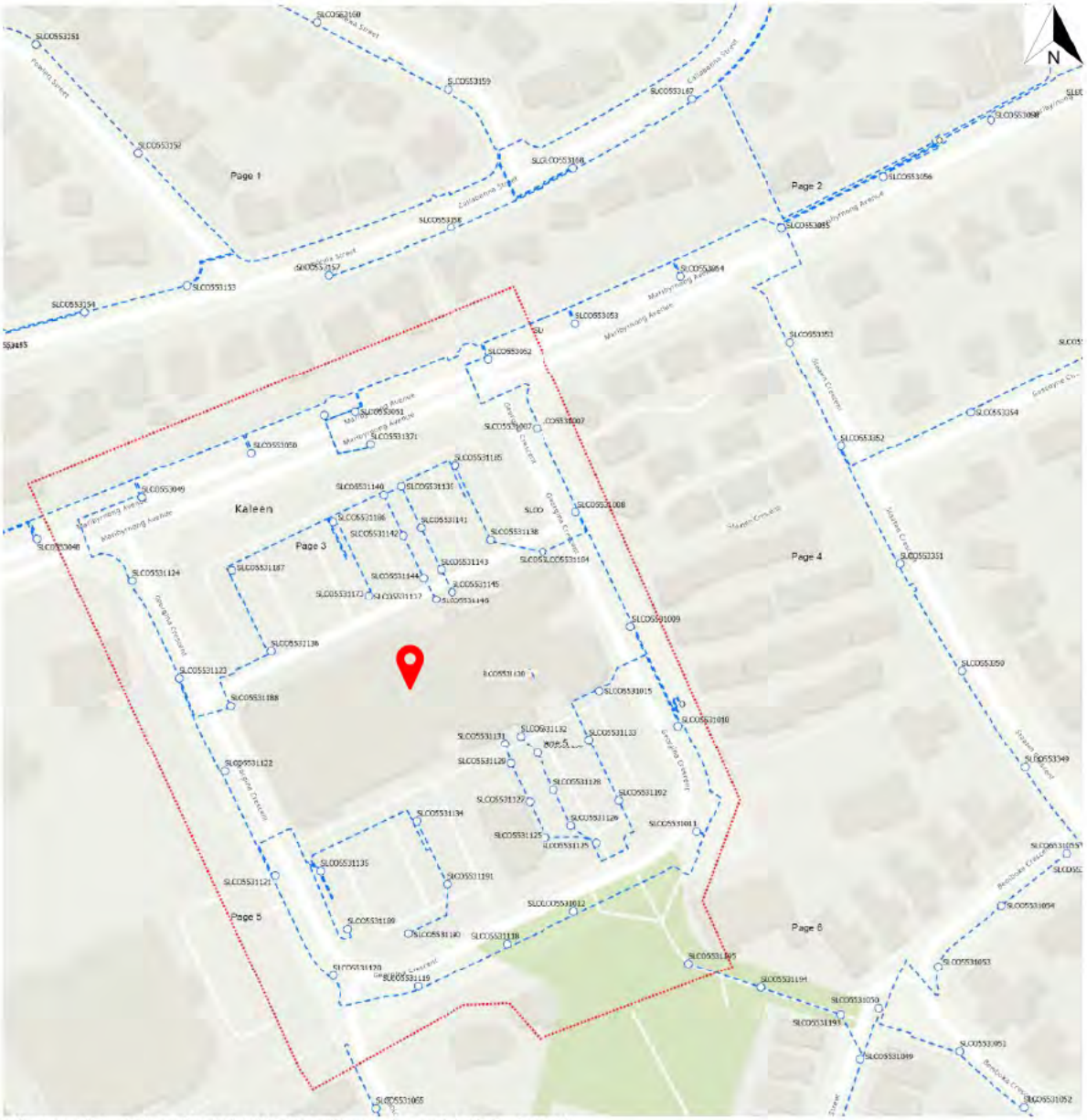


Figure 45 – Streetlight BYDA Information (TCCS, 2024)

Figure 46 – Streetlights in Northern Car Park

Figure 47 – Streetlights in Southern Car Park

Based on DBYD information, information received from Evoenergy, and a visual site audit, the electrical infrastructure within and in close proximity to the subject site has been identified as follows:

- Underground high voltage (HV) lines are located within the northern verge of Maribyrnong Avenue.
- HV electricity branches off the line in Maribyrnong Avenue, crossing the road with three DN140 conduits and then crossing Georgina Crescent (east) through two DN140 conduits to continue south in the east verge.
- The HV lines in the east verge of Georgina Crescent (east) continue to a substation (S 4057) located southeast of the southern internal access road. See Figure 50 below for a photo of this substation.
- The HV lines in Georgina Crescent (east) proceed to the southern verge of Georgina Crescent (south) and terminate near the intersection of Rubicon Street and Georgina Crescent (west), at a substation (S 4895) in Block 4 Section 89. This substation can be seen in Figure 51 below.
- A HV lines branches off the HV line in the southern verge of Georgina Crescent (south), which generally follows the west boundary of Block 33 Section 28.
- Low voltage (LV) lines from the substation in Block 4 Section 89 extend south in the west verge of Rubicon Street and north in the west verge of Georgina Crescent (west). These LV lines provide electrical service connections to the adjacent properties.
- Underground LV lines extend north from the Georgina Crescent (east) substation, servicing the medium density residential areas to the east in Block 55 and 56 Section 28 Kaleen.
- The LV and HV lines in Georgina Crescent (east) branch off, crossing the road through a DN140 and three DN125 conduits to continue west in the northern verge of the southern internal access road. These services terminate approximately halfway along the southern internal road at a substation near Block 10 (S 4565). An easement is not shown in ACTmapi over the electrical service lines that run through the southern access road, nor over the substation. Refer to Figure 52 below for a photo of the substation in relation to the plaza.
- An LV line within two DN125 conduits extends from the substation in the southern internal access road to the west and runs north after crossing Georgina Crescent (west) in three DN125 conduits.
- Service lines to all blocks within and immediately surrounding the group centre branch off from the abovementioned lines.

Refer to Figure 48 for the electrical BYDA information, depicting HV lines in red dashed lines, LV lines in dashed green lines, and service lines shown in lighter green dashed lines for underground services, respectively.

Figure 48 – Electrical BYDA Information Provided by Evoenergy

Figure 49 – Electrical Service Point in Southern Verge of Maribyrnong Avenue

Figure 50 – Electrical Substation S 4057 in East Verge of Georgina Crescent (east)

Figure 51 – Electrical Substation S 4895 in Block 4 Section 89 Kaleen

Figure 52 – Electrical Substation S 4565 Near Block 10 Section 88

Figure 53 – Streetlighting Control Cubicle in Georgina Crescent (east) East Verge

6.9 Boundaries and Easements

A review of ACTmapi does not show any easements within the subject site's extent. There are however sewer, telecommunications, gas, and electrical easements indicated running through Block 2 and Block 14 Section 88 as mentioned in the Section 6.2, Section 6.6, Section 6.7 and Section 6.8 of this report. The services within these blocks are generally located along the northern and southern internal access roads to provide services to Block 10 Section 88 and Block 13 Section 88. An access easement through Block 14 to Block 13 may also be appropriate.

A search on ACTmapi indicates that there are several survey markers within and surrounding the subject site. These include:

- An alpha reference mark (AM) situated adjacent Block 9 Section 88 in the northern access road.
- A kerb marker located on the east kerbside of Georgina Crescent (west) near the intersection with Rubicon Street.
- A kerb marker located on the northern kerbside of Maribyrnong Avenue, north west of the site.
- A coordinated reference marker (CRM 2119) in the east verge of Rubicon Street, south of the site.

Figure 55 and Figure 56 shows a photo of kerb markers (KBM 3455 and KBM 4685) located during the site inspection on Maribyrnong Avenue and Georgina Crescent (west), respectively.

Refer to Figure 54 for an extracted image from ACTmapi showing the location of these survey markers and easements that are situated surrounding the site. Easements are depicted in blue for drainage, red for sewer and yellow for electricity in this map extract.

Figure 54 – Existing Survey Markers and Easements Surrounding the Site (ACTmapi, 2024)

Figure 55 – Kerb Survey Marker on Maribyrnong Avenue

Figure 56 – Kerb Survey Marker on Georgina Crescent (east)

6.10 Transport

6.10.1 Traffic and Vehicular Access

The subject site comprises the Kaleen Group Centre, which is adjacent to Maribyrnong Avenue and bounded by Georgina Crescent that provides ease of accessibility to the commercial area. Georgina Crescent loops around the group centre connecting into Maribyrnong Avenue and this Site Investigation Report refers to the various sections of this road as Georgina Crescent 'east', 'west', and 'south'. A short length of Rubicon Street is also included in the subject site area, to the south west. Within the group centre, the speed limit is signposted as 40km/h at all entrances. An example of this is shown in Figure 63 below. Maribyrnong Avenue however is signposted as 60km/h as can be seen in Figure 60 below. Refer to Figure 59 and Figure 61 for general perspective views of Maribyrnong Avenue and a pedestrian crossing on the road, north of the subject site. The photos in Figure 58, Figure 62, and Figure 66 provide a general view of Georgina Crescent in different aspects across the site.

Within the group centre, there is a northern and southern internal road network that connects from Georgina Crescent (west to east). These internal roads are nameless and connect to the northern and southern car parking areas, respectively. See below Figure 64 and Figure 65 for general perspective photos of the internal access roads within the group centre.

Commercial and community facility properties have driveway access to Georgina Crescent (south and west). A layover has been provided for access to Block 27 Section 89, near the north west corner of the subject site off Georgina Crescent (west). No residential access is provided to Maribyrnong Avenue, or Rubicon Street for the section relevant to this subject site.

If any areas within the subject site are deemed suitable for development/redevelopment, a comprehensive traffic assessment will be necessary to evaluate the potential impact on the surrounding public road network once the development details and connection arrangements are established.

Based on the Active Travel Infrastructure Practitioner Tool (refer to Figure 57 for an excerpt), a summary of the classifications of roads within the vicinity of the site are detailed in Table 2 below. The road geometry requirements for each of these classifications, with the exception of 'arterial road' is provided within the Estate Development Code (2020). TCCS standard MIS 01 'Street Planning and Design' also provides guidance on functional road classifications based on traffic volumes, whilst MIS 06 Verges provides guidance on verge widths. These documents were all referred to in confirming the road classifications provided in Table 2 below.

Table 2 – Road Traffic Classification

Road Name	Classification
Baldwin Drive	Arterial
Maribyrnong Avenue	Major Collector
Georgina Crescent	Access Street B
Rubicon Street	Access Street B

Figure 57 – Extract from the Active Travel Infrastructure Practitioner Tool (2024)

Figure 58 – General View of Georgina Crescent (west) Looking South

Figure 59 – General View of Maribyrnong Avenue Looking East

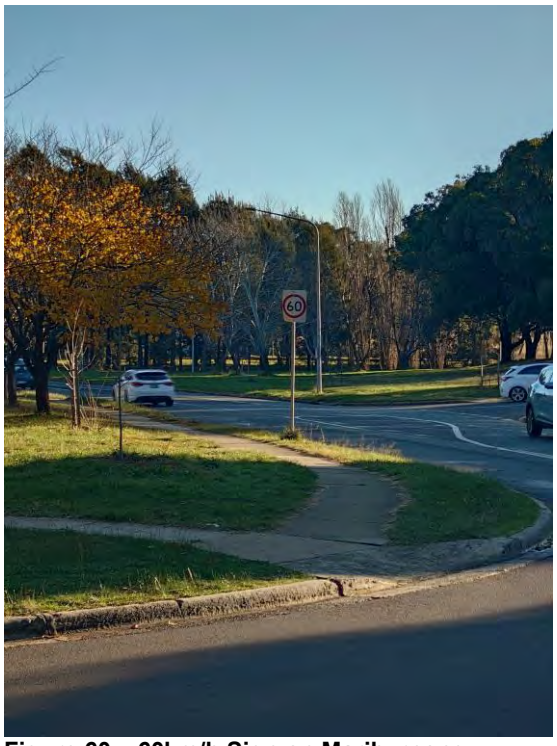


Figure 60 – 60km/h Sign on Maribyrnong Avenue Looking West of Site

Figure 61 – Pedestrian Crossing and Refuge Island on Maribyrnong Avenue North of Site

Figure 62 – Georgina Crescent (east) Looking South

Figure 63 – 40km/h Sign on Georgina Crescent (east)

Figure 64 – Northern Internal Access Road Looking West

Figure 66 – Georgina Crescent (south) Looking West

Figure 65 – Southern Internal Access Road Looking East

TCCS was consulted to obtain their Canberra Strategic Transport Model (CSTM) outputs with assumed turn movements for the AM and PM travel peak periods in the 2026, 2031 and 2041 forecast scenarios. These outputs are provided in Figure 67 to Figure 72 below. From these maps, it can be seen that all roads in the immediate vicinity of the subject site, namely, Maribyrnong Avenue and Georgina Crescent, show peak hour traffic volumes that are well within each respective roads' capacity (<70% of the road's capacity) in both the 2026, 2031 and 2041 morning and afternoon peak periods. However, Baldwin Drive, further to the west of the site, shows that the southbound carriageway operates near capacity during the morning peak in 2026. During the evening peak hour, the northbound carriageway of Baldwin Drive, north of the Maribyrnong Avenue intersection, is projected to exceed its capacity. This situation is similar in the 2031 and 2041 scenarios, where traffic volumes slightly increase by 2031 and then decrease in the 2041 modelling. In the 2026 scenario, the morning peak traffic volume on Baldwin Drive is 1,423 vph, which is the critical period. The afternoon traffic volume in the 2026 scenario is 749 vph in Baldwin Drive's northbound carriageway. The reason the northbound lane operates over capacity with less traffic than in the morning peak is due to the southbound carriageway having two lanes, while the northbound carriageway has a single lane with a 'form one lane' near the Maribyrnong Avenue intersection.

Maribyrnong Avenue is similarly shown in the modelling to be in its most critical period during the morning peak hour, with 2026 being the worst case traffic scenario. The westbound traffic on Maribyrnong Avenue north of the site is projected to be 236 vph in the 2026 scenario, 207 vph in the 2031 AM peak, and 197 vph in the 2041 morning peak hour. The percentage decrease in traffic is approximately 12% from 2026 to 2031 and 5% from 2031 to 2041.

Georgina Crescent, being a lower tier road, does not have modelled traffic volumes shown on the CSTM output. Regardless, the traffic volumes on this road are shown to be less than 25% of the road's capacity.

MIS 03 'Pavement Design' stipulates that the average AM and PM peak hour traffic volumes represent between 10% and 12% of the average annual daily traffic. Therefore, for Maribyrnong Avenue, taking the most conservative scenario of 396 vph in the 2026 AM peak for both directions, this would translate to approximately 3,960 vehicles per day (vpd), which is within the Major Collector classification provided in MIS 01 of 3,001-6,000 vpd. When examining the most trafficked section of Baldwin Drive, located west of the subject site, the traffic volume in both directions is 14,580 vpd in the 2031 AM peak. This volume falls outside the range specified for a Major Collector road classification according to MIS 01, confirming its status as an arterial road.

Georgina Crescent and Rubicon Street do not have projected traffic volumes in the CSTM output, due to their relatively low traffic compared to surrounding roads. However, it can be safely assumed that both roads fall within the Access Street B threshold of 1,000 vpd for commercial zones, as stipulated in MIS 01.

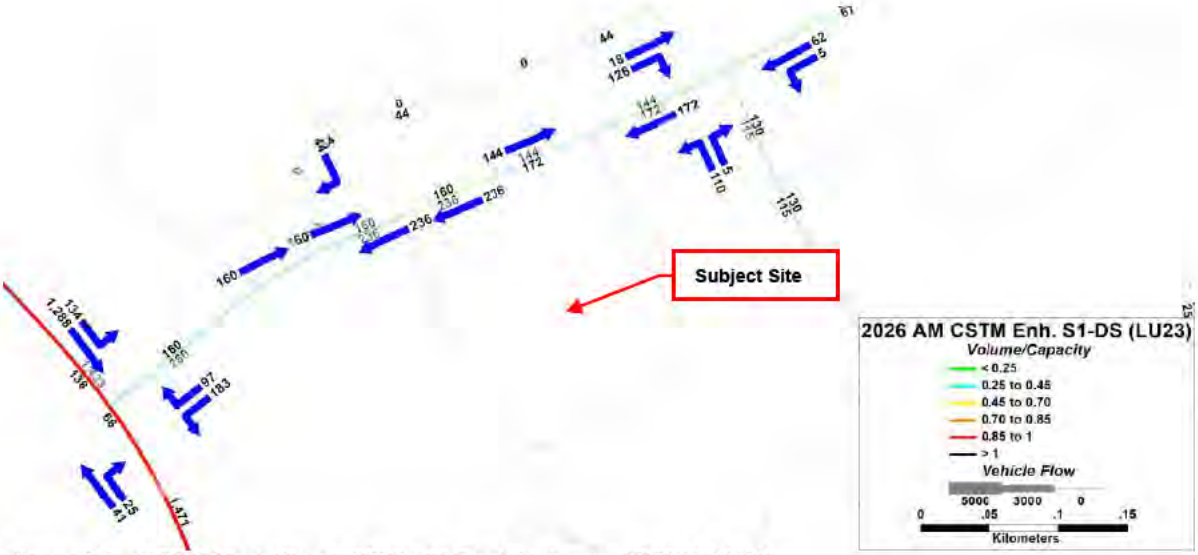


Figure 67 – CSTM Modelling – 2026 AM Peak Volumes (TCCS, 2024)

Figure 68 – CSTM Modelling – 2026 PM Peak Volumes (TCCS, 2024)

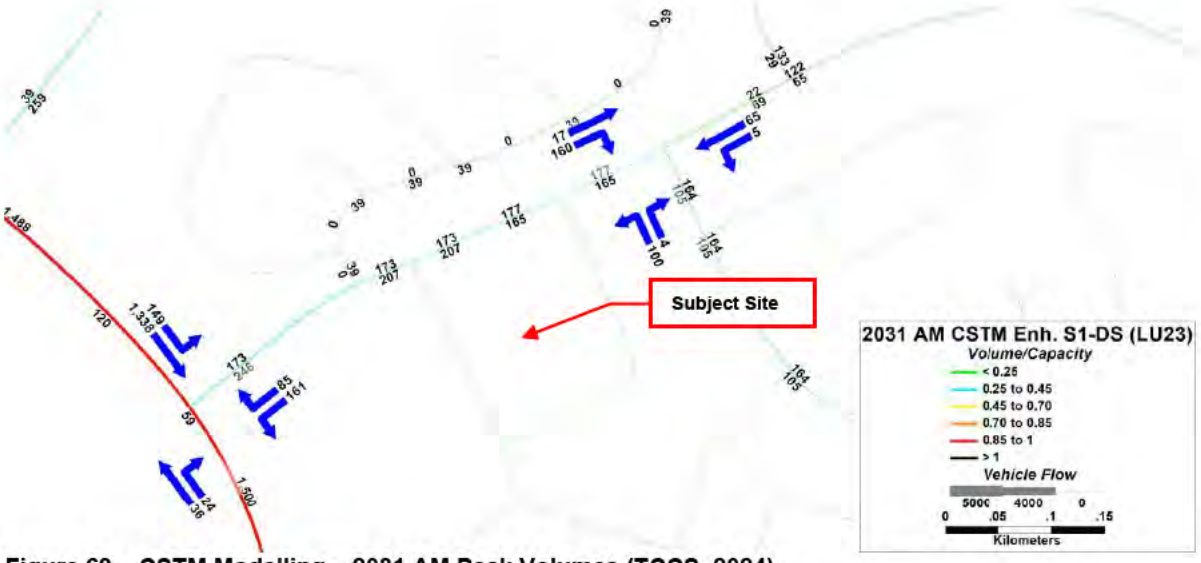


Figure 69 – CSTM Modelling – 2031 AM Peak Volumes (TCCS, 2024)

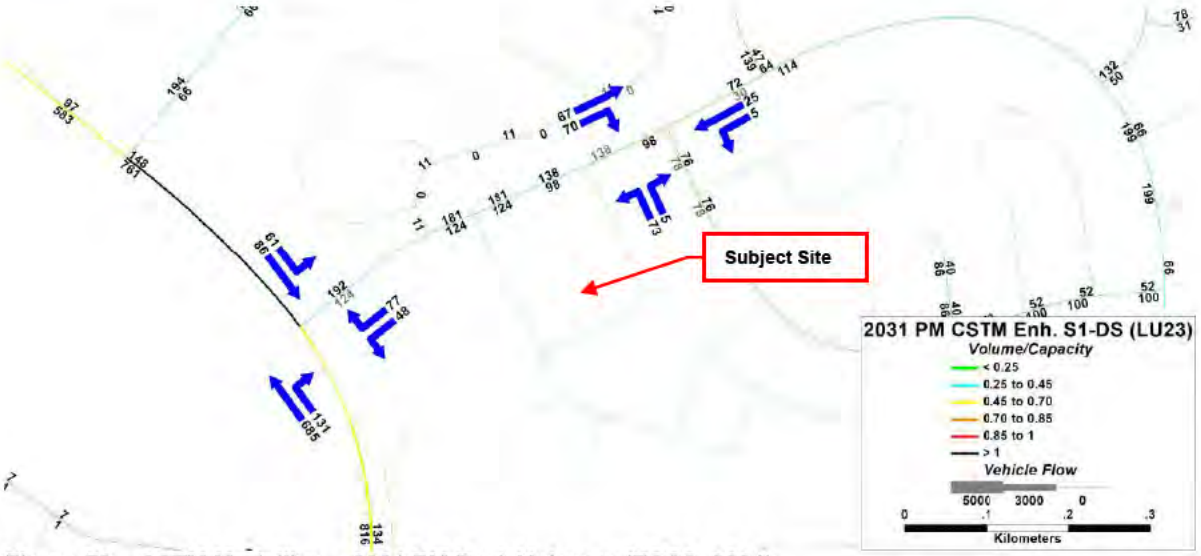


Figure 70 – CSTM Modelling – 2031 PM Peak Volumes (TCCS, 2024)

Figure 71 – CSTM Modelling – 2041 AM Peak Volumes (TCCS, 2024)

Figure 72 – CSTM Modelling – 2041 PM Peak Volumes (TCCS, 2024)

The demographics and associated populations assumed for the local area that is applied to the Canberra Strategic Transport Model (CSTM) was provided by ACT Government TCCS and is detailed in Figure 73 and Table 3 below. The data confirms that the site is located in an area (CSTM Zone 031603) that is a mix of residential, employment and retail space. There is a small decrease in population and employment over the projected years of 2031 and 2041 from 2026. However, the retail space, measured in square meters, is projected to increase by up to 11% over the projected years.

Table 3 – CSTM Assumed Demographic Data (TCCS, 2024)

SUBURB	CSTM ZONE ID	POPULATION			EMPLOYMENT			RETAIL SPACE			SCHOOL ENROLMENT		
		2026	2031	2041	2026	2031	2041	2026	2031	2041	2026	2031	2041
Kaleen	031601	772	753	697	52	52	47	-	-	-	-	-	-
Kaleen	031602	611	596	552	51	50	46	-	-	-	-	-	-
Kaleen	031603	574	560	518	159	157	142	8,932	9,698	10,733	-	-	-
Kaleen	031604	620	605	560	41	41	37	-	-	-	-	-	-
Kaleen	031605	257	250	232	124	122	111	-	-	-	433	427	491
Kaleen	031606	1,759	1,715	1,588	213	210	191	1,360	1,476	1,634	703	694	798
Kaleen	031607	443	432	400	31	30	27	-	-	-	-	-	-
Kaleen	031608	1,456	1,420	1,314	103	101	92	-	-	-	-	-	-
Kaleen	031609	819	798	739	63	62	56	-	-	-	-	-	-
Kaleen	031610	436	425	394	84	83	76	1,558	1,691	1,872	486	480	552
Kaleen	031601	772	753	697	52	52	47	-	-	-	-	-	-
Kaleen	031602	611	596	552	51	50	46	-	-	-	-	-	-

Figure 73 – Canberra Strategic Transport Model (CSTM) Zone ID (TCCS, 2024)

6.10.2 Parking

Car parking is extensively provided around the Kaleen Group Centre predominantly as off street public parking, mainly provided in the northern and southern car parks and internal roads. An approximation of the existing car park spaces within the subject site is listed below:

- 132 parking bays in the northern car park
- 132 parking bays in the southern car park
- 4 short term (30 minute) parallel parking bays in southern access road
- 9 short term (30 minute) parallel parking bays in northern access road
- Loading zones and Australia Post parking only kerbside on the southern and northern access roads.
- 8 on street parking spaces on Georgina Crescent (east)

- 7 on street parking spaces on Georgina Crescent (east)

Aerial imagery from ACTmapi, captured over various periods, was used to estimate the occupancy rate of the off street public car parking available in the group centre. This includes the cumulative off street parking spaces in the northern and southern car parks, totalling approximately 264 parking spaces. From this analysis, the observed average percentage usage of the car parks is approximately 53%. See Table 4 below for details. The observation data represents different seasons and times throughout the years to ensure a comprehensive overview of parking usage. Specific dates and times for the imaging are not available.

Table 4 – Parking Utilisation Estimates

	May-17	Mar-18	Oct-19	Nov-20	Dec-21	Jul-22	Nov-23	Average
Spaces in Use	175	145	125	100	170	105	165	**141**
% Full	66%	55%	47%	38%	64%	40%	63%	**53%**

Please note that this assessment is preliminary and any development/redevelopment proposed on the site that could potentially generate traffic will be assessed in accordance with TCCS requirements (Transport Canberra and City Services).

The Planning (Commercial Zones) Technical Specifications 2024 (effective: 20 March 2024) establishes parking generation rates, considering the site's location and intended uses. For various group centre developments, the parking provision rates as applicable to a commercial zone are comprehensively provided in Schedule 3 of the Commercial Zones Technical Specifications.

The Planning (Commercial Zones) Technical Specifications stipulates that the location of long stay, short stay and operational parking are as follows for a development other than residential, early childhood, and residential care accommodation in a commercial zone:

- Long stay parking – On-site or within 200 metres
- Short stay parking – On-site or within 100m
- Operational parking – On-site
- Visitor parking – On-site or within 100m

Under the Planning (Commercial Zones) Technical Specifications, the following requirements apply for parking spaces designated for motorcycles and motor scooters:

- Three dedicated spaces per 100 car parking spaces are necessary, with at least one space mandated for car parks containing a minimum of 30 car parking spaces.
- These provisions must be in addition to the required number of car parking spaces. Compliance with AS 2890 standards (both part 1 - Off-street and part 5 - On-street) is essential for the provision of motorcycle parking spaces.

Also, in line with the Technical Specification, for public car parks containing more than 10 spaces, parking spaces designated for people with disabilities must constitute a minimum of 3% (rounded up to the nearest whole number) of the total number of parking spaces required for the development.

In accordance with Clause 22.1 of the Commercial Zones Technical Specifications, electric vehicle ready parking only needs to be provided to at least 20% of non-residential parking spaces in new community facility developments.

The design of the proposed parking layout and its associated geometrical dimensions on the site must adhere to Australian Standard AS2890.1, with disability parking conforming to AS2890.6.

In case of a new development, any proposed use of existing parking surrounding the subject site needs to be agreed with TCCS.

Photos in Figure 74 to Figure 79 show existing car parking bays and associated infrastructure in and around the subject site, whilst Figure 80 and Figure 81 show examples of existing parking signs within and surrounding the site.

Figure 74 – Northern Car Park from North East Corner of Site

Figure 75 – Northern Access Road and Car Park

Figure 76 – South East Car Park

Figure 77 – Southern Car Park from South West Corner of Site

Figure 78 – South West Car Park

Figure 79 – South Access Road and Car Park

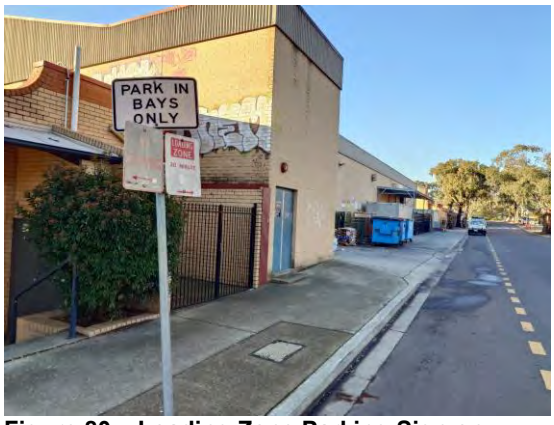


Figure 80 – Loading Zone Parking Sign on Southern Access Road

Figure 81 – Short Term Parking Sign on Georgina Crescent (east)

6.10.3 Pedestrian and Cycle Access

Fully paved verges surround Kaleen Plaza, and segmental paved paths are situated in part of the car parks. This also acts as a plaza frontage to the shopping areas in the front northern access area. An extensive path network is available within and surrounding the subject site, with bicycle parking areas in the northern car park near the plaza's front entrance. In summary, the path network within and around the site includes:

- An approximately 1.5m wide concrete footpath on the south verge of Maribyrnong Avenue.
- An approximately 6.0m wide segmental paved path extends form the southern verge path in Maribyrnong Avenue through the northern car park centrally to the front entrance of the plaza.
- An approximately 2.0m wide concrete footpath on the east verge of Georgina Crescent (east).
- A 1.2m wide concrete path branches off the abovementioned path in the east verge of Georgina Crescent (east) and continues east through Section 28.
- An approximately 1.5m wide concrete footpath in the north and south verges of Georgina Crescent (south).
- An approximately 1.5m wide concrete footpath on the west verge of Georgina Crescent (west).
- A paved area surrounds Block 13 Section 88 with an on grade pedestrian crossing across the southern internal access road to Block 10.
- Fully paved group centre areas with segmental pavers and concrete surrounding Blocks 9, 10, 11 and 12.
- An on grade pedestrian crossing at the main entrance to the group centre on the northern internal access road.

The photos in Figure 83 to Figure 92 provide a visual representation of all of these paths as identified during a site inspection.

An excerpt from the CBR Cycle Routes map in Figure 82, published by ACT Government Transport Canberra, illustrates a local route on Maribyrnong Avenue. This route connects to the main routes further west within the open space area and concrete lined stormwater channel. The main route is shown to be connected to Giralang Shops to the north and principal route C3b to the south, which connects the City to Belconnen Town Centre. The main route branches off to the south east and connects to principal route C1, which connects City to Gungahlin.

Figure 82 – CBR Cycle Routes (Transport Canberra, 2024)

Figure 83 – Footpath in Northern Verge of Maribyrnong Avenue

Figure 85 – Pedestrian Crossing Across Maribyrnong Avenue North of Site

Figure 84 – High Pedestrian Activity Area and Speed Reduction Sign

Figure 86 – Footpath Leading into Subject Site from Maribyrnong Avenue

Figure 87 – Footpath in West Verge of Georgina Crescent (east)

Figure 88 – Footpaths Branching East into Residential Developments in Section 28 Kaleen

Figure 89 – Footpath Branching East into Section 28 from Georgina Crescent (east)

Figure 90 – Footpath in Northern Verge of Georgina Crescent (south)

Figure 91 – Pedestrian Crossing Across Southern Internal Access Road to Block 13

Figure 92 – Main Route Path Adjacent Floodway West of Site

6.10.4 Transport Canberra and Bus Servicing

The subject site is situated in a location where two bus routes run in close proximity to the group centre, with the closest on Maribyrnong Avenue and the other on Baldwin Drive. Bus stops serving both directions on Maribyrnong Avenue is available directly north of the group centre. See Figure 94 and Figure 95 below for photos of bus stops in both eastbound and westbound carriageways of Maribyrnong Avenue, north of the site.

Additionally, another bus route passes the site on Baldwin Drive, with bus stops approximately 350m south west of the subject site.

The following bus routes have been identified within the general vicinity of the subject site to support the public transport needs to the group centre:

- Bus Route 23 operates between Gungahlin Place and Belconnen Town Centre, serving Palmerston, Crace, Giralang, and Kaleen on route.
- Bus Route 30 runs from Dickson Interchange to Belconnen Interchange, passing through Kaleen, Giralang, and Bruce.

Refer to Figure 93 for an excerpt from the Transport Canberra bus route map showing these bus routes in relation to the subject site.

Figure 93 – Bus Routes Adjacent the Subject Site – Extracted from Transport Canberra (2024)

Figure 94 – Bus Stop on Maribyrnong Avenue Eastbound Lane

Figure 95 – Bus Stop on Maribyrnong Avenue Westbound Lane

6.11 Specialist Investigations

6.11.1 Heritage

A heritage assessment was not completed as part of this Site Investigation Report. However, reference was made to the ACTmapi database and the ACT Heritage Register located on the ACT Government Environment and Sustainable Development website (https://www.environment.act.gov.au/heritage/heritage_register/register-by-place).

The ACTmapi mapping shows that there are heritage factors pertaining the southern section of the subject site in Block 33 Section 28 Kaleen. This heritage listed area also includes Blocks 39 to 43 Section 28. The listing on ACTmapi is indicated to have 'Final Registration' status and has been in effect since March 9, 2005. There are also heritage factors identified in Lawson, further west of the subject site. Refer to Figure 96 below for an extract from ACTmapi depicting these areas with final heritage registration within and surrounding the subject site.

The Heritage ID for this area is listed as 1162, which is an entry to the ACT Heritage Register for 'Aboriginal Places – Urban and Rural Bushfire Containment Lines'. Although this document does not explicitly make mention of Block 33 Section 28 Kaleen, it does provide general advice in relation to aboriginal artefacts that are covered by this entry. The ACT Heritage Register includes locations with Aboriginal stone artefacts and their buffer zones. These artefact scatters, representing significant sites of Aboriginal occupation, are valued by the Aboriginal community as evidence of ancestral land use. The Aboriginal community prefers these sites to remain undisturbed to maintain their connection to the land.

Based on this information, a heritage assessment is required in accordance with Section 75 of the Heritage Act 2004, if any development is proposed within and in close proximity to this area.

To validate the information sourced from ACTmapi and the ACT Heritage Register, the ACT Heritage Council was consulted by EPSDD through a section 57 access to information request. The following heritage reports that were provided have been reviewed in relation to the Kaleen Group Centre:

1. 'National Heritage Studies Pty Ltd, 1991, NHS Ginninderra Archaeological Survey-Belconnen Latham, A Report to Dwyer Leslie Pty. Ltd., ACT.'
    - The nearest study area to the Kaleen Group Centre is Group 2, Number 6, located approximately 3 km from the site.
2. 'Peter Rimas Kabaila, 1997, Belconnen's Aboriginal Past, a glimpse into the archaeology of the Australian Capital Territory, Black Mountain Projects Pty. Ltd., ACT.'
    - The closest Aboriginal site to the Kaleen Group Centre is the Reservoir Hill Trigonometrical Station (No. 18), located approximately 2.5 km from the site.
3. 'University of Canberra Cultural Heritage Research Centre, 2000, Cultural and Military Heritage Assessment, Belconnen Naval Transmitter Station and ACT Government Land, Lawson, Report to the Department of Defence and ACT Government.'
    - This study is located in Lawson, approximately 2 km away from the Kaleen Group Centre, and therefore, it is irrelevant to the current investigation.
4. 'ACT Heritage Council, 2002, Australian Capital Territory Interim Heritage Place Register, Aboriginal Places in the District of Belconnen, ACT.'
    - The ACT Heritage Places Register does not identify any Aboriginal sites or potential deposits within the Kaleen Group Centre.
5. 'Navin Officer Heritage Consultants Pty. Ltd., 2006, Belconnen to City Transit Way, Cultural Heritage Assessment, A Report to Brown Consulting Pty. Ltd., ACT.'
    - The study areas in this report do not include the Kaleen Group Centre, making the findings irrelevant to the site.
6. 'Navin Officer Heritage Consultants Pty. Ltd., 2008, Belconnen Naval Transmitting Station, Brief Report, Artefact Collection (Site L19), ACT'

- The report is limited to the Lawson Naval Transmitting Station and is not applicable to the Kaleen Group Centre.

7. ‘Navin Officer Heritage Consultants Pty. Ltd., 2008, Belconnen Naval Transmitting Station Lawson CHA, Indigenous Cultural Heritage Assessment, Draft, A Report to Godden Mackay Logan, ACT.’
    - The focus of this report is on the Lawson area, and it does not pertain to the Kaleen Group Centre.
8. ‘Navin Officer Heritage Consultants Pty. Ltd., 2009, Lawson ACT Concept Planning Study, Cultural Heritage Assessment of Territory Land, A Report to Maunsell AECOM, ACT.’
    - The study site identified in this report is located in Lawson, rendering it irrelevant to the Kaleen Group Centre.
9. ‘Navin Officer Heritage Consultants Pty. Ltd., 2011 Relocation of Emergency Services Agency Sites, Aranda, Charnwood and Calwell, Conder, Cultural Heritage Assessment, A Report to peckvonhartel, ACT.’
    - This report does not address the Kaleen Group Centre, as it focuses on Aranda, Charnwood, and Calwell, making it irrelevant to the Kaleen site.
10. ‘Navin Officer Heritage Consultants Pty. Ltd., 2014, Town Centre Master Plan, Belconnen Town Centre, Draft, A report to Phillip Leeson Architects, ACT.’
    - The study areas in this report are situated near Lake Ginninderra in the Belconnen Town Centre, approximately 6 km away from the Kaleen Group Centre, making it irrelevant to this investigation.
11. ‘Past Traces Heritage Consultants Pty. Ltd., 2019, Belconnen Trunk Sewer Augmentation Project – Aboriginal and Historical Cultural Heritage Impact Assessment, Report Prepared for WSP, ACT.’
    - The study areas identified in this report are along Ginninderra Drive, from Tillyard Drive to Copland Drive, and do not include the Kaleen Group Centre.
12. ‘Past Traces Heritage Consultants Pty. Ltd., 2022, Completion of Heritage Site Survey and Impact Assessment - Umbagong Park Bridges 1193, 1194, 1195, ACT.’
    - The study areas in this report are along Ginninderra Creek and do not cover the Kaleen Group Centre.

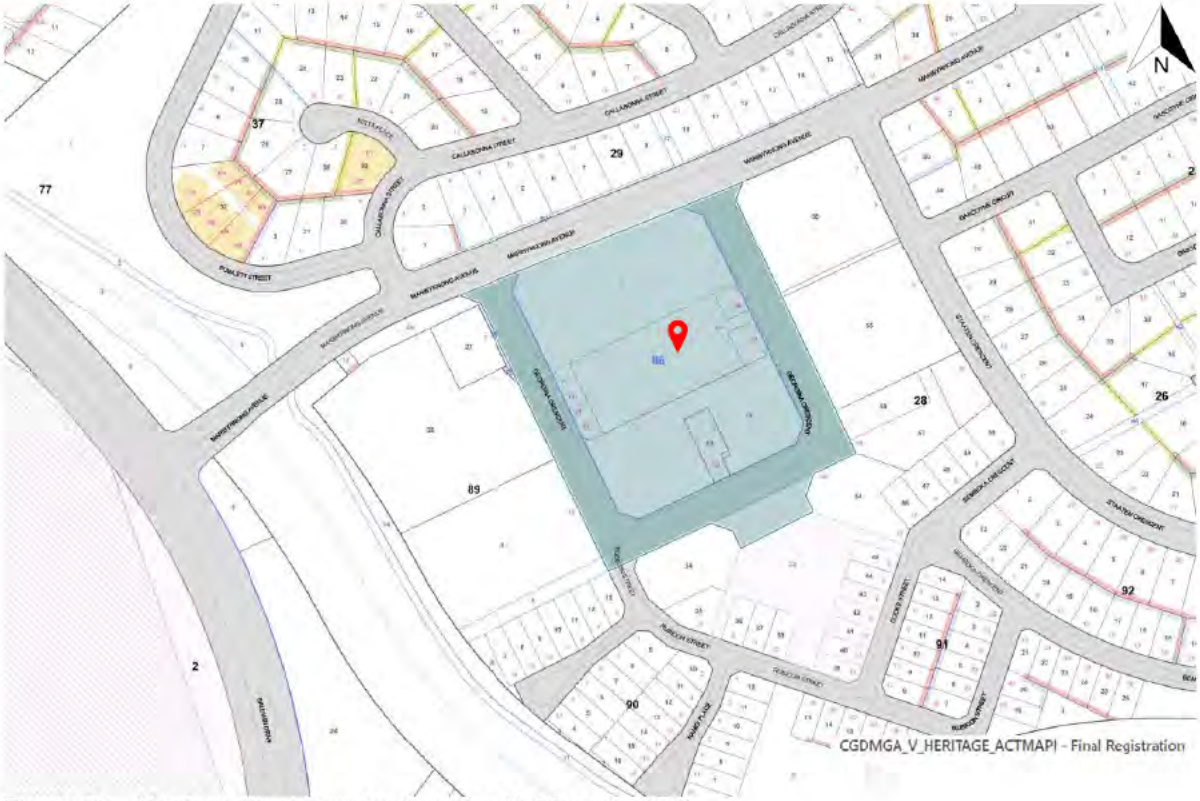


Figure 96 – Heritage Final Registration Map (ACTmapi, 2024)

6.11.2 Ecological

Reviewing ACTmapi data indicates that the subject site is in proximity of ecologically sensitive habitat areas. The mapping shows that to the north west of the subject site, there is potential for Spotted-tailed Quoll habitat areas. Refer to Figure 97, which provides a depiction of the area that incorporates this threatened fauna habitat area in proximity of the site, taken from ACTmapi. Figure 98 also shows ecologically sensitive vegetation mapping from ACTmapi, that correspond with the location of mature large trees.

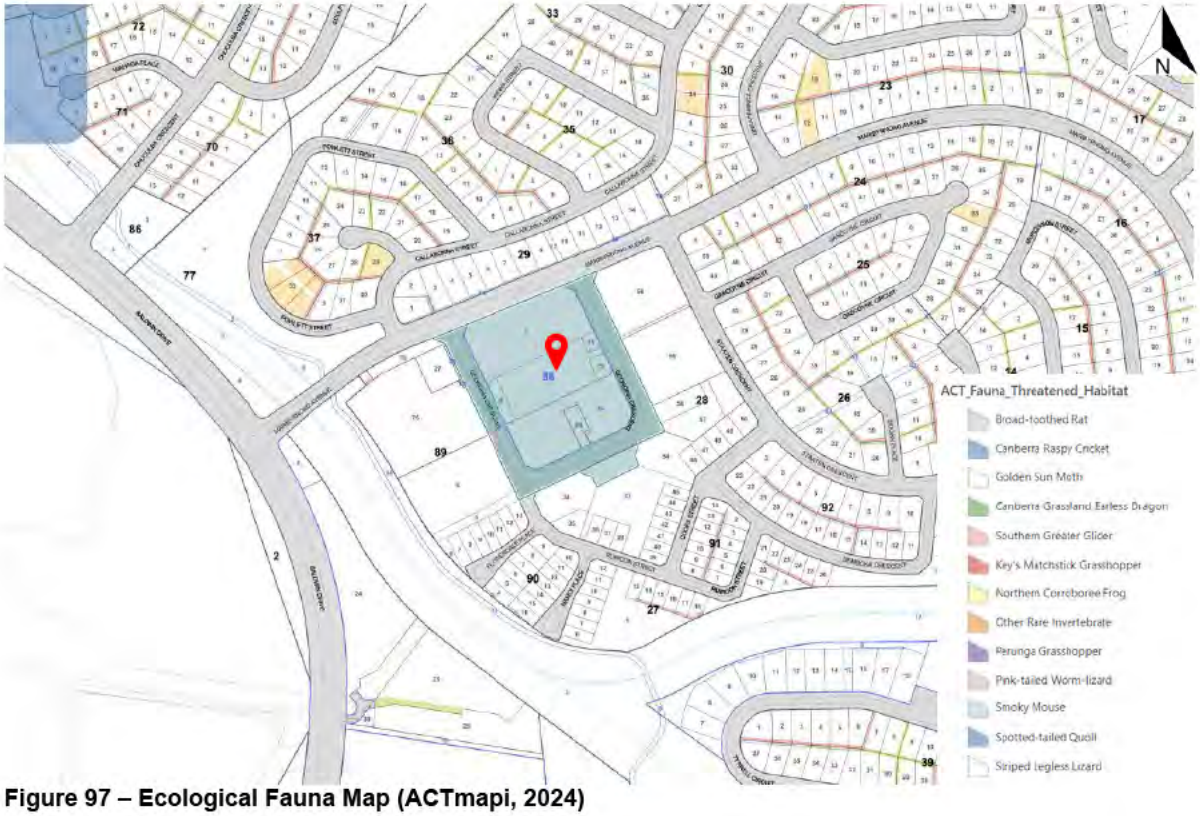


Figure 97 – Ecological Fauna Map (ACTmapi, 2024)

Figure 98 – Ecological Canopy Map (ACTmapi, 2024)

To verify these findings, the ACT Conservator of Flora and Fauna were consulted. The Conservator of Flora and Fauna advised that an ecological impact assessment should be completed for the site, if any development is proposed, addressing several key considerations:

- The Conservator emphasised the importance of maintaining connectivity for small woodland birds, particularly in the red shaded areas on the map provided in Figure 99 below, which indicate high connectivity values concentrated in the green space on the edges of the site.
- The Conservator pointed out that mature native trees are scattered across the site. A comprehensive tree assessment is required to identify all mature native trees. The assessment should also evaluate how the proposed development aligns with the objectives of the Loss of Mature Native Trees Key Threatening Process Action Plan (2023).
- The Conservator noted that the tree assessment should determine if any trees impacted by a proposed development meet the criteria for registration on the ACT Tree Register.
- The Conservator advised that any development on the site is likely to trigger the Biodiversity Sensitive Urban Design Guide. The ecological impact assessment should consider how to incorporate these guidelines into the site redesign.
- The Conservator indicated that development may require a Construction and Environment Management Plan to be approved by the Conservator. In cases where native trees are removed, specific replanting ratios may need to be applied. These ratios are provided in Table 5 below from the Conservator with respect to tree diameter at breast height (DBH).

This advice from the Conservator ensures that ecological considerations are integrated into the planning and development process, maintaining the environmental integrity of the site.

Figure 99 – Ecological Habitat Connectivity (Conservator of Flora and Fauna, 2024)

Table 5 – Native Tree and Shrub Replacement Ratios

DBH Class (cm)	Replacement Ratios
<5	1:1
5 - 20	1:3 + relocate as native mulch or at Conservator discretion
21 - 30	1:8 + relocate as coarse woody debris
31 - 40	1:13 + relocate as coarse woody debris
41 - 50	1:40 + relocate as coarse woody debris
50+	1:90 + reinstate as vertical habitat structure or at Conservator discretion
100+	1:180 + reinstate as vertical habitat structure or at Conservator discretion

If any development is proposed within the subject site, it is recommended to engage with the ACT Conservator of Flora and Fauna during the project's design phase, which will lead to the need for a full ecological and tree assessment of the site and its immediate surrounds.

The subject site is not within an Environmental Offset area.

The ACTmapi database indicates that there are no registered trees within the site.

6.11.3 Environmental

A contaminated land search of the entire subject site's contamination status was initiated with the ACT Environment Protection Authority (EPA). This was to gather an understanding of the potential development constraints due to site contamination. The EPA advised that records for Block 2 and Blocks 9-14 Section 88 Kaleen indicate the following:

- The blocks in the Kaleen Group Centre are not recorded on the EPA's contaminated sites management database or geographic information system.
- Blocks 9 to 13 Section 88 Kaleen are currently occupied by commercial complexes. Before the introduction of natural gas to the ACT in the 1980s, some of these complexes utilised boiler heating or similar systems. These systems were generally fuelled by diesel or heating oil, which was mainly stored in underground fuel storage tanks.
- Aerial photographs indicate that Blocks 2 and 14 Section 88 Kaleen are occupied by car parks. While there is no recorded information on potential site contamination, car parks have been associated with potential site contamination due to the placement of uncontrolled fill during the establishment of the site.

The ACT EPA Contaminated Sites Environment Protection Policy 2017 lists fuel storage and landfilling as activities associated with land contamination, which may pose a risk to human health and the environment. Other potentially contaminating activities may have also been undertaken at the site associated with current and past uses.

The EPA has not issued any orders of assessment or remediation under sections 91C (1) or 91D (1), environment protection orders under sections 125 (2) or (3), requested an audit under section 76 (2), or received an audit notification under section 76A (1) of the Environment Protection Act 1997 (the Act) over the subject site. Consequently, the entire subject site is not recorded on the Register of contaminated sites under section 21A of the Act.

The EPA advised that the information detailed above only relates to records held by the EPA and may not represent the actual condition of the site. While the EPA has no additional information on

contamination of the blocks other than what has been provided above, this does not absolutely rule out the possibility of contamination. The EPA recommends conducting independent tests if absolute certainty of the site's current condition needs to be fully confirmed.

Refer to Appendix C for detailed responses from the ACT EPA.

6.11.4 Geotechnical

The site, in relation to surrounding levels, shows signs of substantial earthworks likely carried out during the subdivision of Kaleen. Considering the levels in the floodway to the west, it is likely that extensive cutting and filling activities were conducted within the group centre to create a level surface, facilitating commercial development and accessibility.

A preliminary geotechnical site assessment, including a review of geological mapping, indicates that the subject site spans the following geological formations: interbedded sandstone, siltstone, and shale. Alluvial soils are expected across the site as the area is mapped in the Winnunga soil landscape.

The subject site has an average approximate grade of 4%, with some flatter areas in car parks. The general fall is from the south east to the north west. It is likely that previous fill operations have created the generally level surface across the group centre site. Key geotechnical considerations include the depth, strength, and excavation characteristics of shallow rock, potential uncontrolled fill operations affecting site classification, the impact of four mature trees onsite, and the shrink-swell (reactive) properties of the soils.

A comprehensive geotechnical intrusive analysis is recommended to better understand ground conditions and to inform future development on the site.

6.11.5 Bushfire

The current bushfire mapping listed on ACTmapi demonstrates that the subject site is relatively near a recorded Bushfire Prone Zone, to the west, beyond Baldwin Drive. The site however is within proximity of a Strategic Bushfire Management Zone, shown in mapping to include part of Maribyrnong Avenue, north west of the site. Refer to Figure 100 and Figure 101 for a bushfire prone area map and strategic bushfire management zone map, respectively, reproduced from ACTmapi. These include the subject site and broader area to provide context.

ACT Fire & Rescue confirmed that the development is located outside the area declared by the ESA as a Bushfire Prone Area. Therefore, applying bushfire protection measures will not be mandatory for the site. However, ACT Fire & Rescue advised that consideration should always be given to bushfire protective measures, as these can improve the survival of any structure in the event of a nearby bushfire or structural fire.

ACT Fire & Rescue advised that the entire site of Section 88 Kaleen is mapped to be capable of providing a Fire Risk Type rating of FRT4, with a minimum available firefighting flow provision of 100L/s. ACT Fire & Rescue have no concerns with water delivery for future development on the site as there appears to be sufficient flow and pressure. For a community development, a Fire Risk Type of FRT3 with a minimum available firefighting flow provision of 60L/s will be required. For commercial development, depending on structure and use type, it may be assessed as FRT3 or potentially FRT4, with a minimum available firefighting flow provision of 100L/s. This advice is consistent with Icon Water's Supplement to WSA Water Supply Code of Australia for commercial developments. The minimum hydrant spacing in an FRT3 zone is at 60 metres along the mains, whilst FRT4 requires a spacing of 45m and double hydrants every 135m and at cul-de-sac ends. This is in accordance with the Icon Water Supplement to WSA Water Supply Code of Australia.

Additional advice from ACT Fire & Rescue suggests that the verification of the fire risk rating can be conducted during the development application stage, with particular consideration given to the size and type of development.

Refer to Appendix C for detailed correspondence with the ACT Fire & Rescue.

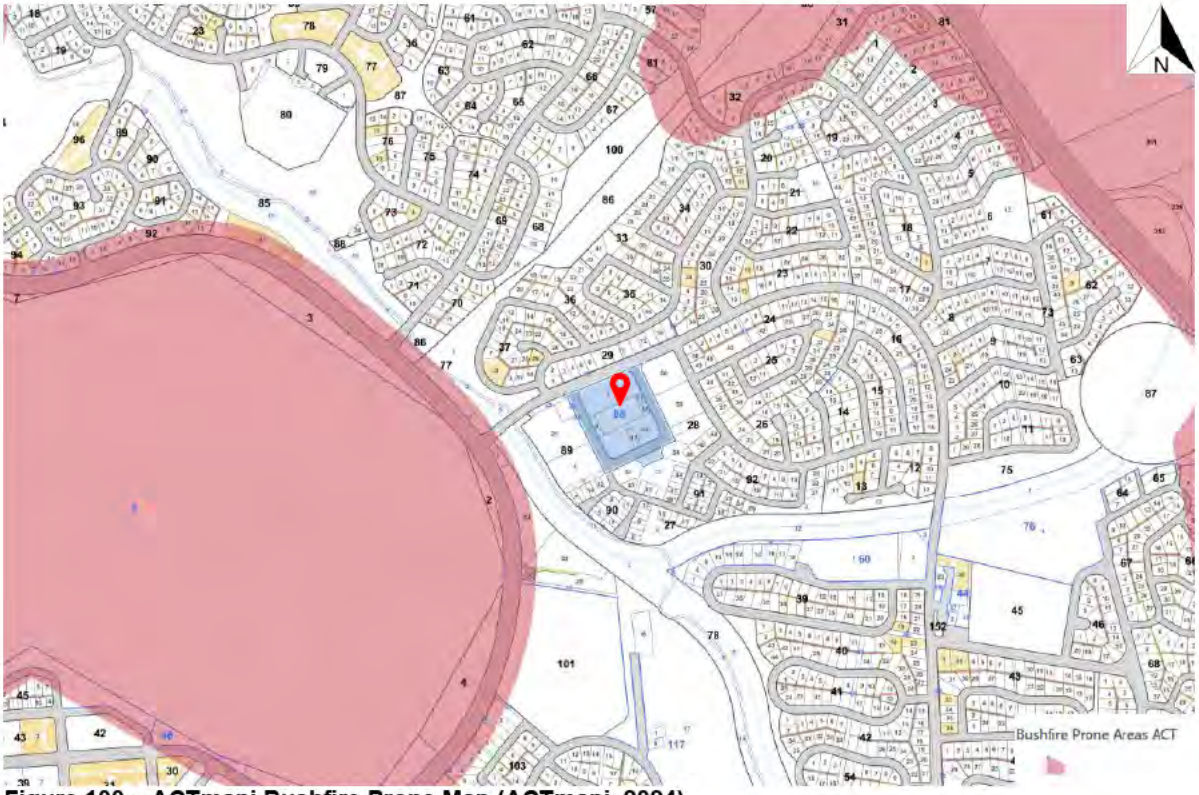


Figure 100 – ACTmapi Bushfire Prone Map (ACTmapi, 2024)

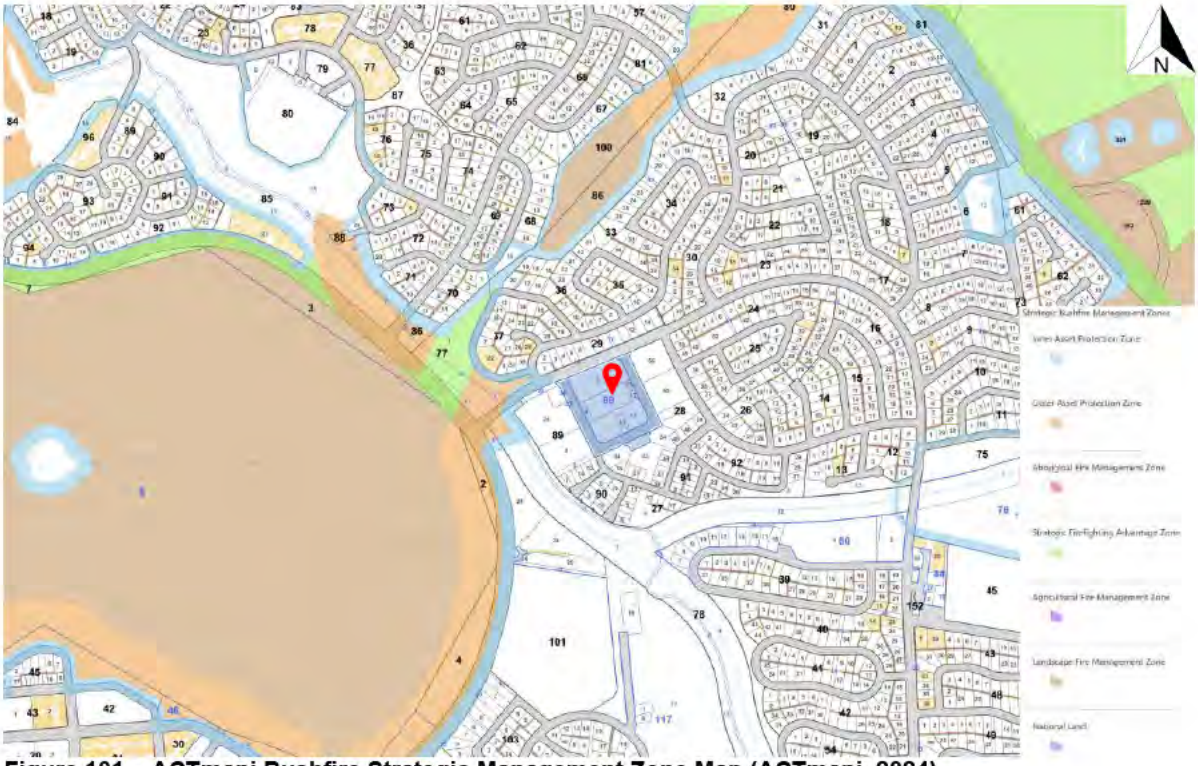


Figure 101 – ACTmapi Bushfire Strategic Management Zone Map (ACTmapi, 2024)

6.11.6 Tree Assessment

The following observations have been made on site and through an onsite inspection for existing trees on and within close vicinity of the site.

- Some very large isolated mature trees are present within the car parks on site and in road verges. Refer to Figure 103, Figure 106, Figure 107, and Figure 108 for examples of large mature trees within road reserves and car parks in the subject site.
- There are also some large mature trees that are located along both northern and southern internal access roads, adjacent Block 10 Section 88. An example of these trees can be seen in Figure 110 below.
- Some dead and felled trees were also observed within the site, an example of which is shown in Figure 111 below, north of Block 13 Section 88. Figure 109 is a photo of a felled tree with remnant stump remaining in the paved verge adjacent Block 10 Section 88.
- Some small relatively newly planted trees were observed during the site inspection within the Maribyrnong Avenue south verge and within the northern portion of the subject site. See Figure 104 and Figure 105 for an example of these newly planted trees observed within the subject site.
- Based on ACTmapi information, none of these trees present on and in close proximity to the site are registered trees. However, mature trees as of 2020 with approximate canopies and colour coded sizes are shown in ACTmapi mapping, as can be seen in Figure 102 below.
- Based on an initial onsite inspection and an aerial imagery review, some of the trees appear to meet the criteria of a regulated tree as defined in the Urban Forest Act 2023 (effective date 1 January 2024).
- A regulated tree is protected under the ACT Urban Forest Act 2023. A regulated tree is defined as:

  a living tree on leased land that:

  - *is at least 8m high; or*
  - *has a canopy at least 8m wide; or*
  - *has 1 trunk that, 1.4m above natural ground level, has:*
    - *a circumference of at least 1m; or*
    - *a diameter of at least 318mm; or*
  - *has 2 or more trunks and, 1.4m above natural ground level, the average circumference of the trunks is at least 625mm, and:*
    - *the sum of the circumferences of each trunk is at least 1m; or*
    - *the sum of the diameters of each trunk is at least 318mm; or*
  - *regardless of the size of the tree:*
  - *has been planted for not more than 5 years:*
    - *under a canopy contribution agreement; or*
    - *in accordance with a tree protection condition of a development approval; or*

  a dead native tree on leased land that, 1.4m above natural ground level, has a trunk with:

  - *a circumference of at least 1.88m; or*
  - *a diameter of at least 600mm.*
- In accordance with the Urban Forest Act 2023, any construction work should be more than 2m away from the vertical projection of the tree canopy and 4m away from the area surrounding the trunk as measured at 1m above natural ground level.

A tree assessment has not been undertaken on the site, however, it is recommended that one is carried out by an accredited arborist in conjunction with a tree survey, to provide detailed information on the location and status of trees within the site. This information would aid in the development or redevelopment of any portion of the site by identifying and assessing trees that are Protected and Regulated, as covered by the Urban Forest Act 2023. Following a tree assessment, the findings should be provided to the ACT Tree Protection Unit for comment/validation.

Refer to Figure 103 to Figure 110 for site photographs of some of the potentially regulated trees and newly planted trees identified during the site inspection.

Figure 102 – Mature Trees Canopy and 2020 Size Map (ACTmapi, 2024)

Figure 103 – Large Mature Trees in Georgina Crescent (west)

Figure 104 – Newly Planted Trees Amongst Mature Trees in Northern Portion of Site

Figure 105 – Large Mature Trees and Newly Planted Trees at Intersection of Georgina Crescent (east) and Maribyrnong Avenue

Figure 106 – Large Mature Trees in Georgina Crescent (south)

Figure 107 – Large Mature Trees in Southern Car Park

Figure 108 – Large Tree Adjacent Block 13 Section 88

Figure 109 – Tree Stump in Northern Access Road

Figure 110 – Large Mature Trees Adjacent Block 10 Section 88

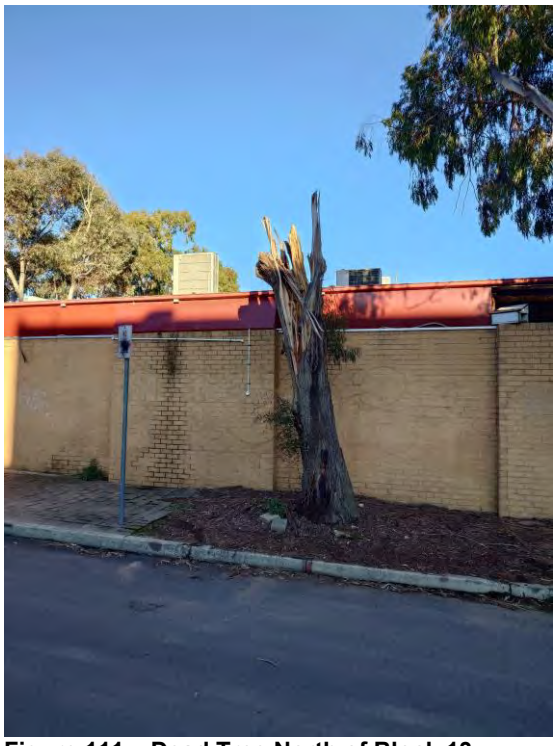


Figure 111 – Dead Tree North of Block 13 Section 88

6.11.7 Water Sensitive Urban Design

The proposed development will drain via newly provided TCCS's stormwater infrastructure into the trunk stormwater mains in Maribyrnong Avenue and the concrete lined floodway north west of the site in Baldwin Drive. This stormwater runoff is conveyed north west in the concrete lined channel adjacent Baldwin Drive to Ginninderra Creek and ultimately, to Lake Ginninderra. It is important the Developer is aware of this and complies with all legislative requirements with regards to stormwater runoff quality and quantity.

Stormwater design for the proposed development shall comply with the EPSDD ACT Biodiversity Sensitive Urban Design Guide, for which the requirements are summarised within the Commercial Zones Planning Technical Specifications (March 2024), including but not limited to the following requirements:

- Mains water use reduction of 40% in comparison to an equivalent development constructed in 2003.
- On site stormwater retention and detention.
- The developer must not increase the peak stormwater runoff from the development from the peak rate of runoff from an unmitigated (rural) site of the same area for minor and major storms.
- A summary of the minimum required WSUD targets and achievements are listed below:
    - Gross pollutants reduction ≥ 90%
    - Reduction in suspended solids ≥ 60%
    - Reduction in total phosphorous ≥ 45%
    - Reduction in total nitrogen ≥ 40%
    - Minimum permeable area of the site ≥ 15%
    - Effluent reuse is optional

The 'ACT Practice Guidelines for Water Sensitive Urban Design' (2018) document provides various methods that can assist in meeting these water sensitive urban design requirements for the proposed development. The following measures can be considered as part of the Development Application for the proposed development to achieve best practice in water sensitive urban design:

Mains water use reduction:

- Water efficient irrigation systems
- Use of stormwater to replace mains water for irrigation
- Water efficient landscaping
- Rainwater tanks for garden watering and internal uses, such as toilet flushing
- Use of greywater for irrigation and toilet flushing on individual dwellings
- Wastewater treatment and reticulation to commercial or industrial users who do not require water of a potable water mains standard

Stormwater management:

- Filter strips
- Swales and Bio-retention swales in lieu of piped drainage systems
- Downpipes and impervious surface areas not directly connected to the stormwater system, direct runoff across lawns and gardens
- Minimising impervious surfaces
- Installing on-site detention storage, which may be increased in size to allow for water harvesting
- Creating extended detention volume in ornamental ponds or landscaped depressions
- Direct connection of downpipes to a separate collection system to discharge to ornamental ponds to maintain water quality

Wastewater reuse:

- Use of domestic greywater, treated or untreated

Construction of the proposed development will also be required to comply with the Environment Protection Authority's document, 'Environment Protection Guidelines for Construction and Land Development in the ACT' (August 2022).

7 Proposed Site Servicing

7.1 General

A potential development, as discussed in Section 3 of this report is unknown with no planning design or massing work being carried out on the subject site to date, with the exception of some relatively recent group centre improvement works.

The following recommendations serve as a preliminary discussion of the site servicing options based on the constraints identified in this investigation. The location and size of the proposed services are to be confirmed following a planning design phase that can confirm a development's scale and extent. Therefore, in the context of this due diligence process, the existing services, infrastructure and other specialist components outlined in previous sections of this report have been considered for any potential development/redevelopment on the site and potential site servicing needs.

The advice provided in this section of the report is based on several aspects that necessitate a comprehensive evaluation for a proposed development.

Recommendations pertaining to additional servicing for the site, whilst based on sound engineering principles and judgement, are contingent on the completeness and accuracy of the available information regarding the existing services. Whilst every effort has been made to ensure the accuracy of this information, neither is guaranteed by JPS Engineering Consultants. It is recommended to physically verify the location and size of existing services before proceeding with detailed designs.

7.2 Sewer Supply

Using the Icon Water Supplement to WSA Gravity Sewerage Code of Australia, the sewage flow rate for the proposed development should be calculated to determine the loading induced on the existing network. According to BYDA information, a DN150 sewer main runs along both Georgina Crescent (east and west), with mains through the centre of the subject site to service Block 13 and Block 10 Section 88. Also, a DN225 sewer runs along the north verge of Maribyrnong Avenue, where all sewer mains in the group centre connect to, the lowest point being in the south west corner of the site. To meet Icon Water Standards, a new sewer tie may be necessary for a potential future development. This will need to be designed to comply with the appropriate depth and grade requirements. Considering the extent of the existing DN150 and DN225 sewer mains within the subject site area and the natural fall across the site to the low point, these mains may be feasible to connect to. The exact connection point will rely on several factors, namely, the main's depth, its available capacity, and the necessary depth for the proposed development to efficiently gravity drain.

The capacity of the DN150 and receiving DN225 sewer mains is undetermined. It's essential to confirm the capacity of the mains that run through the site in consultation with Icon Water after calculating the sewer loading of the proposed development. This calculation will be based on the proposed development's size, intended usage, and accurate site and sewer levels. This process is important to confirm the feasibility of establishing a tie connection to either of the existing manholes over the DN150 or DN225 mains, in coordination with Icon Water. The impact to the existing downstream DN225 sewer line on Maribyrnong Avenue, which will receive any additional flow from a potential development/redevelopment will also need to be verified.

7.3 Potable Water Supply

According to BYDA information, a comprehensive water main network is available surrounding the subject site on Georgina Crescent (east, west and south) and Maribyrnong Avenue.

Once the details of any proposed development within the group centre is known, Icon Water's Supplement to the WSA Water Supply Code of Australia is to be used to calculate the required water demand to service the development. This estimated peak demand, along with the Fire Risk Type (FRT) requirement, mandates achieving a minimum flow rate of 60L/s at a pressure head of 20m for firefighting and 30m for peak demand for FRT3, and 100 L/s for FRT4. The Fire Risk Type of any proposed development and its exact location must be confirmed with ACT Fire & Rescue. The flow

rate should align with Icon Water's Supplement to the WSA Water Supply Code of Australia, Table IW.3. Confirmation from Icon Water is essential to ascertain whether their external network can meet this demand while meeting the minimum pressure requirements.

The capacity of the DN150 reticulation mains throughout the subject site is unknown and must be verified with Icon Water once peak demand calculations are finalised for any proposed development on the site.

To meet the hydrant coverage requirement for Fire Risk Type FRT3, hydrants must be spaced at 60m intervals, as outlined in Table IW.8 of the Icon Water Supplement to the WSA Water Supply Code of Australia. For FRT4 areas, the minimum spacing is 45m between hydrants, with dual hydrants every 135m or at cul-de-sac ends. Given the current hydrant spacing of approximately between 45 and 95 metres along the DN150 main internal to the site on Georgina Crescent, additional hydrants will likely be necessary. Hydrant spacing on Maribyrnong Avenue on the DN150 main north of the site is between 80 and 105m, which will not meet either FRT3 or FRT4 requirements as mentioned above. This main will need additional hydrants to be installed to adequately meet fire safety requirements, depending on the final location of a proposed development in the group centre.

7.4 Stormwater Drainage

According to WAE information and the TCCS Stormwater Database, there is a comprehensive stormwater network within and surrounding the site. Of note is the trunk stormwater pipes in Maribyrnong Avenue, including a DN1600 main immediately north of the site and at the lowest point of the site, this trunk main upgrades to twin DN1350 pipes that run under the centre of the road. Smaller stormwater pipes are available within the subject site that predominantly drain the car parks, internal roads and rooftops of the developments. Several structures that may be suitable for a stormwater tie connection to a proposed development are available within the subject site.

Once a proposed development scenario has been determined, the stormwater drainage requirements are to be assessed in accordance with TCCS Municipal Infrastructure Standards (MIS) 08 for Stormwater. The development site has been designated in accordance with the requirements of a 'Group and Neighbourhood Shopping Centre' and assessed for the 10 year ARI (10% AEP) in the minor storm event, as per 'Table 8-3 Minor System Design AEP' within TCCS MIS08.

The calculation of the impervious area, crucial for this assessment, depends on the proposed land usage and layout, including any on site basement parking and pumping requirements. Additionally, the area to the south/south east of the subject site, identified as a minor catchment, requires analysis as it potentially flows toward the site and through the southern car park toward the plaza. A hydrological and hydraulic analysis, ensuring compliance with TCCS MIS 08 for the 1% AEP plus 300mm freeboard, is required to determine potential stormwater redirection at the southern and eastern boundary of the subject site, where there is likelihood for the southern and south east catchment to drain toward and through the site. The ability to drain major flows along Georgina Crescent adequately will ensure safeguarding the existing developments within the group centre and any proposed development. This assessment is to be undertaken once the development's extent, location and site grading has been established.

Following the standards of TCCS MIS 08, a hydrological and hydraulic analysis must be conducted to determine the feasibility of utilising the existing stormwater mains within and surrounding the subject site to connect into and the downstream pipe capacities. This will be particularly important for the receiving trunk stormwater mains at the north west most end of the site in Maribyrnong Avenue.

The design flows generated by the site and any proposed development is to be calculated using the Australian Rainfall and Runoff Guidelines and ACT Government MIS 08 Standards. Design rainfall intensities can be obtained from the Bureau of Meteorology Design Rainfall Data System (2019), which accounts for climate change.

Additionally, site detention and retention measures should be considered to manage and reduce site flows to pre-development levels, preventing any increase in flows in the adjacent roadways.

7.5 Telecommunications

NBN lines are within and around the site running along the west verge of Georgina Crescent (west) along the southern internal access road, in part of Georgina Crescent (east), and north of the site in Maribyrnong Avenue. Additional NBN services are situated in the central group centre in the southern area to provide service to Block 13 Section 88.

TPG Telecom TransACT lines are also situated in the west verge of Rubicon Street and Georgina Crescent (west) along the same alignment as the NBN service. Additionally, a TransACT line runs along the southern verge of Georgina Crescent (south) and extends into the site toward the plaza, adjacent Block 13 Section 88.

Once the specific scope of the development is defined, and a telecommunications/internet service provider is selected, the developer is to engage in consultation with them to establish the connection process for the site.

NBN necessitates the submission of a Development Application to request a telecommunication connection to their service.

7.6 Electricity

The subject site has a comprehensive electrical network, including three substations within and in proximity of the site. Correspondence with Evoenergy will be required to determine the best connection to a proposed development for an electricity supply once the development's electrical demand is known. This demand is also to include any provision for solar and EV car charging initiatives.

It is assumed that an electrical connection can be established to the underground low voltage electricity lines located within either Georgina Crescent (east and west) or the southern internal access road. LV electricity lines may need to be extended to Block 33 Section 28, if development is proposed on this portion of the subject site. Regardless of these assumptions, to meet the servicing needs of any proposed development, coordination with Evoenergy is necessary. This includes assessing the residual capacity of this electricity service and arranging for any required additional electrical infrastructure or upgrades.

The appropriate location to connect to Evoenergy's electricity network will be determined when the developer submits their final electrical load details (to AS 3000) and final site plans.

If vulnerable usage is proposed as part of the future development on the site, it may be necessary to conduct a step and touch potential test due to the proximity of the pad mounted substation within the plaza area, the substation in Georgina Crescent (east) and the substation that is to the south west of the site in Block 4 Section 89 (S 4895), to confirm any earthing requirements.

7.7 Gas

There is a comprehensive gas network within and surrounding the site, providing service to some of the blocks within the group centre. These gas mains include the west verge of Georgina Crescent (west), the east verge of Georgina Crescent (east), the southern verge of Georgina Crescent (south), both verges in Rubicon Street, part of the southern internal access road and the northern verge of Maribyrnong Avenue. However, it is important to note that, as per the Climate Change and Greenhouse Gas Reduction Act, new gas network connections have been prohibited in all residential, commercial, and community facility land use zones since December 8, 2023.

7.8 Traffic and Parking

The subject site currently has vehicular access through two internal access roads, referred to in this report as the northern and southern internal access roads. These internal roads branch off Georgina Crescent (east and west) and provide vehicular, pedestrian, and cyclist access to the commercial areas and car parking areas on the site. Georgina Crescent (east and west) primarily access Maribyrnong Avenue, which in turn connects to Baldwin Drive, providing arterial road access to the

broader ACT region. Georgina Crescent has a 40 km/h speed limit due to the high pedestrian activity in the group centre, while Maribyrnong Avenue is signposted as 60 km/h beyond the extent of the group centre. Additionally, Maribyrnong Avenue and Baldwin Drive serve as a bus route with bus stops on Maribyrnong Avenue north of the site, providing pedestrian and cyclist access directly to the main entrance of the group centre via pedestrian crossings and wide shared paths.

The site offers over 260 car parking bays, in the northern and southern car parking bays, and some short term on street parking on Georgina Crescent. The utilisation of these off street car parks has been estimated to be approximately 53%. The parking demand generated by a proposed development is to be calculated using the Planning (Commercial Zones) Technical Specifications 2024, as outlined in section 6.10.2 of this report. While the Technical Specifications outline ideal parking provision rates, considering the well connected public transport and active travel network within the group centre, the possibility of reducing parking numbers may be granted at the discretion of the Transport Canberra and City Services (TCCS). Any proposals for accommodating parking needs by using off site parking will need to be agreed to with TCCS prior to submitting a Development Application. The existing parking utilisation in the general group centre appears to have residual capacity whilst accommodating current demands. However, this situation may change in the future, and any replacement parking for that removed to allow development on the subject site will need to be agreed upon with TCCS.

Any proposed development on the subject site will generate additional traffic volume to the local roads. In accordance with the TCCS Guidelines for Transport Impact Assessment (April 2020), a Transport Effects Form (TEF) or Traffic Assessment Report (TAR), depending on the final scale of the development, will be required prior to a Development Approval.

8 Site Opportunities, Constraints and Risk Assessment

A table of constraints is prepared below for the Kaleen Group Centre, based on the existing site services heritage, ecological, and environmental opportunities/constraints discussed within this report. A risk rating was established for each issue identified utilising the following risk matrix definitions.

Table 6 – Risk Matrix Rating Definitions

Risk Rating	Definition of Risk Rating Against Site Constraints
Insignificant	Sufficient, relevant and recent information to inform future development prospect, no additional work necessary at this stage.
Low	Information available is sufficient to inform future development with only minor works or investigations required to progress the design development. It is advised further investigation is undertaken to continue the development process.
Medium	Information available is lacking or absent. Significant risks reside in other investigations undertaken and the timing and cost of the proposed development. It is recommended that these investigations are undertaken.
High	Information available is severely lacking or absent. Major risks reside in other investigations undertaken and the viability of the proposed development. It is advised that these investigations are undertaken as a priority prior to recommended investigations that have been given a lower risk rating.
Extreme	Information is absent, not relevant or insufficient. The outcome of the investigation required is needed to determine whether a portion of the site is developable or unviable.

With respect to the relevant disciplines covered within this Site Investigation Report for the future development of the subject site, the following table has been developed, which incorporates the perceived issues, or gaps in information, the associated risk and a subsequent risk rating.

Table 7 – Assignment of Risk Rating to Identified Constraints

Discipline	Description of Potential Constraint	Allocated Risk Rating
Contamination	The site currently indicates variable surface conditions and potential uncontrolled fill material in the car park, which was placed as part of the group centre and subdivision construction. Furthermore, commercial businesses may have utilised fuel heating, potentially contaminating the land within the site. Currently, there is no available information from the EPA on any potential site contamination, and no studies are available within the general area of the site.	High
Heritage	Heritage values are indicated over Block 33 Section 28. A heritage assessment or advice from the ACT Heritage Council has not been provided for the site as to what impact these heritage values would have toward a future development.	High
Trees	Some large mature trees that would likely fall under the category of being 'Regulated' in accordance with the ACT Urban Forest Act 2023 are located within and surrounding the subject site. All of these trees may inhibit a potential development if unable to be removed	Medium

Discipline	Description of Potential Constraint	Allocated Risk Rating
	and replaced. A professionally undertaken tree survey and arborist assessment is not available.	
Ecological	Potential ecological fauna habitat areas are identified within the site, particularly high connectivity values concentrated in the green space on the edges of the site. An ecological impact assessment has not been produced for the subject site and its surrounds.	Medium
Geotechnical	The site currently represents significant variable surface conditions and the potential of uncontrolled fill material that was placed on the site as part of the group centre's construction. Geotechnical information on the site is not available.	Medium
Flooding	Stormwater hydrological and hydraulic analysis for the subject site has not been undertaken, particularly for the southern catchment and the conveyance of overland flow through the southern car park and general group centre. As a proposed development has not yet been defined, the impact of stormwater flows on the development, as well as the adequacy of overland flow management surrounding the site, and the site's flood immunity, remains unknown.	Medium
Planning	The proposed development's extent and purpose is not fully known and therefore servicing and infrastructure requirements are unable to be accurately determined.	Medium
Electrical	Connection to the existing underground LV or HV services within Georgina Crescent and any upgrade requirements to electrical infrastructure to provide electricity to a potential development in the site is unknown. The existing substations that are within the south east and central portions of the site and the substation in Block 4 Section 89 may need assessment if vulnerable usage is expected as part of future developments.	Medium
Easements	An easement does not exist over the existing sewer, telecommunications, gas and electricity lines that is present within Block 2, 9, 10 and 14 Section 88 Kaleen.	Medium
Traffic	A proposed development will increase traffic generation on the surrounding roads, necessitating an assessment of the impact on these roads in future years to determine compliance and the need for any upgrades. Additionally, any increase in traffic due to future development or redevelopment of the site must consider existing commercial and community facility access points.	Low
Water	The capacity of the existing potable water network within and surrounding the site is not known with respect to a proposed development. Peak demand and firefighting flow requirements are to be determined once the final development/redevelopment is	Low

Discipline	Description of Potential Constraint	Allocated Risk Rating
	understood. Current hydrant coverage does not meet Icon Water and ACT Fire & Rescue requirements in some areas around the site.	
Sewer	A potential connection to the DN150 sewer mains within Georgina Crescent (east and west) and the DN225 sewer main to the north west of the site has not been checked for capacity and level against a proposed development scenario, or the likelihood of Icon Water's acceptance.	Low
Stormwater	The existing DN450 stormwater main capacity in Georgina Crescent (east and west) has not been assessed as to whether this is suitable to drain a potential development. The capacity of the downstream trunk DN1600 and twin DN1350 stormwater mains has also not been checked for suitability to accept the site's discharge flows.	Low
Services	Existing service's exact locations are unconfirmed.	Low
Utilities	Telecommunications service capacity is not known across the site.	Insignificant
Gas	Gas servicing to a potential development within the site has not been explored.	Insignificant

When holistically considering the above noted constraints and risk ratings, the subject site possesses some constraints and the need for additional information to inform a future development. Therefore, the subject site is considered viable for a potential future development, pending address of the recommendations provided in the following section that respond to the above risks.

9 Recommendations

Based on the level of risk, recommendations have been listed in order of priority, to assist in programming the recommended works. The priority listing has been developed by assessing the importance of the additional investigations recommended and the effect that this work would have on other reports. The aim is to provide a comprehensive prioritised list of recommended additional investigations to complete the assessment of the subject site.

It is noted that a residual risk rating has not been provided, however, once recommended additional information and studies has been sought, the residual risk can be assessed based on the outcomes of these reports.

The Kaleen Group Centre has been assessed in this Stage 1 Site Investigation Report based on all existing technical constraints and unknowns, with a focus on compiling with a Development Application submission for development/redevelopment in part of the group centre site. A summary of the recommendations and necessary actions required to enable this site for development with the associated risk colour coded to that which is presented in section 8 of this report is provided below.

- **Contamination Management:** As no investigations are available on the potential of site contamination, an initial environmental study should be undertaken. This study will determine whether further studies are warranted, based on a potential development in the site. Measures should be taken as recommended in the environmental investigation to manage and remediate any potential contamination on site. EPA regulations and guidelines are to be strictly followed to ensure that development potential is not restricted by environmental conditions.

- **Heritage Assessment:** Undertake a full heritage assessment to understand the extent of heritage values, particularly within Block 33 Section 28 Kaleen. Present the findings of the heritage assessment to the ACT Heritage Council so that this constraint to development can be fully mapped and any coordination with RAOs can be undertaken.

- **Trees and Vegetation:** Commission a tree survey and qualified arborist to assess the existing trees to ensure the protection of regulated trees on or near the subject site. Validate the tree assessment with the ACT Urban Treescapes Unit (TCCS) and the Conservator of Flora and Fauna, before proceeding with any activities that could impact existing trees. Furthermore, if trees are proposed to be removed to accommodate a proposed development, replacement trees at a ratio and location agreed to with TCCS, the Conservator and EPSDD Climate Change and Energy will need to be considered.

- **Ecological Assessment:** Liaise with the Conservator of Flora and Fauna to establish a scope of work to address likely ecological constraints to development on the site during the planning phase. Preliminary consultation with the Conservator of Flora and Fauna have advised that an ecological impact assessment should be completed for the site.

- **Urban Planning and Impact Study:** Undertake detailed urban planning design to comprehensively assess the impact and demand of any proposed development on services and infrastructure. This should also include an evaluation of how the development may interact with the adjacent residential, commercial and community facility properties to ensure holistic compatibility. The proposal is to be made in accordance with EPSDD's Development Application process.

- **Stormwater Management:** Undertake a stormwater hydrological and hydraulic analysis for any proposed development in line with TCCS MIS documents. This includes the catchment and capacity analysis of the south/south east area that appears to drain through the southern car park within the site. Validate whether the size and grade of the existing DN450 stormwater mains in Georgina Crescent (east and west) and the trunk DN1600 and twin DN1350 receiving stormwater mains in Maribyrnong Avenue have sufficient capacity to accommodate a potential development's stormwater flows. As part of this analysis of the potential development's drainage needs any on site detention/retention initiatives should be considered.

- **Geotechnical Investigation:** Given the variable surface levels in comparison to the surrounding levels, and development timeframe of the group centre, a detailed geotechnical investigation should be undertaken, which is tailored to a proposed development. A geotechnical assessment is particularly important if basement parking is proposed. This will provide accurate data for foundation/pavement design and construction planning.

- **Electrical Service:** Determine the best connection point to service the site, once development demands are calculated. Address any necessary upgrades to the electrical infrastructure to service a potential development/redevelopment. This is to be undertaken through collaborative consultation with Evoenergy. If vulnerable use is proposed on the site, seek advice from Evoenergy as to whether a step and touch potential test needs to be undertaken due to the nearby pad mounted substations, central, south west and east of the site.

- **Easements:** An appropriate easement width and protection zone is to be determined for the sewer, telecommunications, gas and electricity mains that runs through Block 2, 9, 10 and 14 Section 88 Kaleen. This is to be confirmed with the relevant service authority. Once this is done, if these service mains are intended to remain within the blocks, a new deposited plan is to be produced showing the appropriate easements.

- **Traffic Impact:** In accordance with the TCCS Guidelines for Transport Impact Assessment, either a Transport Effects Form (TEF) or Transport Assessment Report (TAR), will be required to be undertaken, depending on the scale and intended use of a future potential development. Evaluate the potential impact of increased traffic on the existing transport network and parking supply in the group centre as part of this work.

- **Potable Water Supply:** For a potable water connection to a potential development within the site, work closely with Icon Water to establish a connection to their existing DN150 main network. This is to be established once the development and its potable water demand is known. Determine best locations for additional hydrants on existing mains to meet the Fire Risk Type of the development. Ensure compliance with all requirements and standards set by Icon Water and ACT Fire & Rescue throughout the preliminary and detailed design process.

- **Sewer Service:** For a sewer service to a potential development within the site, work closely with Icon Water to establish a connection to their existing DN150 or downstream DN225 sewer main network. The connection point will likely be to one of the existing manholes over these mains. The sewer connection point is to be established once the development is known, demand calculated, and detailed survey information available. Ensure compliance with all requirements and standards set by Icon Water throughout the preliminary and detailed design process.

- **Service Location Confirmation:** Confirm the exact locations of existing services to ensure accurate planning and prevent any conflicts during the development process. This is to be undertaken using non-destructive methods by the developer.

- **Telecommunications Service:** Liaise with NBN for a telecommunications service connection to a potential development, if required.

10 Drawings

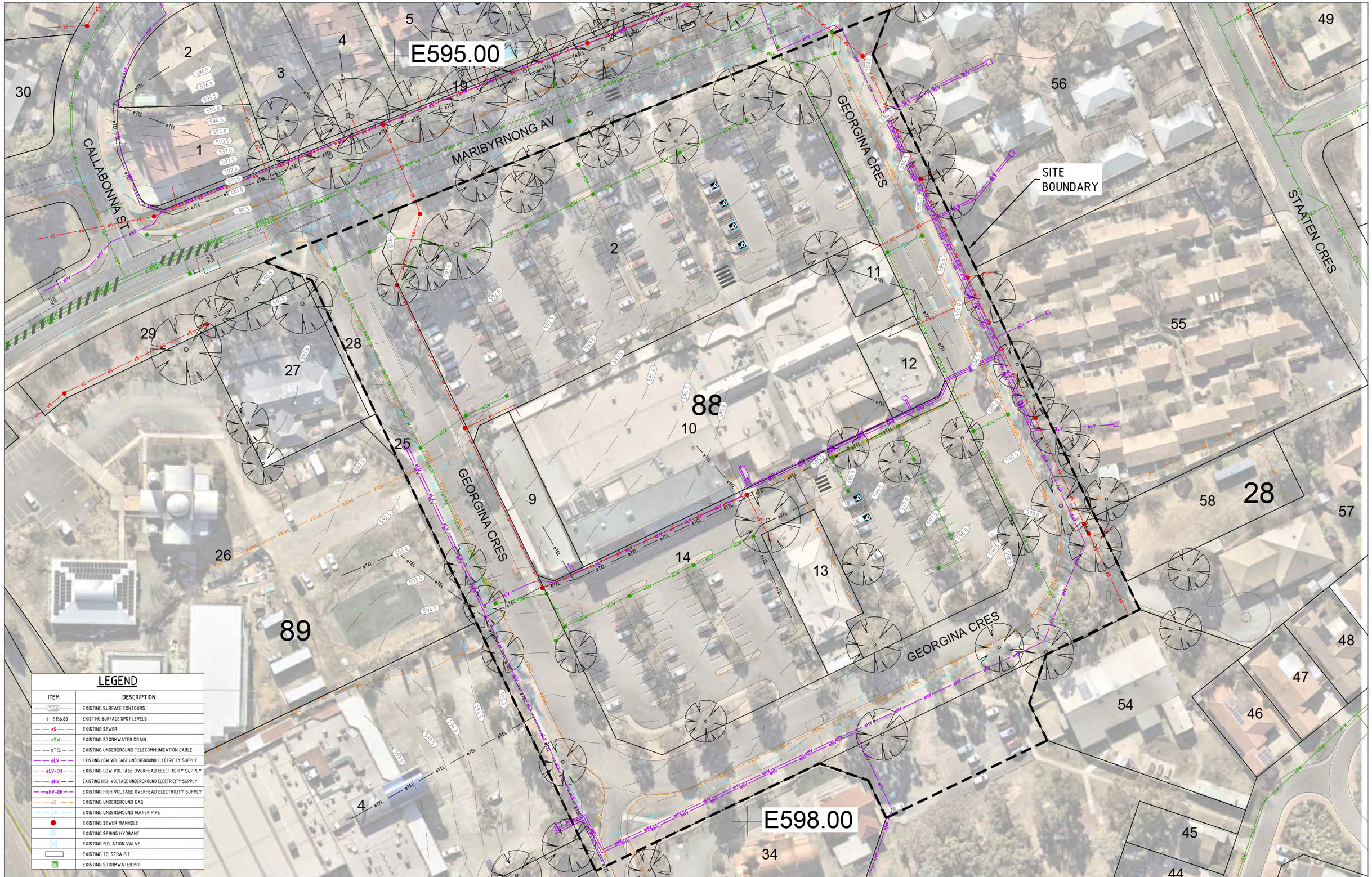
As part of this Site Investigation Report, the following drawing has been prepared and is provided within Appendix A.

Drawing No.	Description	Revision
20240333-DRG-CIV-UT-100	Existing Utilities Plan	A

This drawing is to be read in conjunction with this report. The plans are based upon information and consultation provided by service providers and authorities. All services details are to be confirmed on site. The existing services in the vicinity of the site are represented in an indicative format. This plan was prepared solely for the purposes of this report and for the use of the EPSDD.

Appendix A

Drawing



LEGEND

ITEM	DESCRIPTION
156.6	EXISTING SURFACE CONTOURS
+ ET56.60	EXISTING SURFACE SPOT LEVELS
eS	EXISTING SEWER
eSW	EXISTING STORMWATER DRAIN
eTEL	EXISTING UNDERGROUND TELECOMMUNICATION CABLE
eLV	EXISTING LOW VOLTAGE UNDERGROUND ELECTRICITY SUPPLY
eLV-OH	EXISTING LOW VOLTAGE OVERHEAD ELECTRICITY SUPPLY
eHV	EXISTING HIGH VOLTAGE UNDERGROUND ELECTRICITY SUPPLY
eHV-OH	EXISTING HIGH VOLTAGE OVERHEAD ELECTRICITY SUPPLY
eG	EXISTING UNDERGROUND GAS
eW	EXISTING UNDERGROUND WATER PIPE
	EXISTING SEWER MANHOLE
	EXISTING SPRING HYDRANT
	EXISTING ISOLATION VALVE
	EXISTING TELSTRA PIT
	EXISTING STORMWATER PIT

Rev	Description	Date	Drawn By
A	REVISION UPDATES	05.08.2024	DM

Scales

10 5 0 10 20 30 40 50

LENGTHS ARE IN METRES
SCALE 1:500 @ A1

North

JPS Engineering Consultants

Client Logo

ACT Government
Environment, Planning and Sustainable Development

Status	NOT FOR CONSTRUCTION		
Original Size	A1	Drawn By AD	Drafting Check DA
Date Plotted	05-August-24	Designed By JS	Design Check JS
Coordinate System	STROMLO GRID	Approved JS	Approved Date --
Height Datum	AHD	Approved Signature	

Project Name and Location
SITE INVESTIGATION
KALEEN GROUP CENTRE

Drawing Title
EXISTING UTILITIES PLAN

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
20240333	DRG	CIV	UT	100	A

Appendix B

BYDA and Work as Executed Information

Job No 36545641

byda.com.au

Contact Details

Contact	Contact number	Company	Enquirer ID
John Samoty	[redacted]	JPS Engineering Consultants	3541136

Email
john.samoty@jpsengineering.com.au

Address
28 Barrallier Street
Griffith ACT 2603

Job Site and Enquiry Details

WARNING: The map below only displays the location of the proposed job site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.

Enquiry date	Start date	End date	On behalf of	Job purpo e	Location	On ite activitie
25/04/2024	01/07/2024	30/06/2025	Other EPSDD	Excavation	Both Road, Nature Strip, Footpath	Mechanical Excavation, Non Destructive Digging, Subdivision

Check that the location of the job site is correct. If not, you must submit a new enquiry.

If the scope of works change or plan validity dates expire, you must submit a new enquiry.

Do NOT dig without plans. Safe excavation is your responsibility. If you don't understand the plans or how to proceed safely, please contact the relevant asset owners.

U er Reference	Addre	Note /de cription
97 Georgina Crescent	97 Georgina Crescent Kaleen ACT 2617	-

Your Responsibility and Duty of Care

- **Lodging an enquiry does not authorise project commencement.** Before starting work, you must obtain all necessary information from all affected asset owners.
- If you don't receive plans within 2 business days, contact the asset owner & quote their sequence number.
- Always follow the 5Ps of Safe Excavation (page 2), and locate assets before commencing work.
- Ensure you comply with State legislative requirements for Duty of Care and safe digging.
- If you damage an underground asset, you MUST advise the asset owner immediately.
- By using the BYDA service, you agree to the Privacy Policy and Term of Use.
- For more information on safe digging practices, visit www.byda.com.au

Asset Owner Details

Below is a list of asset owners with underground infrastructure in and around your job site. It is your responsibility to identify the presence of these assets. Plans issued by Members are indicative only unless specified otherwise. Note: not all asset owners are registered with BYDA. You must contact asset owners not listed here directly.

Referral ID (Seq. no)	Authority Name	Phone	Status
238420545	Evoenergy Icon Water	(02) 6293 5770	NOTIFIED
238420541	NBN Co NswAct	1800 687 626	NOTIFIED
238420544	Telstra NSW South	1800 653 935	NOTIFIED
238420543	TPG Telecom (NSW)	1800 786 306	NOTIFIED
238420542	Transport Canberra and City Services	(02) 7801 3960	NOTIFIED

END OF UTILITIES LIST

The 5Ps of Safe Excavation

Plan
Plan your job. Use the BYDA service at least one day before your job is due to begin, and ensure you have the correct plans and information required to carry out a safe project.

Prepare
Prepare by communicating with asset owners if you need assistance. Look for clues onsite. Engage a skilled Locator.

Pothole
Potholing is physically sighting the asset by hand digging or hydro vacuum extraction.

Protect
Protecting and supporting the exposed infrastructure is the responsibility of the excavator. Always erect safety barriers in areas of risk and enforce exclusion zones.

Proceed
Only proceed with your excavation work after planning, preparing, potholing (unless prohibited), and having protective measures in place.

Engage a skilled Locator

When you lodge an enquiry you will see skilled Locators to contact

Visit the Certified Locator website directly and search for a locator near you

dbydlocator.com/certified-locating-organisation

Book a FREE BYDA Session

BYDA offers two different sessions to suit you and your organisation's needs. The free sessions are offered in two different formats online and face to face:

1. **Awareness Session:** Understand the role of BYDA, safe e cavation practices, complying with asset owner instructions, and the consequences of damages. Learn how to mitigate and avoid potential damage and harm and ensure a safe work environment.
2. **Plan Reading Session:** Develop the skills to interpret asset owners' plans, legends, and symbols effectively. Understand the comple ities of plan interpretation to ensure smooth project e ecution.

To book a session, visit:
byda.com.au/contact/education awareness enquiry form/

BOOK NOW

Lodge your FREE enquiry online any time at byda.com.au

Working near nbn™ cables

nbn has partnered with Dial Before You Dig to give you a single point of contact to get information about **nbn** underground services owned by **nbn** and other utility/service providers in your area including communications, electricity, gas and other services. Contact with underground power cables and gas services can result in serious injury to the worker, and damage and costly repairs. You must familiarise yourself with all of the Referral Conditions (meaning the referral conditions referred to in the DBYD Notice provided by **nbn**).

Practice safe work habits

Once the DBYD plans are reviewed, the Five P's of Excavation should be adopted in conjunction with your safe work practices (which must be compliant with the relevant state Electrical Safety Act and Safe Work Australia "Excavation Work Code of Practice", as a minimum) to ensure the risk of any contact with underground **nbn** assets are minimised.

Plan: Plan your job by ensuring the plans received are current and apply to the work to be performed. Also check for any visual cues that may indicate the presence of services not covered in the DBYD plans.

Prepare: Prepare for your job by engaging a DBYD Certified Plant Locator to help interpret plans and identify on-site assets. Contact **nbn** should you require further assistance.

Pothole: Non-destructive potholing (i.e. hand digging or hydro excavation) should be used to positively locate **nbn** underground assets with minimal risk of contact and service damage.

Protect: Protecting and supporting the exposed **nbn** underground asset is the responsibility of the worker. Exclusion zones for **nbn** assets are clearly stated in the plan and appropriate controls must be implemented to ensure that encroachment into the exclusion zone by machinery or activities with the potential to damage the asset is prevented.

Proceed: Proceed only when the appropriate planning, preparation, potholing and protective measures are in place.

Working near **nbn**™ cables

Identify all electrical hazards, assess the risks and establish control measures.

When using excavators and other machinery, also check the location of overhead power lines.

Workers and equipment must maintain safety exclusion zones around power lines.

Once all work is completed, the excavation should be re-instated with the same type of excavated material unless specified by **nbn**. Please note:

- Construction Partners of **nbn** may require additional controls to be in place when performing excavation activities.
- The information contained within this pamphlet must be used in conjunction with other material supplied as part of this request for information to adequately control the risk of potential asset damage.

Contact

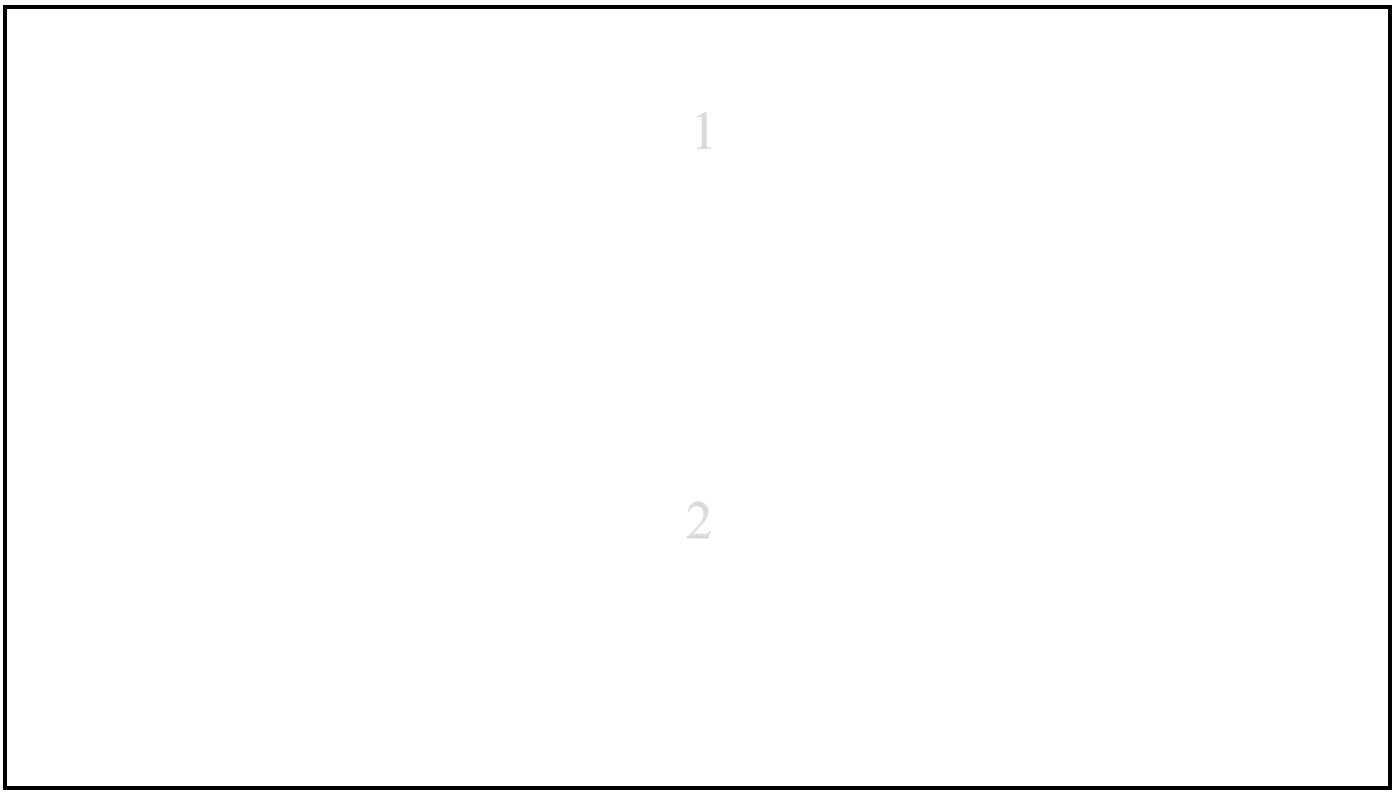
All **nbn**™ network facility damages must be reported online here.
For enquiries related to your DBYD request please call 1800 626 329.

DIAL BEFORE YOU DIG
www.1100.com.au

To:	John Samoty
Phone:	Not Supplied
Fax:	Not Supplied
Email:	john.samoty@jpsengineering.com.au

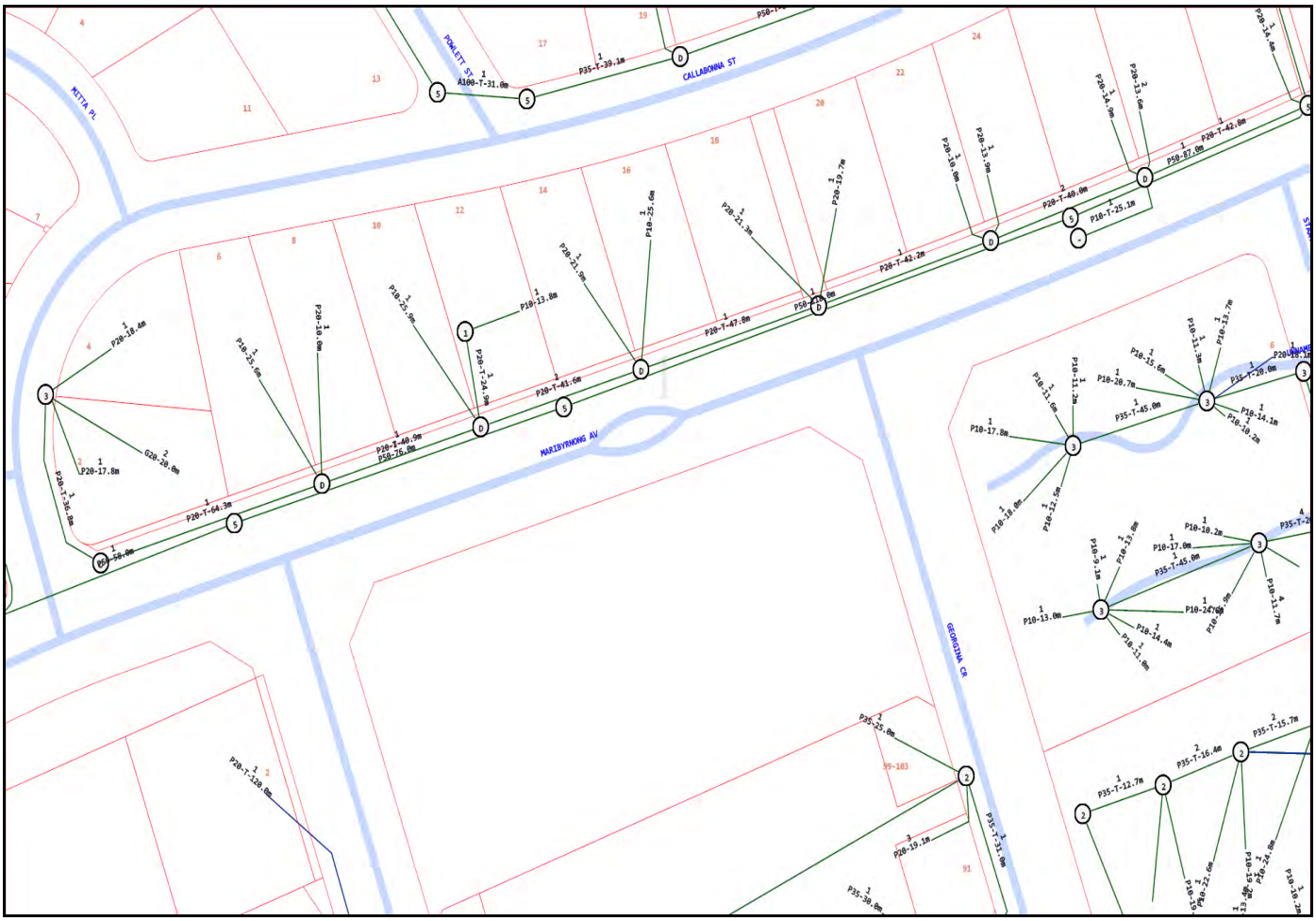
Dial before you dig Job #:	36545641	BEFORE YOU DIG www.byda.com.au Zero Damage - Zero Harm
Sequence #	238420541	
Issue Date:	25/04/2024	
Location:	97 Georgina Crescent , Kaleen , ACT , 2617	

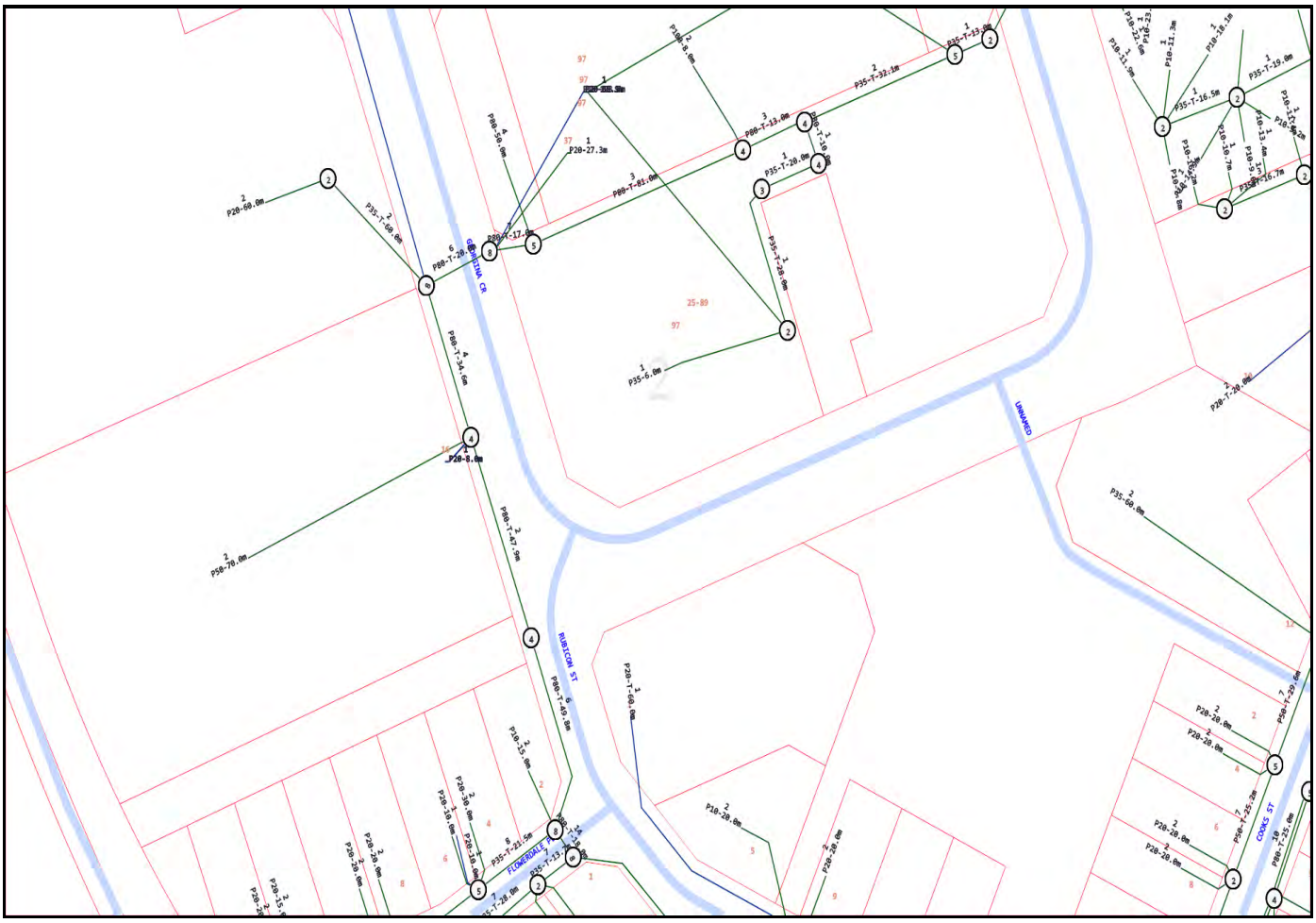
Indicative Plans



LEGEND

44	Parcel and the location
5	Pit with size "5"
2E	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
2 PO – T- 25.0m P40 – 20.0m 5 9	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
2 10.0m 5 9	2 Direct buried cables between pits of sizes ,"5" and "9" are 10.0m apart.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
5 9	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
BROADWAY ST	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m


KITTA PL
POWLETT ST
CALLABONNA ST
MARIBYRNONG AV
GEORGIANA CR
A100-T-31.0m
P35-T-39.1m
P20-T-42.0m
P50-87.0m
P10-T-25.1m
P20-T-40.0m
P20-T-42.2m
P20-T-47.8m
P20-T-41.6m
P20-T-40.9m
P50-76.0m
P20-T-64.3m
P20-T-36.8m
P20-T-120.0m
P35-T-31.0m
P35-T-12.7m
P35-T-16.4m
P35-T-15.7m
P35-T-45.0m



Emergency Contacts

You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.

To:	John Samoty
Phone:	Not Supplied
Fax:	Not Supplied
Email:	john.samoty@jpsengineering.com.au

Dial before you dig Job #:	36545641	
Sequence #	238420541	
Issue Date:	25/04/2024	
Location:	97 Georgina Crescent , Kaleen , ACT , 2617	

Information

The area of interest requested by you contains one or more assets.

nbn™ Assets	Search Results
Communications	Asset identified
Electricity	No assets

In this notice **nbn™ Facilities** means *underground fibre optic, telecommunications and/or power facilities, including but not limited to cables, owned and controlled by* ***nbn™***

Location of **nbn™** Underground Assets

We thank you for your enquiry. In relation to your enquiry at the above address:

- **nbn's** records indicate that there **ARE nbn™** Facilities in the vicinity of the location identified above ("Location").
- **nbn** indicative plan/s are attached with this notice ("Indicative Plans").
- The Indicative Plan/s show general depth and alignment information only and are not an exact, scale or accurate depiction of the location, depth and alignment of **nbn™** Facilities shown on the Plan/s.
- In particular, the fact that the Indicative Plans show that a facility is installed in a straight line, or at uniform depth along its length cannot be relied upon as evidence that the facility is, in fact, installed in a straight line or at uniform depth.
- You should read the Indicative Plans in conjunction with this notice and in particular, the notes below.
- You should note that, at the present time, the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables. As such, consistent with the notes below, particular care must be taken by you to make your own enquiries and investigations to precisely locate any power cables and manage the risk arising from such cables accordingly.
- The information contained in the Indicative Plan/s is valid for 28 days from the date of issue set out above.You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g DBYD Certified Locators, at your cost to locate **nbn™** Facilities during any activities you carry out on site).

We thank you for your enquiry and appreciate your continued use of the Dial Before You Dig Service. For any enquiries related to moving assets or Planning and Design activities, please visit the **nbn** Commercial Works website to complete the online application form. If you are planning to excavate and require further information, please email dbyd@nbnco.com.au or call 1800 626 329.

Notes:

1. You are now aware that there are **nbn™** Facilities in the vicinity of the above property that could be damaged as a result activities carried out (or proposed to be carried out) by you in the vicinity of the Location.
2. You should have regard to section 474.6 and 474.7 of the *Criminal Code Act 1995* (CoA) which deals with the consequences of interfering or tampering with a telecommunications facility. Only persons authorised by **nbn** can interact with **nbn's** network facilities.
3. Any information provided is valid only for **28 days** from the date of issue set out above.

Referral Conditions

The following are conditions on which **nbn** provides you with the Indicative Plans. By accepting the plans,you are agreeing to these conditions. These conditions are in addition, and not in replacement of, any duties and obligations you have under applicable law.

1. **nbn** does not accept any responsibility for any inaccuracies of its plans including the Indicative Plans. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g DBYD Certified Locators, at your cost to locate **nbn™** Facilities during any activities you carry out on site).
2. You acknowledge that **nbn** has specifically notified you above that the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables.
3. You should not assume that **nbn™** Facilities follow straight lines or are installed at uniformed depths

along their lengths, even if they are indicated on plans provided to you. Careful onsite investigations are essential to locate the exact position of cables.

4. In carrying out any works in the vicinity of **nbn™** Facilities, you must maintain the following minimum clearances:
   - 300mm when laying assets inline, horizontally or vertically.
   - 500mm when operating vibrating equipment, for example: jackhammers or vibrating plates.
   - 1000mm when operating mechanical excavators.
   - Adherence to clearances as directed by other asset owner's instructions and take into account any uncertainty for power cables.
5. You are aware that there are inherent risks and dangers associated with carrying out work in the vicinity of underground facilities (such as **nbn™** fibre optic,copper and coaxial cables,and power cable feed to **nbn™** assets).Damage to underground electric cables may result in:
   - Injury from electric shock or severe burns, with the possibility of death.
   - Interruption of the electricity supply to wide areas of the city.
   - Damage to your excavating plant.
   - Responsibility for the cost of repairs.
6. You must take all reasonable precautions to avoid damaging **nbn™** Facilities. These precautions may include but not limited to the following:
   - All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likelihood of damage to the cable, for example: the blades of hand equipment should be aligned parallel to the line of the cable rather than digging across the cable.
   - If any undisclosed underground cables are located, notify **nbn** immediately.
   - All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.
   - The safety of the public and other workers must be ensured.
   - All excavations must be undertaken in accordance with all relevant legislation and regulations.
7. You will be responsible for all damage to **nbn™** Facilities that are connected whether directly, or indirectly with work you carry out (or work that is carried out for you or on your behalf) at the Location. This will include, without limitation, all losses expenses incurred by **nbn** as a result of any such damage.
8. You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.
9. Except to the extent that liability may not be capable of lawful exclusion, **nbn** and its servants and agents and the related bodies corporate of **nbn** and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any plans(including Indicative Plans) attached hereto. Except as expressly provided to the contrary in this information sheet or the attached plans(including Indicative Plans), all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

All works undertaken shall be in accordance with all relevant legislations, acts and regulations applicable to the particular state or territory of the Location. The following table lists all relevant documents that shall be considered and adhered to.

State/Territory	Documents
National	Work Health and Safety Act 2011
	Work Health and Safety Regulations 2011
	Safe Work Australia - Working in the Vicinity of Overhead and Underground Electric Lines (Draft)

	Occupational Health and Safety Act 1991
NSW	Electricity Supply Act 1995
	Work Cover NSW - Work Near Underground Assets Guide
	Work Cover NSW - Excavation Work: Code of Practice
VIC	Electricity Safety Act 1998
	Electricity Safety (Network Asset) Regulations 1999
QLD	Electrical Safety Act 2002
	Code of Practice for Working Near Exposed Live Parts
SA	Electricity Act 1996
TAS	Tasmanian Electricity Supply Industry Act 1995
WA	Electricity Act 1945
	Electricity Regulations 1947
NT	Electricity Reform Act 2005
	Electricity Reform (Safety and Technical) Regulations 2005
ACT	Electricity Act 1971

Thank You,

nbn DBYD

Date: 25/04/2024

ACT Government
Transport Canberra and City Services

Job # 36545641
Seq # 238420542

Provided by Transport Canberra and City Services

BEFORE YOU DIG
www.byda.com.au

Legend

- BYDA Enquiry
- Detailed map page

In an emergency contact Transport Canberra and City Services on (02) 7801 3960

Index Sheet

Plans generated by SmarterWX™ Automate

0 37.5 75 150 m

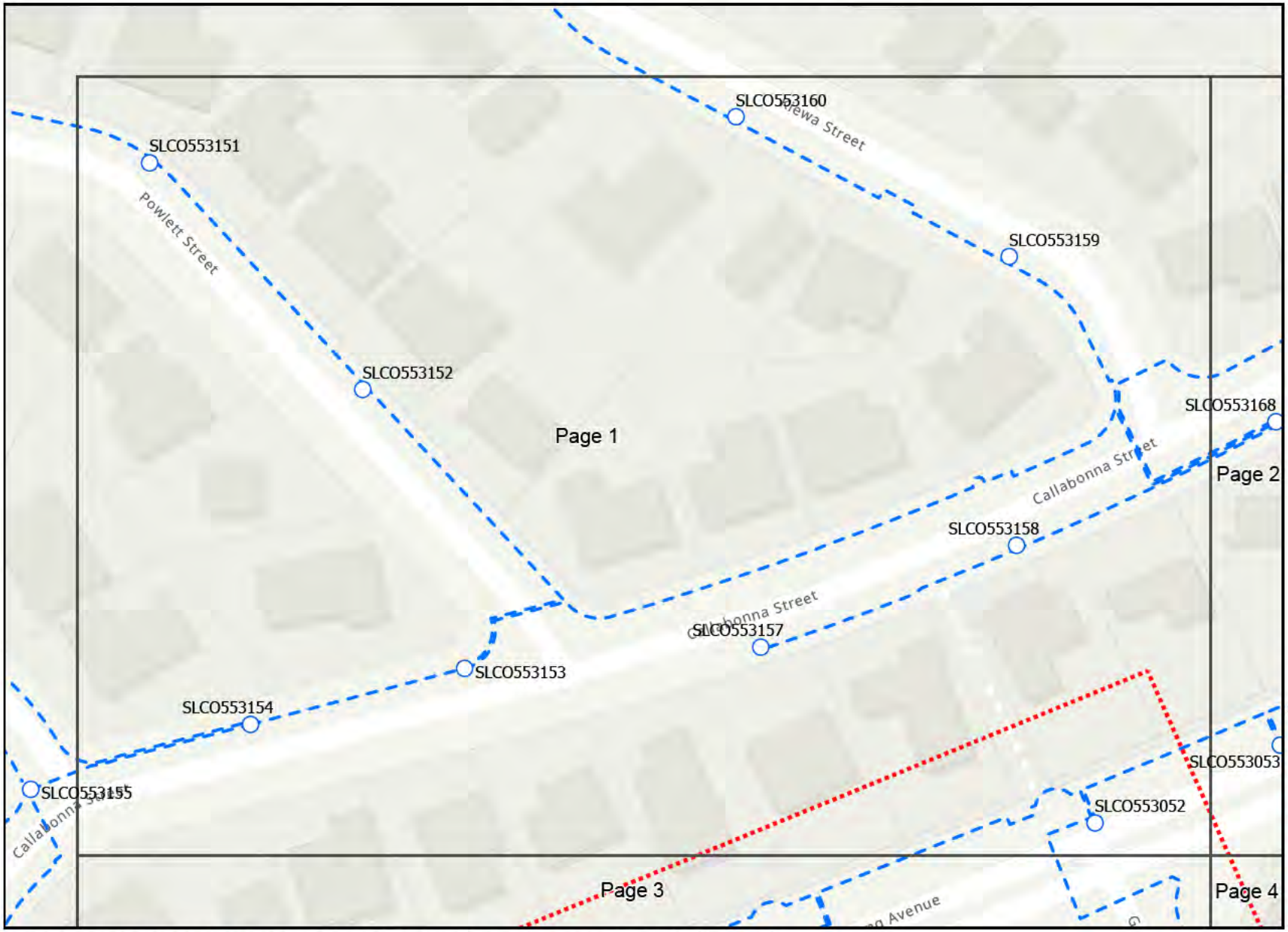
N

Scale 1:3,500

ACT Government
Transport Canberra and City Services

Job # 36545641
Seq # 238420542
Provided by Transport Canberra and City Services

BEFORE YOU DIG
www.byda.com.au



Legend

- BYDA Enquiry

Streetlighting Infrastructure

- Streetlight
- Underground Cable - In Service

In an emergency contact Transport Canberra and City Services on (02) 7801 3960

25/04/24 (valid for 30 days)

Plans generated by SmarterWX™ Automate

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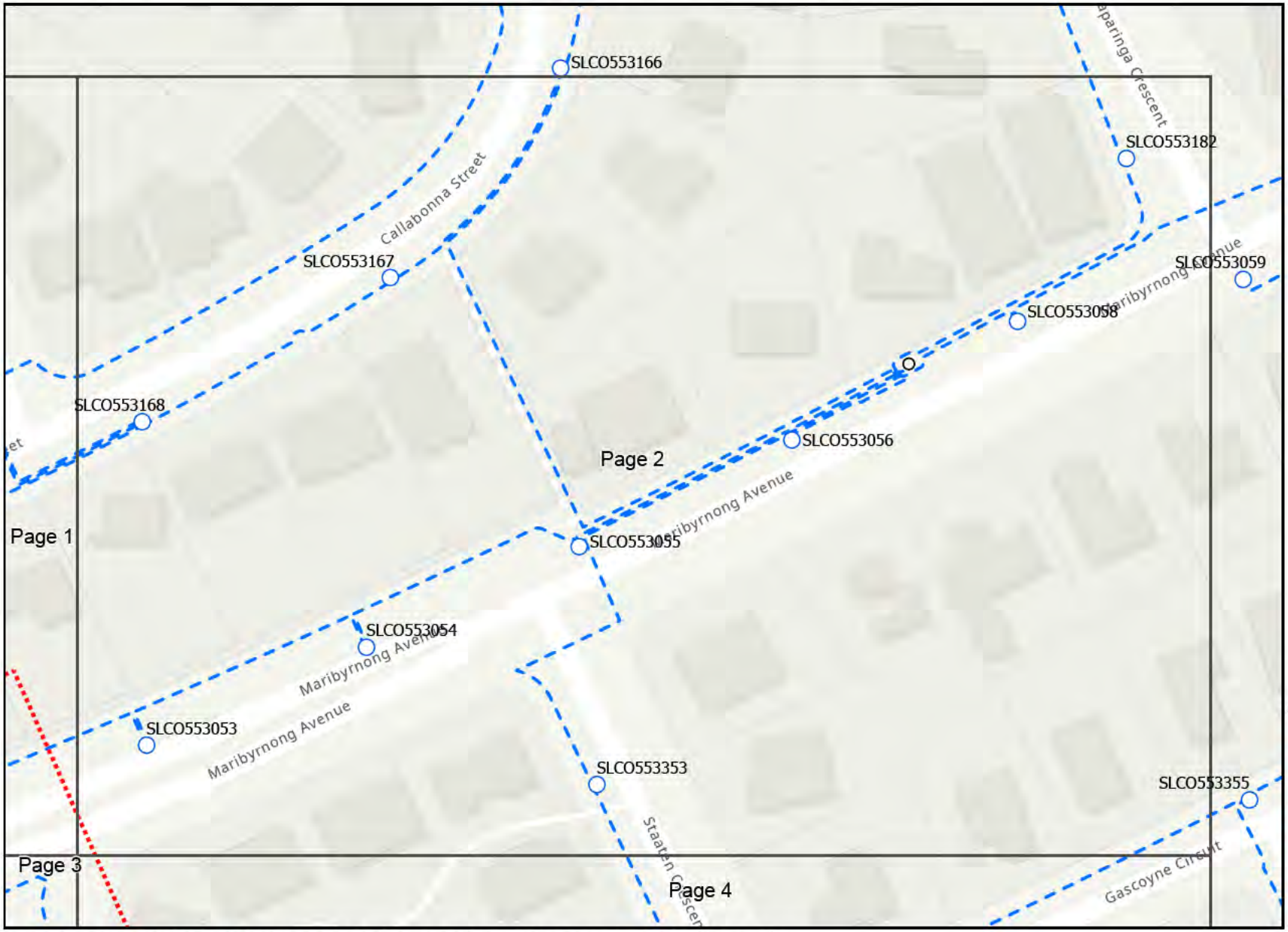
Scale 1:1,000

ACT Government
Transport Canberra and City Services

Job # 36545641
Seq # 238420542
Provided by Transport Canberra and City Services

BEFORE YOU DIG
www.byda.com.au



Legend

- BYDA Enquiry

Streetlighting Infrastructure

- Control Box
- Streetlight
- Underground Cable - In Service

Esri Community Maps Contributors, Australian Capital Territory, Spatial Services, Vicmap, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

Disclaimer: The Plan is provided in response to a Before You Dig request. While all reasonable care has been taken to ensure the accuracy of the information on this plan, its purpose is to provide a general indication of the location of Transport Canberra and City Services infrastructure. The information provided may contain errors or omissions and the accuracy may not suit all users. A site inspection and investigation is recommended before commencement of any project based on this data.

In an emergency contact Transport Canberra and City Services on (02) 7801 3960

25/04/24 (valid for 30 days)

Plans generated by SmarterWX™ Automate

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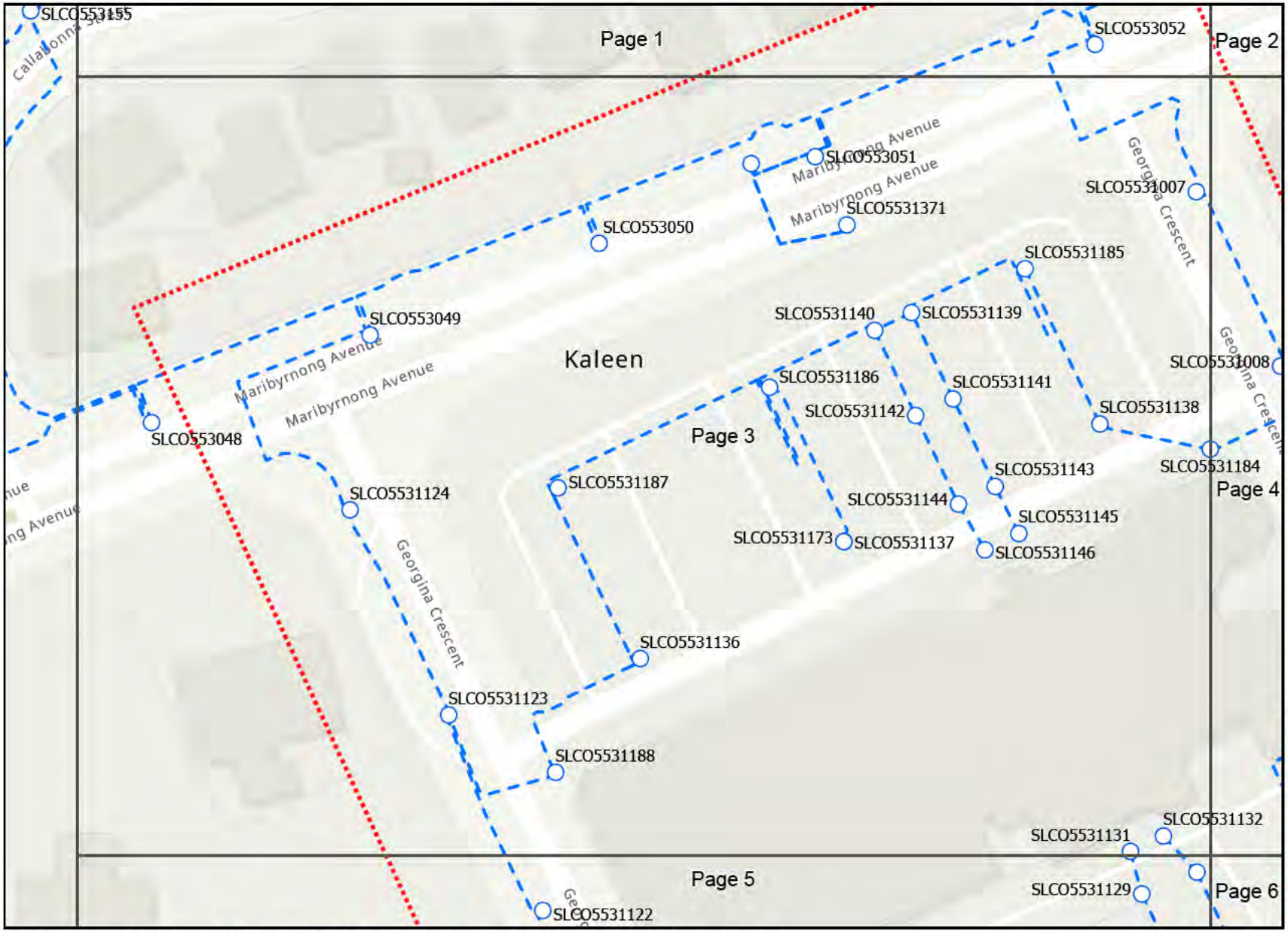
Scale 1:1,000

ACT Government
Transport Canberra and City Services

Job # 36545641
Seq # 238420542
Provided by Transport Canberra and City Services

BEFORE YOU DIG
www.byda.com.au



Legend

- BYDA Enquiry
- Streetlighting Infrastructure
- Streetlight
- Underground Cable - In Service

In an emergency contact Transport Canberra and City Services on (02) 7801 3960

25/04/24 (valid for 30 days)

Plans generated by SmarterWX™ Automate

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Scale 1:1,000

ACT Government
Transport Canberra and City Services

Job # 36545641
Seq # 238420542
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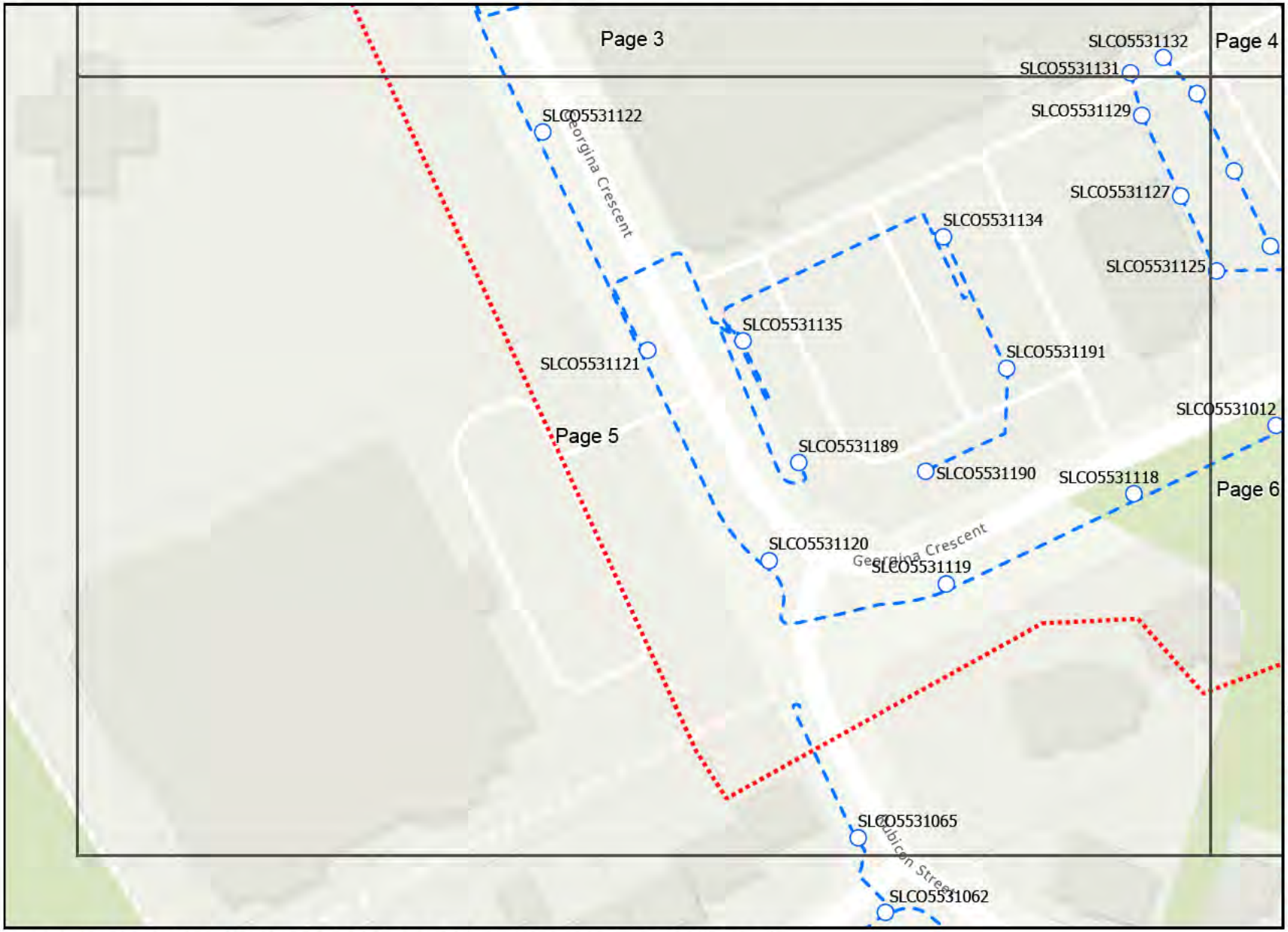

Legend

- BYDA Enquiry

Streetlighting Infrastructure

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- Underground Cable - In Service

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25/04/24 (valid for 30 days)

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Scale 1:1,000

ACT Government
Transport Canberra and City Services

Job # 36545641
Seq # 238420542
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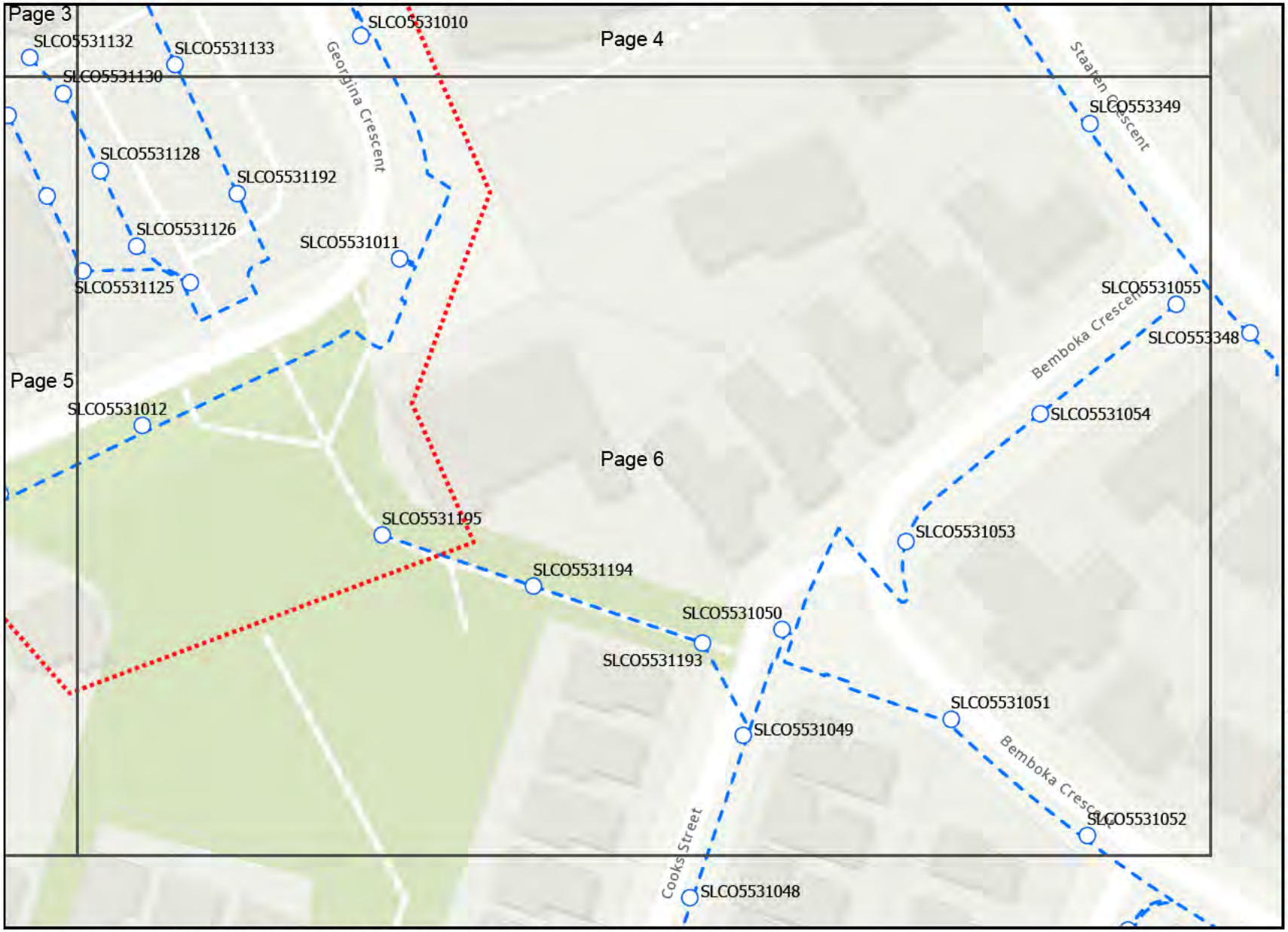


Legend

- BYDA Enquiry

Streetlighting Infrastructure

- Streetlight
- Underground Cable - In Service

In an emergency contact Transport Canberra and City Services on (02) 7801 3960

25/04/24 (valid for 30 days)

Plans generated by SmarterWX™ Automate

0 10 20 40 m

N

Scale 1:1,000

ACT Government
Transport Canberra and City Services

Before You Dig Australia (BYDA)
Location Information
Streetlights and related assets

Asset owner:

Streetlighting Unit
Roads ACT, Transport Canberra and City Services
GPO Box 158
Fyshwick ACT 2601

To:

John Samoty
28 Barrallier Street
Griffith ACT 2603

Enquiry Details	
Utility ID	90520
Job Number	36545641
Sequence Number	238420542
Enquiry Date	25 April 2024
Response	AFFECTED
Address	97 Georgina Crescent Kaleen ACT 2617
Location in Road	Road, Nature Strip, Footpath
Activity	Mechanical Excavation,Non-Destructive Digging,Subdivision

Enquirer Details	
Customer ID	3541136
Contact	John Samoty
Company	JPS Engineering Consultants
Email	john.samoty@jpsengineering.com.au
Phone	+61

PLEASE READ ALL THE INFORMATION AND DISCLAIMERS PROVIDED ON THE ATTACHED PAGES

General location only

- The approximate location of Streetlights and related assets (**the Assets**) in the nominated area are shown on the attached maps (**the Asset Plan**).
- The Asset locations provided with this response are based on the information available at the time and are only an indication of the presence of Assets within the nominated location. If the nominated area is not what you require, please resubmit another inquiry.
- The Asset Plans provided do not show the presence of any other assets, including private property assets.
- Please be aware that the location of the Assets may change to those indicated on the Asset Plan. The Asset locations shown on the attached Asset Plan are indicative only. Due to changes in surface levels and surrounding infrastructure, and works undertaken by other parties, Asset location may differ to those shown on the Asset Plan.
- *It is your responsibility to verify the location of the Assets shown on the Asset Plan through positive identification process*
- A new Asset Plan should be obtained every 28 days to ensure currency and accuracy. It is your responsibility to obtain a new Asset Plan if required.
- While every endeavour has been made to provide information that is accurate and reliable, complete accuracy cannot be guaranteed. Transport Canberra and City Services (TCCS) does not represent or warrant that you or any user of the Asset Plan will achieve any particular objective or guarantee any outcome.

Limitation of Liability

To the maximum extent permitted by law, TCCS and its officers, employees, contractors and agents accept no liability and are not responsible for any actions, liabilities, losses, damages (including consequential damages), costs, claims or expenses of whatever nature and regardless of the cause of action, whether in contract, tort (including negligence) or otherwise, arising out of or in connection with or as a consequence of any inaccuracies in the Asset Plan or the use of the information contained in the Asset Plan.

Without limiting the above, TCCS and its officers, employees, contractors and agents are not responsible to any person for:

- The currency, accuracy or completeness of the information provided in the Asset Plan; or
- Any delays in respect of delivery or supply by TCCS of the information sought in connection with the location of the Assets.

To the maximum extent permitted by law, TCCS specifically excludes any conditions, terms or warranties that may be implied into, or in respect of the provision of the Asset Plan and to the extent that any such condition, term or warranty or liability cannot be excluded, TCCS liability for breach of such implied term, condition or warranty is limited to the resupply of the Asset Plan provided by TCCS or the payment of the reasonable costs of having the Asset Plan supplied again.

Work to be carried out without interference or damage to Assets

Any work undertaken near the Assets, must be performed in a way that does not interfere with the reliability of or access to the Assets. Any work carried out that includes changing the surface level in any area where Assets are indicated must be carried out with care and you will be responsible for any damage caused through failure to exercise such care. TCCS may pursue the person or organisation responsible for causing any damage or interference to the Assets.

TPG Telecom Limited
ABN 76 096 304 620
Level 1, 177 Pacific Hwy
North Sydney NSW 2060
Phone: 1800 786 306 (24hrs)

Date: 25/04/2024

Enquirer Name:John Samoty
Enquirer Address:28 Barrallier Street
Email: john.samoty@jpsengineering.com.au
Phone: +

Dear John Samoty

The following is our response on behalf of each of the TPG carriers (listed below) to your Before You Dig Australia enquiry – Sequence 238420543

It is provided to you on a confidential basis under the following conditions and must be shredded or securely disposed of after use.

Assets Affected: 97 Georgina Crescent Kaleen

Carriers (each a "TPG carrier") and assets affected:

TransACT

Location:

According to our records, the underground assets in the vicinity of the location stated in your enquiry are **AFFECTED**. Please read the below information and disclaimers in addition to the any attached plans provided prior to any construction activities.

IMPORTANT INFORMATION

- The information provided is valid for 30 days from the date of this response. If your work site area changes or your construction activity is beyond 30 days please contact Before You Dig Australia on 1100 or www.1100.com.au to re-submit a new enquiry.
- Due to the nature of underground assets and the age of some assets and records, our plans are indicative of the general location only and may not show all assets in the location. You should not solely rely on these plans when undertaking construction works. It is also inaccurate to assume depth or that underground network conduit and cables follow straight lines, and careful on-site investigations are essential to locate an asset's exact position prior to excavation. It is your responsibility to locate and confirm the exact location of our infrastructure using non-destructive techniques. We make no warranty or guarantee that our plans are complete, current or error free, and to the maximum extent permitted by law we exclude all liability to you, your employees, agents and contractors for any loss, damage or claim arising out of or in connection with using our plans.
- Please note that some of our conduits carry electrical cables and gas pipes. Please exercise extreme care when working within the vicinity of these conduit and take into account the minimum clearance distances under Duty Of Care below.
- You (and your employee and contractors) must not open, move, interfere, alter or relocate any of our assets without our prior approval.
- **Note** It is a criminal offence under the *Criminal Code Act 1995 (Cth)* to tamper or interfere with communication facilities owned by a carrier. Heavy penalties may apply for breach of this prohibition, and any damages suffered, or costs incurred by us as a result of such unauthorised works may be claimed against you.

DAMAGE

- You must report immediately any damage to our network on **1800 786 306** (24hrs). We will hold you liable and seek compensation for any loss or damage to our network, our property and our customers that is caused by or arises out of your activities.

DUTY OF CARE

You have a duty of care to carefully locate, validate and protect our assets when carrying out works near our infrastructure. For construction activities that may impact on or interfere with our network, you will need to call us on **1800 786 306** to discuss a suitable engineering solution, lead time and cost involved. The below precautions must be taken when working in the vicinity of our network:

- Contact us on **1800 786 306** to discuss and obtain relevant information and plans on our infrastructure in a particular location if the information provided in this response is insufficient.
- Physically locate and mark on-site our network infrastructure using non-destructive techniques i.e. pot holing or hand digging every 5 metres prior to commencing any construction activities. Assets located must be marked to AS5488 standard. **NO CONSTRUCTION WORK IS ALLOWED UNTIL THIS STEP IS COMPLETED**. You must use an approved telecommunications accredited locator, or we can provide a locator for you at your expense. If we provide you with a locator, and this locator attended the site and is proven to be grossly negligent in physically locating and marking our infrastructure, then to the extent any TPG carrier is liable for this locator's negligence, acts and omissions, the total liability aggregated for all TPG carriers is limited, at our option, to attend the site and re-mark the infrastructure or to pay for a third party to re-mark the infrastructure.
- If you require us to locate or monitor our infrastructure, please allow five business days' notice for us to respond.
- Ensure all information, including our network requirements and any associated plans provided by us are kept confidential and remain on-site throughout your construction works.

- Use suitably qualified and supervised professionals, particularly if you are working near assets that contain electricity cables or gas pipes.

- Ensure the below minimum clearance distances between the construction activities and the actual location of our assets are met. If you need clearance distances for our above ground assets, or if the below distances cannot be met, call **1800 786 306** to discuss.

  Minimum assets clearance distances.

  - 300mm when laying asset inline, horizontal or vertical.
  - 1000mm when operating vibrating equipment. Eg: vibrating plates. No vibrating equipment on top of asset.
  - 1000mm when operating mechanical excavators or jackhammers/pneumatic breakers.
  - 2000mm when performing directional bore in-line, horizontal and vertical.
  - No heavy vehicle over 3 tonnes to be driven over asset with less than 600mm of cover.

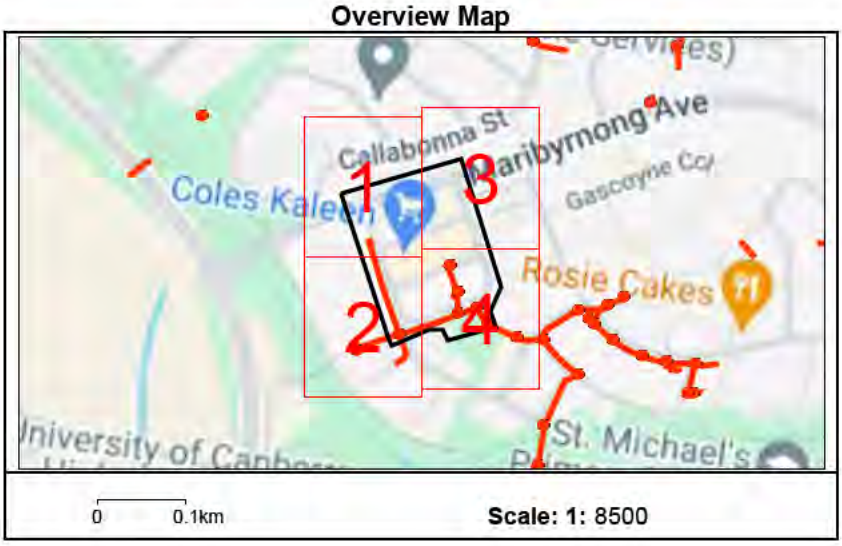
- Reinstate exposed TPG network infrastructure back to original state.

PRIVACY & CONFIDENTIALITY

- Privacy Notice – Your information has been provided to us by Before You Dig Australia to respond to your Before You Dig Australia enquiry. We will keep your personal information in accordance with TPG's privacy policy, see www.tpg.com.au/about/privacy.

- Confidentiality – The information we have provided to you is confidential and is to be used only for planning and designing purposes in connection with your Before You Dig Australia enquiry. Please dispose of the information by shredding or other secure disposal method after use. We retain all intellectual property rights (including copyrights) in all our documents and plans.

Overview Map



TPG Telecom Limited

Enquiry Number: 238420543

Map Sheet: 1

Scale: 1: 750

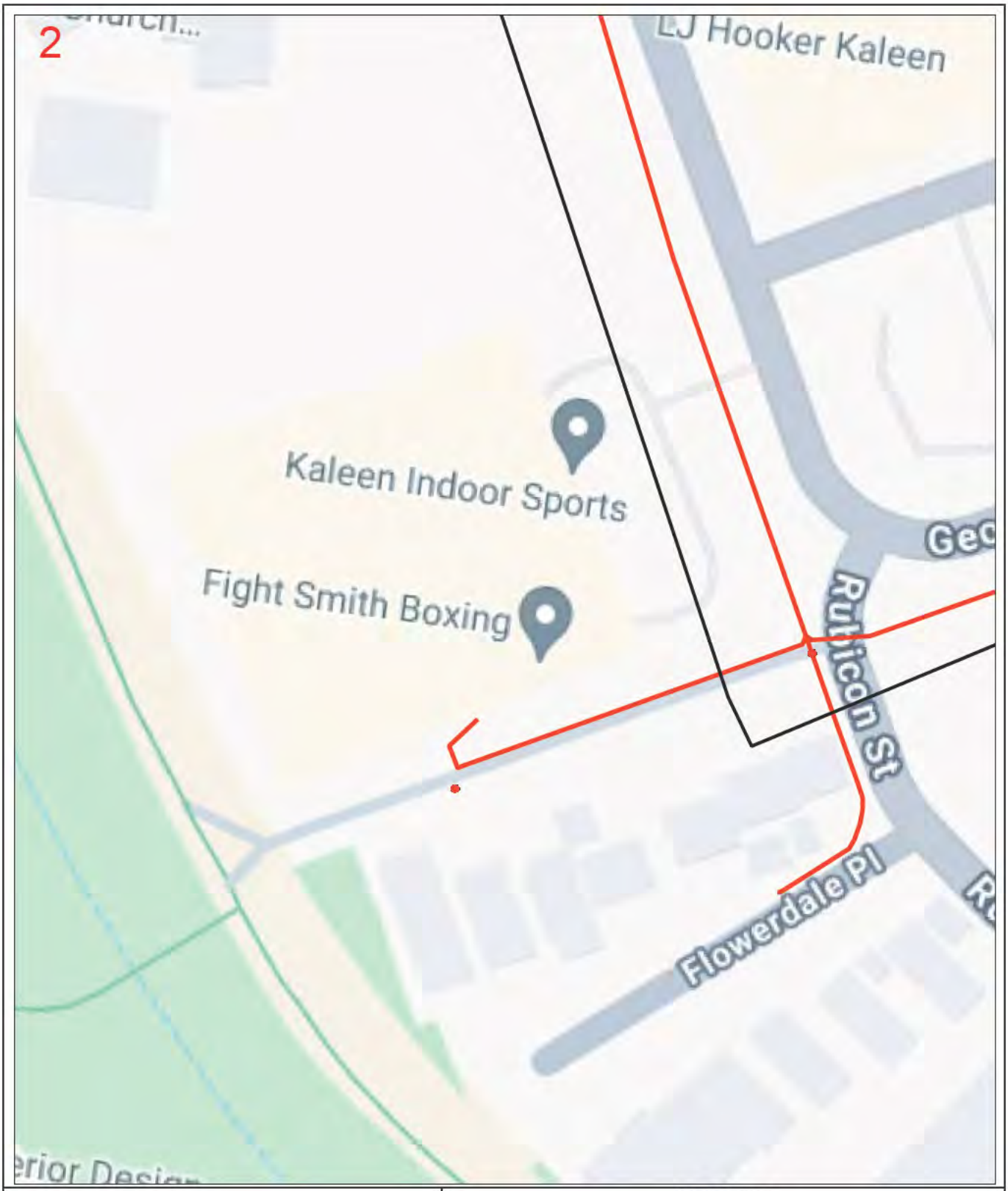
0 0.008km

N

LEGEND

BYDA Work Area

AAPT/PowerTel Pit		TransACT Pit	
AAPT/PowerTel Duct		TransACT Duct	
DDA Pit		SOUL Pattinson Telecoms Pit	
DDA Duct		SOUL Pattinson Telecoms Duct	
Agile/Adam Pit		PIPE Networks Pit	
Agile/Adam Duct		PIPE Networks Duct	



Enquiry Number: 238420543

Map Sheet: 2

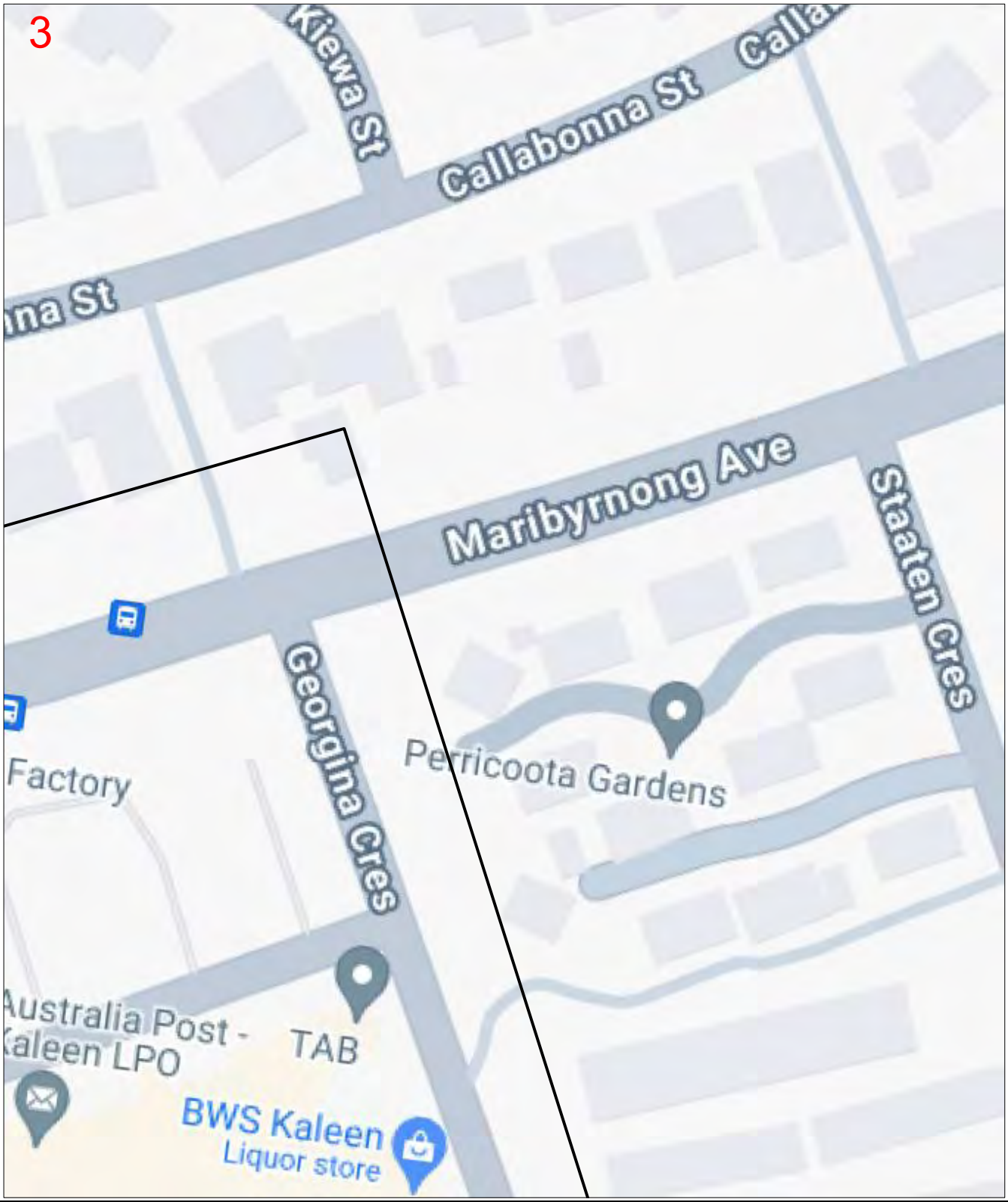
Scale: 1: 750

0 0.008km

N

LEGEND

BYDA Work Area			
AAPT/PowerTel Pit		TransACT Pit	
AAPT/PowerTel Duct		TransACT Duct	
DDA Pit		SOUL Pattinson Telecoms Pit	
DDA Duct		SOUL Pattinson Telecoms Duct	
Agile/Adam Pit		PIPE Networks Pit	
Agile/Adam Duct		PIPE Networks Duct	



Enquiry Number: 238420543

Map Sheet: 3

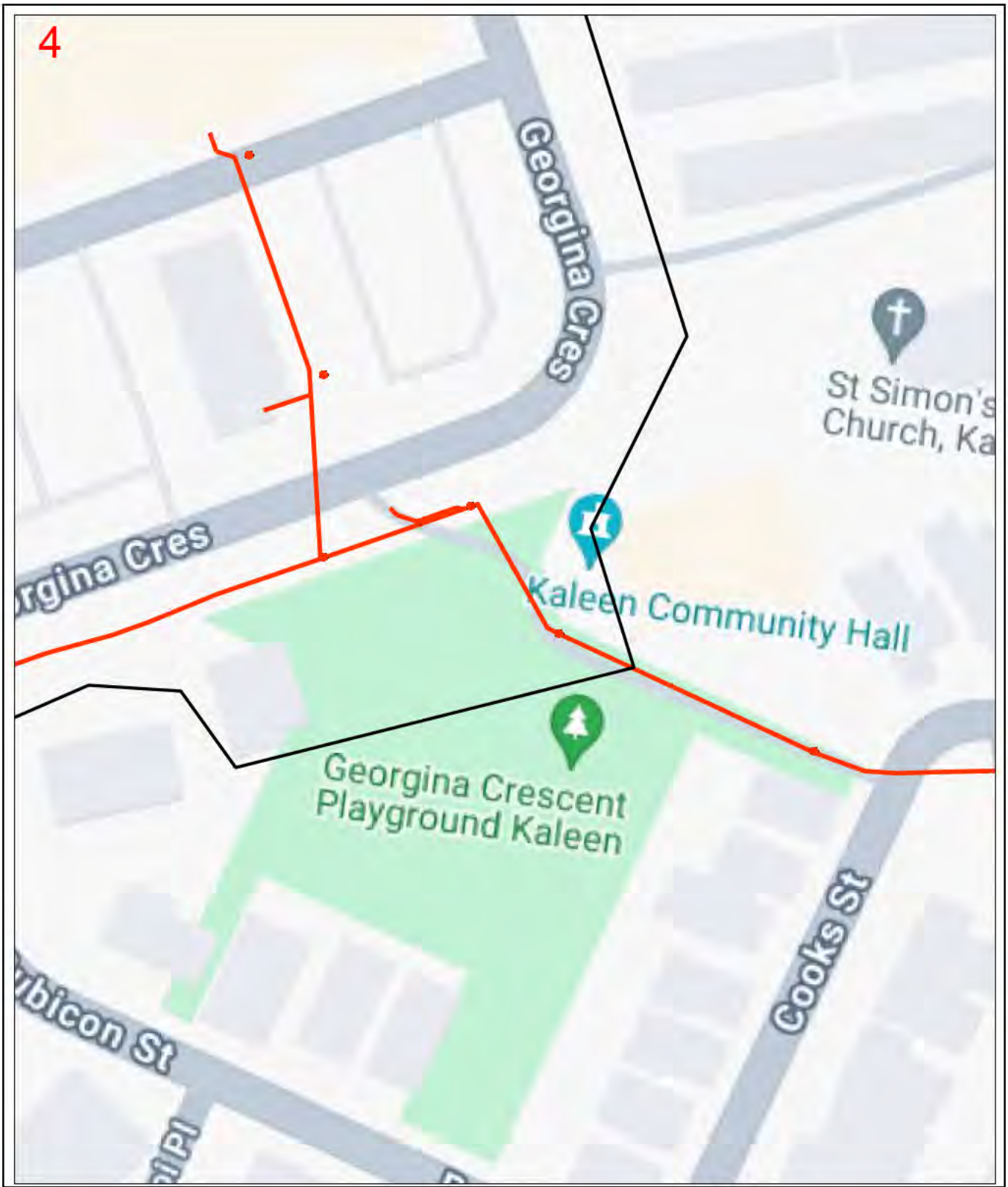
Scale: 1: 750

0 0.008km

N

LEGEND

BYDA Work Area			
AAPT/PowerTel Pit		TransACT Pit	
AAPT/PowerTel Duct		TransACT Duct	
DDA Pit		SOUL Pattinson Telecoms Pit	
DDA Duct		SOUL Pattinson Telecoms Duct	
Agile/Adam Pit		PIPE Networks Pit	
Agile/Adam Duct		PIPE Networks Duct	



Enquiry Number: 238420543

Map Sheet: 4

Scale: 1: 750

0 0.008km

N

LEGEND

BYDA Work Area			
AAPT/PowerTel Pit		TransACT Pit	
AAPT/PowerTel Duct		TransACT Duct	
DDA Pit		SOUL Pattinson Telecoms Pit	
DDA Duct		SOUL Pattinson Telecoms Duct	
Agile/Adam Pit		PIPE Networks Pit	
Agile/Adam Duct		PIPE Networks Duct	

Cable Plan

Report Damage: https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment Ph - 13 22 03 Email - Telstra.Plans@team.telstra.com Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries	Sequence Number: 238420544
TELSTRA LIMITED A.C.N. 086 174 781	Please read Duty of Care prior to any excavating
Generated On 25/04/2024 18:26:07	

WARNING
Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information.
As such,Telstra supplied location information is indicative only.Spatial accuracy is not applicable to Quality Level D.
Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it.
Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy.
Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work.
A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.

See the Steps- Telstra Duty of Care that was provided in the email response.

Certified Locating Organisations (CLO)

Find the closest CLO to your worksite on: https://dbydlocator.com/certified-locating-organisation/

Read the disclaimer and click: Accept and Search Now

A national map and an A-Z list of Certified Locating Organisations is displayed.

Use the map to zoom to your work area and choose the closest Locator indicated.

OR search by entering the **postcode** of your work area.

1. **Enter the post/zip code**
2. **Choose your search radius**
3. **Click filter** (If there is no result, you may have to increase the search radius)
4. **Click on the closest for CLO details or view the results displayed below the map**

Locator skills have been tested, and the Organisation has calibrated location and safety equipment.

Telstra is aware of each Certified Locating Organisation and their employee locators.

Only a DBYD Certified Locator registered with a Certified Locating Organisation is authorised to access Telstra network for locating purposes.

Each Certified Locator working for a CLO is issued with a photo ID Card, authorising them to access Telstra pits and manholes for the purpose of cable and plant locations.

Please ask to see your Locators' CLO ID Card.

Before You Dig Australia

Think before you dig

This document has been sent to you because you requested plans of the Telstra network through Before You Dig Australia (BYDA).

If you are working or excavating near telecommunications cables, or there is a chance that cables are located near your site, you are responsible to avoid causing damage to the Telstra network.

Please read this document carefully. Taking your time now and following the steps below can help you avoid damaging our network, interrupting services, and potentially incurring civil and criminal penalties.

Our network is complex and working near it requires expert knowledge. Do not attempt these activities if you are not qualified to do so.

Useful information

Further Information

Cable Plan enquiries
1800 653 935 (AEST business hours only)

Telstra.Plans@team.telstra.com

Information on how to find cables and request asset relocations:

https://www.telstra.com.au/consumer-advice/digging-construction

Opening Digital Plan Attachments. Asset Plan Readers:

PDF Adobe Acrobat Reader DC Install for all versions
DWF Map Files (all sizes over A3)
Autodesk Viewer (Browser) or
Autodesk Design Review (Microsoft Windows)

Report any damage immediately

https://www.telstra.com.au/forms/report-damage-to-telstra-equipment

13 22 03
If you receive a message asking for an account or phone number say
"I Don't have one"
Then say, "Report Damage" and listen to the prompts.

Relocating Telstra Assets

If your project requires the relocation of a Telstra asset, please contact the Telstra Network Integrity Group:

1800 810 443 (AEST business hours only)

NetworkIntegrity@team.telstra.com

Never try to move or alter our network infrastructure without authorisation. By law, only authorised people can work on our assets or enter a facility owned or operated by us. Any interference, including unauthorised entry or tampering, may result in legal action.

Certified Locating Organisation (CLO)

Engage a CLO

Find your Closest CLO to identify , validate and protect Telstra Assets before you commence you work.
https://dbydlocator.com/certified-locating-organisation/

Your checklist

1. Plan

Plan your work with the latest plans of our network.

Plans provided through the BYDA process are indicative only*.

This means the actual location of our asset may differ substantially from that shown on the plans.

Refer to steps 2 and 3 to determine actual location prior to proceeding with construction.

2. Prepare

Engage a DBYD Certified Locating Organisation (CLO) via dbydlocator.com to identify, validate and protect Telstra assets before you commence work.

3. Pothole

Validate underground assets by potholing by hand or using non-destructive vacuum extraction methods.

Electronic detection alone (step 2) is not deemed to validate underground assets and must not be used for construction purposes.

If you cannot validate the Telstra network, you must not proceed with construction.

4. Protect

Protect our network by maintaining the following distances from our assets:

- 1.0m Mechanical Excavators, Farm Ploughing, Tree Removal
- 500mm Vibrating Plate or Wacker Packer Compactor
- 600mm Heavy Vehicle Traffic (over 3 tonnes) not to be driven across Telstra ducts or plant
- 1.0m Jackhammers/Pneumatic Breakers
- 2.0m Boring Equipment (in-line, horizontal and vertical)

5. Proceed

You can proceed with your work only once you have completed all the appropriate preparation, potholing and protection.

Disclaimer and legal details

*Telstra advises that the accuracy of the information provided by Telstra conforms to Quality Level D as defined in AS5488-2013.

It is a criminal offence under the Criminal Code Act 1995 (Cth) to tamper or interfere with telecommunications infrastructure.

Telstra will also take action to recover costs and damages from persons who damage assets or interfere with the operation of Telstra's networks.

By receiving this information including the indicative plans that are provided as part of this information package you confirm that you understand and accept the risks of working near Telstra's network and the importance of taking all of the necessary steps to confirm the presence, alignments and various depths of Telstra's network. This in addition to, and not in replacement of, any duties and obligations you have under applicable law.

When working in the vicinity of a telecommunications plant you have a "Duty of Care" that must be observed. Please read and understand all the information and disclaimers provided below.

The Telstra network is complex and requires expert knowledge to interpret information, to identify and locate components, to pothole underground assets for validation and to safely work around assets without causing damage. If you are not an expert and/or qualified in these areas, then you must not attempt these activities. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers. Construction activities and/or any activities that potentially may impact on Telstra's assets must not commence without first undertaking these steps. Construction activities can include anything that involves breaking ground, potentially affecting Telstra assets.

If you are designing a project, it is recommended that you also undertake these steps to validate underground assets prior to committing to your design.

This Notice has been provided as a guide only and may not provide you with all the information that is required for you to determine what assets are on or near your site of interest. You will also need to collate and understand all of the information received from other Utilities and understand that some Utilities are not a part of the BYDA program and make your own enquiries as appropriate. It is the responsibility of the entities undertaking the works to protect Telstra's network during excavation / construction works.

Telstra owns and retains the copyright in all plans and details provided in conjunction with the applicant's request. The applicant is authorised to use the plans and details only for the purpose indicated in the applicant's request. The applicant must not use the plans or details for any other purpose.

Telstra plans or other details are provided only for the use of the applicant, its servants, agents, or Certified Locating Organisation. The applicant must not give the plans or details to any parties other than these and must not generate profit from commercialising the plans or details.

Telstra, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Telstra against any claim or demand for any such loss or damage.

Please ensure Telstra plans and information provided always remains on-site throughout the inspection, location, and construction phase of any works.

Telstra plans are valid for 60 days after issue and must be replaced if required after the 60 days.

Data Extraction Fees

In some instances, a data extraction fee may be applicable for the supply of Telstra information. Typically, a data extraction fee may apply to large projects, planning and design requests or requests to be supplied in non-standard formats. For further details contact Telstra Planned Services.

Telstra does not accept any liability or responsibility for the performance of or advice given by a Certified Locating Organisation. Certification is an initiative taken by Telstra towards the establishment and maintenance of competency standards. However, performance and the advice given will always depend on the nature of the individual engagement.

Neither the Certified Locating Organisation nor any of its employees are an employee or agent for Telstra. Telstra is not liable for any damage or loss caused by the Certified Locating Organisation or its employees.

Once all work is completed, the excavation should be reinstated with the same type of excavated material unless specified by Telstra

The information contained within this pamphlet must be used in conjunction with other material supplied as part of this request for information to adequately control the risk of potential asset damage.

When using excavators and other machinery, also check the location of overhead power lines.

Workers and equipment must maintain safety exclusion zones around power lines

WARNING: Telstra plans and location information conform to Quality Level 'D' of the Australian Standard AS 5488 - Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans. FURTHER ON SITE INVESTIGATION IS REQUIRED TO VALIDATE THE EXACT LOCATION OF TELSTRA PLANT PRIOR TO COMMENCING CONSTRUCTION WORK. A plant location service is an essential part of the process to validate the exact location of Telstra assets and to ensure the assets are protected during construction works. The exact position of Telstra assets can only be validated by physically exposing them. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.

Privacy Note

Your information has been provided to Telstra by BYDA to enable Telstra to respond to your BYDA request. Telstra keeps your information in accordance with its privacy statement. You can obtain a copy at www.telstra.com.au/privacy or by calling us at 1800 039 059 (business hours only).

OPENING ELECTRONIC MAP ATTACHMENTS -

Telstra Cable Plans are generated automatically in either PDF or DWF file types, dependent on the site address and the size of area selected. You may need to download and install free viewing software from the internet e.g.

DWF Map Files (all sizes over A3)

Autodesk Viewer (Browser) (https://viewer.autodesk.com/) or

Autodesk Design Review (http://usa.autodesk.com/design-review/) for DWF files. (Windows PC)

PDF Map Files (max size A3)

Adobe Acrobat Reader (http://get.adobe.com/reader/)

Telstra BYDA map related enquiries email

Telstra.Plans@team.telstra.com

1800 653 935 (AEST Business Hours only)

REPORT ANY DAMAGE TO THE TELSTRA NETWORK IMMEDIATELY

Report online - https://www.telstra.com.au/forms/report-damage-to-telstra-equipment

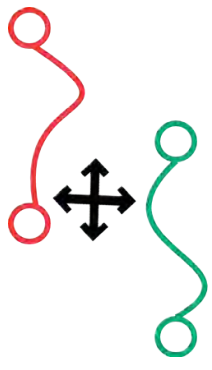
Ph: **13 22 03**

If you receive a message asking for a phone or account number say:

"I don't have one" then say "Report Damage" then press 1 to speak to an operator.

Telstra New Connections / Disconnections

13 22 00



Telstra asset relocation enquiries: 1800 810 443 (AEST business hours only).

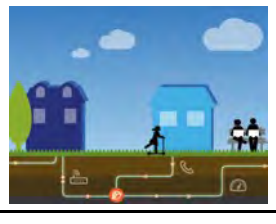
NetworkIntegrity@team.telstra.com

https://www.telstra.com.au/consumer-advice/digging-construction

Certified Locating Organisation (CLO)

https://dbydlocator.com/certified-locating-organisation/

Please refer to attached Accredited Plant Locator.pdf



Telstra Smart Communities
Information for new developments (developers, builders, homeowners)
https://www.telstra.com.au/smart-community

LEGEND

For more info contact a Certified Locating Organisation or Telstra Plan Services 1800 653 935

Exchange
(Major Cable Present)

Footway Access Chamber
(can vary from 1-lid to 12-lid)

or

Pillar / Cabinet
(above ground / free standing)

Above ground complex equipment housing (eg RIM)
Please Note: This equipment is powered by 240V Electricity

OC — Other Carrier Telecommunications Cable/Asset

Distribution cables in Main Cable ducts

Dist

Main Cable ducts on a Distribution plan

MC

Blocked or damaged duct.

P20 — Roadside / Front Boundary

2 pair lead-in to property from pit in street 1

O59 — pair working (pair ID 059)

1 DEAD — 1 pair dead (i.e. spare, not connected)

Side / Rear Property Boundary

Property Number

Single to multiple round conduit
Configurations 1,2,4,9 respectively

P100

(attached text denotes conduit type and size)

Multiple square conduit
Configurations 2, 4, 6 respectively

E85

(attached text denotes conduit type and size)

Cable Jointing Pit
(number / Letter indicating Pit Type)

EJ — Elevated Joint

(above ground joint on buried cable)

Telstra Plant in shared Utility trench

Aerial Cable / Overhead (includes on wall)

Aerial Cable
(attached to joint Use Pole e.g. Power)

Direct Buried Cable

T or TR — Marker Post Installed / Buried Transponder

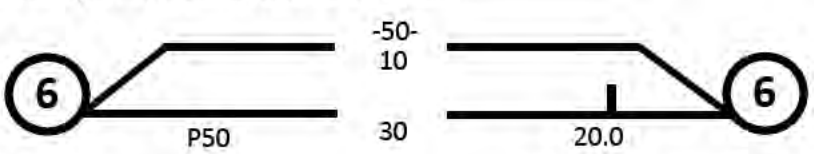
MT — Marker Post, Transponder

SMOF — Optical Fiber cable direct buried

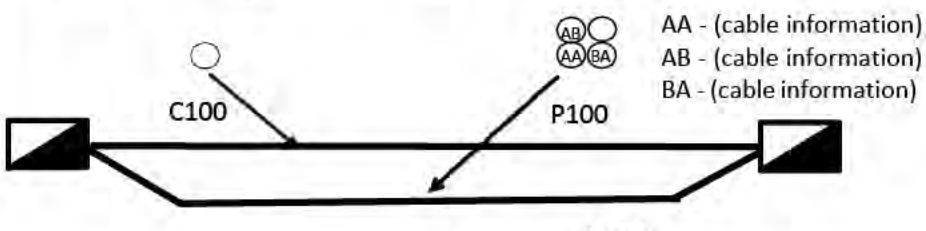
Some examples of conduit type and size:

A - Asbestos cement, P - PVC / Plastic, C - Concrete,
GI - Galanised iron, E - Earthenware
Conduit sizes *nominally* range from 20mm to 100mm
P50 50mm PVC conduit
P100 100mm PVC conduit
A100 100mm asbestos cement conduit

Some Examples of how to read Telstra Plans



One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits. approximately 20.0m apart, with a direct buried 30-pair cable along the same route



Two separate conduit runs between two footway access chambers (manholes) approximately 245m apart A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100)

Asset location information

Applicant/Contractor **Job No.** 36545641 **DBYD Sequence No.** 238420545

Company: JPS Engineering Consultants
Contact: John Samoty
Telephone: +61
Address: 28 Barrallier Street Griffith ACT 2603

Work Details

Suburb: Kaleen
Address: 97 Georgina Crescent

Description:

Enquiry Date: 25-Apr-2024 Issue Date: 25-Apr-2024

WARNING – HIGH PRESSURE GAS PIPELINE IN THE VICINITY

The records of Evoenergy Gas Networks indicate that High Pressure Underground Assets/Pipes ARE present in the vicinity of and/or surrounding area of the above enquiry. Please read all the information and conditions below and overleaf.

No excavations within 15 metres of this asset are permitted without the prior approval of Zinfra PHONE 1300 503 237

IN THE EVENT OF A GAS EMERGENCY CALL 13 19 09 (24 hours)

CONDITIONS FOR WORKS IN THE VICINITY OF EVOENERGY GAS NETWORK ASSETS

Any information provided is valid only for 90 days from the date of issue. If the work operation extends beyond this period, or if the designs are altered in any way, you are requested to re-submit your proposal for re-assessment.

Consistent with the requirements of Part 2 General – Section 8 of the Utility Networks (Public Safety) Regulations 2001 No. 28, Evoenergy require that:

- The requestor shall ensure that all workers on site are aware of the presence of natural gas.
- The requestor shall ensure that under no circumstances will mechanical excavation be carried out within 1.0 metres of a gas main without there being a Zinfra Representative on site.
- The requestor shall be responsible to maintain the presence / visibilities of all gas markings.
- **No live or Isolated gas pipes shall be cut, altered or removed without APPROVAL from Zinfra.**

Note: Individual customer gas connections are generally not shown on the accompanying maps. For information regarding individual gas connections we recommend that you request a site meeting / inlet service location.

You can obtain additional information or arrange a site meeting by contacting Zinfra on **1300 503 237. Note that 24 hours notice is required for site meetings.**

Please read the following important information (overleaf)

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step

evoenergy

1. High Pressure Pipelines

No excavations or heavy construction are permitted within 15m of these pipelines without notification to and authorisation from Jemena. If separation distance is 15m or less, you are required to notify Jemena of your works.

Prior to commencing works near or over the High Pressure Gas Mains you must supply Jemena with your proposal of works including design plans. You must allow four weeks for Jemena to review your works. Please mail your proposed works details to:

Jemena Asset Management Pty Ltd
Land Services Dept
PO Box 1220
North Sydney, NSW, 2059

or email: land.services@jemena.com.au

Once Jemena has reviewed your proposal and design plans and you have received Jemena's approval to proceed, you must organise for a Pipeline Technician to be on Stand-by during your works (charges may apply).

To arrange for a Pipeline Technician to be on site please call the High Pressure Coordinator on **1300 503 237** two working days prior to the works commencing.

2. High Pressure Steel and Large Diameter Medium Pressure Plastic Pipelines

You **must** contact a Pipeline Technician to conduct a survey **before** commencing any work in this area. You can arrange a survey by contacting the High Pressure Response Coordinator on **1300 503 237. Please note that two working days notice is required to arrange a survey.** For all works in the vicinity of High Pressure Gas Mains you are required to arrange for a Pipeline Technician to attend. Charges apply for attendance of any works outside the hours of 7am to 4pm, Monday to Friday ("Standard Business Hours") and for any attendance during Standard Business Hours that is longer than 2 hours.

WARNING. It is essential that ALL these documents be handed to the principal contractor carrying out the work. A photocopy may be taken for office records. All documents must be on site at the time of excavation. The information provided is to be used as guide only and does not absolve third parties in their "Duty of Care" obligations to take additional precautions where the work has the potential to impact on gas assets and the safety of people.

All work that may impact upon the Evoenergy Gas Network should be carefully planned with notification to Jemena (Zinfra) well in advance of commencement. This includes excavation of gas pipelines, crossings of pipelines by other underground infrastructure (drains, power cables, etc), road works or structural installations.

Evoenergy plans have been provided to show the position of underground gas mains and equipment in public gazetted roads only. Individual customers' services are not generally included on these plans. These plans have been prepared solely for Evoenergy's own use and indicate the position of underground mains and installations relative to boundaries and kerbs as at the time the mains were installed, and do not necessarily reflect any subsequent changes eg: changes to road alignments.

Evoenergy and / or Jemena (Zinfra) will accept no liability for inaccuracies in the information or lack of information on such plans for any cause whatsoever arising. Persons excavating or carrying out other earthworks will be held responsible for any damage caused to underground mains and equipment, and the costs associated with replacement or repair.

Please note that the information contained on the map provided is not a method of determining gas availability for the purposes of connection to a natural gas supply. Please contact a gas retailer to determine the availability of gas as an energy source.

IN THE EVENT OF A GAS EMERGENCY CALL 13 19 09 (24 hours)

Extinguish all sources of ignition and keep the area clear of all persons. Any attempt by third parties to repair damaged gas mains or services may result in prosecution under the Utility Networks (Public Safety) Regulations 2001.

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step

evoenergy

Asset location information

evoenergy

Applicant/Contractor **Job No.** **36545641** **BYDA Sequence No.** **238420545**

Company: JPS Engineering Consultants
Contact: John Samoty
Telephone: +61
Address: 28 Barrallier Street Griffith ACT 2603

Work Details

Suburb: Kaleen
Address: 97 Georgina Crescent

Description:

Enquiry Date: 25-Apr-2024 Issue Date: 25-Apr-2024

High pressure critical gas network assets detected within your search area
As High Pressure critical gas assets are present, you must not commence any works without first emailing Jemena Land Services at lands@jemena.com.au (see Item 13 in the Disclaimer).

Check for underground transmission line assets within your search area
Check the attached map for the location of underground transmission lines. If the map indicates there are underground transmission lines in the vicinity of the search area, you must not commence any works without first contacting Evoenergy (see Item 15 in the Disclaimer).

Information

The approximate location of Evoenergy or Icon Water assets in the area-of-enquiry are shown on the attached maps. Review all attached maps to check for utility assets in your work area.

Please refer to your Before You Dig Australia (BYDA) enquiry information to ensure you have received asset maps from all relevant utility owners before you commence work. There may be additional pages attached dependent on what assets are found in the area; and maps might be on pages of different sizes.

Individual customer gas connections are generally not shown on any attached Evoenergy Gas Network map. For information regarding individual gas connections we recommend you request a site meeting / inlet service location as per Item 7 in the Disclaimer.

This information is valid from **25-Apr-2024** to **25-Jul-2024**

In case of an emergency or to report damage
13 10 93 electricity | **02 6248 3111** water & sewer | **13 19 09** gas

Please read the following important information (overleaf)

BEFORE YOU DIG www.byda.com.au

evoenergy | icon WATER

Disclaimer

1. General location only

The Applicant acknowledges that:

a. while Icon Water and Evoenergy have used reasonable endeavours to keep Asset location records current, neither party makes any warranty, guarantee or representation as to the accuracy, currency or completeness of the information contained in the attached Asset Plans.

b. Asset Plans:

   i. may not show all assets in the work area;

   ii. show only the general and approximate location of Assets;

   iii. may show the position of Assets relative to fences, buildings, property lines, kerbs and/or other points of reference that existed at the time the Assets were installed. Any subsequent alterations to those fences, buildings etc may not have been updated on the Asset Plans. Persons should not rely on such things as a point of reference to estimate location of the Assets.

2. Limitation of liability

To the maximum extent permitted by law:

a. subject to paragraph 2(b), Icon Water, Jemena and Evoenergy and the officers, employees and agents of each accept no responsibility or liability for any loss, damage, liability, cost, expense, claim or proceeding of whatever nature and howsoever arising, incurred by or awarded against the Applicant or its officers, employees, agents, contractors or subcontractors, arising out of, connected with or as a consequence of use of the Asset Plans or any inaccuracies in the Asset Plans;

b. where:

   i. a Jemena or Evoenergy representative has, at the Applicants request, attended the work site to mark the location of Assets prior to commencement of any works on the work site, and

   ii. the Jemena or Evoenergy representative has been proven to be negligent in marking the Asset location

then Icon Water, Jemena and Evoenergy's liability, and the liability of the officers, employees and agents of each, is limited, at Icon Water / Jemena / Evoenergy's option, to re-attending the work site to re-mark the Asset location or paying the costs of having a third party attend the work site to re-mark the Asset location.

3. Evoenergy Authorisation and Accreditation for Working on or near the Electricity Network

Accreditation is the process of ensuring that a company or person, wishing to carry out work on or near Evoenergy electricity network, has the necessary level of skills, resources and insurance to undertake the work in a safe and reliable way. Evoenergy has obligations under the Utilities (Management of Electricity Network Assets Code) Determination 2013 to ensure that anyone working on or near its electricity network is adequately and safely trained. Evoenergy takes these obligations seriously.

Anyone working on or near Evoenergy's electricity network must have the appropriate accreditation and authorisation to do so prior to commencing works.

To gain authorisation to work on or near the electricity network you will need to:

1. Ensure you or your company is accredited with Evoenergy by making an application with Evoenergy. The application form can be found on the Evoenergy website: www.evoenergy.com.au
2. Wait for Evoenergy to assess your application and notify you of the outcome.
3. Receive your Compliance tool login and QR code from Evoenergy as proof of authorisation. The QR code is required to be available at all times when working on or near the network.

For further information contact:
accreditations@evoenergy.com.au

4. Electricity cables to be treated as LIVE

ALL electricity cables and conductors identified on the attached Asset Plans, including those marked as 'Abandoned', **MUST** be treated as 'LIVE' and dangerous until such time that they are tested and proven to be 'DE-ENERGISED'. Evoenergy recommends that cables identified as 'Abandoned' and which may be impacted, severed, damaged and/or removed by excavation works be proven 'DE-ENERGISED' and safe before commencing full-scale excavations.

5. Location of Assets may change

Assets may be moved, or additional Assets may be installed at any time. Persons using the attached Asset Plans are advised to be alert for changed locations or new installations performed after the Issue Date. If work extends for a period of 3 months beyond the Issue Date, a new application MUST be made to Before You Dig Australia for up to date Asset Location Information.

6. Work to be undertaken without interference or damage to assets

Any work undertaken near Assets, including without limitation excavation, structures, material storage, heavy vehicle parking, blasting or change of surface level, must be performed in a way that does not interfere with the reliability of, or access to Icon Water or Evoenergy Assets, including electricity lines or plant. Persons excavating are required to exercise care if Assets are indicated on Asset Plans and will be held responsible for any damage caused through failure to exercise such care. Icon Water or Evoenergy (as applicable) will pursue the person responsible for causing the damage or interference to their Assets to recover costs and expenses incurred in remedying such damage or interference.

7. Asset location marking

You may request our representative to visit the work site to mark the approximate location of Assets by calling **02 6293 5770** (Water and Electricity – excluding streetlight assets) or **1300 503 237** (Gas) between 7:30 am and 4 pm. Irrespective of any mandatory directions given in this notice, Evoenergy recommends that a site visit be conducted before commencing any works near Assets. Appointments will be accepted only if the Asset Location Information Sequence

Number is supplied. The location and marking of Assets will not take place unless the Asset Location Advice and attached Asset Plans are in colour and to the same scale as supplied, and are at the work site. Evoenergy does not charge for these site visits. Alternatively, the Applicant may wish to engage a private underground Asset locator, at the Applicant's expense.

You are responsible for maintaining the presence / visibility of all markings and to ensure that all workers on site are aware of:

- the presence of Icon Water / Evoenergy infrastructure in the vicinity of the intended work and
- Icon Water, Jemena and Evoenergy's requirements.

NB: Arranging for marking of approximate Asset locations by either an Evoenergy representative or private underground asset locator will not relieve the Applicant and persons working on their behalf of responsibility to exercise care when working near Evoenergy / Icon Water Assets or for any damage they cause to Evoenergy / Icon Water Assets while performing works.

8. Underground Assets must be located by potholing

Potholing or other non-destructive techniques must be used until underground Assets are located. When located, excavation may commence provided that persons carrying out the excavation work must follow Evoenergy's recommended specifications concerning minimum safety distances when excavating within the vicinity of Icon Water or Evoenergy's networks. Unless otherwise approved by Jemena, **under no circumstances can mechanical excavation be carried out within 1.0 metres of a gas main without a Jemena Representative on site.**

9. Water, Sewer and Effluent Mains

Icon Water requires mandatory supervision by authorised Icon Water personnel when potholing and excavating within the vicinity of critical water and sewer network assets (as determined by Icon Water) or Icon Water mains with a diameter of 300mm and above. **All effluent mains are classified as critical assets.**

To arrange an inspection or for any emergency please call Icon Water **02 6248 3111**.

10. Substation Earthing Conductors

The information does not include details of substation earthing conductors. These are installed within the vicinity of pole and ground mounted substations. Earthing conductors extend 1.0m in each direction from the substation. However, please be aware that site-specific requirements mean earthing conductors may be installed beyond this distance. Further information can be provided upon request.

11. Indications of the Presence of Cables

The presence of cables or conduits may be indicated by the following warning and marking devices

- Letter "E" inscriptions on Kerbs or "Electrical" inscriptions on pit lids
- Danger signs on above ground posts, walls etc
- Thin Orange "Caution Electrical Cables" Warning Tape
- Orange /Black PLASTIC Polymeric slab (3-6mm thick x 200mm wide)
- Concrete Bricks or slabs (approx 200mm x 500mm)
- Orange PVC or white Asbestos Cement (AC) Conduit or Galvanized Pipe
- Cylindrical concrete "ACTEA Electric Cable" markers
- Weak Concrete encasement directly around cables / conduits
- Texture/ colour change of excavated material (bedding sand, cracker dust, clean fill)

Note that some cables may have been installed without the presence of such marking devices.

12. Gas mains

a. Evoenergy gas mains are managed by Jemena Asset Management Pty Ltd and operated by Zinfra.

b. Mandatory stand-by / supervision by Zinfra personnel is required when excavating within the vicinity of critical gas network assets OR where mechanical excavation is required within 1.0 metres of the gas network. Your activity around critical gas assets will be supervised by Zinfra at no charge for the first two hours. This supervision is to ensure the integrity of Evoenergy's assets is maintained.

Note: Charges may apply if stand-by is required for longer than two hours.

Please contact Zinfra on **1300 503 237** between 7.30 am and 4 pm if you require a stand-by person.

13. High Pressure Gas Network Assets

You must supply Jemena with your proposal of works including a written outline of your works and design plans for review. It may take up to four weeks for Jemena to review your works proposal. Following review, we will advise you of Jemena's requirements for protecting the High Pressure gas main. Please mail your proposed works details to:

Jemena Asset Management Pty Ltd
Attention: Land Services Department
PO Box 1220 North Sydney NSW 2059

or email lands@jemena.com.au

Please note that a duty of care exists to ensure that this gas main is not compromised or damaged during future development or construction work.

14. Streetlight Assets

Streetlight assets in the ACT are owned and maintained by the ACT Government. You expressly acknowledge and agree that

a. Evoenergy does not maintain streetlight asset information; and

b. any such information provided by Evoenergy may not be up to date, reliable or complete and is provided strictly on an "as is" basis without any warranty of any kind. Please contact Access Canberra on **13 22 81** during business hours if you require further information.

15. Underground Transmission Line Assets

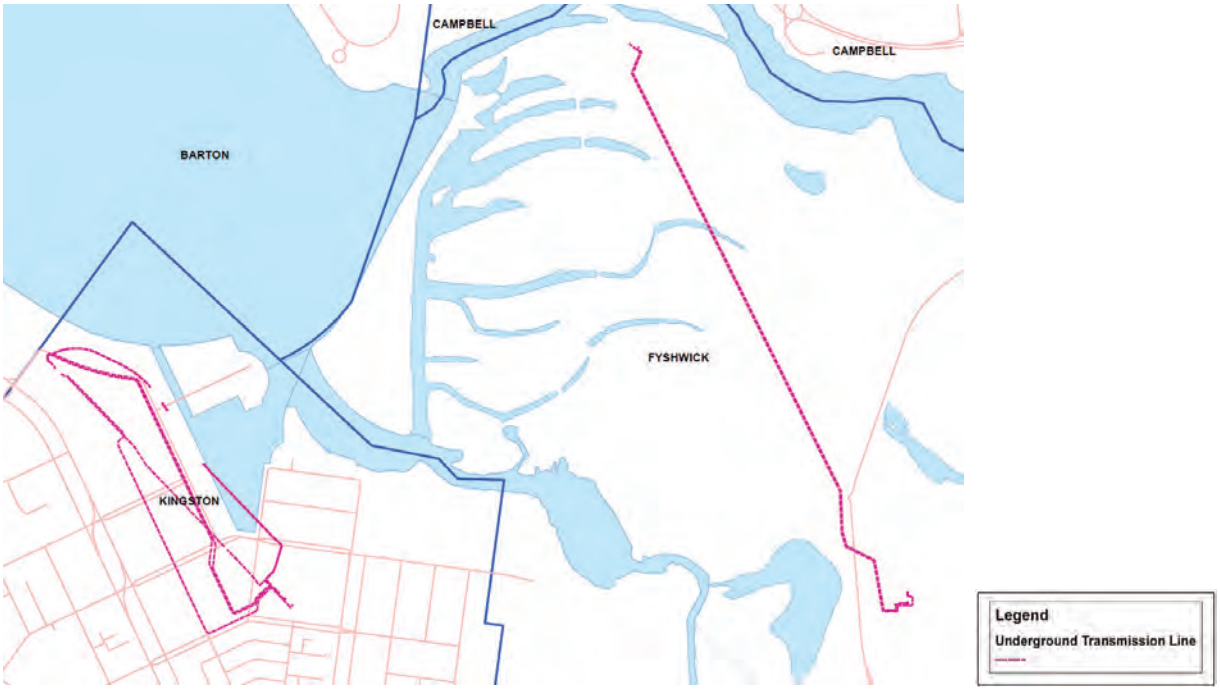
You must supply Evoenergy with your proposal of works including a written outline of your works and design plans for review.

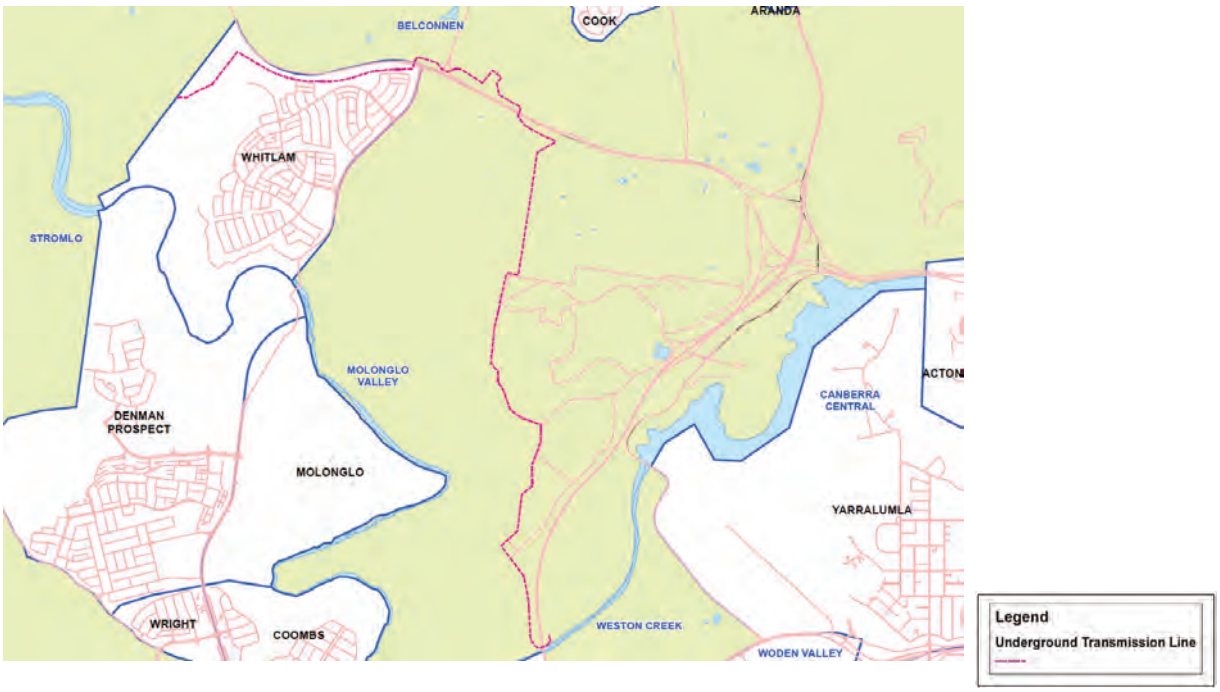
It may take up to four weeks for Evoenergy to review your works proposal. Following review, we will advise you of Evoenergy's requirements for protecting the Underground Transmission Line Assets.

Please email your proposed work details to:
Network.ConnectionAdvice@evoenergy.com.au

Please note that a duty of care exists to ensure that this Electrical Asset is not compromised or damaged during future development or construction work.

THIS DOCUMENT AND ASSOCIATED ASSET PLANS MUST BE KEPT AT THE WORK SITE.





Icon Water: Effluent Re-use Network Legend

Hydrant

- OverheadFillingPoint
- MillCock
- PillarHydrant
- HighCapacity
- SpringHydrant

Fitting

- Outlet
- Inlet
- Blank Flange
- Dual Service Tee
- End Cap
- Gibault Joint
- Maintenance Hole
- Open End
- Orifice Plate
- Reducer
- Tapping Band Bend

Service Connection (Meter)

- Flow Element
- Billing Large Diameter
- Billing Small Diameter

TestStation

- Flow Recording Device
- Sampling Point

Pump

- Pump

SystemValve

- <all other values>
- Ball Valve
- Butterfly Valve
- Cone Valve
- Gate Valve
- Globe Valve
- Needle Valve
- Scour Valve

Control (Protection) Valve

- Double Check
- Reflux Valve
- Single Air Valve
- Double Air Valve
- Enhanced Double Air Valve
- Reduced Pressure Zone Valve
- Pressure Relief Valve
- Float Valve

CurbStop Valve

- Main Cock Valve
- Tapping Band Valve

ReservoirSupply

- ReservoirSupply

Main

- RisingMain
- BulkSupply
- DistributionMain
- Reticulation

Lateral Line

- Irrigation
- Wash Down
- Overflow
- Scour
- Drain

EffluentStructure

- Dam
- Pump Station
- Reservoir Structure
- Treatment Plant
- Valve Chamber

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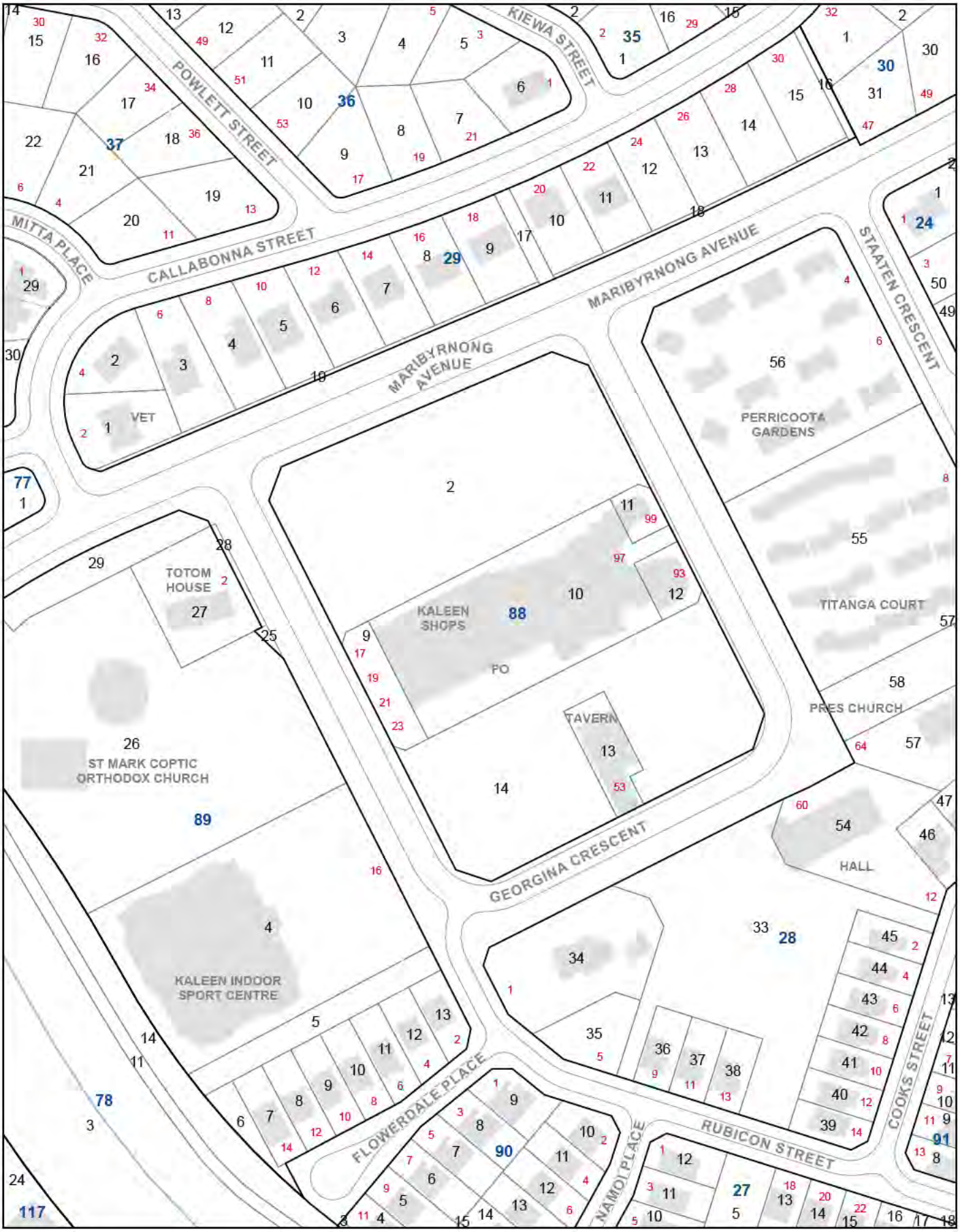
icon WATER



Seq #: 238420545

97 Georgina Crescent, Kaleen

Effluent Network

icon WATER

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Template: EffluentA4Portrait

Creation Date: 25-Apr-2024

ELECTRICITY NETWORK LEGEND

Support Structure (Distribution)
- Pole
- Streetlight-Only Pole

Support Structure (Transmission)
- Pole
- Tower
- Yard Structure

Underground Structure
- Pit

Recloser
- Recloser

Building
- Zone Building
- Standalone Chamber

Switches
- Air Break
- Load Break
- Overhead Link

Fuse
- Drop Out Fuse

Service Point
- Service Point

Streetlight
- Streetlight Controller

Joint
- Cable Joint

Underground Earth Cable
- Underground Earth Cable

Fibre Optic Cable
- Overhead Fibre Optic Cable
- Underground Fibre Optic Cable

Copper Communication Cable
- Pilot Cable

Streetlight
- Streetlight
- Streetlight Controller
- Streetlight Photoelectric Controller
- Other Streetlight Support
- Streetlight Column

Streetlight Cable
- Overhead Streetlight Line
- Underground Streetlight Line, In Service
- Underground Streetlight Line, Abandoned

Transmission Line
- Overhead Transmission Line
- Underground Transmission Line, In Service
- Underground Transmission Line, Abandoned

HV Electric Lines
- Overhead HV Electric Line
- Underground HV Electric Line, In Service
- Underground HV Electric Line, Abandoned

LV Electric Lines
- Overhead LV Electric Line

Underground LV Electric Line <= 50 mm
- Underground LV Electric Line, In Service
- Underground LV Electric Line, Abandoned

Underground LV Electric Line > 50 mm
- Underground LV Electric Line, In Service
- Underground LV Electric Line, Abandoned

Service Lines
- Overhead Service Line

Underground Service Line <= 50 mm
- Underground Service Line, In Service
- Underground Service Line, Abandoned

Underground Service Line > 50 mm
- Underground Service Line, In Service
- Underground Service Line, Abandoned

Underground Route
- Duct

DuctBank
- <all other values>
- Conduit
- DepthIndicatorDeep
- DepthIndicatorShallow

Ground Mounted Structure
- Streetlight Control Cubicle
- Distribution Box
- Point-Of-Entry Cubicle
- HV Switching Station
- Kiosk
- Padmount
- Link Pillar
- Micro Pillar
- Mini Pillar
- Pregnant Column
- Communication Cubicle
- SCADA Cubicle

Electric Supply Site
- 132kV Switching Station
- Bulk Supply Station
- Mobile Zone Substation
- Zone Substation
- Overhead Substation
- Chamber Substation
- Stockade

IMPORTANT NOTE:

- The term 'ABANDONED' is utilised to identify an underground cable that has been physically disconnected from the Evoenergy electricity network, is not in service and cannot readily be put back into service without specific augmentation and/or reconnection works. Cable(s) identified by Evoenergy as 'ABANDONED' have been discarded in-situ by Evoenergy. ALL cables should be treated as 'LIVE' and Dangerous until proven de-energised and safe.

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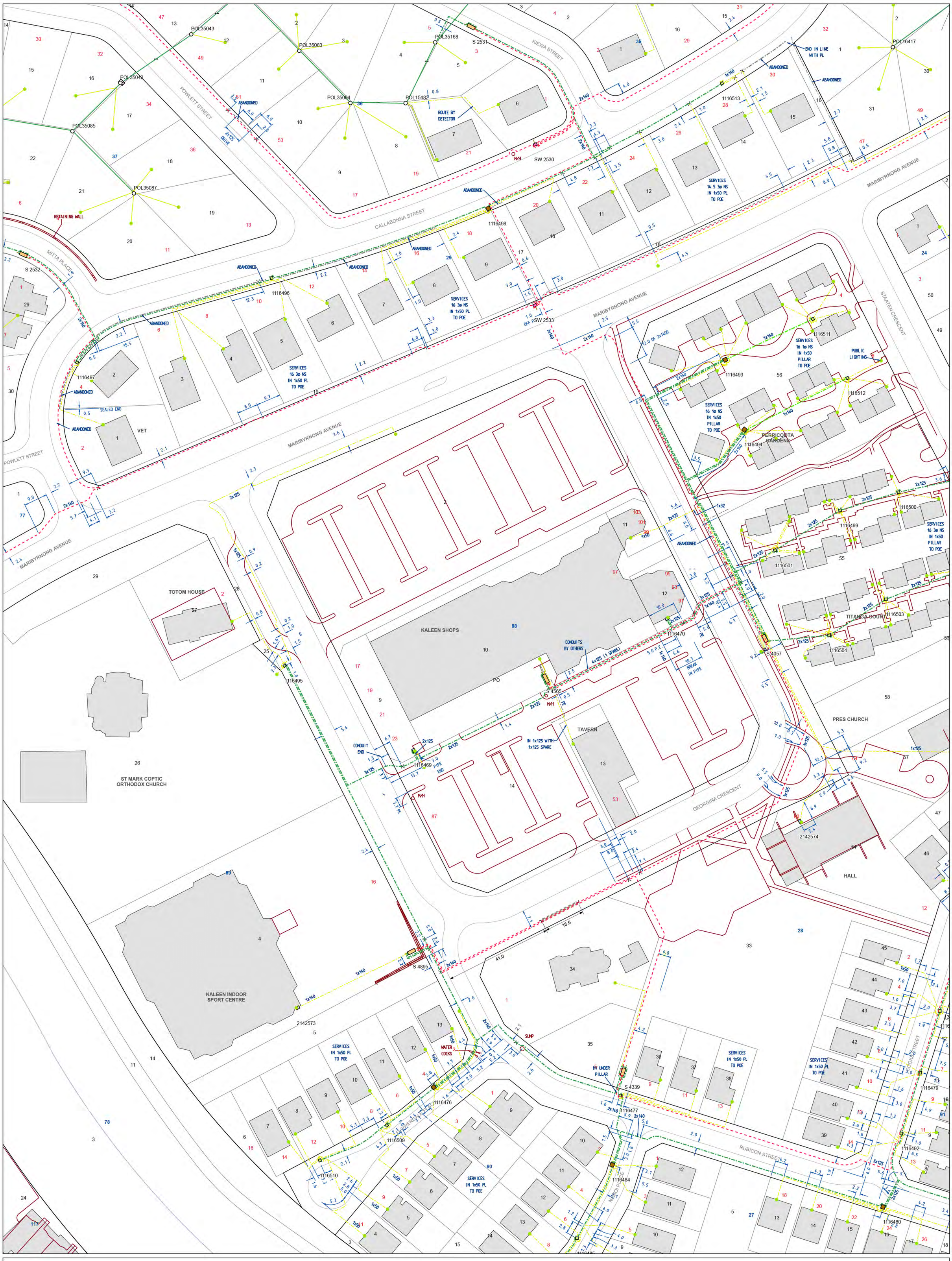
BEFORE YOU DIG www.byda.com.au



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97 Georgina Crescent, Kaleen

Evoenergy Electricity Network

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Template: ElectricityA1Portrait

Creation Date: 25-Apr-2024

GAS NETWORK LEGEND

GasStation CRITICAL

- DistrictRegulator
- TrunkReceivingStation
- PrimaryRegulatingStation
- BulkMeteringStation
- PressureMonitoringStation
- ScraperStation
- BR BoundaryRegulatorSet
- BRS SecondaryBoundaryRegulatorSet
- ValveStation

GasDevice

- <all other values>
- IsolationValve
- Odouriser
- Siphon
- WaterbathHeater
- Filter
- Catalyst Heater
- Silencer
- Regulator

GasDevice High Risk Valve CRITICAL

- HighRiskAreaIsolation

GasMeter

- DomesticMeter
- IndustCommMeter
- SecondaryMeterSet

GasFitting

- EndCap
- Tee
- ExpansionJoint
- Flange
- Reducer
- Cross
- ServiceSaddle
- InsulationJoint
- GaugingPoint

CPAnode

- AnodeGroundBed
- SacrificialAnode

CPRectifier

- R TransformerRectifier

CPCable

- CPRectifierCable
- CPGroundBedCable

Conduit

- Conduit

GasStructure

- <all other values>
- CPKiosk
- Pit
- StationStructure

GasService

- <all other values>
- Gas Service IN USE
- Gas Service NOT IN USE

GasService STEEL or MAOP>=1050 OR DIA >=75mm CRITICAL

- Gas Service IN SERVICE
- Gas Service NOT IN SERVICE

GasPipe

- <all other values>
- DistributionMain, Nylon, InService
- Gas Pipe NOT IN USE
- DistributionMain, PE, InService
- DistributionMain, Copper, InService

GasPipe STEEL OR MAOP>=1050 OR DIA>=75mm CRITICAL

- DistributionMain, Copper, InService
- DistributionMain, Nylon, InService
- DistributionMain, PE, InService
- PrimaryMain, Steel, InService
- PrimaryMain, Steel, Proposed
- SecondaryMain, Steel, InService
- SecondaryMain, Steel, Proposed
- TransmissionMain, Steel, InService
- Gas Pipe NOT IN USE

R 10.0 = DISTANCE TO ROAD
B 10.0 = DISTANCE TO BOUNDARY
E 10.0 = DISTANCE TO END
C 10.0 = DISTANCE TO CHANGE OF DIRECTION

4.4 = DISTANCE FROM MAIN TO KERB
0.6 = DISTANCE FROM MAIN TO BOUNDARY

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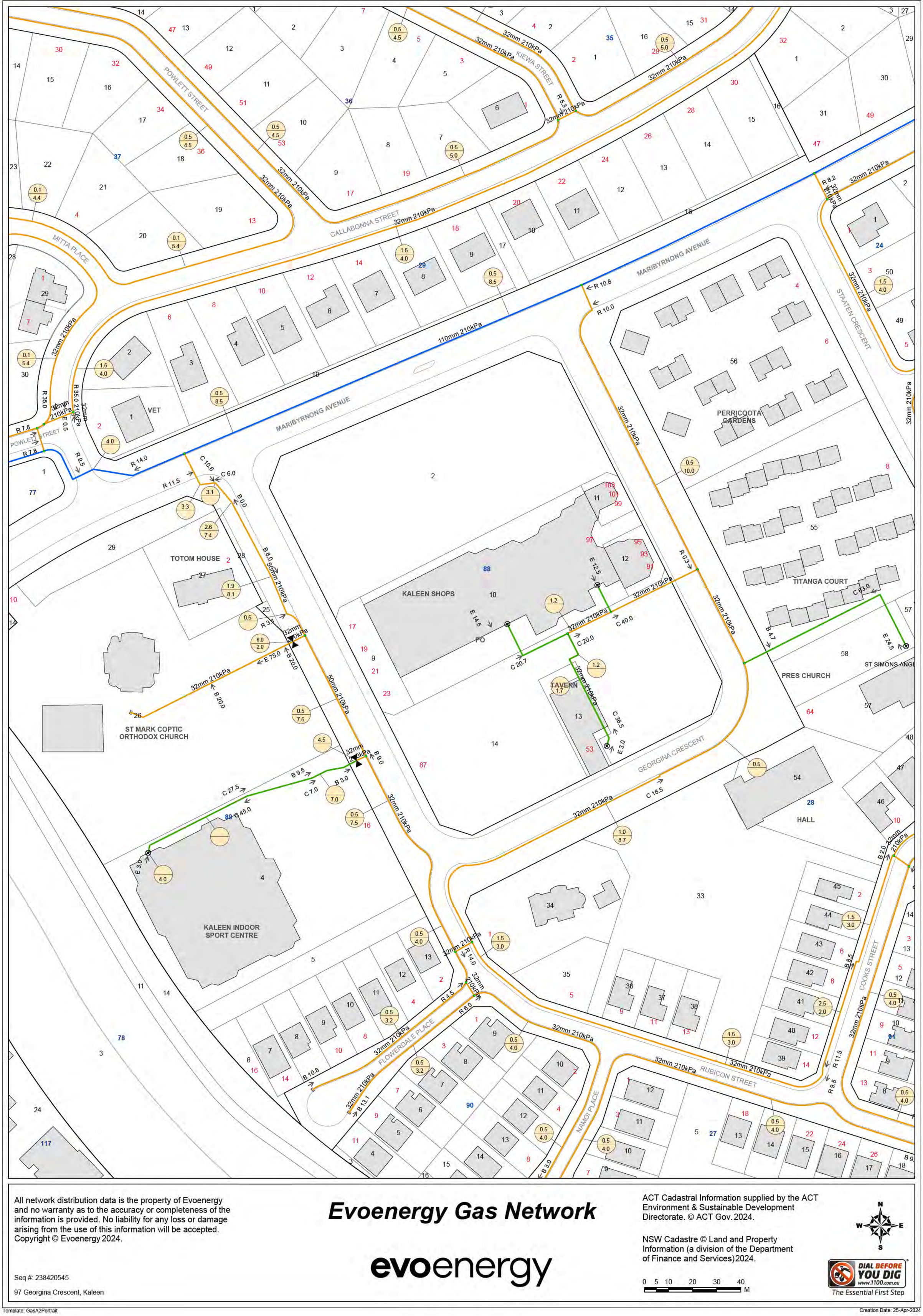

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Evoenergy Gas Network

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Template: GasA2Portrait

Creation Date: 25-Apr-2024

Icon Water: Sewer Network Legend

Abandoned Point
- Abandoned Point

Maintenance Hole
- Active
- De-Commissioned

Fitting
- Buried Vertical Riser
- Dead End
- Reducer
- Riser
- Tee

Service Connection
- Service Connection

DischargePoint
- DischargePoint

Gauging Point / Test Station
- ChemicalTransducer
- ElectroMagnetic
- Flume
- PressureTransducer
- Sonic
- Venturi
- WeirGauge

Inspection Shaft
- Special Inspection Shaft
- Standard 225 Inspection Shaft

Clean Out Point
- Rodding Point

Control (Protection) Valve
- Air Valve
- Reflux Valve

Pump
- Pump

Storage Tank / Vault
- Storage Tank / Vault

SystemControlValve
- Scour Valve
- Ball Valve
- Plug
- Gate Valve
- Stop Log
- Penstock

Sewer Structures
- Odour Scrubber
- Sewer Fan
- Vent

Vertical Drop
- Vertical Drop

VortexDrop
- VortexDrop

Weir
- Weir

Gravity Main
- Vent Pipe
- Reticulation Main
- Trunk Main
- Tunnel
- Siphon
- Overflow Pipe
- Inline Storage

Pressure Main
- Pressure Main

Lateral Line
- Property Service Line
- Scour Line

De-Commissioned Mains
- De-Commissioned Mains

Abandoned Mains
- Abandoned Mains

Sewer Structure
- DiversionChamber
- DiversionPoint
- PumpStation
- SplitManhole
- StorageBasin
- TreatmentPlant
- DischargeStructure
- PipeBridge
- SeptageFacility
- ValveChamber

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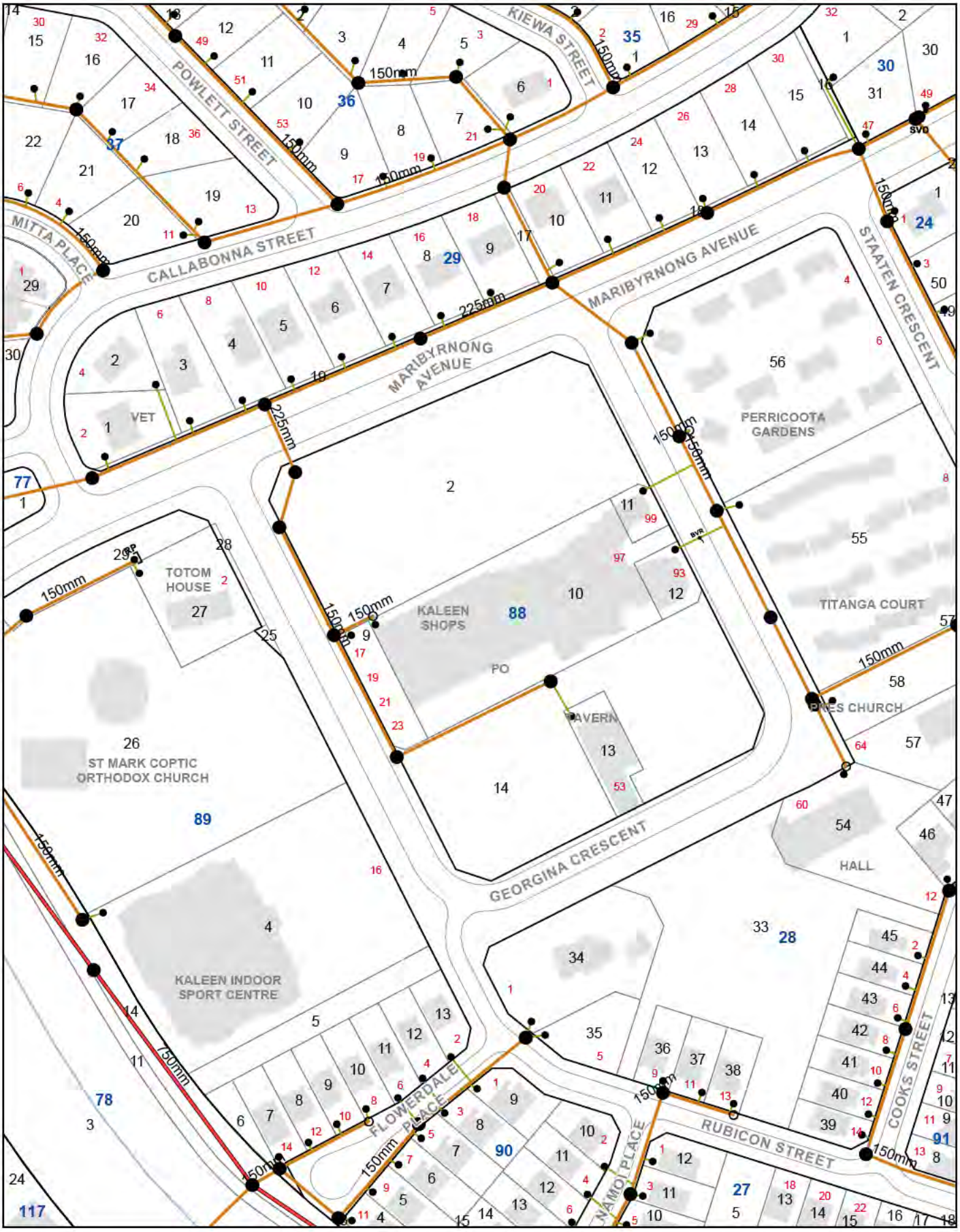
icon WATER



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97 Georgina Crescent, Kaleen

Sewer Network

icon WATER

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Template: SewerA4Portrait

Creation Date: 25-Apr-2024

Icon Water: Water Network Legend

Hydrant
- HighCapacity
- MillCock
- OverheadFillingP...
- PillarHydrant
- SpringHydrant

Service Connection (Meter)
- Flow Element
- Billing Large Diameter
- Billing Small Diameter

Test Station
- Pressure Recording Device
- Flow Recording Device
- Sampling Point

Pump
- Pump

System Valve: Ball
- Ball Valve

System Valve: Butterfly
- Altitude Inlet Control
- Back Up
- DualFlowRate
- Flow Altitude
- Flow Rate Control
- Isolation
- Normally Closed Isolation
- Pump Control

System Valve: Butterfly Motorised
- Altitude Inlet Control
- Back Up
- DualFlowRate
- Flow Altitude
- Flow Rate Control
- Isolation
- Normally Closed Isolation
- Pump Control

Control (Protection) Valve
- Double Air
- Double Check
- Enhanced Double Air Valve
- Float Valve
- Pressure Relief Valve
- Reduced Pressure Zone
- Reflux Valve
- Single Air

System Valve: Cone
- Altitude Inlet Control
- Outlet Control

System Valve: Gate
- Zone Valve
- Normally Closed Isolation
- Isolation
- Flow Rate Control
- Back Up
- Altitude Inlet Control

System Valve: Gate Motorised
- Isolation

System Valve: Globe
- Pump Control
- Pressure Sustaining
- Pressure Reducing
- Flow Rate Control
- Flow Altitude
- Outlet Control
- Back Up
- Altitude Inlet Control

System Valve: Needle
- System Valve: Needle

System Valve: Scour
- System Valve: Scour

Network Structure
- Service Reservoir
- Treatment Plant Reservoir
- NonPotable Water Reservoir
- Minor Tanks

Main
- Reticulation Main
- Distribution Main
- Bulk Supply Main
- Rising Main

Lateral Line
- Domestic Service
- Fire Service
- Overflow
- Wash Down
- Scour
- Drain

Abandoned Mains and Lateral Lines
- Abandoned Mains and Lateral Lines

Water Structure
- Dam
- Pipe Bridge
- Pump Station
- Reservoir Structure
- Treatment Plant
- Valve Chamber
- Warning Zone: Contact Icon Water before any excavation in this area 62483111

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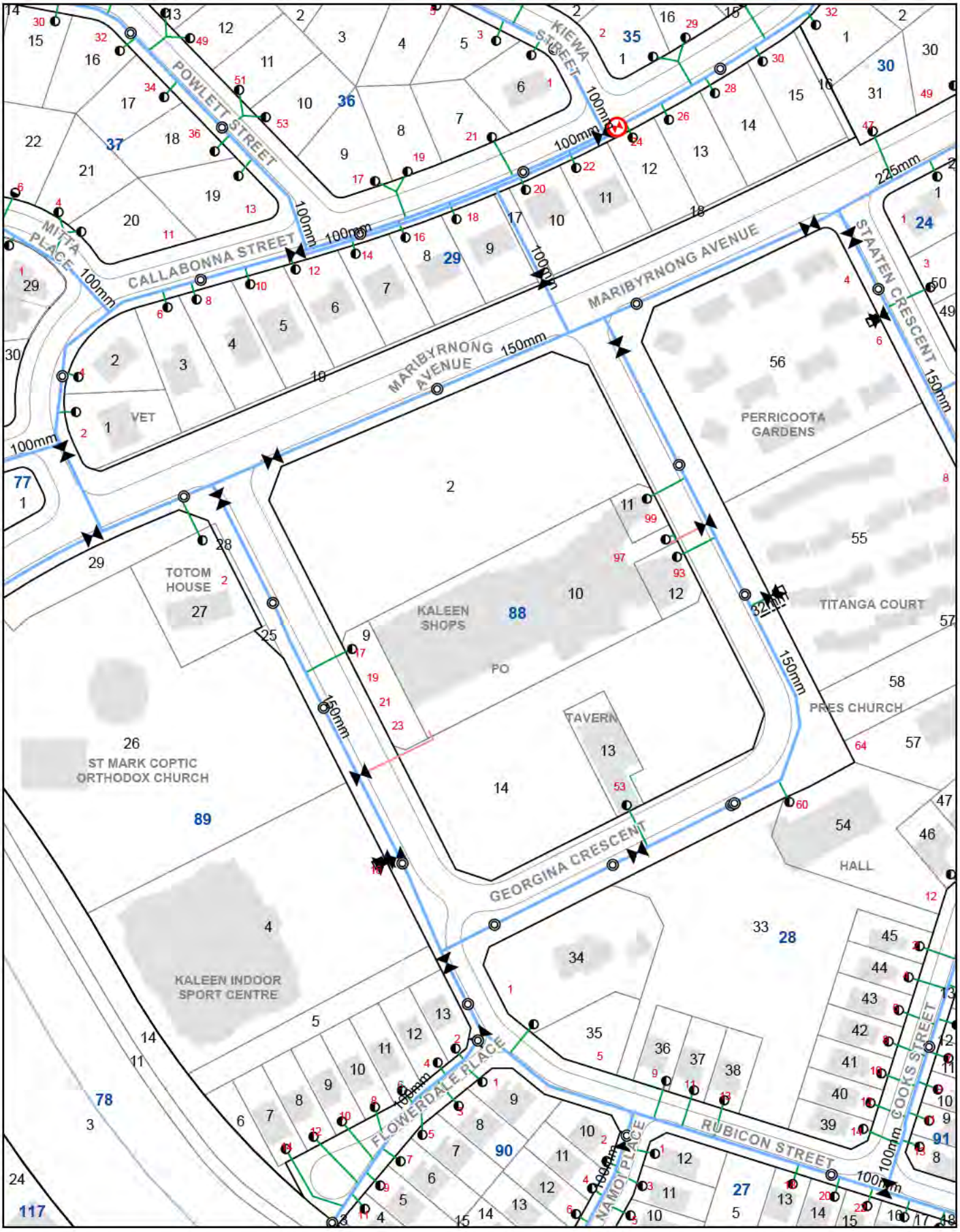
icon WATER



Water Network

icon WATER

0 5 10 20 30 40 M

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Seq #: 238420545

97 Georgina Crescent, Kaleen

Template: WaterA4Portrait

Creation Date: 25-Apr-2024

Appendix C

Correspondence

From: Baines, Greg
To: John Samoty
Cc: ConservatorFloraFauna
Subject: FW: Kaleen Group Centre - Flora and Fauna Review
Date: Thursday, 16 May 2024 2:29:00 PM
Attachments: image001.png

OFFICIAL

Hi John,

Please find a high-level overview of ecological constraints and considerations for future developments within the Kaleen Group Centre, below.

An ecological impact assessment should be completed for the site, this should include consideration of the following matters;

- Maintaining connectivity for small woodland birds. The red shaded areas in the map below indicate areas the provide connectivity values. At a site scale the connectivity values are concentrated on the tree lines in the green space on the edges of the site, it will be important to maintain this connectivity.

- Mature native trees are scattered across the site. A tree assessment will be required, it should identify all mature native trees and the report should consider how the development conforms with the objectives of the Loss of Mature Native Trees Key Threatening Process Action Plan

https://www.environment.act.gov.au/__data/assets/pdf_file/0011/2316188/Loss-of-Mature-Native-Trees.pdf

- The assessment should consider whether any trees meet the criteria for registration on the ACT Tree Register.
- Any development on site is likely to trigger the Biodiversity Sensitive Urban Design Guide, the ecological impact assessment should consider how these guidelines can be incorporated into a redesign of the site https://www.planning.act.gov.au/__data/assets/pdf_file/0011/2324675/ACT-Biodiversity-Sensitive-Urban-Design-Guide.pdf
- Development may require a Construction and Environment Management plan to be approved by the Conservator. In this situation the following replanting ratios may be applied if native trees are removed.

Native Tree and Shrub Replacement Ratios

DBH class (cm)	REPLACEMENT RATIOS
<5	1:1
5 - 20	1:3 + relocate as native mulch or at Conservator discretion
21 - 30	1:8 + relocate as coarse woody debris
31 - 40	1:13 + relocate as coarse woody debris
41 - 50	1:40 + relocate as coarse woody debris
50+	1:90 + reinstate as vertical habitat structure or at Conservator discretion
100+	1:180 + reinstate as vertical habitat structure or at Conservator discretion

Regards
Greg

Greg Baines
Senior Consevation Officer I Office of the Conservator of Flora and Fauna
Phone: [redacted] I Email: greg.baines@act.gov.au
Environment Division I Environment, Planning and Sustainable Development Directorate I ACT Government
Level 2, 480 Northbourne Avenue Dickson | GPO Box 158 Canberra ACT 2601 I www.environment.act.gov.au

From: ACTF&R Risk & Planning
To: John Samoty
Cc: ACTF&R Risk & Planning
Subject: RE: Fire Advice and Risk Rating - Kaleen Group Centre
Date: Thursday, 30 May 2024 9:56:06 AM
Attachments: image005.png
image006.png
image007.png
image008.png
image009.png
image010.png
image011.png

OFFICIAL

Good morning John,
ACTF&R can confirm this site is located outside of the area declared by the ESA as the Bushfire Prone Area. Applying bushfire protection measures will not be mandatory for the site however, due to the sites proximity to the bushfire prone area, consideration should be given to bushfire protective measures as these simple measures can improve the survival of any structure in the event of a nearby bushfire or structural fire.
The entire site of Section 88 Kaleen is mapped to be capable of providing FRT4 with a minimum available firefighting flow provision of 100 l/s. ACTF&R have no concerns with water delivery for future development on the site as community development will require FRT3 - with a minimum available firefighting flow provision of 60 l/s and commercial development, depending on structure/use type, may be assessed as FRT3 or potentially FRT4 - with a minimum available firefighting flow provision of 100 l/s.
Regards

Station Officer Graeme Hoskinson
Bushfire and Development Assessment Officer
ACT Fire & Rescue | Community Safety
9 Amberley Avenue, Majura ACT 2609
p. 62078472
e. ACTF-RRisk-Planning@act.gov.au

From: John Samoty <John.Samoty@jpsengineering.com.au>
Sent: Thursday, May 30, 2024 2:05 AM
To: ACTF&R Risk & Planning <ACTF-RRisk-Planning@act.gov.au>
Subject: RE: Fire Advice and Risk Rating - Kaleen Group Centre

Dear ACT Fire & Rescue Team,

Just following up on the below request for information.

Kind regards,

John Samoty, MIEAust, CPEng, NER, RPEQ, APEC Engineer, IntPE(Aus)
Director

JPS Engineering Consultants

28 Barrallier Street, Griffith, ACT 2603
M
E John.Samoty@JPSEngineering.com.au

From: John Samoty
Sent: Tuesday, 14 May 2024 4:25 AM
To: ACTF&R Risk & Planning <ACTF-RRisk-Planning@act.gov.au>
Subject: Fire Advice and Risk Rating - Kaleen Group Centre

Dear ACT Fire & Rescue Team,

JPS Engineering Consultants are currently engaged by EPSDD to undertake a Site Investigation Report for the Kaleen Group Centre. See below an image of the site outlined and highlighted in red.

EPSDD is reviewing existing group and local centres to enhance their activation and vitality as part of the latest Territory Plan District Strategy implementation. This includes assessing the site's role as community meeting places and ensuring they remain viable within the broader network of centres.

ACTmapi indicates that there is a nearby bushfire prone area along Baldwin Drive and that there are strategic bushfire management zones in close proximity to the site to the west/north west and north east in open space areas. See below relevant extracts from ACTmapi.

Based on this information, can you please advise whether there would need to be any special bushfire mitigation allowances incorporated into any proposed development in the Group Centre? Also, could you please confirm what the most appropriate Fire Risk Type (FRT) would be for any commercial/community type development in the Group Centre, and any other concerns that ACT Fire & Rescue may have toward future development(s) within this site?

Kind regards,

John Samoty, MIEAust, CPEng, NER, RPEQ, APEC Engineer, IntPE(Aus)
Director

JPS Engineering Consultants

28 Barrallier Street, Griffith, ACT 2603
M
E John.Samoty@JPSEngineering.com.au

From:	Zhang, Jianmin on behalf of Contaminated Sites
To:	John Samoty
Cc:	Jennings, RussellC
Subject:	Contaminated land search result - Kaleen Group Centre Block 2 and Blocks 9-14 Section 88 Kaleen Belconnen
Date:	Friday, 31 May 2024 8:06:20 PM

OFFICIAL

Dear Mr Samoty

RE: CONTAMINARTED LAND SEARCH

Thank you for your search form request of 25/05/2024 enquiring about:

Block 2 and Blocks 9-14 Section 88 Kaleen Belconnen

Records held by the Environment Protection Authority (EPA) for the above block(s) indicate the following:

Kaleen Group Centre
The blocks are not recorded on the EPA's contaminated sites management database or geographic information system.

Blocks 9-13 Section 88 Kaleen
These blocks are currently occupied by commercial complexes. Commercial complexes prior to the introduction of natural gas to the ACT in the 1980's utilised boiler heating or similar systems. These systems were generally fuelled by diesel or heating oil which was mainly stored in underground fuel storage tanks.

Blocks 2 and 14 Section 88 Kaleen
Aerial photographs indicate that Blocks 2 and 14 Section 88 Kaleen are occupied by car parks. Whilst there is no recorded information on potential site contamination, car parks have been associated with potential site contamination due to the placement of uncontrolled fill during the establishment of the site.

The ACT EPA Contaminated Sites Environment Protection Policy 2017 lists fuel storage and landfilling as activities associated with land contamination which may pose a risk to human health and the environment.

Other potentially contaminating activities may have also been undertaken at the site associated with current and past uses.

The EPA has not issued any orders of assessment or remediation under sections 91C (1) or 91D (1) respectively, environment protection orders under sections 125 (2) or (3), requested an audit under section 76 (2) or received an audit notification under section 76A (1) of the Environment Protection Act 1997 (the Act) over the site and as a result the site is not recorded on the Register of contaminated sites under section 21A of the Act.

The information detailed above only relates to records held by the EPA and may not represent

the actual condition of the site.

At present the EPA has no information on contamination of the above block(s) other than as detailed above. However, this does not absolutely rule out the possibility of contamination and should not be interpreted as a warranty that there is no contamination.

I appreciate that this does not absolutely rule out the existence of contamination of the soils. If you or your clients wish to be completely sure you, or they, should arrange to conduct independent tests.

Regards

Jianmin Zhang |Environment Protection Officer |Office of the Environment Protection Authority
Phone: 02 6207 2151|Email: jianmin.zhang@act.gov.au
Access Canberra|Chief Minister, Treasury and Economic Development Directorate |ACT Government
GPO Box 158, Canberra City, ACT 2601 | www.act.gov.au/accessCBR

We acknowledge the Traditional custodians of the ACT, the Ngunnawal people. We acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

ACT Heritage Council

Entry to the ACT Heritage Register

Heritage Act 2004

20132. Aboriginal Places – Urban and Rural Bushfire Containment Lines

Parts of various Sections and Blocks within:

Amaroo, Bonython, Dunlop, Farrer, Fraser, Hall, Kaleen, MacGregor, Theodore, Gungahlin

Parts of various Blocks within:

Districts of BELCONNEN, CANBERRA CENTRAL, GUNGAHLIN and TUGGERANONG

This entry which was previously part of the old heritage places or the old heritage objects registers (as defined in the ***Heritage Act 2004***), as the case may be, is taken to be registered under the ***Heritage Act 2004***.

Conservation Requirements (including Specific Requirements), as defined under the ***Heritage Act 2004,*** that are contained within this document are taken to be Heritage Guidelines applying to this place or object, as the case may be.

Information restricted under ***the old heritage places register or old heritage objects register*** is restricted under the ***Heritage Act 2004***.

Contact: ***ACT Heritage Council*** ***c/o Secretary*** ***PO Box 144*** ***Lyneham ACT 2602***
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building our city building our community
ACT Government

environment ACT

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ACT Heritage Council

AUSTRALIAN CAPITAL TERRITORY
INTERIM HERITAGE PLACES REGISTER

For the purposes of s. 68(2) of the *Land (Planning and Environment) Act* 1991, a listing for the following places has been prepared by the ACT Heritage Council, for the purpose of including:

Aboriginal Places along Urban and Rural Bushfire Containment Lines (126), comprising:

- **Aboriginal Places in the District of Belconnen (47)**
- **Aboriginal Places in the District of Canberra (1)**
- **Aboriginal Places in the District of Gungahlin (11)**
- **Aboriginal Places in the District of Tuggeranong (33)**
- **Aboriginal Places in the Suburb of Amaroo, District of Gungahlin (3)**
- **Aboriginal Places in the Suburb of Bonython, District of Tuggeranong (3)**
- **Aboriginal Places in the Suburb of Dunlop, District of Belconnen (9)**
- **Aboriginal Places in the Suburb of Farrer, District of Woden Valley (2)**
- **Aboriginal Places in the Suburb of Fraser, District of Belconnen (2)**
- **Aboriginal Places in the Suburb of Hall, District of Hall (5)**
- **Aboriginal Places in the Suburb of Kaleen, District of Belconnen (1)**
- **Aboriginal Places in the Suburb of MacGregor, District of Belconnen (2)**
- **Aboriginal Places in the Suburb of Theodore, District of Tuggeranong (5)**
- **Aboriginal Places in the Suburb of Gungahlin, District of Gungahlin (2)**

In an interim Heritage Places Register.

Copies of the listing are available for inspection at ACT Public Libraries and at all ACT Government Shopfronts. For further information please contact:

The Secretary
ACT Heritage Council
GPO Box 144, Canberra, ACT 2601

Telephone: (02) 6207 7378 Facsimile: (02) 6207 2200

Notified: Notifiable Instrument 2003- 430
Effective: 23 October 2003

IDENTIFICATION OF THE PLACES

The places comprise Aboriginal sites located within:

- District of Belconnen
- District of Canberra
- District of Gungahlin
- District of Tuggeranong
- Suburb of Amaroo, District of Gungahlin
- Suburb of Bonython, District of Tuggeranong
- Suburb of Dunlop, District of Belconnen
- Suburb of Farrer, District of Woden Valley
- Suburb of Fraser, District of Belconnen
- Suburb of Hall, District of Hall
- Suburb of Kaleen, District of Belconnen
- Suburb of MacGregor, District of Belconnen
- Suburb of Theodore, District of Tuggeranong
- Suburb of Gungahlin, District of Gungahlin

The Canberra 1:10 000 scale Adjusted Grid Co-ordinate (AGC) locations for the places are held by the Heritage Unit within a database of ACT site locations. The AGC grid co-ordinates are restricted information under s.82 of the *Land (Planning and Environment) Act 1991*.

FEATURES INTRINSIC TO THE HERITAGE SIGNIFICANCE OF THE PLACES

The places comprise locations where Aboriginal stone artefacts have been recorded (n=126), and their individually specified site buffer zones (as described in Schedule 2).

STATEMENT OF SIGNIFICANCE

The ACT Aboriginal community considers all archaeological evidence of the past occupation of the ACT by Aboriginal people to be significant. Aboriginal places have the capacity to demonstrate and provide information about ways in which Aboriginal people lived in the past. These places are part of a regional body of evidence that has potential to reveal information about patterns of past Aboriginal land-use and settlement. Details of the site locations and descriptive information about them builds upon and complements the considerable body of archaeological research that exists for the Canberra region.

These places are all part of the physical evidence of a traditional way of life that is no longer practised within the ACT. The presence of artefact scatters in these localities demonstrates past occupation and use of these places by Aboriginal people. Stone was an extremely important element of Aboriginal culture, essential to their day-to-day living. Stone artefacts thus constitute an enduring record of Aboriginal technology and settlement patterns. The individual artefacts at the sites also have significance due to their potential to contribute to research about Aboriginal stone technology.

Areas of identified archaeological potential are considered to be significant cultural resources because of their potential to contain buried evidence of past Aboriginal occupation, likely to be intact and in better condition than other surface exposed sites.

CONSERVATION POLICY AND SPECIFIC REQUIREMENTS

The Heritage Council promotes a *general conservation policy* for all Aboriginal heritage sites. This policy states that Aboriginal sites are to be conserved appropriately in accordance with their individual heritage significance, taking into account their Aboriginal and archaeological heritage values. Aboriginal sites and their components form an integral part of the landscape. The spatial relationships between sites, as well as their geographic relationship to land, constitute significant information with potential to inform about past cultural practices. The maintenance of records about sites and their geographic location is essential for the conservation of this information. Areas that have potential to contain Aboriginal heritage sites, including areas in which archaeological survey has not yet been undertaken, are to be managed in a way that permits the identification, significance assessment and conservation, where appropriate, of the Aboriginal cultural heritage resource.

In addition to the general conservation policy, the Heritage Council has developed a series of *specific requirements* to provide direction for conservation of the heritage significance of Aboriginal heritage sites. The specific requirements have been prepared to implement conservation policies and objectives developed for the places. Any actions that affect the conservation of the heritage significance of the places constitute 'development' for the purposes of the Act and approval will be required prior to undertaking the action. To undertake development without approval may be an offence.

The specific requirements for conservation of Aboriginal heritage places are set out in Schedule 1. This is preceded by general information about the different types of Aboriginal heritage places that can occur and their conservation objectives.

Artefact Scatters

Artefact scatters constitute identifiably dense occurrences of stone artefacts and represent geographic foci of Aboriginal occupation related to a range of activities. Scatters may form as a result of single intensive occupation events or build up over hundreds or thousands of years due to repeated use or occupation of an area. The current appearance and structure of an artefact scatter site will depend upon the impact of events, termed *formation processes,* that have affected the artefacts during and after their deposition. Formation processes include both natural and cultural factors such as soil erosion and deposition, other natural disturbances, reuse of places by Aboriginal people and later European land-use practices. The heritage values of artefact scatters are based upon their Aboriginal and archaeological significance.

All artefact scatters are considered to be significant by the Aboriginal community. Aboriginal people generally express the desire for all such sites to be left *in situ* wherever feasible. Their significance to Aboriginal people is primarily based on their provision of evidence of the occupation of land by their ancestors. Artefact scatters thus comprise a demonstrable link to place for contemporary Aboriginal people.

The archaeological significance of artefact scatters stems both from their physical representation of past cultural practices and for their potential to yield information through research that will increase our understanding of the past. The potential research value accorded to sites depends in turn on a range of factors including the individual quality and quantity of artefactual content, the condition and integrity of the site structure, whether the artefacts occur *in situ* within cultural deposit, and whether original relationships between artefacts are likely to be discernible and meaningful.

The significance of artefact scatters may be thus ranked from low to high according to their value to Aboriginal people, their archaeological value and their condition and integrity. **Their significance to Aboriginal people may not necessarily, however, relate to or accord with archaeological significance assessments.** The criteria for ranking artefact scatters into either low, medium or high categories of significance and their associated conservation objectives are detailed as follows:

- **Artefact scatters of Low Conservation Value**

Artefact scatters identified as having low conservation value are those sites with very few artefacts, with artefacts of a common type, with no associated cultural deposit and/or sites that have already been highly disturbed and where there is negligible potential for them to provide further information. Such sites may either be conserved *in situ* or be the subject of a program of archaeological investigation and salvage as recommended by the Heritage Council, after consultation with the relevant Aboriginal organisations.

Generally, the conservation objective for this site type is to record and retain where feasible, otherwise salvage.

- **Artefact scatters of Medium Conservation Value**

Artefact scatters identified as having medium conservation value include sites with high artefact numbers and/or density and/or with identified or potential associated deposit. They are also sites of common type and character. Sites of medium conservation value may either be conserved *in situ* or be the subject of a program of archaeological investigation and salvage. The investigation and salvage may include collection of artefacts, subsurface testing, excavation or other investigative techniques as recommended by the Heritage Council, after consultation with the relevant Aboriginal organisations.

Generally, the conservation objective for this site type is to record and retain, where feasible, or salvage.

- **Artefact scatters of High Conservation Value**

Artefact scatters identified as having high conservation value include sites with high artefact numbers and/or density, with rare, or representative artefacts, and/or with identified or potential associated deposit. They may also be sites of good preservation and condition where the original site structure and contents have survived. Sites of high conservation value are to be conserved *in situ* in an appropriate setting, where feasible. However site investigations for the purposes of improving their conservation or research may be permitted, provided that the relevant Aboriginal organisations have been consulted about any proposed works and agree to their occurrence.

The identification of appropriate conservation actions may require preparation of a Conservation and Management Plan. Actions that propose impact upon their identified heritage values will be considered on a case by case basis by the Heritage Council in consultation with the relevant Aboriginal organisations, and with reference to the applicable Conservation and Management Plan or Research Plan, if prepared.

Generally, the conservation objective for this site type is to record, retain and actively conserve.

Schedule 1: Specific Requirements for the Conservation of Aboriginal Heritage Places

1 Information regarding the description and specific location of the place shall be held in a database of ACT Aboriginal heritage sites.

2 Actions that would affect the conservation of the heritage significance of the place constitute 'development' for the purposes of the Act.

3 Works that improve or benefit the conservation of the heritage significance of the place are permitted. Proponents of such works shall advise the Heritage Council and consult with the relevant Aboriginal organisations about the proposal. The agreement of the Heritage Council must be obtained prior to works being undertaken.

4a Development proponents shall be aware that the presence of an Aboriginal heritage site(s) within a development area may impose constraint upon the development. The nature of the constraint will vary according to the assessed significance of the site(s) and the potential heritage impact of the development. For *artefact scatters* assessed as being of *low conservation value* (LCV) the development constraint may range from nil constraint to a requirement to undertake further survey or investigation of a place, further recording of a place and/or collection of artefacts or other cultural materials.

4b Development proponents shall be aware that the presence of an Aboriginal heritage site(s) within a development area may impose constraint upon the development. The nature of the constraint will vary according to the assessed significance of the site(s) and the potential heritage impact of the development. For *artefact scatters* assessed as being of *medium conservation value* (MCV) the development constraint may range from nil constraint to a requirement to undertake further survey or investigation of all or part of the place, further recording of a place and/or collection of artefacts or other cultural materials, subsurface testing, monitoring during development or salvage excavation, or a requirement to conserve a representative part of the site whilst carrying out further works on the remainder.

4c Development proponents shall be aware that the presence of an Aboriginal heritage site(s) within a development area may impose constraint upon the development. The nature of the constraint will vary according to the assessed significance of the site(s) and the potential heritage impact of the development. For *artefact scatters* or *Aboriginal scarred trees* assessed as being of *high conservation value* (HCV) the development constraint may range from nil constraint to a requirement to undertake investigation of a place, prepare and/or implement a Conservation and Management Plan for the place, to an inability to undertake part or all of the development within the affected area(s).

5 The ACT Heritage Council shall advise the proponent of the degree of constraint, based upon the nature of the development and its potential heritage impact and the significance assessment of the site(s), and in consultation with the relevant Aboriginal organisations.

6 Artefacts (including scarred trees) and/or any other identified significant fabric or components of the site shall not be removed, damaged, altered or disturbed without the prior agreement of the Heritage Council, in consultation with the relevant Aboriginal organisations.

7 Any further investigation of sites and/or collection of artefacts and/or salvage of site fabric or other cultural materials agreed to by the Heritage Council shall be undertaken by a qualified archaeologist in consultation with the relevant Aboriginal organisations, in accordance with a proposed methodology provided to and endorsed by the Heritage Council, in consultation with the relevant Aboriginal organisations.

8 Salvaged or collected materials shall be archived by the Heritage Unit, pending establishment of an appropriate storage facility.

9 If the Heritage Council advises collection or salvage then, following completion of salvage works as advised by the Heritage Council only Specific Requirement No. 1 shall apply to the identified place.

Schedule 2: List of Aboriginal heritage places

GENERAL SITE DESCRIPTION	LOCATION	SPECIFIC REQUIREMENTS (refer to Schedule 1)	RESTRICTED INFORMATION The precise location details as provided are based upon the visually apparent extent of a place inclusive of a small buffer area. There is always a possibility a site may extend further than indicated by its surface appearance. (Note that Canberra 1:10 000 Adjusted Grid Co-ordinates are restricted information)
B1 An isolated stone artefact located on lower slope. Recorded – T. Knight 2003		***National Land – Recommended Only*** ***Artefact scatter of LCV:*** ***1*** ***2*** ***3*** ***4a*** ***5*** ***6*** ***7*** ***8*** ***9***	
B2 An isolated stone artefact located on lower slope adjacent to Cork Oak Plantation. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B3 An isolated stone artefact located on lower slope adjacent to cork oak plantation. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

B4 An isolated stone artefact located on crest in cleared paddock. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B5 An open scatter of at least two artefacts located on a mid-slope saddle in open paddock. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B6 An open scatter of at least two artefacts located on lower slope overlooking creek. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B7 An open scatter of at least two artefacts located on lower slope overlooking creek. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

B8 An isolated stone artefact located on crest in open paddock. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B9 An isolated stone artefact located on slope crest in open paddock. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B11 An isolated stone artefact located on slope crest overlooking creek line. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B12 An isolated stone artefact located on upper slope under power line. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

B13 An open scatter of at least two artefacts located near creek bank. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B14 An isolated stone artefact located near drainage line on slope feature. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B15 An open scatter of at least two artefacts located on creek bank. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B16 An open scatter of at least five artefacts located on ridge crest. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

B17 An open scatter of at least two artefacts located on ridge crest. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B18 An open scatter of at least four artefacts located on ridge side. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B19 An isolated stone artefact located on flat near creek. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
B20 An isolated stone artefact located on ridge crest. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

B21 An isolated stone artefact located on crest adjacent to power line/suburb of Hawker. Recorded – T. Knight 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLB1FR An isolated stone artefact located on west facing basal slopes of Farrer Ridge, overlooking a former water course. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLB2FR An isolated stone artefact located on eastern bulldozer push on north-facing mid-to-upper slopes of Farrer Ridge. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLB3FR A low density scatter of at least three stone artefacts located on a long low gradient basal slope beside a drainage area north of Sulwood Drive. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLB4SP An isolated stone artefact located on lower slope of a small ridgeline hill. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**
CLB5B An open scatter of at least three artefacts located on the mid-slope and crest of a ridgeline spur. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**
STRANGER POND TRACK 1 (SPT1) An open scatter of at least two artefacts located on a vehicle track at the eastern base of a low ridgeline hill. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**
CLB6T An isolated stone artefact located on upper slope of ridgeline saddle overlooking low gradient basal slopes and a drainage line to the south-west. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**

CLC1 An isolated stone artefact located mid-slope of low rise in undulating open valley floor. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLC2 An open scatter of at least three artefacts located on a low rise above shallow open drainage depression. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLC3 An isolated stone artefact located on a low rise adjacent to an open drainage depression. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLC4 An open scatter of at least nine artefacts located on a low rise adjacent to open drainage depression. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLC5 An open scatter of at least six artefacts located on a low rise adjacent to an open drainage depression. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLC6 An open scatter of at least two located on lower slope of Red Hill ridgeline extension. Recorded – P. Saunders 2003		**Former site location:** **1**	
CLC7 An open scatter of at least two artefacts located on a very low slope. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLC8 An isolated stone artefact located on the crest of the Red Hill ridgeline extension. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLC9 An isolated stone artefact located on a low ridge at Red Hill. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLC10 An open scatter of at least three artefacts located on mid-to-lower slope above Ginninderra Creek. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLC11 An isolated stone artefact located on a lower slope approx. 50m above Ginninderra Creek. Recorded – P. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLC12 An isolated stone artefact located on lower slope 10m from Ginninderra Creek. Recorded – T. Saunders 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLSC1 An open scatter of at least 12 artefacts located mid-slope 100m from Tuggeranong Creek. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSC2 An isolated stone artefact located on mid-slope shoulder, 150m from Tuggeranong Creek. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSC3 An open scatter of at least eight artefacts located on a mid-slope shoulder, 200m from Tuggeranong Creek. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSC4 An open scatter of at least two artefacts located mid-slope, 100m from a drainage line. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLSC5 An open scatter of at least six artefacts located on a crest, 200m from a drainage line at base of slope. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSC6 An open scatter of at least six artefacts located on the lower slope of a creek margin. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSC7 An open scatter of at least 36 artefacts located on a mid-slope shoulder of a creek margin. Recorded – C. Dearling 2003		**Artefact scatter of MCV:** **1** **2** **3** **4b** **5** **6** **7** **8** **9**	
CLSC8 An open scatter of at least 17 artefacts located on a lower slope, 20m from a drainage line. Recorded – C. Dearling 2003		**Artefact scatter of MCV:** **1** **2** **3** **4b** **5** **6** **7** **8** **9**	

CLSC9 An open scatter of at least 17 artefacts located on a lower slope. Recorded – C. Dearling 2003		**Artefact scatter of MCV:** **1** **2** **3** **4b** **5** **6** **7** **8** **9**	
CLSC10 An open scatter of at least five artefacts located on a wetland spur crest. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSC11 An isolated stone artefact located on the lower slope of a spur. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSC12 An open scatter of at least 10 artefacts located mid-slope on a spur. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLSC13 An isolated stone artefact. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSC14 An open scatter of at least two artefacts located on the lower slope of a spur. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSC15 An open scatter of at least 11 artefacts located on the lower slope of a creek margin. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSC16 An isolated stone artefact located on the upper slope of a spur. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLSC17 An open scatter of at least two artefacts located on the upper slope of a crest, 250m from the Murrumbidgee River. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSC18 An open scatter of at least 20 artefacts located on the mid-to-upper slope of a river margin. Recorded – C. Dearling 2003		**Artefact scatter of MCV:** **1** **2** **3** **4b** **5** **6** **7** **8** **9**	
CLSC20 An open scatter of at least seven artefacts located on the lower slope of a river margin. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSN1 An isolated stone artefact located mid-slope. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLSN2 An open scatter of at least six artefacts located on the lower slope of a creek margin. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSN3 An isolated stone artefact located on the lower slope of a creek margin. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSN4 An open scatter of at least two artefacts located on the lower slope of a creek margin. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLSN5 An isolated stone artefact located mid-slope. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLWB3 An open scatter of at least 14 artefacts located on a slope to the north of Fassifern. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB4 An open scatter of at least three artefacts located on the lower slope of a creek margin. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB5 An isolated stone artefact located on the crest of a spur. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB6 An isolated stone artefact located on a lower slope. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLWB9 An open scatter of at least five artefacts located on a lower slope near drainage line at end of a spur. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB10 An open scatter of at least 18 artefacts located mid-slope, 100m from nearest water source. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB11 An open scatter of at least three artefacts located on the lower slope of a spur. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB12 An open scatter of at least 15 artefacts located on the lower slope of a creek margin. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLWB13 An open scatter of at least two artefacts located on the lower slope of a creek margin, 100m from Ginninderra Creek. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB14 An open scatter of at least four artefacts located on a lower slope of a creek margin, 20m from Ginninderra Creek. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB15 An open scatter of at least 12 artefacts located on an upper slope in a power-line easement. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB16 An open scatter of at least three artefacts located on an upper slope. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLWB17 An isolated stone artefact located on a lower slope. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB18 An isolated stone artefact located on a lower slope. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB19 An open scatter of at least three artefacts located on a mid-slope. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB20 An open scatter of at least two artefacts located on an upper slope. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLWB21 An isolated stone artefact located on a mid –slope of a creek margin. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB22 An open scatter of at least seven artefacts located on a lower slope. Recorded –C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB23 An open scatter of at least two artefacts located on a lower slope of a creek margin. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB24 An open scatter of at least seven artefacts located on an upper slope, extending down to confluence of Ginninderra Creek and an unnamed tributary from the south. Recorded – C. Dearling 2003		**Artefact scatter of MCV:** **1** **2** **3** **4b** **5** **6** **7** **8** **9**	

CLWB25 An open scatter of at least two artefacts located on the lower slope of a creek margin. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB27 An open scatter of at least 17 artefacts located on an upper slope. Recorded – C. Dearling 2003		**Artefact scatter of MCV:** **1** **2** **3** **4b** **5** **6** **7** **8** **9**	
CLWB28 An open scatter of at least 78 artefacts located on the lower slope and flat of a creek margin, less than 100m from Ginninderra Creek. Recorded – C. Dearling 2003		**Artefact scatter of HCV:** **1** **2** **3** **4c** **5** **6** **7** **8** **9**	
CLWB29 An open scatter of at least 28 artefacts located on the lower slope and valley floor, 50m from Ginninderra Creek. Recorded – C. Dearling 2003		**Artefact scatter of MCV:** **1** **2** **3** **4b** **5** **6** **7** **8** **9**	

CLWB30 An open scatter of at least four artefacts located on an upper slope, 60m from Ginninderra Creek. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB31 An open scatter of at least three artefacts located on lower slope, 60m from Ginninderra Creek. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB32 An open scatter of at least two artefacts located mid-slope, 60m from Ginninderra Creek. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB33 An open scatter of at least 28 artefacts located on the upper slope of a crest. Recorded – C. Dearling 2003		**Artefact scatter of MCV:** **1** **2** **3** **4b** **5** **6** **7** **8** **9**	

CLWB34 An open scatter of at least eight artefacts located mid-slope of a crest. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB35 An open scatter of at least three artefacts located on lower-to-mid slope. Recorded – C. Dearling 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLWB36 An open scatter of at least 16 artefacts located on mid-to-upper slope of a crest. Recorded – C. Dearling 2003		**Artefact scatter of MCV:** **1** **2** **3** **4b** **5** **6** **7** **8** **9**	
TUG1 An isolated stone artefact located on a crest where the containment line crosses Angle Crossing Road. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

TUG2 An open scatter of at least two artefacts located on a low rise 200m from an ephemeral creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
TUG3 An open scatter of at least four artefacts located on a low rise 250m from an ephemeral creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
TUG4 An isolated stone artefact located on western side of Monaro Highway, 2km north of Williamsdale. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
TUG5 An open scatter of at least three artefacts located on a moderate rise 25m from an ephemeral creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

TUG6 An isolated stone artefact located on flat level ground near a small creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
TUG7 An open scatter of at least four artefacts located on a small level rise 100m from an ephemeral creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
TUG8 An isolated stone artefact located on a small flat rise above an ephemeral creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
TUG9 An open scatter of at least five artefacts located on a crest, 500m from a creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

TUG10 An isolated stone artefact located on a small spur. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
TUG11 An open scatter of at least three artefacts located adjacent to the Tharwa Road roundabout on the southern side of the Monaro Highway. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
TUG12 An open scatter of at least 50 artefacts located to the west of the Tuggeranong axe-grinding grooves. Recorded – R. Paton 2003		**Artefact scatter of HCV:** **1** **2** **3** **4c** **5** **6** **7** **8** **9**	
TUG13 An open scatter of at least three artefacts located on a mid-slope, 300m from Tuggeranong Creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

TUG14 An open scatter of at least three artefacts located on a hill crest. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
TUG15 An open scatter of at least three artefacts located on a small crest. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
TUG16 An isolated stone artefact located near the crest of a hill. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
TUG17 An open scatter of at least two artefacts located on a locally flat area, midway up a moderate slope. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLD1 An open scatter of at least four artefacts located on the crest of a gently sloping spur. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLD2-3 An open scatter of at least 67 artefacts located on the flat, slightly elevated ground on the south side of Hall's Creek. Recorded – R. Paton 2003		**Artefact scatter of HCV:** **1** **2** **3** **4c** **5** **6** **7** **8** **9**	
CLD4 An open scatter of at least three artefacts located on top of a hill on flat, level ground. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLD5 An open scatter of at least two artefacts located on a gentle slope on relatively flat, level ground. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLD6 An open scatter of at least two artefacts located on a moderate slope. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLD7 An open scatter of at least three artefacts located on a small rise near an ephemeral soak. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLD8 An isolated stone artefact located on a small rise near a soak. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLD9 An isolated stone artefact located on a small rise. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLD10 An isolated stone artefact located on a small rise approx. 200m north of Hall's Creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLD11 An open scatter of at least three artefacts located on a small rise approx. 250m north of Hall's Creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLD12 An isolated stone artefact located on a small rise approx. 200m north of Hall's Creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLD13 An isolated stone artefact located on a small rise approx. 200m north of Hall's Creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

CLD14 An open scatter of at least two artefacts located on a slight rise. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLD15 An open scatter of at least 10 artefacts located near the old Nova Scotia homestead, near Hall. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	
CLD16 An isolated stone artefact located mid-slope on a hill near Gladstone Road, 300m from an ephemeral creek. Recorded – R. Paton 2003		**Artefact scatter of LCV:** **1** **2** **3** **4a** **5** **6** **7** **8** **9**	

BACKGROUND INFORMATION

1. DESCRIPTION OF PLACES

The places comprise 1 Aboriginal site located within the District of Canberra, 47 Aboriginal sites located within the District of Belconnen, 12 Aboriginal sites located within the District of Gungahlin, 33 Aboriginal sites located within the District of Tuggeranong, 3 Aboriginal sites located within the Suburb of Amaroo, District of Gungahlin, 3 Aboriginal sites located within the Suburb of Bonython, District of Tuggeranong, 9 Aboriginal sites located within the Suburb of Dunlop, District of Belconnen, 2 Aboriginal sites located within the Suburb of Farrer, District of Woden Valley, 2 Aboriginal sites located within the Suburb of Fraser, District of Belconnen, 5 Aboriginal sites located within the Suburb of Hall, District of Hall, 2 Aboriginal sites located within the Suburb of MacGregor, District of Belconnen, 5 Aboriginal sites located within the Suburb of Theodore, District of Tuggeranong and 2 Aboriginal sites located within the Suburb of Gungahlin, District of Gungahlin. The sites are isolated finds (n=47) and scatters of stone artefacts (n=79).

2. STATUS OF PLACES AT NOMINATION DATE:

The places are not previously recorded or entered into any ACT or Commonwealth Register.

3. BACKGROUND

A regional understanding of the variability, condition and conservation status of Aboriginal sites throughout the Territory is essential for the sound assessment of site significance and development of appropriate conservation strategies for Aboriginal heritage places and cultural landscapes. 'Site' is the common term for the locations where material remains relating to past Aboriginal occupation are in evidence, whereas the legislation refers to 'places'. These two terms are used interchangeably in this document.

These places were recorded during cultural heritage surveys of graded containment lines put in place under the declared 'State of Emergency' during the January 2003 ACT bushfires.

Unregistered Aboriginal sites are legally protected from disturbance, however the poor state of knowledge regarding their nature and location, and difficulties with their recognition and detection has undoubtedly already resulted in inadvertent disturbance to and destruction of a proportion of the record. The remaining sites, for the most part, are considered to be under potential threat due to future development pressure, with the exception of registered places and sites located in the small proportion of land in the Territory that is unsuitable for development.

4. CONSULTATION WITH STAKEHOLDERS

Aboriginal groups in the ACT are strongly supportive of actions that increase awareness and protection of Aboriginal cultural heritage places. The three Aboriginal organisations defined as relevant regarding consultation on heritage matters according to the *Land (Planning and Environment) Act 1991*, have been consulted regarding the significance and management of these sites.

Representatives of the three Relevant Aboriginal Organisations were invited to participate in the containment line surveys and to provide comments on the significance of any Aboriginal heritage places discovered during the surveys. During the registration process the Aboriginal organisations also have the opportunity to provide comments on the Aboriginal significance of these places and their management.

Copies of the draft register entry have also been circulated to other stakeholders, including the land owners/managers of the affected areas, and parties that originally reported the sites. A number of site visits were undertaken with rural lessees to show them site locations and discuss the registration process.

5. ANALYSIS AGAINST THE CRITERIA SPECIFIED IN SCHEDULE 2 OF THE LAND *(PLANNING AND ENVIRONMENT)* ACT 1991:

Criterion (i): A place which demonstrates a high degree of technical and/or creative achievement, by showing qualities of innovation or departure or representing a new achievement of its time.

Not applicable

Criterion (ii): A place which exhibits outstanding design or aesthetic qualities valued by the community or a cultural group.

Not applicable

Criterion (iii): A place which demonstrates a distinctive way of life, taste, tradition, religion, land use, custom, process, design or function which is no longer practised, is in danger of being lost, or is of exceptional interest.

The sites are all the product of past Aboriginal land-use and demonstrate varied aspects of a traditional way of life no longer practised in the ACT. The artefact scatters present in these localities demonstrate occupation and use of land by Aboriginal people, in the past.

Criterion (iv): A place which is highly valued by the community or a cultural group for reasons of strong or special religious, spiritual cultural, educational or social associations.

The places are all of significance to the Aboriginal community due to their association with traditional Aboriginal culture and their ability to demonstrate the comprehensive occupation of the ACT by their ancestors.

Criterion (v): A place which is the only known or only comparatively intact example of its type.

Not applicable

Criterion (vi): A place which is a notable example of a class of natural or cultural places or landscapes and which demonstrates the principal characteristics of that class.

Not applicable

Criterion (vii): A place which has strong or special associations with a person, group, event, development or cultural phase which played a significant part in local or national history.

These places have been identified as significant by the ACT Aboriginal community. They provide physical evidence of the past occupation and use of the areas in the Belconnen District by Aboriginal people.

Criterion (viii): **A place which represents the evolution of a natural landscape, including significant geological features, landforms, biota or natural processes.**

Not applicable

Criterion (ix): **A place which is a significant habitat or locality for the life cycle of native species; for rare, endangered or uncommon species; for species at the limits of their natural range; or for distinct occurrences of species.**

Not applicable

Criterion (x): **A place which exhibits unusual richness, diversity or significant transitions of flora, fauna or natural landscapes and their elements.**

Not applicable

Criterion (xi): **A place which demonstrates a likelihood of providing information which will contribute significantly to a wider understanding of natural or cultural history, by virtue of its use as a research site, teaching site, type locality or benchmark**

These sites comprise part of a related body of evidence with potential to provide information about local and regional patterns of past Aboriginal land-use practices and settlement patterns. Some of the sites have potential to contain information that, via research, could provide information about past Aboriginal occupation of the locality and region.

Appendix D

Site Photos

Photo #1

Photo #2

Photo #3

Photo #4

Photo #5

Photo #6

Photo #7

Photo #8

Photo #9

Photo #10

Photo #11

Photo #12

Photo #13

Photo #14

Photo #15

Photo #16

Photo #17

Photo #18

Photo #19

Photo #20

Photo #21

Photo #22

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Photo #31

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Photo #34

Photo #35

Photo #36

Photo #37

Photo #38

Photo #39

Photo #40

Photo #41

Photo #42

Photo #43

Photo #44

Photo #45

Photo #46

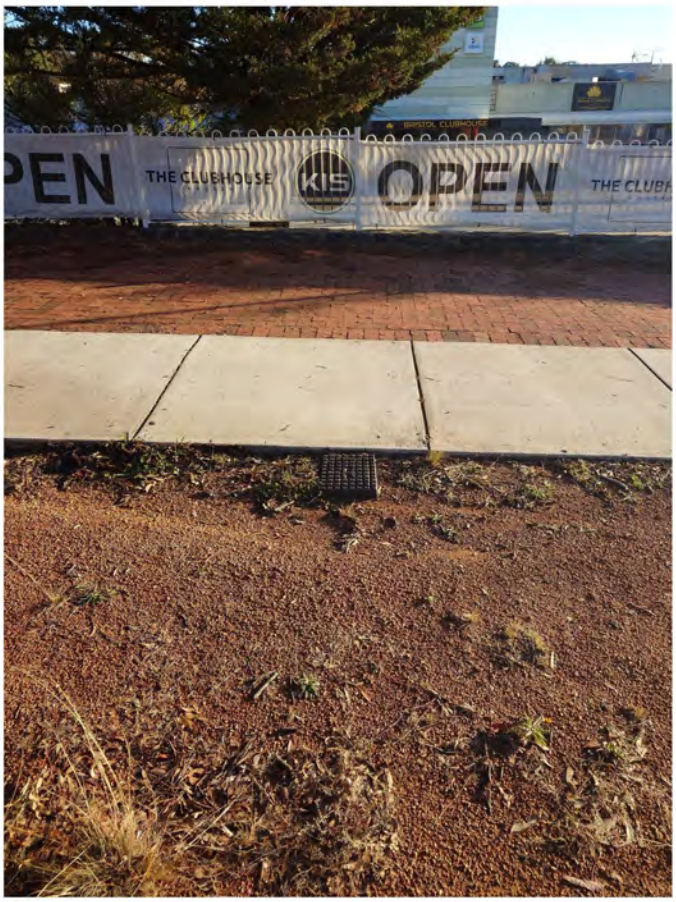

Photo #47

Photo #48

Photo #49

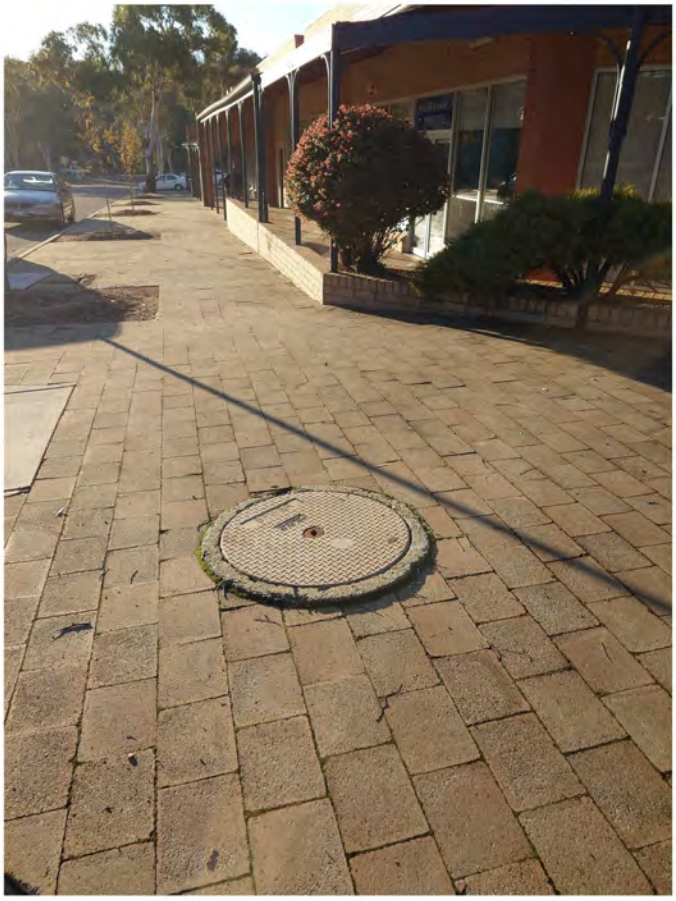

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Photo #66

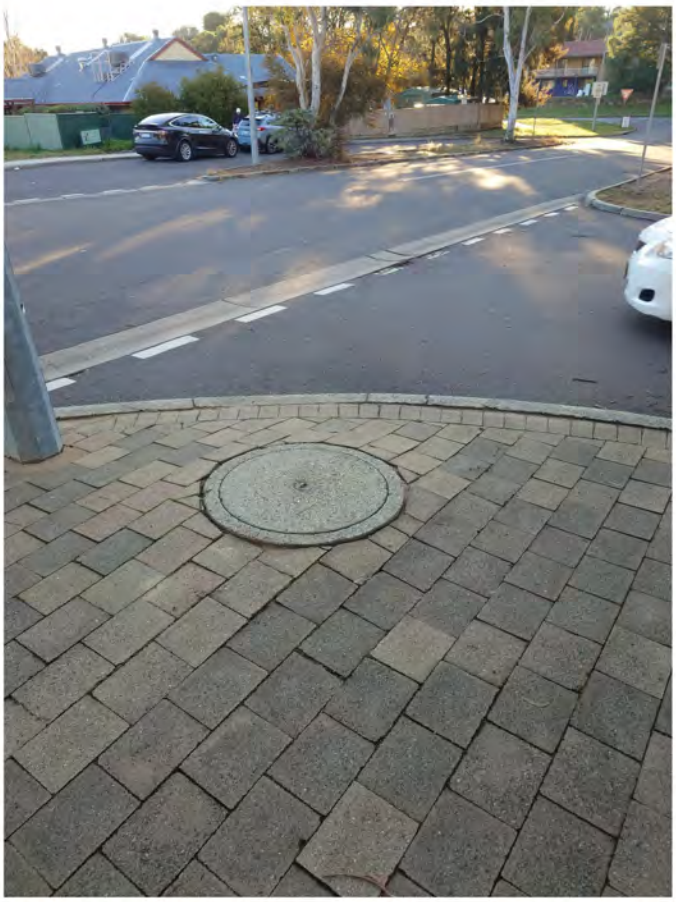

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Photo #71

Photo #72

Photo #73

Photo #74

Photo #75