SUBURBAN RAIL LOOP EAST

SRL East Draft Structure Plan

Utilities Servicing Technical Report

More Homes For Victorians

VICTORIA State Government

Suburban Rail Loop

PREPARED FOR SUBURBAN RAIL LOOP AUTHORITY

SRL EAST DRAFT STRUCTURE PLAN - UTILITIES SERVICING TECHNICAL REPORT

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Contents

Appendices

Glossary and abbreviations

ABBREVIATION	DESCRIPTION
AGIG	Australian Gas Infrastructure Group
AJM-JV	Aurecon, Jacobs and Mott MacDonald Joint Venture
AS	Australian Standard
ASD	Adjacent-to-Station Developments
BAU	Business as usual
EES	Environment Effects Statements
FAN	Fibre access node
GIS	Geographic information system
GSR	Gas Substitution Roadmap
HV	High voltage
IWM	Integrated water management
IWMS	Integrated Water Management Strategy
LV	Low voltage
Km	Kilometre
kV	Kilo volt
NBN	Nation Broadband Network Co.
PSA	Planning scheme amendment
SMS	Safety Management Study
SRL	Suburban Rail Loop
SRLA	Suburban Rail Loop Authority
SRL East	Suburban Rail Loop East
USP	Utility Service Provider
VPP	Victorian Planning Provisions

Executive summary

Draft Structure Plans (Structure Plans) are being prepared for the areas surrounding the new underground stations as part of the Suburban Rail Loop (SRL) East project at Cheltenham, Clayton, Monash, Glen Waverley, Burwood and Box Hill.

The Structure Plans will set a vision and framework to guide urban growth and change in each neighbourhood, while protecting and preserving the character and features people love about them now.

This SRL East Structure Plan – Utilities Servicing Technical Report has been prepared to inform the development of the Structure Plans.

The report describes the existing utility networks in each Structure Plan Area and surrounding area and identifies high-level network augmentation works to support and meet future demand.

Issues and opportunities relating to utility services that impact planning for the development of each Structure Plan Area are identified.

Recommendations to consider when developing the Structure Plans are made, with the objective to avoid, minimise or manage potential negative impacts of change, and to maximise potential for positive change.

FINDINGS

Findings of the utilities servicing technical assessment can be grouped into the following categories:

- **Augmentation** – Identification of augmentation required to support development in the SRL East Structure Plan Areas. This includes:
  - » South East Water sewer and Yarra Valley Water potable water and sewer assets require augmentation to increase service capacity. The nature of works is generally unknown and so the impact on existing easements and potential required land take is unknown. Minor works to the local reticulation network may be required which are subject to future development connection requests.
  - » Augmentation of the existing United Energy Surrey Hills and Burwood zone substations is required to support growth in the Box Hill and Burwood Structure Plan Areas.
  - » Additional zone substations are required within the Clayton and Box Hill Structure Plan Areas.
  - » Augmentation of the National Broadband Network (NBN) is required and can be accommodated within nearby existing fibre access node (FAN) sites and underground assets within the public road reserve, which has no land take implications in the SRL East Structure Plan Areas.
  - » The existing Telstra network has capacity to service the forecast future development, although the extent of augmentation works is undetermined.
- **Assets** – Identification of existing assets with notable development constraints. This includes but is not limited to:
  - » Existing high-pressure transmission gas mains on Nepean Highway and Rowans Road (Cheltenham Structure Plan Area) and Dandenong Road (Clayton and Monash Structure Plan Areas). Guidance is provided for development in proximity to these gas mains.
  - » Existing trunk sewer mains within established easements may be subject to change because of identified augmentation works.
- **Projects** – Identification of committed projects by various utility service providers which represent an opportunity to coordinate works to accommodate growth in the SRL East Structure Plan Areas, achieve

sustainability initiatives and deliver cost efficiency. This includes the delivery of the Dingley Recycled Water Scheme by South East Water in collaboration with Yarra Valley Water.

RECOMMENDATIONS

The approach to providing utilities services for urban infill development can be undertaken through the existing utility networks which accommodate changes in network demand through incremental growth over time.

Providing new services in an urban infill area is generally progressive and network augmentation works align with future development proposals based on demand at an individual site scale. However, addressing network capacity constraints through this approach may result in inefficiencies.

The following recommendations are proposed to support structure planning and future development of the six SRL East Structure Plan Areas. The recommendations have been informed by the consultation with Utility Service Providers (USPs) in the context of existing and assessment of future network capacity for potable water, sewer, recycled water, electricity, gas and telecommunications services.

Line-wide

1. Promote lot consolidation to incorporate the relocation of utility assets from easements on private property into the public realm where feasible, to minimise potential impacts to development yield.

2. Support South East Water, Yarra Valley Water and other Integrated Water Management (IWM) Forum members to pursue alternative water supply initiatives within the SRL East Structure Plan Areas as part of an IWM Strategy, including the Dingley Recycled Water Scheme and its associated infrastructure assets.

3. Re-locate existing overhead electrical infrastructure to below-ground as part of adjoining public realm works, where they limit opportunities to increase tree canopy and improve / enhance walking and cycling infrastructure.

4. Design new utility (above-ground) infrastructure to minimise visual impacts on the public realm.

Cheltenham

1. Early engagement with operators of transmission gas pipelines during the permit application process and through a Safety Management Study (SMS) assessment, is required to ensure compliance with safety standards and minimise delays to planning approvals, near existing high pressure gas main on Nepean Highway.

Clayton

1. Early engagement with operators of transmission gas pipelines during the permit application process and through a SMS assessment, is required to ensure compliance with safety standards and minimise delays to planning approvals, near the existing high pressure gas main on Dandenong Road.

Monash

1. Existing trunk sewer easements, including Monash and Mile Creek Branch Sewers, will require design solutions (that is, build over or relocate assets) to minimise potential impacts to development yield.

2. Early engagement with operators of transmission gas pipelines, during the permit application process and through a SMS assessment, is required to ensure appropriate compliance with safety standards and minimise delays to planning approvals, near the existing high-pressure gas main on Dandenong Road.

Glen Waverley

1. Existing trunk sewer easements, including the 375-millimetre sewer main through industrial development near Aristoc Road, will require design solutions (that is, build over or relocate assets) to minimise potential impacts to development yield.

Burwood

1. Existing sewer easements, including the Gardiners Creek Main and Highbury Road Branch Sewers and the 225-millimetres main sewer through Deakin University, will require design solutions (that is, build over or relocate assets) to minimise potential impacts to development yield.

Box Hill

1. Existing trunk sewer easements, including the 600-millimetre main sewer through Box Hill Central Shopping Centre and the 225-millimetre main sewer through existing residential development north of Albion Road, will require design solutions (that is, build over or relocate assets) to minimise potential impacts to development yield.

OTHER OPPORTUNITIES

Continual consultation with USPs will ensure adequate utility provisions as part of the design and development process. This will provide further detail of the development's utility needs and allow assessment of their network capacity to support this growth. The following outlines opportunities to undertake further future engagement with USPs to support implementation of the Structure Plans and future development:

Cheltenham

- Consult with South East Water on the assets identified for future augmentation to understand works, particularly land take requirements for capacity upgrades, to support development in the Structure Plan Area.

Clayton

- Consult with United Energy to confirm location, timing, easements, buffers and land take requirements of new electrical zone substation, to support development in the Structure Plan Area.

Monash

- Consult with Yarra Valley Water on assets identified for future augmentation to understand works, particularly land take requirements for capacity upgrades to support development in the Structure Plan Area.

Glen Waverley

- Consult with Yarra Valley Water on assets identified for future augmentation to understand works, particularly land take requirements for capacity upgrades to support development in the Structure Plan Area.

1 Introduction

Suburban Rail Loop (SRL) is a transformational project that will help shape Melbourne's growth in the decades ahead. It will better connect Victorians to jobs, retail, education, health services and each other – and help Melbourne evolve into a 'city of centres'.

SRL will deliver a 90-kilometre rail line linking every major train service from the Frankston Line to the Werribee Line via Melbourne Airport.

SRL East from Cheltenham to Box Hill will connect major employment, health, education and retail destinations in Melbourne's east and south-east. Twin 26-kilometre tunnels will link priority growth suburbs in the municipalities of Bayside, Kingston, Monash and Whitehorse.

SRL East Draft Structure Plan (Structure Plan) Areas will surround the six new underground stations at Cheltenham, Clayton, Monash, Glen Waverley, Burwood and Box Hill.

1.1 Purpose of this report

This SRL East Structure Plan – Utilities Technical Servicing Report will inform the preparation of the Structure Plans to guide land use planning and development in the SRL East Structure Plan Areas related to providing utility services.

The report describes the existing utility networks in each Structure Plan Area and the surrounding area and identifies high-level network augmentation works to support and meet future demand.

Issues and opportunities relating to utility services that impact planning for the development of each Structure Plan Area are identified.

Recommendations to consider when developing the Structure Plans are made.

1.2 Project context

Construction of the SRL East underground stations is underway at Cheltenham, Clayton, Monash, Glen Waverley, Burwood and Box Hill. This provides an opportunity to enhance the surrounding neighbourhoods.

SRL East will support thriving and sustainable neighbourhoods and communities that offer diverse and affordable housing options, with easy access to jobs, transport networks, open space, and community facilities and services.

A vision for each SRL East Structure Plan Area and surrounds has been developed in consultation with the community and stakeholders. The visions set out the long-term aspirations for each Structure Plan Area, so they are ready to meet the needs of the growing population.

Figure 1.1 shows SRL East in the context of the entire SRL project and Melbourne's rail network.

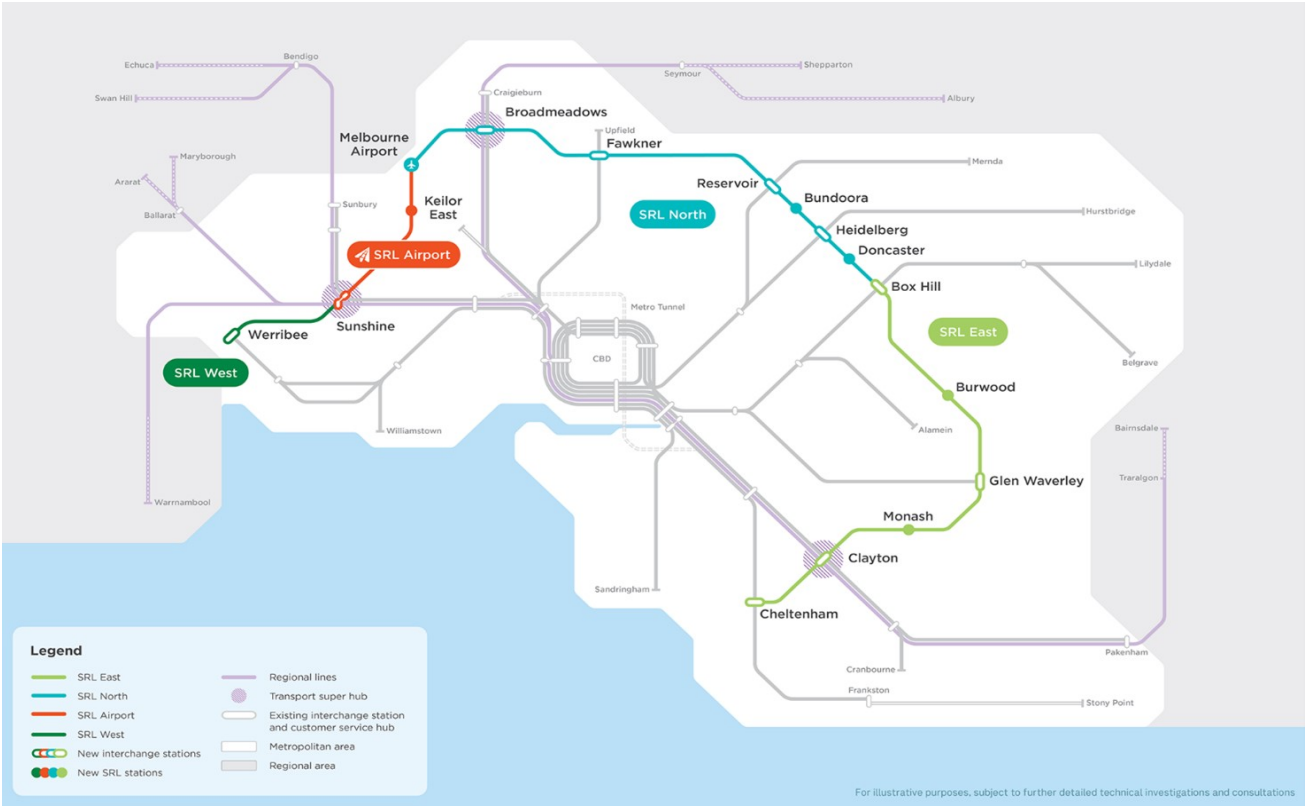

FIGURE 1.1 SUBURBAN RAIL LOOP

1.3 Structure planning

Structure Plans are being prepared for defined areas surrounding the SRL East stations to help deliver the vision developed for each SRL East neighbourhood.

The Structure Plans cover defined Structure Plan Areas that can support the most growth and change. These areas cover a walkable catchment that extends from the SRL station entrances. Additional places are included within each Structure Plan Area as required to make planning guidance more robust and effective, and to align with each community's aspirations and current and future needs.

A Structure Plan is a blueprint to guide how an area develops and changes over a period of time. Structure Plans describe how future growth within the area will be managed in an appropriate and sustainable way to achieve social, economic and environmental objectives. The Structure Plans cover a wide range of matters, such as transport connections and car parking, housing and commercial development, community infrastructure, urban design, open space, water and energy management, climate resilience and sustainability.

By tailoring planning decisions to reflect the needs of a defined area, Structure Plans give effect to the policies and objectives set for these areas and cater for changing community needs. They also provide certainty for residents, businesses and developers by identifying the preferred locations and timing of future land uses, development and infrastructure provision.

Structure Plans take a flexible and responsive approach that enables places to evolve over time.

Planning scheme amendments will be required to implement the Structure Plans into the planning schemes of the cities of Bayside, Kingston, Monash and Whitehorse.

1.4 Structure of this report

- **Section 1** provides the purpose, context and background of the technical assessment.
- **Section 2** outlines the methodology for the technical assessment.
- **Section 3** defines the six SRL East Structure Plan Areas.
- **Section 4** summarises legislation, policies, and other documents relevant to the assessment.
- **Section 5** describes the existing utility conditions in each Structure Plan Area.
- **Section 6** advises on future servicing capacity and works required to support each Structure Plan Area.
- **Section 7** sets out the recommendations to consider when developing the Structure Plans.

2 Methodology

The purpose of this technical report is to inform the Structure Plan planning process in relation to utility constraints, residual capacity and augmentation works required to support future development in an efficient manner. However, it should be noted the responsibility to deliver infrastructure remains with the respective utility service providers.

An assessment of the following utilities in each SRL East Structure Plan Area was completed:

- Water
- Sewage
- Recycled water
- Electricity
- Gas
- Telecommunications
- Other relevant utility service infrastructure.

The assessment was conducted in collaboration with relevant utility service providers in each Structure Plan Area identified in the next Section 2.1. This includes identification of existing services in proximity to each SRL East Structure Plan Area, investigation of the capacity of networks to service future development by the utility service providers, and preparation of recommendations based on information received from them to considered when developing the Structure Plans.

Consultation has occurred with SRLA to:

- Utilise existing contacts to engage with utility service providers and stakeholders to identify and compile received geographic information system (GIS) data on existing utility services
- Collaborate with relevant utility service providers, as per SRLA's engagement protocol, to understand their constraints, network capacity to accommodate future demand, and to identify required augmentation works to support growth in the SRL East Structure Plan Areas.

2.1 Consultation

Table 2.1 summarises the stakeholders engaged for each respective service area. The knowledge of each utility service provider about their networks provided the basis for the summary of existing utility networks provided in Section 5. The utility service providers have also undertaken assessments to prepare advice to inform their future network, which is outlined in Section 6.

TABLE 2.1 UTILITY SERVICE PROVIDERS CONSULTED

SERVICE INFRASTRUCTURE	UTILITY SERVICE PROVIDER
Sewer	Melbourne Water Yarra Valley Water South East Water
Potable water and recycled water	Melbourne Water Yarra Valley Water South East Water
Electricity	United Energy
Gas	Multinet Gas Networks Australian Gas Infrastructure Group
Telecommunications	Telstra NBN Co Vocus AARNet

2.2 Data register

Appendix A records data received from utility service providers to date which has been used for the purpose of utility service provider coordination and to inform this technical report.

2.3 Inter-relationships to other technical reports

The interrelationship to other technical reports prepared to support the preparation of the Structure Plans are detailed in Table 2.2.

TABLE 2.2 INTER-RELATIONSHIPS WITH OTHER TECHNICAL REPORTS

TECHNICAL REPORT	KEY AREAS OF INTER-RELATIONSHIP
SRL East Structure Plan – Flooding Technical Report	The Flooding Technical Report describes the existing minor and major flooding conditions in proximity to each SRL East Structure Plan Area and outlines issues and opportunities related to flood management that impact planning for the development of each Structure Plan Area. The report provides flooding recommendations to consider when developing the Structure Plans. The utilities servicing technical assessment relied on the Flooding Technical Report recommendations related to stormwater and flood risk management within the SRL East Structure Plan Areas.
SRL East Structure Plan - Integrated Water Management Strategy	The Integrated Water Management (IWM) Strategy outlines opportunities for each Structure Plan Area. This includes opportunities to implement and optimise an integrated water management approach to minimise legacy flooding issues, reduce potable water consumption, and reduce mean annual rainfall (stormwater) volumes. The Integrated Water Management Strategy could impact potable water and sewer demand and the network augmentation works required to support the growth in each of the SRL East Structure Plan Areas.

TECHNICAL REPORT	KEY AREAS OF INTER-RELATIONSHIP
SRL East Structure Plan – Climate Response Plans	The Climate Response Plans define focus areas for sustainability in each SRL East Structure Plan Area and provide recommendations to achieve the objectives. The plans aim to guide how development and growth in each Structure Plan Are adapts to and mitigates the effects of climate change and contributes to environmental sustainability. The Climate Response Plans' opportunities could influence the augmentation works required to support growth.

2.4 Engagement with utility service providers

Information on projected population and employment growth within the SRL East Structure Plan Areas to 2041 was provided to utility service providers to enable them to forecast future demand for utility services, servicing capacity and to identify augmentation works required to support development in the SRL East Structure Plan Areas.

This section outlines the information provided to utility service providers.

2.4.1 GROWTH FORECASTS

Population projections generated for the SRL East Business and Investment Case (BIC) (2021) were used for assessing future housing demand in the SRL East Structure Plan Areas as shown in Table 2.3 . The land use projections (including demographic and employment estimates) in the BIC are derived from the CityPlan model.

Total population refers to all long-term residents of the SRL East Structure Plan Areas. Long-term residents are those who have lived, or intend to live, within the SRL East Structure Plan Areas for 6 months or longer. This means all residents are included, apart from those living in temporary forms of accommodation such as hotels, correctional institutions or hospitals. People living in student accommodation, retirement villages and other non-standard forms of residential accommodation are included in the total population.

Employment estimates by industry for the SRL East Structure Plan Areas in 2021 and 2041 were derived using data from the 2021 Australian Bureau of Statistics (ABS) Census and the SRL East Business and Investment Case (BIC) (2021).

TABLE 2.3 TOTAL PROJECTED POPULATION AND EMPLOYMENT WITHIN EACH STRUCTURE PLAN AREA, 2041

2041 POPULATION AND EMPLOYMENT NUMBERS FOR SRL EAST STRUCTURE PLAN AREAS OR EQUIVALENT		
	Population	**Employment**
Cheltenham Structure Plan Area	20,800	22,600
Clayton Draft Structure Plan Area	26,900	29,600
Monash Draft Structure Plan Area	17,900	50,000
Glen Waverley Structure Plan Area	11,700	13,800
Burwood Structure Plan Area	11,000	16,900
Box Hill Structure Plan Area	29,100	38,700

Source: SRL East Structure Plan - Housing Needs Assessment 2024

2.4.1.1 Current employment (2021)

Table 2.4 outlines the current distribution of employment by industry within each SRL East Structure Plan Area. Employment growth is split into five categories to provide additional detail to the future servicing capacity assessment as each employment industry category has a different utility demand profile.

TABLE 2.4 CURRENT (2021) EMPLOYMENT DISTRIBUTION BY INDUSTRY

	PROFESSIONAL SERVICES	HEALTH	EDUCATION	OTHER POPULATION SERVICES	INDUSTRIAL	TOTAL
Cheltenham Structure Plan Area	2300	1300	400	5000	1500	10,500
Clayton Structure Plan Area	900	8900	300	1500	800	12,400
Monash Structure Plan Area	4400	700	8000	3600	3300	20,000
Glen Waverley Structure Plan Area	1900	900	900	3,300	600	7,600
Burwood Structure Plan Area	1100	500	3900	2,200	1000	8800
Box Hill Structure Plan Area	5300	7600	1800	3000	600	18,300
South East Region	156,200	123,400	80,800	243,100	150,000	753,500
Greater Melbourne	666,500	337,200	224,400	725,500	423,200	2,376,700

2.4.1.2 Employment projections 2041

Table 2.5 show the forecast employment growth anticipated for each of SRL East Structure Plan Area in 2041 for the same five categories.

TABLE 2.5 EMPLOYMENT PROJECTIONS BY INDUSTRY, 2041

	PROFESSIONAL SERVICES	HEALTH	EDUCATION	OTHER POPULATION SERVICES	INDUSTRIAL	TOTAL
Cheltenham Structure Plan Area	5400	2600	1000	10,400	3200	22,600
Clayton Structure Plan Area	4400	16,800	1300	3900	3100	29,600
Monash Structure Plan Area	15,700	1700	15,500	9700	7,400	50,000

	PROFESSIONAL SERVICES	HEALTH	EDUCATION	OTHER POPULATION SERVICES	INDUSTRIAL	TOTAL
Glen Waverley Structure Plan Area	4300	1300	2100	4600	1400	13,800
Burwood Structure Plan Area	3500	800	6400	4400	1800	16,900
Box Hill Structure Plan Area	11,100	14,200	3500	7600	2300	38,700
South East Region	283,800	216,400	132,000	368,400	211,400	1,211,900
Greater Melbourne	1,166,400	658,700	410,300	1,210,000	604,200	4,049,500

2.4.2 TRAVEL ZONE DATA

The employment and population growth were also provided to utility service providers at the travel zone level. Travel zones (TZNs) are the unit of geography used by the Victorian Integrated Transport model (VITM). There are a total of around 7000 zones across Victoria in the model. The purpose of this input is to provide an indication of the distribution of population and employment within each Structure Plan Area and therefore demand for utility services within specific areas.

2.5 Assumptions and limitations

The following assumptions and limitations apply to this technical assessment:

- The population and employment growth forecasts and travel zone distribution are indicative estimates. Actual growth and distribution will be subject to future development proposals.
- The information provided by third parties is preliminary and may change as more detailed assessment is undertaken. The mapped service locations are indicative only and the survey quality of the data has not been validated. They should not be relied upon for any detailed planning or design works, or for construction activities.
- Advice and recommendations in this report rely on the accuracy and currency of the USP spatial data and advice provided to date. This report does not consider any spatial information that has not been received as part of the data register listed in Appendix A.
- No site inspections, service proving or other reviews of existing infrastructure condition were conducted.
- Infrastructure funding and commercial considerations were not considered for this assessment.

3 SRL East Structure Plan Areas

This section defines the Structure Plan Area and Study Area for this report.

3.1 Study Areas

Study Areas were established for the utilities assessment. The Study Areas extend for a radius of 1.6 kilometres from each SRL station and include the Structure Plan Areas. A 1.6-kilometre radius was selected as it is considered a sufficient distance to understand the existing context of the utilities networks that could influence the Structure Plan Areas. This includes bulk regional supply points, trunk reticulation and its transition into the local reticulation network to service existing customers in the Structure Plan Areas.

3.2 Cheltenham Structure Plan Area

The Cheltenham Structure Plan Area surrounds the SRL station at Cheltenham in the cities of Kingston and Bayside.

The Structure Plan Area is generally bordered by residential land north of Stayner Grove and Alison Street to the north, residential land east of Chesterville Road to the east, Park Road to the south and Middleton Street and Worthing Road to the west.

Nepean Highway is a major road that intersects the Structure Plan Area in a north to south-east alignment.

The existing Frankston Line intersects the centre of the Structure Plan Area in a north-south alignment.

The Cheltenham Structure Plan Area is shown in Figure 3.1.

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FIGURE 3.1 CHELTENHAM STRUCTURE PLAN AREA

3.3 Clayton Structure Plan Area

The Clayton Structure Plan Area surrounds the SRL station at Clayton in the cities of Monash and Kingston.

The Structure Plan Area is generally bordered by North Road / Wellington Road to the north, Ormond Road to the west, residential lots between Alward Avenue and Murdock Street, and parts of the Dandenong Line to the south, and Kombi Road and Buckland Street to the east.

Dandenong Road is a major road, running in a north-west to south-east alignment through the edge of the Structure Plan Area. The existing Cranbourne / Pakenham Line intersects the Structure Plan Area in a north-south alignment.

The Clayton Structure Plan Area is shown in Figure 3.2.

FIGURE 3.2 CLAYTON STRUCTURE PLAN AREA

3.4 Monash Structure Plan Area

The Monash Structure Plan Area surrounds the SRL station at Monash in the City of Monash.

It is generally bordered by Wellington Road to the south, Beddoe Avenue and Boundary Road to the west, land north of Ferntree Gully Road to the north and an existing drainage channel, which forms a natural barrier to properties to the east.

Monash University Clayton campus is in the Monash Structure Plan Area.

The Monash Structure Plan Area is shown in Figure 3.3

FIGURE 3.3 MONASH STRUCTURE PLAN AREA

3.5 Glen Waverley Structure Plan Area

The Glen Waverley Structure Plan Area surrounds the SRL station at Glen Waverley in the City of Monash.

It is generally bordered by Madeline Street to the north, Danien Street and The Outlook to the east, Waverley Road to the south and Kinnoull Grove and Rose Avenue to the west.

Coleman Parade and the existing Glen Waverley Line intersect the centre of the Structure Plan Area in an east-west alignment.

Key arterial roads include Springvale Road which intersects the precinct in a north-south alignment, and High Street Road and Waverley Road.

The Glen Waverley Structure Plan Area is shown in Figure 3.4 .

FIGURE 3.4 GLEN WAVERLEY STRUCTURE PLAN AREA

3.6 Burwood Structure Plan Area

The Burwood Structure Plan Area surrounds the SRL station at Burwood. The Structure Plan Area is mainly located in the City of Whitehorse, with the southern portion south of Highbury Road extending into the City of Monash.

The Structure Plan Area is generally bounded by Uganda Street, Deakin University, Inverness Avenue, Bronte Avenue and Yarra Bing Crescent to the north, Andrews Street, Wridgway Avenue, Prospect Street and Huntingdale Road to the east, Zodiac Street, Ashwood Drive, Carmody Street and Barlyn Road to the south and Sixth Avenue, Evans Street, Warrigal Road, Parer Street and Meldan Street to the west.

Burwood Highway intersects the centre of the Structure Plan Area in an east-west alignment.

Deakin University Burwood campus is in the Structure Plan Area.

The Burwood Structure Plan Area is shown in Figure 3.5.

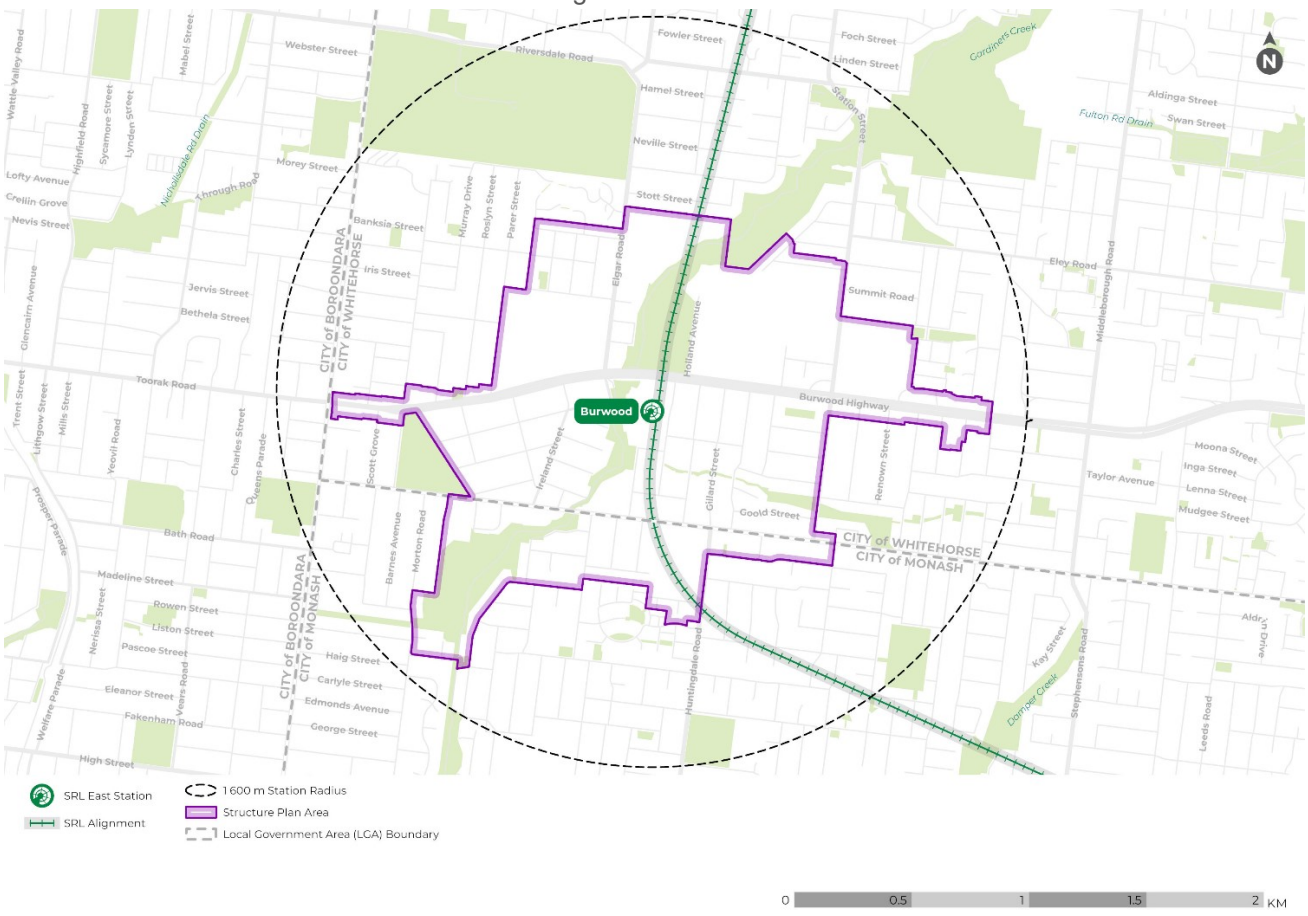

FIGURE 3.5 BURWOOD STRUCTURE PLAN AREA

3.7 Box Hill Structure Plan Area

The Box Hill Structure Plan Area surrounds the SRL station at Box Hill in the City of Whitehorse.

It is generally bordered by Severn Street and McKean Street to the north, Clota Avenue and Laburnum Street to the east, slightly west of Elgar Road to the west and Canterbury Road to the south.

Whitehorse Road / Maroondah Highway and the existing Belgrave / Lilydale Line intersect the centre of the Structure Plan Area in an east-west alignment. The main road corridors include Whitehorse Road, Elgar Road and Station Street.

The Box Hill Structure Plan Area is shown in Figure 3.6.

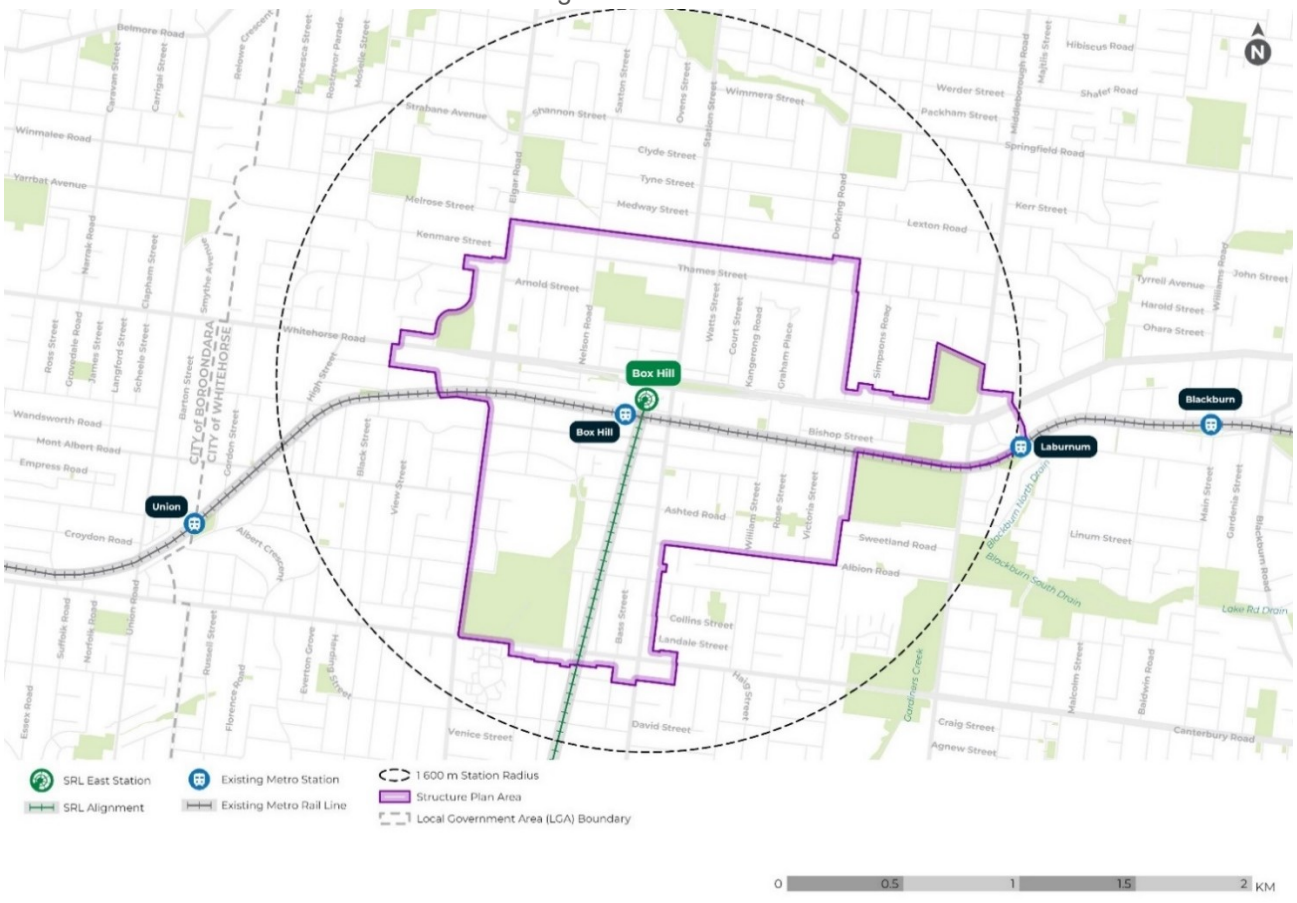

FIGURE 3.6 BOX HILL STRUCTURE PLAN AREA

4 Legislative and policy context

This section summarises legislation, polices and other documents relevant to the Utilities Servicing Technical Report. Comment is provided on their implications for structure planning purposes in SRL East Structure Plan Areas.

4.1 Victoria Planning Provisions

The Victoria Planning Provisions (VPPs) are established under Part 1A of the *Planning and Environment Act 1987* (Vic). The VPPs form the framework (template) used for all Victoria's municipal planning schemes.

The VPPs relevant to utilities and their objectives are listed in the Tables below. These clauses apply equally to each SRL East Structure Plan Area as they are contained in the local planning policies of the relevant municipal planning schemes.

The clauses in Table 4.1 set out policies to provide new and existing urban development in Victoria in a sustainable way. They focus on maximising the use and access to existing utilities and infrastructure, including known investment and servicing strategies, to ensure urban development is feasible, cost effective and efficient. Structure planning supports the facilitation of infrastructure by engaging with utility service providers on existing capacity and future demand to determine utility infrastructure development or augmentation requirements including whether land take will be required.

TABLE 4.1 VICTORIA PLANNING PROVISIONS – SETTLEMENT

VPP CLAUSE	OBJECTIVE / DESCRIPTION
Clause 11 – Settlement	
11.02–1S Supply of Urban Land	This clause requires planning authorities to plan to accommodate projected population growth over at least a 15-year period and provide clear direction on locations where growth should occur. It includes strategies to ensure the ongoing provision of land and supporting infrastructure to support sustainable urban development. Planning for urban growth should consider: • Opportunities to consolidate, redevelop and intensify existing urban areas. • Service limitations and the costs of providing infrastructure.
11.02–2S Structure planning	This clause seeks to ensure the orderly development of land through the preparation of Structure Plans. It includes strategies to facilitate: • Logical and efficient provision of infrastructure • The use of existing infrastructure and services.
11.02 – 3S Sequencing of development	This clause seeks to ensure that sequencing of development facilitates infrastructure planning and funding. It includes strategies to: • Ensure that planning for water supply, sewerage and drainage works receives high priority in early planning for areas of growth.

The clauses in Table 4.2 set out policies to provide utilities to service urban growth in a sustainable and progressive way. They focus on integrating utility infrastructure through subdivision and the creation of allotments and responding to emerging technologies and demands.

TABLE 4.2 VICTORIA PLANNING PROVISIONS – BUILT ENVIRONMENT AND DEVELOPMENT INFRASTRUCTURE

VPP CLAUSE	OBJECTIVE / DESCRIPTION
15.01 – Built environment	
15.01-3S Subdivision design	This policy includes strategies to: • Provide utilities and services that support the uptake of renewable energy technologies, such as microgrids and energy storage systems, including batteries.
19.03 – Development infrastructure	
19.03–2S Infrastructure design and provision	This policy includes strategies to: • Integrate developments with infrastructure and services, whether they are in existing suburbs, growth areas or regional towns.
19.03–3S Integrated water management	This policy includes strategies to: • Provide for sewerage at the time of subdivision or ensure lots created by the subdivision are capable of adequately treating and retaining all domestic wastewater within the boundaries of each lot. • Ensure land is set aside for water management infrastructure at the subdivision design stage. • Minimise the potential impacts of water, sewerage and drainage assets on the environment. • Protect significant water, sewerage and drainage assets from encroaching sensitive and incompatible uses.
19.03–4R Telecommunications – Metropolitan Melbourne	This policy includes strategies to: • Support the provision of high-quality telecommunications infrastructure in Melbourne's employment, urban renewal and growth areas through early planning for fibre-ready facilities and wireless infrastructure.

Table 4.3 sets out objectives and standards for providing infrastructure and utilities related to multiple dwellings, residential buildings and residential subdivision. They apply across residential and mixed-use zones, and other zones that provide for residential development. The provision of utility services must also occur according to the requirement of the legislation summarised in Table 4.4.

TABLE 4.3 VICTORIA PLANNING PROVISIONS – DWELLINGS AND RESIDENTIAL SUBDIVISION

VPP CLAUSE	OBJECTIVE / DESCRIPTION
Clause 55 – Two or more dwellings on a lot and residential buildings	
55.02–4 Infrastructure Objectives	This clause aims to ensure development is provided with appropriate utility services and infrastructure and that it does not unreasonably overload the capacity of utility services and infrastructure. It includes **Standard B4** which states that: • Development should be connected to reticulated services, including reticulated sewerage, drainage and electricity, if available • Development should not unreasonably exceed the capacity of utility services and infrastructure, including reticulated services and roads. • In areas where utility services or infrastructure have little or no spare capacity, developments should provide for the upgrading of or mitigation of the impact on services or infrastructure.
Clause 56 – Residential subdivision	
56.09 Utilities	This policy aims to ensure residential subdivision design appropriately provides for utilities.
56.09–1 Shared trenching objectives	This policy aims to maximise opportunities for shared trenching and minimise constraints on landscaping within street reserves. It includes **Standard C27** which states that: • reticulated water, gas, electricity and telecommunications services should be provided in shared trenching to minimise construction costs and land allocation for underground services.
56.09–2 Electricity and telecommunications objectives	This policy aims to provide public utilities to lots in a timely, efficient and cost-effective manner, and to reduce greenhouse gas emissions by supporting generation and use of electricity from renewable sources. It includes **Standard C28** which states: • The electricity supply system must be designed according to the requirements of the relevant electricity supply provider and be provided to the boundary of all lots in a subdivision to the satisfaction of the relevant electricity authority. • Arrangements that support the generation or use of renewable energy at a lot or neighbourhood level are encouraged. • The telecommunication system must be designed according to the requirements of the relevant telecommunications servicing agency and should be consistent with any approved strategy, policy or plan for providing advanced telecommunications infrastructure, including fibre optic technology. • The telecommunications system must be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant telecommunications servicing authority.

4.2 Roles and responsibilities

The role and responsibilities of regulatory authorities related to the provision of utilities services are summarised in Table 4.4. The legislation listed directs utility service providers as retailers to deliver services to Australian Standards, to agreed service levels, and to customer needs, through direct engagement.

TABLE 4.4 ROLES AND RESPONSIBILIES IN UTILITIES

UTILITY SERVICE	UTILITY SERVICE PROVIDER	LEGISLATION	REQUIREMENTS
Potable water	South East Water Yarra Valley Water Melbourne Water	*Water Act 1989* (Vic) *Water Industry Act 1994* (Vic)	The Water Act provides the legal framework for managing Victoria's water resources. The main purpose of the Water Act is to: • Promote the equitable and efficient use of our water resources. • Make sure our water resources are conserved and properly managed for the benefit of all Victorians. • Increase community involvement in conserving and managing our water resources. The Act establishes a State-owned corporation in relation to the supply of water, the provision of sewerage and stormwater drainage systems, and the disposal of wastewater in Victoria. The Act also provides for the transfer of assets, rights, and liabilities of the Water Board. This includes planning to support the future growth of population and employment within their relevant service area. Melbourne Water, Yarra Valley Water and South East Water have distinct but complementary roles under the Act. Melbourne Water is responsible for managing bulk water supply, major water infrastructure, and overseeing the overall water quality and environmental sustainability of water resources in the region. Yarra Valley Water and South East Water are responsible for the direct supply of water to consumers, billing, customer service, and maintaining the local distribution network. Together, they ensure that water is delivered efficiently, safely, and sustainably to homes and businesses.
Wastewater (sewer)	South East Water Yarra Valley Water Melbourne Water		
Recycled water	South East Water Yarra Valley Water		
Electricity	United Energy	*Electricity Industry Act 2000* (Vic) *Energy Safe Victoria Act 2005* (Vic)	The Electricity Industry Act regulates the electricity supply industry. It establishes guidelines and provisions related to the generation, transmission, distribution, and retail of electricity. This includes planning to support the future growth of population and employment within their relevant service area. The Act ensures efficient and reliable electricity services while safeguarding consumer interests and promoting fair competition within the industry. United Energy, as a Distribution Network Service Provider (DNSP), is responsible for managing and maintaining the electricity distribution network within its service area. Under the Electricity Industry Act, its role includes ensuring the safe and reliable delivery of electricity to consumers, managing network infrastructure, and complying with regulatory standards. United Energy is also involved in network planning, upgrades, and responding to outages, while ensuring the distribution of electricity meets legal and safety requirements. The Energy Safe Victoria Act establishes Energy Safe Victoria (ESV) as the safety regulator for electricity and gas in Victoria.
Telecommunications	NBN Co Telstra Optus	*Telecommunications Act 1997* (Cth)	The Telecommunications Act establishes the legal framework for regulating telecommunications services in Australia, ensuring the fair and efficient operation of networks. It promotes competition, regulates infrastructure deployment, and sets consumer protection standards, fostering a reliable and accessible telecommunications industry. The Act is crucial for ensuring that carriers and service

UTILITY SERVICE	UTILITY SERVICE PROVIDER	LEGISLATION	REQUIREMENTS
	AARNet VERNET Vocus/Nextgen		providers comply with national requirements related to privacy, security, and access to emergency services. Its provisions help maintain a balanced market, protect consumers, and ensure that Australians have equitable access to telecommunications services, regardless of location. Under the Telecommunications Act, service providers must meet several key obligations, including registering with the Australian Communications and Media Authority (ACMA) and adhering to consumer protection standards such as the Telecommunications Consumer Protections (TCP) Code. Providers must ensure the security of their networks and comply with data retention laws, making customer information available to law enforcement as required. They are also responsible for facilitating lawful interception capabilities, ensuring emergency service access, sharing infrastructure with other carriers, and complying with anti-spam and telemarketing regulations. Furthermore, providers must meet obligations under the Universal Service Obligation (USO) to ensure basic services are available to all Australians, especially in rural and remote areas.
Gas	Multinet Gas Networks Australian Gas Infrastructure Group (AGIG)	*Gas Industry Act 2001* (Vic) *Gas Safety Act 1997* (Vic) *Pipelines Act 2005* (Vic)	The Gas Industry Act regulates the gas industry. Its key provisions include requirements for obtaining gas distribution and retail licenses. The Act establishes a consumer safety net for domestic and small business customers. Under the Act, Multinet Gas plays a critical role as a gas distribution service provider. Multinet Gas is responsible for managing and maintaining the gas distribution network within its service area, ensuring the safe and reliable delivery of natural gas to residential, commercial, and industrial customers. Multinet Gas is also tasked with network planning, infrastructure upgrades, and responding to gas emergencies, while complying with regulatory and safety standards outlined in the Gas Industry Act. The Gas Safety Act aims to ensure the safe conveyance, sale, supply, measurement, control and use of gas. It provides regulations to generally oversee gas safety. The Pipelines Act is the primary legislation governing the construction and operation of pipelines carrying liquid and gaseous fuels and other industrial products at high pressure in Victoria. This includes planning to support the future growth of population and employment within their relevant service area.

5 Existing conditions

This section summarises the existing conditions of the networks operated by utility service providers in the region surrounding and within the SRL East Structure Plan Areas. It provides GIS mapping of the next sing networks and identifies known network performance issues and committed infrastructure projects.

5.1 Line-wide regional existing conditions

The line-wide existing conditions summarised below provide regional context on the utility service providers operating in proximity to the SRL East Structure Plan Areas. Appendix B.1 provides GIS maps showing their networks.

5.1.1 POTABLE WATER

Melbourne Water is the wholesale water utility provider responsible for providing bulk drinking water supply to the Greater Melbourne area, which includes the SRL East Structure Plan Areas. Melbourne Water manages major catchments, water reservoirs, treatment plants and trunk mains. Bulk drinking water is supplied to water retailers such as South East Water and Yarra Valley Water. Water retailers receive treated water from Melbourne Water and distribute it to customers within their service area.

Water retailers are responsible for the local water distribution network, including mains, meters and local infrastructure:

- South East Water services the Cheltenham and Clayton Structure Plan Areas and a small portion of the Monash Structure Plan Area.
- Yarra Valley Water services the Box Hill, Burwood, Glen Waverley Structure Plan Areas and most of the Monash Structure Plan Area.

Figure 5.1 shows the service regions of South East Water and Yarra Valley Water.

Melbourne Water has not provided commentary on the performance and residual capacity of its existing potable water network. However, Melbourne Water typically considers its existing network in its servicing assessment when preparing service advice on required works to support development through planning applications and any future demand through forecast growth.

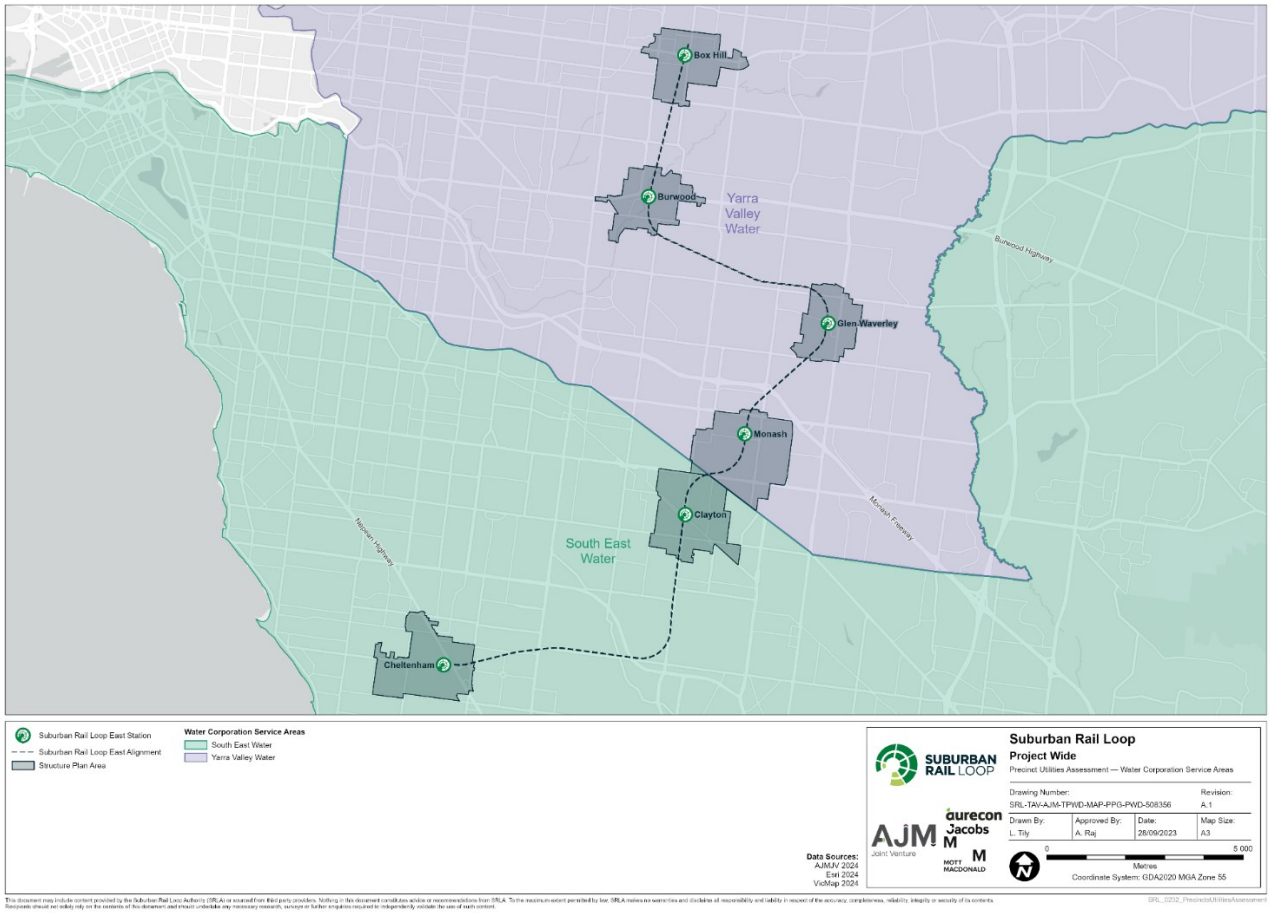

FIGURE 5.1 SERVICE REGIONS OF YARRA VALLEY WATER & SOUTH EAST WATER

5.1.2 RECYCLED WATER

South East Water and Yarra Valley Water often work in collaboration to ensure water services are cohesively provided. They are currently investigating the supply of recycled water to select regions across their service areas.

There are no identified existing recycled water assets or pipework located in proximity to the SRL East Structure Plan Areas. However, detailed design is currently underway for South East Water's Dingley Recycled Water Scheme and the Eastern Alternative Water Scheme. Stage 1 is in feasibility and concept stage.

5.1.2.1 Dingley Recycled Water Scheme

The Dingley Recycled Water Scheme will deliver recycled water to around 40 sites in the Bayside, Kingston, Greater Dandenong and Monash Local Government Areas. The locations of these sites are yet to be confirmed and could be within the SRL East Structure Plan Areas.

The Recycled Water Scheme will be delivered in two stages. The first stage will include the design and construction of a 12-kilometre transfer main to bring recycled water from the Eastern Treatment Plant to service the identified locations. The second stage involves construction of the connection pipes from the transfer main to the identified sites, comprising a total 42 kilometres of pipeline. The Cheltenham Structure Plan Area will be in proximity to the stage two west connection pipes.

Investigation works for the transfer main began in late November 2023. However, due to unexpected delays during early works, it is estimated that construction of stage one will commence in early 2025. It should take approximately 9 months to complete. Stage two is expected to start in 2025 with an estimated completion date of 2028.

5.1.2.2 Eastern Alternative Water Scheme – Stage 1

The Eastern Alternative Water Scheme is being led by Yarra Valley Water and is in the feasibility and concept stage. The Alternative Water Scheme will explore opportunities for alternative water supply and use in the eastern region of Melbourne. Possible sources include high-quality recycled water, stormwater, rainwater and greywater, which can be used for non-drinking water purposes such as flushing toilets, clothes washing, irrigation, car washing, watering gardens and other industrial uses. Developing alternative water schemes will strengthen the water system's climate resilience, help customers save drinking water, and improve waterway health and liveability.

5.1.3 SEWER

Melbourne Water is the wholesale water utility provider responsible for providing bulk sewer services for the Greater Melbourne area, which includes the SRL East Structure Plan Areas. This includes large trunk sewers that transport sewerage from retail water companies and the management of major sewerage treatment plants that treat sewage to ensure it is safe before its release into nearby waterways. South East Water and Yarra Valley Water, as water retailers, manage the collection of sewerage from customers and transport it to the larger trunk sewers managed by Melbourne Water. South East Water and Yarra Valley Water are responsible for the local sewer distribution network.

South East Water services the Cheltenham Structure Plan Area and most of the Clayton Structure Plan Area. Yarra Valley Water services the Box Hill, Burwood, Glen Waverley and Monash Structure Plan Areas and a small portion of the Clayton Structure Plan Area.

Figure 5.1 shows the sewage service regions for South East Water and Yarra Valley Water.

Melbourne Water has not provided commentary on its existing sewer network's current performance and residual capacity. However, Melbourne Water typically considers the existing sewage network in its servicing

assessment when preparing service advice on required works to support development through planning applications and any future demand through forecast growth.

5.1.4 ELECTRICITY

All the SRL East Structure Plan Areas are serviced by United Energy.

As noted in United Energy's *Distribution Annual Planning Report* (2023), it is a regulated Distribution Network Service Provider (DNSP) within Victoria. United Energy owns the electrical infrastructure from a sub-transmission to distribution level which supply electricity to homes and businesses.

A zone substation is an electrical substation that connects the sub-transmission network to the distribution network. It typically steps down the voltage from sub-transmission levels (such as 66 kV) to high voltage distribution levels (such as 11 or 22 kV). Zone substations also act as controlling points between different high voltage networks.

The capacity of a zone substation is typically described by its N-1 firmware capacity, which describes the upper limit where it can run smoothly even if one major component fails, ensuring that electricity continues without interruptions. A zone substation can operate beyond its N-1 capacity, but there are risks of network unreliability and/or overloading when a single fault or failure occurs.

5.1.5 GAS

Multinet Gas Networks is responsible for providing gas distribution services to the SRL East Structure Plan Areas.

Multinet Gas Networks owns and operates the gas network throughout Melbourne's inner and outer east, the Yarra Ranges and South Gippsland, including the mains and gas meters. It distributes natural gas to over 710,000 customers, transporting gas from the high-pressure transmission network operated by APA GasNet to residential, commercial and industrial customers.

Multinet Gas Networks is yet to provide commentary on the residual capacity or current performance of its existing network.

Figure 5.2 shows the Multinet Gas Networks distribution service area.

FIGURE 5.2 MULTINET GAS NETWORKS DISTRIBUTION AREA (MULTINET GAS NETWORKS, 2023)

5.1.6 TELECOMMUNICATIONS

The regional telecommunications network located in and around the SRL East Structure Plan Areas comprises a network of cables, towers and other equipment that provide services including internet, phone and television. The telecommunications network modes considered as part of this servicing report include the fibre / copper / coaxial network and the mobile network.

Service providers include the government-owned National Broadband Network (NBN Co) and the following private companies:

- Telstra
- Optus
- AARnet
- TPG
- Aussie Broadband

- Vocus/ NextGen
- VERNet.

These telecommunication providers have not provided commentary on the current performance and residual capacity of their networks. AARNet has provided GIS data. Other telecommunication providers are yet to provide information on their network. The existing network and its impact within the SRL East Structure Plan Areas, particularly underground assets, is presently unknown. However, the utility service providers have considered the existing network when preparing advice on the proposed servicing strategies noted in Section 2.4

5.1.6.1 NBN exchange sites

The SRL East Structure Plan Areas are serviced by eight separate NBN exchange sites. These sites are referred to as fibre access nodes (FAN) sites. The FAN sites have the key functions and purposes summarised below.

Functions

- Aggregation point – FAN sites aggregate data from multiple fibre connections. These connections come from homes and businesses within the FAN site's fibre serving area (FSA).
- Connection to the backbone network – FAN sites connect the local fibre optic network to the NBN's main backbone network, which is a high-capacity network linking major cities and regions.
- Data distribution – They distribute data to and from end-users, managing the flow of internet traffic efficiently.

Purposes

- Improved performance – By reducing the distance data must travel over copper lines (in fibre to the node setups), FAN sites improve overall network performance.
- Scalability – They allow for easier expansion of the network as demand for high-speed internet grows.
- Reliability – Centralised management and maintenance at FAN sites help ensure more consistent and reliable network service.

In essence, FAN sites are vital nodes that ensure the efficient and effective operation of the NBN, providing high-speed internet access to Australian homes and businesses while ensuring improved performance, future scalability and reliability.

5.1.7 COMMITTED PROJECTS

Table 5.1 lists the committed utilities project in proximity to the SRL East Structure Plan Areas identified at the time of writing this report.

TABLE 5.1 COMMITTED PROJECTS

SERVICE	ITEM	DESCRIPTION	LINK TO OTHER DISCIPLINES
Recycled water	Dingley Recycled Water Scheme and Eastern Alternative Water Scheme	Provision of recycled water from the Eastern Treatment Plant to service the local government areas around the SRL East Structure Plan Areas	Integrated water management

5.2 Cheltenham Structure Plan Area

The existing conditions of the utility networks relating to the Cheltenham Structure Plan Area are summarised below, along with relevant committed projects.

5.2.1 EXISTING SITE INFRASTRUCTURE

5.2.1.1 Potable water network

Melbourne Water as the bulk water supplier and South East Water as the water retailer are responsible for providing potable water services within the Cheltenham Structure Plan Area. There are no identified Melbourne Water potable water assets located within the Cheltenham Structure Plan Area. However, bulk water is assumed to be transferred to reservoirs north-east of the Structure Plan Area and then distributed via trunk reticulation to the local retail water network. The retail potable water network within the Cheltenham Structure Plan Area ranges from 100 to 600-millimetre assets located within the public road reserve.

The Cheltenham Structure Plan Area is generally well serviced by the local potable water reticulation network. All roadways within the Structure Plan Area contain watermains of at least 100 millimetres. Any new property connections into the existing network generally do not require extensive lead-in infrastructure.

Some localised areas such as the Cheltenham Driving Range, Cheltenham Cemetery, Sir William Fry Reserve and the vacant land north of Sir William Fry Reserve currently have limited network coverage and ability to service additional connections. These locations are not anticipated to be future development sites.

New connections into the network are assessed on a case-by-case basis in collaboration with South East Water and are subject to capacity within the existing network.

Appendix B.2 provides GIS maps showing the existing potable water network.

5.2.1.2 Recycled water network

There are no identified existing recycled water assets or pipework located in proximity to the Cheltenham Structure Plan Area.

5.2.1.3 Sewer network

Melbourne Water as the bulk sewer supplier and South East Water as the water retailer are responsible for providing sewer services within the Cheltenham Structure Plan Area. There are no identified Melbourne Water assets in the area.

The existing sewer network consists of South East Water mains ranging in size from 100 to 600 millimetres. A large proportion of the sewer network within the Cheltenham Structure Plan Area is located along rear easement sewer mains running between the rear property line of residential properties. The remaining network is located throughout the public road reserve.

The Cheltenham Structure Plan Area is well serviced by the existing local sewer network. Most residential properties are connected to local rear easement sewer mains, which service adjoining properties and each line could run for 150 metres before connecting to the nearby local sewer retic within the public road reserve. Development in properties with existing rear sewer easements will need to consider guidance from the relevant utility service providers to manage the existing connections and ongoing services for the length of the line. Any new property connections into the existing network generally do not require extensive lead-in infrastructure.

Some localised areas such as the Cheltenham Driving Range, Cheltenham Cemetery, Sir William Fry Reserve and the vacant land north of Sir William Fry Reserve have limited network coverage and ability to service additional connections. These locations are not anticipated to be future development sites.

New connections into the network are assessed on a case-by-case basis in collaboration with South East Water and are subject to capacity within the existing network.

Appendix B.2 provides GIS maps showing the existing sewer network.

5.2.1.4 Electricity network

The Cheltenham Structure Plan Area is serviced by the Sandringham, Beaumaris, Cheltenham, Heatherton and Mentone zone substations. Table 5.2 details the characteristics of the zone substations, their proximity to the SRL station at Cheltenham, the installed firm capacity, actual summer maximum demand, approximate residential capacity and forecast demand exceeding current capacity. Note these figures are based on United Energy's *Distribution Annual Planning Report* which is a publicly available document providing forecast demands up to 5 years in future. While United Energy has noted that future network planning is considered beyond 2027–28, it is not clear what and how potential servicing issues are considered in the medium and long-term based on the *Distribution Annual Planning Report*.

TABLE 5.2 CHELTENHAM STRUCTURE PLAN AREA ZONE SUBSTATION BREAKDOWN (2022-23)

ZONE SUBSTATION NAME	TRANSFORMATION	DISTANCE FROM SRLA STATION (KM)	INSTALLED FIRM CAPACITY (N-1 REDUNDANCY (MVA)	ACTUAL 2022-23 SUMMER MAXIMUM DEMAND (MVA)	APPROX. RESIDUAL N-1 CAPACITY (MVA)	FORECAST DEMAND EXCEEDING CURRENT CAPACITY
Beaumaris (BR)	66 / 11 kV	3.1 km	30.8	25.4	5.4	No forecast demand exceeding current N-1 capacity.
Sandringham (SR)	66 / 11 kV	2.6 km	33.9	29.1	4.8	No forecast demand exceeding current N-1 capacity.
Cheltenham (CM)	66 / 11 kV	1.0 km	30.5	20.5	10	No forecast demand exceeding current N-1 capacity.
Heatherton (HT)	66 / 22 kV	2.5 km	61.4	46.9	15.9	No forecast demand exceeding current N-1 capacity.
Mentone (M)	66 / 11 kV	3.4 km	52.6	34.4	18.2	No forecast demand exceeding current N-1 capacity.

The Cheltenham Structure Plan Area is well serviced by United Energy's high voltage network. A 66 kV overhead line is the spine of the electrical network. It runs through the centre of the Structure Plan Area along Karen Street through to Bay Road, before turning south along Jack Road. The local reticulation within the Structure Plan Area is generally overhead.

Appendix B.2 provides GIS maps showing the existing electricity network.

5.2.1.5 Gas network

Multinet Gas Networks provides gas distribution services to the Cheltenham Structure Plan Area. Publicly available Before You Dig Australia information indicates a high-pressure gas main runs along Nepean Highway and Rowans Road. The remainder of the Structure Plan Area is well serviced by the local reticulation network.

See Appendix D for considerations associated with developing land in proximity to existing gas assets and the gas referral process.

5.2.1.6 Telecommunications network

The Cheltenham Structure Plan Area has various levels of regional telecommunications coverage. The Structure Plan Area has the following networks:

- Full NBN coverage – delivered through underground fibre lines
- Near full 5G Telstra coverage – via 5G towers.

Appendix B.2 provides GIS maps showing the existing telecommunications network.

NBN assets

Table 5.3 lists the NBN FAN sites that service the Cheltenham Structure Plan Area.

TABLE 5.3 CHELTENHAM NBN FIBRE ACCESS NODE SITES

NBN FAN SITE NAME	NBN FAN SITE CODE	NBN FAN SITE ADDRESS
Cheltenham	3CTA	315 Charman Road, Cheltenham, 3192
Highett	3HGT	1063 Nepean Highway, Moorabbin, 3189

5.2.2 COMMITTED PROJECTS

Table 5.4 lists committed utilities projects by other stakeholders near but outside the Cheltenham Structure Plan Area at the time of writing this report. Additional projects may be identified as engagement with utility service providers progresses.

TABLE 5.4 COMMITTED PROJECTS – CHELTENHAM STRUCTURE PLAN AREA

SERVICE	ITEM	DESCRIPTION	LINK TO OTHER DISCIPLINES
Electrical	Sandringham zone substation upgrade	Install a third 20 / 33 MVA transformer at Sandringham zone substation, or Install a third transformer at adjacent Moorabbin zone substation along with distribution feeders to offload Sandringham zone substation	Sustainability: – SRL Structure Plan – Climate Response Plan – Cheltenham (Realising Net Zero)
Electrical	Sandringham zone substation #3 transformer replacement	Replace #3 transformer by 2025 due to >50-year current asset age and close to end-of-life condition	Sustainability: SRL Structure Plan – Climate Response Plan – Cheltenham (Realising Net Zero)

5.3 Clayton Structure Plan Area

The existing conditions of the utility networks relating to the Clayton Structure Plan Area are summarised below, along with relevant committed projects.

5.3.1 EXISTING SITE INFRASTRUCTURE

5.3.1.1 Potable water network

Melbourne Water as the bulk water supplier and South East Water as the water retailer are responsible for providing potable water services within the Clayton Structure Plan Area. There is a DN1700 Melbourne Water

water main that runs along Prince Charles Street and a D1350 that runs along Wellington Road. Both connect into the Notting Hill Water Reservoirs to distribute bulk treated water to the surrounding area.

The retail potable water network within the Cheltenham Structure Plan Area ranges from 100 to 750-milllimetre assets located within the public road reserve.

The Clayton Structure Plan Area is generally well serviced by the local potable water reticulation network. All roadways within the Structure Plan Area contain watermains of at least 100 millimetres. Any new property connections into the existing network generally do not require extensive lead-in infrastructure. Some localised areas such as an industrial development on the corner of Carinish Road and Brown Road, Monash Medical Centre and Fregon Reserve have limited network coverage and ability to service additional connections. However, new connections into the network are assessed on a case-by-case basis in collaboration with South East Water and are subject to capacity within the existing network.

The South East Water potable water network is connected to the Yarra Valley Water network across the service area boundary. Works involving assets located in both service regions will require coordination between both water retailers.

Appendix B.3 provides GIS maps showing the existing potable water network.

5.3.1.2 Recycled water network

There are no identified existing recycled water assets or pipework located in proximity to the Clayton Structure Plan Area.

5.3.1.3 Sewer network

Melbourne Water as the bulk sewer supplier and South East Water as the water retailer are responsible for providing sewer services within the Clayton Structure Plan Area. There are no identified Melbourne Water assets.

The existing sewer network consists of South East Water mains ranging in size from 100 to 600 millimetres. A large proportion of the sewer network within the Clayton Structure Plan Area is located along rear easement sewer mains running between the rear property line of residential properties. The remaining network is located throughout the public road reserve.

The Clayton Structure Plan Area is well serviced by the existing local sewer network. Most residential properties are connected to local rear easement sewer mains, which service adjoining residential properties and each line could run for 250 metres before connecting to the nearby local sewer retic within the public road reserve. Development in properties with existing rear sewer easements will need to consider guidance from relevant utility service providers to manage the existing connections and ongoing services for the length of the line.

Any new property connections into the existing network generally do not require extensive lead-in infrastructure. Some localised areas such as an industrial development on the corner of Carinish Road and Brown Road, Monash Medical Centre and Fregon Reserve have limited network coverage and ability to service additional connections. New connections into the network are assessed on a case-by-case basis in collaboration with South East Water and are subject to capacity within the existing network.

The South East Water sewer network is connected to Yarra Valley Water network across the service area boundary. Works involving assets located in both service regions will require coordination between the water retailers.

Appendix B.3 provides GIS maps showing the existing sewer network.

5.3.1.4 Electricity network

The Clayton Structure Plan Area is serviced by the Oakleigh East, Clarinda, Springvale and Springvale South zone substations. Table 5.5 details the characteristics of the zone substations, their proximity to the SRL

station at Clayton, the installed firm capacity, actual summer maximum demand, approximate residential capacity and forecast demand exceeding current capacity.

There are known limitations in the current serviceability of the Clarinda zone substation as peak demands are due to exceed the existing N-1 capacity, operating at risk of potential network unreliability and/or overloading. United Energy has identified this risk and committed to works to increase the capacity of the zone substation as shown in Table 5.7 . Note these figures are based on United Energy's *Distribution Annual Planning Report* (2023) which is a publicly available document which shows forecast demands up to 5 years in future. While United Energy has noted that future network planning is considered beyond 2027–28, it is not clear what and how potential servicing issues are considered in the medium and long-term based on the *Distribution Annual Planning Report*.

TABLE 5.5 CLAYTON STRUCTURE PLAN AREA ZONE SUBSTATION BREAKDOWN

ZONE SUBSTATION NAME	TRANSFORMATION	DISTANCE FROM SRLA STATION (KM)	INSTALLED FIRM CAPACITY (N-1 REDUNDANCY (MVA)	ACTUAL 2022-23 SUMMER MAXIMUM DEMAND (MVA)	APPROX. RESIDUAL N-1 CAPACITY (MVA)	FORECAST DEMAND EXCEEDING CURRENT CAPACITY
Oakleigh East (OE)	66 / 11 kV	2.3 km	31.1	13.6	17.5	No forecast demand exceeding current N-1 capacity.
Clarinda (CDA)	66 / 22 kV	1.9 km	25.7	20.8	4.9	Summer 2023-24 demand exceed current N-1 capacity
Springvale (SV)	66 / 22 kV	2.4 km	119.6	40.1	79.5	No forecast demand exceeding current N-1 capacity.
Springvale West (SVW)	66 / 22 kV	2.4 km	119.6	48.3	71.3	No forecast demand exceeding current N-1 capacity.
Springvale South (SS)	66 / 22 kV	4.2 km	39.9	34.5	5.4	No forecast demand exceeding current N-1 capacity.

The Clayton Structure Plan Area is well serviced by United Energy's high voltage network. A 66 kV overhead line is the spine of the electrical network. It runs along the south boundary of the Structure Plan Area, cutting through Murdock Street into Bond Street, before linking into the Clarinda zone substation. The 11 kV lines feed into the local reticulation network from the west of the Structure Plan Area. The local reticulation within the Structure Plan Area is generally overhead, except for the reticulation around the existing Clayton Station which is underground.

Appendix B.3 provides GIS maps showing the existing electricity network.

5.3.1.5 Gas network

Multinet Gas Networks provide gas distribution services to the Clayton Structure Plan Area. Publicly available Before You Dig Australia information indicates a high-pressure gas main runs along Dandenong Road. The remainder of the Structure Plan Area is well serviced by a local reticulation network.

See Appendix D for considerations associated with developing land in proximity to existing gas assets and the gas referral process.

5.3.1.6 Telecommunications network

The Clayton Structure Plan Area has various levels of regional telecommunications coverage. The Structure Plan Area has the following networks:

- Full NBN coverage – delivered through underground fibre lines

- Dedicated AARNet fibre lines
- Near full 5G Telstra coverage – via 5G towers.

Appendix B.3 provides GIS maps showing the existing telecommunications network.

NBN assets

Table 5.6 lists the NBN FAN site that services the Clayton Structure Plan Area.

TABLE 5.6 CLAYTON NBN FIBRRE ACCESS NODE SITES

NBN FAN SITE NAME	NBN FAN SITE CODE	NBN FAN SITE ADDRESS
Clayton	3CLA	2 Franklyn Street, Oakleigh East, 3166

AARNet assets

Fibre network lines laid by AARNet are located within the Clayton Structure Plan Area connecting to several smaller commercial and industrial sites.

Appendix B.3 provides GIS maps showing the AARNet fibre network.

5.3.2 COMMITTED PROJECTS

Table 5.7 lists the committed utilities project by other stakeholders near but outside the Clayton Structure Plan Area at the time of writing this report. Additional projects may be identified as engagement with utility service providers progresses.

TABLE 5.7 COMMITTED PROJECT – CLAYTON STRUCTURE PLAN AREA

SERVICE	ITEM	DESCRIPTION	LINK TO OTHER DISCIPLINES
Electrical	Clarinda zone substation upgrade	Install a second 20 /33 MVA permanent transformer at Clarinda zone substation. These upgrade works are in response to the forecast growth reaching the zone substation's N-1 capacity in summer 2023–24, operating at risk of potential network unreliability and/or overloading. It is triggered by existing growth in the area irrespective of SRL East attributed growth.	Sustainability – SRL East Structure Plan – Climate Response Plan – Clayton (Realising Net Zero)

5.4 Monash Structure Plan Area

The existing conditions of the utility networks relating to the Monash Structure Plan Area are summarised below, along with relevant committed projects.

5.4.1 EXISTING SITE INFRASTRUCTURE

5.4.1.1 Potable water network

Melbourne Water as the bulk water supplier and Yarra Valley Water and South East Water as the water retailers are responsible for providing potable water services within the Monash Structure Plan Area. Potable water is delivered to the Notting Hill Service Reservoir located in the west of the Monash Structure Plan Area.

Bulk water is transferred via the Notting Hill Outlet Main, Notting Hill Sandringham Main, and Mt Waverley Notting Hill Main.

The remaining potable water network within the Structure Plan Area is smaller in diameter, ranging from 100 to 750 millimetres and is located within the public road reserve and on private properties.

Based on Yarra Valley Water GIS data, several areas such as Monash University, the Australian Synchrotron, CSIRO, and the industrial developments north and east of Monash University have limited network coverage and ability to service additional connections. The local streets around residential properties generally contain watermains of at least 100 millimetres. Due to the limited potable water infrastructure, new connections into the network may require some lead-in infrastructure. New connections into the network are assessed on a case-by-case basis in collaboration with Yarra Valley Water and are subject to capacity within the existing network.

The Yarra Valley Water potable water network is connected to the South East Water network across the service area boundary. Works involving assets located in both service regions will require coordination between both water retailers.

Appendix B.4 provides GIS maps showing the existing potable water network.

5.4.1.2 Recycled water network

There are no identified existing recycled water assets or pipework located in proximity to the Monash Structure Plan Area.

5.4.1.3 Sewer network

Melbourne Water as the bulk sewer supplier and South East Water as the water retailer are responsible for providing sewer services within the Monash Structure Plan Area. There are no identified Melbourne Water assets. The existing sewer network primarily consists of Yarra Valley Water mains ranging in size from 100 to 450 millimetres.

Based on the Yarra Valley Water's GIS data, several areas such as Monash University, the Australian Synchrotron, CSIRO, and the industrial developments north and east of Monash University have limited network coverage and ability to service additional connections. There is a 375-millimetre main which runs through the Monash University campus which has an associated easement. There are also some instances where residential properties are connected to local rear easement sewer mains. Development in proximity to these existing rear easements will need to consider relevant guidance from utility service providers during the development approval stages to manage the existing connections and ongoing services for the length of the line.

Due to the limited potable water infrastructure, new connections into the network may require some lead-in infrastructure. New connections into the network are assessed on a case-by-case basis in collaboration with Yarra Valley Water and are subject to capacity within the existing network.

The Yarra Valley Water sewer network is connected to the South East Water network across the service area boundary. Works involving assets located in both service regions will require coordination between the water retailers.

Appendix B.4 provides GIS maps showing the existing sewer network.

5.4.1.4 Electricity network

The Monash Structure Plan Area is serviced by the Notting Hill, Clarinda, Springvale, Mulgrave, and Glen Waverley zone substations. Table 5.8 details the characteristics of the substations, their proximity to the SRL station at Monash, the installed firm capacity, actual summer maximum demand, approximate residential capacity and forecast demand exceeding current capacity.

There are known limitations in the current serviceability of the Clarinda zone substation and Mulgrave zone substation as peak demands are due to exceed the existing N-1 capacity, operating at risk of potential network unreliability and/or overloading. United Energy has identified this risk and committed to augmentation works to increase the capacity of the zone substations as shown in Table 5.10. Note these figures are based on United Energy's *Distribution Annual Planning Report* (2023) which is a publicly available document which shows forecast demands up to 5 years in future. While United Energy has noted that future network planning is considered beyond 2027–28, it is not clear what and how potential servicing issues are considered in the medium and long-term based on the *Distribution Annual Planning Report*.

TABLE 5.8 MONASH STRUCTURE PLAN AREA ZONE SUBSTATION BREAKDOWN

ZONE SUBSTATION NAME	TRANSFORMATION	DISTANCE FROM SRLA STATION (KM)	INSTALLED FIRM CAPACITY (N-1 REDUNDANCY (MVA)	ACTUAL 2022-23 SUMMER MAXIMUM DEMAND (MVA)	APPROX. RESIDUAL CAPACITY (MVA)	FORECAST DEMAND EXCEEDING CURRENT CAPACITY
Notting Hill (NO)	66 / 22 kV	1 km	73.1	36.5	36.6	No forecast demand exceeding current N-1 capacity.
Clarinda (CDA)	66 / 22 kV	4.3 km	25.7	22.8	2.9	Summer 2023-24 demand exceed current N-1 capacity
Springvale (SV)	66 / 22 kV	2.4 km	119.6	40.1	79.5	No forecast demand exceeding current N-1 capacity.
Springvale West (SVW)	66 / 22 kV	2.7 km	119.6	48.3	71.3	No forecast demand exceeding current N-1 capacity.
Glen Waverley (GW)	66 / 22 kV	2.9 km	68.8	59.3	10.2	No forecast demand exceeding current N-1 capacity.
Mulgrave (MGE)	66 / 22 kV	4.6 km	74.4	67.0	2.6	Summer 2023-24 demand exceed current N-1 capacity

The Monash Structure Plan Area is well serviced by United Energy's high voltage network. A 66 kV overhead line is the spine of the electrical network. It runs south along Clayton Road, then runs east along Wellington Road past Monash University, before heading south down Blackburn Road. The same line then moves north along the western boundary of the Structure Plan Area running north along Nantilla Road. Overhead lines of 11 kV are located in the east and north-east region of the Structure Plan Area. The local reticulation within the Structure Plan Area is generally overhead.

Appendix B.4 provides GIS maps showing the electricity network.

5.4.1.5 Gas network

Multinet Gas Networks provides gas distribution services to the Monash Structure Plan Area. Publicly available Before You Dig Australia information indicates a high-pressure gas main runs along Dandenong Road and Gardner Road. The remainder of the Structure Plan Area is well serviced by a local reticulation network.

See Appendix D for considerations associated with developing land in proximity to existing gas assets and the gas referral process.

5.4.1.6 Telecommunications network

The Monash Structure Plan Area has various levels of regional telecommunications coverage. The Structure Plan Area has the following networks:

- Full NBN coverage – delivered through underground fibre lines
- Dedicated AARNet fibre lines
- Near full 5G Telstra coverage – via 5G towers.

Appendix B.4 provides GIS maps showing the existing telecommunications network.

NBN assets

Table 5.9 lists the NBN FAN sites that service the Monash Structure Plan Area.

TABLE 5.9 MONASH NBN FIBRE ACCESS SITES

NBN FAN SITE NAME	NBN FAN SITE CODE	NBN FAN SITE ADDRESS
Clayton	3CLA	2 Franklyn Street, Oakleigh East, 3166
Wheelers Hill	3WHL	535 Springvale Road, Glen Waverley, 3150

AARNet assets

Fibre network lines laid by AARNet are located within the Monash Structure Plan Area connecting to several sites including the CSIRO, Monash University sites, Australian Synchrotron, and several smaller commercial and industrial sites.

Appendix B.4 provides GIS maps showing the AARNet fibre network.

5.4.2 COMMITTED PROJECTS

Table 5.10 lists committed utilities projects by other stakeholders in near but outside the Monash Structure Plan Area at the time of writing this report. Additional projects may be identified as engagement with utility service providers progresses.

TABLE 5.10 MONASH NBN FIBRE ACCESS SITES

SERVICE	ITEM	DESCRIPTION	LINK TO OTHER DISCIPLINES
Electrical	Clarinda zone substation upgrade	Install a second 20 / 33 MVA permanent transformer at Clarinda zone substation. These upgrade works are in response to the forecast growth reaching the zone substation's N-1 capacity in summer 2023–24, operating at risk of potential network unreliability and/or overloading. It is triggered by existing growth in the area irrespective of SRL East attributed growth.	Sustainability: SRL Structure Plan – Climate Response Plan - Monash (Realising Net Zero)

5.5 Glen Waverley Structure Plan Area

The existing conditions of the utility networks relating to the Glen Waverley Structure Plan Area are summarised below, along with relevant committed projects.

5.5.1 EXISTING SITE INFRASTRUCTURE

5.5.1.1 Potable water network

Melbourne Water as the applicable bulk water supplier and Yarra Valley Water as the water retailer are responsible for providing potable water services within the Glen Waverley Structure Plan Area. Bulk water is delivered west along High St Road and south along Gallaghers Road via the Silvan Mt Waverly Trunk Main. It is then delivered to the Mt View service reservoirs located in the south-east of the Glen Waverley Structure Plan Area. Bulk water is transferred to the retail network west along the Mt View Outlet Trunk Main on Waverly Road.

The remaining potable water network within the Structure Plan Area is smaller in diameter ranging from 100 to 375 millimetres and is located within the public road reserve and on private properties.

The Glen Waverley Structure Plan Area is generally well serviced by the local potable water reticulation network. All roadways within the Structure Plan Area contain watermains of at least 100 millimetres. Any new property connections into the existing network generally do not require extensive lead-in infrastructure. Some localised areas such as Wesley College and The Glen Shopping Centre have limited network coverage and ability to service additional connections. However, new connections into the network are assessed on a case-by-case basis in collaboration with Yarra Valley Water and are subject to capacity within the existing network.

Appendix B.5 provides GIS maps showing the existing potable water network.

5.5.1.2 Recycled water network

There are no identified existing recycled water assets or pipework located in proximity to the Glen Waverley Structure Plan Area.

5.5.1.3 Sewer network

Melbourne Water as the bulk sewer supplier and Yarra Valley Water as the water retailer are responsible for providing sewer services within the Glen Waverley Structure Plan Area. There are no identified Melbourne Water assets. The existing sewer network primarily consists of Yarra Valley Water mains ranging in size from 100 to 300 millimetres.

The Monash Structure Plan Area is well serviced by the existing local sewer network. Most residential properties are connected to local rear easement sewer mains, which service adjoining residential properties and each line could run for 100 metres before connecting to the nearby local sewer retic within the public road reserve. Development in properties with existing rear sewer easements will need to consider relevant guidance from utility service providers to manage the existing connections and ongoing services for the length of the line.

New property connections into the existing network generally do not require extensive lead-in infrastructure. Some localised areas such as Wesley College and The Glen Shopping Centre have limited network coverage and ability to service additional connections. New connections into the network are assessed on a case-by-case basis in collaboration with Yarra Valley Water and are subject to capacity within the existing network.

Appendix B.5 provides GIS maps showing the existing sewer network.

5.5.1.4 Electricity network

The Glen Waverley Structure Plan Area is serviced by the East Burwood and Glen Waverley zone substations. Table 5.11 details the characteristics of the substations, their proximity to the SRL station at Glen Waverley, the installed firm capacity, actual summer maximum demand, approximate residential capacity and forecast demand exceeding current capacity. Note these figures are based on United Energy's *Distribution Annual Planning Report* (2023) which is a publicly available document which shows forecast demands up to 5 years in future. While United Energy has noted that future network planning is considered beyond 2027–28,

it is not clear what and how potential servicing issues are considered in the medium and long-term based on the *Distribution Annual Planning Report*.

TABLE 5.11 GLEN WAVERLEY STRUCTURE PLAN AREA ZONE SUBSTATION BREAKDOWN

ZONE SUBSTATION NAME	TRANSFORMATION	DISTANCE FROM SRLA STATION (KM)	INSTALLED FIRM CAPACITY (N-1 REDUNDANCY (MVA)	ACTUAL 2022-23 SUMMER MAXIMUM DEMAND (MVA)	APPROX. RESIDUAL CAPACITY (MVA)	FORECAST DEMAND EXCEEDING CURRENT CAPACITY
East Burwood (EB) ZS	66 / 22 kV	3 km	67.3	53.2	14.1	No forecast demand exceeding current N-1 capacity.
Glen Waverley (GW) ZS	66 / 22 kV	0.6 km	68.8	59.3	10.2	No forecast demand exceeding current N-1 capacity.

The Glen Waverley Structure Plan Area is well serviced by United Energy's high voltage network. A 66 kV overhead line is the spine of the electrical network. It runs from the south feeding directly into the Glen Waverley zone substation. The local reticulation within the Structure Plan Area is generally overhead, except for the reticulation around The Glen Shopping Centre which is underground.

Appendix B.5 provides GIS maps showing the existing electricity network.

5.5.1.5 Gas network

Multinet Gas Networks provides gas distribution services to the Glen Waverley Structure Plan Area. Publicly available Before You Dig Australia information indicates a low-pressure gas network is located within the public road reserve and services existing customers.

See Appendix D for considerations associated with developing in proximity to existing gas assets and the gas referral process.

5.5.1.6 Telecommunications network

The Glen Waverley Structure Plan Area has various levels of regional telecommunications coverage. The Structure Plan Area has the following networks:

- Full NBN coverage – delivered through underground fibre lines
- Dedicated AARNet fibre lines
- Near full 5G Telstra coverage – via 5G towers.

Appendix B.5 provides maps showing the existing telecommunications network.

NBN assets

Table 5.12 lists the NBN FAN sites that service the Glen Waverley Structure Plan Area.

TABLE 5.12 GLEN WAVERLEY NBN FIBRE ACCESS NODE SITES

NBN FAN SITE NAME	NBN FAN SITE CODE	NBN FAN SITE ADDRESS
Tally Ho	3TYH	72-76 Blackburn Road, Glen Waverley, 3150
Wheelers Hill	3WHL	535 Springvale Road, Glen Waverley, 3150

AARNet assets

Fibre network lines laid by AARNet are located within the Glen Waverley Structure Plan Area connecting to several sites including Holmesglen Institute of TAFE and Wesley College.

Appendix B.5 includes GIS maps showing the AARNet fibre network.

5.5.2 COMMITTED PROJECTS

Table 5.13 lists the committed utilities project by other stakeholders in proximity to but outside the Glen Waverley Structure Plan Area at the time of writing this report. Additional projects may be identified engagement with utility service providers progresses.

TABLE 5.13 COMMITTED PROJECTS – GLEN WAVERLEY STRUCTURE PLAN AREA

SERVICE	ITEM	DESCRIPTION	LINK TO OTHER DISCIPLINES
Electrical	Glen Waverley zone substation upgrade	Install new distribution feeders at the adjacent Notting Hill zone substation and transfer load to Notting Hill zone substation; or Install a fourth 20 / 33 MVA transformer at Glen Waverley zone substation. Note this project is not expected to occur in the United Energy's current forward planning period (2023 to 2027) as forecast demand is still within the zone substation' capacity	Sustainability: SRL Structure Plan – Climate Response Plan – Glen Waverley (Realising Net Zero)

5.6 Burwood Structure Plan Area

The existing conditions of the utility networks relating to the Burwood Structure Plan Area are summarised below, along with relevant committed projects.

5.6.1 EXISTING SITE INFRASTRUCTURE

5.6.1.1 Potable water network

Melbourne Water as the bulk water supplier and Yarra Valley Water as the water retailer are responsible for providing potable water services within the Burwood Structure Plan Area. There are no identified Melbourne Water assets in the area.

The remaining potable water network within the Structure Plan Area is smaller in diameter ranging from 100 to 375 millimetres and is located within the public road reserve and on private properties.

The Burwood Structure Plan Area is generally well serviced by the local potable water reticulation network. All roadways within the Structure Plan Area contain watermains of at least 100 millimetres. Any new property connections into the existing network generally do not require extensive lead-in infrastructure.

Some localised areas such as Presbyterian Ladies' College, Deakin University, Gardiners Reserve and area in proximity around Gardiners Creek have limited network coverage and ability to service additional connections. However, new connections into the network are assessed on a case-by-case basis in collaboration with Yarra Valley Water and are subject to capacity within the existing network.

Appendix B.6 provides GIS maps showing the existing potable water network.

5.6.1.2 Recycled water network

There are no identified existing recycled water assets or pipework located in proximity to the Burwood Structure Plan Area.

5.6.1.3 Sewer network

Melbourne Water as the bulk sewer supplier and Yarra Valley Water as the water retailer are responsible for providing sewer services within the Burwood Structure Plan Area. The DN1800 Melbourne Water sewer main bisects the area and conveys sewer flows from north-east to south-west. A 750-millimetre Yarra Valley Water sewer main is adjacent the Gardiners Creek riverine alignment which flows in the same direction. The existing sewer network primarily consists of Yarra Valley Water mains ranging in size from 100 to 450 millimetres.

The Burwood Structure Plan Area is well serviced by the existing local sewer network. Most residential properties are connected to local rear easement sewer mains, which service adjoining residential properties and each line could run for 150 metres before connecting to the nearby local sewer retic within the public road reserve. Development in properties with existing rear sewer easements will need to consider relevant guidance from utility service providers to manage the existing connections and ongoing services for the length of the line.

New property connections into the existing network generally do not require extensive lead-in infrastructure. Some localised areas such as Presbyterian Ladies' College, Deakin University, Gardiners Reserve and area in proximity around Gardiners Creek have limited network coverage and ability to service additional connections. New connections into the network are assessed on a case-by-case basis in collaboration with Yarra Valley Water and are subject to capacity within the existing network.

Appendix B.6 provides GIS maps showing the existing sewer network.

5.6.1.4 Electricity network

The Burwood Structure Plan Area is serviced by the Riversdale, Burwood, East Burwood, and Box Hill zone substations. Table 5.14 details the characteristics of the substations, their proximity to the SRL station at Burwood, the installed firm capacity, actual summer maximum demand, approximate residential capacity and forecast demand exceeding current capacity. Note these figures are based on United Energy's *Distribution Annual Planning Report* (2023) which is a publicly available document which shows forecast demands up to 5 years in future. While United Energy has noted that future network planning is considered beyond 2027–28, it is not clear what and how potential servicing issues are considered in the medium and long-term based on the *Distribution Annual Planning Report*.

TABLE 5.14 BURWOOD STRUCTURE PLAN AREA ZONE SUBSTATION BREAKDOWN

ZONE SUBSTATIONNAME	TRANSFORMATION	DISTANCE FROM SRLA STATION (KM)	INSTALLED FIRM CAPACITY (N-1 REDUNDANCY (MVA)	ACTUAL 2022-23 SUMMER MAXIMUM DEMAND (MVA)	APPROX. RESIDUAL CAPACITY (MVA)	FORECAST DEMAND EXCEEDING CURRENT CAPACITY
Riversdale	Unknown	2.4 km	Unknown	Unknown	Unknown	Unknown
Burwood (BW)	22 / 11 kV	1 km	25.2	22.5	2.7	No forecast demand exceeding current N-1 capacity.
East Burwood (EB)	66 / 22 kV	2.7 km	67.3	53.2	14.1	No forecast demand exceeding current N-1 capacity.
Box Hill (BH) Z	66 / 22 kV	2.7 km	71.8	51.3	20.5	No forecast demand exceeding current N-1 capacity.

The Burwood Structure Plan Area has limited access to United Energy's high voltage network. A single 22 kV line runs north to south along Warrigal Road. While this line is outside the Structure Plan Area, it would feed into the reticulation network for the Burwood Structure Plan. The local reticulation within the Structure Plan Area is generally overhead.

Appendix B.6 includes GIS maps showing the existing electricity network.

5.6.1.5 Gas network

Multinet Gas Networks provides providing gas distribution services to the Burwood Structure Plan Area. Publicly available Before You Dig Australia information indicates a low-pressure gas network is located within the public road reserve and services existing customers.

See Appendix D for considerations associated with developing in proximity to existing gas assets and the gas referral process.

5.6.1.6 Telecommunications network

The Burwood Structure Plan Area has various levels of regional telecommunications coverage. The Structure Plan Area has the following networks:

- Full NBN coverage – delivered through underground fibre lines
- Dedicated AARNet fibre lines
- Near full 5G Telstra coverage – via 5G towers.

Appendix B.6 includes maps showing the existing telecommunications network.

NBN assets

Table 5.15 lists the NBN FAN sites that service the Burwood Structure Plan Area.

TABLE 5.15 BURWOOD NBN FIBRE ACCESS NODE SITES

NBN FAN SITE NAME	NBN FAN SITE CODE	NBN FAN SITE ADDRESS
Burwood	3BUR	186 Burwood Highway, Burwood, 3125
Clayton	3CLA	2 Franklyn Street, Oakleigh East, 3166

AARNet assets

Fibre network lines laid by AARNet are located within the Burwood Structure Plan Area connecting to several sites including Deakin University sites and Presbyterian Ladies' College.

Appendix B.6 includes GIS maps showing the AARNet fibre network.

5.6.2 COMMITTED PROJECTS

There are no identified committed utilities projects by other stakeholders in proximity to but outside the Burwood Structure Plan Area at the time of writing this report

5.7 Box Hill Structure Plan Area

The existing conditions of the utility networks relating to the Box Hill Structure Plan Area are summarised below, along with relevant committed projects.

5.7.1 EXISTING SITE INFRASTRUCTURE

5.7.1.1 Potable water network

Melbourne Water as the bulk water supplier and Yarra Valley Water as the water retailer are responsible for providing potable water services within the Box Hill Structure Plan Area. Bulk water is delivered via the two Surrey Hills service reservoirs located in the south-west of the Box Hill Structure Plan Area. It is transferred to the retail network along the Mitcham-Surrey Hill Trunk Main on Canterbury Road.

The remaining potable water network within the Box Hill Structure Plan Area is smaller in diameter and is located within the public road reserve and on private properties.

The Box Hill Structure Plan Area is generally well serviced by the local potable water reticulation network. All roadways within the Structure Plan Area contain watermains of at least 100 millimetres. Any new property connections into the existing network generally do not require extensive lead-in infrastructure. Some localised areas such as Surrey Park and Box Hill Gardens have limited network coverage and ability to service additional connections. However, new connections into the network are assessed on a case-by-case basis in collaboration with Yarra Valley Water and are subject to capacity within the existing network.

Appendix B.7 provides GIS maps showing the existing potable water network.

5.7.1.2 Recycled water network

There are no identified existing recycled water assets or pipework located in proximity to the Box Hill Structure Plan Area.

5.7.1.3 Sewer network

Melbourne Water as the bulk sewer supplier and Yarra Valley Water as the water retailer are responsible for providing sewer services within the Box Hill Structure Plan Area. There are no identified Melbourne Water assets.

The Box Hill Structure Plan Area is well serviced by the existing local sewer network. Some localised areas such as Surrey Park and Box Hill Gardens have limited network coverage and ability to service additional connections.

The largest asset is a section of 600-millimetre Yarra Valley Water sewer main running from the north-west to the south-east of the Structure Plan Area which has an associated easement. The main is approximately 100 years old, and a 20 to 25-metre deep concrete main which services approximately 200 hectares of the upstream sewer catchment. The 900-metre section between Whitehouse Road and Station Street cuts under the existing Belgrave Line, Box Hill Central and other developments on Cambridge Street, Oxford Street, Howard Street and James Street and imposes an easement.

There are also several instances where residential properties are connected to local rear easement sewer mains, which service adjoining residential properties and each line could run for 100 metres before connecting to the nearby local sewer retic within the public road reserve. Development in properties with existing rear sewer easements will need to consider relevant guidance from utility service providers to manage the existing connections and ongoing services for the length of the line.

New property connections into the existing network generally do not require extensive lead-in infrastructure. New connections into the network are assessed on a case-by-case basis in collaboration with Yarra Valley Water and are subject to capacity within the existing network.

Appendix B.7 provides GIS maps showing the existing sewer network.

5.7.1.4 Electricity network

The Box Hill Structure Plan Area is serviced by the Doncaster, Surrey Hills and Box Hill zone substations. Table 5.16 details the characteristics of the substations, their proximity to the SRL station at Box Hill, the installed firm capacity, actual summer maximum demand, approximate residential capacity and forecast demand exceeding current capacity.

There are known limitations in the current serviceability of the Doncaster zone substation as actual peak demands exceed the existing N-1 capacity. United Energy has identified this risk and committed to works to increase the capacity of the substation before summer 2025–2026 as shown in Table 5.18. Note these figures are based on United Energy's *Distribution Annual Planning Report* (2023) which is a publicly available document which shows forecast demands up to 5 years in future. While United Energy has noted that future network planning is considered beyond 2027–28, it is not clear what and how potential servicing issues are considered in the medium and long-term based on the *Distribution Annual Planning Report*.

TABLE 5.16 BOX HILL ZONE SUBSTATION BREAKDOWN

ZONE SUBSTATION NAME	TRANSFORMATION	DISTANCE FROM SRLA STATION (KM)	INSTALLED FIRM CAPACITY (N-1 REDUNDANCY (MVA)	ACTUAL 2022-23 SUMMER MAXIMUM DEMAND (MVA)	APPROXIMATE RESIDUAL CAPACITY (MVA)	FORECAST DEMAND EXCEEDING CURRENT CAPACITY
Doncaster (DC)	66 / 22 kV	2.6 km	72.4	74.9	-2.5	Currently exceeding existing N-1 capacity
Surrey Hills (SH)	22 / 6.6 kV	2.2 km	11.1	6.5	4.6	No forecast demand exceeding current N-1 capacity.
Box Hill (BH)	66 / 22 kV	1.9 km	71.8	51.3	20.5	No forecast demand exceeding current N-1 capacity.

The Box Hill Structure Plan Area has limited access to United Energy's high voltage network. The north of the Structure Plan Area has connection into the 22 kV network. The southern region has no access to the high voltage network. The local reticulation within the Structure Plan Area is generally overhead, except for the reticulation around Box Hill Central Shopping Centre which is underground. Appendix B.7 provides GIS maps showing the existing electricity network.

5.7.1.5 Gas network

Multinet Gas Networks provides gas distribution services to the Box Hill Structure Plan Area. Publicly available Before You Dig Australia information indicates a low-pressure gas network is located within the public road reserve and services existing customers. See Appendix D for considerations associated with developing in proximity to existing gas assets and the gas referral process.

5.7.1.6 Telecommunications network

The Box Hill Structure Plan Area has various levels of regional telecommunications coverage. The Structure Plan Area has the following networks:

- Full NBN coverage – delivered through underground fibre lines
- Near full 5G Telstra coverage – via 5G towers.

Appendix B.7 provides GIS maps showing the existing telecommunications network.

NBN assets

Table 5.17 lists the NBN FAN sites used to service the Box Hill Structure Plan Area.

TABLE 5.17 BOX HILL NBN FIBRE ACCESS NODE SITES

NBN FAN SITE NAME	NBN FAN SITE CODE	NBN FAN SITE ADDRESS
Blackburn	3BLB	179-181 Surrey Road, Blackburn, 3130
Box Hill	3BOX	75-77 Carrington Road, Box Hill, 3128

5.7.2 COMMITTED PROJECTS

SRL Station at Box Hill

Table 5.18 lists committed utilities projects by other stakeholders in proximity to but outside the Box Hill Structure Plan Area at the time of writing this report. Additional projects may be identified as engagement with utility service providers progresses.

TABLE 5.18 COMMITTED PROJECTS – BOX HILL STRUCTURE PLAN AREA

SERVICE	ITEM	DESCRIPTION	LINK TO OTHER DISCIPLINES
Electrical	Doncaster zone substation upgrades	Install a fourth 20 / 33 MVA transformer and two distribution feeders at the Doncaster zone substation before summer 2025–26. This will also address the replacement limitation since there will be additional capacity at the Doncaster zone substation to cope with a transformer failure due to poor condition. Replace one Doncaster zone substation transformer and establish two new feeders out of the Doncaster zone substation. This option will not address the need for a fourth transformer. These upgrade works are in response to the actual demand currently exceeding the zone substation's N-1 capacity. It is triggered by existing growth in the area irrespective of SRL East attributed growth.	Sustainability: SRL Structure Plan – Climate Response Plan – Box Hill (Realising Net Zero)

6 Future capacity assessment

6.1 Line-wide servicing capacity

The utility service providers provided advice on the future servicing capacity and any required works to support development in the SRL East Structure Plan Areas based on the population forecasts (see Section 2.4). This included advice on:

- General commentary of the serviceability of the SRL East Structure Plan Areas
- Required works to existing utility infrastructure to support development in each Structure Plan Area including land take requirements, amendments to existing utilities infrastructure and easements, trunk infrastructure alignments, and development options which minimise the visual impact on built form and the public realm
- Indicative timing of planned or anticipated services augmentation
- Potential impacts and subsequent next steps related to development close to existing utility assets.

Existing utility networks are operating within each Structure Plan Area which supply current users and accommodate changes in network demands through incremental growth over time. The USPs have noted the approach for providing new services in an urban infill area is generally progressive and that network augmentation works align with development proposals. Consequently, demand for additional utility services and/or augmentation to increase capacity is incremental and based on demand at an individual site scale.

As part of this approach, the utility service providers continually monitor current usage against forecasts, available network capacity, customer applications for new connections, market dynamics, niche customer requests, and the evolution of future utility service requirements. This approach will generally be undertaken by the utility service providers in response to development within the SRL East Structure Plan Areas.

As part of any planning application process, early and continual consultation with utility service providers will be required to ensure adequate utility provisions as part of the design and development process. This will inform them of a development's utility needs and allow them to assess their network capacity to support this growth. If the demand cannot be accommodated by residual capacity and additional network capacity is required, network augmentation works may impact the timing of a proposed development. This is particularly relevant for large-scale and substantial developments, which can significantly increase demand on existing utilities.

6.1.1 WATER SERVICING CAPACITY

South East Water and Yarra Valley Water have reviewed the resident and employment population growth forecasts for the SRL East Structure Plan Areas (see Section 2.4) in the context of their existing potable water and sewer networks and their committed upgrade works to prepare high-level advice on the works required to support development within the SRL East Structure Plan Areas.

6.1.1.1 Proposed infrastructure

South East Water

South East Water has advised that based on its assessment of anticipated growth in the Cheltenham and Clayton Structure Plan Areas, its internal growth forecast aligns with the 2041 growth projections. South East Water has advised the potable water network will be generally suitable to sufficiently accommodate anticipated development within each SRL East Structure Plan Area.

Minor works to the local reticulation network may be subject to future development connection requests. However, these have minimal structure planning implications as the network is located within the public road reserve and reflective of the typical servicing approach to providing new services in an urban infill area within the region.

Yarra Valley Water

Yarra Valley Water has completed a high-level assessment of its existing key assets in the Box Hill, Burwood, Glen Waverley and Monash Structure Plan Areas.

Based on the 2041 growth forecasts for these four Structure Plan Areas, Yarra Valley Water has identified works that will be required to support future demand.

Yarra Valley Water has proposed the following works to the potable water network:

- Upgrades to pumping stations, pressure-reducing stations and storage tanks – the requirement for works to increase servicing capacity may include require a land take for site expansion
- Augmentation works for major distribution mains from 225 to 600 millimetres within each Structure Plan Area – the required upgrades will increase servicing capacity either increasing the diameter of existing assets and/or duplicating assets along the existing alignment.

6.1.1.2 Other considerations

Bulk water

South East Water and Yarra Valley Water's advice will provide inputs into Melbourne Water incrementally increasing demand for bulk water services over time. This will inform Melbourne Water's servicing capacity assessment for the Greater Melbourne region and any need for augmentation of Melbourne Water's bulk and trunk utilities infrastructure.

Recycled water for SRL East Structure Plan Areas

South East Water and Yarra Valley Water are making progress towards delivering recycled water within the vicinity of the SRL East Structure Plan Areas. Preliminary investigations into the feasibility of providing alternative water sources have begun. However, a detailed business case is needed by the water retailers to determine the viability of a third pipe alternative water scheme. If viable, new developments could connect to this system for non-potable water uses (such as toilets, laundry and irrigation systems).

It should be noted there may be land take implications for providing a potential recycled water network. This includes potential recycled water tank and pumping station sites which each have indicative footprints of 50 x 50 metres. However, the number of sites, their locations and potential development integration opportunities are yet to be determined by South East Water and Yarra Valley Water.

6.1.2 SEWER SERVICING CAPACITY

South East Water and Yarra Valley Water provided high-level advice on the sewer servicing strategies for the SRL East Structure Plan Areas within their service areas to inform this technical assessment. Each Structure Plan Area is generally serviceable by sewer with upgrades of the trunk mains identified in the next Section 6.1.2.1.

6.1.2.1 Proposed infrastructure

South East Water and Yarra Valley Water have identified sections of the existing sewer trunk line which have limited capacity to accommodate forecast growth within the Structure Plan Areas located in their servicing area. The nature of required and optimal augmentation works is unclear at this stage, with different options available. The potential options and their impacts to easements and development are:

- Upgrading a sewer main, which may increase the size of an existing easement

- Duplicating a sewer main, which may have a neutral impact on existing easement (subject to positioning)
- Diverting sewerage flows, which may reduce or remove an existing easement.

Further detailed assessment by South East Water and Yarra Valley Water is required to understand the preferred augmentation works and their accompanying impact on the associated easements. South East Water and Yarra Valley Water have indicated this will occur in the coming years as part of their longer-term planning and as development proposals provide more certainty on timing and demand.

6.1.2.2 Other considerations

Existing easements

As noted in Section 5, there are instances where the existing sewer main is not located in the public road reserve and crosses under private property, inside a defined associated easement. Existing easements can limit development yield as building over utility assets is generally restricted. Therefore, the planning implications related to development of lots affected by these easements should be considered as part of opportunities for lot consolidation during the land use and development process in response to the Structure Plans.

Potential options to limit the impact of easements include:

- Relocating the existing sewer asset and removing the associated easement. This is the preferred approach, particularly for substantial sewer trunk mains, given it will maximise development potential and provide outcomes that may not be achieved through a typical approach to providing new services in an urban infill area.
- Development in proximity of the existing asset following the associated development guidelines.

Options should be considered in collaboration with South East Water and Yarra Valley Water to understand the impact of augmentation works required to increase the network's capacity and the potential implications on existing easements.

Appendices B.1 to B.7 provide GIS maps showing the existing sewer trunk mains and the locations of sewer easements.

Bulk sewer

South East Water and Yarra Valley Water's advice will provide inputs into Melbourne Water incremental increasing demand for bulk sewer services over time. This will inform Melbourne Water's servicing capacity assessment for the Greater Melbourne region and any need for augmentation of Melbourne Water's bulk and trunk utilities infrastructure.

6.1.3 ELECTRICITY SERVICING CAPACITY

United Energy has reviewed the growth forecasts for the Structure Plan Areas (see Section 2.4) in the context of its electrical network and committed upgrade works to prepare high-level advice on augmentation works required to support development within the SRL East Structure Plan Areas.

6.1.3.1 Proposed infrastructure

United Energy has identified the need for new zone substations and augmentation of existing zone substations in proximity to the SRL East Structure Plan Areas to support the electrical demand in 2041.

As part of the advice, multiple high-level development options were explored for providing new required zone substations in the SRL East Structure Plan Areas. Assessing the development options included criteria such as potential integration and co-location with components of the Structure Plan, such as but not limited to public open space, streets, co-locating different utilities in hubs, community and stormwater infrastructure, residual and commercial development amongst other concurrent construction works.

The recommended option is similar to the current approach for zone substations to service high density areas, such as the Melbourne Central Business District, which integrate the utility asset into the footprint of a building. This approach is preferred as it allows other compatible land uses to coexist within the same site or building footprint within the SRL East Structure Plan Areas, minimising visual impact on built form and the public realm.

An alternative option is a stand-alone outdoor zone substation similar to the current zone substations which service the SRL East Structure Plan Areas. This is not recommended given their visibility, additional consumption of land required, and the lack of integration potential.

6.1.3.2 Other considerations

There is opportunity to underground nearby existing overhead electrical lines as part of future works in the road reserve within the Structure Plan Areas. Undergrounding electrical lines is a common feature of urban renewal projects and a generally feasible way to improve the urban design, streetscape, safety and service reliability.

6.1.4 GAS SERVICING CAPACITY

Under the Victorian Gas Substitution Roadmap (GSR) developed by the Department of Transport and Planning (DTP) with the Department of Energy, Environment and Climate Action (DEECA), from 1 January 2024 new gas connections are being phased out for new dwellings, apartment buildings and residential subdivisions that require a planning permit.

No new residential gas infrastructure will be enabled in accordance with the GSR. As such, engagement with Multinet Gas Networks focused on development of servicing strategies for future non-residential development in each SRL East Structure Plan Area. This includes understanding the future transition where existing residual supply is disconnected as part of future developments and the corresponding gas supply could be repurposed for future non-residential connections.

Multinet Gas Networks typically undertakes future planning assessments based on its annual review of network performance and approved development applications in the upcoming year. Given this assessment approach, Multinet Gas Networks did not provide advice on the SRL East Structure Plan Areas gas serviceability to 2041 and any works required to support forecast growth to inform recommendations to be considered when developing the Structure Plans.

6.1.4.1 Other considerations

Developing in proximity to existing assets and the gas referral process

As the planning authority, SRLA has commenced the engagement with Multinet Gas Networks expected by the requirements described in Appendix D for development in proximity to existing gas assets, the gas referral process and will continue consultations during the exhibition of planning scheme amendments for SRL East Structure Plan Areas.

6.1.5 TELECOMMUNICATIONS SERVICING CAPACITY

Based on NBN and Telstra's high-level responses, the SRL East Structure Plan Areas are generally serviceable by those telecommunication service providers. The next Section 6.1.5.1 identifies the known works required to support development.

6.1.5.1 Proposed infrastructure

NBN

Based on the 2041 growth forecasts for the SRL East Structure Plan Areas, NBN predicts there is sufficient capacity to service the additional demand within the existing FAN sites. As such, no additional FAN sites with land take requirements are needed to support the Structure Plan Areas.

Minor network augmentations will be required within the exchange itself to install additional equipment to meet future demand. Similarly, underground pit and pipe and ducting works are required to support development. However, these works are generally reactive and targeted as formal customer requests are submitted and have minimal implications to be considered when developing the Structure Plans.

Telstra

Telstra has advised there is sufficient network infrastructure to support growth in the SRL East Structure Plan Areas. However, the extent of future required network upgrades and its impact on the Structure Plans are unknown.

Other telecommunication service providers

Vocus and AARNet have noted that like other third-party telecommunication providers, they lease ducts space from Telstra and NBN. As such, Telstra and NBN are responsible for future planning and providing telecommunication ducts and pits for itself and other providers.

Third-party telecommunication providers are typically involved when there is a customer servicing requests and assessments are made to facilitate that connection, which have minimal implications to be considered when developing the Structure Plans.

6.1.5.2 Other considerations

Following the submission of formal customer requests, required supporting infrastructure works may impact the existing public road network during construction.

6.2 Cheltenham servicing capacity

6.2.1 POTABLE WATER SERVICING CAPACITY

South East Water has reviewed the growth forecasts for the Cheltenham Structure Plan Area and has not identified a need for new or augmentation of existing infrastructure to support growth given the alignment between SRLA and South East Water growth forecasts.

South East Water has not provided commentary on the potential developability issues related to low serviceability as related to section 5.2.1.1

Minor works to the local reticulation network may be required, subject to future development connection requests. South East Water will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.2.2 SEWER SERVICING CAPACITY

South East Water has identified the following high-level works in proximity to the Cheltenham Structure Plan Area required to support forecast future demand for sewer services.

Trunk works

The following sewer trunk infrastructure requires augmentation to add capacity to meet demand from forecast population growth in the Cheltenham Structure Plan Area:

- Diversion and upgrade work along the Well Street Branch Sewer.

Diversion works have been identified as South East Water's preferred option to resolve future network capacity issues. As a result, the identified works do not have land take requirements and there is a neutral and/or positive impact on the removal of existing nearby easements that constrain development. Working with existing easement constraints in proximity to the identified sewer main is a conservative position to take until South East Water provides further details on the required augmentation works and its impact of existing easements. Additionally, South East Water has not provided commentary on the potential developability issues related to low serviceability as related to section 5.2.1.3.

Sewer pump station

South East Water has advised the following sewer pump station may require upgrade to meet demand from forecast population growth in the Cheltenham Structure Plan Area:

- Rowans Road Sewer Pump Station (SPS018).

South East Water has identified the potential need for additional land to accommodate the identified works. However, the required land take is yet to be determined. Spatial flexibility around the identified existing assets is recommended until South East Water provides further details on the required augmentation works.

South East Water has also advised the works identified above are planned at a high-level in its capital works program. As such, these works are required in the medium to long-term to accommodate future growth in the area irrespective of SRL East attributed growth. The impact of development in the Cheltenham Structure Plan Area may accelerate but does not trigger the need for these works. Further details such as the detail of the augmentation works, the extent of impact on existing easements and timing of works will be determined by South East Water as it continually monitors the network performance over time and as new connection applications are submitted.

Appendix C.1 provides GIS maps showing the identified sewer assets with limited network capacity and where augmentation works are required.

6.2.3 ELECTRICITY SERVICING CAPACITY

United Energy has reviewed the growth forecasts for the Cheltenham Structure Plan Area and has not identified the need for new or augmentation of existing bulk infrastructure to support growth. It can be inferred that growth can be accommodated by the current residual capacity of nearby existing zone substations and/or accounted for by the committed upgrades of identified zone substations in Section 5.2.2.

However, details of reticulation were undetermined at the time of writing this report. United Energy will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.2.4 GAS SERVICING CAPACITY

The typical approach of Multinet Gas Networks to providing gas services for future non-residential development is based on its annual review of network performance and approved development applications in the upcoming year. See Section 6.1.4 for line-wide advice which can be applied at a high-level to the Cheltenham Structure Plan Area.

6.2.5 TELECOMMUNICATIONS SERVICING CAPACITY

NBN and Telstra have reviewed the growth forecasts for the Structure Plan Areas (see Section 2.4) to prepare high-level advice on the servicing approach and works required to support development within the Cheltenham Structure Plan Area.

6.2.5.1 Proposed infrastructure

NBN

NBN has identified that minor network augmentations may be required within the FAN sites listed in Table 5.3 to install additional equipment to support growth in the Cheltenham Structure Plan Area.

Telstra

Telstra has advised there is sufficient network infrastructure to support growth in the SRL East Structure Plan Areas. However, the extent of future network upgrades and its impact on the Cheltenham Structure Plan is unknown.

6.3 Clayton servicing capacity

6.3.1 POTABLE WATER SERVICING CAPACITY

South East Water has reviewed the growth forecasts for the Clayton Structure Plan Area and has not identified a need for new or augmentation of existing infrastructure to support growth given the alignment between the SRL East Structure Plan Area and South East Water growth forecasts.

Minor works to the local reticulation network may be required, subject to future development connection requests. South East Water will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.3.2 SEWER SERVICING CAPACITY

South East Water has identified the following high-level works in proximity to the Clayton Structure Plan Area required to meet forecast future demand for sewer services.

Trunk works

The following sewer trunk infrastructure are planned to add capacity to meet demand from forecast population growth in the Clayton Structure Plan Area:

- Diversion works of branch sewer connection between Main Road and Westall Road. The proposed alignment is parallel with the existing rail alignment.

Diversion works have been identified as South East Water's preferred option to resolve future network capacity issues. As a result, the identified works do not have land take requirements and there is a neutral and/or positive impact on the removal of existing nearby easements that constrain development. Working with existing easement constraints in proximity to the identified sewer main is a conservative position to take and until South East Water provides further details on the required augmentation works and its impact of existing easements.

South East Water has not identified the need for sewer pump station or storage asset works to meet demand from forecast population growth in the SRL East Structure Plan Areas, given the existing sewer catchments are gravity feed.

South East Water has also advised the works identified above are planned at a high-level in its capital works program. As such, these works are required in the medium to long-term to accommodate future growth in the area irrespective of SRL East attributed growth. The impact of development in the Clayton Structure Plan Area may accelerate but does not trigger the need for these works. Further details such as the detail of the augmentation works, the extent of impact on existing easements and timing of works will be determined by South East Water as it continually monitors the network performance over time and as new connection applications are submitted.

Appendix C.2 provides GIS maps showing the identified sewer assets with limited network capacity and where augmentation works are required.

6.3.3 ELECTRICITY SERVICING CAPACITY

6.3.3.1 Proposed infrastructure

United Energy has identified the potential need for a new zone substation to support future growth in the Clayton Structure Plan Area. The recommended development option is an integrated zone substation with a nominal footprint of 50 x 40 metres and 10 metres high (2.2 metres for a basement and 7.8 metres for a transformer and switch room). This allows co-location integration with compatible land uses within the same site and/or building footprint and minimises visual impact on built form and the public realm.

Details such as required location, high voltage reticulation from the site, easements, buffers and required timing are undetermined. United Energy will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

An alternative option to the integrated zone substation is a stand-alone site similar to the existing zone substations in the region. The required footprint is approximately 70 x 60 metres and is not able to co-locate with other land uses within the same site or building footprint. This is not recommended given their visibility, additional consumption of land required, and the lack of integration potential.

6.3.4 GAS SERVICING CAPACITY

The typical approach of Multinet Gas Networks to providing gas services for future non-residential development is based on its annual review of network performance and approved development applications in the upcoming year. See Section 6.1.4 for line-wide advice which can be applied at a high-level to the Clayton Structure Plan Area.

6.3.5 TELECOMMUNICATIONS SERVICING CAPACITY

NBN and Telstra have reviewed the growth forecasts for the Structure Plan Areas (see Section 2.4) to prepare high-level advice on the servicing approach and works required to support development within the Clayton Structure Plan Area.

6.3.5.1 Proposed infrastructure

NBN

NBN has identified that minor network augmentations may be required within the FAN sites listed in Table 5.6 to install additional equipment to support growth in the Clayton Structure Plan Area.

Telstra

Telstra has advised there is sufficient network infrastructure to support growth in the SRL East Structure Plan Areas. However, the extent of future network upgrades and its impact on the Clayton Structure Plan is unknown.

6.4 Monash servicing capacity

6.4.1 POTABLE WATER SERVICING CAPACITY

6.4.1.1 Proposed infrastructure

Yarra Valley Water has identified the high-level works described below in proximity to the Monash Structure Plan Area required to meet forecast future demand for potable water services.

Trunk works

The following potable water trunk infrastructure requires upgrade and/or duplication to add capacity to meet demand from forecast population growth in the Monash Structure Plan Area:

- The existing major mains DN225 to DN600 located along Wellington Road, Blackburn Road, Duerdin Street and Ferntree Gully Road.

The nature of the trunk and reticulation works are unknown and could involve upgrading or duplicating the mains and/or diverting water flow.

Pump station and storage tanks works

The following pump station and storage tanks will require upgrade:

- Notting Hill Reservoir Water Pump Station and Storage Tanks.

The Notting Hill Storage Tanks are co-located with the Notting Hill Service Reservoir owned by Melbourne Water. Any augmentation works will also impact the performance of Yarra Valley Water and Melbourne Water assets. Further coordination between Yarra Valley Water and Melbourne Water is required to provide a holistic approach to infrastructure augmentation works.

The required land take for the capacity expansion of the pump station and storage tanks are unknown. Spatial flexibility around the identified existing assets is recommended until Yarra Valley Water and Melbourne Water provide further details on the required augmentation works.

Appendix C.3 provides GIS maps showing the identified potable water assets with limited network capacity and where augmentation works are required.

Additional minor works to the local reticulation network may be required, subject to future development connection requests. Yarra Valley Water will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.4.1.2 Other considerations

There are opportunities to incorporate an alternative water service in the Monash Structure Plan Area and reduce demand on the potable water service. Providing a recycled water network could defer and/or reduce the overall scale of required augmentation works identified above.

6.4.2 SEWER SERVICING CAPACITY

6.4.2.1 Proposed infrastructure

Yarra Valley Water has identified the following works in proximity to the Monash Structure Plan Area required to meet forecast future demand for sewer services.

Trunk works

The following sewer trunk infrastructure requires augmentation to add capacity to meet demand from forecast population growth in the Monash Structure Plan Area:

- Monash University Branch Sewer (375 millimetres) – note that Yarra Valley Water owns a portion of the sewer trunk line upstream of maintenance structure MON11
- Mile Creek Branch Sewer (450 millimetres) – note that Yarra Valley Water owns a portion of the sewer trunk line upstream of maintenance structure MIL5.

Sewer infrastructure downstream of MON11 (Monash University Branch Sewer) and MIL5 (Mile Creek Branch Sewer) are owned by South East Water and any augmentation works will also impact the sewer network within its service area. Further coordination between South East Water and Yarra Valley Water is required to provide a holistic approach to infrastructure augmentation works.

Reticulation works

The following reticulation mains require augmentation:

- Reticulation sewer between maintenance structure MON33 and MON33-3.

The nature of the trunk and reticulation works are unknown and could involve upgrading or duplicating the mains and/or diverting sewerage flows.

Appendix C.3 provides GIS maps showing the identified sewer assets with limited network capacity and where augmentation works are required.

Additional minor works to the local reticulation network may be required, subject to future development connection requests. Yarra Valley Water will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.4.2.2 Other considerations

The following identified existing sewer mains currently run under private property and have an associated designated easement. The nature of the required works is unknown and could involve upgrading or duplicating the mains and/or diverting sewerage flow.

As a result, the impact on the existing easements associated with the identified sewer trunk mains are unknown.

Monash University Branch Sewer

Yarra Valley Water has identified the Monash University Branch Sewer as an asset that will require augmentation of an unknown nature. A portion of the existing 375-millimetre main runs underneath the Monash University Clayton campus at a depth of 4.2 metres at the deepest point to 2.6 metres (Yarra Valley Water, 2024). The branch sewer also runs through Scenic Boulevard across Jock Marshall Reserve before connecting to Blackburn Road and running south.

Additionally, there is a small portion of the branch sewer to the south-east of Monash University that is diverted from Blackburn Road, running along the back fence property line for one block before returning to Blackburn Road. This sewer is located under several private properties, within a designated easement. Major works along this sewer main will require additional planning due to the constraints of its location.

Mile Creek Branch Sewer

The existing Mile Creek Branch Sewer runs through residential housing between Ferntree Gully Road and Blackburn Road and the downstream portion is parallel with the open channel culvert. The 450-millimetre main runs under several properties within a designated easement.

6.4.3 ELECTRICITY SERVICING CAPACITY

United Energy has reviewed the growth forecasts for the Monash Structure Plan Area and has not identified a need for new or augmentation of existing bulk infrastructure to support growth. It can be inferred that growth can be accommodated by the current residual capacity of nearby existing zone substations, accounted for by

the committed upgrades of identified zone substations in Section 0 and/or supported by the new zone substation in the Clayton Structure Plan Area.

Details of future reticulation are undetermined. United Energy will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.4.4 GAS SERVICING CAPACITY

The typical approach of Multinet Gas Networks to providing gas services for future non-residential development is based on its annual review of network performance and approved development applications in the upcoming year. See Section 6.1.4 for further line wide advice which can be applied at a high-level to the Monash Structure Plan Area.

6.4.5 TELECOMMUNICATIONS SERVICING CAPACITY

NBN and Telstra have reviewed the growth forecasts for the Structure Plan Areas (see Section 2.4) to prepare high-level advice on the servicing approach and works required to support development within the Monash Structure Plan Area.

6.4.5.1 Proposed infrastructure

NBN

NBN has identified that minor network augmentations may be required within the FAN sites listed in Table 5.9 to install additional equipment to support growth in the Monash Structure Plan Area.

Telstra

Telstra has advised there is sufficient network infrastructure to service growth in the SRL East Structure Plan Areas. However, the extent of future network upgrades and its impact on the Monash Structure Plan is unknown.

6.5 Glen Waverley servicing capacity

6.5.1 POTABLE WATER SERVICING CAPACITY

6.5.1.1 Proposed infrastructure

Yarra Valley Water has identified the following high-level works in proximity to the Glen Waverley Structure Plan Area required to meet forecast future demand for potable water services.

Trunk works

The following potable water trunk infrastructure requires upgrade and/or duplication to add capacity to meet demand from forecast population growth in the Glen Waverley Structure Plan Area:

- The existing major mains DN225 to DN600 located along Waverley Road, Springvale Road, Gallaghers Road, Shepperd Road, High Street Road, Montgomery Avenue, Coleman Parade, Durward Avenue, Westlands Road, Kuebler Street and Moylan Road.

The nature of the trunk and reticulation works are unknown and could involve upgrading or duplicating the water mains and/or diverting water flow.

Pump station storage tank works

The following pump station storage tank will require upgrade:

- Mt View Hotel Water Pump Station Storage Tank.

Transfer pump station works

The following transfer pump station will require upgrade:

- Glen Waverley, High Street Road Transfer Pump Station.

Pressure-reducing station works

The following pressure-reducing stations will require upgrade:

- Syndal, High Street Road Pressure Reducing Station.
- Glen Waverley, Westlands Road Pressure Reducing Station.
- Glen Waverley, Shepherds Road Pressure Reducing Station.

The Mt View Hotel water pump station and storage tanks are collocated with the Mt View Reservoir owned by Melbourne Water. Any augmentation works will also impact the performance of Yarra Valley Water and Melbourne Water assets. Further coordination between Yarra Valley Water and Melbourne Water is required to provide a holistic approach to infrastructure augmentation works.

The required land take for the capacity expansion of the pump station storage tanks, transfer pump stations and pressure-reducing stations are unknown. Spatial flexibility around the identified existing assets is recommended until Yarra Valley Water and Melbourne Water provide further details on the required augmentation works.

Appendix C.4 provides GIS maps showing the identified potable water assets with limited network capacity and where augmentation works are required.

Additional minor works to the local reticulation network may be required, subject to future development connection requests. Yarra Valley Water will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.5.1.2 Other considerations

There are opportunities to incorporate an alternative water service in the Monash Structure Plan Area and reduce demand on the potable water service. Providing a recycled water network could defer and/or reduce the overall scale of required augmentation works identified above.

6.5.2 SEWER SERVICING CAPACITY

Yarra Valley Water has identified the following works in proximity to the Glen Waverley Structure Plan Area required to meet forecast future demand for sewer services.

6.5.2.1 Proposed infrastructure

Trunk works

The following sewer trunk infrastructure requires augmentation to add capacity to meet demand from forecast population growth in the Glen Waverley Structure Plan Area:

- Scotchmans Creek Branch Sewer – note that Yarra Valley Water owns an upstream portion of the sewer trunk line
- Scotchmans Creek Relieving Sewer
- Glen Waverley Branch Sewer.

Melbourne Water owns the downstream portion of the Scotchmans Creek Branch Sewer and any augmentation works will also impact the sewer network within its responsibilities. Further coordination is required to provide a holistic approach to infrastructure augmentation works.

Reticulation works

The following reticulation mains also require augmentation:

- Reticulation sewer between maintenance structure MOA37-14 and MOA37-17.

The nature of the trunk and reticulation works are unknown and could involve upgrading or duplicating the mains and/or diverting sewerage flows.

Appendix C.4 provides GIS maps showing the identified sewer assets with limited network capacity and where augmentation works are required.

Additional minor works to the local reticulation network may be required, subject to future development connection requests. Yarra Valley Water will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.5.2.2 Other considerations

The following identified existing sewer mains currently run under private property and have an associated designated easement. The nature of the required works is unknown and could involve upgrading or duplicating the sewer mains and/or diverting sewerage flows.

As a result, the impact on the existing easements associated with the identified sewer trunk mains are unknown.

Scotchmans Creek Branch Sewer

The existing Scotchmans Creek Branch Sewer ranges from 300 to 675-mllimetres diameter. Most of the downstream component runs in parallel to Scotchmans Creek. The upstream components traverse through several properties, particularly along Ivanhoe Street.

6.5.3 ELECTRICITY SERVICING CAPACITY

United Energy has reviewed the growth forecasts for the Glen Waverley Structure Plan Area and has not identified a need for new or augmentation of existing bulk infrastructure to support growth. It can be inferred that growth can be accommodated by the current residual capacity of nearby existing zone substations and/or accounted for by the committed upgrades of identified zone substations in Section 0.

Details of future reticulation are undetermined. United Energy will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.5.4 GAS SERVICING CAPACITY

The typical approach of Multinet Gas Networks to providing gas services for future non-residential development is based on its annual review of network performance and approved development applications in the upcoming year. See Section 6.1.4 for line-wide advice which can be applied at a high-level to the Glen Waverley Structure Plan Area.

6.5.5 TELECOMMUNICATIONS SERVICING CAPACITY

NBN and Telstra have reviewed the growth forecasts for the Structure Plan Areas (see Section 2.4) to prepare high-level advice on the servicing approach and works required to support development within the Glen Waverley Structure Plan Area.

6.5.5.1 Proposed infrastructure

NBN

NBN has identified that minor network augmentations may be required within the FAN sites listed in Table 5.12 to install additional equipment to support growth in the Glen Waverley Structure Plan Area.

Telstra

Telstra has advised there is sufficient network infrastructure to support growth in the SRL East Structure Plan Areas. However, the extent of future network upgrades and its impact on the Glen Waverley Structure Plan is unknown.

6.6 Burwood servicing capacity

6.6.1 POTABLE WATER SERVICING CAPACITY

6.6.1.1 Proposed infrastructure

Yarra Valley Water has identified the following high-level works in proximity to the Burwood Structure Plan Area required to meet forecast future demand for potable water services.

Trunk works

The following potable water trunk infrastructure requires upgrade and/or duplication to add capacity to meet demand from forecast population growth in the Burwood Structure Plan Area:

- The existing major mains DN225 to DN600 running along Essex Road, Highbury Road, Morton Road, Elizabeth Street, Warrigal Road, Toorak Road, Station Street, Eley Road and Elgar Road.

The nature of the trunk and reticulation works are unknown and could involve upgrading or duplicating the water mains and/or diverting water flow.

Yarra Valley Water has not identified any required augmentation works such as pump stations, pump station tanks or pressure-reducing stations which have land take implications for the Burwood Structure Plan Area.

Appendix C.5 provides GIS maps showing the identified potable water assets with limited network capacity and where augmentation works are required.

Additional minor works to the local reticulation network may be required, subject to future development connection requests. Yarra Valley Water will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.6.1.2 Other considerations

There are opportunities to incorporate an alternative water supply in the Monash Structure Plan Area and reduce demand on the potable water service. Providing a recycled water network could defer and/or reduce the overall scale of the required augmentation works identified above.

6.6.2 SEWER SERVICING CAPACITY

Yarra Valley Water has identified the following works in proximity to the Burwood Structure Plan Area required to meet forecast future demand for sewer services.

6.6.2.1 Proposed infrastructure

Trunk works

The following sewer trunk infrastructure requires augmentation to add capacity to meet demand from forecast population growth in the Burwood Structure Plan Area:

- Highbury Branch Sewer (750 millimetres)
- Gardiner Creek Main Sewer (300 millimetres) – note that Yarra Valley Water owns an upstream portion of the sewer trunk line.

Melbourne Water owns the downstream portion of the Gardiner Creek Main Sewer downstream portion and any augmentation works will also impact the sewer network within its responsibilities. Further coordination is required to provide a holistic approach to infrastructure augmentation works.

Reticulation works

The following reticulation mains also require augmentation:

- Reticulation sewer between maintenance structure GCM90 and GCM90-3
- Reticulation sewer between maintenance structure GCM91 and GCM91-2.

The nature of the trunk and reticulation works are currently unknown and could involve upgrading or duplicating the mains and/or diverting sewerage flows.

Appendix C.5 provides GIS maps showing the identified sewer assets with limited network capacity and where augmentation works are required.

Additional minor works to the local reticulation network may be required, subject to future development connection requests. Yarra Valley Water will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.6.2.2 Other considerations

The following identified existing sewer mains currently run under private property and have an associated designated easement. The nature of the required works is unknown and could involve upgrading or duplicating the sewer mains and/or diverting sewerage flows. As a result, the impact on the existing easements associated with the identified sewer mains are unknown.

Gardiners Creek Main Sewer

The Gardiners Creek Main Sewer runs within the road reserve of Sinnott Street. The 750-millimetre main passes underneath an industrial park on the corner of Highbury Road and Sinnott Street. The designated easement is located along an unnamed service road, clear of any above-ground structures. The main sewer then crosses Highbury Road and travels through the road reserve of Chandler Grove. The remainder of the main sewer runs in parallel with Gardiners Creek.

Highbury Road Branch Sewer

The Highbury Road Branch Sewer cuts across from Sinnott Street running east to west. The 300-millimetre main sewer runs under several residential properties in a designated easement.

6.6.3 ELECTRICITY SERVICING CAPACITY

6.6.3.1 Proposed infrastructure

United Energy has identified the need for augmentation to the existing infrastructure listed in Table 6.1 to support development in the Burwood Structure Plan Area.

TABLE 6.1 BURWOOD STRUCTURE PLAN AREA – PROPOSED ELECTRICAL AUGMENTATION

STRUCTURE PLAN AREA/STATION	ZONE SUBSTAION	ADDRESS	CURRENT CONFIGURATION	PROPOSED AUGEMENTATION
Burwood	Burwood (BW)	1-3 Morton Road, Burwood, 3125	22 / 11 kV zone substation	Converting site to a 66 / 11 kV or 66 / 22 kV zone substation configuration

While the Burwood zone substation is not located directly within the Burwood Structure Plan Area, augmentation works at the site are required to facilitate growth in the Structure Plan Area and surrounding areas. United Energy has stated augmentations to the existing Burwood zone substation may require land take adjacent to the site.

6.6.4 GAS SERVICING CAPACITY

The typical approach of Multinet Gas Networks to providing gas services for future non-residential development is based on its annual review of network performance and approved development applications in the upcoming year. See Section 6.1.4 for further line wide advice which can be applied at a high-level to the Burwood Structure Plan Area.

6.6.5 TELECOMMUNICATIONS SERVICING CAPACITY

NBN and Telstra have reviewed the growth forecasts for the Structure Plan Areas (see Section 2.4) to prepare high-level advice on the servicing approach and works required to support development within the Burwood Structure Plan Area.

6.6.5.1 Proposed infrastructure

NBN

NBN has identified that minor network augmentations may be required within the FAN sites listed in Table 5.15 to install additional equipment to support growth in the Burwood Structure Plan Area.

Telstra

Telstra has advised there is sufficient network infrastructure to service growth in the SRL East Structure Plan Areas. However, the extent of future network upgrades and its impact on the Burwood Structure Plan is unknown.

6.7 Box Hill servicing capacity

6.7.1 POTABLE WATER SERVICING CAPACITY

6.7.1.1 Proposed infrastructure

Yarra Valley Water has identified the following high-level works in proximity to the Box Hill Structure Plan Area required to meet forecast future demand for potable water services.

Trunk works

The following potable water trunk infrastructure requires upgrade and/or duplication to add capacity to meet demand from forecast population growth in the Box Hill Structure Plan Area:

- The existing major distribution mains DN225 to DN600 running along Elgar Road, Severn Street, Station Street, Middleborough Road, Tower Street, St Johns Avenue, Mount Albert Road, Clyde Street and Springfield Street.

The nature of the trunk and reticulation works are unknown and could involve upgrading or duplicating the mains and/or diverting water flow.

Pump station storage tanks

The following pump station storage tank will require upgrade:

- Surrey Hill, Elgar Road Water Pump Station Storage Tank.

Pressure-reducing station works

The following pressure-reducing stations will require upgrade:

- Box Hill North, Melrose Street and Elgar Road Pressure Reducing Station
- Box Hill North, Springfield Park Pressure Reducing Station.

The Surrey Hill, Elgar Road Water Pump Station Storage Tanks are collocated with the Surrey Hills Reservoir owned by Melbourne Water. Any augmentation works will also impact the performance of Yarra Valley Water and Melbourne Water assets. Further coordination between Yarra Valley Water and Melbourne Water is required to provide a holistic approach to infrastructure augmentation works.

The required land take for the capacity expansion of the pump station and storage tanks are unknown. Spatial flexibility around the identified existing assets is recommended until Yarra Valley Water and Melbourne Water provide further details on the required augmentation works.

Appendix C.6 provides GIS maps showing the identified potable water assets with limited network capacity and where augmentation works are required.

Additional minor works to the local reticulation network may be required, subject to future development connection requests. Yarra Valley Water will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.7.1.2 Other considerations

There are opportunities to incorporate an alternative water service in the Monash Structure Plan Area and reduce demand on the potable water service. Providing a recycled water network could defer and/or reduce the overall scale of required augmentation works identified above.

6.7.2 SEWER SERVICING CAPACITY

Yarra Valley Water has identified the following works in proximity to the Box Hill Structure Plan Area required to meet forecast future demand for sewer services.

6.7.2.1 Proposed infrastructure

Trunk works

The following sewer trunk infrastructure requires augmentation to add capacity to meet demand from forecast population growth in the Box Hill Structure Plan Area:

- Box Hill Branch Sewer (600 millimetres)
- Box Hill North Branch Sewer (375 millimetres).

Reticulation works

The following reticulation main also requires augmentation:

- Reticulation sewer between maintenance structure BOX21 and BOX21-35.

The nature of the trunk and reticulation works are unknown and could involve upgrading or duplicating the mains and/or diverting sewerage flows.

Appendix C.6 provides GIS maps showing the identified sewer assets with limited network capacity and where augmentation works are required.

Additional minor works to the local reticulation network may be required, subject to future development connection requests. Yarra Valley Water will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

6.7.2.2 Other considerations

The following identified existing sewer mains currently run under private property and have an associated designated easement. The nature of the required works is unknown and could involve upgrading or duplicating the sewer mains and/or diverting sewerage flows. As a result, the impact on the existing easements associated with the identified sewer trunk mains are unknown.

Once initial servicing advice is provided, exploring alternative servicing strategies and development options with utility service providers is recommended. Alternative servicing strategies include non-typical approaches to servicing which have other benefits such as better alignment with the SRL East visions and principles, anticipated development staging, sustainability, reliability and commerciality.

900mm section of Box Hill Branch Sewer

An opportunity to explore different development options includes resolving the development constraints associated with the 900-metre section of the 600-millimetre Box Hill Branch Sewer main and its easement, that traverses across the central section of the Box Hill Structure Plan Area from Whitehorse Road to Station Street.

An alternative approach is to install additional underground sewer utilities within Whitehorse Road as part of the permanent realignment of Whitehorse Road as required in the approved SRL East Environment Effects Statement (EES). Co-locating underground services as part of these required road works, such as duplicating and/or diverting the nearby 600-millimetre sewer main, while excavation works are underway could be a cost-efficient approach to potentially elevating current capacity constraints while avoiding further expansion of the existing sewer easement.

600mm section of Box Hill Branch Sewer

The existing 600-millimetre Box Hill Branch Sewer that cuts through under the existing Belgrave Line, Box Hill Central Shopping Centre and other developments on Cambridge Street, Oxford Street, Howard Street and James Street is large, almost 100 years old and deep (20 to 25 metres below ground). However, the required augmentation works are currently unknown. Yarra Valley Water has identified this sewer main's constraints and taken a generally risk adverse approach to future development in proximity to this main. Any potential development proposal, particularly relating to below-ground excavations, will likely require consultation with Yarra Valley Water, adherence to relevant development guidelines, and demonstration that existing access and loads on the asset is not exceeded as part of a proposed development.

6.7.3 ELECTRICITY SERVICING CAPACITY

6.7.3.1 Proposed infrastructure

United Energy has identified the potential need for a new zone substation to support growth in the Box Hill Structure Plan. The recommended development option is an integrated zone substation with a nominal footprint of 50 x 40 metres and 10 high (2.2 metres for a basement and 7.8 metres for a transformer and switch room). This allows co-location integration with compatible land uses within the same site and/or building footprint and minimises visual impact on built form and the public realm.

Details such as required location, high voltage reticulation from the site, easements, buffers and required timing are undetermined. United Energy will provide these details over time as it continually monitors the network performance and as connection applications are submitted.

An alternative option to the integrated zone substation is a stand-alone site similar to the existing zone substations in the region. The required footprint is approximately 70 x 60 metres and is not able to co-locate with other land uses within the same site or building footprint. This is not recommended given their visibility, additional consumption of land required, and the lack of integration potential.

United Energy has also identified the need for the augmentation of the existing infrastructure listed in Table 6.2.

TABLE 6.2 BOX HILL STRUCTURE PLAN AREA – PROPOSED ELECTRICAL AUGMENTATION

STRUCTURE PLAN AREA / STATION	ZONE SUBSTAION	ADDRESS	CURRENT CONFIGURATION	PROPOSED AUGEMENTATION
Box Hill	Surrey Hills (SH)	639 Canterbury Rd, Surrey Hills, 3127	22 / 11 kV zone substation	Converting site to a 66 / 11 kV or 66 / 22 kV zone substation configuration

While the Surrey Hills zone substation is not located directly within the Box Hill Structure Plan Area, augmentation works at the site are required to facilitate the growth in the Box Hill Structure Plan Area and surrounding areas. United Energy has stated that augmentations to the existing Surrey Hills zone substation may require land take adjacent to the site.

6.7.4 GAS SERVICING CAPACITY

The typical approach of Multinet Gas Networks to providing gas services for future non-residential development is based on its annual review of network performance and approved development applications in the upcoming year. See Section 6.1.4 for line-wide advice which can be applied at a high-level to the Box Hill Structure Plan Area.

6.7.5 TELECOMMUNICATIONS SERVICING CAPACITY

NBN and Telstra have reviewed the growth forecasts for the Structure Plan Areas (see Section 2.4) to prepare high-level advice on the servicing approach and works required to support development within the Box Hill Structure Plan Area.

6.7.5.1 Proposed infrastructure

NBN

NBN has identified that minor network augmentations may be required within the FAN sites listed in Table 5.17 to install additional equipment to support growth in the Box Hill Structure Plan Area.

Telstra

Telstra has advised there is sufficient network infrastructure to service growth in the SRL East Structure Plan Areas. However, the extent of future network upgrades and its impact on the Box Hill Structure Plan is unknown.

7 Recommendations

The approach to providing utilities services for urban infill development can be undertaken through the existing utility networks which accommodate changes in network demand through incremental growth over time.

Providing new services in an urban infill area is generally progressive and network augmentation works align with future development proposals based on demand at an individual site scale. However, addressing network capacity constraints through this approach may result in inefficiencies.

There are opportunities for the Structure Plans to adopt a holistic and proactive approach to improve overall outcomes. Recommendations for potable water, sewer, recycled water, electricity, gas and telecommunications services to be considered when developing the Structure Plans are summarised below.

RECOMENDATIONS

Line-wide

1. Promote lot consolidation to incorporate the relocation of utility assets from easements on private property into the public realm where feasible, to minimise potential impacts to development yield.

2. Support South East Water, Yarra Valley Water and other Integrated Water Management (IWM) Forum members to pursue alternative water supply initiatives within the SRL East Structure Plan Areas as part of an IWM Strategy, including the Dingley Recycled Water Scheme and its associated infrastructure assets.

3. Re-locate existing overhead electrical infrastructure to below-ground as part of adjoining public realm works, where they limit opportunities to increase tree canopy and improve / enhance walking and cycling infrastructure.

4. Design new utility (above-ground) infrastructure to minimise visual impacts on the public realm.

Cheltenham

1. Early engagement with operators of transmission gas pipelines during the permit application process and through a Safety Management Study (SMS) assessment, is required to ensure compliance with safety standards and minimise delays to planning approvals, near existing high pressure gas main on Nepean Highway.

Clayton

1. Early engagement with operators of transmission gas pipelines during the permit application process and through a SMS assessment is required to ensure appropriate compliance with safety standards and to minimise delays to planning approvals near the existing high-pressure transmission gas main on Dandenong Road.

Monash

1. Existing trunk sewer easements, including Monash and Mile Creek Branch Sewers, will require design solutions (that is, build over or relocate assets) to minimise potential impacts to development yield.

2. Early engagement with operators of transmission gas pipelines, during the permit application process and through a SMS assessment, is required to ensure appropriate compliance with safety standards and minimise delays to planning approvals, near the existing high-pressure gas main on Dandenong Road.

Glen Waverley

1. Existing trunk sewer easements, including the 375-millimetre sewer main through industrial development near Aristoc Road, will require design solutions (that is, build over or relocate assets) to minimise potential impacts to development yield.

Burwood

1. Existing sewer easements, including the Gardiners Creek Main and Highbury Road Branch Sewers and the 225-millimetres main sewer through Deakin University, will require design solutions (that is, build over or relocate assets) to minimise potential impacts to development yield.

Box Hill

1. Existing trunk sewer easements, including the 600-millimetre main sewer through Box Hill Central Shopping Centre and the 225-millimetre main sewer through existing residential development north of Albion Road, will require design solutions (that is, build over or relocate assets) to minimise potential impacts to development yield.

OTHER OPPORTUNITIES

Continual consultation with USPs will ensure adequate utility provisions as part of the design and development process. This will provide further detail of the development's utility needs and allow assessment of their network capacity to support this growth. The following outlines opportunities to undertake further future engagement with USPs to support implementation of the Structure Plans and future development:

Cheltenham

- Consult with South East Water on the assets identified for future augmentation to understand works, particularly land take requirements for capacity upgrades, to support development in the Structure Plan Area.

Clayton

- Consult with United Energy to confirm location, timing, easements, buffers and land take requirements of new electrical zone substation, to support development in the Structure Plan Area.

Monash

- Consult with Yarra Valley Water on assets identified for future augmentation to understand works, particularly land take requirements for capacity upgrades to support development in the Structure Plan Area.

Glen Waverley

- Consult with Yarra Valley Water on assets identified for future augmentation to understand works, particularly land take requirements for capacity upgrades to support development in the Structure Plan Area.

References

About the Suburban Rail Loop Authority. (2023, September 18). Retrieved from VICTORIA'S BIG BUILD: https://bigbuild.vic.gov.au/about/about-the-suburban-rail-loop-authority

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Appendix A

Data register

DATA	SOURCE	DATE	PURPOSE
SRL East GIS information	SRLA	04/07/2023	1.6 km station radius, rail alignment and station box spatial information to provide spatial context for the Structure Plans.
SRL East Structure planning inputs	SRLA	16/05/2024	Boundary of Structure Plan Areas, growth forecasts, density distribution (travel zone) data and employment breakdown by industry.
Melbourne Water Asset information	Melbourne Water	14/08/2023 31/08/2023	Outlines the location and characteristic of key Melbourne Water assets and pipework. Identification of critical assets.
Yarra Valley Water asset information	Yarra Valley Water	23/08/2023	Outlines the location and characteristic of key Yarra Valley Water assets and pipework. Identification of critical assets.
Yarra Valley Water preliminary sewer network servicing advice	Yarra Valley Water	19/06/2024	Outlines Yarra Valley Water's preliminary sewer network advice for the Monash, Glen Waverley, Burwood and Box Hill Structure Plan Areas
Yarra Valley Water preliminary potable water network servicing advice	Yarra Valley Water	22/07/2024	Outlines Yarra Valley Water's preliminary potable water network advice for the Monash, Glen Waverley, Burwood and Box Structure Plan Areas
South East Water asset information	South East Water	24/07/2024	Outlines the location and characteristic of key South East Water assets and pipework. Identification of critical assets.
South East Water potable water network preliminary servicing advice	South East Water	23/07/2024	Outlines South East Water's preliminary advice for future potable water servicing capacity in the Cheltenham and Clayton Structure Plan Areas.
South East Water sewer network preliminary servicing advice	South East Water	26/07/2024	Outlines South East Water's preliminary advice for future sewer servicing capacity in the Cheltenham and Clayton Structure Plan Areas.
United Energy Distribution Annual Planning Report (2023)	United Energy	Dec 2023	Outlines United Energy's current sub-transmissions arrangement, historic performance, and foreseeable required network augmentations.
United Energy asset information	United Energy	17/02/2024	Outlines the location and characteristic of key United Energy assets and HV reticulation. Identification of critical assets.
United Energy servicing assessment	United Energy	18/07/2024	Outlines the proposed augmentations and land take requirements of Untied Energy's electricity network.
NBN advice and fibre access node (FAN) site location data	NBN Co	11/06/2024	Outlines the locations of the NBN fibre access node sites that serve the six SRL East Structure Plan Areas and advice on future servicing capacity.
AARNet Dial Before you Did data	AARNET	16/08/2023	Outlines the location of AARNet's existing fibre lines within each Structure Plan Area.

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