



Kororoit (Part 2) Precinct Structure Plan

Servicing and Utilities Report

Victorian Planning Authority

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→ The Power of Commitment



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Executive summary

This Utilities and Servicing Assessment has been prepared to support the Kororoit Part 2 Precinct Structure Plan. The findings are based on consultation with seven key Utility Service Providers, though the level of detail provided varied significantly. Of the seven USPs, one provided a complete layout and response (Greater Western Water), two provided partial advice (APA Group, NBN Co), and four had not provided sufficient information at the time of this report (AusNet Gas Services, Powercor, Melbourne Water, and City of Melton).

The key findings for each utility are summarised below:

Sector	Findings
Stormwater Drainage	- Melbourne Water's Neale Road and Gardiner Lane Development Services Schemes (DSS), are still in the preliminary design phase with a high-level concept not expected until late 2025. - The lack of a finalised drainage plan represents a significant information gap for the PSP process, particularly regarding land take requirements for future assets.
Potable Water	- DN300 trunk water main is required along Neale Road to service the precinct, supported by new DN225 reticulation mains as shown on the provided servicing plans. - GWW has advised that the alignment of new mains is flexible and they can be constructed within residential land, providing a key opportunity to de-constrain the Neale Road reserve
Recycled Water	No recycled water will be extended to the precinct.
Sewer	- The servicing strategy is centred on a new Clarke Road Sewer Pump Station, which is critical infrastructure for the wider region and requires a land parcel of approximately 4,000 sqm. - Proposed trunk sewers, including a DN450 main on Sinclairs Road and a DN750 rising main on Clarke Road, are required to service the precinct. - GWW has provided a clear, staged (FY26-FY32) plan, providing significant planning certainty
Electrical	- The existing Powercor 22kV distribution feeders (TNA011 and MLN033) have insufficient capacity to service the future estimated peak demand of 5 Megawatts by 2035. - Development of the precinct is contingent on the delivery of a new 'Rockbank East' Zone Substation (ZSS). Powercor has indicated this is planned within the next 5 years (approx. 2030) and requires a 1-hectare site. - An interim upgrade, involving a new Melton Terminal Station ZSS and HV Feeder, is planned for 2026. - AusNet Services confirmed the transmission line easement details from the 2014 report remain valid, including provision for future lines, but these lines do not directly service KP2.
Gas	- The 571-metre measurement length from the APA transmission pipeline remains a key constraint, restricting sensitive land uses within this buffer. - The 20m wide transmission easement provides a key opportunity for a linear park and shared path, an outcome supported by APA and the precinct's transport strategy. - The strategy for extending the local reticulation network is unconfirmed, pending advice from AusNet Gas Services.
Telecommunications	- The precinct will be serviced by extending the NBN network from two adjacent Fibre Serving Areas: 3RBK (Rockbank) for the northwest/southwest zones and 3DRP (Deer Park) for the northeast zone. - NBN stated a new fibre build of 200+ metres is required along Neale Road. - While NBN Co. has confirmed ample network capacity, detailed layouts were not provided, creating some planning uncertainty.

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1. Introduction

To allow Victoria's growth areas to thrive, a strategic plan is to be put in place that can inform key aspects of proposed infrastructure including subdivision delivery, liveable spaces, commercial opportunities and essential services. A precinct structure plan (PSP) is a high-level tool that helps inform certainty towards intended outcomes for each parcel within a neighbourhood and is intentionally flexible in nature to react to potential site constraints. The PSP plays a role in informing the overarching planning scheme to be coherent with the regulatory body it resides in whilst having an emphasis on the *20-minute neighbourhood* – living locally in safe, accessible and attractive communities. To supplement the overarching PSP, a Utilities and Servicing Assessment is formulated to directly reference service infrastructure that will facilitate zones within the precinct.

In 2014 the Victorian Planning Authority (VPA) liaised with Aurecon to prepare a Utilities and Servicing Assessment to support the precinct structure plan of Kororoit, located in the suburb Deanside in Melbourne's West. The 1,181 hectares of land area was to accommodate 9,000 lots and be consolidated as part of the Melton growth corridor. The PSP found no distinctive issues with extending services through Kororoit, partly due to the highly developed areas surrounding the precinct to the north and west. However, due to unresolved boundaries for the proposed Kororoit Regional Park in the area southeast of the precinct, approximately one quarter of Kororoit was separated in 2017 from the original scheme, and the boundaries for Kororoit Part 2 (KP2) had begun to be formed. With pre-commencement project scoping now completed for KP2, GHD are now engaged by the VPA to undertake a similar Utilities and Servicing assessment and reaffirm that the area southeast of Kororoit can be adequately serviced for future residents and open space purposes. GHD will confirm the relevance of 2014 advice and focus on the future servicing arrangements for future developments in KP2.

1.1 Purpose of this report

This Utilities and Servicing Assessment has been prepared for the VPA to support the development of the Precinct Structure Plan for Kororoit Part 2 (KP2), located within the City of Melton. The purpose of this report is to identify and assess the existing and proposed utility infrastructure required to enable the future development of the precinct.

1.2 Scope and limitations

The location of existing services has been approximately determined based on Before You Dig Australia information and information provided by Authorities. The location and depth of existing infrastructure is approximate and service proving is recommended to confirm the location and depth.

Assessment of the condition and capacity of existing infrastructure has been based on advice and data received from USP's. Information provided by stakeholders is preliminary information only, subject to change and should not be relied upon without verification.

GHD has prepared this report on the basis of information provided by VPA and others who provided information to GHD (including Government and Utility Service Providers), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report, which were caused by errors or omissions in that information.

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Accessibility of documents

If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.

1.3 Assumptions

This Utilities and Servicing Assessment has been prepared as a high-level input to support the development of the Kororoit Part 2 Precinct Structure Plan (PSP). It is based on preliminary consultation with servicing authorities and available background information. The findings and recommendations contained are indicative and subject to refinement through future design, authority review, and PSP exhibition processes.

Reference is made throughout this report to Aurecon's **2014 Kororoit PSP (Part 1) Servicing and Utilities Report**, which provides historical context and baseline servicing strategies. Accessibility to the 2014 report is beneficial for understanding how servicing recommendations and layouts have evolved, and this report will note where KP2 aligns with or diverges from those earlier recommendations. Reference to the 2025 O'Brien Traffic Integrated Transport Assessment for KP2 is also made.

The following assumptions apply:

- **Authority Advice:** Input from servicing authorities (e.g. APA, Greater Western Water, CitiPower) is based on preliminary advice and is not binding. It reflects current planning and infrastructure strategies but may change as development progresses or further technical studies are undertaken.
- **Infrastructure Alignments:** All infrastructure layouts, alignments, and servicing catchments shown in this report are indicative in nature. They are not binding on GHD or the authorities who provided input. Final alignments will be subject to detailed design, land availability, and authority approval.
- **GIS and Mapping Outputs:** Any spatial data, mapping, or CAD outputs included in this report are for illustrative purposes only. They are not to be relied upon for design or construction and should be validated through future survey and design processes.
- **Planning Context:** The assessment aligns with the VPA Precinct Structure Planning Guidelines (2021) and supports the broader objectives of Plan Melbourne 2017–2050, including the delivery of 20-minute neighbourhoods. However, this report does not constitute a statutory servicing strategy and should be read in conjunction with other PSP technical studies.

1.4 Project Context

1.4.1 Precinct Location

The Kororoit Part 2 Precinct (the Precinct) is in Deanside, a suburb within the City of Melton on the western fringe of metropolitan Melbourne. The Precinct comprises approximately 255 hectares of land, bound by Kororoit Creek to the north, Clarke Road to the east, Western Freeway to the south and Sinclairs Road to the west. An Opportunities and Constraints Plan is provided in Figure 1 below, illustrating the location and preliminary infrastructure within the precinct as well as the boundaries separating the greater Kororoit Part 1 (KP1) from Kororoit Part 2.

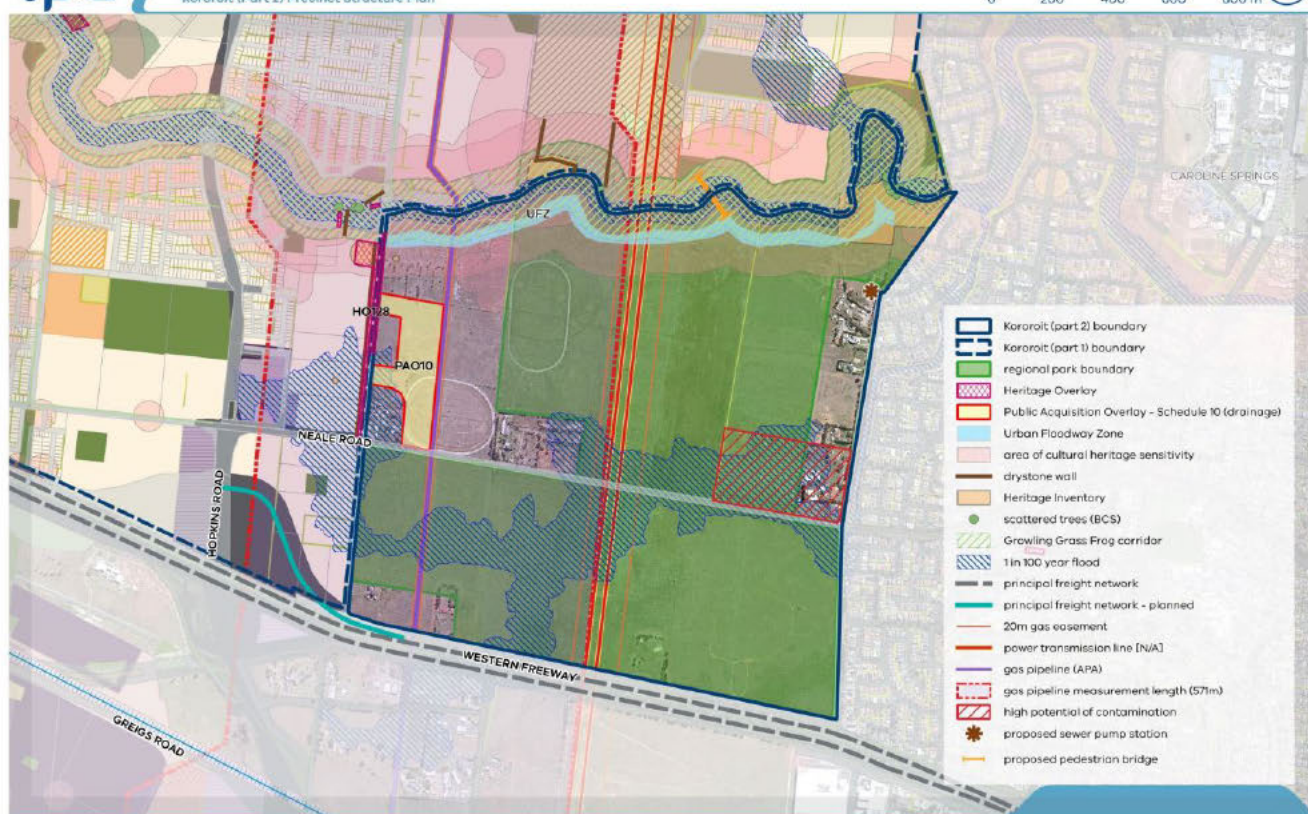


Figure 1 Opportunities and Constraints - Kororoit (Part 2) Precinct Structure Plan (VPA, 2025)

1.4.2 Existing Land Use

The Kororoit Part 2 Precinct is predominantly rural and conservation land. Most of the area consists of native grassland, with scattered rural residential properties accessed via Sinclairs Road, Clarke Road, and Neale Road. Significant portions are reserved for the future Kororoit Creek Regional Park, which is supported by the current KP2 zoning of a Rural Conservation Zone (RCZ). The purpose of an RCZ is to typically conserve natural resources, biodiversity and scenic non-urban areas. However, with the surrounding KP1 precinct classified as an Urban Growth Zone (UGZ), there is potential for KP2 to convert minor portions to residential use.

Pre-investigation infrastructure includes a gas transmission pipeline at the west and a 220kV electricity transmission line, both protected by easements. The current land use pattern reflects a transition between established urban areas to the east such as Caroline Springs, and conservation/open space to the west and north.

1.5 Methodology

GHD undertook a comprehensive review of existing planning documents, servicing authority advice, and spatial data obtained through a Before You Dig Australia (BYDA) enquiry to inform the Kororoit Part 2 PSP. The methodology included analysis of the previous 2014 Kororoit PSP, recent authority correspondence, and updated utility mapping to identify the location and capacity of existing and proposed infrastructure.

Consultation was undertaken with key servicing authorities to confirm current and planned servicing requirements for water, sewer, gas, electricity, telecommunications, and stormwater. The authorities consulted in this assessment are outlined in Table 1 below. This report integrates their advice regarding existing and required infrastructure to service the precinct. However, there were instances where authorities did not provide sufficient advice in the timeframe granted to formulate this assessment, or where BYDA information lacked enough evidence to conclusively prove a utility status. As such the useful infrastructure data types utilised to formulate a coherent assessment are as follows in Table 2.

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Utility Service Authority	Layout Response Provided?	Infrastructure Data Type
APA Group Transmission	Partial	Authority Advice; VPA supplied data
AusNet Gas Services	No	Authority Advice; Digitised BYDA Data
Powercor	Yes	Authority Advice; Digitised BYDA Data
Greater Western Water	Yes	Authority Advice; VPA supplied data; Digitised BYDA Data

Utility Service Authority	Layout Response Provided?	Infrastructure Data Type
Melbourne Water Corporation	No	Authority Advice; Digitised BYDA Data
NBN Co	Partial	Authority Advice; Spatial Data
Melton Shire Council	No	Digitised BYDA Data

Using the estimated proposed development dwelling yields of 1,051 and residential land use predictions provided by the VPA at zones in the northwest, northeast and southwest, GHD commenced discussions with the relevant USPs to determine the potential impacts of proposed development on existing infrastructure (Figure 2 below). These discussions focussed on the expected utility layouts to service proposed residential developments, how the current advice would align with advice granted for KP1 in 2014 infrastructure and the identification of services that were likely to require relocation, replacement, or upgrade. It is worth noting that some data in the 2014 PSP that was listed as future servicing has now been delivered and may be considered in existing conditions.

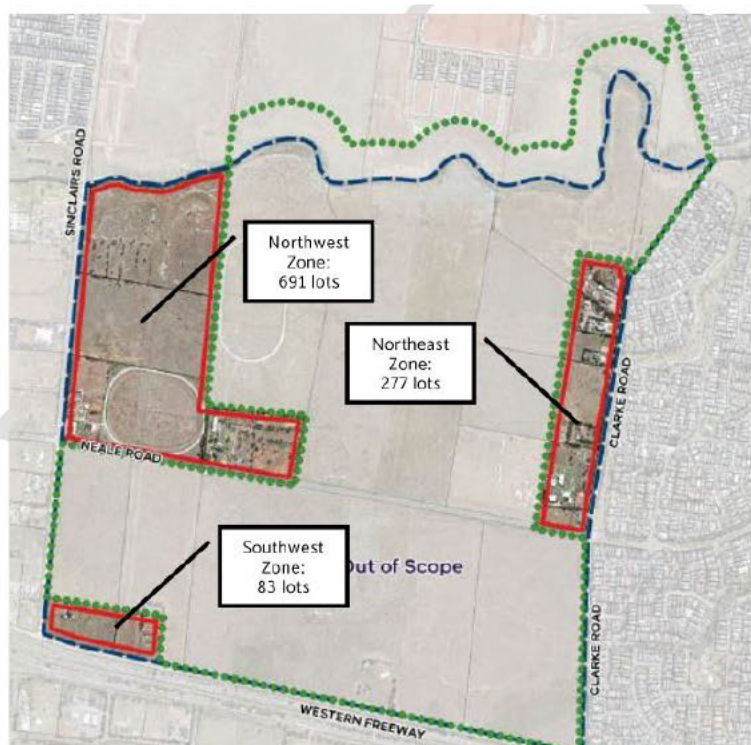


Figure 2 Proposed indicative residential lot yield (O'Brien Traffic, 2025)

Where BYDA information was sparse, spatial analysis was conducted using GIS website datasets provided by authorities to enable the identification of infrastructure corridors and easements. The findings are presented by utility type, with reference to both historical and current servicing strategies. This approach ensures that the assessment addresses both legacy infrastructure and future requirements, supporting the development of a robust and coordinated servicing strategy for the precinct. Appendix B include high-level sketches of the existing and proposed utility layouts in KP2, respectively.

2. Stormwater Drainage Infrastructure

2.1 Overview of the Precinct Stormwater Drainage Network

The primary function of the stormwater drainage network within the Kororoit Part 2 Precinct is to manage surface water runoff and reduce the risk of flooding associated with urban development. Drainage infrastructure is designed to convey stormwater away from developed areas and into designated outfalls, while also supporting water quality and ecological values.

Melbourne Water is the floodplain management authority for the precinct and is responsible for the planning and delivery of regional drainage infrastructure. Local drainage infrastructure, including minor pipes, pits, and street-level assets, will be delivered in accordance with council standards as per the City of Melton.

Stormwater drainage infrastructure within the precinct will need to be coordinated with other servicing networks and land use constraints, including conservation areas, utility easements, and proposed open space. The integration of drainage infrastructure with ecological and recreational assets will be a key consideration in future planning.

2.2 Existing Conditions

2.2.1 Melbourne Water Corporation

Melbourne Water manages few key drainage assets within KP2. Existing information is sparse and limited to pipeline and open channel information derived from BYDA. This is likely due to the rural conditions and low urbanisation within the current KP2. Open channel drainage travels along the southern edge of Neale Road between Clarke Road and Sinclairs Road, stopping at Sinclair's Road before connecting to a culvert beneath the intersection and travelling west into KP1. At the eastern end of Neale Road the open channel directs downstream via a culvert beneath the Clarke Road intersection and travels north through a vegetated swale, discharging into Kororoit Creek at the Northern boundary. Approximately at the centre of Neale Road, the open channel connects south towards the Western Freeway. The direction of stormwater runoff in this area is unknown. The 2014 KP1 PSP did not address stormwater servicing, and such no comment can be made on how it aligns with previous strategy.

2.2.2 Melton Shire Council

Melton Shire Council is responsible for local drainage infrastructure within KP2. Due to the rural nature and low level of urbanisation in the area, existing council-managed assets are minimal and not well documented. No formal drainage strategy or mapped local drainage network has been identified within KP2 besides partial pipes and pits presented in BYDA.

Current council infrastructure is expected to consist of stormwater pits pipes and associated with rural road reserves, particularly along Neale Road, Clarke Road, and Sinclairs Road. These assets are not currently mapped in detail and are likely to be upgraded or replaced as part of future development works.

2.3 Key Issues and Opportunities

The Opportunities and Constraints plan (Figure 1) highlights several key drainage-related constraints within KP2. A Public Acquisition Overlay (PAO) for drainage is located along the corner of Neale and Sinclairs Road, supporting future stormwater management when areas in the northwest zone become subdivided and residential. Portions of the precinct near Kororoit Creek and adjacent low-lying areas are affected by the 1 in 100-year flood extent and the Urban Floodway Zone, particularly along the northern boundary. Additional flood-prone land is present near the intersection of Sinclair's Road and Neale Road, where open channels and culverts manage runoff. These overlays and constraints will influence the location and design of future drainage infrastructure. The integration of new drainage assets must consider these mapped constraints, as well as the presence of

conservation corridors and utility easements, to ensure effective flood mitigation and compliance with planning requirements.

2.3.1 Melbourne Water Corporation

Melbourne Water has identified several key issues and opportunities for stormwater management within the Kororoit Part 2 Precinct. The precinct is subject to two Development Services Schemes (DSS): the Neale Road DSS and the Gardiner Lane DSS. As of this assessment, no formal advice has been received regarding the detailed requirements or timing of these DSS. Melbourne Water has confirmed that a high-level concept for the DSS is expected to be designed by subconsultant Alluvium and available in October/November 2025. The DSS schemes are expected to relate to the drainage PAO at the corner of Neale and Sinclair Road as well as include land takes and asset locations. There is an opportunity to deliver integrated water management outcomes by aligning drainage infrastructure with conservation and open space areas. Ongoing coordination with Melbourne Water will be required to confirm the preferred drainage strategy, asset locations, and land take requirements as the DSS progresses.

2.3.2 Melton Shire Council

Council has not been involved in consultation and as such has not undertaken additional flood management or stormwater mitigation studies for KP2. Future drainage solutions will need to be delivered by developers in accordance with EDCM requirements. There is an opportunity to coordinate local drainage upgrades with regional strategies led by Melbourne Water, ensuring that new assets are integrated with broader flood management and water quality objectives. Early engagement with Council will be important to address local drainage constraints and to support the delivery of effective stormwater management for future urban development.

3. Water Infrastructure

3.1 Overview of the Precinct Water Network

The potable and recycled water supply network for the Kororoit Part 2 (KP2) precinct is managed by Greater Western Water (GWW). The precinct is currently a mix of rural and conservation land and lacks the infrastructure needed to support the proposed urban development. A key component of the precinct's structure planning is the extension of GWW's trunk and reticulation network to service the future community. This servicing strategy must align with the broader planning for Melbourne's western growth corridor, ensuring that new infrastructure is sized and staged appropriately to accommodate long-term growth.

3.2 Existing Conditions

BYDA data confirms the presence of existing GWW potable water mains within the road reserves that form the precinct's boundaries for the rural areas that currently exist.

Existing infrastructure includes:

- A DN100 PVC main located along the northern edge of Neale Road, running between Sinclairs Road and Clarke Road
- A DN150 PVC main located along the western edge of Sinclairs Road
- A DN80 PVC main running along the western edge of Clarke Road
- There are currently no existing recycled water assets within or directly adjacent to the KP2 precinct

The three residential development parcels within KP2 are themselves undeveloped and lack internal water reticulation with this current infrastructure. The existing mains will serve as connection points for the future network extensions required to service the precinct.

The 2014 Servicing Report for the broader Kororoit area correctly identified that the wider network capacity was limited and would require significant augmentation to support large-scale urban growth, eg. DN300-600 water mains.

3.3 Key Issues and Opportunities

The future servicing plan for KP2 provided by GWW's authority advice details the new potable water infrastructure required to service the three residential pockets (Figure 3).



Figure 3 Potable water future servicing plan (GWW, 2025)

The future water servicing strategy involves:

- A DN300 trunk water main constructed along Neale Road. This will replace the existing DN100, likely at the northern edge of the road.
- DN225 reticulation mains extending from the trunk main on Sinclairs and Clarke Road to service the northwest, southwest and northeast residential zones.

The northeast zone is to be supplied by the existing DN450 at Rockbank Middle Road, to the east of KP2. The northwest zone will obtain supply from the existing DN280 on Sinclairs Road, north of Kororoit Creek. The southwest zone will connect to the existing DN300 at the west of KP2, at the Hopkins and Neale Road intersection.

This local servicing plan is consistent with the broader strategy outlined in the 2014 Aurecon report, which anticipated the need for new distribution mains between DN300 and DN600 to service development in the area.

GWW has confirmed that the precinct falls outside its recycled water supply network and it is not considering extending these services to the KP2 PSP. This is a significant constraint from a sustainability perspective and means the development will not feature a third-pipe system. A key opportunity identified through consultation with GWW is the potential for flexible alignment of the new water main along Neale Road. GWW has advised that while the main is indicatively shown within the road reserve likely at north edge, it can be constructed within the adjacent residential land if sufficient space is provided. This flexibility can help optimise the road cross-section for transport and landscaping outcomes without being overly constrained by utility requirements.

4. Sewer Infrastructure

4.1 Overview of the Precinct Sewerage Network

The sewerage network for the KP2 precinct is managed by GWW. The function of the network is to collect and transport wastewater from future residential properties to treatment facilities. Given the precinct's current rural state, a new sewerage network including trunk mains, reticulation pipes, and a new sewer pump station (shown on Figure 1), will be required to service the proposed development. The design and delivery of this infrastructure must be carefully staged to align with the development of the three residential zones and integrate with the broader GWW network servicing the Melton growth corridor.

4.2 Existing Conditions

While the residential parcels within KP2 are undeveloped, the road reserves forming the precinct boundaries contain existing sewer infrastructure. GIS confirms the presence of a DN225 sewer pressure pipe constructed in 2020 along Neale Road. GWW has noted the presence of this temporary sewer rising main that runs east-west, south of Neale Road. This main, services an existing pump station in Deanside - west of KP2 - and is not intended to be a permanent asset or a connection point for KP2 development. GWW have also provided a 2025 concept plan which shows existing DN900 trunk infrastructure outside the northeast corner of KP2. In the 2014 report, this pipeline was proposed as a DN825, however GWW have stated due to model and assumption adjustments over the past decade upsizing to DN900 was required to increase the assets by one size.

4.3 Key Issues and Opportunities

The future servicing strategy provided by GWW addresses the needs of all three residential zones and relies on the construction of significant new trunk infrastructure, as shown in the servicing plan, Figure 4 below.



Figure 4 Sewer future servicing plan (GWW, 2025)

The strategy is centred around the northeast Clarke Road Sewer Pump Station (SPS), which will service the northeast residential zone, alongside a proposed DN750 sewer rising main (shown green-dotted line) that will be constructed north south along the Clarke Road reserve travelling south towards the Western Freeway. This aligns

with the 2014 report which projected a 600L/s permanent pumped outlet and pump station south of Kororoit Creek and adjacent to the Kororoit Regional Park.

The northwest zone will be serviced by a new DN450 trunk sewer (shown green solid line), to be constructed along Sinclairs Road between Kororoit Creek and Neale Road. GWW stated A DN225 minor reticulation asset can be constructed along the Neale Road-facing lots connecting to the DN450 if required or can be built through the residential land itself. This offers valuable design flexibility and allows the Neale Road cross-section to be optimised.

GWW advice stated that the southwest zone can connect via a DN225 sewer that travels north towards the DN450 at the Sinclairs and Neale Road intersection. This aligns with the 2014 Aurecon report, which anticipated the need for major backbone sewer infrastructure along key corridors to service the area.

The most significant issue is the need to secure a land parcel of approximately 4,000 sqm for the new Clarke Road Sewer Pump Station. This land must be set aside through the PSP process, and its location is critical for servicing not only KP2 but also a catchment of approximately 20,000 properties in the wider Melton network as advised by GWW.

The key opportunity is the fact that GWW has provided a clear, staged (FY26-FY32) plan for the delivery of trunk infrastructure. This provides the VPA and developers with certainty for planning and informing the PSP.

5. Electrical Infrastructure

5.1 Overview of Victoria's Electrical Network

The electricity 'grid' is the term used to describe the interconnected network that transports electricity generated at power stations to individual properties. This network can be visualised in Figure 5 below.

Electricity is generated at power stations across the country, generally located proximate to energy sources. The *transmission* network includes terminal stations and transmission lines, which connect the power stations to the terminal stations. The terminal stations lower the voltage level of the electricity that passes to the *distribution* network, which connect the terminal stations to individual properties. The transmission network is generally categorised as 220 kilovolts and above, and the distribution network is 66 kilovolts and below.

The distribution network comprises the following components:

- Sub-transmission lines connect terminal stations to zone substations.
- Zone substations
- Distribution feeders are either overhead or underground lines that connect zone substations to local substations.
- Local substations: indoor, kiosk, or pole-mounted
- Low voltage power lines: either overhead lines or underground cables connecting power from the local substations to the customers.

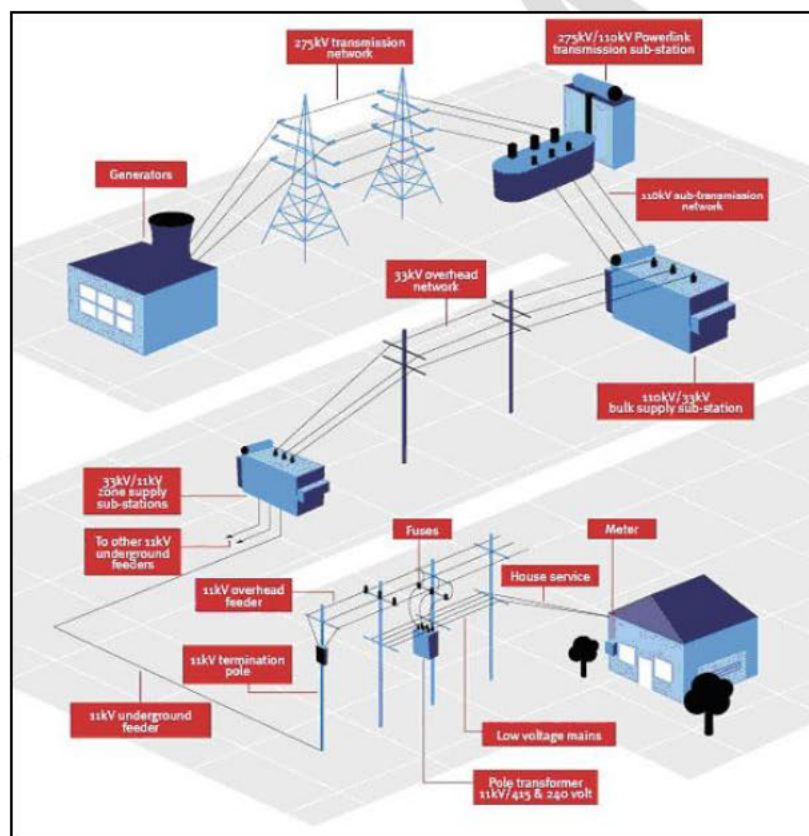


Figure 5 Typical Electricity Transmission and Distribution Network

Responsibility for the electrical network is split:

- AusNet Services is responsible for the transmission lines within the easement passing through the precinct.
- Powercor is the responsible authority for the low-voltage, high-voltage and sub-transmission electrical distribution network supplying power to customers in the precinct.

5.2 Existing Conditions

Correspondance from Powercor identified that the primary distribution assets supplying the area are existing 22kV overhead HV feeders originating from both the Melton Zone Substation MLN033 and the Truganina Zone Substation TNA011. Mapping provided by Powercor (Figure 6) indicates the TNA011 feeder runs north-south along the Sinclairs Road corridor and east-west along Neale Road within the KP2 precinct. Figure 6 also demonstrates the MLN033 feeder travels east-west along Neale Road, outside the KP2 boundary to the northwest. Powercor has confirmed these feeders have very limited spare capacity for additional load uptake.

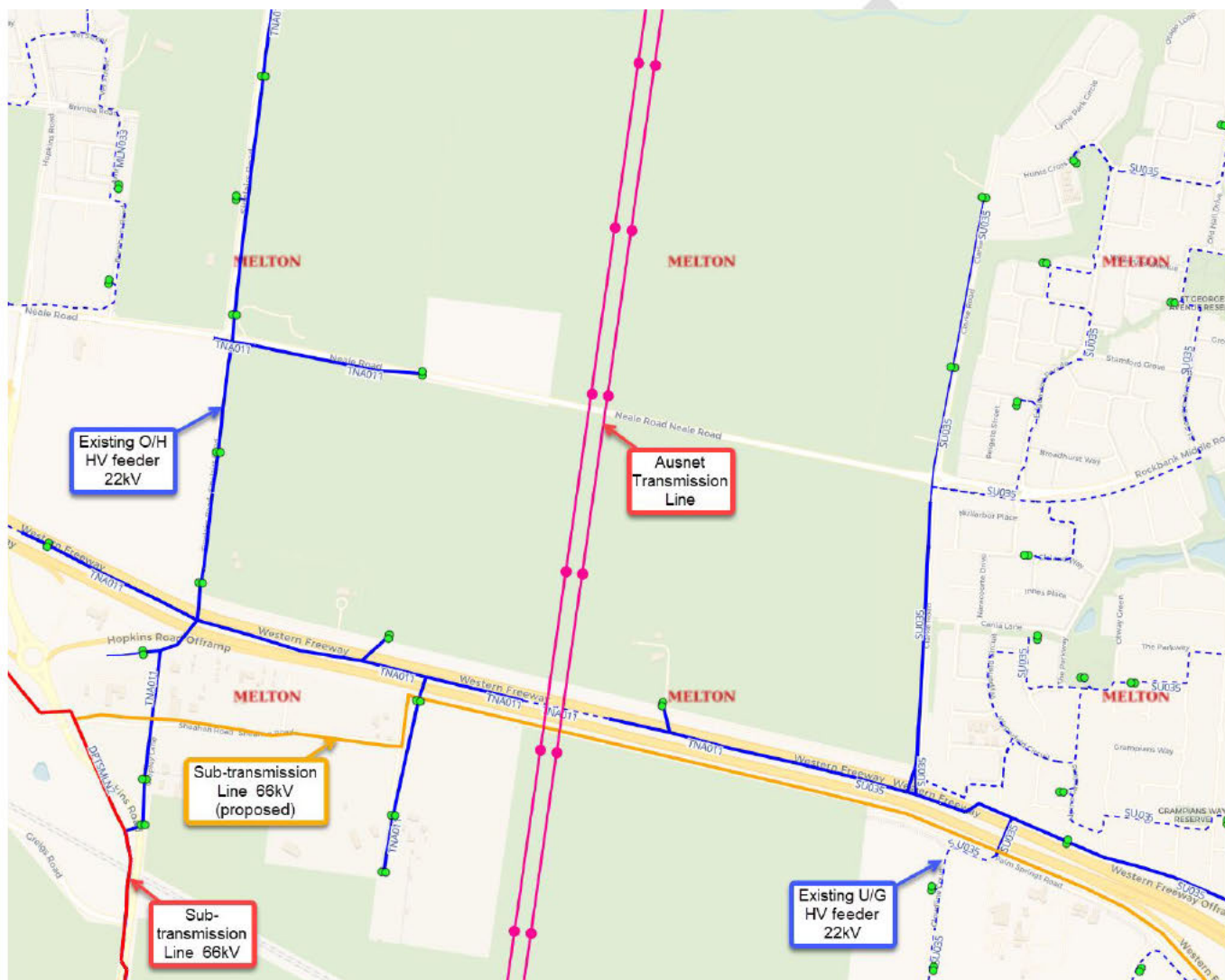


Figure 6 Electricity existing and future servicing plan (Powercor, 2025)

A major physical feature shown on the 2014 PSP as well as Figure 6 above is the existing transmission line easement that runs in a north-south direction through the centre of the KP2 precinct. AusNet Services has confirmed that the information presented in the 2014 PSP regarding this easement remains accurate and valid. This includes the two existing 500kV transmission lines as well as one future 220kV to the west and one 500kV transmission line to the east. AusNet also confirmed that the overall easement width is still required for existing and future assets, which reaffirms what is shown on the opportunities and constraints plan (Figure 1). AusNet has advised that these transmission lines do not service any infrastructure within KP2; they are part of the state's bulk electricity transmission network.

5.3 Key Issues and Opportunities

Regarding Powercor's distribution network, the future servicing strategy is as follows:

- A new Melton Terminal Station Zone Substation (MTC ZSS) and associated HV Feeder are planned for 2026 to allow for immediate additional load uptake in the broader area outside KP2.
- The long-term strategy relies on the construction of a new 'Rockbank East' Zone Substation south of the KP2 precinct, now planned within the next 5 years - by approximately 2030 - subject to load forecasts and other variables. This substation is critical for servicing the full growth in KP2. A proposed 66kV sub-transmission line from Hopkins Road at the south is intended to supply the three residential zones.
- A further 'Rockbank' Zone Substation to the west of KP2 is anticipated in the longer term once the Rockbank East ZSS reaches capacity.

The most critical issue for the Powercor distribution network is the insufficient capacity of the existing 22kV feeders (MLN033 and TNA011) to handle the estimated 5 MW peak demand from the future KP2 development by 2035. Consequently, the full development of the precinct is contingent on the delivery of the new Rockbank East Zone Substation, a major project with a significant lead time. Although a 5 year timeframe is now indicated for this substation, this timing remains subject to variables like actual load growth and budget allocation, creating ongoing uncertainty for precise development staging within the PSP. The primary opportunity related to the Powercor network lies in the requirement for the new Rockbank East Zone Substation. This allows the VPA to engage in proactive collaboration with Powercor to identify and secure the necessary 1-hectare site, ensuring it is strategically located to efficiently serve KP2 and coordinate with broader infrastructure rollouts in the growth corridor.

Regarding AusNet Services' transmission network, the future servicing strategy does not include any specific upgrades within the easement in the short to medium term.

The main issue concerning the AusNet transmission network is the requirement to retain the existing easement due to the potential future construction of the planned 220kV and additional 500kV lines, even though timing is uncertain. This easement imposes strict land use constraints within and adjacent to it, as detailed in the 2014 report, affecting buildings, structures, landscaping, excavation, and requiring specific clearances for road crossings. However, there is potential to utilize the land within the AusNet transmission easement for compatible open space functions, such as passive recreation or shared paths, provided designs meet AusNet's safety and access requirements and receive their approval. This offers an opportunity to integrate the easement corridor into the precinct's broader open space and active transport network.

6. Gas Infrastructure

6.1 Overview of Victoria's Gas Network

Victoria's gas network consists of high-pressure transmission pipelines that transport large volumes of natural gas across the state, and a lower-pressure distribution network that reticulates gas to individual customers. APA Group is the responsible authority for the key transmission assets within the KP2 precinct. The local distribution network is managed by AusNet Gas Services, who engage contractors such as Downer for planning and operational works. The extension of the local distribution network to service new developments is a standard process but is subject to commercial viability and the evolving regulatory landscape regarding gas connections in new homes.

6.2 Existing Conditions

The most significant existing gas infrastructure within the KP2 precinct is the APA Group's high-pressure gas transmission corridor. As per the 2014 report this corridor contains two major pipelines - a DN500 Truganina-Plumpton pipeline and a DN150 Deer Park-Sunbury pipeline - running north south along the western portion of KP2. A measurement length of 571m from these pipelines create an easement where sensitive land uses e.g., schools, childcare are discouraged.

For the distribution network, initial BYDA plans indicate the presence of existing DN180 High Pressure AusNet distribution mains along Neale Road, which service the adjacent Kororoit Part 1 development. This aligns with advice from the 2014 PSP report which stated DN180 supply mains be implemented along Neale Road tying into Rockbank Middle Road from the east of KP2. GHD has commenced liaison with Downer, on behalf of AusNet Gas Services, to confirm the full extent and capacity of the existing network; however, a comprehensive existing condition plan for the entire KP2 area has not yet been provided.

6.3 Key Issues and Opportunities

The future servicing strategy for gas in KP2 is currently under review, pending detailed advice from both APA Group and AusNet Gas Services.

The strategy for extending the local distribution network is unconfirmed. While the existing DN180 supply on the Neale Road provide a logical connection point for northwest, northeast and southwest zones, AusNet Gas Services, via Downer, has not yet provided a proposed servicing layout for the KP2 precinct, nor have they confirmed if the servicing approach from the 2014 PSP remains valid. Conversely, APA have stated that development remains consistent with the 2014 PSP. Should information from the 2014 report be utilised however, the three residential zones can connect to the supply line via proposed DN63-180 reticulations mains. Further, there is broader uncertainty regarding the future of residential gas connections due to potential changes in government policy aimed at electrification in new homes. Clarification on AusNet's plans for servicing new residential lots is required. Similarly, APA Group has not provided a detailed indicative layout for its transmission assets in the context of the KP2 plan.

While the distribution strategy is pending, APA Group has confirmed its requirements for development near its transmission pipeline, which are consistent with the approach taken for the adjacent Kororoit Part 1 precinct. The key issues are:

- A 571-metre measurement length associated with the high-pressure transmission pipeline remains a critical constraint on development.
- Any future zoning controls for the precinct must include statutory triggers for planning permits for any proposed sensitive land use applications within the pipeline's measurement length.

Key opportunities are:

- APA revalidates the Safety Management Study (SMS) in the Melbourne region every 5 years. However, KP2 PSP is unlikely to require an updated SMS unless dwelling densities of 50 dwellings per hectare or greater are proposed.

- The integration of the 20-metre-wide APA gas easement into the precinct's linear open space network. This aligns with the recommendation in the Integrated Transport Assessment to create a north-south shared path within the easement, turning a constraint into a community and active transport asset. This differs from previous advice in the 2014 report which stated no development or road reserve may occur over the 20m wide pipeline easement.

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7. Telecommunications Infrastructure

7.1 Overview of Victoria's Telecommunications Network

The rollout of high-speed broadband is a key factor in servicing growth areas like KP2. The responsibility for providing telecommunications infrastructure in new developments is typically shared. For developments of 100 lots or more, such as this precinct, NBN Co. is generally the responsible infrastructure provider.

A foundational principle, first established for the area in the 2014 Kororoit Servicing Report, is that developers are responsible for providing fibre-ready "pit and pipe" infrastructure. This involves installing empty conduits and pits to the carrier's standards, which allows the service provider to efficiently install their fibre optic network as the development is constructed.

7.2 Existing Conditions

A comprehensive existing conditions layout for the precinct was not provided by NBN Co. The following assessment of the existing network is therefore based on publicly available NBN rinseout spatial data and information obtained from BYDA.

- The three proposed residential zones within the KP2 precinct are currently not serviced by any fixed-line telecommunications network. This means Sinclairs (except the south), Neale and Clarke Road in KP2 are currently not serviced by NBN as per BYDA excerpts. The surrounding areas however, are serviced by two distinct NBN Fibre Serving Areas (FSAs).
- 3RBK (Rockbank) FSA is located to the north and west of the precinct. The closest existing 3RBK infrastructure to the western boundary of KP2 appears to be located along Burnham Road.
- 3DRP (Deer Park) FSA is located to the east. The closest existing infrastructure to the eastern boundary is in the vicinity of the Rockbank Middle Road and St Georges Avenue intersection.

7.3 Key Issues and Opportunities

NBN Co. did not provide a comprehensive proposed layout for servicing KP2, advising that GHD should use the formal NBN data request process, at a cost, to obtain detailed plans. However, email correspondence did provide a high-level servicing strategy and confirmation of network capacity. Based on the available information, the inferred servicing strategy is as follows:

- The northwest and southwest zones will be serviced by extending the NBN network from the 3RBK (Rockbank) FSA, connecting from the Burnham Road intersection and travelling along the southern edge of Neale Road. The NBN would likely split north and south at the Sinclairs Road intersection to service the northwest and southwest zones.
- The northeast zone will be serviced by extending the network from the 3DRP (Deer Park) FSA. The NBN cable would likely extend along the south of Rockbank Middle Road from the pit at St Georges Avenue. Upon travelling east towards the Neale and Clarke Road intersection, the NBN would likely travel north along Clarke Road to service the northeast zone.

NBN Co. has confirmed there is ample capacity in the parent networks to support the development and that a new fibre build of approximately 200 metres or more will be required along Neale Road. However, the absence of existing or proposed layouts from NBN Co. creates a degree of uncertainty for the PSP process. The servicing strategy has been inferred from high-level mapping rather than confirmed engineering plans.

8. Neale Road Cross Sections

To formulate the Neale Road cross section, Nearmap investigations were undertaken to measure the road reserve width from the southern boundary to the northern boundary, amounting to 20m. This correlates with the O'Brien Traffic Integrated Transport Assessment for KP2 which also states a reserve width of 20m. A combination of this transport assessment, Streetview imagery and EDCM Table 4 and 5 for a two-lane trunk connector were utilised to demonstrate the Neale Road cross sections depicted in Appendix A.

8.1 Minimum Depths

To gain an understanding of how the future services will be located within the road reserve the following drawings provide a typical section through different road types. The sections show typical alignments for services with offsets from boundaries.

Depth of services will be in accordance with typical USP requirements, the specified minimum depths are provided in Table 3 below:

Table 3 Utility Minimum Cover Depths

Service	Minimum Cover Depth Untrafficked (mm)	Minimum Cover Depth Road/Trafficked (mm)
Telecommunications	600	750
Electrical	300	300
Sewer	900	1200
Water < DN300	450	750
Water ≥ DN300	600	1000
Gas	450	600
Stormwater	450	600

8.2 Existing Conditions

The Neale Road reserve currently accommodates several key utility assets. Refer to Appendix A for drawings of these existing typical sections. Where utility offsets are unknown, they have been placed indicatively based on EDCM standard drawing typical offsets. The existing infrastructure within this corridor includes:

- Stormwater: An open channel drain runs along the southern verge of Neale Road, conveying surface water from the surrounding area.
- Water: A GWW DN100 PVC potable water main is located within the northern edge of the road reserve. BYDA data shows an offset of 2.5m from the northern boundary.
- Sewer: A GWW DN225 PE sewer pressure pipe - temporary rising main - runs along the corridor, servicing an existing pump station to the west of KP2. BYDA data shows an offset of 5.5m from the southern boundary near Sinclairs Road and 2m near Clarke Road.
- Gas: An AusNet Gas DN180 high-pressure distribution main is located within the road reserve to the south, providing a key supply line for the area. BYDA data shows an offset of 2.3m from the southern boundary.
- Telecommunications: BYDA data from NBN confirms Neale Road is not serviced by fixed-line NBN infrastructure.
- Electricity: A Powercor 22kV overhead feeder is located within the southern edge of the road reserve. The feeder pole offset varies from the boundary based on Streetview imagery, averaging approximately 4.5m from the southern boundary.

8.3 Proposed Conditions

Future development of the KP2 residential zones will require the installation of significant new utility infrastructure within or adjacent to the Neale Road corridor. Refer to Appendix A for drawings of these proposed typical sections. Where utility offsets are unknown, they have been placed indicatively based on EDCM standard drawing typical offsets. The proposed infrastructure within this corridor includes:

- Stormwater: Advice from Melbourne Water is not yet available to depict drainage along Neale Road.
- Water: A DN300 trunk water main is proposed along Neale Road to service the precinct. Service offsets are not yet confirmed but it is likely to replace the existing DN100 at the northern edge.
- Sewer: GWW are flexible with the placement of the DN225 reticulation sewer on Neale Road. As its placement would be to service the northwest zone, it is likely the sewer line will be constructed along the northern edge of Neale Road.
- Gas: Sufficient information is not provided regarding proposed Gas on Neale Road.
- Telecommunications: A NBN fibre build of approximately 200 metres or more will be required along Neale Road to extend the network into the precinct. It will be assumed to be located along the northern edge to service the northwest zone as no layout information has been provided by NBN.
- Electricity: Powercor suggest current overhead feeders are to be upgraded to services future lots. This suggests the existing overhead feeder with an offset averaging 4.5m from the southern boundary will be upgraded.

8.4 Implications for Road Widening

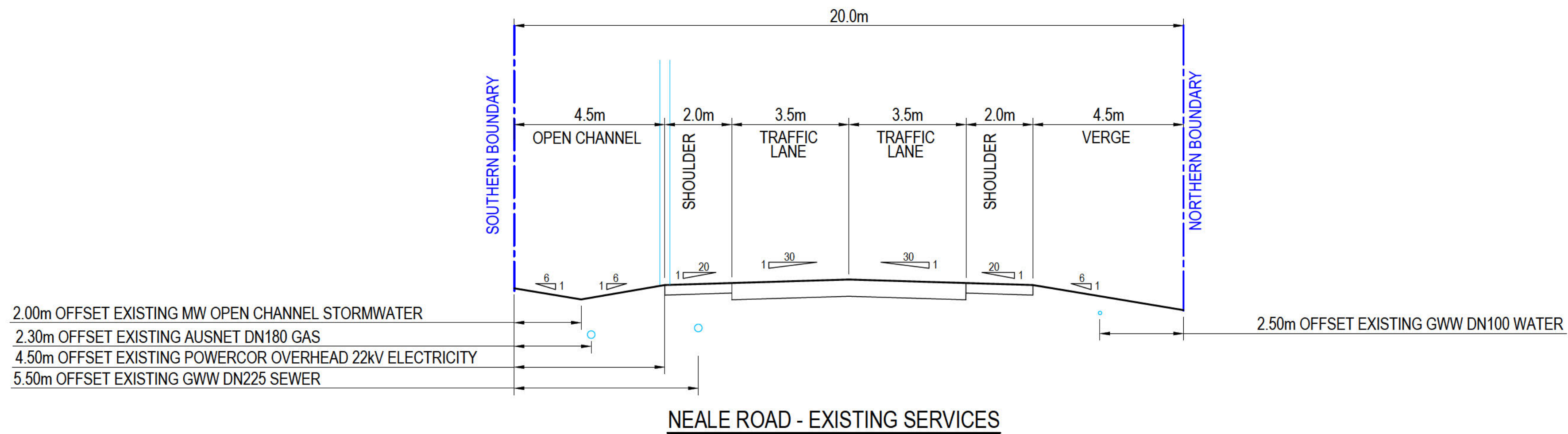
The Neale Road corridor is a congested and critical alignment for multiple major utility services. The O'Briens Integrated Transport Assessment concluded that a two-lane secondary arterial is sufficient to accommodate the ultimate traffic forecast of ~18,120 vehicles per day. Should the road be widened to a four-lane arterial, it would likely require the costly and complex relocation of several key assets, including the existing high-pressure gas main and the proposed DN300 trunk water main. However, given that many of the utilities are undersized for the future development of KP2, undergoing four-lane arterial widening may provide the opportunity to relocate/upgrade/remove existing services with open-cut.

Regarding the two-lane scenario, a key opportunity to de-constrain the road reserve lies in the advice provided by Greater Western Water. GWW has confirmed that the proposed DN300 water main and DN225 sewer have flexible alignments and can be constructed within the adjacent residential land north of Neale Road, rather than within the road reserve itself. Leveraging this flexibility would be a critical step in preserving the road corridor for transport functions and would make the delivery of a two-lane arterial cross-section, complete with the required active transport infrastructure, more achievable. This should be a central consideration in progressing conversations with the Melton Shire Council.

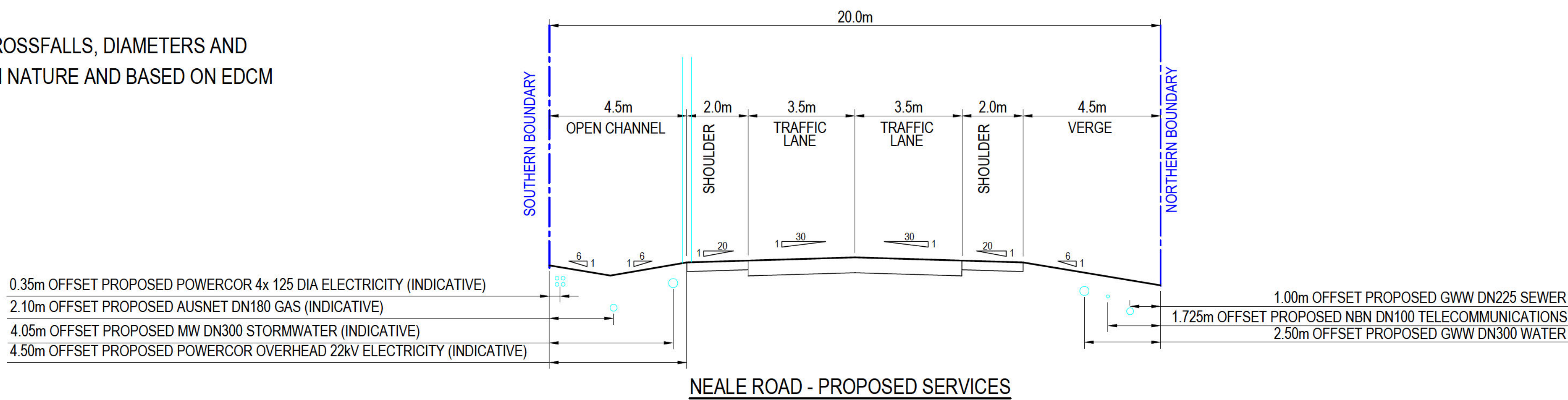
Appendices

Appendix A

**Neale Road Cross Sections Existing And
Proposed**



NOTE:
ROAD RESERVE WIDTHS, CROSSFALLS, DIAMETERS AND
OFFSETS ARE INDICATIVE IN NATURE AND BASED ON EDCM



WARNING
SERVICES SHOWN ON THIS DRAWING ARE
APPROXIMATE ONLY. THE EXACT LOCATION IS TO BE
CONFIRMED ON SITE BY CONTRACTOR PRIOR TO
COMMENCEMENT OF WORKS.

P02 FINAL ISSUE				
P01 DRAFT ISSUE				
Rev	Description	Checked	Approved	Date
Author	M. KENDA	Drafting Check	C. HASWELL	
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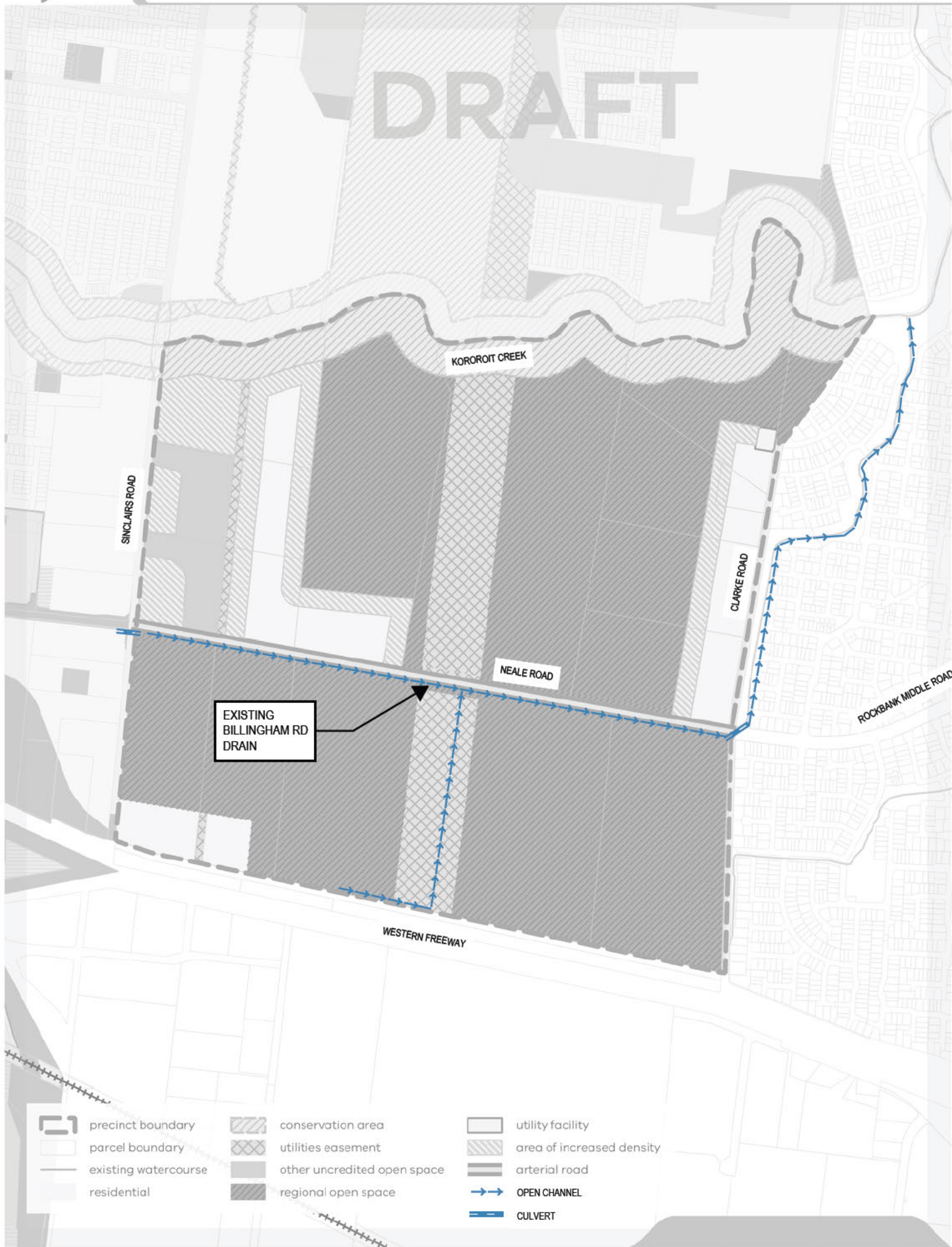
Project No.
12673577

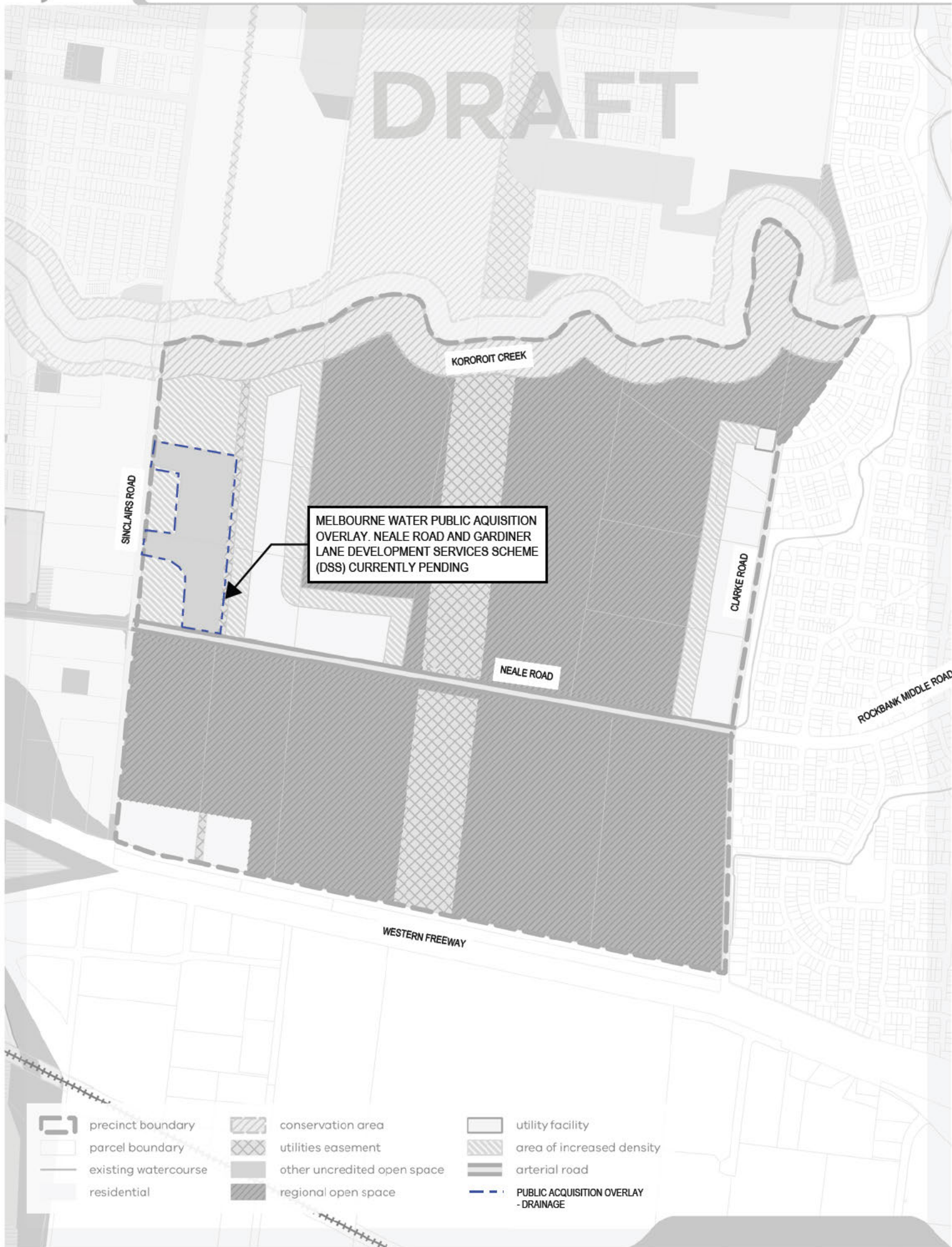
Client	VICTORIAN PLANNING AUTHORITY
Project	KOROROIT PART 2 PSP - UTILITIES AND SERVICING ASSESSMENT
Status	PRELIMINARY

Drawing Title	NEALE ROAD TYPICAL SECTIONS	Size	A1
12673577-GHD-00-00-DRG-CI-00001		Drawing No.	Rev P02

Appendix B

**Existing and Proposed Utility Indicative
Layouts**



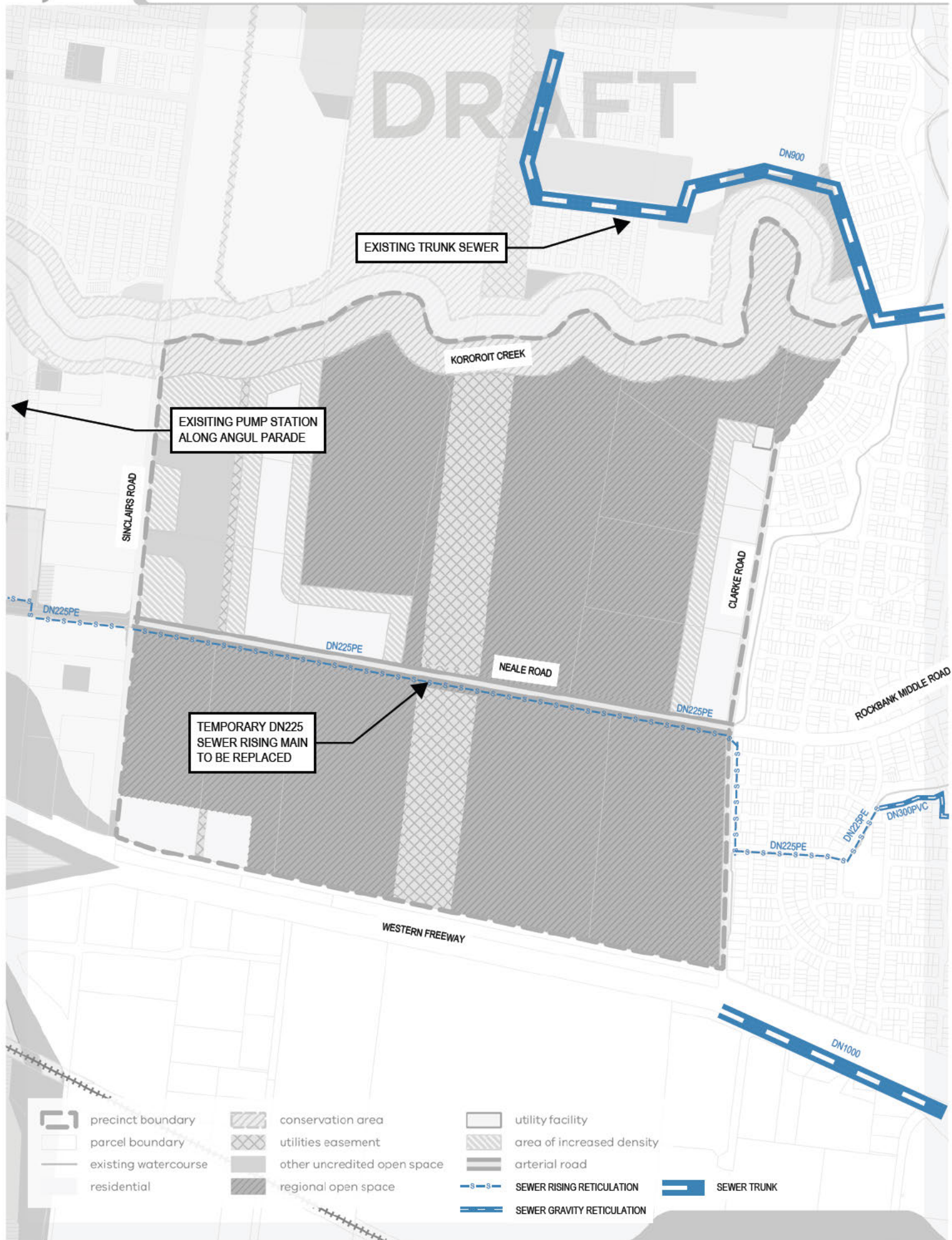


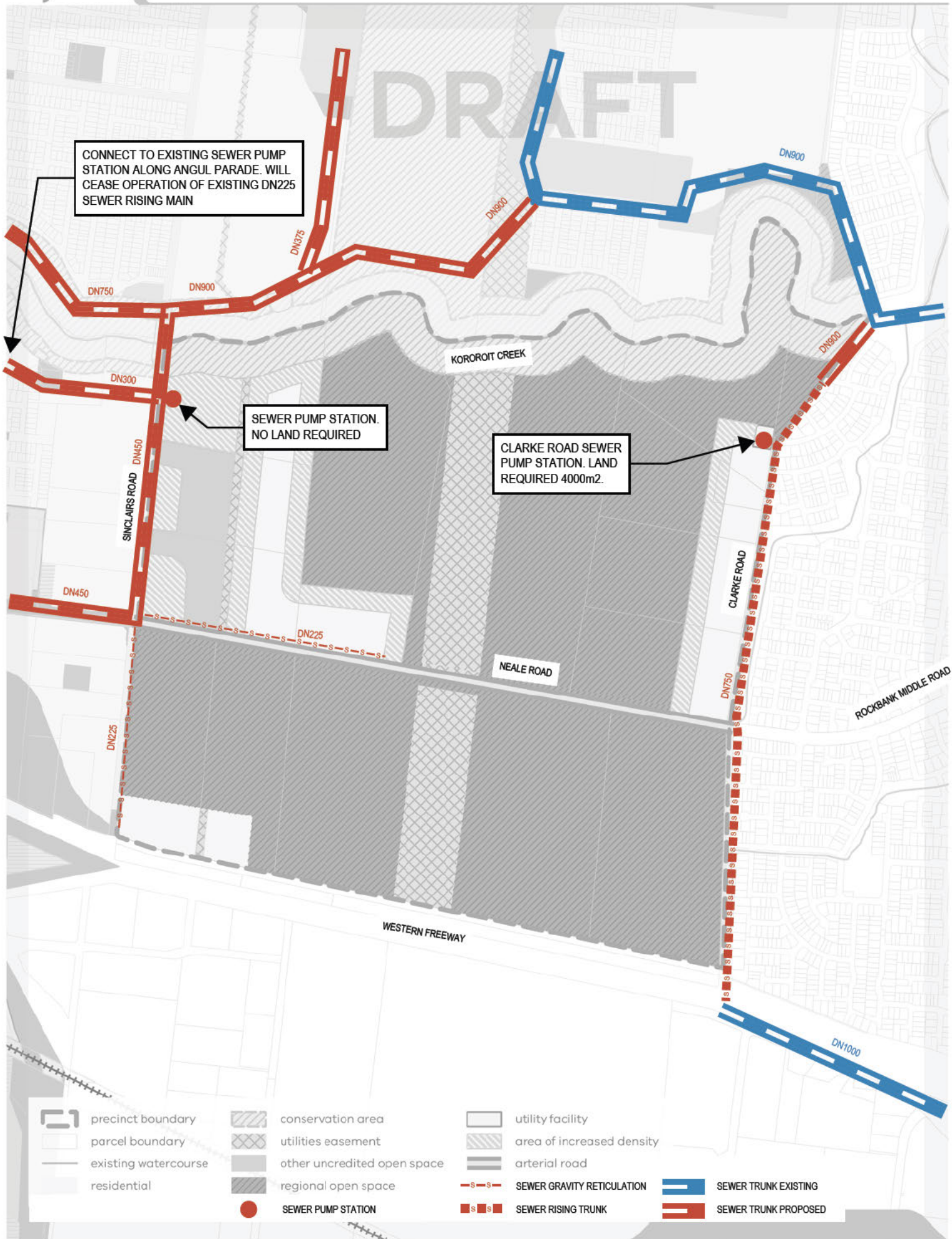
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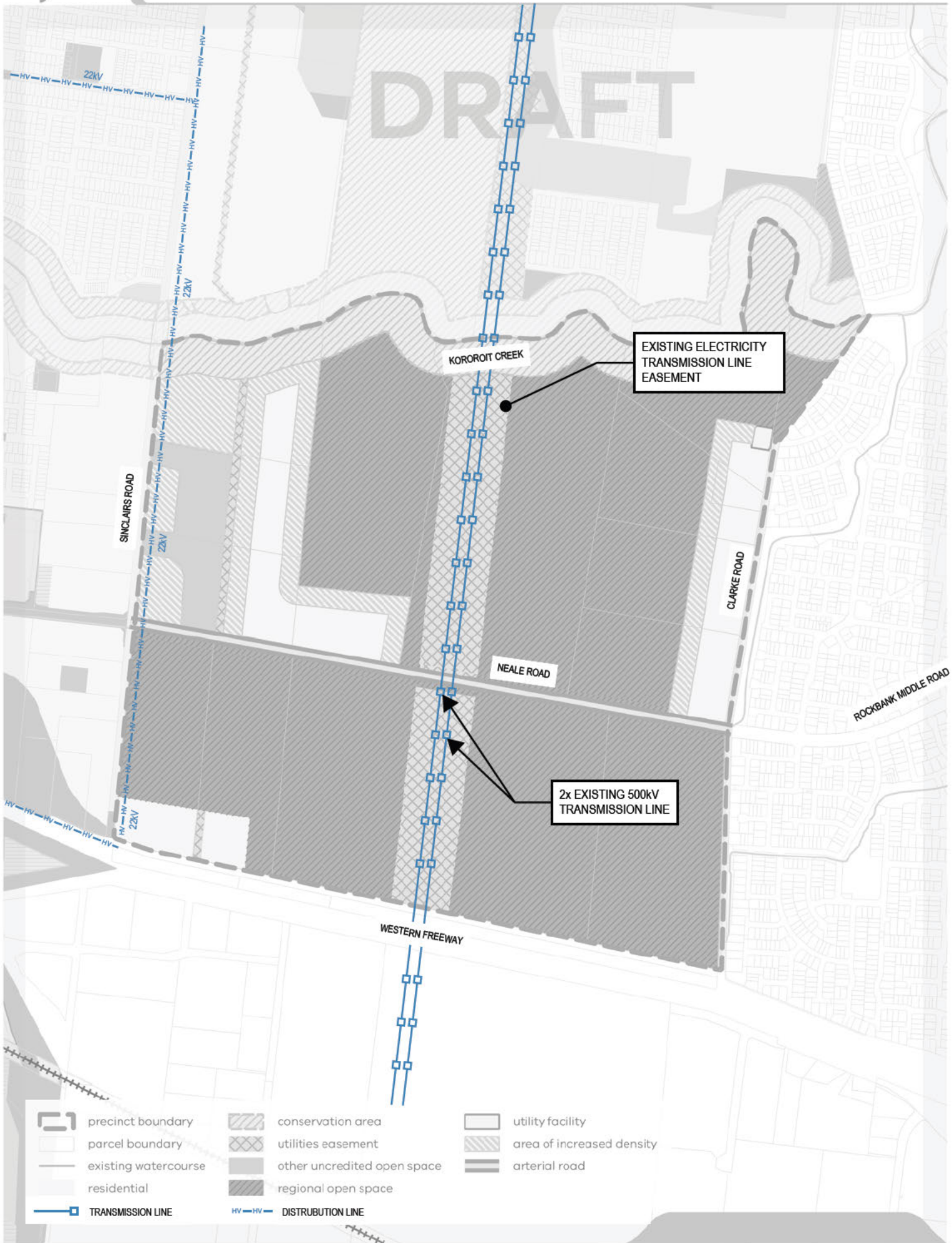


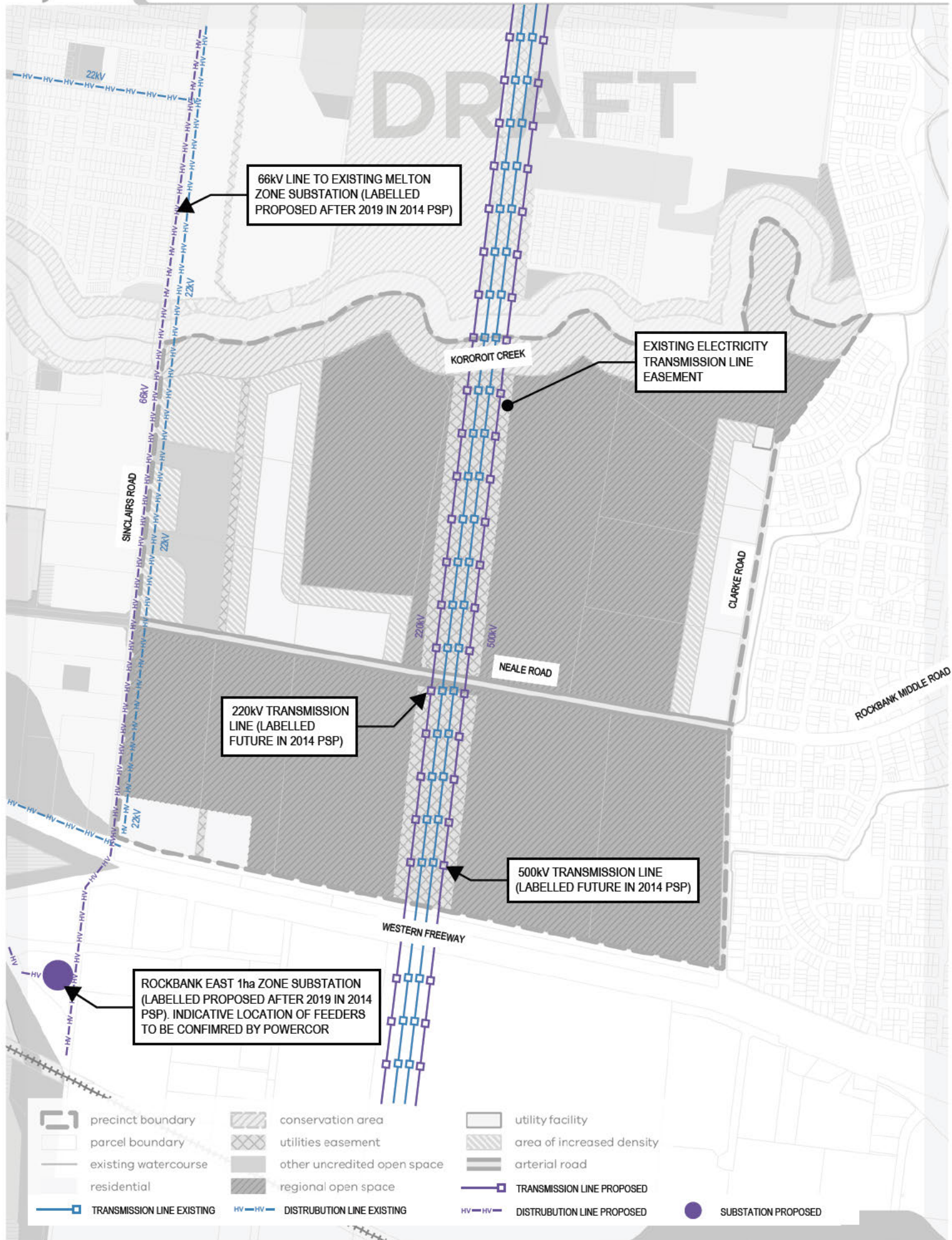
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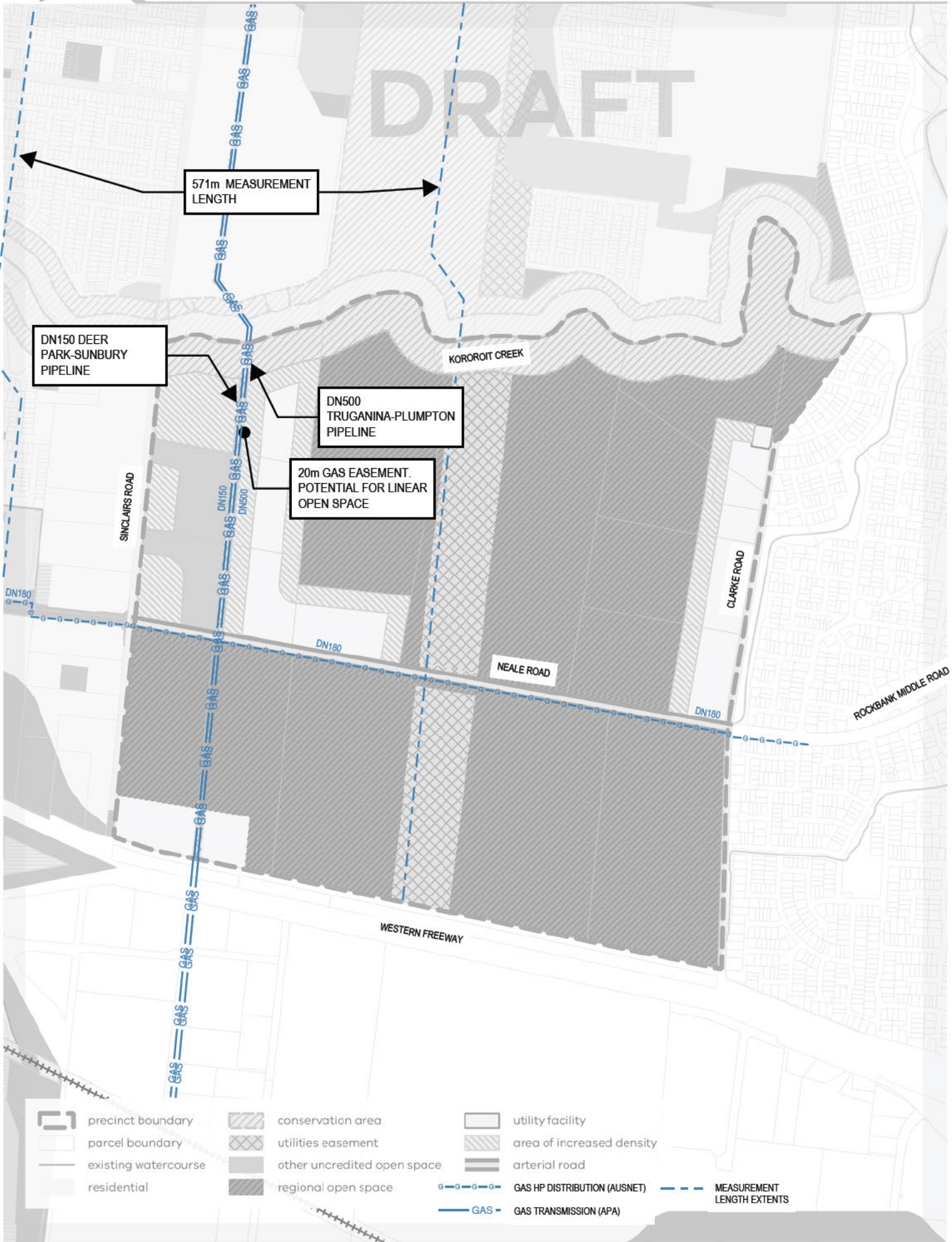












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KOROROIT CREEK

DISCLAIMER: FUTURE SERVICING
STRATEGY FOR GAS IN KP2 CURRENTLY
UNDER REVIEW, PENDING ADVICE FROM
APA GROUP AND AUSNET GAS SERVICES

SINCLAIRS ROAD

CLARKE ROAD

NEALE ROAD

ROCKBANK MIDDLE ROAD

WESTERN FREEWAY



precinct boundary



parcel boundary



existing watercourse



residential



conservation area



utilities easement



other uncredited open space



regional open space



utility facility



area of increased density



arterial road

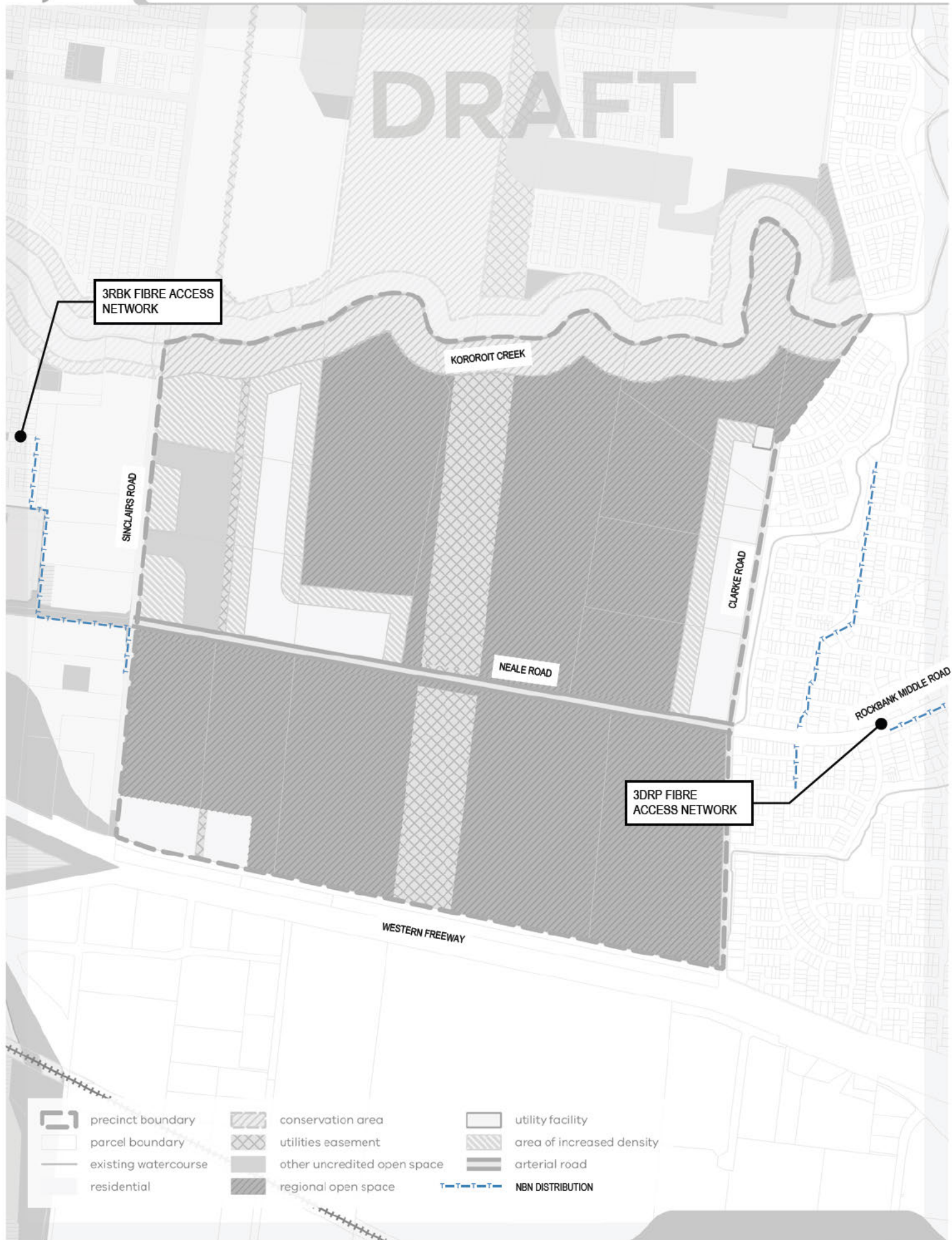


GAS HP DISTRIBUTION (AUSNET)



GAS TRANSMISSION (APA)

MEASUREMENT
LENGTH EXTENTS



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