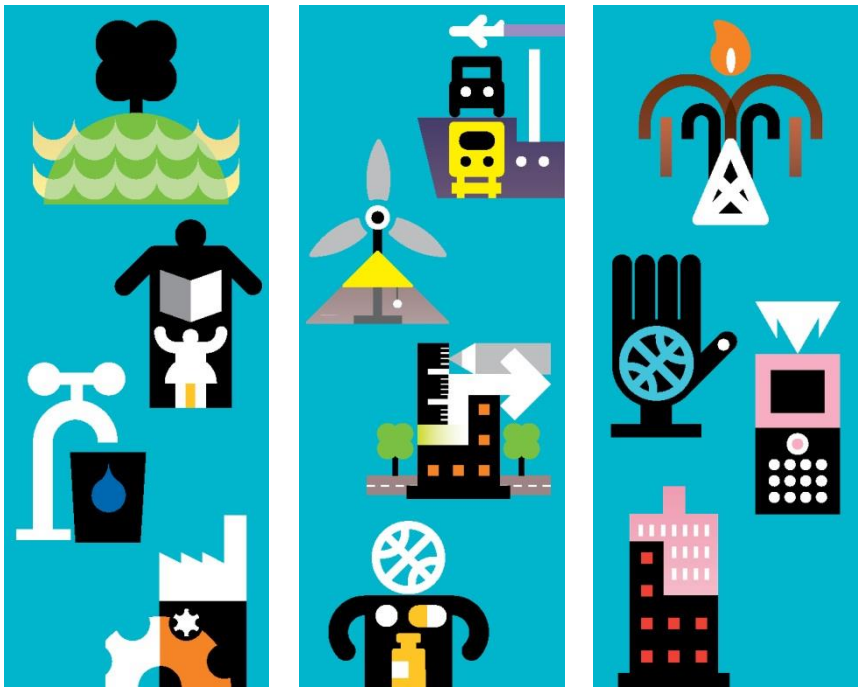

Infrastructure Precinct Planning Report

Vineyard Precinct

October 2016

Department of Planning & Environment

Mott MacDonald

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Department of Planning & Environment

L10, 383 Kent Street, Sydney NSW 2000, Australia

PO Box Q1678, QVB Sydney NSW 1230, Australia
T +61 (0)2 9098 6800 **F** +61 (0)2 9098 6810 **W** www.mottmac.com/australasia

10 Valentine Ave,
Parramatta NSW 2150

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
A	27.06.2014	John Taylor	Greg Lee	Chris Avis	DRAFT For Client Review
B	29.08.2014	John Taylor	Greg Lee	Chris Avis	Final DRAFT
C	02.07.2015	Greg Lee	Greg Lee	Chris Avis	For Exhibition
D	20.07.2015	John. Taylor	Greg Lee	Chris Avis	For Exhibition
E	19.10.2016	Rachel Higgisson	Greg Lee	Chris Avis	For Exhibition

Standard

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1 Introduction

In 2005 the NSW Government identified a need to sustainably plan Sydney's urban growth at its outer perimeters to accommodate part of an expected additional 1.7million people in Sydney by 2036. From this, two growth centres were established. The North West Priority Growth Area (NWPGA) located within The Hills, Blacktown and Hawkesbury local government areas and The South West Priority Growth Area (SWPGA) located within Liverpool, Camden and Campbelltown local government areas.

The two Growth Areas are planned to provide up to 181,000 new homes for 500,000 people over the next 25-30 years. The NWPGA, which this report is focused around, aims to provide 70,000 of these homes for 200,000 residents.

In order to streamline the re-zoning processes to facilitate development of the Growth Centres, a Precinct Planning process has been used. This process coordinates the planning and delivery of water, wastewater, recycled water, power, telecommunications, roads and other key services in order to facilitate new communities.

Mott MacDonald has been engaged by the Department of Planning and Environment (DP&E) to undertake an Infrastructure study to inform the preparation of and Indicative Layout Plan (ILP) for the Vineyard Precinct (the Site) located within the North West Priority Growth Area (NWPGA).

The purpose of this report is to identify key existing servicing infrastructure and outline requirements for new trunk infrastructure to service the precinct. This information will then be used, not only to inform the ILP, but also to identify an 'Early Activation' Sub-Precinct which is most suitable for initial development within the precinct.

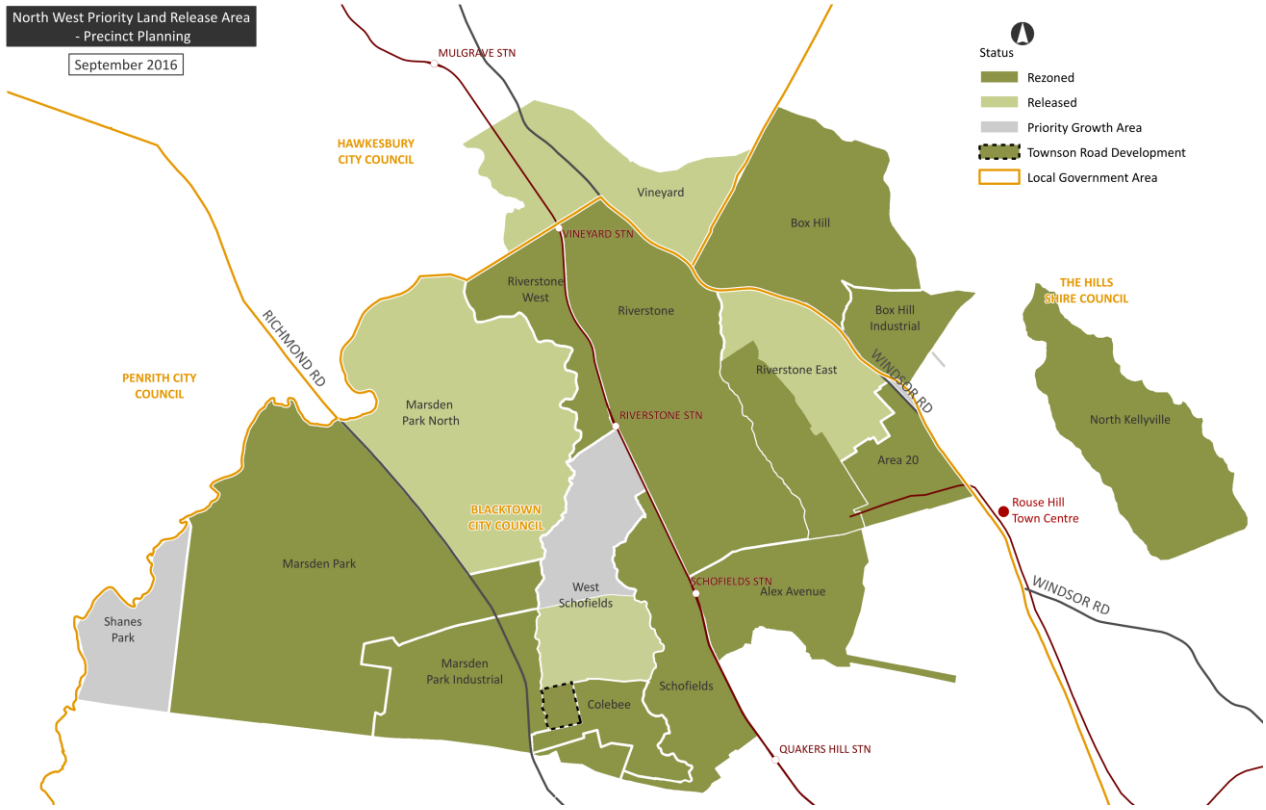
1.1 Regional Context

The North West Priority Growth Area is located approximately 50km north-west of Sydney's CBD, and borders Rouse Hill Town Centre at its eastern corner. Figure 1.1 below shows the overall NWPGA structure layout and current re-zoning status.

It is crossed by Richmond Road and Windsor Road generally between South/ Wianamatta Creek and Commercial Road to the north respectively and generally between the Westlink M7 and Schofields Road to the south respectively. At the southern border on Richmond Road, entry and exit to and from the Westlink M7 can be gained in both a south and east direction.

The Western Rail Line bisects the NWPGA with existing stations at Schofields, Riverstone and Vineyard. The Sydney Metro North West (SMNW) is proposed to have stations at Rouse Hill Town Centre and on Cudgegong Road in Area 20, at the south-east corner of the NWPGA.

Figure 1.1: North West Priority Growth Area Structure Plan



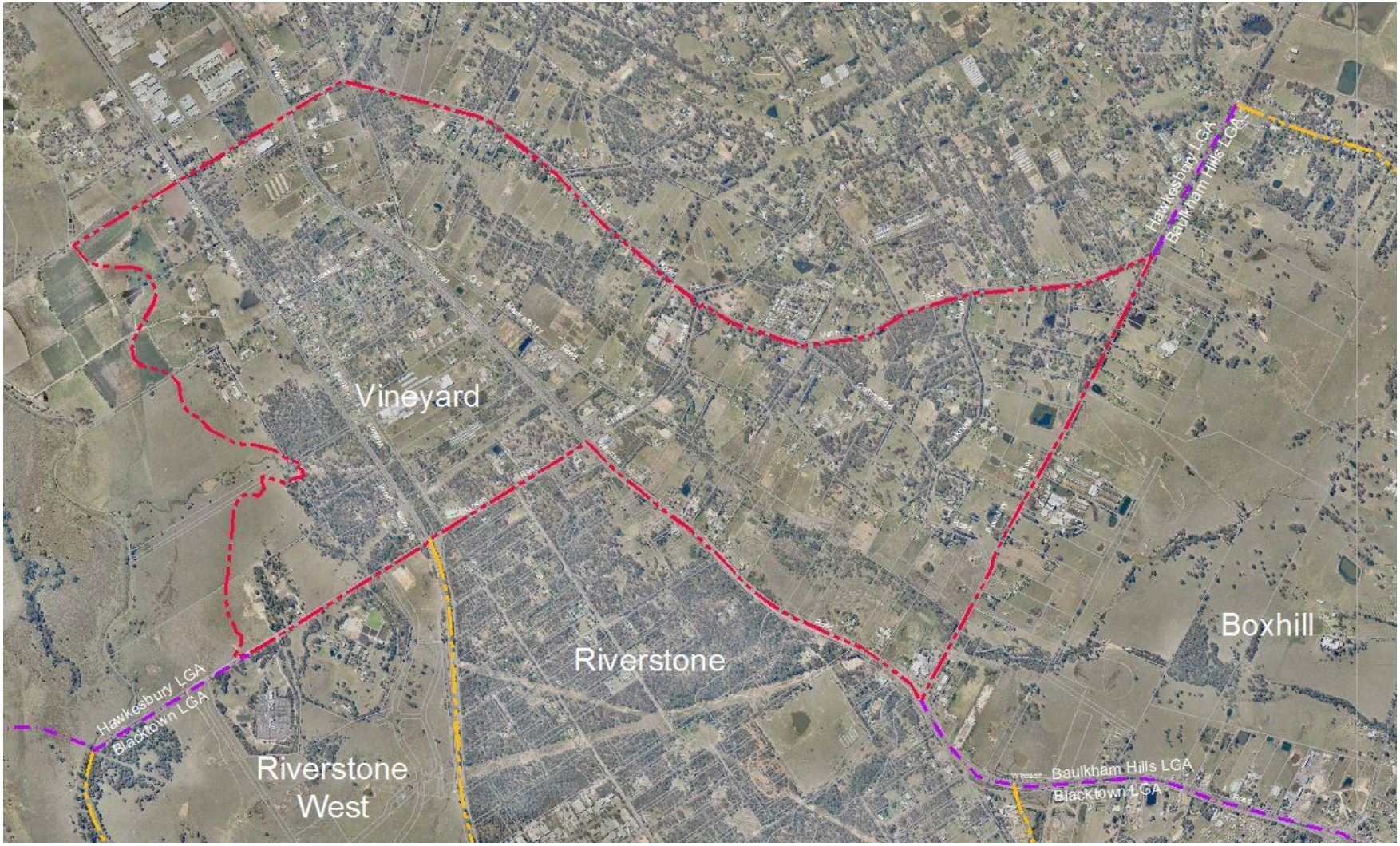
Source: NSW Department of Planning and Environment

1.2 The Site

The Vineyard Precinct is located centrally in the northern most portion of the North West Priority Growth Area (NWPGA) and is bounded by Commercial and Menin Roads to the north, Boundary Road to the east, Windsor and Bandon Roads to the south and topography based boundary (crest) to the west. The site is bordered by three other growth precincts, Box Hill to the east and Riverstone East and Riverstone West to the south. Although the site is wholly within Hawkesbury City Council (HCC) Local Government Area (LGA) it is bordered by the Blacktown City Council and Hills Shire Council as shown below in Figure 1.2.

The overall site comprises 590 hectares of primary production and rural small holdings zoned land under the Hawkesbury Local Environmental Plan (2012). It is approximately 4km wide in a west-east direction and ranges from approximately 1-2km long in a north-south direction.

Figure 1.2: The Site



Source: Nearmap 2014

1.3 Base Information

The base information used as part of this assessment and presented on the plans included as Appendix A is shown in Table 1.1 below.

Table 1.1: Base Information

Item	Category	Description	Source
1	Survey and Cadastral	1m Contour Data	DP&E
2	Survey and Cadastral	Cadastral Data	DP&E
3	Existing Services	TransGrid transmission lines	DP&E
4	Existing Services	TransGrid transmission lines, easement and pole locations	Dial Before You Dig (DBYD)
5	Existing Services	Endeavour Energy transmission lines, distribution lines and easements.	DBYD
6	Existing Services	Sydney Water existing sewer and water infrastructure locations	DBYD
7	Existing Services	Jemena trunk gas pipeline and easement location	DBYD
8	Existing Services	Jemena distribution mains	DBYD
9	Existing Services	Caltex High Pressure Multi Products Newcastle Pipeline Easement	DBYD
10	Existing Services	Telecommunications infrastructure type and location	DBYD
11	Northwest Rail link	Rapid Transit Rail Facility location	DP&E

1.4 Survey

To ensure accurate design, detailed ground survey is required to correctly document existing topography including surface features and structures to suitably prepare strategies for:

- Road layouts;
- Zoning;
- Drainage, primarily to locate appropriate sites for detention and water quality structures; and
- Infrastructure servicing, including sewer

Aerial LiDAR survey (3D) is acceptable to suitably prepare strategies for the above components of the Precinct Plan. Contour data of the Site at 1m intervals has been utilised in this assessment. Subsequent design stages will require more detailed survey data to ensure a robust solution is achieved.

1.5 Existing Services

Existing service location information has largely been obtained through a Dial Before You Dig (DBYD) services search. The data obtained has then been overlaid on cadastre plans in AutoCAD and plotted

manually. Some additional information was provided by the Department of Planning and Environment in AutoCAD format and was cross referenced against the DBYD information.

The service information has been consolidated and displayed on a number of plans which can be found in Appendix A. The details shown on the plans should be considered as indicative only as the original DBYD information is not based on detailed survey data. This means they may vary from the locations shown on plan.

2 Existing Servicing Infrastructure

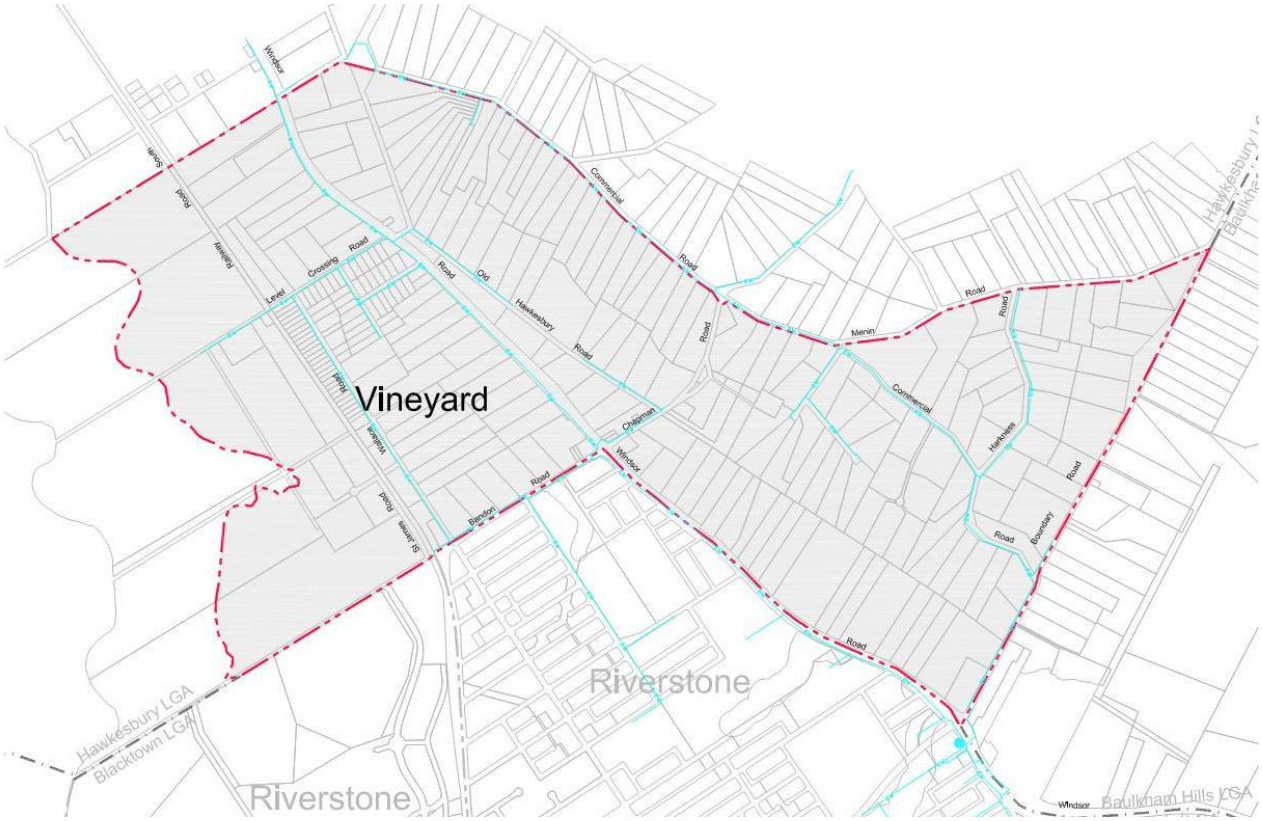
The following details existing services infrastructure located within and in close proximity to the Site. Existing layout plans developed from Dial Before you Dig information, as well as service provider consultation have been created and are included in Appendix A for reference.

2.1 Water Supply

The site is surrounded by three existing supply locations being at Oakville (WS0297) to the north-east, Rouse Hill (WS0476) to the south-east and South Windsor (WS0355; WS0294; WS0197) to the north-west. All three locations are linked via a trunk distribution network. Existing distribution lines service most existing roads within the site. A 150mm steel cement-lined (SCL) changing to a 100mm ductile iron cement-lined (DICL) and a 300mm cast iron cement-lined (CICL) traverse the site along Windsor Road through the centre of the site and Commercial Road at the northern boundary respectively.

An existing pumping station also exists at the southern boundary of the site at the intersection of Boundary and Windsor Roads (WP0187).

Figure 2.1: Existing Water Services



Source: Dial Before you Dig

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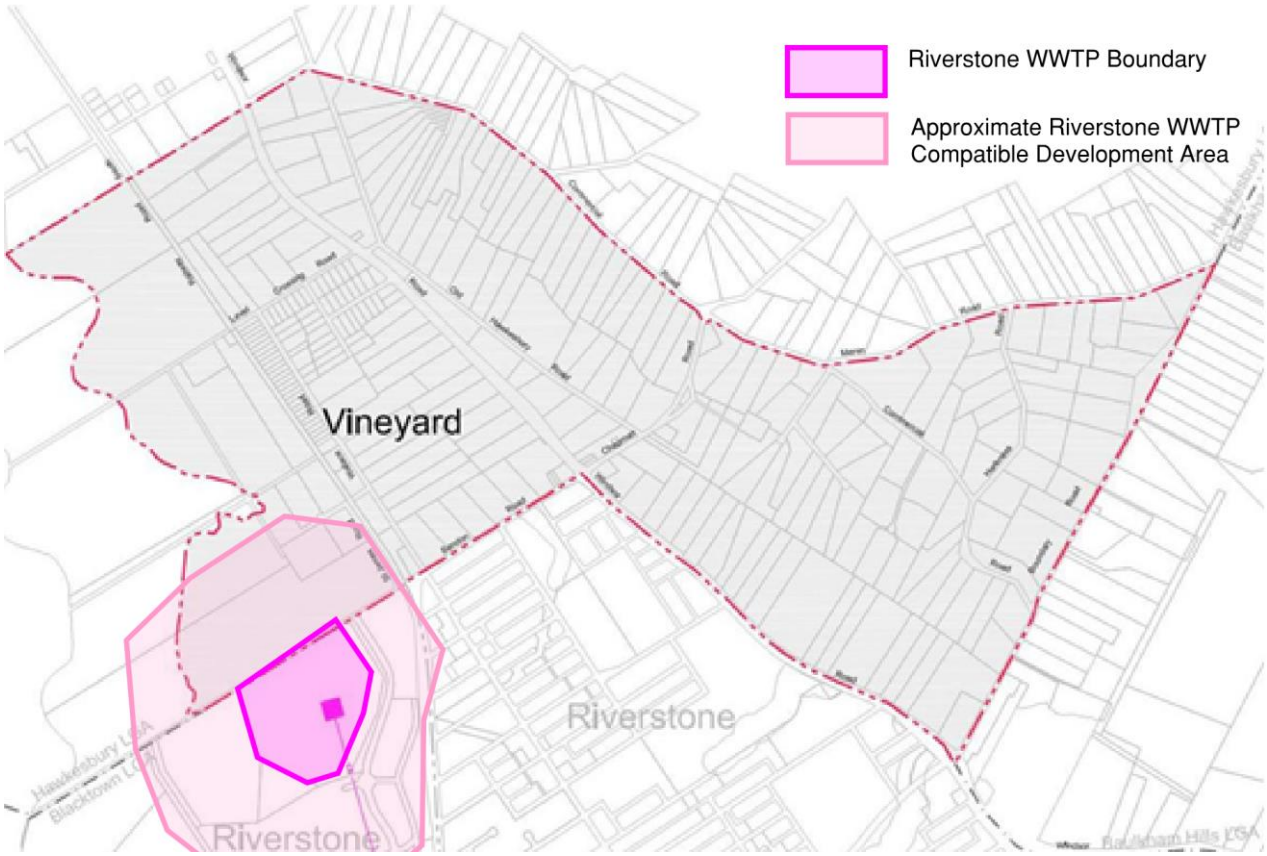
2.2 Sewer

There is currently no mains sewer infrastructure within the Site area. It is understood that the existing lots are serviced by on-site systems with waste water treated and disposed of on-site or waste water regularly collected and removed by tanker.

The Riverstone Sewerage Treatment Plant (STP), lies outside the southern border of the site at Bandon Road, west of Windsor Road and within the Riverstone West Precinct.

Sydney water has produced an odour contour map for the STP. These approximate contours are shown in Figure 2.2, and would not support any residential land uses within the contour. This area is located outside the Stage 1 boundary and therefore will not impact development.

Figure 2.2: Existing Sewer Services and Riverstone WWTP CDA



Source: Dial Before you Dig and Sydney Water: Urban Growth Strategy, 20/11/14

2.3 Electricity

2.3.1 Endeavour Energy

The Site is currently serviced primarily by the Riverstone Zone Substation which is located on the corner of Riverstone Parade and Bourke Street. Supply is brought via the existing overhead network from the substation to the site along Riverstone Parade. Once within the site the supply moves north-east along Bandon Road to Windsor Road where it then heads north-west and continues until it exits the site. Property connections are generally direct from the overhead network.

A 132kV transmission line departs the Vineyard Bulk Supply Point (BSP) and travels north-east on Bandon Road within a 30m wide easement. The easement is generally contained within the road reserve over the boundary of the Site, until it diverts south-east away from the Site. Here, approximately 300m south-west of St James Road, it enters into the Riverstone West Precinct and continues through the Riverstone, Riverstone East and Area 20 Precincts onto the existing Rouse Hill Switching Station, located on Cudgegong Road, approximately 150m north of Schofields Road.

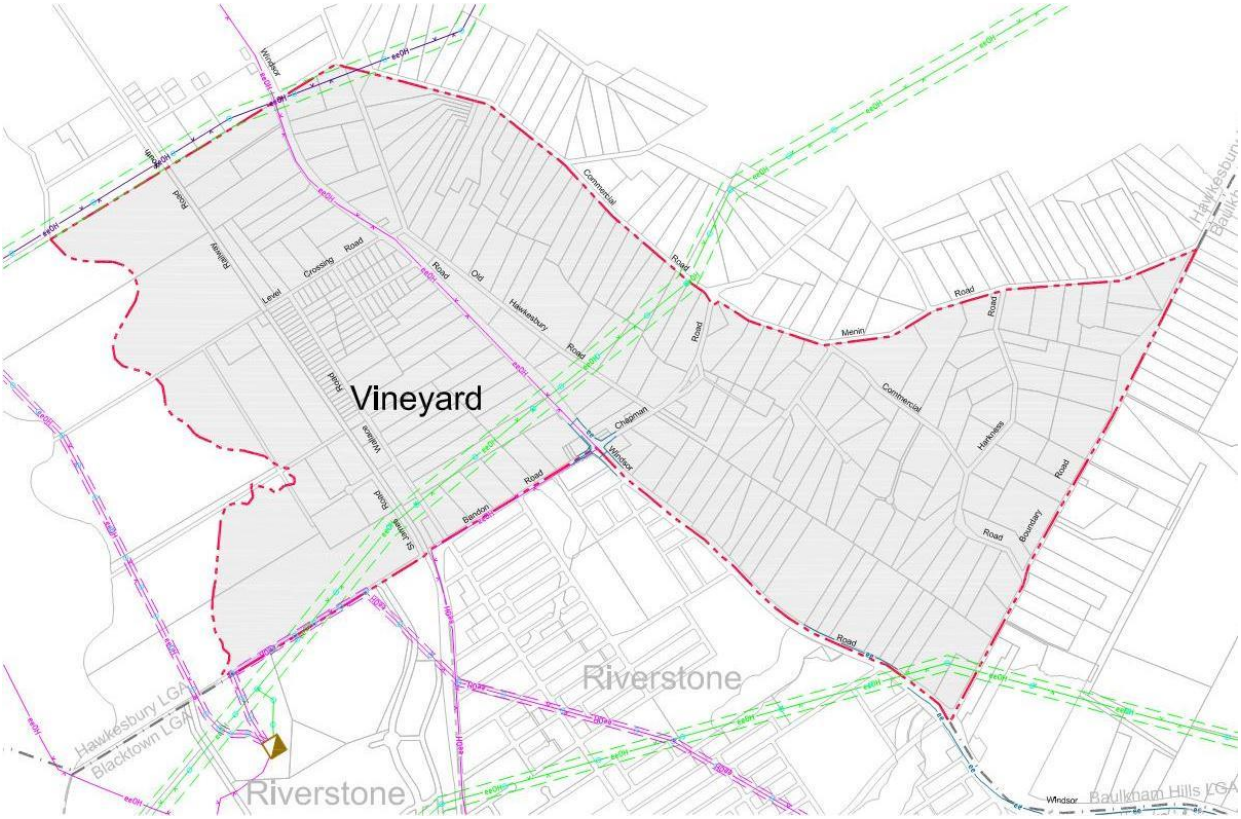
2.3.2 TransGrid

Three existing transmission lines cross the site at its north-west, centre and south-east portions. These are the Earing to Kemps Creek, Vales Point to Sydney West and Sydney West to Sydney North No.2 respectively. These three services generally travel in a south-west to north-east direction. The Earing to Kemps Creek transmission line consists of 2 x 500kV feeders (feeder 5A1 & 5A2) within a 70m wide easement. It generally stays outside of the north-west boundary line, however cuts through the northern most corner of the site, east of Windsor Road.

The existing Vineyard Bulk Supply Point (BSP) is located outside the south-west corner of the site, adjacent to the Riverstone STP and within the Riverstone West Precinct. The Vales Point to Sydney West transmission line crosses the BSP with 2 x 330kV feeders (feeders 25 & 26).They are contained within two overlapping 60.96m wide easements, forming one approximately 85m wide easement. Once through the BSP they cross into the site along Bandon Road in a north-east direction. They change course slightly at St James Road approximately 200m north of Bandon Road then exit the site at Commercial Road, approximately 100m north of Chapman Road.

The final transmission line, Sydney West to Sydney North No.2, is a single 330kV feeder (feeder 14) contained within a 60.96m easement. It cuts the southernmost corner of the site at Windsor Road and Boundary Road approximately 250m north of where the two roads meet. This results in a relatively small 2ha parcel of land being segregated from the overall site.

Figure 2.3: Existing Electrical Services

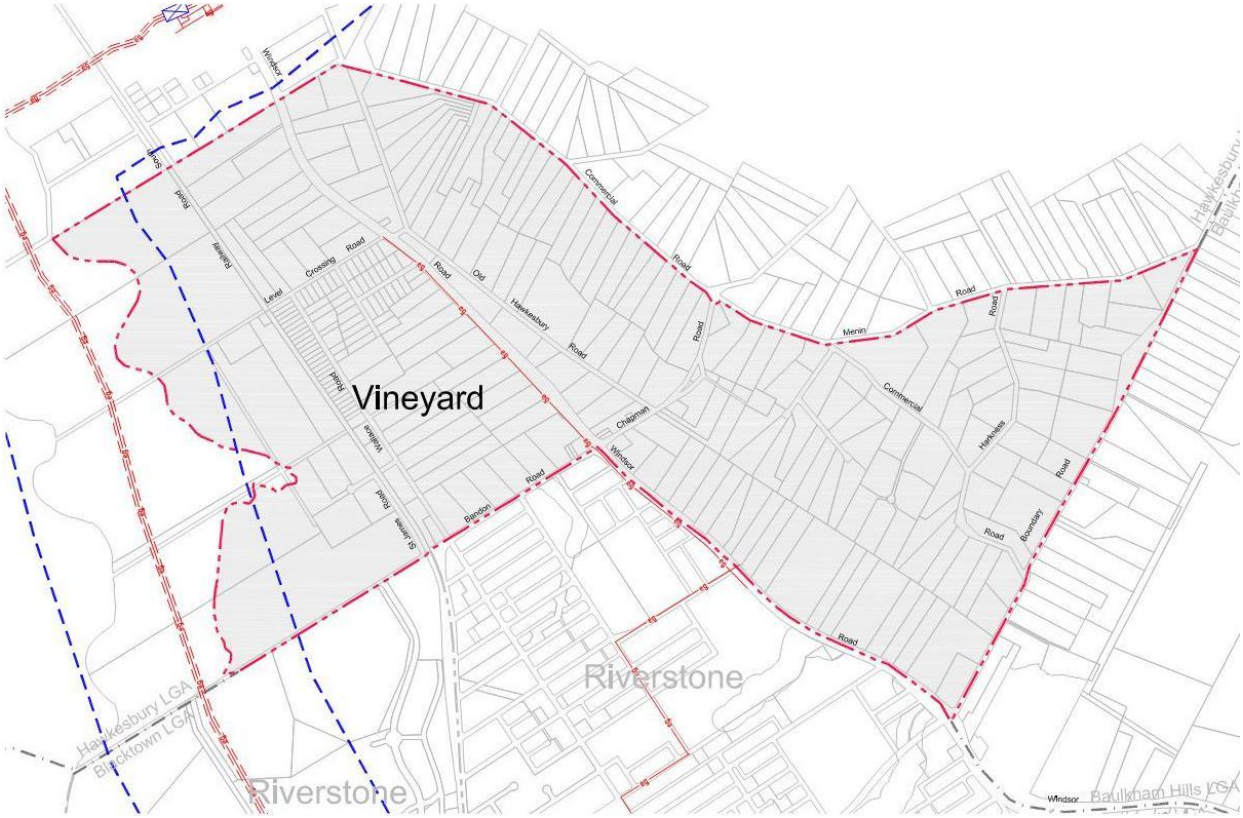


Source: Dial Before you Dig

2.4 Gas

The site is currently bisected by a 300kPa main along Windsor Road. It enters north from the existing Windsor Trunk Receiving Station (TRS) located on Windsor Road. Once within the site it travels south-east and splits south-west at Level Crossing Road. This line then turns south-east along Wallace Road and terminates slightly north-west of Bandon Road. The Windsor Road line continues south-east, exiting the site south-west at Otago Street into the Riverstone Precinct.

Figure 2.4: Existing Gas Services



Source: Dial Before you Dig

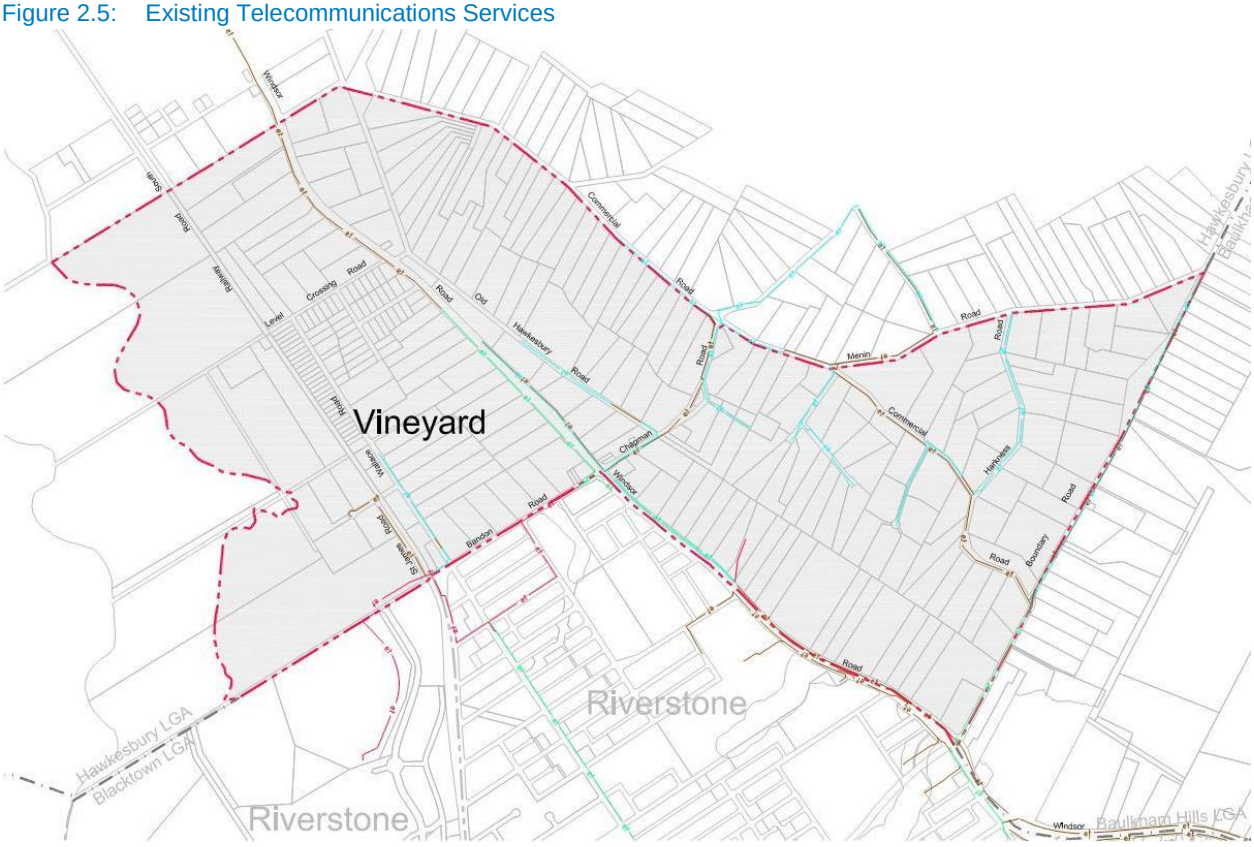
2.5 Telecommunications

The site is serviced by both the Windsor Exchange and the Riverstone Exchange, with the border of the two located approximately 300m north of Bandon Road. The Windsor exchange is located on Brabyn Street, Windsor and the Riverstone exchange is located on Riverstone Road, centrally between boundaries of the Riverstone Precinct.

Most roads through the Site have copper telecommunication lines or a combination of copper and fibre optics telecommunications lines traversing them. Where only copper is used, the lines are generally overhead. The main conduit route travels south-east from the Windsor exchange along Windsor Road, terminating just north of Otago Street, within the Riverstone exchange area.

A second main conduit route from the Riverstone exchange enters the Site at its southern most corner at the intersection of Windsor Road and Boundary Road. The route travels north-east along Boundary Road and then north-west along Commercial Road. The line crosses Menin Road and turn east, exiting the site north-west on Stahls Road.

Figure 2.5: Existing Telecommunications Services



Source: Dial Before you Dig

2.6 Roads

The existing road network is generally made up of a network of roads running in a south-east to north-west direction. A large number of properties receive access from the roads which form the border of the site. These are Boundary Road at the south-east, Menin and Commercial Roads at the north and Bandon and Windsor Roads at the south.

The principal arterial road to the site is Windsor Road, travelling from the south-east corner at Boundary Road along its southern border. It enters the site at Bandon/ Chapman Roads and continuing north-west, exits the site at Brennans Dam Road. Windsor Road provides a direct connection from the site to the Westlink M7, approximately 14km south-east of the Bandon/ Chapman/ Windsor Roads intersection. This intersection is located approximately at the centre of the site.

Bandon/ Chapman Roads divide the site in generally a south-west to north-east direction with north-west branches in Old Hawkesbury Road, Wallace Road and St James Road. Level Crossing Road, approximately 700m from the north-west boundary of the site, provides a south-west to north-east link between Wallace Road, Windsor Road and Old Hawkesbury Road. Figure 2.6 shows the existing road network.

The current land zoning reflects the existing condition of the road network. The roads are in generally reasonable condition; however there are areas with various defects and pavement failure. The road drainage network is primarily made up of a gravel shoulder which runs into swale drains, with no formal kerb and gutter drainage network.

Further details of the existing road hierarchy can be found in the Vineyard Precinct Transport Study by ARUP.

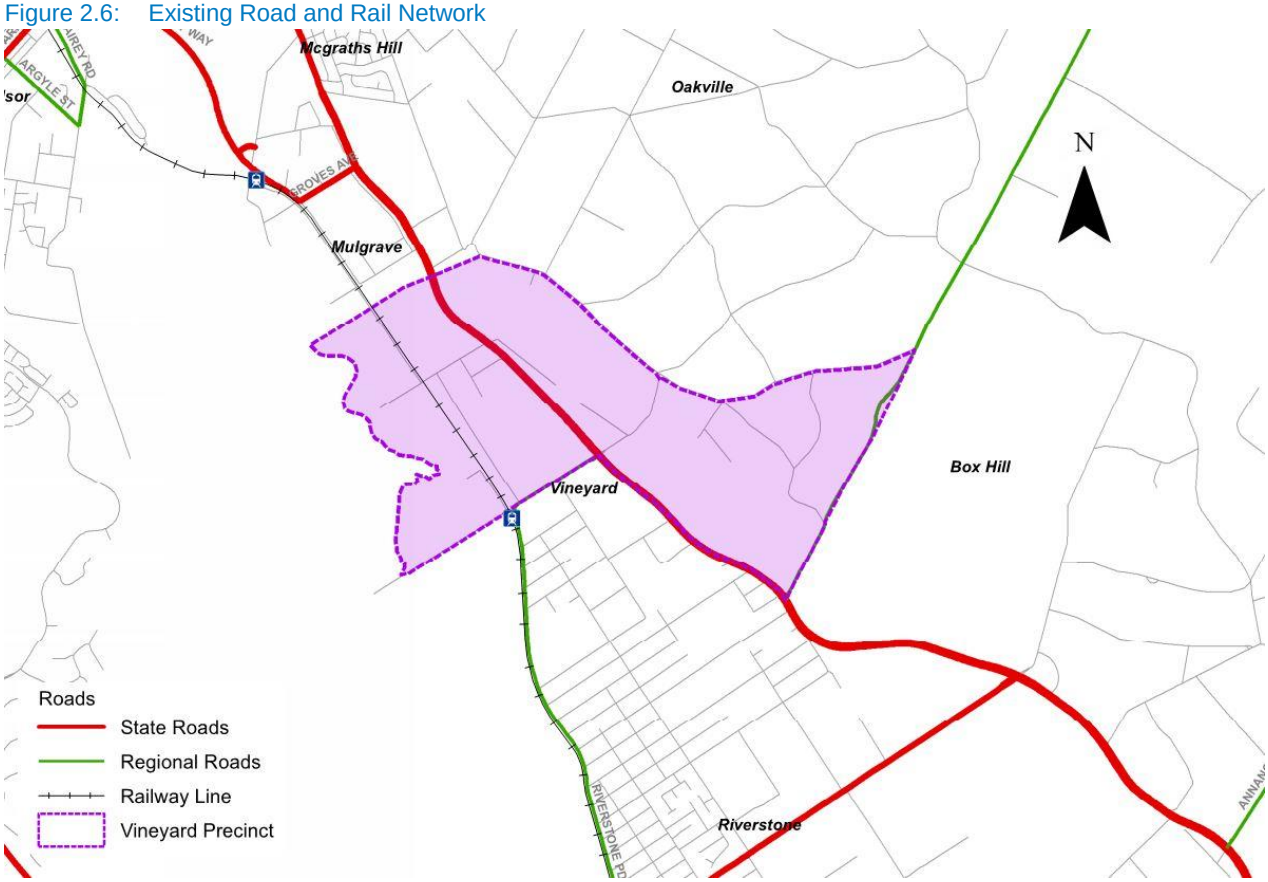
2.7 Rail Network

The North Shore, Northern & Western Line (T1) crosses the western portion of the site entering at Bandon Road and travelling parallel to Wallace Road and Railway Road South, then exiting at the north-west border of the Site. Figure 2.6 shows the existing rail network. Two stations are located within close proximity of the site. Vineyard Station is located outside the south-west corner of the site, at the intersection of Bandon Road and Riverstone Parade. It has a small informal gravel car park on the corner of Bandon Road and Riverstone Parade catering for approximately 10 vehicles. A number of vehicles also park on the gravel shoulders of the intersecting roads. Mulgrave Station is located at the corner of Mulgrave Road and Railway Road South, approximately 1,200m north-west of the site. It has a commuter car park catering for approximately 100 vehicles.

The train line results in two level crossings over Bandon road, adjacent St James Road and over Level Crossing Road, adjacent Railway Road South.

Further details of the existing road hierarchy can be found in the Vineyard Precinct Transport Study by ARUP

Figure 2.6: Existing Road and Rail Network



Source: Vineyard Precinct Transport Study –DRAFT report, ARUP, 2014

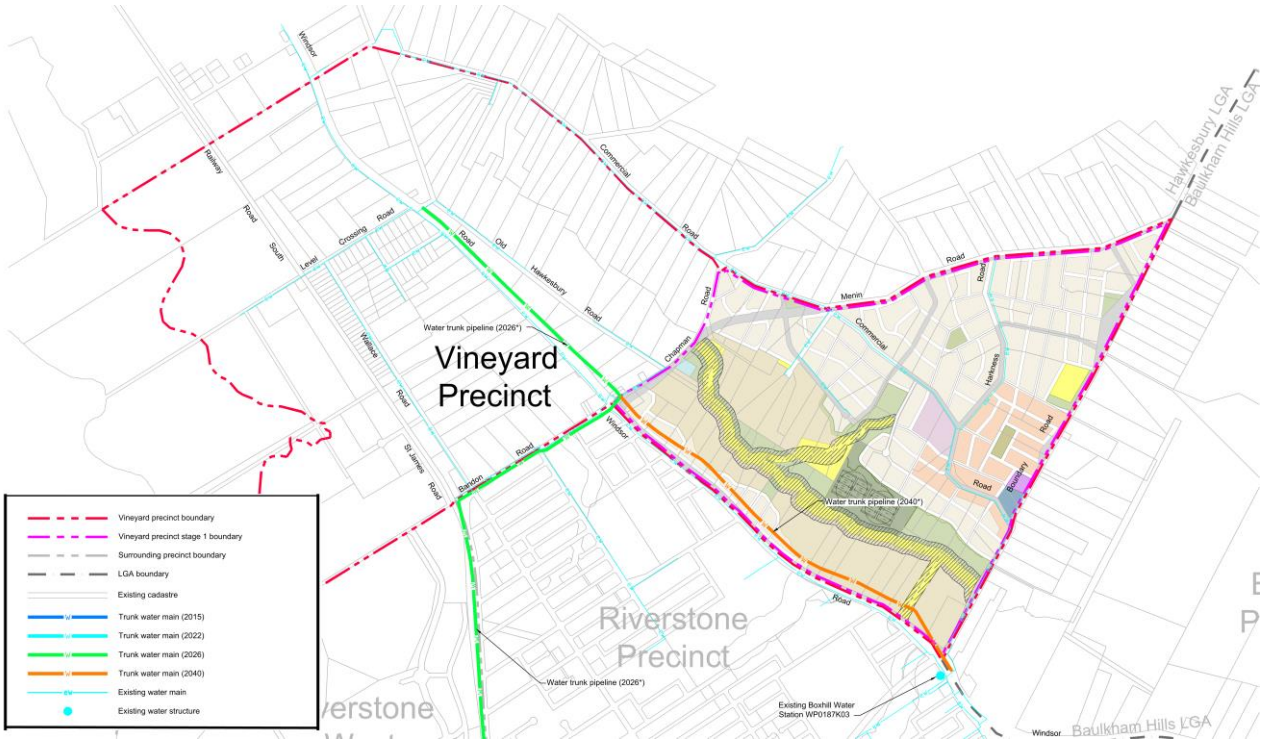
3 Ultimate Development

The following details the currently proposed servicing strategy for ultimate Site. Ultimate layout plans developed from Dial Before you Dig base data and service provider consultation have been created and are included in Appendix A for reference.

3.1 Water Supply

Sydney Water has proposed two new trunk services to the Vineyard area. These new lines are currently planned for construction between 2026 and 2040 and as such, details have been limited. The first is proposed to extend north along Riverstone Parade and into the site at Bandon Road, turning east towards Windsor road and then north once reaching Windsor Road to approximately Level Crossing Road. The second new line is proposed to branch off the first proposed line at Windsor Road, traveling south to Boundary Road. Although the two lines are currently proposed by 2026 and 2040 respectively, Sydney Water have indicated that this works program may be affected by market pressures and development in the region. Details are shown in Figure 3.1.

Figure 3.1: Sydney Water Ultimate Servicing Strategy – Potable Water



Based on Sydney Water advice

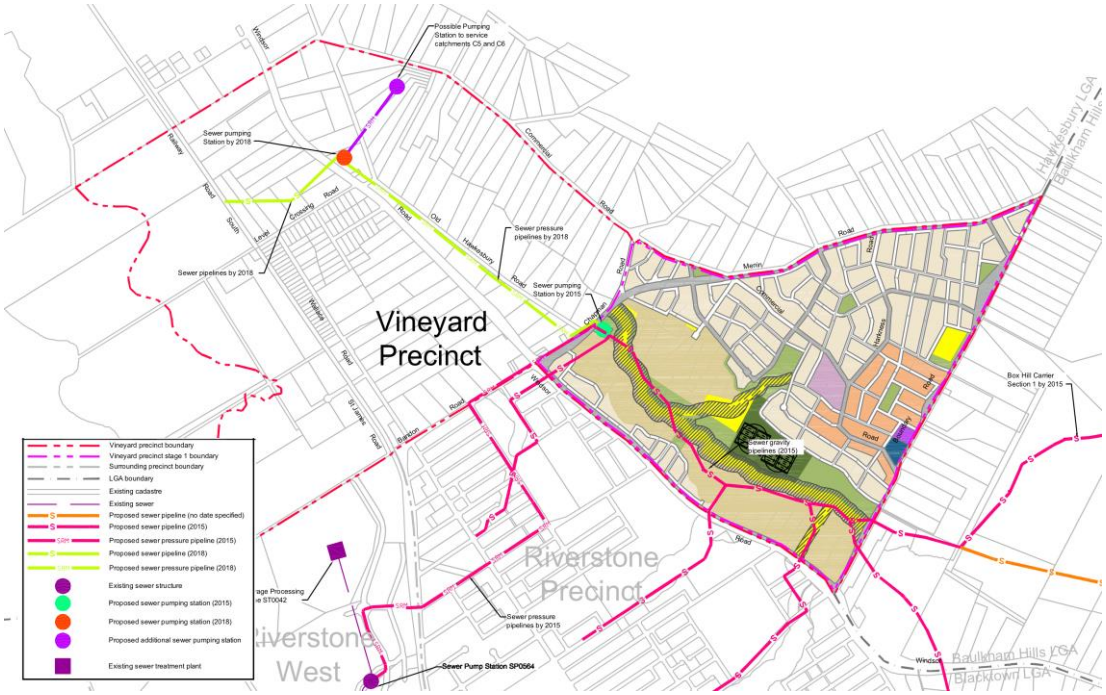
3.2 Sewer

As part of the overall servicing strategy for the NWPGA, Sydney Water has proposed new wastewater services including a trunk main along the Killarney Chain of Ponds. They have divided the Site into two main catchments, which include areas generally east of Chapman Road and areas west of Chapman and Bandon Roads.

The first package of works to provide sewer services to the eastern areas of the site were completed in 2015. As stated, this includes a new gravity trunk main along the Killarney Chain of Ponds which drains to a new pumping station located at Chapman Road. From this pumping station a new rising main will convey waste water south-west along Bandon Road and ultimately to the Riverstone STP.

The second package proposed by 2018, consists of a gravity main in the north-west portion of the site, west of the Killarney Chain of Ponds and located within an existing branch to the main channel It drains to a pumping station located within the 100 year flood zone. From the pumping station, a rising main is then proposed to transport waste water, directly along the creek and within the 100 year flood zone to the first package pumping station located at approximately Chapman Road where it is transported to the STP via the first package network.

Figure 3.2: Sydney Water Ultimate Servicing Strategy – Sewerage



Based on Sydney Water advice

3.2.1 Lead-in Mains

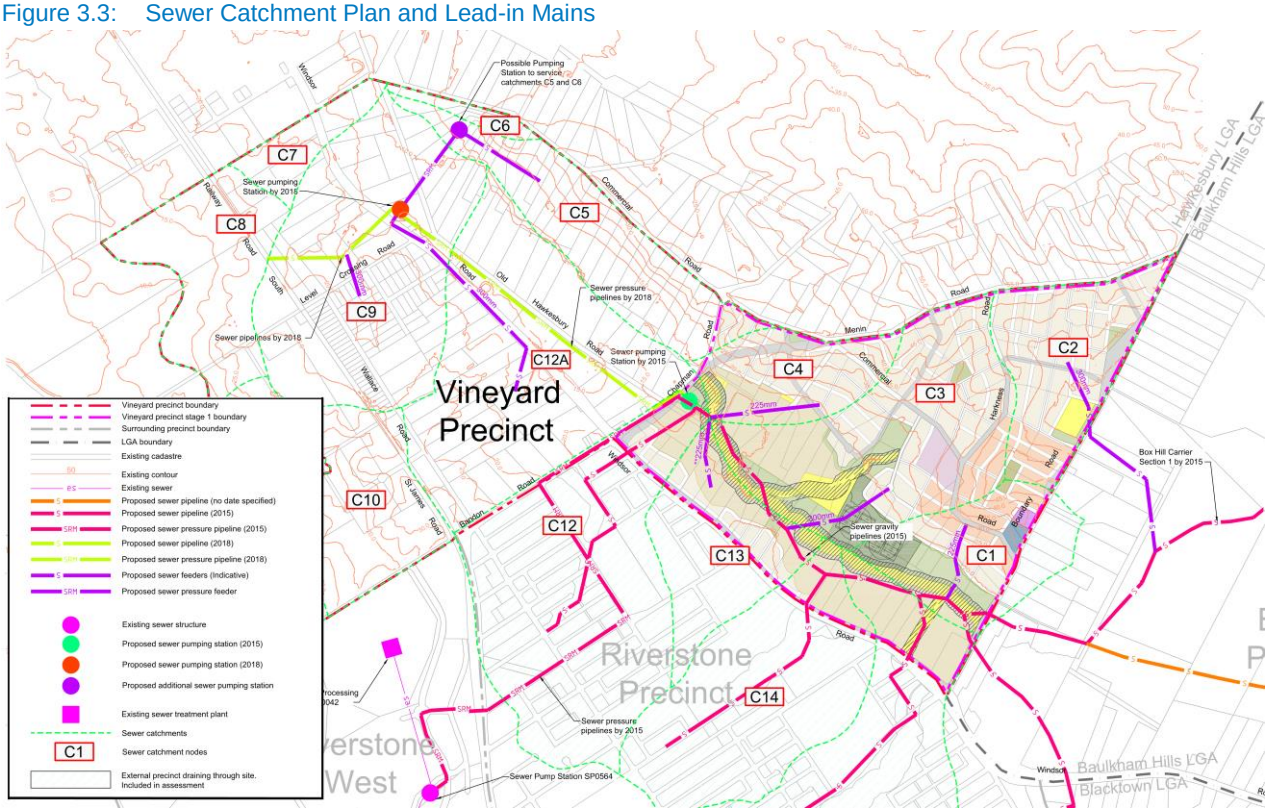
Lead-in mains will be required to connect any new developments to the new trunk mains. These have been indicatively sized based on existing topography and anticipated dwelling numbers and site constraints, these are listed in the below table and shown on Figure 3.3. It should be noted that the lead-in mains described are indicative only in both size and location. They will be assessed in subsequent applications.

Table 3.1: Approximate Sewer Lead-in Mains

Catchment	Approximate Developable Land (ha)	Anticipated Land Use	Approximate Lot Yield*	Equivalent Persons (EP)	Approximate Lead-in main Size including external catchments** (mm)	Approximate Lead-in main Size excluding external catchments# (mm)
1	15	Low Density Residential	211	739	225	225
2	43	Low Density Residential	612	2142	300	300
3	52	Low Density Residential	744	2604	300	300
4	21	Low Density Residential	307	1075	225	225
5	21	Low Density Residential	304	1064	225	225
6	2	Low Density Residential	24	84	150	150
7	9	Low Density Residential	126	441	150	150
8	23	Low Density Residential	323	1131	225	225
9	61	Low Density Residential	873	3056	300	300
10	42	Low Density Residential	595	2083	300	300
11	5	Low Density Residential	69	242	150	150
12	47	Low Density Residential	675	2363	375	300
13	9	Low Density Residential	123	431	225	150
14	10	Low Density Residential	150	525	375	150
15	3	Low Density Residential	49	172	375	150

*assumed 14.3 low density residential lots per hectare of gross developable area. This allows for roads, parks, etc.
**assumes that all catchments which have externally contributing precincts comprise of low density residential
#assumes that externally contributing precincts are accounted for by their own lead-in main and do not contribute to the site

Figure 3.3: Sewer Catchment Plan and Lead-in Mains



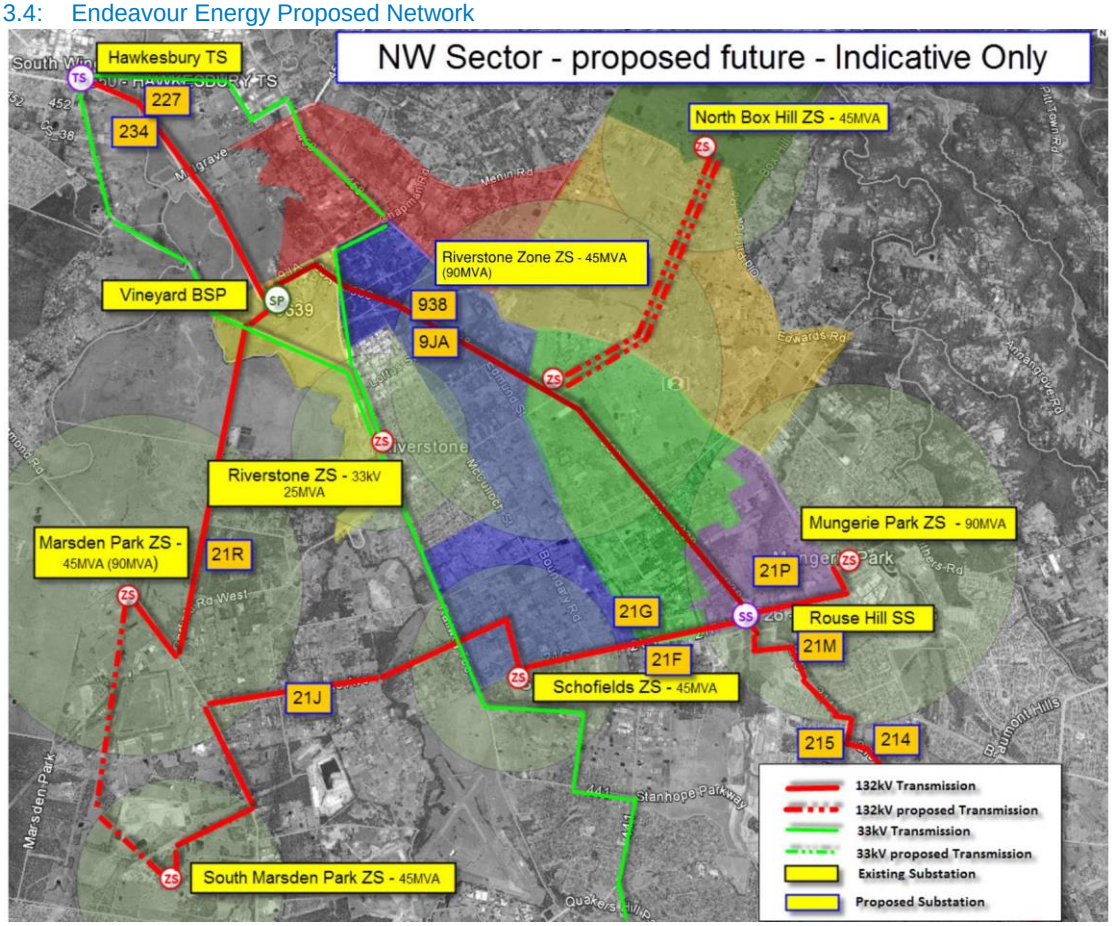
3.3 Electricity

3.3.1 Endeavour Energy

The ultimate development strategy will see the Riverstone zone substation provide power to the northern areas of the Site and a new zone substation proposed in Riverstone East/ Box Hill to provide power to the southern areas of the Site. Figure 3.4 below, shows the general servicing strategy for the overall region. It identifies that a new North Box Hill zone substation will provide power to North Box Hill and the northern areas of Box Hill and a second new zone substation in Riverstone East/ Box Hill will provide power to the southern areas of Box Hill and Vineyard as well as the central and northern areas of Riverstone East. It should be stressed that while the figure shows a proposed substation in Riverstone East, a site has not been acquired and the substation may be located within either the Riverstone East or Box Hill Precincts.

The existing Riverstone zone substation presently has available capacity for an additional 400-500 lots (this is discussed further in Section 6.3) and currently provides power as far east as North Box Hill. Once both new substations are commissioned, power dedicated to these eastern areas will become available to divert north to Vineyard.

Figure 3.4: Endeavour Energy Proposed Network



Source: Endeavour Energy – 31.03.2014

3.3.1.1 Timing

Endeavour Energy has advised that the timing in which the Precinct will be serviced for electrical servicing is ultimately market driven. To unlock the entire Precinct, the proposed Riverstone East/ Box Hill zone substation as well as the proposed zone substation in North Box Hill will need to be constructed.

Currently, a site has not been acquired for either of these two substations, though negotiations are currently underway with land owners to obtain an appropriate location. Endeavour Energy have outlined that the planning, acquisition, approval, design and construction phases involved in commissioning a new

zone substation would take between 3 and 4 years. This would mean that a new substation may not be commissioned until 2018-2019.

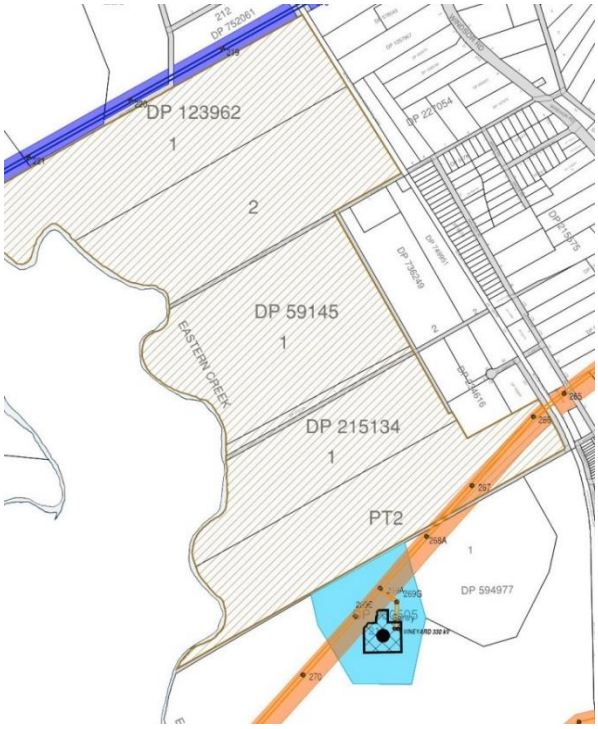
3.3.1.2 Impact on Road Network

Endeavour Energy has advised that they would likely bring a new high voltage main from the BSP to the future location of the North Box Hill zone substation. This would be required to traverse the Vineyard Precinct and would generally be contained within the road reserve and require a 10m wide easement along the adjacent properties. If this eventuates, the most likely route is expected to be used is along Bandon, Windsor and Boundary Roads. Future road upgrades and land zoning should take consideration of the route and potential easements.

3.3.2 TransGrid

TransGrid has advised that no future upgrades of their infrastructure are currently planned. They have however identified a number of properties which have been flagged as potential routes for future infrastructure should it be needed. These lots encompass the area between the Vineyard BSP and the Earing to Kemps Creek Transmission lines and are shown hatched in brown in Figure 3.5 below.

Figure 3.5: Properties that TransGrid have flagged for future infrastructure.



Source: TransGrid – 25.03.2014

3.4 Gas

Jemena have outlined current staging strategies of the Rouse Hill Capacity Development Project, which aims to provide new gas infrastructures to the new estate areas and cater for growth demands. As part of this, a new 200mm steel main (300kPa) is proposed from the Windsor TRS south-east along Windsor Road and along Wallace Road, via Level Crossing Road. Developers would still be required to provide lead-ins from the new mains to service any proposed developments.

3.5 Telecommunications

Discussions with Telstra and NBN Co have outlined that demand will drive the installation of telecommunication lines to the development areas. Once the Site has been re-zoned and developments commence, developers must lodge an application with a provider, depending on the size of the development (Telstra < 100 lots; NBN Co > 100 lots). The provider will then bring in sufficient cabling through the main ducts to service that development.

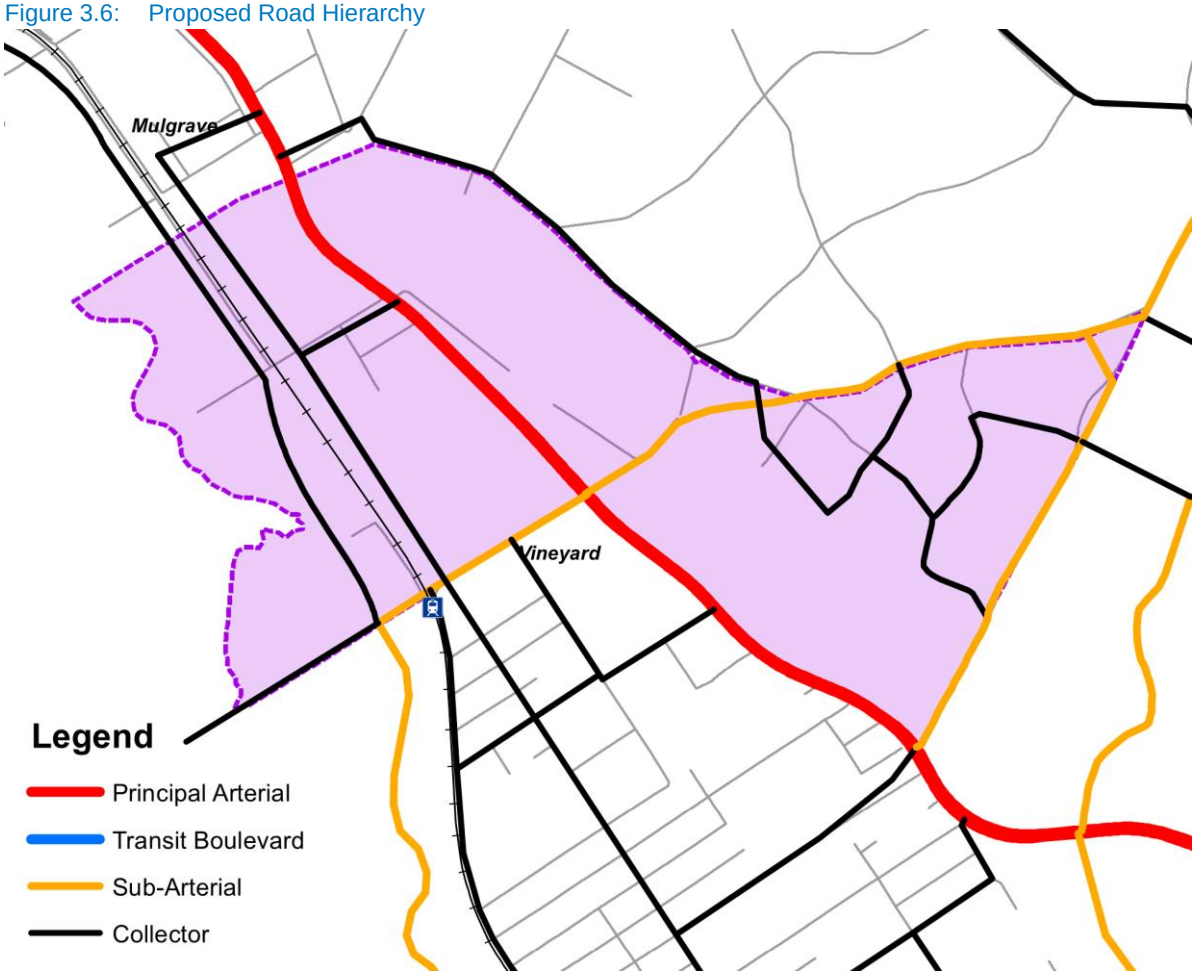
They have advised that when undertaking construction of any new public roads or upgrades to existing roads that they be notified. This is so that they can arrange for new lead-in ducts to be installed across the Site as needed.

3.6 Roads

The Vineyard Precinct Transport Study by ARUP outlines that the existing roads within the Site will form the structure of the future road network. Windsor Road and Boundary Road are currently classified as arterial roads, with Bandon, Menin, Commercial and Chapman Roads recognised as needing improvement to form the higher order road network (sub-arterial/ collector Roads).

Figure 3.6 shows the ultimate road hierarchy for the Site. Further details of the overall proposed site transport structure, including bus routes, pedestrian and cycling facilities and typical road cross sections can be found in ARUP's report.

Figure 3.6: Proposed Road Hierarchy



Source: Arup 2016

3.7 Ongoing Assessment

Recent discussions with Sydney Water have identified that the planned network has capacity to service approximately 3,500 new lots. The projected yield for Vineyard Stage 1 is approximately 2,400 new lots and therefore there is sufficient capacity in the existing network to support Stage 1. Yields for the remaining Vineyard Precinct are yet to be determined. In the event that the total yield for the Vineyard Precinct exceeds Sydney Water's spare capacity further reassessment and appropriate strategy will be explored.

Similarly, Endeavour Energy is also aware that reassessment will need to be undertaken once overall yields are finalised.

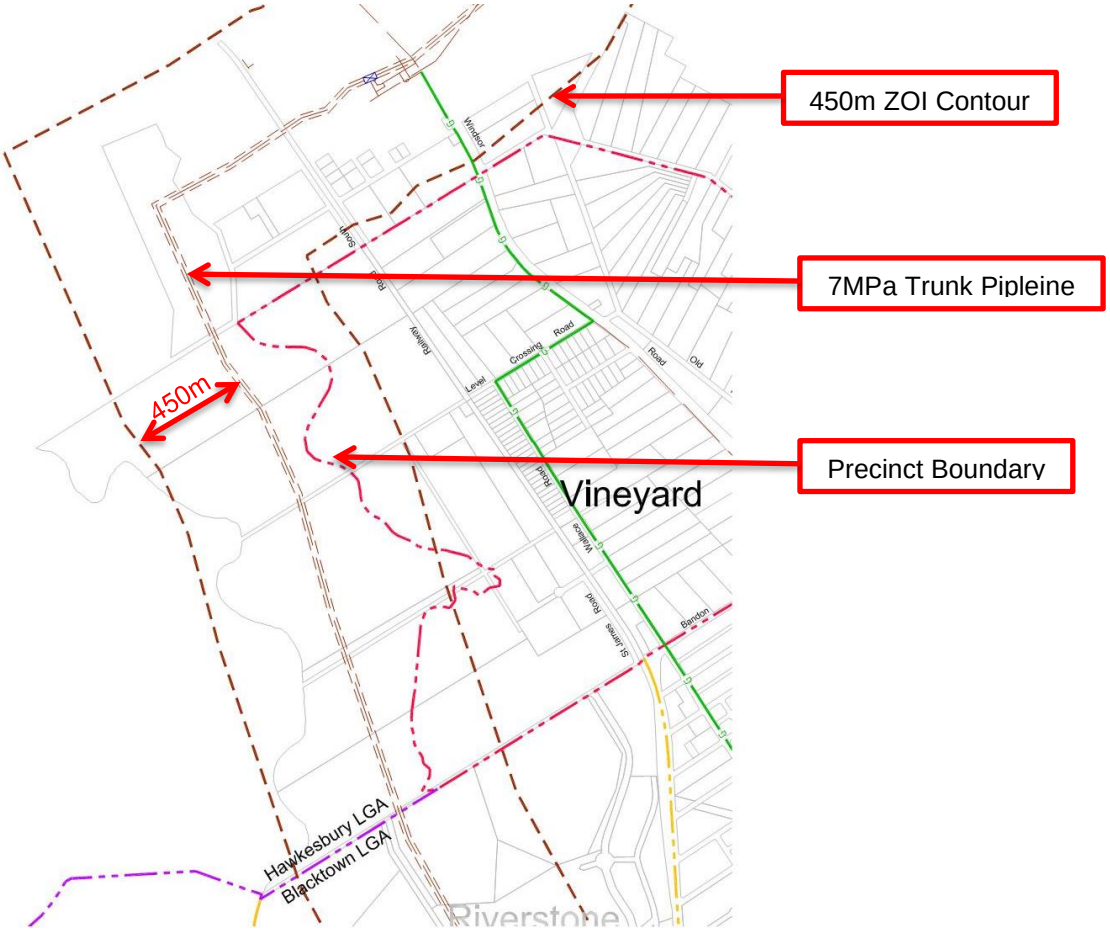
4 Other Relevant Infrastructure

4.1 Jemena

The JGN Licence 7 Pipeline (Plumpton to Newcastle) is located slightly outside of the Site area generally to the west. It travels north-west the length of the boundary, diverting north-east approximately 550m north of the Site and continuing in this direction past the Site. The pipeline has a diameter of 500mm and a maximum allowable pressure of 7MPa. It is located within a 24.385m wide easement with an approximate depth of cover of 1.0m.

While the pipeline itself does not cross the site, it must still be considered when planning for proposed developments in the area. The Zone of Influence (ZOI) of the pipeline is categorised by the risk to life associated with a potential rupture. The pipeline has potential to cause injury to a person within a 450m radius. Plotting this along the length of the pipeline, a ZOI boundary can be developed. This is shown in Figure 4.1 below.

Figure 4.1: Jemena Trunk Pipeline Zone of Influence Contours



Development within the ZOI of the pipeline is still possible, though types of developments should be limited to exclude those where the occupants cannot easily or readily evacuate in the event of a rupture. These types of developments include but are not limited to schools, hospitals, child care centres, and aged care facilities.

The current zoning of land surrounding the pipeline is generally rural which is planned to change to residential. The difference in land zoning has potential implications on the change in risk exposure, being the type and number of people who could be impacted by or impact on the pipeline. To mitigate these risks and ensure regulation compliance with its licencing conditions and AS2885 Pipelines - Gas and Liquid Petroleum, Jemena have outlined they require a risk review of the proposed ILP in the form of a Safety Management Study (SMS).

4.2 Caltex

The Caltex Newcastle Pipeline runs from the Caltex Refinery at Kurnell (Sydney) to Silverwater Terminal and onto various terminals in Newcastle. The pipeline is located within the same trench and thus the same easement as the above described Jemena pipeline. It is 300mm in diameter and has a maximum operating pressure of 10MPa. The pipeline transports Gasoline and Diesel products, approximately 4 billion litres each year. The pipeline shares the same ZOI as the Jemena pipeline and as such would be considered in any risk review undertaken as part of Jemena's SMS.

Developing around or over the pipeline must be done so in accordance with the requirements attached in Appendix B.

5 Staged Rezoning

Taking into consideration to the timing for delivery of services to the Precinct, it has been determined by DPE that a staged rezoning plan is more appropriate than rezoning of the entire Precinct as one. This is to boost development in a targeted area encouraging natural growth, as rezoning all of the Precinct at once may result in development in sporadic areas which could slow the overall progress of the Precinct. The zoning has been therefore split into two main stages as described below.

5.1 Stage 1 Rezoning

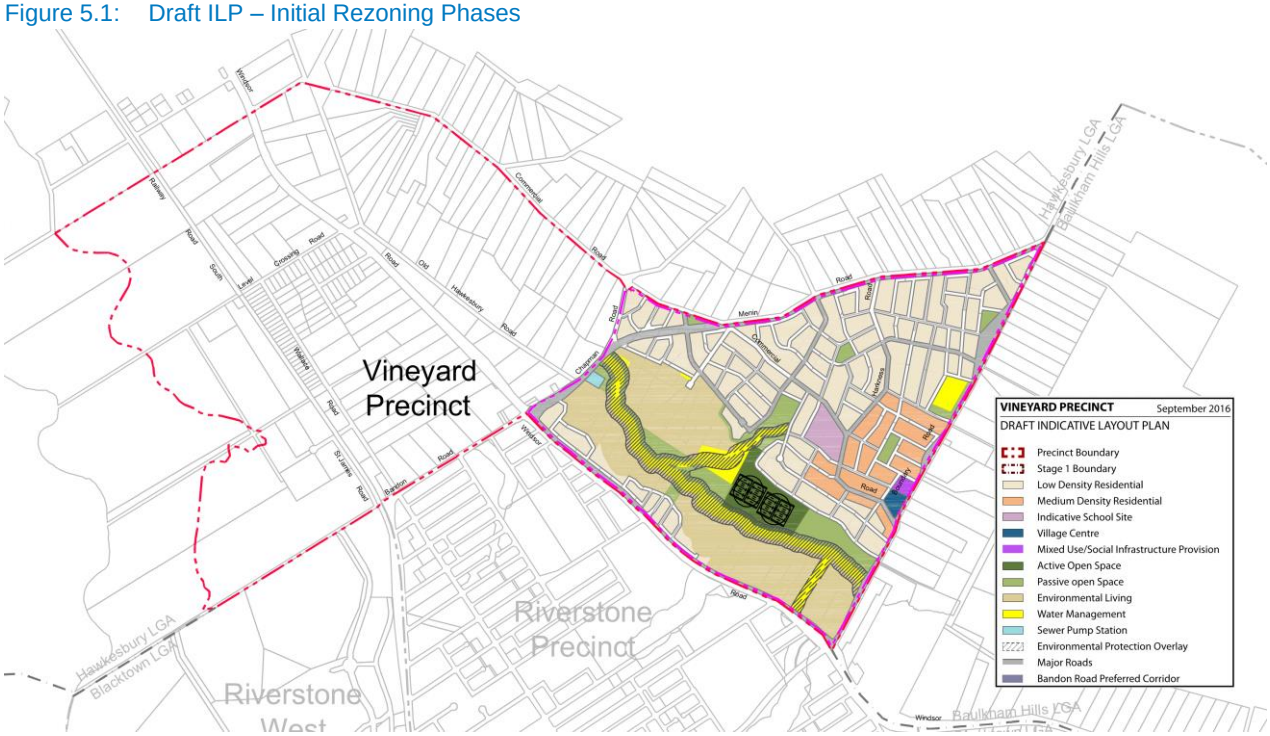
Stage 1 is located in the eastern portion of the Precinct and is bounded by Menin Road to the north, Boundary Road to the east, Windsor Road to the south and Chapman Road to the west. The Stage 1 area is illustrated in Figure 5.1.

Stage 1 is projected to cater for approximately 2,400 new dwellings, and could satisfy dwelling supply in the area for the immediate future, depending on market conditions.

5.2 Future Rezoning

The re-zoning strategy for the remaining precinct area has at this stage yet to be determined. This is partially due to an evident infrastructure gap beyond the first release stage. Refer to section 3 of this report for further information regarding the ultimate servicing opportunities for the remainder of the Vineyard Precinct.

Figure 5.1: Draft ILP – Initial Rezoning Phases



6 Early Activation Sub-Precinct

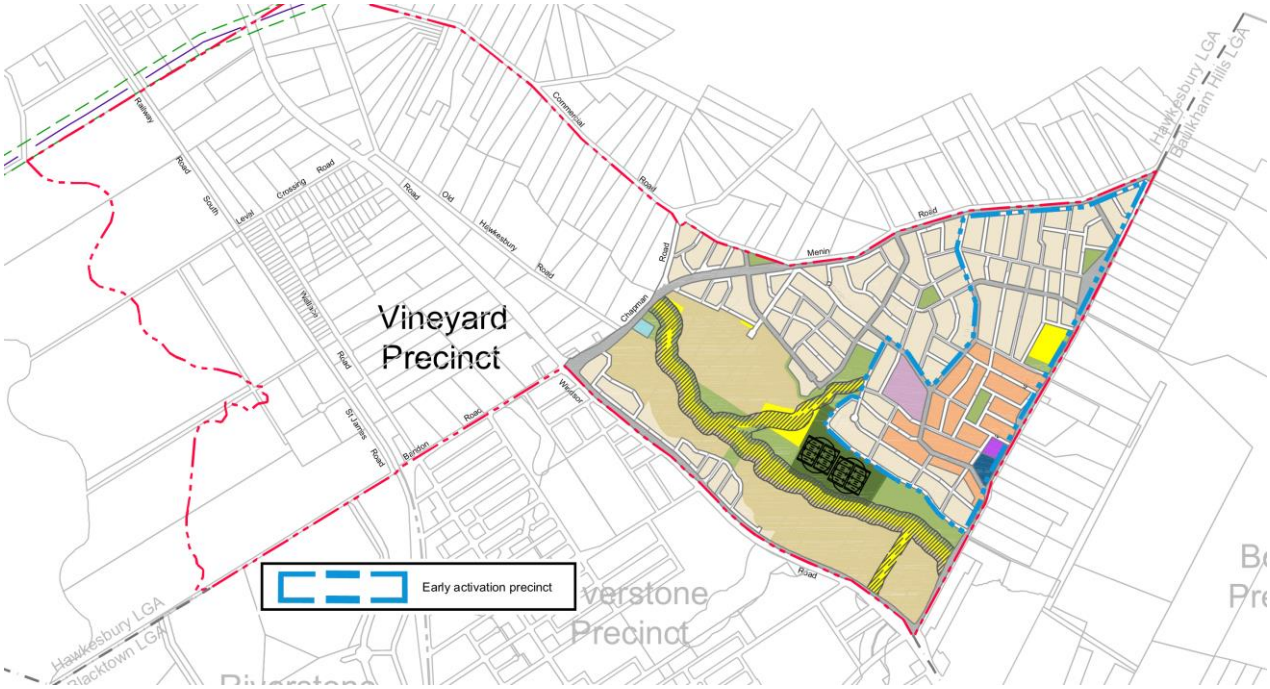
As part of the Precinct Planning process, an 'Early Activation' Sub-Precinct (EAP) has been identified which is based predominantly on utilising existing infrastructure to service new lots with minimal augmentation. Whilst the overall EAP is planned to provide 1,500 new lots initial development is limited by the existing service capacity which in this instance is not sufficient to supply 1,500 dwellings (refer Section 6.6). Once existing capacity is exhausted, minimal upgrade works are required to increase service capacity and therefore the EAP represents the most economical and efficient area to initiate development.

The EAP will informally provide an area that is unlocked and available to develop as soon as the Precinct is re-zoned. Development will then expand outside the EAP, but will require upgrades to the existing network to receive servicing.

Through consultation with service providers, an area has been identified in the eastern corner of the Site located within Stage 1 which is bounded by Menin Road to the north, Boundary Road to the east and Harkness and Commercial Roads to the West. This is based on what is currently available in terms of capacity and physical infrastructure and what is proposed in the near future. It should be noted however that localised lead-in works may need to be constructed to utilise those existing services.

The following details the currently proposed servicing strategy for the EAP. EAP layout plans developed from Dial Before you Dig information, as well as service provider consultation have been created and are included in Appendix A for reference.

Figure 6.1: Early Activation Precinct



6.1 Water Supply

Sydney Water has indicated an area in the eastern portion of the Site, generally between Boundary, Commercial and Harkness Roads as an EAP. This area has existing potable water infrastructure capable of servicing approximately 900 low density residential lots. An existing 300mm dia. main travels along Boundary Road to Menin Road and along Commercial Road, with a 150mm dia. branch at Harkness Road. Figure 6.2 shows the existing potable water alignment and sizing of mains.

It is important to note that this capacity is not reserved for Vineyard and may not be available if taken up by an adjacent development site, such as Box Hill.

6.2 Sewer

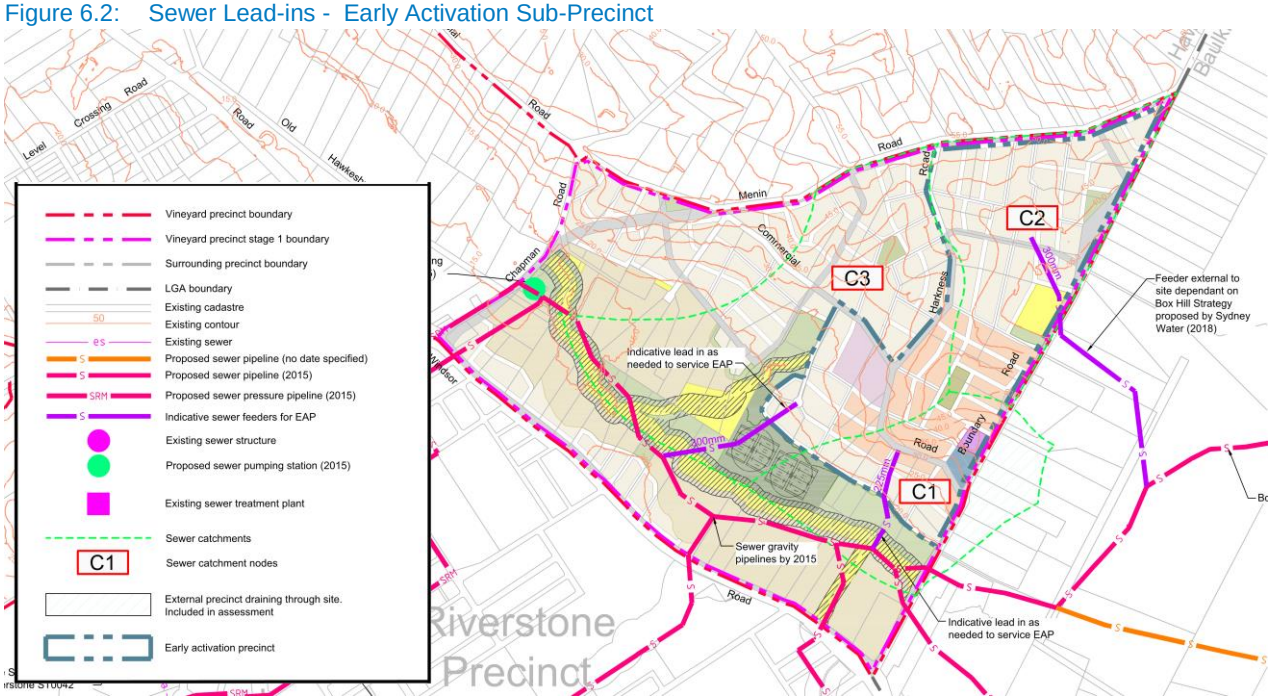
As described in Section 3.2, new infrastructure to service the region was constructed in 2015. These trunk mains are sized to service the fully developed Precinct. As such, to align with the water supply capacity, 900 low density residential lots are able to be encapsulated within this service.

It should be noted that the general EAP boundary shown by Sydney Water has been based on existing topography to suit existing waste water catchments. The boundary does not consider surrounding precincts or land uses as can be seen in the below Figure 6.2. Infrastructure Plans in Appendix A show the preferred EAP boundary which considers existing lot boundaries.

6.2.1 Lead-in Mains

Lead-in mains to service the EAP are included in the assessment in Section 3.2.1 for the ultimate development. With regards to the EAP site, it is divided into two catchments. The eastern catchment, drains directly to the Killarney Chain of Ponds trunk main within the overall Vineyard Precinct. The western catchment drains through the Box Hill Precinct to an upper branch of the Killarney Chain of Ponds main. Sydney Water have identified that they will be providing the feeder to the eastern catchment, from the trunk main, through the Box Hill Precinct and up to Boundary Road. This is currently projected for a 2018 completion

Figure 6.2: Sewer Lead-ins - Early Activation Sub-Precinct



Based on Sydney Water advice

6.3 Electricity

Endeavour Energy has advised that the existing Riverstone zone substation currently has capacity for an additional 400-500 lots. In order to facilitate these lots, new feeders will be required to divert the spare capacity from the substation to the EAP. This would involve utilising the existing overhead network. Feeders would be brought to the overall site along Riverstone Parade and Bandon Road, branching south-east at Windsor Road and then onto Boundary Road and into the EAP area. As with the commissioning of the new substations discussed in section 3.3.1, the implementation of these new feeders are market driven.

6.4 Gas

Jemena have outlined that the existing 300kPa system within the Site has sufficient capacity for 800-1000 lots. However, new secondary mains extended from the feeder mains would be required to service any new developments.

6.5 Telecommunications

As per section 3.5, both Telstra and NBN Co have advised that the existing main conduit infrastructure is sufficient to provide reticulation to an EAP within the Site area. They have outlined that they only assess infrastructure improvements at a development stage. Depending on the number of lots, protocol is to lodge an application with Telstra if the development is less than 100 lots and NBN Co if it is greater than 100 lots. The application will be assessed and servicing provided as needed, including lead-ins. They have however indicated that should any major roads be upgraded outside of a development, they should be notified such that they can provide major conduits as needed.

6.6 Summary of Available Capacity

The below table summarises the lot potential from each service provider. The table highlights that the maximum number of lots which can be created is limited to the service which has the least available capacity. As can be seen, the Electrical supply has a current capacity for only 400-500 lots which sets the initial lot yield possible once Stage 1 is rezoned, with the remaining capacity coming online shortly thereafter.

Table 6.1: Available Capacity

Service Provider	Lot Potential
Water/ Sewer	900
Electrical	400-500
Gas	800-1000
Telecommunications	800-1000
Minimum	**400-500**

Appendices

Appendix A. Plans 31
Appendix B. Service Provider Correspondence 32

Vineyard Precinct
Infrastructure Master Plan

Vineyard

Locality Sketch

Not To Scale

Sheet List Table	
Sheet Number	Sheet Title
0000	Cover Sheet
0001	Existing Site Plan
0010	Combined Services Plan
0020	Water Servicing Supply Strategy
0021	Water Servicing Strategy Plan Early Activation Precinct
0030	Sewer Servicing Supply Strategy
0031	Sewer Servicing Strategy Plan Early Activation Precinct
0040	Electricity Servicing Strategy Plan
0041	Electricity Servicing Strategy Plan Early Activation Precinct
0050	Gas Servicing Strategy Plan
0051	Gas Servicing Strategy Early Activation Precinct
0060	Telecom Servicing Strategy Plan
0061	Telecom Servicing Stategy Plan Early Activation Precinct

Client

NSW GOVERNMENT Planning & Environment

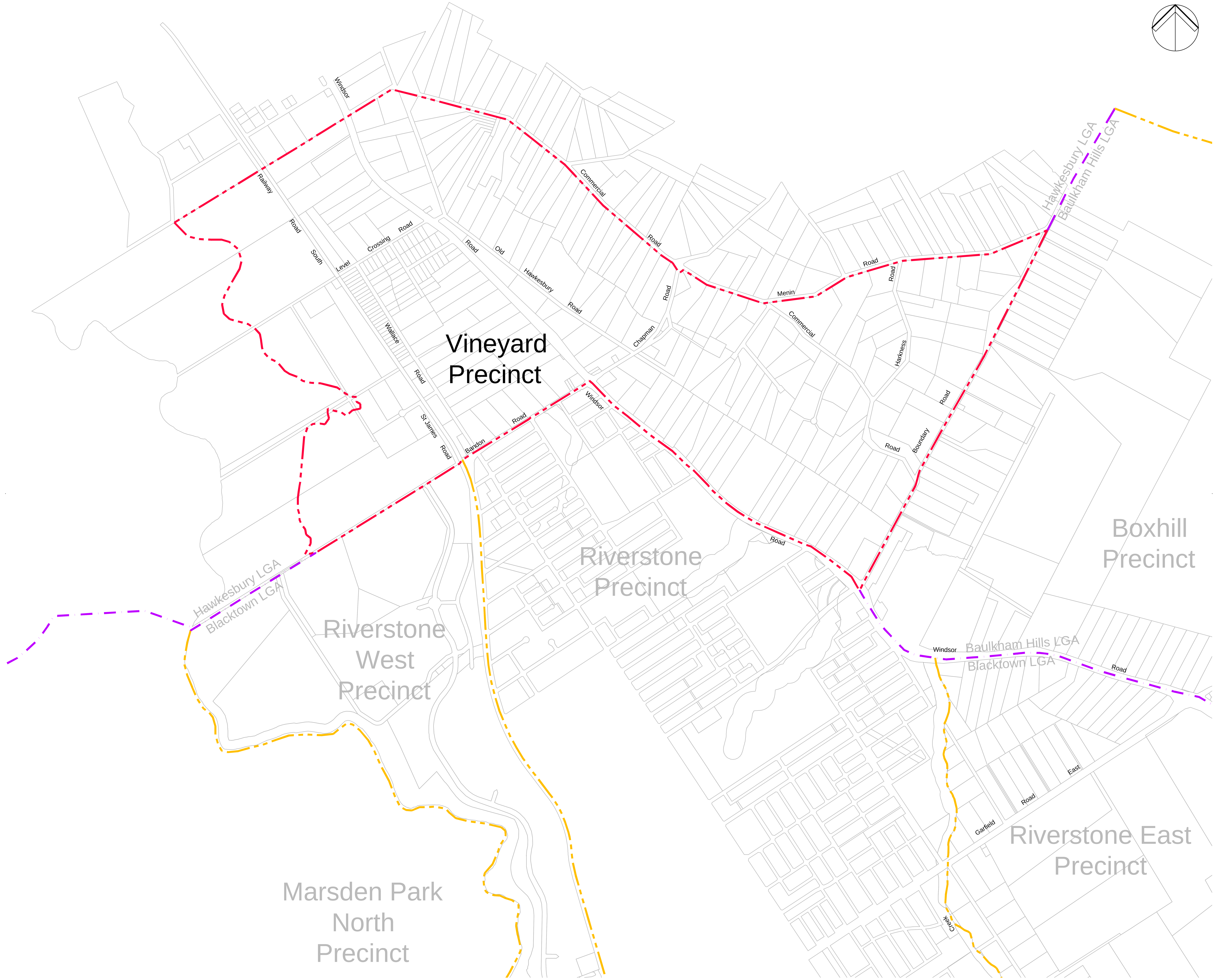
Prepared By

Mott MacDonald

ABN 134 120 353
Level 10, 383 Kent Street, Sydney NSW 2000, PO Box Q1678, QVB Sydney NSW 2123
T +61 2 9098 6800 W www.mottmac.com.au

MM Project No	334311
Dwg No	0000
Revision	P6
Date	19.10.2016
Reason For Issue	Issued For Exhibition

Date: 19-10-16 Time: 11:11am Plotted By: mcr5584 Filename: P:\parramatta\Projects\334xxx\334311\06 CAD\S_2_working drawings\Civil\Autocad\S_2_Vineyard\Dra\wings\MMD-334311-C-DR-XY-XXX-0000.dwg



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Notes

Key to symbols

- Vineyard precinct boundary
- Surrounding precinct boundary
- LGA boundary
- Existing cadastre

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P6	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P5	14.10.2016	MMc	Issued For Exhibition	GL	CJA
P4	01.07.2015	MMc	Issued For Exhibition	GL	CJA
P3	03.09.2014	ADS	Issued for Information	GL	CJA
P2	29.08.2014	ADS	Issued for Information	GL	CJA

Mott MacDonald
Level 10, 383 Kent Street
Sydney, NSW 2000
Australia
PO Box Q1678
QVB Sydney NSW 1230
T +61 (0)2 9098 6800
W www.mottmac.com.au

Client
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Title
Vineyard Precinct
Infrastructure Master Plan

Existing Site Plan

Designed	JT	.	Eng check	DB	.
Drawn	ADS	.	Coordination	CJA	.
Dwg check	GC	.	Approved	CJA	.

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Drawing Number
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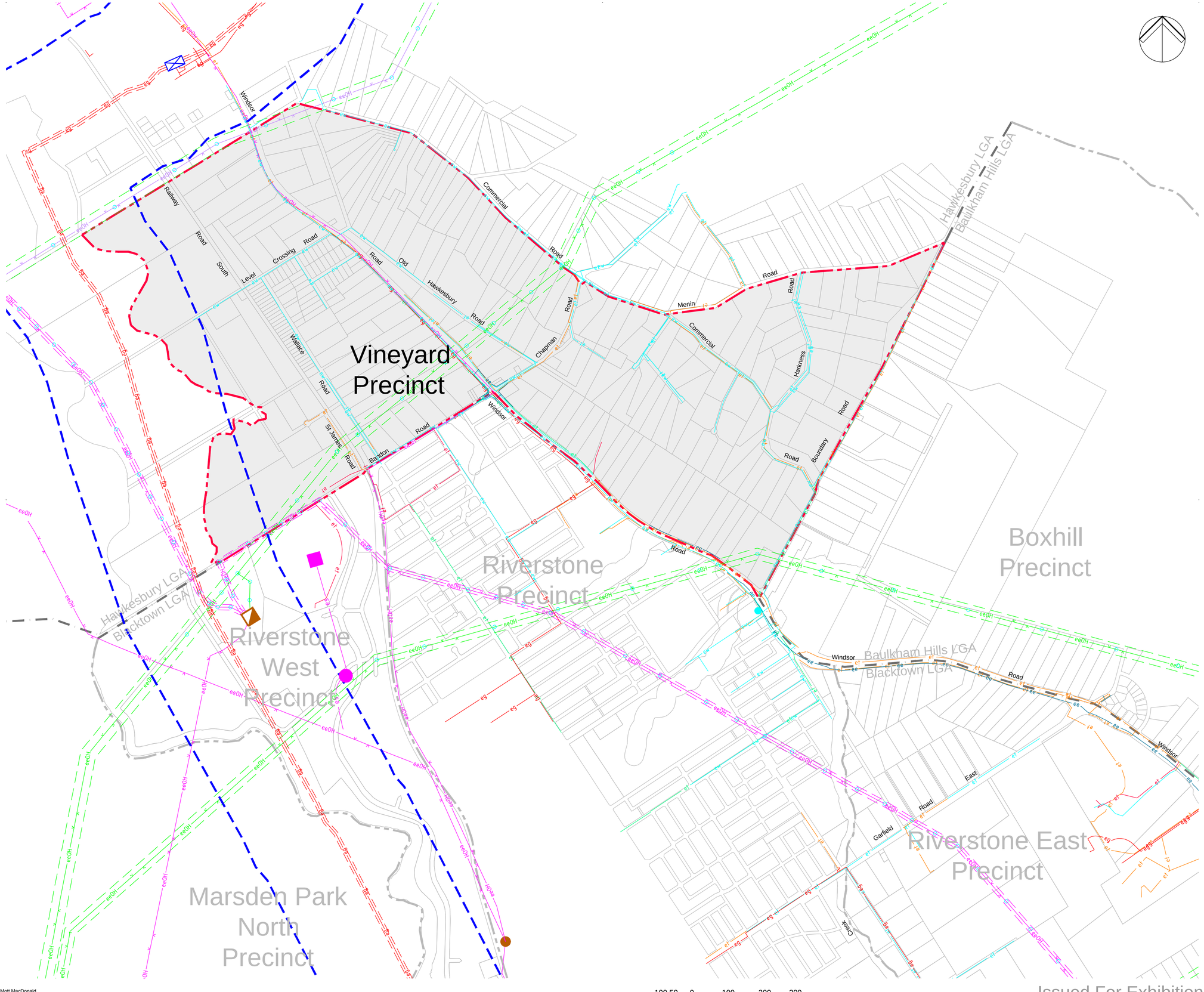

Notes

Key to symbols

- Vineyard precinct boundary
- Surrounding precinct boundary
- LGA boundary
- Existing cadastre
- Existing water main
- Existing sewer
- Existing Transgrid transmission line easement
- Existing Transgrid transmission line - 330 kv
- Existing Transgrid transmission line - 500 kv
- Existing Endeavour Energy easement
- Existing electricity overhead
- Existing electricity
- Existing high pressure gas main (Jemena JGN gas pipeline)
- Existing trunk gas main (Jemena Gas West pipeline)
- Zone of influence for risk management (450m radius)
- Existing telecommunication line
- Existing telecommunication overhead
- Existing optic fibre
- Existing optic fibre and copper cables
- Existing water structure
- Existing sewer structure
- Existing sewer treatment plant
- Existing zone substation
- Existing transmission pylon
- Existing electrical bulk supply point
- Existing trunk receiving station

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P6	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P5	14.10.2016	MMc	Issued For Exhibition	GL	CJA
P4	01.07.2015	MMc	Issued For Exhibition	GL	CJA
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P2	29.08.2014	ADS	Issued for Information	GL	CJA

Mott MacDonald
Level 10, 383 Kent Street
Sydney, NSW 2000
Australia
PO Box Q1678
QVB Sydney NSW 1230
T +61 (0)2 9098 6800
W www.mottmac.com.au

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Title

Vineyard Precinct Infrastructure Master Plan

Combined Services Plan

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Dwg check	GC	.	Approved	CJA	.

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Vineyard Precinct

Water trunk pipeline (2026*)

Water trunk pipeline (2040*)

Water trunk pipeline (2026*)

Existing Boxhill Water Station WP0187K03

Water trunk pipeline (2015)

Water trunk pipeline (2015)

Water trunk pipeline (2022)

375mm

450mm

Riverstone West Precinct

Riverstone Precinct

Boxhill Precinct

Riverstone East Precinct

Marsden Park North Precinct

Hawkesbury LGA

Blacktown LGA

Baulkham Hills LGA

Windsor

Railway

South

Level

Crossing

Road

Old

Hawkesbury

Commercial

Chapman

Menin

Hartness

Boundary

Wallace

St James

Bandon

Garfield

Creek

East

100 50 0 100 200 300

PLAN Scale 1:10000 @ A1

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Notes

NOTE:
*Dates are a guide provided by service providers and are subject to change, depending on rate of development

Key to symbols

- Vineyard precinct boundary
- Vineyard precinct stage 1 boundary
- Surrounding precinct boundary
- LGA boundary
- Existing cadastre
- Trunk water main (2015)
- Trunk water main (2022)
- Trunk water main (2026)
- Trunk water main (2040)
- Existing water main
- Existing water structure

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P7	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P6	14.10.2016	MMc	Issued For Exhibition	GL	CJA
P5	20.07.2015	JK	Issued For Exhibition	GL	CJA
P4	01.07.2015	MMc	Issued For Exhibition	GL	CJA
P3	03.09.2014	ADS	Issued for Information	GL	CJA

Mott MacDonald

Level 10, 383 Kent Street
Sydney, NSW 2000
Australia
PO Box Q1678
QVB Sydney NSW 1230
T +61 (0)2 9098 6800
W www.mottmac.com.au

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Title

Vineyard Precinct Infrastructure Master Plan

Water Servicing Supply Strategy

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Dwg check	GC	.	Approved	CJA	.

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Drawing Number

MMD-334311-C-DR-VY-XX-0020

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Notes

Key to symbols

- Vineyard precinct boundary
- Vineyard precinct stage 1 boundary
- Surrounding precinct boundary
- LGA boundary
- Existing cadastre
- Trunk water main (2015)
- Trunk water main (2022)
- Existing water main
- Existing water structure
- Early activation precinct

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P7	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P6	14.10.2016	MMc	Issued For Exhibition	GL	CJA
P5	20.07.2015	JK	Issued For Exhibition	GL	CJA
P4	01.07.2015	MMc	Issued For Exhibition	GL	CJA
P3	03.09.2014	ADS	Issued for Information	GL	CJA

Mott MacDonald
Level 10, 383 Kent Street
Sydney, NSW 2000
Australia
PO Box Q1678
QVB Sydney NSW 1230
T +61 (0)2 9098 6800
W www.mottmac.com.au

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Title

Vineyard Precinct Infrastructure Master Plan

Water Servicing Strategy Plan Early Activation Precinct

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Dwg check	GC	.	Approved	CJA	.

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Drawing Number
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Vineyard Precinct

Possible Pumping Station to service catchments C5 and C6

Sewer pumping Station by 2018

Sewer pipelines by 2018

Sewer pressure pipelines by 2018

Sewer pumping Station by 2015

Sewer gravity pipelines (2015)

Box Hill Carrier Section 1 by 2015

Box Hill Carrier Section 2 by 2015

Riverstone Sewage Processing Plant. Riverstone ST0042

Sewer pressure pipelines by 2015

Sewer Pump Station SP0564

C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C12A C13 C14 C15

Riverstone Precinct

Riverstone West

Boxhill Precinct

Riverstone East Precinct

Hawkesbury LGA
Blacktown LGA

Baulkham Hills LGA
Blacktown LGA

Hawkesbury LGA
Baulkham Hills LGA

Catchment	Vineyard Developable Land (ha)	Anticipated Land Use	Approximate Lot Yield	Equivalent Persons (EP)	Approximate Feeder Size including external catchments** (mm)	Approximate Feeder Size excluding external catchments# (mm)
C1	15	Low Density Resiential	211	739	225	225
C2	43	Low Density Resiential	612	2142	-	300
C3	52	Low Density Resiential	744	2604	-	300
C4	21	Low Density Resiential	307	1075	-	225
C5	21	Low Density Resiential	304	1064	-	225
C6	2	Low Density Resiential	24	84	-	150
C7	9	Low Density Resiential	126	441	-	150
C8	23	Low Density Resiential	323	1131	-	225
C9	61	Low Density Resiential	873	3056	-	300
C10	42	Low Density Resiential	595	2083	-	300
C11	5	Low Density Resiential	69	242	-	150
C12#	-	Low Density Resiential	-	-	-	-
C12A	47	Low Density Resiential	675	2364	-	300
C13**	9	Low Density Resiential	123	431	225	150
C14#	10	Low Density Resiential	150	525	Part of Riverstone strategy	Part of Riverstone strategy
C15#	3	Low Density Resiential	49	172	Part of Riverstone strategy	Part of Riverstone strategy
Total	0		*5185	*18152	0	0

The following has been assumed in undertaking the assessment
- Assumed 14.3 low density residential lots per hectare of gross developable area. This allows for roads, parks, etc.; and
- High density residential has been assessed as 70 equivalent persons per gross hectare.

**Feeder size assumes that externally contributing precincts use vineyard precinct feeders.
#Feeder size assumes that externally contributing precincts are accounted for by their own feeder main and do not contribute to the Vineyard Precinct

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Notes

- Feeders shown are indicative only. Actual size and location may vary when detailed design has been undertaken.
- C7, C8, C10 and C11 may require pumping stations to service due to topography.
- * Approximate lot yield only based on possible development land. Actual yield may vary.

Key to symbols

- Vineyard precinct boundary
- Vineyard precinct stage 1 boundary
- Surrounding precinct boundary
- LGA boundary
- Existing cadastre
- Existing contour
- Existing sewer
- Proposed sewer pipeline (no date specified)
- Proposed sewer pipeline (2015)
- Proposed sewer pressure pipeline (2015)
- Proposed sewer pipeline (2018)
- Proposed sewer pressure pipeline (2018)
- Proposed sewer feeders (Indicative)
- Proposed sewer pressure feeder
- Existing sewer structure
- Proposed sewer pumping station (2015)
- Proposed sewer pumping station (2018)
- Proposed additional sewer pumping station
- Existing sewer treatment plant
- Sewer catchments
- C1 Sewer catchment nodes
- External precinct draining through site. Included in assessment

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P7	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P6	14.10.2016	MMc	Issued For Exhibition	GL	CJA
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Mott MacDonald
Level 10, 383 Kent Street
Sydney, NSW 2000
Australia
PO Box Q1678
QVB Sydney NSW 1230
T +61 (0)2 9098 6800
W www.mottmac.com.au

Client: NSW GOVERNMENT Planning & Environment

Title
Vineyard Precinct
Infrastructure Master Plan

Sewer Servicing Supply Strategy

Designed	JT	.	Eng check	DB	.
Drawn	ADS	.	Coordination	CJA	.
Dwg check	GC	.	Approved	CJA	.
Scale at A1	1:10000	Status	PRE	Rev	P7

Drawing Number
MMD-334311-C-DR-VY-XX-0030

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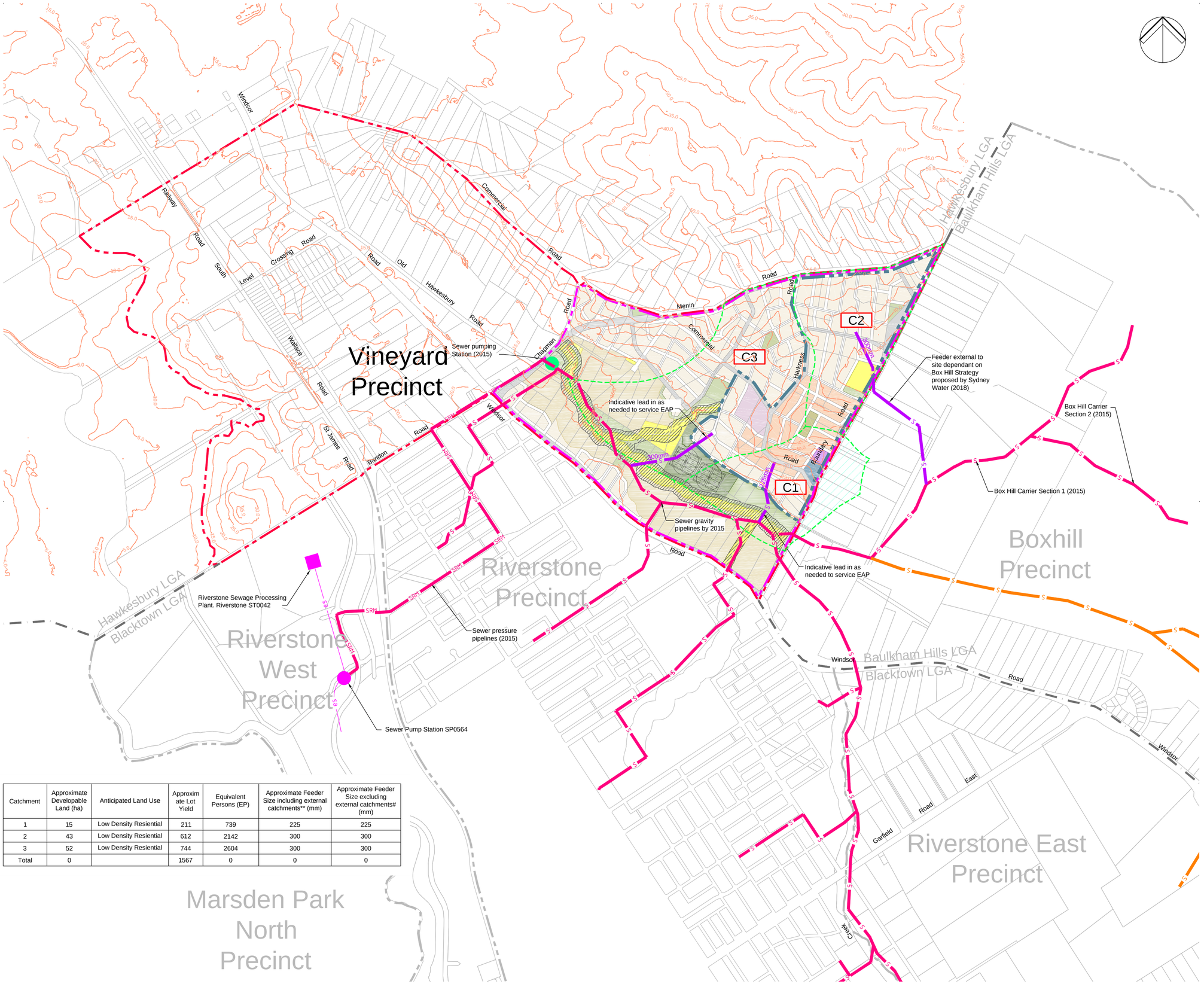

Catchment	Approximate Developable Land (ha)	Anticipated Land Use	Approximate Lot Yield	Equivalent Persons (EP)	Approximate Feeder Size including external catchments** (mm)	Approximate Feeder Size excluding external catchments# (mm)
1	15	Low Density Resiential	211	739	225	225
2	43	Low Density Resiential	612	2142	300	300
3	52	Low Density Resiential	744	2604	300	300
Total	0		1567	0	0	0

100 50 0 100 200 300
PLAN Scale 1:10000 @ A1

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Notes

- Feeders shown are indicative only. Actual size and location may vary when detailed design has been undertaken
- **Sizes assume external catchments drain through site

Key to symbols

- Vineyard precinct boundary
- Vineyard precinct stage 1 boundary
- Surrounding precinct boundary
- LGA boundary
- Existing cadastre
- Existing contour
- Existing sewer
- Proposed sewer pipeline (no date specified)
- Proposed sewer pipeline (2015)
- Proposed sewer pressure pipeline (2015)
- Indicative sewer feeders for EAP
- Existing sewer structure
- Proposed sewer pumping station (2015)
- Existing sewer treatment plant
- Sewer catchments
- Sewer catchment nodes
- External precinct draining through site. Included in assessment
- Early activation precinct

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P7	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P6	14.10.2016	MMc	Issued For Exhibition	GL	CJA
P5	20.07.2015	JK	Issued For Exhibition	GL	CJA
P4	01.07.2015	MMc	Issued For Exhibition	GL	CJA
P3	03.09.2014	ADS	Issued for Information	GL	CJA

Mott MacDonald
Level 10, 383 Kent Street
Sydney, NSW 2000
Australia
PO Box Q1678
QVB Sydney NSW 1230
T +61 (0)2 9098 6800
W www.mottmac.com.au

Client: NSW GOVERNMENT Planning & Environment

Title
Vineyard Precinct Infrastructure Master Plan

Sewer Servicing Strategy Plan Early Activation Precinct

Designed	JT	.	Eng check	DB	.
Drawn	ADS	.	Coordination	CJA	.
Dwg check	GC	.	Approved	CJA	.

Scale at A1	Status	Rev
1:10000	PRE	P7

Drawing Number
MMD-334311-C-DR-VY-XX-0031

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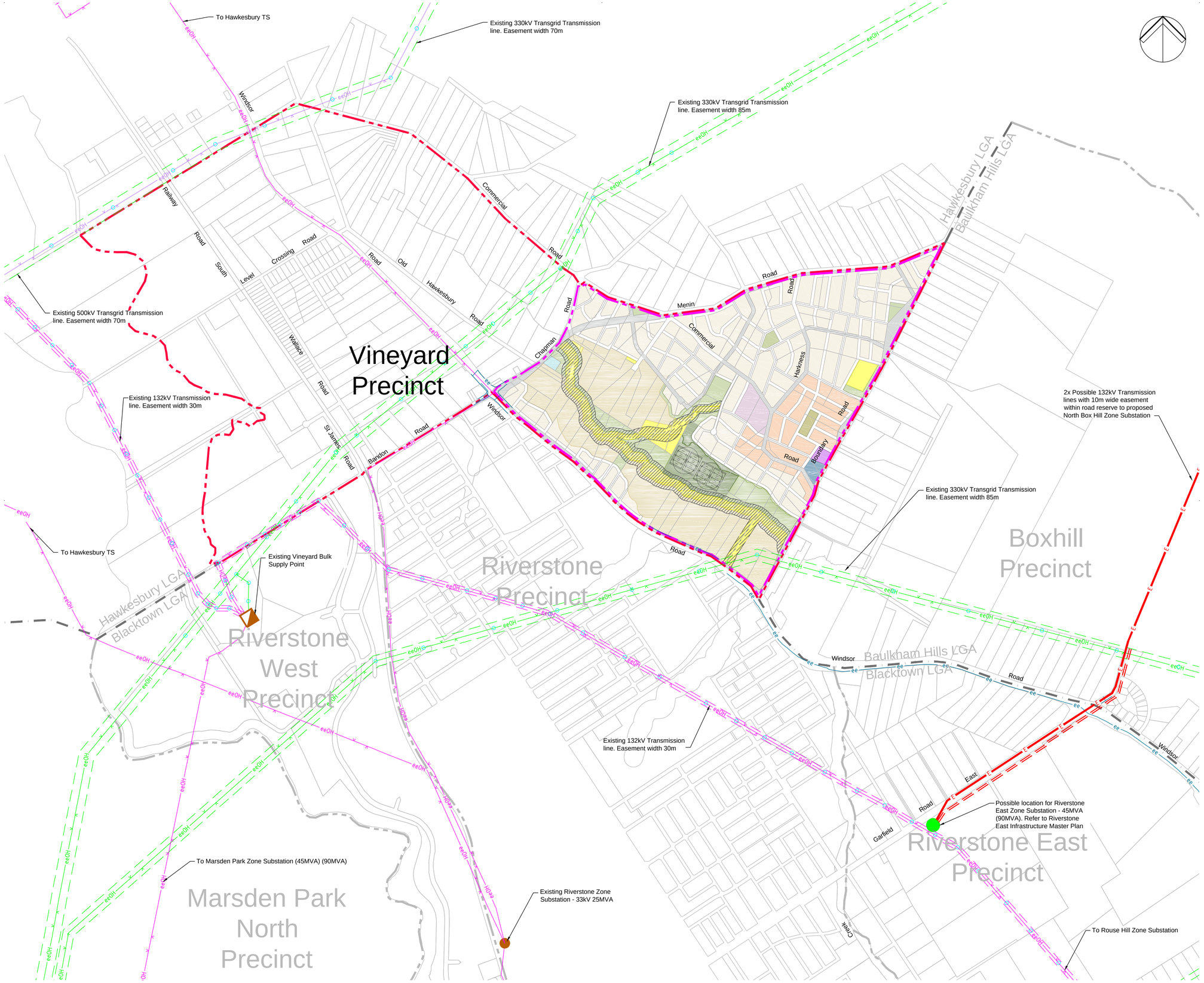

100 50 0 100 200 300

PLAN Scale 1:10000 @ A1

Notes

- Proposed feeders shown are indicative only. Actual number and alignment may vary when detailed design has been undertaken

Key to symbols

- Vineyard precinct boundary
- Vineyard precinct stage 1 boundary
- Surrounding precinct boundary
- LGA boundary
- Existing cadastre
- Existing Transgrid transmission line easement
- Existing Transgrid transmission line - 330 kv
- Existing Transgrid transmission line - 500 kv
- Existing Endeavour Energy easement
- Existing electricity overhead
- Existing electricity
- Possible electricity
- Possible electricity easement
- Possible zone substation
- Existing zone substation
- Existing transmission pylon
- Existing electrical bulk supply point

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P7	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P6	14.10.2016	MMc	Issued For Exhibition	GL	CJA
P5	20.07.2015	JK	Issued For Exhibition	GL	CJA
P4	01.07.2015	MMc	Issued For Exhibition	GL	CJA
P3	03.09.2014	ADS	Issued for Information	GL	CJA

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Level 10, 383 Kent Street
Sydney, NSW 2000
Australia
PO Box Q1678
QVB Sydney NSW 1230
T +61 (0)2 9098 6800
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NSW GOVERNMENT Planning & Environment

Title

Vineyard Precinct Infrastructure Master Plan

Electricity Servicing Strategy Plan

Designed	JT	.	Eng check	DB	.
Drawn	ADS	.	Coordination	CJA	.
Dwg check	GC	.	Approved	CJA	.

Scale at A1	Status	Rev
1:10000	PRE	P7

Drawing Number

MMD-334311-C-DR-VY-XX-0040

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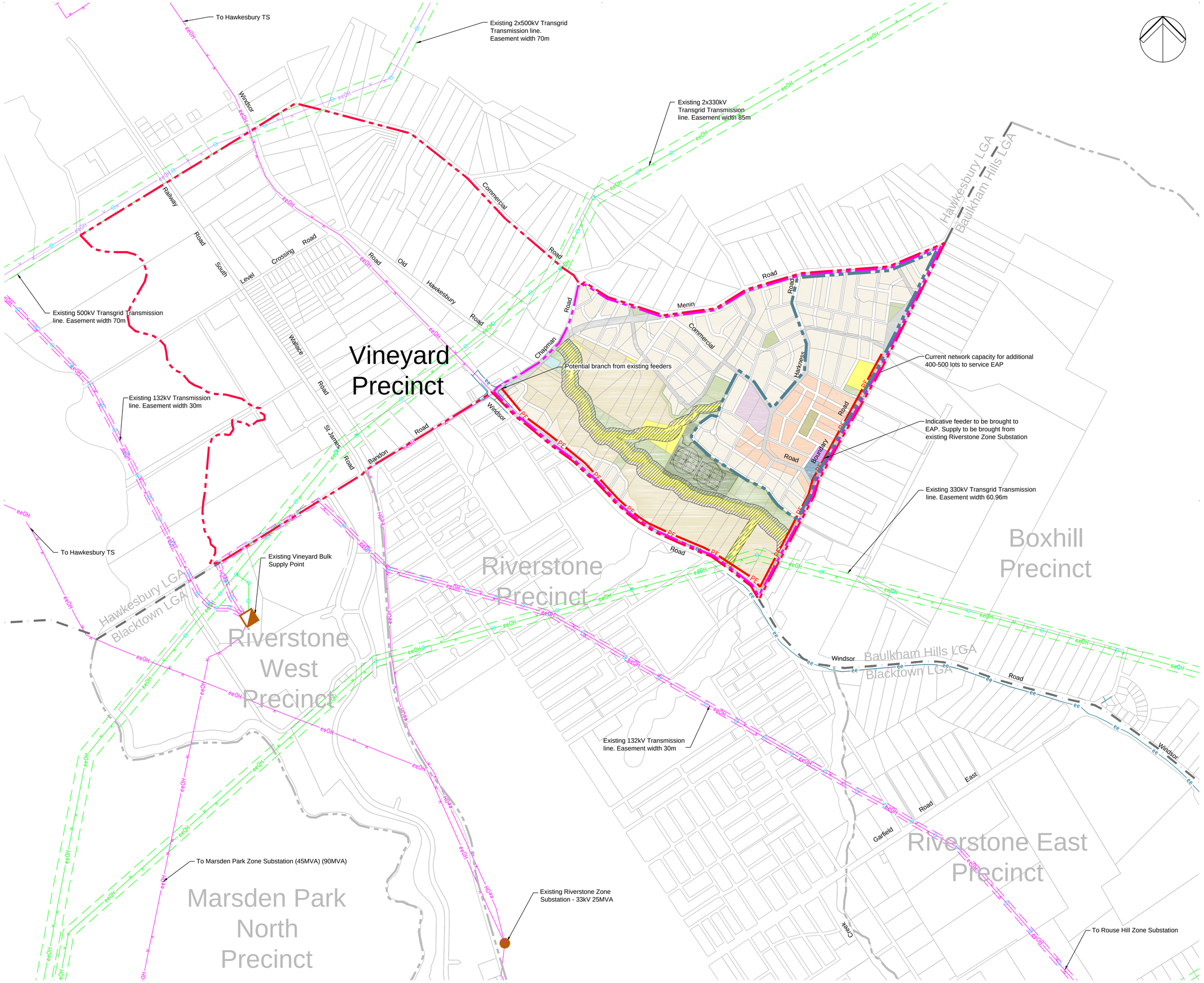

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PLAN Scale 1:10000 @ A1

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Notes

- Feeders shown are indicative only. Actual size and location may vary when detailed design has been undertaken

Key to symbols

- Vineyard East precinct boundary
- Vineyard precinct stage 1 boundary
- Surrounding precinct boundary
- LGA boundary
- Existing cadastre
- Existing Transgrid transmission line easement
- eeOH — Existing Transgrid transmission line - 330 kv
- eeOH — Existing Transgrid transmission line - 500 kv
- Existing Endeavour Energy easement
- eeOH — Existing electricity overhead
- ee — Existing electricity
- PE — Indicative electrical feeders for EAP
- Existing zone substation
- Existing transmission pylon
- Existing electrical bulk supply point
- Early activation precinct

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P7	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P6	14.10.2016	MMc	Issued For Exhibition	GL	CJA
P5	20.07.2015	JK	Issued For Exhibition	GL	CJA
P4	01.07.2015	MMc	Issued For Exhibition	GL	CJA
P3	03.09.2014	ADS	Issued for Information	GL	CJA

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Level 10, 383 Kent Street
Sydney, NSW 2000
Australia
PO Box Q1678
QVB Sydney NSW 1230
T +61 (0)2 9098 6800
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Client
NSW GOVERNMENT Planning & Environment

Title
Vineyard Precinct Infrastructure Master Plan

Electricity Servicing Strategy Plan Early Activation Precinct

Designed	JT	.	Eng check	DB	.
Drawn	ADS	.	Coordination	CJA	.
Dwg check	GC	.	Approved	CJA	.

Scale at A1	Status	Rev
1:10000	PRE	P7

Drawing Number
MMD-334311-C-DR-VY-XX-0041

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100 50 0 100 200 300

PLAN Scale 1:10000 @ A1

Notes

Key to symbols

- Vineyard precinct boundary
- Vineyard precinct stage 1 boundary
- Surrounding precinct boundary
- LGA boundary
- Existing cadastre
- Existing high pressure gas main (Jemena JGN gas pipeline)
- Existing trunk gas main (Jemena Gas West pipeline)
- Zone of influence for risk management (450m offset)
- Proposed gas main
- Existing trunk receiving station

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P7	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P6	14.10.2016	MMc	Issued For Exhibition	GL	CJA
P5	20.07.2015	JK	Issued For Exhibition	GL	CJA
P4	01.07.2015	MMc	Issued For Exhibition	GL	CJA
P3	03.09.2014	ADS	Issued for Information	GL	CJA

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QVB Sydney NSW 1230
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NSW GOVERNMENT Planning & Environment

Title

Vineyard Precinct Infrastructure Master Plan

Gas Servicing Strategy Plan

Designed	JT	.	Eng check	DB	.
Drawn	ADS	.	Coordination	CJA	.
Dwg check	GC	.	Approved	CJA	.

Scale at A1	Status	Rev
1:10000	PRE	P7

Drawing Number
MMD-334311-C-DR-VY-XX-0050

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Notes

Key to symbols

- Vineyard precinct boundary
- Vineyard precinct stage 1 boundary
- Surrounding precinct boundary
- LGA boundary
- Existing high pressure gas main (Jemena JGN gas pipeline)
- Existing trunk gas main (Jemena Gas West pipeline)
- Indicative gas feeder to service early activation precinct
- Zone of influence for risk management (450m radius)
- Existing trunk receiving station
- Early activation precinct

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P7	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P6	14.10.2016	MMc	Issued For Exhibition	GL	CJA
P5	20.07.2015	JK	Issued For Exhibition	GL	CJA
P4	01.07.2015	MMc	Issued For Exhibition	GL	CJA
P3	03.09.2014	ADS	Issued for Information	GL	CJA

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Level 10, 383 Kent Street
Sydney, NSW 2000
Australia
PO Box Q1678
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W www.mottmac.com.au

Client: NSW GOVERNMENT Planning & Environment

Title
Vineyard Precinct
Infrastructure Master Plan

Gas Servicing Strategy
Early Activation Precinct

Designed	JT	.	Eng check	DB	.
Drawn	ADS	.	Coordination	CJA	.
Dwg check	GC	.	Approved	CJA	.

Scale at A1	Status	Rev
1:10000	PRE	P7

Drawing Number
MMD-334311-C-DR-VY-XX-0051

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100 50 0 100 200 300

PLAN Scale 1:10000 @ A1

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Notes

Key to symbols

- Vineyard precinct boundary
- Vineyard precinct stage 1 boundary
- Surrounding precinct boundary
- LGA boundary
- Existing cadastre
- Existing telecommunication line
- Existing telecommunication overhead
- Existing optic fibre
- Existing optic fibre and copper cables
- Existing telecommunication exchange boundary

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P7	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P6	14.10.2016	MMc	Issued For Exhibition	GL	CJA
P5	20.07.2015	JK	Issued For Exhibition	GL	CJA
P4	01.07.2015	MMc	Issued For Exhibition	GL	CJA
P3	03.09.2014	ADS	Issued for Information	GL	CJA

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Level 10, 383 Kent Street
Sydney, NSW 2000
Australia
PO Box Q1678
QVB Sydney NSW 1230
T +61 (0)2 9098 6800
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NSW GOVERNMENT Planning & Environment

Title

Vineyard Precinct Infrastructure Master Plan

Telecom Servicing Strategy Plan

Designed	JT	.	Eng check	DB	.
Drawn	ADS	.	Coordination	CJA	.
Dwg check	GC	.	Approved	CJA	.

Scale at A1	Status	Rev
1:10000	PRE	P7

Drawing Number
MMD-334311-C-DR-VY-XX-0060

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PLAN Scale 1:10000 @ A1

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Notes

Key to symbols

- Vineyard precinct boundary
- Vineyard precinct stage 1 boundary
- Surrounding precinct boundary
- LGA boundary
- Existing telecommunication line
- Existing telecommunication overhead
- Existing optic fibre
- Existing optic fibre and copper cables
- Existing telecommunication exchange boundary
- Early activation precinct

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P7	19.10.2016	MMc	Issued For Exhibition	GL	CJA
P6	14.10.2016	MMc	Issued For Exhibition	GL	CJA
P5	20.07.2015	JK	Issued For Exhibition	GL	CJA
P4	01.07.2015	MMc	Issued For Exhibition	GL	CJA
P3	03.09.2014	ADS	Issued for Information	GL	CJA

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Level 10, 383 Kent Street
Sydney, NSW 2000
Australia
PO Box Q1678
QVB Sydney NSW 1230
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Client
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Title
Vineyard Precinct
Infrastructure Master Plan

Telecom Servicing Stategy Plan
Early Activation Precinct

Designed	JT	.	Eng check	DB	.
Drawn	ADS	.	Coordination	CJA	.
Dwg check	GC	.	Approved	CJA	.

Scale at A1	Status	Rev
1:10000	PRE	P7

Drawing Number
MMD-334311-C-DR-VY-XX-0061

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Appendix A. Plans

Appendix B. Service Provider Correspondence

Note: Authority correspondence can be provided if required.