

Ironstone Development Group Pty Ltd
West Talbingo Masterplan, Miles Franklin Dr.
Essential Services Report
23113 July 2023



ESSENTIAL SERVICES REPORT

LOT 35 DP878863, MILES FRANKLIN
DRIVE, TALBINGO

PREPARED FOR

Ironstone Development Group Pty Ltd

PREPARED BY

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EXECUTIVE SUMMARY

Site Plus Pty Ltd (Siteplus) has been commissioned by Ironstone Development Group Pty Ltd to prepare an Essential Services Report for the proposed masterplan development application at Lot 35 DP878862, Miles Franklin Drive, Talbingo.

This report assesses the existing infrastructure services surrounding the site and how they will need to be modified to service the development.

The development consists of a torrens title subdivision, hotel development, shop top housing commercial precinct as well as residential dwellings.

A number of known services are present within and fronting the site. These include:

- High voltage 11KV lines traverse the site. A new or augmentation of the existing feeder is required to provide an additional 11KV service from the Zone Substation to the site. The existing 11KV service traversing the site will need relocations in order to facilitate the proposed development. This feeder will most likely be made underground to increase bushfire resilience.
- Telstra conduits are available within Whitty Street to provide NBN service to the development. There will be no backhaul charges required to facilitate the provision of NBN for the development. The site is covered by Telstra's 4G network providing mobile coverage. The increase in mobile network users will likely provide an increase in feasibility to upgrade the mobile coverage within Talbingo.
- There is no gas main within the vicinity of the site and as such no gas reticulation will be provided to the estate.
- There is no suitable sewer or water infrastructure currently servicing the site. Upgrades will be required to facilitate the development of the network and treatment infrastructure. The facilities have the potential to facilitate these upgrades at the developers' cost subject to further studies as part of future applications.

In summary, the subdivision of land and development of the site for its intended purpose can be achieved with the appropriate upgrade works. Given the nature of the Masterplan application, it is considered inappropriate to further the required studies and works until the approval of the Masterplan Development Application, at which time, studies specific to the approved development can be undertaken.

1. INTRODUCTION

1.1. Preliminary

1.1.1. Siteplus Engagement

Site Plus Pty Ltd has been commissioned by Ironstone Development Group Pty Ltd to prepare an Essential Services Report for the proposed masterplan development application comprising of a hotel, shop top housing commercial precinct and residential allotments at Lot 35 DP878862, Miles Franklin Drive, Talbingo.

The aim of the Study is to ensure that the proposed subdivision can be serviced by all the required infrastructure.

1.1.2. Scope of Work

Siteplus determined the following investigations were required to understand the infrastructure needs for the proposed development:

- Investigate the existing services within the site and surrounding area including the road reserves fronting the development.
- Outline the requirements for an electricity service for the Subdivision to Endeavour Energy standards.
- Evaluate the requirements for telecommunications and provisions needed for their relocation.
- Outline the provisions for gas utilities within the area.
- Determine the requirements for Sewer and Water services for the development.

1.2. Subject Land

The subject site is located on the western extent of the Talbingo Village, immediately adjacent to Talbingo Tourist Park. The site is bound by agricultural land to the South and West and Miles Franklin Drive to the North. Immediately beyond Miles Franklin Drive lies Jounama Pondage, a dam constructed on the Tumut River as part of the Snowy Scheme

Currently the site is being used for agricultural purposes and grades steeply to Miles Franklin Drive at around 10%. The land is zoned RU5: Village with a minimum lot size of 225m².

Figure 1 Locality Map



source: [Nearmaps](#)

2. ELECTRICAL SERVICES

2.1. Existing Electrical Services

There is currently a 11kv High Voltage (HV) Overhead Feeder line that intersects the site. These service the western portion of the existing Tullimbar Village including the Tourist Park.

As part of the investigation by a level 3 electrical designer, it has been determined that there isn't enough capacity in the existing 11kV HV aerial line to service the site whilst maintaining the required level of service for the other infrastructure in the vicinity of the site. As such, a new 11kV feed to the site will be required with the possibility of the augmentation to the existing 11kV to provide another service. This will be required from the zone sub station near Tumut 3 power station. A cost estimate has been provided for the works and ranges from \$275,000 plus GST for the augmentation works up to \$475,000 if a new feed is required based on more detailed investigations as part of future applications.

There is no existing Low Voltage (LV) infrastructure on the site. Electrical supply of approximately 5000amp will be provided to the lots from the provided feeder above. It is estimated that 6 pad mount substations will be required to service the site and the proposed infrastructure. All electrical infrastructure is to be provided underground within the site.

Street lighting is to be provided to council standard as part of the development. This will include lighting upgrades of the Miles Franklin Drive intersections to a suitable standard. These will be run off the proposed pad mount and LV reticulation.

The total cost of the internal electrical and lighting reticulation works is expected to be \$1.5million.

West Talbingo Masterplan
Lot 35 DP878862, Miles Franklin Drive, Talbingo NSW
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3. TELECOMMUNICATION SERVICES

3.1. Existing NBN Services

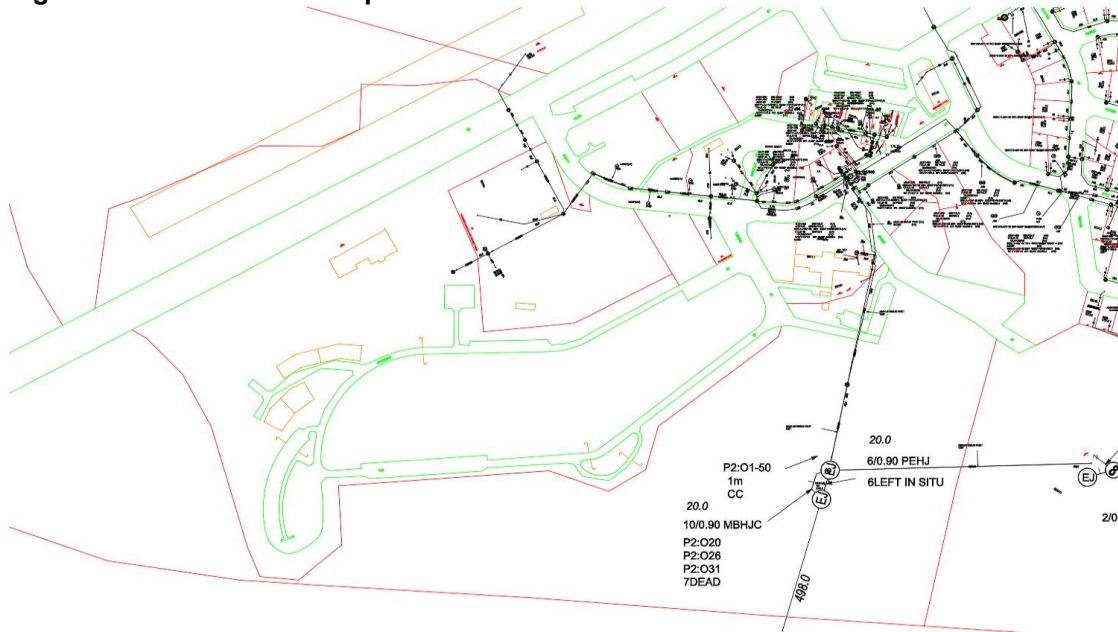
The site contains existing Telstra infrastructure in the north east corner. There is more significant infrastructure within Whitty Street, near the Thomas Street intersection.

3.2. Proposed NBN Services

Lead in for the site will come through Whitty and Thomas Street's. The site is noted as being NBN ready on the NBNCo website and as such, there should be no lead in developer costs.

Underground Fibre installation to each lot will be provided and the total cost is approximately \$1,500 per lot for NBN servicing.

Figure 3 Telstra Network Map



3.3. Mobile Coverage

The entire site lies within Telstra's 4G network coverage and should be able to provide suitable wireless connections to the site. There has been concerns relating to the suitability and reliability of the existing network to cope in times of high demand. Given the provision of NBN to all locations within the new development likely to have extensive wifi connections and the impact on the mobile network is considered minimal.

Due to the increase in population as a result of the development, it is likely that this will make upgrade works by Telstra more feasible and promote an upgrade.

4. GAS SERVICES

4.1. Existing Gas Mains

There is no existing gas infrastructure within the proximity of the site. As such, no gas reticulation will be undertaken. Any gas required for the commercial or Hotel premises will need to be trucked in as required. Based on current market trends, it is considered that Gas will not be required by any of the Residential premises.

5. SEWER AND WATER

5.1. Existing Sewer and Water

Siteplus has determined the following waste water generation and potable water demand for the site based on the Water Services Association of Australia (WSA) Sewerage and Water Supply codes.

Customer Type	Sewer EP	Water Demand (L/s)
Torrens Title Lots	287	8.2
Townhouses	95	2.7
Appartments	280	0.34
Hotel	380	0.46
Commercial		0.43
Total	373	12.12

This equates to a water demand of roughly 1ML/day.

Siteplus has been in liaison with Snowy Valleys Council staff regarding the sewer and water servicing for the site.

Currently the towns water treatment plant has capacity for 0.82ML/day with only around .082ML/day capacity remaining. The existing plant has the potential for a capacity of 2.1ML/day with significant upgrades required to the network and reservoir to accommodate this. Based on this, there is potential to implement this upgrade to accommodate both the existing town use 0.74ML/day as well as the proposed site demand of 1ML/day for a total demand of 1.8ML/day, below the plant's ultimate capacity of 2.1ML/day.

As part of the Water Cycle Management Study prepared by Siteplus to support the masterplan application, substantial water tanks are proposed to reduce the water demand on the towns water supply as much as possible, utilising all roof area to meet as much non-potable water use as possible given the proposed roof area. This will be done in tandem with the upgrades, rather than as an offset for demand requirements. Re-use targets are outlined in that report.

The existing wastewater treatment plant in Talbingo has capacity for 1100EP. Of this, there is only around 110EP capacity available which doesn't take into account wet weather flows which often exceed the plants capacity. This remaining capacity is considered not sufficient to cater for the 373EP produced by the subject development.

As such, upgrades will be required in order to cater for the development. These upgrades will also require upgrade of the lead in works to the sewer treatment plant, with potential for upgrade of pumpstation upgrades.

This study determines that the upgrade works to both the sewer and water treatment plants are possible and further investigations are on-going and will need to be finalised prior to the release of Subdivision Works Certificates (SWC) for the development.

5.2. Proposed Sewer and Water

Internally, sewer and water reticulation will be provided to all lots and connected to the town sewer and water supply.

6. STORMWATER AND FLOODING

For information regarding flooding and stormwater management. Please refer to the Stormwater Management Study prepared by Site Plus Pty Ltd dated July 2023.

APPENDIX A

Level 3 Report



23042

ELECTRICAL REPORT

**PROPOSED WEST TALBINGO VILLAGE
ELECTRICAL SUPPLY REPORT**

MAY 2023

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1.0 PURPOSE

The purpose of this report is to ascertain what will be required to supply electricity to the proposed West Talbingo Village

2.0 SCOPE

This report presents the findings of an Essential Energy network investigation. Henderson Consulting Engineers P/L are accredited Level 3 Service Providers and accredited to design modifications to the Essential Energy distribution network. This report has been prepared by Henderson Consulting Engineers P/L for Site Plus Pty Ltd

3.0 MAXIMUM DEMAND

Henderson Consulting Engineers have carried out a preliminary maximum demand calculation (see below). It is anticipated that the site will require a 5000amp 3 phase supply. (3.5MVA)

Preliminary After Diversity Maximum Demand Calculation

Job No: 23042

Site: West Talbingo Village

Date: 11/05/2023

Engineer: Peter Henderson

Item	Area m ²	Number	VA/sqm	kVA/Lot	Total (kVA)
Hotel	12517		90		1126.53
Lot 1 Residential	1765.6		65		114.764
Lot 1 Commercial	505.2		100		50.52
Lot 2 Residential	2648.4		65		172.146
Lot 2 Commercial	757.8		100		75.78
Lot 3 Residential	1765.6		65		114.764
Lot 3 Commercial	505.2		100		50.52
Lot 4 Residential	4199.2		65		272.948
Lot 4 Commercial	191.8		100		19.18
Lot 5 Residential	3349.65		65		217.72725
Lot 5 Commercial	4458.1		100		445.81
Lot 6 Residential	746.2		65		48.503
Lot 7 Residential	746.2		65		48.503
Lot 8 Residential	746.2		65		48.503
Lot 9 Residential	746.2		65		48.503
Lot 10 Residential	746.2		65		48.503
Lot 11 Residential	746.2		65		48.503
Lot 12 Residential	559.65		65		36.37725
Single Dwelling Residential		82		6.5	533

Total (kVA) 3521.0845

Preliminary Required Total Site 3ph Supply (Amps) 4898.55

4.0 ESSENTIAL ENERGY NETWORK

There isn't capacity on the existing Essential Energy network in the vicinity of the site to supply the required 3.5MVA load.

The existing Essential Energy Talbingo Zone Substation is approximately 2.7km from the site.

There is an existing 11kV aerial line from the zone substation to the site. This Overhead line currently supplies the Talbingo township. It is unlikely that this will have capacity to supply the site. The existing 11kV conductors are 6/0.186+7/0.062 ASCR/GZ (BS215)

In order to supply the load, modifications to the network will be required. A new 11kV feeder may be required from the existing zone substation to the site.

Note: It may be possible to augment the existing 11kV conductors rather than install a new OH line.

We are currently waiting on confirmation from Essential Energy to confirm the existing load on the existing network to determine how to supply the site. Enquiry 00078544 is currently with Essential Energy and we are waiting for a response.

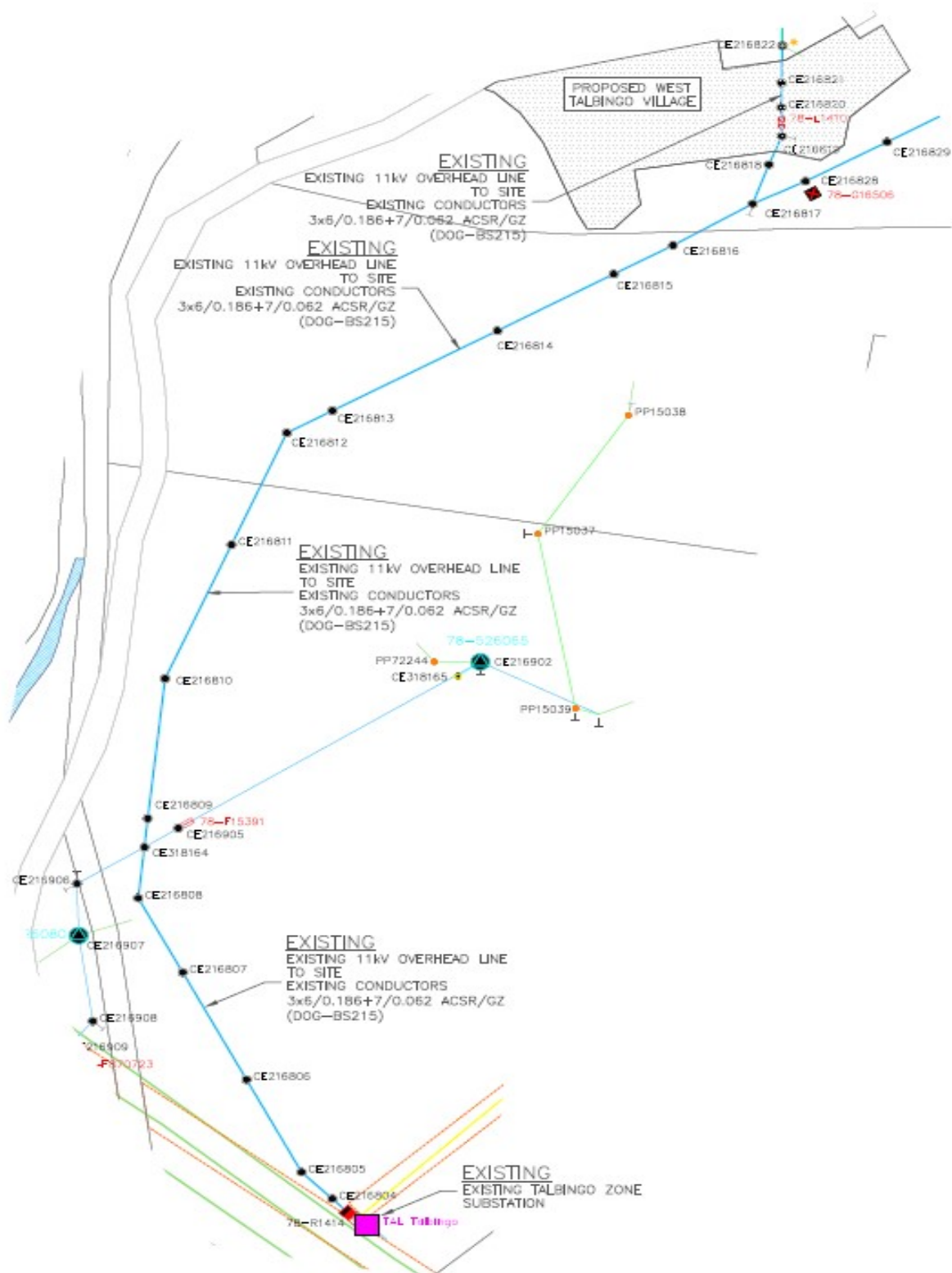
A new overhead 11kV feeder route could possibly follow the existing 11kV feeder within the existing easement.

The site will likely require the following padmount substations:

- 1 x 1500kVA padmount substation to supply the hotel
- 1 x 500kVA padmount substations to supply the single dwellings
- 2 x 500kVA padmount substations to supply shop top housing (lots 1-5)
- 2 x 315kVA padmount substations to supply the townhouses (lots 6-12)

5.0 ESSENTIAL ENERGY NETWORK MAP

See the below Essential Energy network map for existing 11kV overhead line and the Talbingo Zone Substation location.



6.0 COSTS

Below is a table indicating the cost estimate for the installation of the proposed new 11KV OH line and also the proposed padmount substations

Item	Total Cost
6 x padmount substations @ \$150,000 each	\$900,000 + GST
Street Lighting and LV Reticulation throughout site	\$600,000 + GST
New 11kV overhead feeder	\$475,000 + GST
Option to augment existing 11kV conductors	\$275,000 + GST

The above costs are an estimate only. They are provided to give an indication with respect to the feasibility of the project. There are numerous variables that have not been considered.

The installation costs given are based on experience and previous project costs. More accurate costs can not be acquired until a detailed design has been carried out and Essential Energy design information is acquired.

7.0 SUMMARY

The Proposed West Talbingo Village will likely require a new 11kV overhead feeder from the Talbingo Zone substation to supply the proposed electrical load. The above is subject to Essential Energy approval and confirmation.