

# UPD

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**Subdivision Preliminary Investigation Report  
UPD 9985 – Cubbine & Mitchell St, Cunderdin**

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# 1. INTRODUCTION

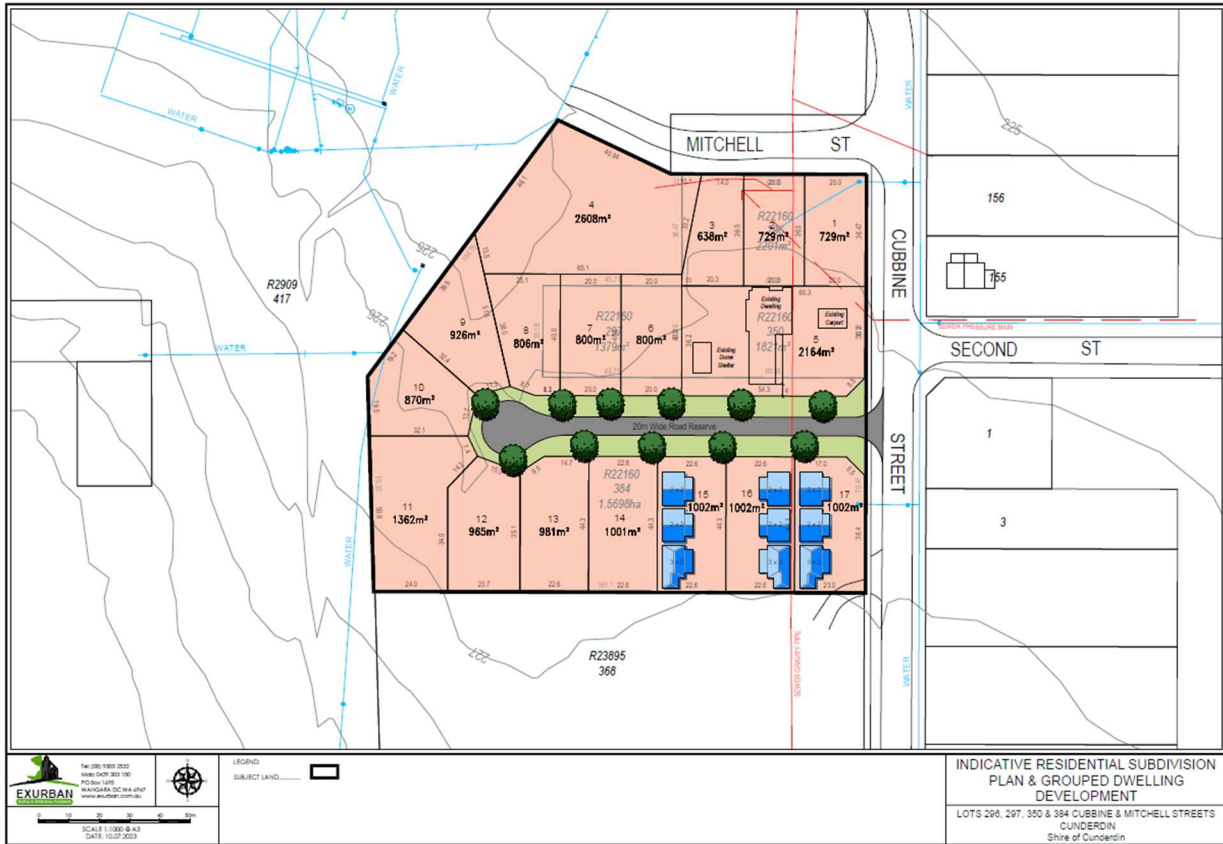
David Wills and Associates Consulting Engineers has requested Underground Power Development to complete a servicing investigation report for the proposed development in Cubbine & Mitchell Streets, Cunderdin, see below.

Figure 1: New Subdivision Location



## 2. POWER REQUIREMENTS

Figure 2: Cunderdin Draft Concept Plan



Based on the current structure plan, the subdivision will be combined of 4x rural residential lots (i.e. >1000sqm), 10x standard residential lots and 3x Group Housing lots. Each of the rural lots will be served with 3 phase power at 5kVA per lot, standard residential will be 4.7 kVA per lot and Group Housing will be 4.7 kVA per dwellings.

The following load assessment is calculated.

Load Type	Number of Lots	Required kVA	Total kVA	Comments
Rural Residential	4 lots	5 kVA/Lot	20 kVA	Based on WP UDS
Standard Residential	10 lots	4.7 kVA/Lot	47 kVA	Based on WP UDS
Group Housing	3 lots	4.7 kVA/Dwellings	42.3 kVA	Based on WP UDS
<b>Total</b>			<b>110 kVA</b>	

## 3. NETWORK AND FEEDER CAPACITY

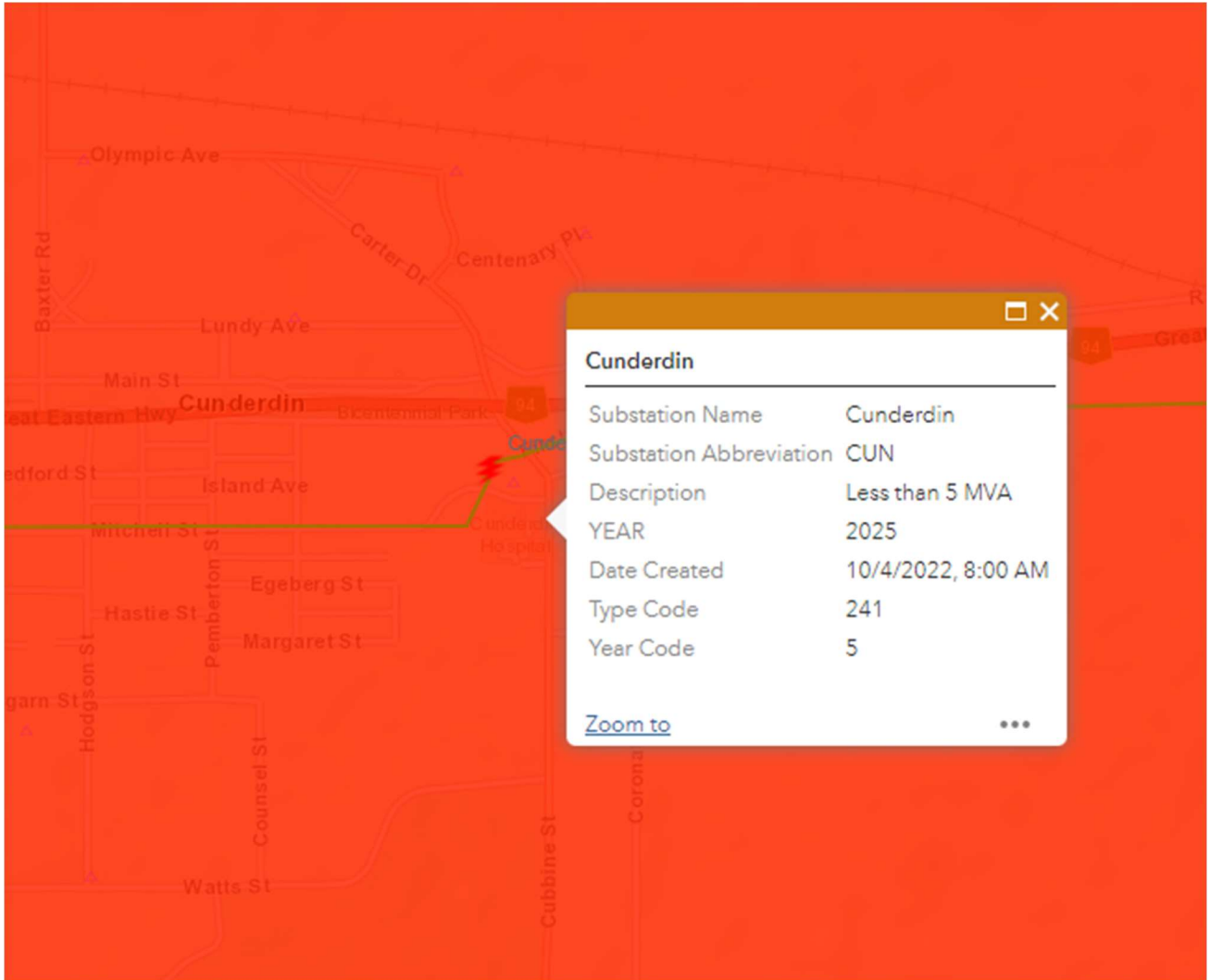
Western Power's Network Capacity Mapping tool indicates that Cunderdin Substation will be the zone substation that feeds the development area. The substation has remaining capacity of less than 5 MVA as of 2025. This capacity forecast remains the same until the latest forecasting available in 2030. Although the area is constrained as indicated by the network mapping tool below, we don't envisage any



significant HV upgrade. However, WP may require some network reinforcement to the HV network, this will be advised when WP issue the DIP.

Image from WP Mapping tool:

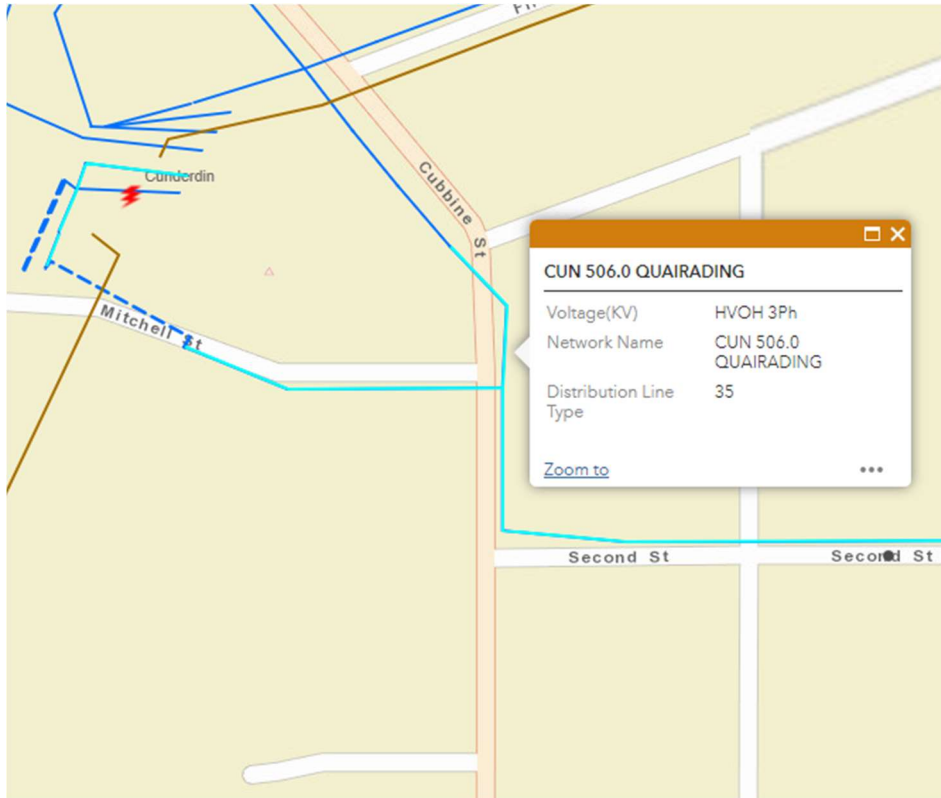
Figure 3: Network Capacity Mapping Tool



#### 4. EXISTING DISTRIBUTION POWER NETWORK

The Western Power Network Mapping tool (NCMT) indicates that there is a three-phase 22kV feeder servicing this development area, i.e. CUN 506.0.

**Figure 4: Western Power HV Network**



The overhead lines within the new development area on Mitchell St need to be removed by WP. Existing HV & LV aerial cables on Cubbine St will remain and overhead-underground conversion is required for any existing buildings/dwellings or supplies remaining.

Figure 5: WP Overhead Assets on Mitchell St



A minimum 315 kVA pad mounted TX will be required for supplying the new lots, and possibly a switchgear unit is needed dependent on WP allowance/requirements.

## 5. FIRE ZONES FOR TRANSFORMERS

The development will require new HV Transformer Substation Sites which will need to be located away from any building or structure to allow for 6m fire zone around the Western Power site and 4.5m above the site.

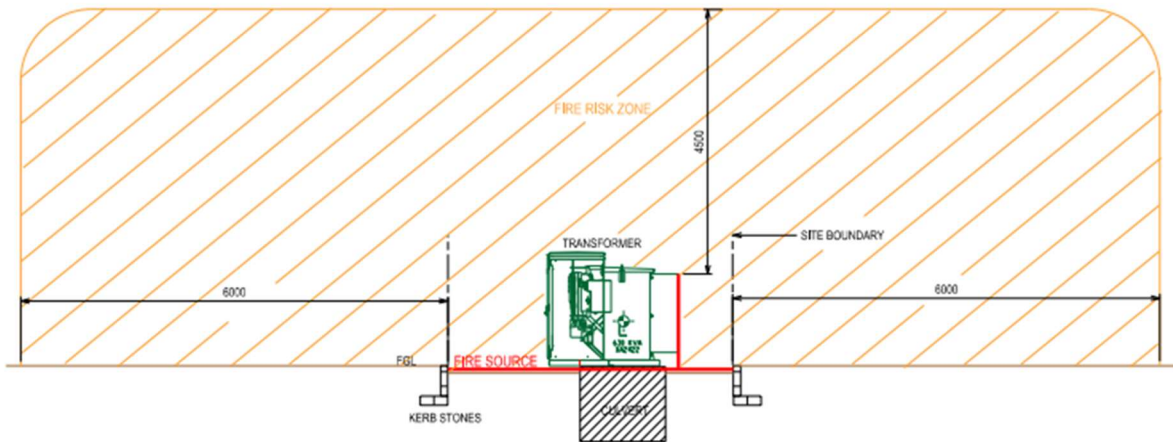
Under the Western Power Distribution Substation Plant Manual for zones around transformers, a 6m Restricted Covenant (RC) around the site is required, preventing any structure within this area without prior approval from Western Power. Please refer to the Distribution Substation Plant Manual link below:

<https://www.westernpower.com.au/siteassets/documents/documents-and-policies/distribution-substation-plant-manual/distribution-substation-plant-manual-chapter5-substation-fire-risk-20210504.pdf>



**Figure 6: Diagram Depiciting Fire Risk Zone and Site Boundary Surrounding Transformer**

**Figure 6.1: Example - Substation site with oil containment kerb or walls**



## 6. TRANSMISSION LINE NETWORK

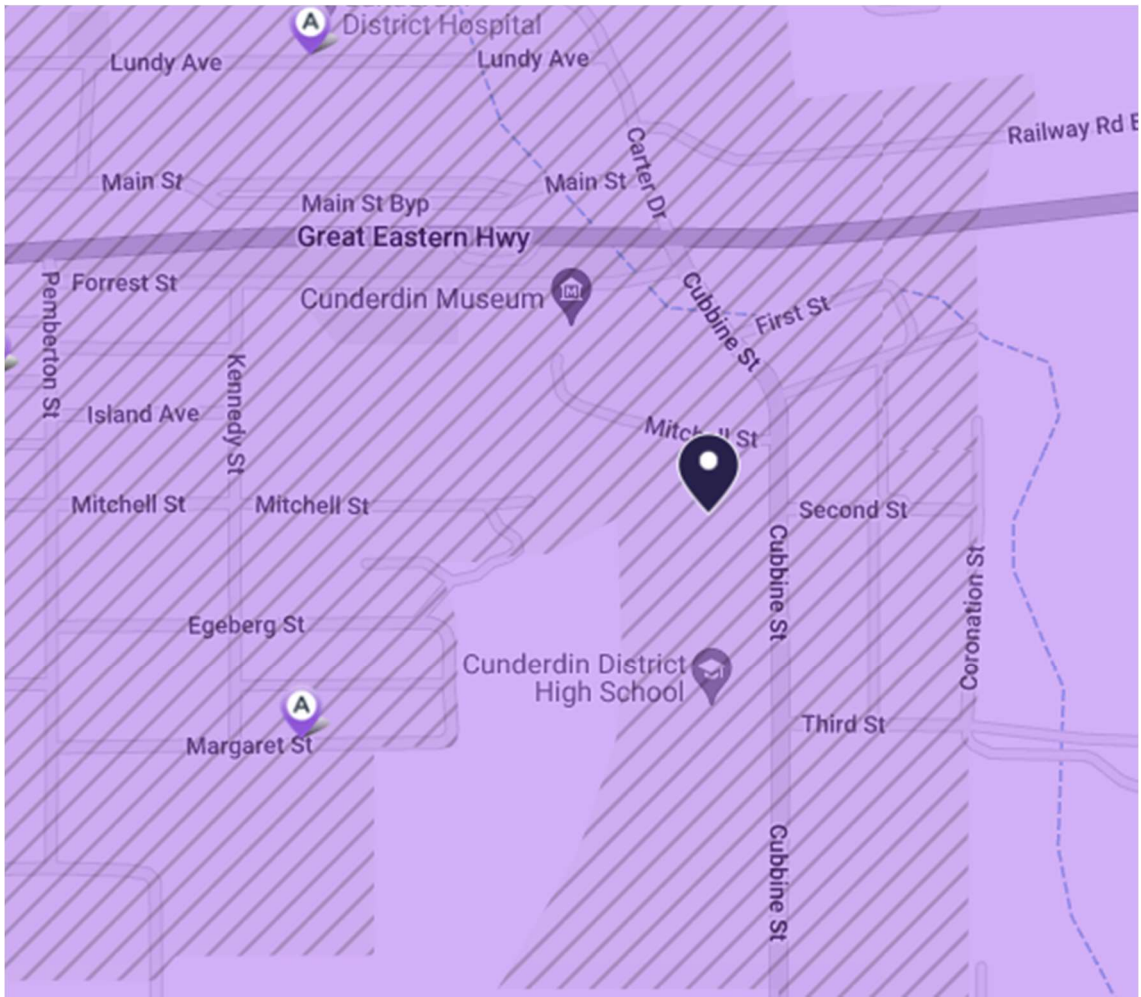
There are no Western Power transmission lines in the vicinity of this development.

## 7. COMMUNICATIONS CONSIDERATIONS

According to the NBN rollout map, the surrounding area are served by fixed line service.

NBN assets already exist within the vicinity of the development, communication services is available to cover the new development area.

Figure 7: NBN Rollout Map Showing Development Site



**Map options**

Rollout status     
  Service available area ⓘ     
  Build commenced area ⓘ     
  Other fibre provider area ⓘ

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Show service type     
  Fixed line ⓘ     
  Fixed wireless ⓘ     
  Satellite ⓘ