

The Secretary
NSW Department of Planning, Industry & Environment



5 December 2021

ATTENTION: Warragamba Dam Assessment Team

Dear Sir or Madam

I refer to the Department's below email of 28 September 2021 regarding the Environmental Impact Statement (EIS) for State Significant Infrastructure (SSI) Warragamba Dam Raising at Crest Road, Warragamba NSW 2752 (Lot 1124 DP 1159978) with the project to provide temporary storage capacity for large inflow events into Lake Burragorang to facilitate downstream flood mitigation and includes infrastructure to enable environmental flows. Submissions need to be made to the Department by 19 December 2021.

As shown in the below site plan from Endeavour Energy's G/Net master facility model (and extract of Google Maps Street View) in regard to the 'Construction Area' there are:

- No easements benefitting Endeavour Energy (active easements are indicated by red hatching).
- 132,000 volt / 132 kilovolt (kV) high voltage overhead power lines and overhead earth cables coming from Endeavour Energy's North Warragamba Zone Substation located at Silverdale Road, Silverdale (Lot 41 DP1126346) to the Warragamba Generation Station / Transmission Supply Point which is 'Out of Service'.
- From the end of Production Avenue there are low voltage and 11,000 volt / 11 kV high voltage overhead power lines following Twenty Third Street and Twenty Fourth Street (supplying High Voltage Customer Substation no. 15204 indicated by the symbol  and two pole mounted substations no.s 11983 and 16454 indicated by the symbol ).

In regard to the overhead power lines traversing the site, although not held under easement, these are protected assets and deemed to be lawful for all purposes under Section 53 'Protection of certain electricity works' of the Electricity Supply Act 1995 (NSW). Essentially this means the owner or occupier of the land cannot take any action in relation to the presence in, on or over the land of electricity works ie. the electricity infrastructure cannot be removed to rectify the encroachment. These protected assets are managed as if an easement is in place – please refer to the below point 'Easement Management / Network Access'.

In accordance with Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights', as shown in the following extracts of Table 1 – 'Minimum easement widths':

- The low voltage and 11 kV high voltage overhead power lines require a 9 metre minimum easement width ie. 4.5 metres to both sides of the centre line of the poles / conductors.
- The 132 kV high voltage overhead power lines with steel towers require a 30 metre minimum easement width ie. 15 metres to both sides of the centre line of the towers / conductors.

Table 1 - Minimum easement widths

	Voltage	Asset Type	Construction	Minimum Easement (m)
Overhead Assets	400V– 22kV	Bare Construction	All	9
		ABC		
		CCT		
	132kV	Bare conductor (see Note 2)	Line post insulators	25
			H pole Structures	30
			Steel tower	30

ABC = Aerial Bundled Cables CCT = Covered Conductor Thick

This easement width in some circumstances may not be warranted ie. depending on the span (the longer the span the greater the sag and blowout of the overhead power lines), type of conductor, access, property type and use etc. However if the easement width cannot be reasonably provided, as a minimum any building or structure (including fencing, signage, flag poles etc.) whether temporary or permanent must comply with the minimum safe distances / clearances for voltages up to and including 132,000 volts (132 kV) as specified in:

- Australian/New Zealand Standard AS/NZS 7000 – 2016: ‘Overhead line design’ as updated from time to time.
- ‘Service and Installation Rules of NSW’ which can be accessed via the following link to the Energy NSW website:

<https://energy.nsw.gov.au/government-and-regulation/legislative-and-regulatory-requirements/service-installation-rules> .

These distances must be maintained at all times and regardless of the Council’s allowable building setbacks etc. under its development controls. As a guide only please find attached a copy of Endeavour Energy Drawing 86232 ‘Overhead Lines Minimum Clearances Near Structures’. As indicated above in regard to the width of the easement, some of these factors will similarly impact on the minimum clearances.

If there is any doubt whatsoever regarding the safety clearances to the overhead power lines, the applicant will need to have the safety clearances assessed by a suitably qualified electrical engineer / Accredited Service Provider (please refer to the below point ‘Network Capacity / Connection’. This will require the provision of a detailed survey plan showing the location of the conductors to enable the assessment / modelling of the clearances for which there are software packages available. If the safety clearances are inadequate, either the parts of the building or structure encroaching the required clearances or the overhead power lines will need to be redesigned to provide the required clearances.

Even if there is no issue with the safety clearances to the building or structure, ordinary persons must maintain a minimum safe approach distance of 3.0 metres to all voltages up to and including 132,000 volts / 132 kV. Work within the safe approach distances requires an authorised or instructed person with technical knowledge or sufficient experience to perform the work required, a safety observer for operating plant as well as possibly an outage request and/or erection of a protective hoarding.

Endeavour Energy’s recommendation is that whenever reasonably possible buildings and structures be located and designed to avoid the need to work within the safe approach distances for ordinary persons eg. not having parts of the building normally accessible to persons in close proximity of the overhead power lines; the use of durable / low maintenance finishes. Alternatively, in some instances the adoption of an underground solution may be warranted ie. particularly for low voltage which can be more readily (in shorter distances) and comparatively economically be undergrounded.

Consideration must be given to WorkCover (now SafeWork NSW) ‘Work Near Overhead Power Lines Code of Practice 2006’ which includes the following requirements for work near low voltage overhead power / service lines.

TABLE 4

Approach distances for work near low voltage overhead service lines

Ordinary Persons (m)				
Hand held tools	Operation of crane or mobile plant	Handling of metal materials (Scaffolding, roofing, guttering, pipes, etc)	Handling of non-conductive materials (Timber, plywood, PVC pipes and guttering, etc)	Driving or operating vehicle
0.5	3.0	4.0	1.5	0.6

In addition the developer / builder should consider 'tiger tailing'/matting the low voltage overhead service lines to provide a distinct visual of the location of overhead construction ie. these are still not regarded as insulated conductors and safe approach distances need to be maintained.

Endeavour Energy Mains Design Instruction MDI 0031 'Overhead line design' includes the following clearance zone for pole mounted substations.

9.0 SUBSTATIONS, AUTO-RE Closers, SECTIONALISERS, VOLTAGE REGULATORS AND ENCLOSED SWITCHES

9.1.2 Equipment hazard and fire zone

As part of the design, allowance is to be made for a three metre horizontal clearance zone around pole mounted substations, regulators, reclosers, sectionalisers and enclosed switches to minimise the effects of failure of any equipment and manage ongoing noise in accordance with Figure 13.

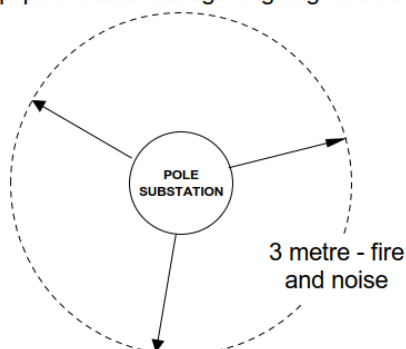


Figure 13 – Fire and noise separation

Pole mounted substations, regulators, reclosers, sectionalisers and enclosed switches may contain hazardous materials. Additional requirements apply to environments containing explosive gas atmospheres. Where applicable these provisions must comply with the requirements of AS/NZS 60079.

As a high voltage customer the 'High Voltage Operational and Maintenance Protocol' between Endeavour Energy and the customer regarding the provision of high voltage supply to the site will specify a 'Load of Customers Installation' which is adequate for the then / Customer's current requirements. The Protocol generally also states the following:

'Should any further increase in loads be required, contact should be made with Endeavour Energy's Network Connections Branch, who will inform you of the requirements in this regard'.

The Protocol also identifies where Endeavour Energy's responsibility terminates (normally at the pole or pillar on the road verge from which supply is taken) in respect of:

- ownership of high voltage equipment;
- switching operations; and
- maintenance of equipment.

Endeavour Energy has noted the following in the EIS but as a general observation there does not appear to be much detail provided about the electricity infrastructure required to facilitate the proposed development or the impact on electricity infrastructure either for the construction or the subsequent upstream and downstream impacts of the dam raising.

- Chapter 4 : ‘Project development and alternatives’ indicates ‘Estimates of damage at different flood levels were provided by power service providers’.
- Chapter 5: ‘Project description’ refers to demolition the existing hydroelectric power station equipment to allow for new environmental flow infrastructure.

5.4.8 Consumption of natural resources

5.4.8.1 Energy use during construction

The main energy sources would be electricity to power the concrete batch plants and chilled water units, and fuel (mainly diesel) to power plant and equipment. Electricity would be sourced from the local power network or from generators. Estimates of energy use during construction is presented in Table 5-5.

Table 5-5. Energy use during construction

Energy source	Estimated energy use
Electricity	701,664 kWh
Fuel	79,401 GJ

- Chapter 6: ‘Consultation’ 6.6.3 ‘Inputs from infrastructure and service providers’ makes no reference to Endeavour Energy.
- Chapter 15: ‘Flooding and hydrology’

15.4.6.6 Indirectly affected areas

There will be areas outside the limit of flooding that would not be inundated and would not lose road access. However, they may be indirectly affected because of flood damaged infrastructure such as loss of transport links, electricity supply, water supply, sewerage or telecommunications services. They may require resupply or in the worst case, evacuation.

Endeavour Energy’s Asset Planning & Performance (APP) Branch has provided the following advice:

From a review of the EIS it appears the only of Endeavour Energy’s electricity assets directly impacted are:

- 11 kV North Warragamba Zone Substation Feeder NG1247 Chlorination Drive & Auxiliary No.2 (+ associated low voltage and streetlighting) and the Out of Service (OOS) section of 132 kV Feeder DR 937.

For the 11 kV, if supply is to be retained, APP Branch has no issues with the line been relocated. The works are contestable and the Accredited Service Provider (ASP) will need to complete design and construction.

For the OOS 132 kV, the line is used to connect to the Warragamba Generation Station / hydroelectric power station which the EIS indicates is to be demolished. APP Branch is unlikely to have any further use for the 132 kV sections in the affected area. The line can be removed but they may be able to be used for construction supply (see below).

- For construction supply, APP Branch need to know what the maximum demand is rather than the estimated energy required. With a 702 megawatt hour (MWh) total load over the project, it is estimated that their maximum demand is < 1 megavolt amperes (MVA). Proposed Method of Supply (MOS):
 - If the maximum demand is <1 MVA, it can currently be supplied from 11 kV Feeder NG1247. However the current spare capacity may be exhausted by the future stages of the Marsh Road, Silverdale residential subdivision.
 - If permitted to utilise Feeder NG1247, the feeder should be extended to the OOS sections of 132 kV FDR 937 and energised at 11 kV.

If the maximum demand is 1+ MVA, a new 11 kV feeder will be required. Connecting the OOS sections of 132 kV Feeder 937 to one of the 11 kV circuit breakers at North Warragamba Zone Substation (e.g. Feeder NG1299).

This is likely to be APP Branch's preferred solution as it will not be difficult to implement and retains spare capacity of FDR NG1247. There is also an option for Endeavour Energy to utilise the new feeder after the dam construction is complete for other development occurring in the area.

- If the OOS sections of 132 kV Feeder DR 937 are used, they are not currently energised and it is not clear to what extent they have been maintained [although there has been some Pre-summer Bushfire Inspections (PSBI) undertaken to identify any defects). Nonetheless the Feeder will need to be checked for compliance prior to energisation.

Subject to the foregoing and the following recommendations and comments Endeavour Energy has no objection to the SSI Development.

- Network Capacity / Connection

In due course the applicant for the proposed development of the site will need to submit an appropriate application based on the maximum demand for electricity for connection of load via Endeavour Energy's Network Connections Branch to carry out the final load assessment and the method of supply will be determined. Straightforward applications can be completed online and permission to connect may be provided immediately if submitting a complying application.

Depending on the outcome of the assessment, any required padmount substation/s will need to be located within the property (in a suitable and accessible location) and be protected (including any associated cabling) by an easement and associated restrictions benefiting and gifted to Endeavour Energy. Please refer to Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights'.

For more complex connections, advice on the electricity infrastructure required to facilitate the proposed development (including asset relocations) can be obtained by submitting a Technical Review Request to Endeavour Energy's Network Connections Branch, the form for which FPJ6007 is attached. The response to these enquiries is based upon a desktop review of corporate information systems, and as such does not involve the engagement of various internal stakeholders in order to develop a 'Connection Offer'. It does provide details of preliminary connection requirements which can be considered by the applicant prior to lodging a formal application for connection of load.

Further details of the entire range of connection services including temporary builder's supply; asset relocation and removal; subdivisions; meeting the requirements of development approval etc; are available by contacting Endeavour Energy's Network Connections Branch via Head Office enquiries on business days from 9am - 4:30pm on telephone: 133 718 or (02) 9853 6666 or on Endeavour Energy's website under 'Home > Residential and business > Connecting to our network' via the following link:

<http://www.endeavourenergy.com.au/> .

Alternatively the applicant may need to engage an Accredited Service Provider (ASP) of an appropriate level and class of accreditation to assess the electricity load and the proposed method of supply for the development. The ASP scheme is administered by Energy NSW and details are available on their website via the following link or telephone 13 77 88:

<https://energy.nsw.gov.au/government-and-regulation/legislative-and-regulatory-requirements/asp-scheme-and-contestable-works> .

Endeavour Energy is urging applicants /customers to engage with an Electrical Consultant prior to finalising plans to in order to assess and incorporate any required electricity infrastructure. In so doing the consideration can also be given to its impact on the other aspects of the proposed development. This can assist in avoiding the making of amendments to the plan or possibly the need to later seek modification of an approved development application.

- Network Asset Design

Endeavour Energy's Company Policy 9.2.5 'Network Asset Design' includes the following requirements for electricity connections to new subdivision / development.

5.11 Reticulation policy

5.11.1 Distribution reticulation

In order to improve the reliability performance of and to reduce the operating expenditure on the network over the long term the company has adopted the strategy of requiring new lines to be either underground cables or where overhead is permitted, to be predominantly of covered or insulated construction. Notwithstanding this strategy, bare wire overhead construction is appropriate and permitted in some situations as detailed below.

In areas with the potential for significant overhanging foliage, CCT is used to provide increased reliability as it is less susceptible to outages from wind-blown branches and debris than bare conductors. CCT must only be used in treed² areas as the probability of a direct lightning strike is low. In open areas where the line is not shielded from a direct lightning strike, bare conductors must generally be used for 11kV and 22kV reticulation.

Non-metallic Screened High Voltage Aerial Bundled Cable (NMSHVABC) must be used in areas which are heavily treed and where it is not practicable to maintain a tree clearing envelope around the conductors.

² A "treed" area is one with a substantial number of trees adjacent to the line, in each span. In these situations CCT is used to provide increased reliability as it is less susceptible to outages from wind-blown

5.11.1.1 Urban areas

Reticulation of new residential subdivisions will be underground. In areas of low bushfire consequence, new lines within existing overhead areas can be overhead, unless underground lines are cost justified or required by either environmental or local council requirements.

Where underground reticulation is required on a feeder that supplies a mixture of industrial, commercial and/or residential loads, the standard of underground construction will apply to all types of load within that development.

Where ducting is used, adequate spare ducts and easements must be provided at the outset to cover the final load requirements of the entire development plan.

Extensions to the existing overhead 11kV/22kV network must generally be underground. Bare wire will be used for conductor replacements and augmentations except in treed areas where CCT or NMSHVABC must be used.

Extensions to the existing overhead LV network and augmentations must either be underground or ABC. Conductor replacements greater than 100m in route length must utilise aerial bundled cable.

5.11.1.2 Non-urban areas

Extensions to the existing overhead 11kV and 22kV network and conductor replacements / augmentations must be underground. Where underground reticulation is not practical overhead construction can be used. The choice of overhead construction must be bare wire for the following circumstances:

- areas that are not substantial treed;
- long gully crossings;
- SWER lines;
- joint use 132, 66 or 33kV lines; and
- distribution lines with transmission construction and located in an easement.

All other overhead constructions **must** be CCT or NMSHVABC.

Extensions to the existing overhead LV network and augmentations must either be underground or utilise ABC. Conductor replacements greater than 100m route length must utilise ABC.

5.11.2 Transmission and sub-transmission

Transmission and sub-transmission lines will be must overhead construction unless environment, community and/or planning instrument considerations require an underground solution.

- Earthing

The construction of any building or structure (including fencing, signage, flag poles, hoardings etc.) whether temporary or permanent that is connected to or in close proximity to Endeavour Energy's electrical network is required to comply with Australian/New Zealand Standard AS/NZS 3000:2018 'Electrical installations' as updated from time to time. This Standard sets out requirements for the design, construction and verification of electrical installations, including ensuring there is adequate connection to the earth. It applies to all electrical installations including temporary builder's supply / connections.

Inadequate connection to the earth to allow a leaking / fault current to flow into the grounding system and be properly dissipated places persons, equipment connected to the network and the electricity network itself at risk from electric shock, fire and physical injury.

The earthing system is usually in the form of an earth electrode consisting of earth rods or mats buried in the ground. It should be designed by a suitably qualified electrical engineer / Accredited Service Provider (ASP) following a site-specific risk assessment having regard to the potential number of people could be simultaneously exposed, ground resistivity etc. For details of the ASP scheme please refer to the above point "Network Capacity / Connection".

In particular appropriate consideration should be provided to the conductivity of the fencing near electricity infrastructure or within the easement where there is a possibility it could act as a conductor of electricity and dangerous currents may be carried along the fence. Where conductive / metal fencing is used it must be appropriately earthed eg. the by the use of isolation panels where the fence enters or exits the easement created by the use of timber posts and/or earth electrode installed adjacent to the electricity infrastructure or easement.

- Easement Management / Network Access

The following is a summary of the usual / main terms of Endeavour Energy's electrical easements requiring that the landowner:

- Not install or permit to be installed any buildings, structures or services within the easement site.
- Not alter the surface level of the easement site.
- Not do or permit to be done anything that restricts access to the easement site without the prior written permission of Endeavour Energy and in accordance with such conditions as Endeavour Energy may reasonably impose.

Endeavour Energy's preference is for no activities or encroachments to occur within its easements. However, if any proposed works or activities (other than those approved / certified by Endeavour Energy's Network Connections Branch as part of an enquiry / application for load or asset relocation project) will encroach / affect Endeavour Energy's easements or protected assets, contact must first be made with the Endeavour Energy's Easements Officer, Philip Wilson, on business days on direct telephone 9853 7110 or alternately by email Philip.Wilson@endeavourenergy.com.au or Easements@endeavourenergy.com.au.

Please find attached for the applicant's reference copies of Endeavour Energy's:

- Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights' which deals with activities / encroachments within easements.
- General Restrictions for Overhead Power Lines.

Details of all the proposed works or activities within the easement (even if not part of the Development Application) must be referred to Endeavour Energy's Easements Officer for assessment and possible approval provided it meets the minimum safety requirements and controls. However please note that this does not constitute or imply the granting of approval by Endeavour Energy to any or all of the proposed encroachments and / or activities within the easement.

It is imperative that the access to the existing electrical infrastructure on and in proximity of the site be maintained at all times. To ensure that supply electricity is available to the community, access to the electricity infrastructure may be required at any time. Restricted access to electricity infrastructure by electricity workers causes delays in power restoration and may have severe consequences in the event of an emergency.

This is particularly important where there are poles or structures and changes in direction to a line route. In the event of fallen conductors, access to the poles to restring the power lines will be required by electricity workers with heavy vehicles, machinery and materials and is essential for restoring electricity supply.

- Prudent Avoidance

The electricity network is operational 24/7/365 ie. all day, every day of the year. The electricity industry has adopted a policy of prudent avoidance by doing what can be done without undue inconvenience and at modest expense to avert the possible risk to health from exposure to emissions from electricity infrastructure such as electric and magnetic fields (EMF) and noise which generally increase the higher the voltage ie. Endeavour Energy's network ranges from low voltage (normally not exceeding 1,000 volts) to high voltage (normally exceeding 1,000 volts but not exceeding 132,000 volts / 132 kV).

In practical terms this means that when designing new transmission and distribution facilities, consideration is given to locating them where exposure to the more sensitive uses is reduced and increasing separation distances. These emissions are generally not an issue but with Council's permitting or encouraging development with higher density, reduced setbacks and increased building heights, new development can impact on existing electricity infrastructure. Even then noise levels can vary and people perceive sounds differently so to minimise any potential exposure to intrusive noise, the siting towards the electricity infrastructure of less susceptible uses such as garages, non-habitable or rooms not regularly occupied in the dwelling / building is recommended. This will also assist in reducing exposure to EMF.

Where development is proposed in the vicinity of electricity infrastructure, Endeavour Energy is not responsible for any amelioration measures for such emissions that may impact on the nearby proposed development. Endeavour Energy believes that likewise applicants (and Council) should also adopt a policy of prudent avoidance by the siting of more sensitive uses away from any electricity infrastructure – including any possible future electricity infrastructure required to facilitate the proposed development.

Please find attached a copy of Energy Networks Association's 'Electric & Magnetic Fields – What We Know' which can also be accessed via their website at <https://www.energynetworks.com.au/electric-and-magnetic-fields> and provides the following advice:

Electric fields are strongest closest to their source, and their strength diminishes rapidly as we move away from the source.

The level of a magnetic field depends on the amount of the current (measured in amps) and decreases rapidly once we move away from the source.

Typical magnetic field measurements associated with Endeavour Energy's activities and assets given the required easement widths, safety clearances etc. and having a maximum voltage of 132,000 volt / 132 kV, will with the observance of these separation distances not exceed the recommended magnetic field public exposure limits.

- Vegetation Management

The planting of large trees near electricity infrastructure is not supported by Endeavour Energy. Particularly for overhead power lines, ongoing vegetation management / tree trimming is a significant network cost and falling trees and branches during storms are a major cause of power outages.

Suitable planting needs to be undertaken in proximity of electricity infrastructure (including any new electricity infrastructure required to facilitate the proposed development). Only low growing shrubs not exceeding 3.0 metres in height, ground covers and smaller shrubs, with non-invasive root systems (less than 400 millimetres below ground level) are the best plants to use. Larger trees should be planted well away from electricity infrastructure (at least the same distance from overhead power lines as their potential full grown height) and even with underground cables, be installed with a root barrier around the root ball of the plant.

Landscaping that interferes with electricity infrastructure may become a potential safety risk, cause of bush fire, restrict access, reduce light levels from streetlights or result in the interruption of supply. Such landscaping may be subject to Endeavour Energy's Vegetation Management program and/or the provisions of the Electricity Supply Act 1995 (NSW) Section 48 'Interference with electricity works by trees' by which under certain circumstances the cost of carrying out such work may be recovered.

Endeavour Energy's recommendation is that existing trees which are of low ecological significance in proximity of overhead power lines be removed and if necessary replaced by an alternative smaller planting. Any planting needs to ensure appropriate clearances are maintained whilst minimising the need for future pruning.

- Dial Before You Dig

Before commencing any underground activity the applicant is required to obtain advice from the **Dial Before You Dig 1100** service in accordance with the requirements of the Electricity Supply Act 1995 (NSW) and associated Regulations. This should be obtained by the applicant not only to identify the location of any underground electrical and other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

- Demolition

Demolition work is to be carried out in accordance with Australian Standard AS 2601—2001: 'The demolition of structures' as updated from time to time. All electric cables or apparatus which are liable to be a source of danger, other than a cable or apparatus used for the demolition works shall be disconnected ie. all electrical apparatus shall be regarded as live until isolated and proved de-energised by approved means.

Appropriate care must be taken to not otherwise interfere with any electrical infrastructure on or in the vicinity of the site eg. streetlight columns, power poles, overhead power lines and underground cables etc.

- Site Remediation

Endeavour Energy's Environmental Business Partner Team have advised that the remediation of soils or surfaces impacted by various forms of electricity infrastructure is not uncommon but is usually not significant eg. transformer oil associated with leaking substations, pole treatment chemicals at the base of timber poles etc. The method of remediation is generally the removal of the electricity infrastructure, removal of any stained surfaces or excavation of any contaminated soils and their disposal at a licensed land fill. The decommissioning and removal of the redundant electricity infrastructure will be dealt with by Endeavour Energy's Network Connections Branch as part of the application for the connection of load for the new development – please refer to the above point 'Network Capacity / Connection'.

If the applicant has any concerns over the remediation works related to redundant electricity infrastructure they should contact Environmental Business Partner Team via Head Office enquiries on business days from 9am - 4:30pm on telephone: 133 718 or (02) 9853 6666.

- Public Safety

Workers involved in work near electricity infrastructure run the risk of receiving an electric shock and causing substantial damage to plant and equipment. Please find attached copies of Endeavour Energy's public safety training resources, which were developed to help general public / workers to understand why you may be at risk and what you can do to work safely. The public safety training resources are also available via Endeavour Energy's website via the following link:

<http://www.endeavourenergy.com.au/wps/wcm/connect/ee/nsw/nsw+homepage/communitynav/safety/safety+brochures> .

If the applicant has any concerns over the proposed works in proximity of the Endeavour Energy's electricity infrastructure to the road verge / roadway, as part of a public safety initiative Endeavour Energy has set up an email account that is accessible by a range of multiple stakeholders across the company in order to provide more effective lines of communication with the general public who may be undertaking construction activities in proximity of electricity infrastructure such as builders, construction industry workers etc. The email address is Construction.Works@endeavourenergy.com.au.

- Emergency Contact

In case of an emergency relating to Endeavour Energy's electrical network, the applicant should note the Emergencies Telephone is 131 003 which can be contacted 24 hours / 7 days. Endeavour Energy's contact details should be included in any relevant risk and safety management plan.

I appreciate not all the foregoing issues may be directly relevant or significant to the SSI Development. However, Endeavour Energy's preference is to alert proponents / applicants of the potential matters that may arise should development within closer proximity of the existing and/or required electricity infrastructure needed to facilitate the proposed development on or in the vicinity of the site occur.

In regard to the impact on electricity infrastructure as a result of the subsequent upstream and downstream impacts of the dam raising, please find attached a copy of Endeavour Energy's 'Flood Response and Impacts on Electricity Distribution Network'. This document has been developed to provide advice to Councils regarding flood response and impacts on the electricity distribution network for the development of floodplain risk management studies and plans.

Could you please pass on a copy of this submission and the attached resources to the applicant? Should you wish to discuss this matter, or have any questions, please do not hesitate to contact me or the contacts identified above in relation to the various matters. Due to the high number of development application / planning proposal notifications submitted to Endeavour Energy, to ensure a response contact by email to property.development@endeavourenergy.com.au is preferred.

With the current easing of the COVID-19 health risk, whilst a significant number of Endeavour Energy staff are returning to the office, it may sometimes take longer than usual to respond to enquiries. Thank you for your ongoing understanding during this time.

Your faithfully

Cornelis Duba

Development Application Specialist

Sustainability & Environment

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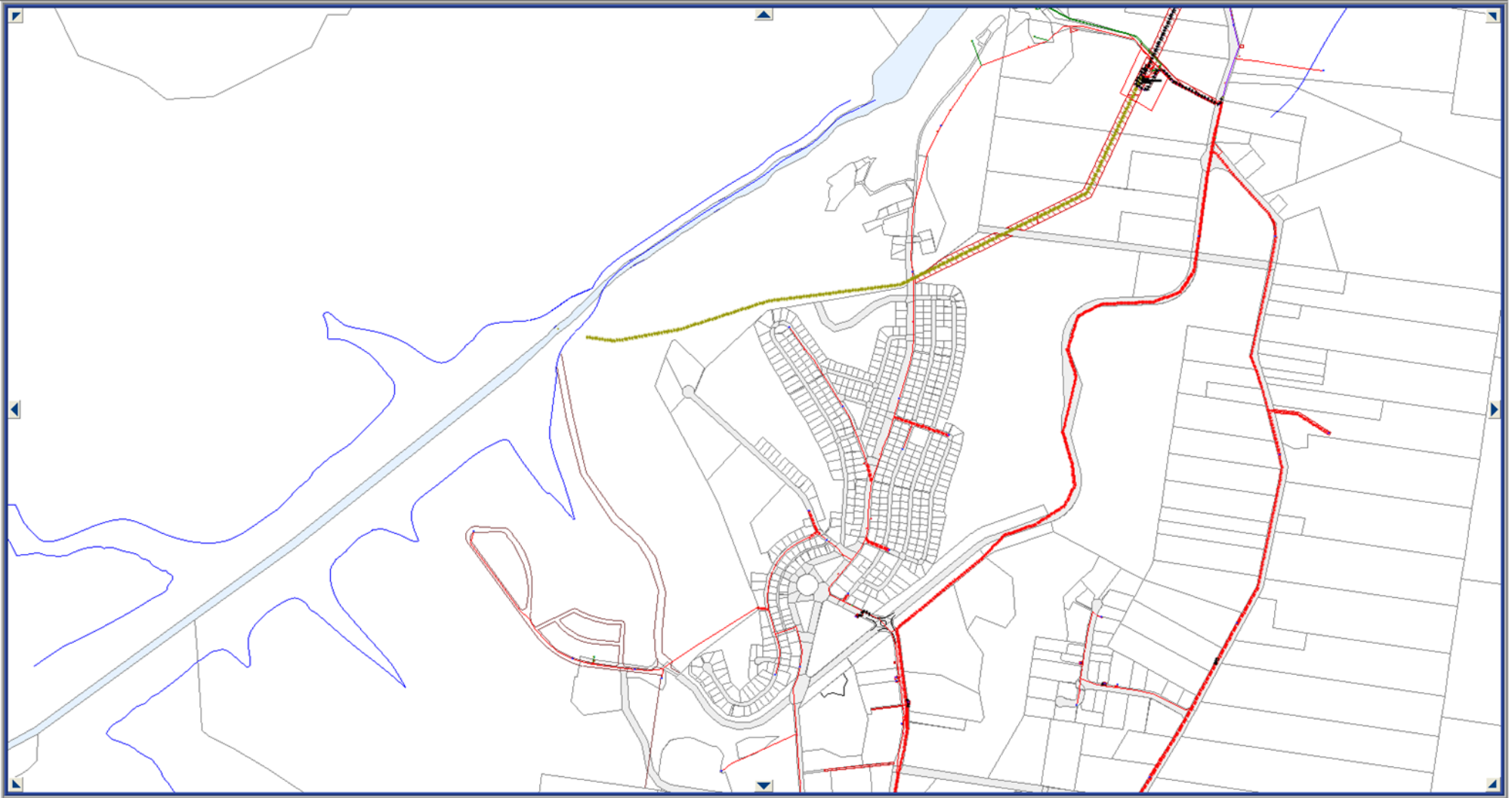
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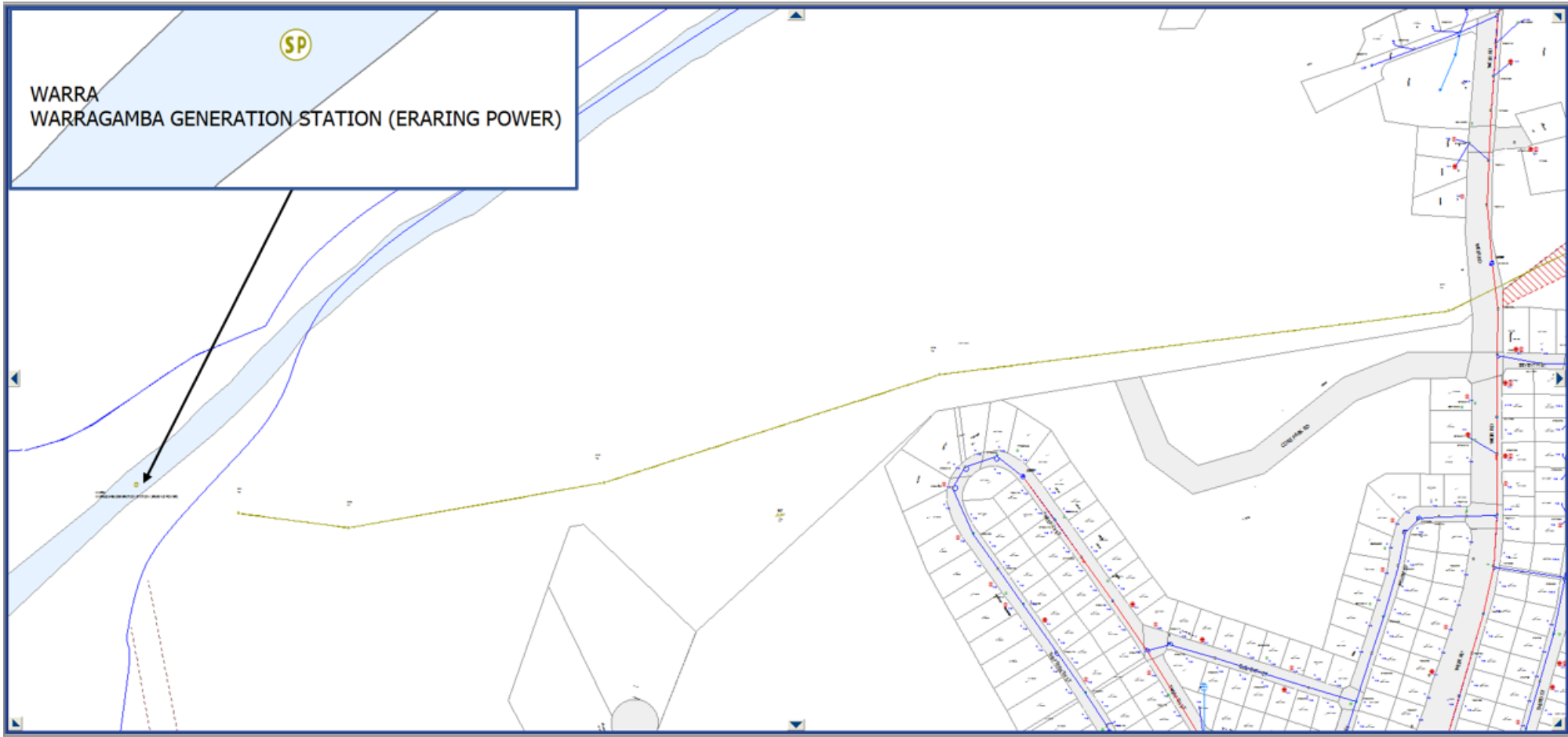


Figure 5-2. Construction area

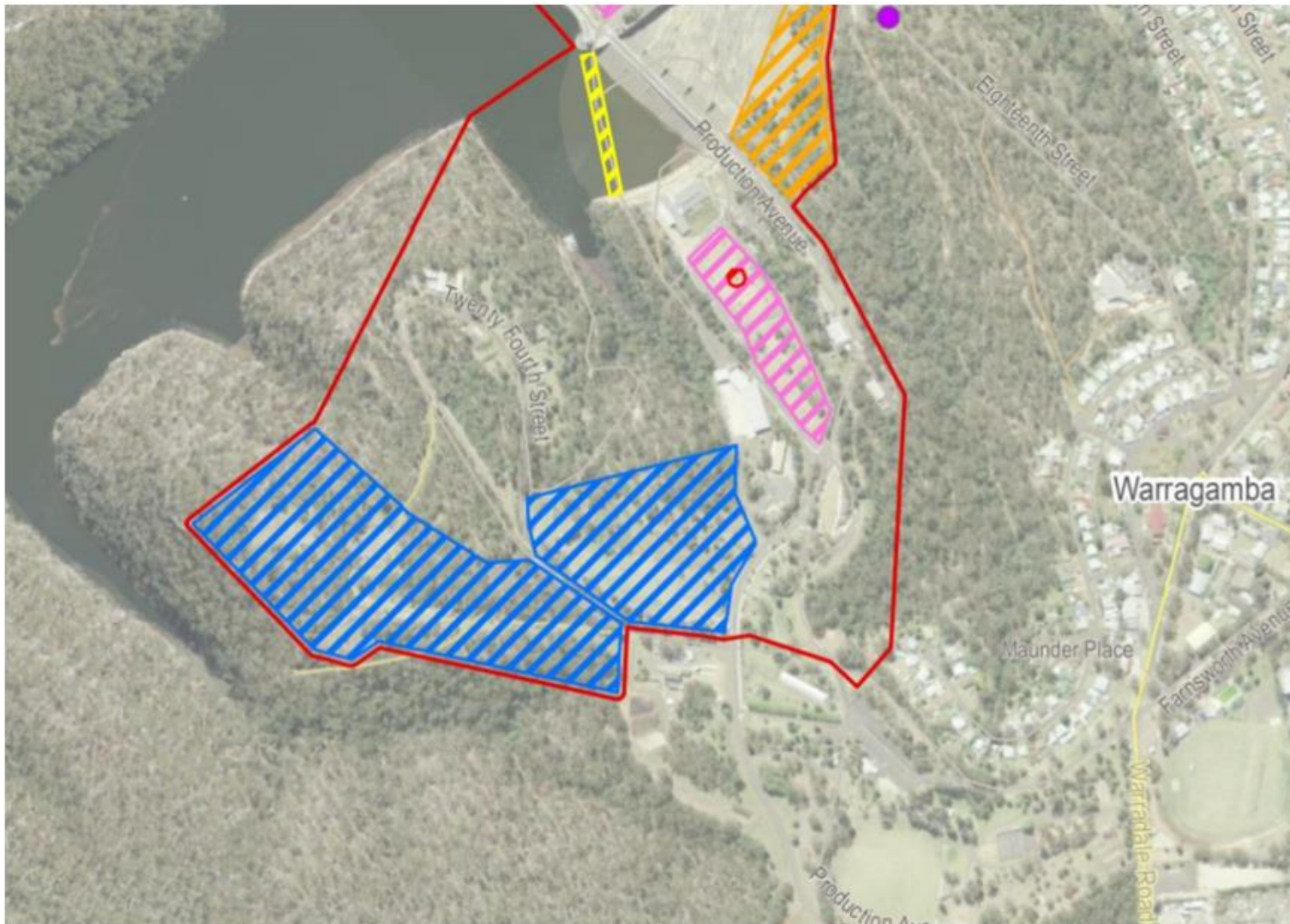




Please note the location, extent and type of any electricity infrastructure, boundaries etc. shown on the plan is indicative only. In addition it must be recognised that the electricity network is constantly extended, augmented and modified and there is a delay from the completion and commissioning of these works until their capture in the model. Easements benefitting Endeavour Energy are indicated by red hatching. Generally (depending on the scale and/or features selected), low voltage (normally not exceeding 1,000 volts) is indicated by blue lines and high voltage (normally exceeding 1,000 volts but for Endeavour Energy's network not exceeding 132,000 volts / 132 kV) by red lines (these lines can appear as solid or dashed and where there are multiple lines / cables only the higher voltage may be shown). This plan only shows the Endeavour Energy network and does not show electricity infrastructure belonging to other authorities or customers owned electrical equipment beyond the customer connection point / point of supply to the property. This plan is not a 'Dial Before You Dig' plan under the provisions of Part 5E 'Protection of underground electricity power lines' of the Electricity Supply Act 1995 (NSW).



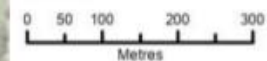




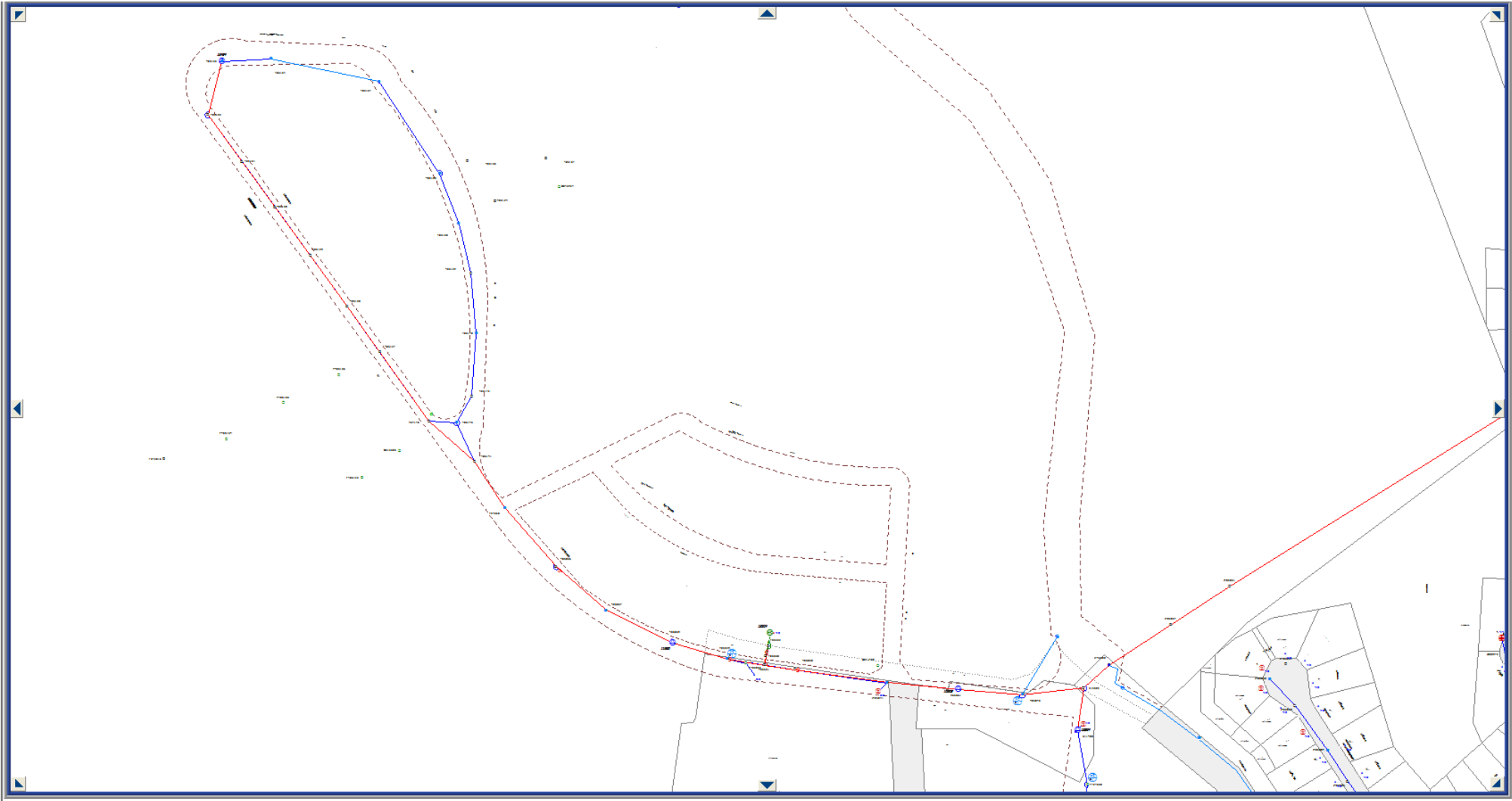
LEGEND

Construction Footprint

-  Concrete Batch Plant & Materials Storage and Handling Area
-  Clearing
-  Coffers Dams
-  Construction Zone
-  Exclusion Zone Around Fountain
-  Potential Materials Storage and Handling Area (Cleared)
-  Viewing Platform



SOURCES Roadnet MDS 2019, public_NSW_Imagery: © Department of Finance, Services & Innovation 2019, WaterNSW 2019, SMEC 2019





Production Ave

Warragamba, New South Wales

Google

Street View - Dec 2020

