

HumeLink Environmental Impact Statement

Surface Water and Groundwater Quality Impact Assessment

AUGUST 2023

What is an Environmental Impact Statement (EIS)

The HumeLink project has been classified by the NSW Government as Critical State Significant Infrastructure (CSSI). All CSSI development applications must be accompanied by an Environmental Impact Statement (EIS). The purpose of the EIS is to identify and assess the potential environmental, economic and social impacts of the project to help government agencies, relevant authorities, community and stakeholders make an informed decision or provide an informed submission on the merits of the project.

EIS project footprint

The [HumeLink project](#) extends from the existing Wagga Wagga 330 kV substation to the existing Bannaby 500 kV substation and the future Maragle 500 kV substation.

The EIS footprint is based on an indicative 200 metre corridor and is defined as the area directly affected by the construction and operation of the project. It includes the indicative location of project infrastructure, the area that would be directly disturbed during construction and any easement required during operation.

The final location of all proposed infrastructure will be confirmed during detailed design.

HumeLink planning approvals and EIS

As part of the planning approval process for HumeLink, Transgrid is preparing an EIS in accordance with the [Secretary's Environmental Assessment Requirements \(SEARs\)](#). The SEARs identify matters which must be addressed in the EIS and essentially form its terms of reference. It includes the requirements from both the NSW and Commonwealth Governments.

A surface water and groundwater technical study was completed as part of the HumeLink EIS to inform the project's surface water and groundwater quality assessment. Details about the study are included in this fact sheet.

Can I provide feedback?

Once the EIS is finalised, the NSW Department of Planning and Environment (DPE) will place it on exhibition and call for public submissions. Feedback on the EIS can be provided directly to the DPE during this public display period. More information on how to make a submission will be provided closer to the EIS exhibition period.

To learn more about the HumeLink EIS, please visit the [EIS Frequently Asked Questions](#) on our website.



Surface water
and groundwater

HumeLink Environmental Impact Statement Specialist Studies



Aboriginal heritage



Electric and magnetic fields



Social



Agricultural land



Greenhouse gas and climate change risk



Soils, geology and contamination



Air quality



Historic heritage



Surface water and groundwater



Aviation safety



Hydrology and flooding



Sustainability



Biodiversity



Landscape character and visual amenity



Traffic and transport



Bushfire risk



Land use and property



Economic



Noise and vibration



Surface Water and Groundwater Quality Impact Assessment

As part of the HumeLink EIS, Transgrid undertook a surface water and groundwater quality impact assessment. The assessment included:

- a desktop review
- field investigations to understand surface water and groundwater conditions within and surrounding the project footprint
- assessment of potential impacts
- identification of mitigation measures.

What does this study assess?

The surface water and groundwater study area includes the project footprint and a one-kilometre buffer. The study area includes four major surface area catchments: the Murrumbidgee River, the Upper Murray River, the Lachlan River and the Hawkesbury-Nepean River. The assessment included:

- review of legislation, guidelines and policies
- gathering data and desktop analysis
- conducting site visits

- identifying relevant requirements and water quality objectives under the relevant guidelines and policies
- assessing the significance of potential construction and operation impacts on surface water and groundwater quality within the study area
- undertaking the Minimal Impact Considerations Assessment required under the *NSW Aquifer Interference Policy*
- undertaking preliminary assessments in accordance with the *Neutral or Beneficial Effect of Water Quality Assessment Guideline 2022* (WaterNSW, 2022) for the areas within the Sydney Drinking Water Catchment
- identifying mitigation measures to address potential impacts.

Sensitive receiving environments include key fish habitats and threatened aquatic species, groundwater dependent ecosystems, wetlands and groundwater users.

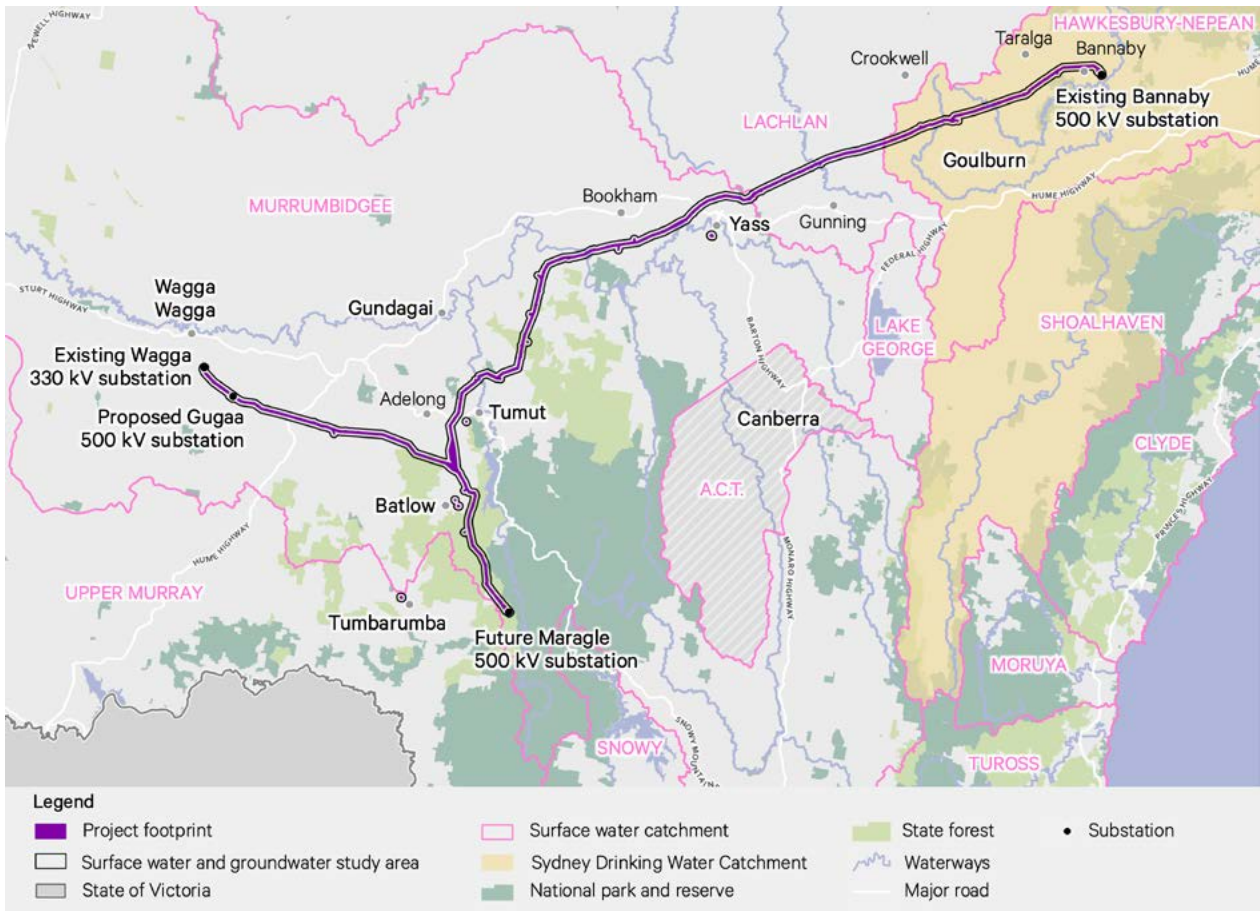


Figure 1: Surface water and groundwater study area.



Potential construction impacts

Water supply and management

During construction, the project will require water for dust suppression, concrete mixing and civil works. Dust suppression will use the most water.

Water will be used responsibly. Where possible, non- potable water will be used and will be sourced from construction sedimentation basins and farm dams, in agreement with the relevant landowners.

Potable water will be required at the worker accommodation facility and the concrete batching locations and will be sourced from local council town water supplies following their approval.

Potable water is also known as drinking water.

The project will generate wastewater at worker facilities, construction compounds and worker accommodation. Wastewater generated by the project will be collected in tanks or field portaloos and disposed of at local wastewater treatment plants.



Neutral or beneficial effect assessment

A Neutral or Beneficial Effect on Water Quality (NorBE) assessment is applicable for areas within the Sydney Drinking Water Catchment only. Approximately 65 kilometres of the project footprint between Bannister and Bannaby is situated within the Sydney Drinking Water Catchment, and therefore a NorBE assessment was undertaken for this portion of the project. The preliminary assessment has concluded that the project is expected to have an overall neutral impact on water quality during construction.

Water quality, erosion and sedimentation

During construction, surface water quality may be impacted through construction activities such as:

- vegetation clearing
- excavation and earthworks
- stockpiling of soil and construction materials
- accidental spillages.

The significance of the impact will vary depending on the type of activity and its proximity to waterways.

Geomorphology

River geomorphology relates to the form, shape, size and structure of waterways. The geomorphic condition of a waterway is dependent on the water flows, vegetation, soil types and aquatic biodiversity which can be affected by changes to catchments and waterways.

Geomorphology impacts of the project on waterways can result from excessive dirt and runoff next to and into waterways and/or direct disturbance to waterways. Some direct disturbance may occur due to installation of waterway crossings. Geomorphology impacts were assessed based on the existing condition of the river, inherent fragility (sensitivity to change) and likelihood of recovery. Waterway crossings will be installed in line with all relevant approval and environmental conditions.

The installation of waterway crossings for vehicle and equipment access may contribute to temporary changes to flow path, channel shape and flow conditions. Impacts on geomorphic conditions from construction activities are anticipated to be short-term and limited.

Groundwater

Construction activities such as vegetation removal, compaction of dirt, earthworks, concreting, water use and disposal may impact on groundwater flow paths or recharge levels and quality. While impacts to groundwater may occur during construction, these are expected to be minimal.

Flow path refers to the route which water draining from an area will take.

Groundwater recharge is the process where water moves downward from surface water to groundwater.



Pictured: A water cart is used to control dust on construction sites.



Potential operational impacts

Water supply and management

Non-drinking water would be required during operation for maintenance activities and substation operation. Annual demand from each substation will be very low, and therefore the impact on water availability is expected to be negligible.

Water quality, erosion and sedimentation

Impacts associated with water quality, erosion and sedimentation during operation of the project would vary depending on the location and proximity to sensitive receiving environments.

Geomorphology

Geomorphology impacts from operation of the project would be limited to the Bannaby 500 kV substation and permanent waterway crossings. Some waterway crossings may need to remain after construction is complete which may impact the water flow and bank stability. The magnitude of impact will be dependent on the number of crossings, bank conditions after construction, flow rates and location.

Groundwater

Operational impacts to groundwater including changes to groundwater flow paths, levels, quality and impacts to existing users are expected to be localised and low.



Proposed management measures

A range of mitigation and management measures are proposed to avoid or minimise the identified potential surface water and groundwater impacts. These include:

- developing and implementing a plan to manage potential impacts to soil and water quality
- incorporating scour (washout) protection in the design of infrastructure sitting within waterways to minimise potential impacts on flow conditions and natural functioning of the waterway, where possible
- monitoring water quality at sensitive waterways during construction to detect any changes in water quality
- developing water supply and management agreements between the delivery partner and relevant water users and suppliers
- assessing alternative construction methodologies as required to minimise impacts to groundwater dependent ecosystems and existing groundwater users (if identified to be directly impacted during detailed design).

As the project progresses through the development of the EIS and detailed design, more information about the identified impacts to surface water and groundwater, as well as the proposed mitigation measures, will become available.

For information on Hydrology and Flooding please read the [Hydrology and Flooding](#) fact sheet.



Pictured: Swale drain, similar to what may be constructed on HumeLink, used to manage surface water flows.



Pictured: Water storage pond located near construction worker accommodation at Project Energy Connect west of Wagga Wagga.

Connect with us

Transgrid is committed to working with landowners and communities through the development of HumeLink. Please connect with us for more information.



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