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Development Application - Statement of Environmental Effects

Crown Land – Duxton Viticulture Installation of a 3rd Pump at an Existing Pump Station

Euston

May 2022

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Introduction

Duxton Viticulture Pty Ltd (Duxton) is seeking development consent to install a new diesel-powered river pump and 30m section of mainline adjacent to its existing pumping infrastructure located on the north bank of the Murray River.

The pump site location is approximately 30km east of Euston. The proposed pump station will supply irrigation water to Duxton's vineyards located adjacent to the Murray River.

The original pump station comprising two electric powered pumps has been operational since approximately 2004. It does not benefit from a Crown Land Licence to occupy the site and a Crown Land Application and Consent Authority Application are submitted with this report for consideration.

The proposed works are for the installation of a diesel-powered irrigation pump to be constructed adjacent to existing irrigation infrastructure. The additional pump is required to complement the existing ageing infrastructure and offer a redundancy solution should the electric components fail or require scheduled maintenance. The pump will deliver water to an existing mainline with the connection point 30m to the north-west of the proposed pump.

The objective of this report is to support an application for Landowners Consent and subsequent Development Application to be submitted to Balranald Shire Council.

Following consideration of the Balranald LEP, SEPP's, integrated approval requirements and other documents, the proposal to construct the pump adjacent to existing pumps is worthy of support. It will not have any significant impacts upon the environment or adjoining land. The proposal is consistent with the Balranald LEP and should be supported through the issue of development approval.

Location of works

The site is located on the northern bank of the Murray River, on Lot 2 DP 1252366 within the Western Lands Division. The site is approximately 30km east of Euston NSW.

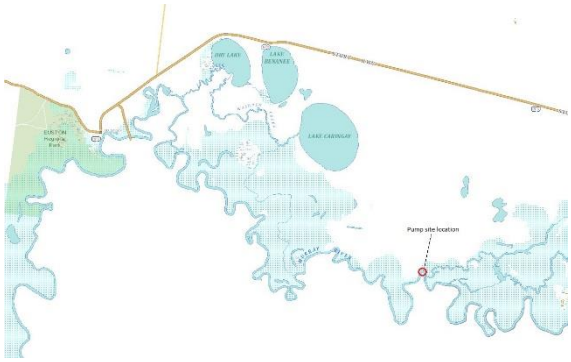


Figure 1 *The site is located 30km east of Euston.*

The proposed activity area is adjacent to an operational pump station located on the northern bank of the Murray River. The nearest residential dwelling is located on the proponent's land approximately 700m north of the proposed pump station.

Above the top of the high bank the land is Western Lands Lease (WLL) 11340 with Duxton as the leaseholder. Below the top of the bank is assumed to be Crown Land.

The location of the proposed pump station has been heavily modified by the construction of the existing electrical pumping infrastructure, access tracks and a connecting mainline from new pumping infrastructure 30m upstream installed in 2018.

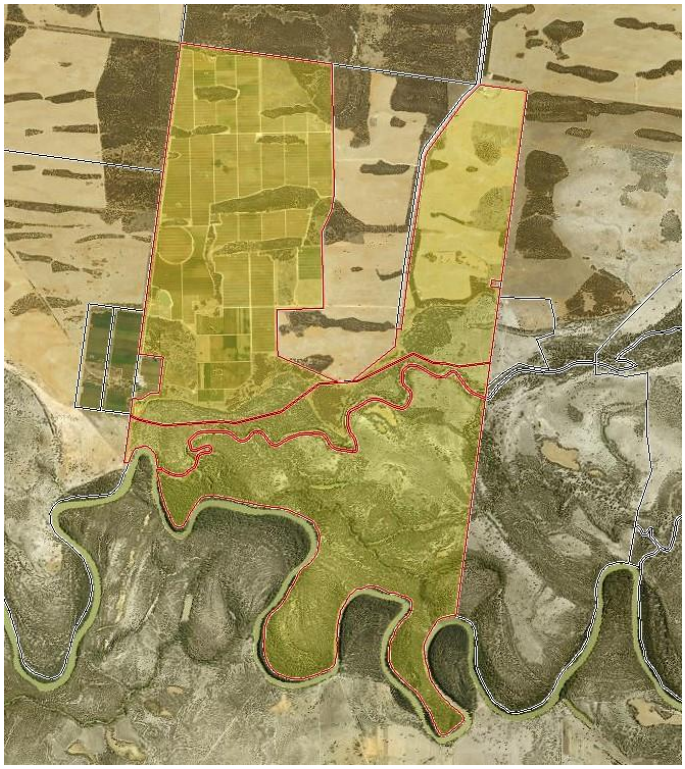


Figure 2 *Lot 2 DP 1252366*

Figure 3 *Works site location*

Figure 4 *Existing electrical pump station*

Proposal

Scope

The proposed works include the construction of a new pump station and a 30m section of mainline to connect to an existing mainline that supplies water to an on-farm dam. The proposed construction will be adjacent to existing infrastructure owned and operated by Duxton.

Although the property boundary of Lot 2 DP 1252366 extends to the waterline on the zoning map (Figure 5) it is assumed this is a mapping error and that the majority of construction will occur on Crown Land. The works will include installation of a concrete slab and footings; driving steel pylons into the riverbank and below the waterline and the erection of steel framework to support the suction column, pump, and diesel engine.

Fuel for the diesel pump will be supplied from existing double bunded fuel tanks located 25m upstream which also service a Duxton owned pump site which was constructed in 2018. The fuel lines will be buried in previously disturbed ground which is the same alignment as the mainline connecting the old and new pump stations.

The proposed works at the site will require the use of heavy plant and equipment which will access the site from the riverbank. A works barge will also be required to drive the lower two piles from the river.

The immediate work area has previously been heavily disturbed by the construction of the adjacent electric pumping station and the alignment of a delivery mainline that passes directly behind the location of the concrete slab of the proposed construction and joins the existing delivery manifold of the electric pump installation. All proposed works will occur on these previously disturbed areas.

A Construction Environmental Management Plan (CEMP) for the construction works is appended to this document as Appendix 1.

Project Justification

The existing infrastructure is ageing, and the applicant wishes to take measures to secure reliable delivery of irrigation water to the permanent viticultural plantings. The proposed works are therefore considered vital to ensure the ongoing viability of the viticultural enterprise.

Plan of works

The proposed pump station will consist of a single Batescrew turbine pump model 14MB powered by a John Deere 6090H2 diesel engine. The angled turbine pump and engine will be supported on a 1.6m high steel framed platform on the high bank of the river.

The pump column will be 355mm diameter and will be supported on steel rails attached to 4 cylindrical steel piles driven into the riverbank and bed to a depth of 2 - 2.5m. The height of the platform will be at 55.4m AHD, which places the water sensitive components above the 1:100-year flood level.

The steel frame supporting the pump and motor will be mounted on a 4.3m x 5.0m concrete slab which will be anchored to the riverbank by two concrete footings.

An existing well-formed track accessible only from the proponent's property will be used to access the existing and proposed new pump.

A broad outline of the works to be performed at the site is listed below.

Stage 1: Site preparation

The initial phase of the works will see the installation of measures to ensure that the environmental and ecological values of the site and its environs are preserved.

Areas required for parking and laydown will be marked out and clearly identified. There is ample open area behind the existing infrastructure and adjacent to the formed track for laydown of materials.

Stage 2: Driving of piles into the riverbank

Marking out the locations and driving of four piles (steel tubes) on the sloping bank and in the river. The piles will be driven by a hydraulic pile-driver attached to a crane operating from the bank. The lower two piles will require driving from a works barge in the river.

Stage 3. Pour concrete slab

Two 500mm diameter holes will be augured into the top of the high bank to a depth of 2m to act as footings for the concrete slab. Formwork will be constructed to box up the concrete slab to support the pump and engine frame and concrete will be poured into the footings and formwork to tie the structure together.

Stage 4. Construct pump platform and rails for suction column

A steel platform 1.6m high will be constructed to hold the pump and motor and will be affixed to the concrete slab. A steel rail will be affixed between the existing piles and newly inserted piles to support the suction column and pump.

Stage 5. Installation of Engine, Gearbox and Pump

Installation of the diesel engine, gearbox, column and pump will be achieved using a crane positioned on the high bank. The crane will be able to operate from the formed track.

Stage 6 Connecting to the existing mainline

Immediately on exiting the pump station, the subsurface mainline will run in a northerly direction for 5m before changing alignment and following the direction of an existing access track before connecting to an existing 450mm mainline. The trench will be excavated to a depth of 1m and will follow the alignment of the formed track – see Figure 4.

Stage 7: Commissioning and clean-up

When all connections have been completed the new pump will be run up to pressure to ensure that all flanges, gaskets, and packings are water-tight and that all controls and telemetry are working to designed specifications.

Figure 5 *Alignment of delivery pipe*

Site Rehabilitation Plan

Duxton have a no plans to discontinue irrigation pumping at the site, however, in the unlikely event that this should occur, a site rehabilitation plan has been developed to return the site to as close to its pre-development condition as possible.

Works included in the rehabilitation plan include the following:

- De-energising of infrastructure
- Removal of above ground infrastructure. This includes all of the pumping and pump control components. It also includes all of the support gantry and elevated support platform.
- Removal of the concrete slab
- Site revegetation and management

A copy of the Site Rehabilitation Plan is appended as Appendix 2.

Planning controls

Definition

The works are defined as a Water Supply System for which the Balranald LEP provides the definition as:

any of the following:
(a) a water reticulation system,
(b) a water storage facility,
(c) a water treatment facility,
(d) a building or place that is a combination of any of the things referred to in paragraphs (a)–(c).

Zoning

The Zone map for this area (Figure 6) indicates the new pump will be in Zone RU1, however this document has been written under the premise that this is a mapping error and that the works will occur in the W1 Natural waterways zone.

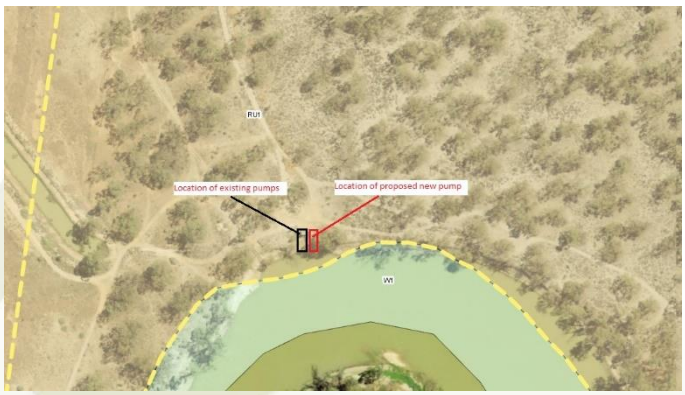


Figure 6 *Zone map*

The objectives of zone W1 is:

To protect the ecological and scenic values of natural waterways.
To prevent development that would have an adverse effect on the natural values of waterways in this zone.
To provide for sustainable fishing industries and recreational fishing.

Development consent is required under zone W1 for the Water Supply System.

Other relevant clauses from the LEP are as follows:

- 6.2 Riparian land, waterways, and groundwater vulnerability
- 6.5 Development on riverfront areas
- 6.6 Development on riverbeds and banks
- 6.7 Earthworks

An assessment of the relevant clauses is outlined below

Additional mapping

The land is affected by the following mapping in addition to the zoning of the land.

- Riparian lands and watercourse
- Natural resources sensitivity

State Environmental Planning Policy (Biodiversity and Conservation) 2021

This policy applies to the area covered by the Balranald Shire Council and is applicable in the assessment of this proposal. Chapter 5 River Murray Lands is applicable to this development, the objectives of which are:

(a) to ensure that appropriate consideration is given to development with the potential to adversely affect the riverine environment of the River Murray, and
(b) to establish a consistent and co-ordinated approach to environmental planning and assessment along the River Murray, and
(c) to conserve and promote the better management of the natural and cultural heritage values of the riverine environment of the River Murray.

The Policy outlines specific principles and planning controls that apply to this proposal and consultation which is required under the Policy. The proposed development is not specifically listed in the Planning Control and Consultation Table in Clause 5.12.

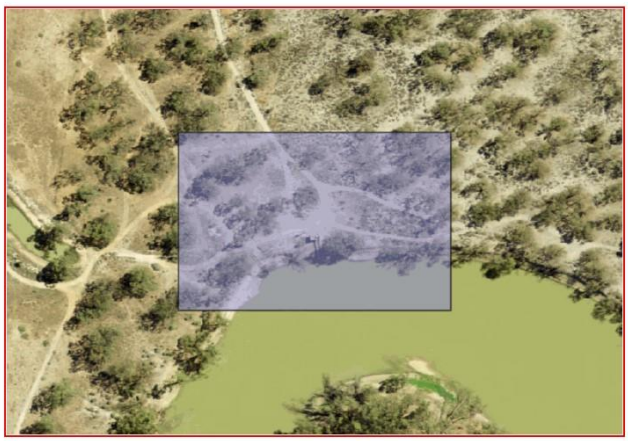
Aboriginal cultural heritage

All Aboriginal cultural heritage is protected by the NSW National Parks and Wildlife Act 1974. Responsibility rests with the proponent of a development to demonstrate that due care and diligence have been taken to identify and avoid impacts on archaeological sites through construction works.

A search of the AHIMS database was conducted and the search revealed no records of Aboriginal sites, places or heritage objects have been recorded or declared at or near the location of the activity area.

An Aboriginal cultural heritage assessment was conducted in the activity area by Dr Matt Cupper (Landskape Archaeology) in October 2017 (Appendix 3). This report was generated for the construction of a pump site approximately 30m upstream of the proposed development.

Dr Cupper has confirmed by email (Appendix 4) that the 2017 activity area included the area for the current proposal, and his advice is that the conclusions and recommendations from the previous report are valid, and that no Aboriginal cultural heritage will be impacted by the proposed development.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

Figure 7 *AHIMS search result for the site*

Water Management Act

A controlled activity approval authorises its holder to carry out a specified controlled activity at a specified location in, on or under waterfront land. Under the Water Management Act 2000 (WM Act), a controlled activity means:

- the erection of a building or the carrying out of a work (within the meaning of the Environmental Planning and Assessment Act 1979), or
- the removal of material (whether or not extractive material) or vegetation from land, whether by way of excavation or otherwise, or
- the deposition of material (whether or not extractive material) on land, whether by way of landfill operations or otherwise, or
- the carrying out of any other activity that affects the quantity or flow of water in a water source.

Crown Lands Act

The area of the pump site does not benefit from a Crown Lands License and an application will accompany the application for Landowners Consent.

Site and Surrounding Area

Locality

The pump site is in the Murray Geological Province and the Riverina Bioregion and the Robinvale Plains IBRA sub-region.

The area of the riverbank in the vicinity of the proposed development has been heavily modified in the past by the construction of the original pump site, powerlines, mainlines, access track and associated irrigation infrastructure.

There is a well-formed access track immediately behind (north) of the proposed pump station that is accessible only via the proponent's vineyard which is located to the north and north east of the river pump site. Tillara Road provides vehicle access to the land which connects to the Sturt Highway.

Subject site

The vegetation immediately surrounding the pump station is dominated by River Cooba (*Acacia stenophylla)* and a number of scattered River Red Gum (*E. camaldulensis)* on or near the top of the bank. There is very little understory vegetation in the area of the proposed development due to recent ground disturbance arising from the installation of irrigation infrastructure and access track.

The woodlands on the floodplain behind the pump station are dominated by Black Box (*E. largiflorens)* and the understory vegetation consists of Tangled Lignam (*Duma florulenta),* and Hedge Saltbush (*Rhagodia spinescens).*

The riverbank within the construction area is devoid of native vegetation. There is a River Cooba (*Acacia stenophylla)* within 3.5m of the existing infrastructure, however the piles and rails will not come within 1m of this tree.

The area has been subject to previous high-level disturbance during the initial construction of the pump station in 2004 and the installation of a 30m sub-surface mainline across the top of the high bank connecting the manifolds of the electric pumps with a new diesel-powered pumps site constructed in 2018.

Figure 8 *Site infrastructure and vegetation.*

Figure 9 *Alignment of connecting manifold*

Planning assessment

Policy context

The site is located within the W1 Zone – Waterways. Consent is required to carry out works within this zone. To support the provision of consent, a number of aspects connected to the proposed works have been considered.

Aboriginal Cultural Heritage

The works area has been subject to previous high-level disturbance during the initial construction and subsequent operation and maintenance of the original pump station.

More recently, the area has been disturbed by the installation of an underground manifold joining the electric pumps to the newly installed (2018) diesel pump installation approximately 30m upstream.

Disturbance above the high bank will be limited to two 500mm diameter footings to be augured into the top of the high bank to secure the concrete slab. This area has already been disturbed by the installation of the underground connecting manifold.

Disturbance on the bank will be limited to pile driving four piles with a hydraulic driver.

A search of the AHIMS site revealed that there are no cultural heritage objects recorded at or near the site.

Additionally, an Aboriginal cultural heritage assessment conducted in the area for a previous development (Cupper, 2017) included the activity area of this development and concluded that there were no items of Aboriginal cultural heritage that would be impacted by the development.

Native vegetation

Vegetation in the area is classified as PCT ID 13 – Black Box – Lignum woodland wetland of the inner floodplains in the semi-arid climate zone.

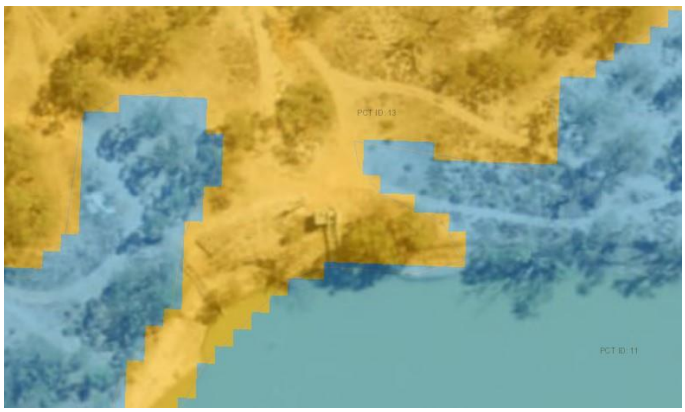


Figure 10 *Plant Classification Type*

The following species were identified in proximity to the activity area but will not be impacted by construction works.

Scientific Name	Common Name	Location	EPBC	NSW
Acacia stenophylla	River Cooba	River bank adjacent to proposed slab	No	No
Chenopodium nitrariaceum	Nitre Goosefoot	Behind existing concrete slab	No	No
Muehlenbeckia florulenta	Tangled Lignum	Downstream of existing pumps	No	No
Rhagodia spinescens	Thorny saltbush	Behind existing pumps	No	No

Table 1 *Native species identified proximal to the proposed development*

The proposed pump site is relatively clear of understory species but has several River Cooba trees proximal to the activity area, the nearest of which is 3.5m from existing infrastructure. Branches from the larger trees overhang the activity area however, construction activities can proceed without impact.

The alignment of the 30m section of delivery mainline will traverse ground previously disturbed by the installation of the subsurface manifold joining the old and new pump stations. The mainline will then follow the alignment of access track which is devoid of vegetation.

The overstory present was predominantly River Cooba, mid and understory species were absent, and no aquatic plants were observed in the river in the vicinity of the pump site. No logs or woody debris was visible in the river at the location of the proposed new pump.

No native vegetation is expected to be impacted by the proposed activities and therefore a Boset report has not been appended for this proposal.

Fauna impacts

No trees will be removed for this project and excavation will be limited to the two augured footings for the concrete slab. The site is already heavily disturbed and contains three diesel-powered pumps and two electric powered pumps in a 30m stretch of river and as such impact on local fauna populations is expected to be insignificant.

State Environmental Planning Policy (Biodiversity and Conservation) 2021

The State Environmental Planning Policy (Biodiversity and Conservation) 2021 sets out principles that need to be considered in undertaking any development on land that the plan applies to. A response to the principles is offered below.

Access.

- Public access to the waterway and the foreshore of the Murray River is not being altered as a result of these works. This is due to the existing pumping infrastructure, suctions and pipelines being in place on site. Access for maintenance and operational requirements will remain unchanged following these works

Bank disturbance

- The works proposed will not impact the shape of the bank. No excavation or deposition will occur on the bank of the river.
- The use of driven piles as footings for the new structure is a low impact/low disturbance method of construction that will not alter the stability of the site.
- No vegetation will be adversely impacted because of these works.

Flooding

- The site is subject to inundation by floodwater, but the works will not be adversely impacted by floods of any magnitude.
- The proposed development of the site will not deprive the surrounding ecosystems of the benefits of periodic flooding.

- There will no increased hazards or risks from flooding because of this proposed development. The proposed development will not have any material impact on flood events, nor will it have any impact on risk from flooding.
- There will be no redistributive effects on flooding because of the proposed works. This development will have no impact on flooding in the river.
- The proposed works will not impact any other land in the vicinity. All adjoining land consists of the riverbank and is likewise subject to the same flood events.
- There will no impact on the ability of essential facilities or services to have flood free access
- There will be no change to the risk of pollution during flooding because of this proposal.
- The proposed works will have no measurable impact on floodwater flow velocity or the intensity and magnitude of flood impacts.
- The design of this infrastructure ensures that it will not be at risk even in a 1:100-year flood event.

Land degradation

- The works will be undertaken to limit the degradation and erosion to the land. There will be excavation within the riverbank and bank disturbance will be limited to driving of piles.
- No native vegetation will be removed as part of the proposed development and therefore will not contribute to an increase in erosion.
- The proposal will have no impact on potential pollution of surface water, groundwater, salinisation and soil acidity.

Landscape

- No vegetation will be removed because of these works. Tree roots that have become exposed by the erosion of the bank will be covered and protected during construction activities.

River related uses

- The development has an intrinsic relationship with the river. The site is the only source of irrigation water, and it cannot be located elsewhere.

Settlement

- The proposal does not constitute new or expanded settlement.

Water quality

- The works will not result in increased risk to water quality by facilitating the addition of sediment, salts, nutrients or hazardous substances.
- The CEMP identifies that a silt fence will be erected during construction to prevent soil or other debris from entering the river.
- No stockpiling of materials is required for the proposed construction activity.
- Fuel for the diesel engine will be stored in existing double-bunded fuel tanks.

Wetlands

- The works are not located on wetlands and will not have any impact on any wetlands.

Balranald LEP

The site is located in Zone W1 Natural Waterways. The proposed works are consistent with the relevant objectives of this zone, including:

- *To protect the ecological and scenic values of natural waterways*

The pump site is an addition to existing infrastructure and the proposed works will have minimal additional impact on the ecologic and scenic values of the riparian environment. No terrestrial or aquatic vegetation will be impacted by the proposed activity and the appearance of the site will largely be the same.

- *To prevent development that would have an adverse effect on the natural values of waterways in this zone*

The proposed works will not cause additional impacts from development at the site. The works are connected with an existing site and the degree of development will not be altered by these works.

- *To provide for sustainable fishing industries and recreational fishing*

There will be no adverse impacts on fishing because of this proposal at this location.

Clause 6.7 relates to earthworks and seeks to ensure they do not have a detrimental impact upon the environment. Earthworks will be restricted to the auguring of footings and boxing of the concrete slab above the high bank.

The clause requires consent for earthworks and in response to the items that Council must consider the following is offered:

- Drainage patterns of the existing environment will not be altered as a result of the works proposed.
- The land is used by horticultural development for water supply purposes, and this will continue for the foreseeable future. Therefore, future alternate use or development is not contemplated for the immediate surrounds.
- No fill material will be removed or added to/from the riverbank. The works will preserve the existing bank profile as far as possible.
- There will be no impact on the adjoining land because of the works proposed.
- In the event aboriginal cultural items are uncovered during construction, the relevant organisations will be notified. Based upon the significant disturbance previously undertaken and the previous Aboriginal cultural heritage assessment interaction with cultural heritage objects is considered highly unlikely.
- The possible impacts upon the Murray River have been considered above.

Consideration of riparian land and the riverbed and bank is provided for at Clause 6.2 and 6.6 of the LEP. The items requiring consideration are similar to those provided for in the SEPP (Biodiversity and Conservation) however a response to the additional items is provided.

Consideration of impacts to native flora and fauna is provided elsewhere. The works will be undertaken in as an environmentally sensitive manner as possible.

The works will not interfere with the river itself and will not have any impact upon the free passage of fish.

Potential Impacts

Below is a list of the potential impacts that have been identified during the planning phase for this project. The list also includes the steps that have been taken to minimise these impacts.

Tree removal or damage

The site is largely devoid of vegetation so impacts to vegetation will be minimal. There will be no need to remove, lop or cause any harm to vegetation at the site.

Visual and aesthetic impact

The site is an existing pump station. The addition of the diesel pump will result in minimal changes to the site's visual impact. Other pump stations of similar design and appearance are located close by.

Traffic impacts

There will a small increase in traffic during the construction phase of the project but no long-term traffic impacts for any roads in New South Wales.

Impact on flow paths

There will be no impacts on any river flows as a result of this proposal.

Waste management

The production of waste will be limited to the construction phase of the project. During the works, the management of waste will be a priority. Workers at the site will be required to remove all waste materials from the site at the conclusion of each working day.

Siting impacts

The pump station will not interrupt views of, or disrupt access to, the river and its environs.

Navigation

A work barge will be operating in the Murray River for a short period of time to drive the lower two piles, and additional controls will need to be implemented to ensure the safety of other river users.

The finished structure will have the same reach into the river as the existing two pump columns and therefore will not represent an increased navigation hazard. Reflectors will be mounted on upstream and downstream sides of the structure as per relevant NSW regulations.

Visual appearance

The visual impact of the infrastructure at the site will reflect its function and the additional pump will not change the aesthetics of the local landscape. The site is an existing irrigation pump station, and the proposed works will not substantially alter this fact.

Design impacts

There will be minimal changes to the site's appearance by the addition of a third pump. The site is an existing pump station and the infrastructure at the site reflects this use.

Noise, vibration, dust, and other emissions

The pump station is located in a relatively remote area of New South Wales. There are no residences that are close enough to detect noise from the operating pump station. There will be no detectable vibration or dust from the operating pump station.

Ongoing operation of the diesel pump will generate exhaust fumes however it is not anticipated that these will have any impact on ambient air quality over and above the day-to-day emissions generated by farm machinery on the property. The diesel pump is there for risk mitigation and will only run when existing infrastructure fails or requires service and maintenance.

Construction Impacts

The proponent will implement a number of control measures to ensure that the potential impacts to the site as a result of construction activity will be controlled and minimised. These include the following:

Silt fencing

Silt control fencing will be erected at the site. The fence will be placed along the riverbank, close to the water's edge. This will prevent any loose soil or any other debris from entering the river. Any material trapped by the fence will be picked up by and disposed of appropriately.

Vegetation impact

The project will have minimal impact on vegetation. No vegetation will be cleared, trimmed, or lopped at any time during the works.

Fauna impact

Impacts on faunal species as a result of the project will be minimal. There will be no impact with the bed of the river. No snags or logs will be removed from the water.

Rubbish and waste

Contractors will be required to remove all wastes from the site each day. No waste of any type will be permitted to be stored at the site.

Noise

Noise emissions will be generated by machinery including a hydraulic pile driver and excavator during the brief construction period.

The impact on sensitive receptors (700m away on the proponents farm) will be mitigated by confining construction activity hours to the EPA recommended times of 7am to 6pm Monday to Friday and 8am to 1pm on Saturday.

Dust, vibration, and other emissions

It is not expected that construction activity will result in emissions of dust, vibration, or any other type of emissions.

Conclusion

In light of the information presented in this document the proposed development responds well to the opportunities and constraints of the site and is considered to be consistent with the relevant planning provisions.

The proposal is appropriate for the site for the following reasons:

- The works are required for risk mitigation purposes and are associated with existing irrigation infrastructure
- There will be no impact on vegetation.
- The works constitute an effective and appropriate response to the site's characteristics and constraints.
- The plan of works has been developed after consideration of the likely impacts upon the locality in general and the Murray River in particular.
- The proposal is consistent with Balranald LEP.
- The proposal is consistent with State Environmental Planning Policy (Biodiversity and Conservation) 2021.

Given the above, the project should be supported through the issuing of Landowners Consent and subsequent Development Consent.

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