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11 May 2023

Attention: Gavin Treasure
Chief Executive Officer
Shire of Dumbleyung

Delivered by email to: ceo@dumbleyung.wa.gov.au

Dear Gavin

GOLF COURSE LAKE DEVELOPMENT PROPOSAL – PRELIMINARY ENVIRONMENTAL SCOPING

Introduction

The Shire of Dumbleyung are currently investigating the feasibility of a proposal for the Shire to establish and maintain a reliable surface water body at Golf Course Lake that can be used by the local community and tourists for water-based recreation activities (herein referred to as 'the proposal').

The purpose of this preliminary environmental scoping is to provide the Shire with preliminary information on the anticipated environmental requirements for the proposal, which the Shire can then consider in their decision-making process as to whether to proceed further with the proposal.

The proposal can be generally defined as a combination of the following elements:

- Modification and deepening of Golf Course Lake by 1.6 m.
- An increase of current water inflows to Colf Course Lake by one of two options:
    - Upstream diversion of Coblinine River at Dongolocking Creek and transfer of water (approximately 4% of the average total flow volume of the Coblinine River) into Golf Course Lake, through a constructed 6 km open channel. (Preferred option)
    - Downstream diversion via a new constructed bund across Coblinine Rover downstream of Golf Course Lake. (Alternate option)

The proposal area, incorporating the preferred upstream diversion option, is herein referred to as the 'site' and its extent is indicatively shown in the attached **Figure 1**.

Scope of work

The Shire have engaged Emerge Environmental Services Pty Ltd (T/A Emerge Associates) to provide environmental consultancy services in relation to the proposal, and specifically to undertake a preliminary environmental scoping exercise to assist in understanding the feasibility of the proposal with respect to environmental considerations, including any necessary environmental investigations and approvals processes, and the associated time and cost implications of these.

The scope of work includes:

- Completion of a background review, including a site inspection, to understand the previous investigations completed to date and a preliminary understanding of the relevant existing environmental values within the site.
- A pre-referral meeting with the Environmental Protection Authority (EPA) Services branch of the Department of Water and Environmental Regulation (DWER), to inform the feasibility of the proposal being environmentally acceptable and if so, the likely environmental approval pathway necessary under the Western Australia *Environmental Protection Act 1986*.
- Preparation of an indicative project plan, to outline the environmental work anticipated to be required to progress the proposal to a concept design stage and attain necessary environmental approvals.

This report presents and discusses the outcomes of the above scope of work.

Background Review

The following information sources were considered as part of the background review:

- Agenda and minutes from Shire of Dumbleyung Ordinary Council Meetings (OCM):
  - OCM 19 August 2021
  - OCM 16 September 2021
  - OCM 1 February 2022
- Previous investigations completed in relation to the proposal, including:
  - *Golf Course Lake - Water Based Recreation Feasibility Assessment* (Wheatbelt Hydrology 2020)
  - *Golf Course Lake - Water Based Recreation Feasibility Assessment Part 2 - Groundwater Assessment* (Wheatbelt Hydrology 2021)
- Publicly available spatial information relating to land ownership, aerial imagery, flora and vegetation, wetlands, waterways, soils, nature reserves and topography.
- A site inspection completed on 2 June 2022.

Based on the previously completed investigations and the information provided in the applicable Shire OCM agenda and minutes:

- Water-based recreational activities have been popular in Dumbleyung for many decades and the town proudly associates with a water speed world record set on Lake Dumbleyung in 1964.
- Lake Dumbleyung has traditionally been the primary location for local water-based recreational activities, but since the early 1990s it has not consistently filled to a suitable depth to enable such activities.
- The Shire have been investigating options for providing a more consistently filled water body suitable for water-based recreational activities. This would likely involve modification/s such as increasing water volumes and/or excavation to deepen an existing lake in the region.
- Lake Dumbleyung was not considered a practical option for such a proposal due to its large size (52 km2) and designation of most of the lake as a nature reserve. However, Golf Course Lake was identified as a potential option due to it:
  - being on a Crown Reserve vested with the Shire for recreation purposes.
  - supporting some existing shoreline facilities (including the golf course and clubhouse).
  - being of an area small enough to readily fill, but also large enough to allow for water skiing.
  - being near a potential source of water (the Coblinine River).

- The Shire have previously completed some initial liaison with stakeholders and agencies, the outcomes of which are summarised as follows:
    - Initial conversations with local Aboriginal Traditional Owners on the proposal were positive.
    - July 2019 – Department of Biodiversity, Conservation and Attractions (DBCA), who advised that rediverting flows from the Coblinine River is not something DBCA would consider without significant discussion. Any proposal would need to be of significant community value and would also require an assessment of environmental impacts.
    - July 2019 – DWER Native Vegetation Regulation, who advised hydrological, flora and fauna studies of any drainage infrastructure and surrounding areas would be required. DWER flagged the potential for saltbush species to occur, which can be of high conservation significance if they have a locally restricted distribution. DWER also flagged that diverting large volumes of water into a usually dry lake system can mobilise crystalised surface salts into the groundwater profile, as well as recharging underlying aquifers that can result in rising groundwater levels and associated salinity that may impact vegetation.
    - July 2020 – DWER Albany Region, who advised the Shire to contact EPA Services for further information on any required statutory environmental approval processes.
- The Shire commissioned Wheatbelt Hydrology to assess the hydrological feasibility of the proposal, who concluded that, to keep Golf Course Lake depth at or above 1.5 m (the minimum for gazettal of the lake for water skiing) during October to April, the lake bed would require deepening by 1.6 m, and that the current water inflow is insufficient. Two options for increasing water inflow were identified:
    - An upstream diversion of Coblinine River at Dongolocking Creek and transfer of water (approximately 4% of the average total flow volume of the Coblinine River) through a 6 km open channel directly into Golf Course Lake. This was chosen as the preferred option as it was considered to result in minor changes to water volumes in the Coblinine River and provide a better outcome in terms of water levels achieved in Golf Course Lake, albeit with a higher construction cost. The downstream impacts to Lake Dumbleyung would be a reduction of inflow between 1-7% of total annual volume.
    - A downstream diversion comprising construction of a bund across Coblinine River downstream of Golf Course Lake to divert water into the lake. This option, whilst being lower cost, was considered to likely increase water volumes in the Coblinine River Nature Reserve upstream of the bund (potentially up to 3km), which may impact existing values. Subsequently this was selected as the primary option for investigation by the Shire. The downstream impacts to Lake Dumbleyung would be a reduction of inflow between 1-7% of total annual volume.
- The Shire commissioned Wheatbelt Hydrology to complete a follow-up groundwater assessment to determine if changing the physical characteristics and hydrology of the lake would result in any impacts on water quality in the lake or surrounding areas. The assessment determined that groundwater surrounding Golf Course Lake is currently saline and quite acidic (particularly in the north). Currently, the acidic groundwater is buffered by higher pH sediments and alkaline inflows and this is expected to continue or improve if proposed increases in inflow occur.
- The site is subject to varied land ownership, with Gold Course Lake largely situated within a publicly owned Crown Reserve, whilst the proposed upstream diversion channel pass through multiple privately owned land parcels, as shown in **Figure 1**.

A Senior Botanist and a Senior Environmental Consultant from Emerge Associates completed a site inspection on 2 June 2022. The purpose of the site inspection was to attain an initial understanding of the general environmental characteristics of the site and local area, as opposed to completion of detailed ecological assessments which were not undertaken. Based on observations from the site inspection and publicly available environmental spatial information, the existing environmental values of the site are summarised as follows:

- Golf Course Lake forms part of a series of wetland chains occurring across the local area, which are associated with low-lying areas within the landscape, as shown in **Figure 2**.
- Golf Course Lake is situated adjacent to the Coblinine River, which flows in a westerly direction adjacent to the site, ultimately flowing into Dumbleyung Lake approximately 4 km west of the site, as shown in **Figure 3**.
- At the time of the site inspection, Golf Course Lake supported some areas of shallow surface water due to recent rains, but at a depth unsuitable for water-based recreational activities.
- Most of the surrounding local area has been historically cleared of native vegetation to enable agricultural land uses, with remnant vegetation mainly limited to within and adjacent to the wetland chain extending across the locality, which is broadly described as comprising 'samphire with thicket & scattered trees'. Some adjacent areas, which sit comparatively higher in the landscape, are mapped as comprising 'low woodland or open low woodland' native vegetation. Regional vegetation complex mapping is shown in **Figure 4**.
- Regional soil landscape mapping identifies the following soils types within the site (**Figure 5**):
    - Coblinine 3 subsystem: saline broad alluvial plains. Mainly saline wet soils with small areas of alkaline grey shallow sandy, and less commonly loamy, duplex soils and hard cracking clays.
    - Coblinine 4 Subsystem: lakes and swamps along with small areas of lunettes, swales and dunes, including saline and fresh lakes such as Lake Dumbleyung and Lake Toolibin. Saline wet soils and salt lake soils with grey hard cracking clays and grey duplex soils.
- Native vegetation surrounding Golf Course Lake was observed onsite to comprise Eucalypt and Casuarina woodland on banks and upper edges, and saltmarsh shrubland near the water edge. This is generally consistent with regional vegetation complex mapping.
- The condition of vegetation was observed to vary across the site, likely ranging from 'degraded' to 'excellent' condition using the Keighery (1994) scale. Extensive historical vegetation clearing and modification has occurred in areas adjacent to the lake to establish the golf course infrastructure (fairways, greens, clubhouse, access tracks, etc.).
- Areas of native vegetation surrounding Golf Course Lake may represent the threatened ecological community (TEC) 'Eucalypt Woodlands of the Western Australian Wheatbelt'. This TEC is listed as Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Further survey would be required to determine if, and to what extent, this TEC occurs.
- With the exception of the adjacent golf course areas, weed cover and diversity surrounding Golf Course Lake and the two proposed diversion areas was generally low.
- Native vegetation along the proposed upstream diversion channel and at the proposed downstream diversion bund consists of saltmarsh shrubland that was partly inundated at the time of the inspection.
- Multiple flora species listed as 'threatened' or 'priority' under Commonwealth and/or State legislation may occur around Golf Course Lake and at the proposed diversion areas. A detailed flora and vegetation assessment (including targeted flora surveys) has not been undertaken at this point in time and would be required to confirm any such occurrences.
- Multiple fauna species listed under Commonwealth and State legislation (particularly birds) may use Golf Course Lake, the surrounding vegetation and proposed diversion areas. A fauna assessment has not been undertaken at this point in time and would be required to confirm the fauna habitat values of the area.

EPA Services Pre-referral Meeting

A pre-referral meeting was held with DWER EPA Services in relation to the proposal on 16 September 2022. Attendees included two EPA Services Officers, four Shire representatives (Shire CEO, a Shire Officer and two Shire Councillors) and a Senior Environmental Consultant from Emerge Associates. The key outcomes of the pre-referral meeting are summarised as follows:

- The Shire provided historical and contextual background to the proposal. EPA Services commented it is a unique proposal that doesn't fit neatly into either of their infrastructure or land use planning streams (noting EPA Services officers in attendance were from the EPA Services – Planning Branch).
- EPA Services noted they not aware of any existing or historical proposals that involved the excavation and filling of a lake for a recreational boating use. Other proposals with some similarities which EPA Services were aware of included:
    - Southern Forest Irrigation Scheme (EPA assessment no. 2203), which proposes to create an agricultural irrigation network feeding off the Donnelly River.
    - Various salt lake potash proposals may also have some similarities, in that they involve excavation of salt lake sediments.

  Emerge Associates have since become aware of the *Champion Lakes Masterplan Development* which involved the excavation and creation of an artificial lake to facilitate a recreational and professional rowing precinct, which has some similarities to the proposal and was subject to EPA assessment and Ministerial approval in the early 2000s.
- EPA Services advised that if the project proceeds, it is likely to require referral to the EPA under Section 38 of the *Environmental Protection Act 1986* (EP Act) and environmental impact assessment by the EPA, due to its potential environmental impacts.
- EPA Services provided an overview of the newly introduced cost recovery regulatory fee system for the assessment of proposals (*Environmental Protection (Cost Recovery) Regulations 2021*). EPA Services advised these costs were likely to apply to the proposal, which would require the Shire to pay fees to cover the EPA's assessment costs.
- EPA Services also flagged the potential need for a Commonwealth EPBC Act referral, if there are potential impacts to 'matters of national environmental significance' (MNES) listed under the EPBC Act. This would be separate and additional to the state EPA referral process under the EP Act. Assessment under the EPBC Act also attracts regulatory fees.
- EPA Services advised that, at a minimum, the following key environmental EPA factors are likely to apply to the proposal and would require assessment:
    - Inland waters
    - Terrestrial environmental quality
    - Flora and vegetation
    - Terrestrial fauna.
- When queried by Emerge Associates as to the likelihood that the proposal may be considered environmental unacceptable, EPA Services advised there is no longer a mechanism at the referral stage for the EPA to provide a 'quick no' to a proposal on the basis it is environmentally unacceptable, as the EPA can only decide to assess or not assess. However, if the EPA have significant concerns regarding the environmental acceptability of a proposal, then the EPA can meet with the proponent to discuss options to either;
    - modify the proposal to reduce its environmental impacts or;
    - discuss the possibility of the proposal being withdrawn;

  in order to avoid an assessment process that ultimately leads to a recommended refusal. Given the potential impacts of this proposal, such an outcome cannot be ruled out.
- EPA Services advised that the EPA cannot consider social benefits that the proposal may offer when assessing a proposal. However, the Minister for Environment would ultimately chose whether to approve the project and has discretion to consider social benefits.

Indicative Project Plan for Environmental Considerations

Introduction

An indicative project plan has been developed for the environmental considerations of the proposal, with the purpose of:

- Outlining the anticipated environmental approval requirements and assessment pathway.
- Outlining the anticipated technical environmental work required to facilitate the anticipated approval requirements and assessment pathway.
- Providing preliminary estimates on the likely time and costs associated with completing the anticipated technical environmental work, undertaking the assessment and attaining environmental approvals.

Given the early and conceptual nature of the proposal at this time, this indicative project plan is necessarily high level and should not be interpreted as final or all-encompassing. It is intended to provide an initial estimate only of the likely process and associated time and cost implications (at an 'order of magnitude' scale) to address the environmental considerations applicable to the proposal, to enable the Shire to make an informed decision around whether to proceed further with the proposal. The indicative project plan is not a detailed scope of work or fee proposal, which would ultimately be required for each stage of any future environmental assessment process.

Information sources

In this context, the indicative project plan has been developed in consideration of:

- Outcomes of the background review and site inspection.
- Outcomes of the pre-referral meeting with EPA Services held on 16 September 2022.
- Other proposals subject to EPA assessment that have similar proposal elements (e.g. diversion of natural water sources for irrigation and excavation of salt lakes), including:
    - *Champion Lakes Masterplan Development* (EPA assessment no. 1400)
    - *Lake Disappointment Potash Project* (EPA assessment no. 2087)
    - *Beyondie Sulphate of Potash Project* (EPA assessment no. 2138)
    - *Lake Wells Potash Project* (EPA assessment no. 2144)
    - *Mackay Suplhate of Potash Project* (EPA assessment no. 2193)
    - *Southern Forest Irrigation Scheme* (EPA assessment no. 2203)
    - *Lake Way Sulphate of Potash Project* (EPA assessment no. 2228)
- Agency regulations and guidelines in relation to statutory assessment (cost recovery) fees, including:
    - EP Act *Environmental Protection (Cost Recovery) Regulations 2021*
    - *Implementing cost recovery for Part IV of the Environmental Protection Act 1986 Discussion paper* (DWER 2021)
    - *Cost recovery implementation statement: cost recovery for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999 2016-17* (DoEE 2016)
- Emerge Associates professional experience in navigating environmental approvals processes for development proposals.

Anticipated environmental approval requirements

For proposals within Western Australia, there are two primary environmental approval processes to consider:

- Approval under the Western Australian EP Act.
- Approval under the Commonwealth EPBC Act.

A preliminary assessment of the (WA) EPA 'Environmental Factors' (**Table 1**) and EPBC Act MNES has been completed to determine what environmental considerations are likely to be applicable to the proposal, as well as the associated potential environmental impacts of the proposal. Collectively, this information has been used to inform conclusions around the likely environmental approval requirements that are anticipated to be required for the proposal.

Addressing the applicable EPA environmental factors as part of a future assessment process will require the Shire to undertake a wide range of technical investigations – including for baseline conditions and then assessing potential environmental impacts of the proposed design & operation of the lake for recreational boating use. As such, **Table 1** also provides a high level summary of the likely minimum work requirements to appropriately address each environmental factor.

Table 1: Preliminary assessment of EPA environmental factors and their application to the proposal

Theme	Environmental factor	Application to proposal	Likely minimum work required
Sea	Benthic communities and habitats	**Not applicable** Proposal located approximately ~160 km from the nearest marine environment.	• N/A
	Coastal processes		
	Marine environmental quality		
	Marine fauna		
Land	Flora and vegetation	**Likely to be applicable** The site supports native flora and vegetation, potentially including conservation significant values. The proposal may result in potential impacts through direct clearing, altered fire regimes, spread of weeds, alteration to surface water flows, groundwater and eco-hydrological conditions.	• Baseline flora and vegetation survey, including crossover with baseline hydrological monitoring. • Technical impact assessment, including crossover with post-development hydrological modelling.
	Landforms	**Potentially applicable** The site is situated on a paleochannel landform, which may be of local and/or regional significance. The proposal has the potential to impact this landform through changes to hydrological regimes associated with the landform.	• Baseline landform assessment • Technical impact assessment
	Subterranean fauna	**Potentially applicable** Subterranean fauna (stygofauna) may potentially occur in underlying groundwater aquifers. The proposal is likely to alter groundwater conditions (level and quality) and therefore may potentially impact stygofauna, if they occur.	• Baseline stygofauna survey, including crossover with baseline hydrogeological assessment. • Technical impact assessment, including crossover with hydrological modelling for groundwater changes.
	Terrestrial environmental quality	**Likely to be applicable** The proposal may result in potential impacts to terrestrial environmental quality through increased salinity due to rising groundwater levels, exposure of acid sulfate soils (ASS) during construction and contamination of terrestrial environment due to disposal of excavated material.	• Baseline geotechnical and soil quality assessment (including ASS investigation), including crossover with baseline groundwater modelling and baseline hydrogeological assessment. • Technical impact assessment, including crossover with hydrological modelling.
	Terrestrial fauna	**Likely to be applicable** The site supports terrestrial and aquatic fauna habitat, potentially including conservation significant species. The proposal may result in potential impacts through direct clearing of habitat, alteration and disruption of surface water flows, increased human presence, changes to feral animal populations, noise and vibration.	• Baseline vertebrate terrestrial fauna survey • Baseline invertebrate and short-range endemic fauna survey • Baseline aquatic fauna survey, including crossover with baseline hydrological monitoring. • Technical impact assessment, including crossover with hydrological modelling.

Theme	Environmental factor	Application to proposal	Likely minimum work required
Water	Inland waters	**Likely to be applicable** The site supports a range of natural surface water features (Golf Course Lake, Coblinine River, Dongolocking Creek, upstream of Dumbleyung Lake) and underlying groundwater aquifers. The proposal will involve modification of existing hydrological processes, which has the potential to impact inland water features due to changes to natural surface water flows and changes to groundwater levels and quality.	• Baseline hydrological and hydrogeological assessment • Pre-development monitoring of existing surface water and groundwater regimes (quality and quantity/levels) • Modelling of baseline hydrological processes, including flood events. • Modelling of post-development hydrological processes, including flood events. • Technical impact assessment based on modelling outputs. • Water balance assessment for significance environmental values (Golf Course Lake, Coblinine River, Dongolocking Creek and Dumbleyung Lake) • Post development monitoring program.
Air	Air quality	**Unlikely to be applicable** This environmental factor relates to activities that have emissions that may impact on air quality, typically associated with industrial land uses and considered unlikely to be applicable to the proposal.	• N/A
	Greenhouse gas emissions	**Potentially applicable** The proposal will produce greenhouse gas emissions during construction and operation, however it is unlikely that scope 1 or scope 2 annual emissions are likely to exceed 100,000 tonnes CO^2-equivalent, which triggers application of this environmental factor. Notwithstanding, an assessment of predicted emissions will be required to confirm this.	• Greenhouse gas emission assessment.
People	Human health	**Not applicable** This environmental factor relates to possible impacts to human health from emission of radiation, which will not be applicable to the proposal.	• N/A
	Social surroundings	**Potentially applicable** The site has potential to support Aboriginal cultural heritage values, which could be disturbed through implementation of the proposal. The proposal is also likely to generate noise emissions (during both construction and operation) which may have amenity impacts to sensitive land uses and fauna.	• Aboriginal cultural heritage surveys (ethnographic and archaeological) • Technical impact assessment. • Noise modelling and impact assessment.

With respect to the EPBC Act, the following MNES are known, likely or have the potential to occur within the site and as such may potentially be impacted by the proposal:

- One TEC; Eucalypt Woodlands of the Western Australian Wheatbelt.
- Nine threatened flora species, including orchid and saltmat species, amongst others.
- Seven threatened fauna species, including Carnaby's cockatoo, amongst others.
- Seven migratory bird species, including species which utilise inland water features.

In this context, it is anticipated that referral, assessment and approval will be required for the proposal under both the EP Act and EPBC Act. Notwithstanding, it is noted that assessment and approval under the EPBC Act may ultimately not be required, if potential impacts to MNES are determined to not be significant at the referral stage, however a conservative scenario has been assumed for the purpose of this advice whereby EPBC Act assessment and approval will be necessary.

Anticipated assessment pathway and preliminary time and cost estimates

Table 2 outlines the anticipated assessment pathway that would be required for the proposal to attain environmental approval under both the EP Act and EPBC Act. Only environmental components have been considered (i.e. no consideration of engineering requirements have been included). This is a preliminary and high-level overview of what could be expected, and is based on a range of assumptions, including:

- A comprehensive level of assessment would be required due to the nature of the potential environmental impacts of the proposal, which will require completion of a wide range of technical surveys and investigations to a high level of detail. Potential impacts and likely minimum required work is summarised in **Table 1**.
- A bilateral assessment approach would be progressed, whereby the proponent nominates for impacts to EPBC Act listed MNES to be assessed by the EPA through the EP Act assessment process (rather than separately). Whilst this allows for a single *assessment* process, the proposal would still ultimately require separate *approval* by the Commonwealth Minister for the Environment.

It is important to note that even if the proponent chose to proceed with the proposal and navigated the anticipated assessment pathway;

- The EPA may conclude that the proposal is not environmentally acceptable and recommend to the Minister for Environment that it be refused.
- If the proposal was approved, State and Commonwealth Ministerial conditions will create a long-term compliance obligation on the Shire which may constrain (significantly or otherwise) aspects of the proposal design and operation, that may make the proposal untenable or impractical to implement.

Table 2: Summary of anticipated environmental approvals pathway and required work

Assessment pathway	Assessment pathway breakdown	Likely minimum work required	Preliminary cost estimate[1,2]	Preliminary time estimate[3]	Key assumptions
Pre-referral	• Completion of baseline surveys of existing environment within and adjacent to the site. This informs project design (e.g. avoiding significant values) and informs the environmental impact assessment process. • Provision of environmental advice into the engineering design process to develop the concept design and construction methodology.	• Ad-hoc advice and inputs to design process • Baseline flora and vegetation survey • Baseline landform assessment • Baseline stygofauna survey • Baseline geotechnical and soil quality assessment (including ASS investigation) • Baseline vertebrate terrestrial fauna survey • Baseline invertebrate and short-range endemic fauna survey • Baseline aquatic fauna survey • Baseline hydrological and hydrogeological assessment • Pre-development monitoring of existing surface water and groundwater regimes (quality and quantity/levels) • Modelling of baseline hydrological processes, including flood events • Greenhouse gas emission assessment • Aboriginal cultural heritage surveys (ethnographic and archaeological).	Direct costs: • $400-900k Regulatory fees: • N/A	12-18 months to complete necessary baseline investigations (accounting for seasonality).	• Some baseline surveys may be staged. For example, completion of preliminary or desktop assessment to determine risk at 'pre-referral' stage, then completion of detailed site assessment during the 'assessment' stage, if determined to be required.
Referral	• Once a concept design is complete and adequate baseline information on environmental values is attained, the proposal can be referred (separately) under the EP Act and EPBC Act. This step involves preparation of the necessary documentation and lodgement with respective agencies.	• Pre-referral meetings with environmental agencies • Prepare and lodge EP Act referral • Prepare and lodge EPBC Act referral • Agency consideration of referrals to make assessment decision.	Direct costs: • $35-80k Regulatory fees: • EPBC Act $6.5k • EP Act $50k	3-6 months.	• There may be some overlap in timing between 'pre-referral' and 'referral' stages (e.g. holding pre-referral meetings and preparation of referral documents).
Scoping	• Assuming the referral decision is that the proposal requires assessment, this stage involves developing an Environmental Scoping Document (ESD), which outlines the required technical work to be completed as part of the assessment stage.	• Prepare and lodge ESD with EPA • EPA review of ESD, provision of comments, updates to ESD. Multiple iterations typically required. • Advertise ESD & update in response to any comments received.	Direct costs: • $20-50k Regulatory fees: • EPBC Act $5-10k • EP Act $50-65k	6-12 months.	• Multiple reviews of the ESD are typically required by the EPA before consenting to advertise, which can result in an extended scoping timeframe and higher costs.

Assessment pathway	Assessment pathway breakdown	Likely minimum work required	Preliminary cost estimate[1,2]	Preliminary time estimate[3]	Key assumptions
Assessment & Ministerial approval	• Completion of technical investigations and impact assessments to understand, quantify and assess the potential environmental impacts of the proposal. • Preparation of the consolidated Environmental Review Document (ERD), which is the proponent's primary impact assessment document submitted to the EPA and publicly advertised. • Following advertising, EPA completes their assessment and prepares a recommendation report to the Minister for Environment. • Minister for Environment considers EPA report and makes a decision whether to approve the proposal. • Separate approval decisions made by State and Federal ministers.	• Technical environmental impact assessments for each applicable EPA factor & MNES. • Modelling of post-development hydrological processes, including flood events. • Water balance assessment for significance environmental values (Golf Course Lake, Coblinine River, Dongolocking Creek and Dumbleyung Lake). • Prepare and lodge ERD. • Agency review of ERD, provision of comments, updates to ERD. Multiple iterations typically required. • Advertise ERD. • Respond to public comments and update ERD in response, where required. • EPA assessment of ERD and preparation of recommendation report. • Minister for Environment (WA) makes approval decision. • Minister for Environment (Commonwealth) makes approval decision.	Direct costs: • $250-650k Regulatory fees: • EPBC Act $100-150k • EP Act $320-550k	12-24 months.	• Multiple reviews of the ERD are typically required by the EPA before consenting to advertise, which can result in an extended scoping timeframe and higher costs. • No consideration of environmental offsets has been made, as these cannot be predicted this early in the process. Offsets have the potential to have further material cost and time implications on the assessment process.
Post-approval and implementation	• Implementation of proposal commences. • Approval of required Environmental Management Plans (EMPs) to be implemented as part of the proposal.	• Preparation and submission of required EMPs. • Implementation of post-development hydrological monitoring program. • Annual compliance reporting [4]	Direct costs: • $100-300k Regulatory fees: • EPBC Act $5-10k • EP Act $30-65k	Ongoing	• EMPs would be required for four environmental factors are required (those 'likely to be applicable'). • No consideration of environmental offsets has been made, as these cannot be predicted this early in the process. Implementation of offsets has the potential to have further material cost and time implications during implementation.

[1] Cost estimates are preliminary and high level, intended to provide an 'order of magnitude' only. More detailed cost scoping would be required prior to the commencement of each phase.

[2] Agency assessment costs are based on preliminary assessment against *Environmental Protection (Cost Recovery) Regulations 2021*, *Implementing cost recovery for Part IV of the Environmental Protection Act 1986 Discussion paper* (DWER 2021) and *Cost recovery implementation statement: cost recovery for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999 2016-17* (DoEE 2016). Regulators would provide a formal regulatory fee schedule following referral of the proposal.

[3] Timing estimates are preliminary and high level, intended to provide an 'order of magnitude' only. More detailed scheduling and forecasting would be required prior to the commencement of each phase.

[4] Costs for annual compliance reporting have not been considered, on the basis that these are ongoing annual costs rather than one-off fixed costs.

Conclusions

Based on the outcomes of the background review, site inspection and pre-referral meeting with EPA Services, an indicative project plan for the environmental considerations of the proposal has been prepared. In conclusion Emerge found:

- The proposal will likely require referral, assessment and approval under the State EP Act and the Commonwealth EPBC Act.
- The outcome in terms of securing approval is not certain in this case. The EPA may conclude that the proposal is not environmentally acceptable and recommend to the Minister for Environment that it be refused.
- If the proposal was approved, State and Commonwealth Ministerial conditions will create a long-term compliance obligation on the Shire which may constrain (significantly or otherwise) aspects of the proposal design and operation, that may make the proposal untenable or impractical to implement.
- The process will require a wide range of technical and detailed assessments and investigations in relation to applicable environmental factors and MNES.
- The preliminary and high-level total cost and time estimates for environmental components of the proposal (from project initiation to approval and implementation) are between approximately **$1.4-2.9M** and **2.5-5 years**. These estimates would be further refined as the proposal becomes more defined and the assessment process progresses, however these initial ranges provides an early 'order of magnitude' estimate for the Shire to consider. These only consider environmental processes (i.e. do not include engineering considerations).

It is important to note that based on the potential environmental impacts of the proposal, the information currently available and our experience; it is Emerge's professional opinion that, on the balance of probabilities, if the Shire chooses to progress the proposal and after a costly and lengthy environmental impact assessment process, the EPA could find that the proposal is environmentally unacceptable and recommend to the Minister(s) that the project is refused. While the Ministers are the ultimate decision makers and the Shire can lodge an appeal on the EPA findings, the Ministers would need to be convinced that that the community and economic benefits outweigh the environmental impacts and political risk in order to approve the project, if the EPA recommend refusal. In summary, there is no guarantee that the proposal would be approved.

We trust this provides adequate information in relation to preliminary environmental scoping to assist in informing the Shire's decision-making process. Should you wish to discuss further, please do not hesitate to contact the undersigned.

Yours sincerely
Emerge Associates

Andreas Biddiscombe
SENIOR ENVIRONMENTAL CONSULTANT

cc: none

Encl: Figure 1: Land Ownership
Figure 2: Topography
Figure 3: Hydrography
Figure 4: Vegetation
Figure 5: Soils

References

Wheatbelt Hydrology 2020, Golf Course Lake - Water Based Recreation Feasibility Assessment.

Wheatbelt Hydrology 2021, Golf Course Lake - Water Based Recreation Feasibility Assessment Part 2 - Groundwater Assessment.

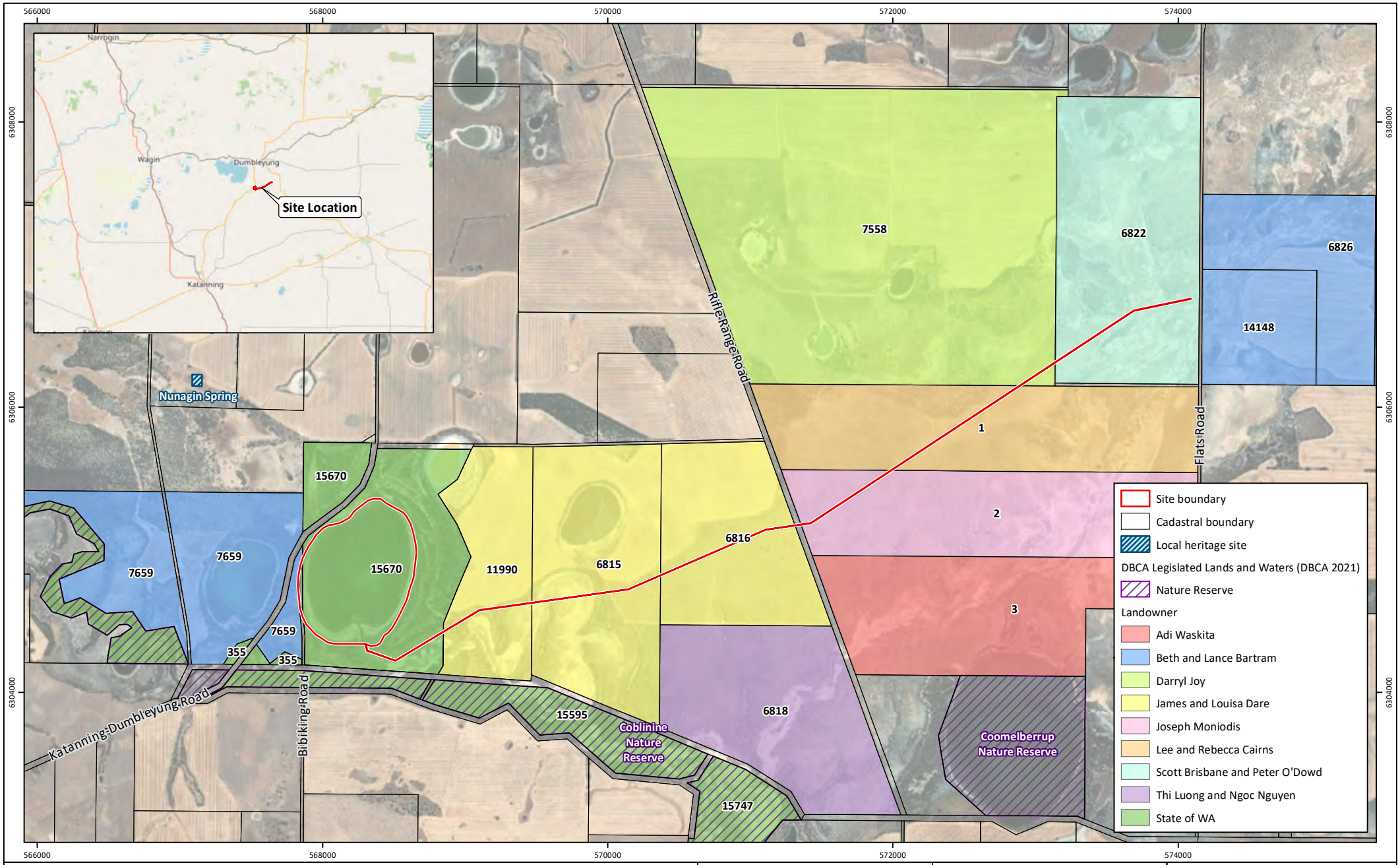

Figure 1: Land Ownership

Project: Environmental Support
Dumbleyung Lake Development
Client: Shire of Dumbleyung

Plan Number:
EP22-022(01)--F01
Drawn: GAR
Date: 31/05/2022
Checked: RAW
Approved: ADB
Date: 08/07/2022

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Metres
Scale: 1:35,000@A4
GDA 1994 MGA Zone 50

emerge ASSOCIATES

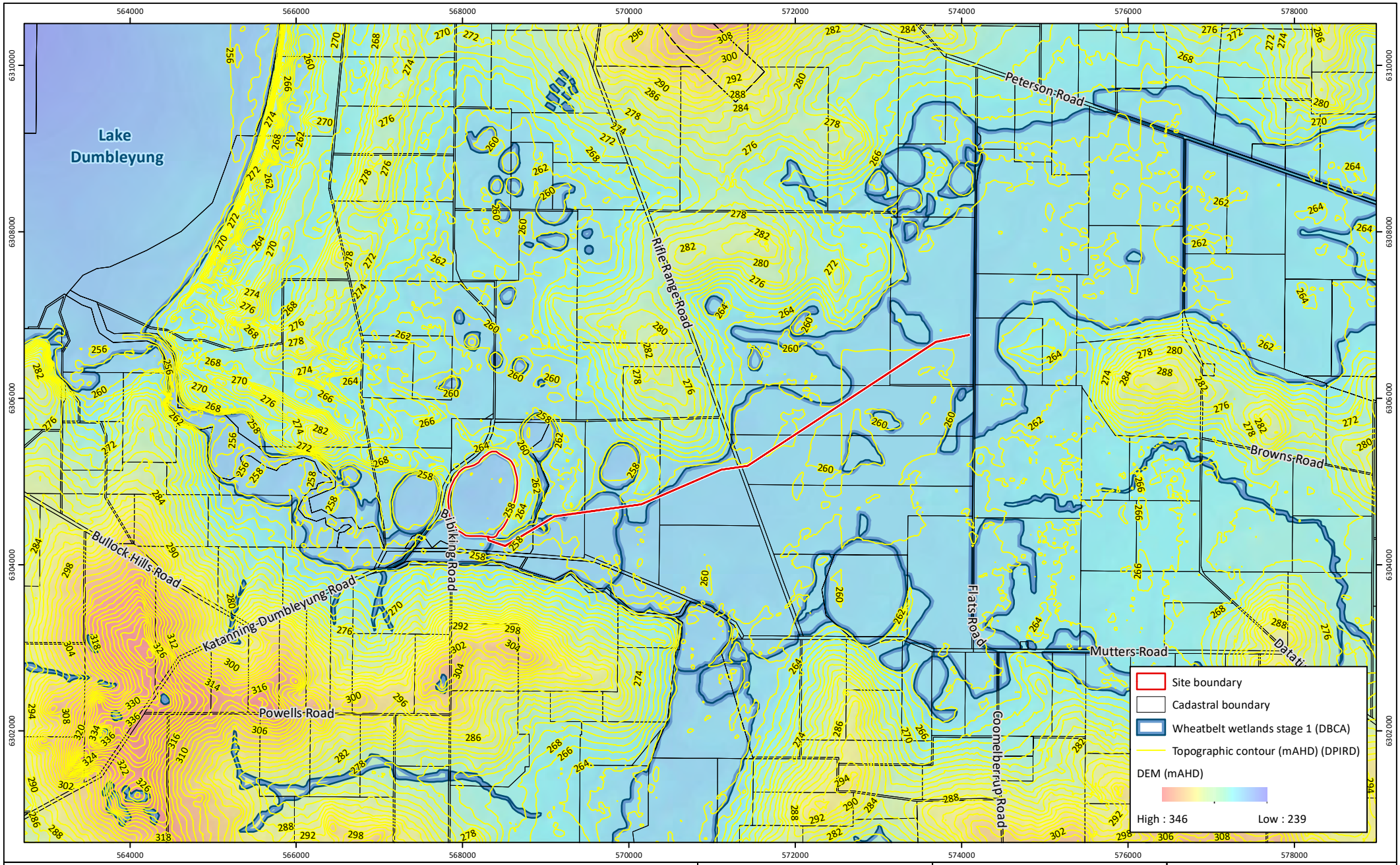

Figure 2: Topography

Project:	Environmental Support Dumbleyung Lake Development
Client:	Shire of Dumbleyung

Plan Number:
EP22-022(01)--F02

Drawn:	GAR
Date:	31/05/2022
Checked:	RAW
Approved:	ADB
Date:	08/07/2022

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Kilometers

Scale: 1:60,000@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

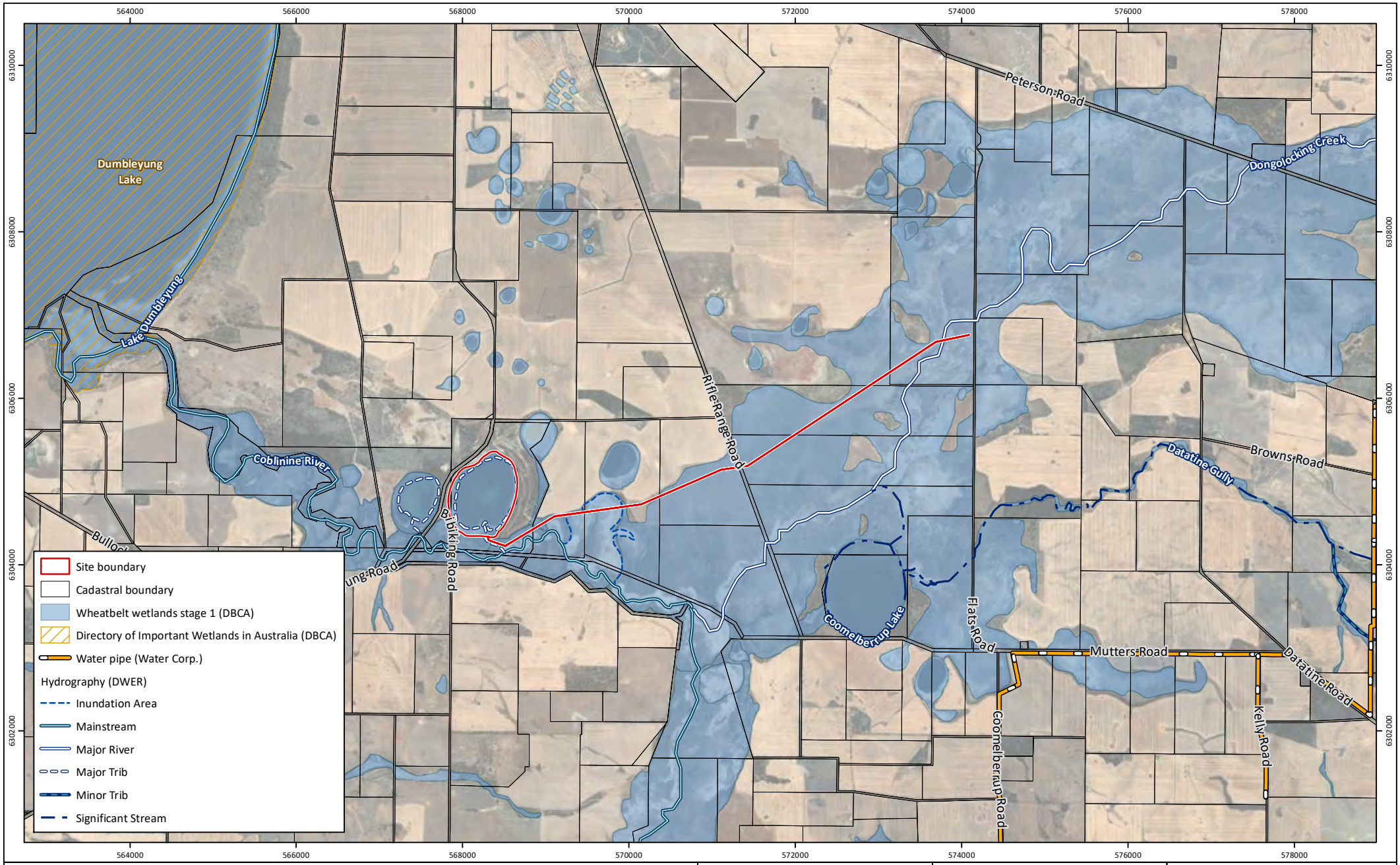

Figure 3: Hydrography

Project:	Environmental Support Dumbleyung Lake Development
Client:	Shire of Dumbleyung

Plan Number:
EP22-022(01)--F03

Drawn:	GAR
Date:	31/05/2022
Checked:	RAW
Approved:	ADB
Date:	08/07/2022

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Kilometers

Scale: 1:60,000@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

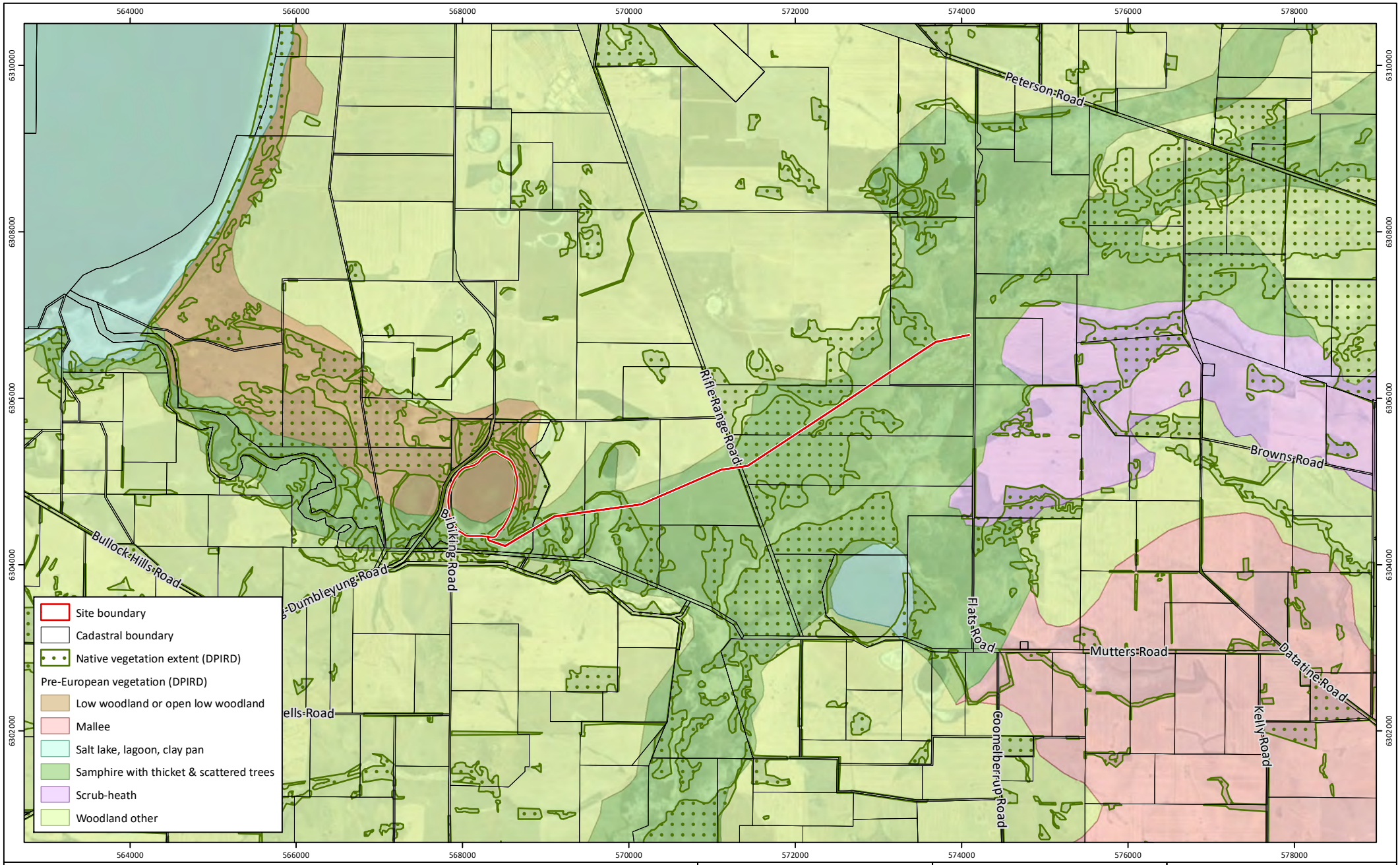

Figure 4: Vegetation

Project: Environmental Support
Dumbleyung Lake Development
Client: Shire of Dumbleyung

Plan Number:
EP22-022(01)--F04

Drawn:	GAR
Date:	31/05/2022
Checked:	RAW
Approved:	ADB
Date:	08/07/2022

N

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Kilometers
Scale: 1:60,000@A4
GDA 1994 MGA Zone 50

emerge ASSOCIATES

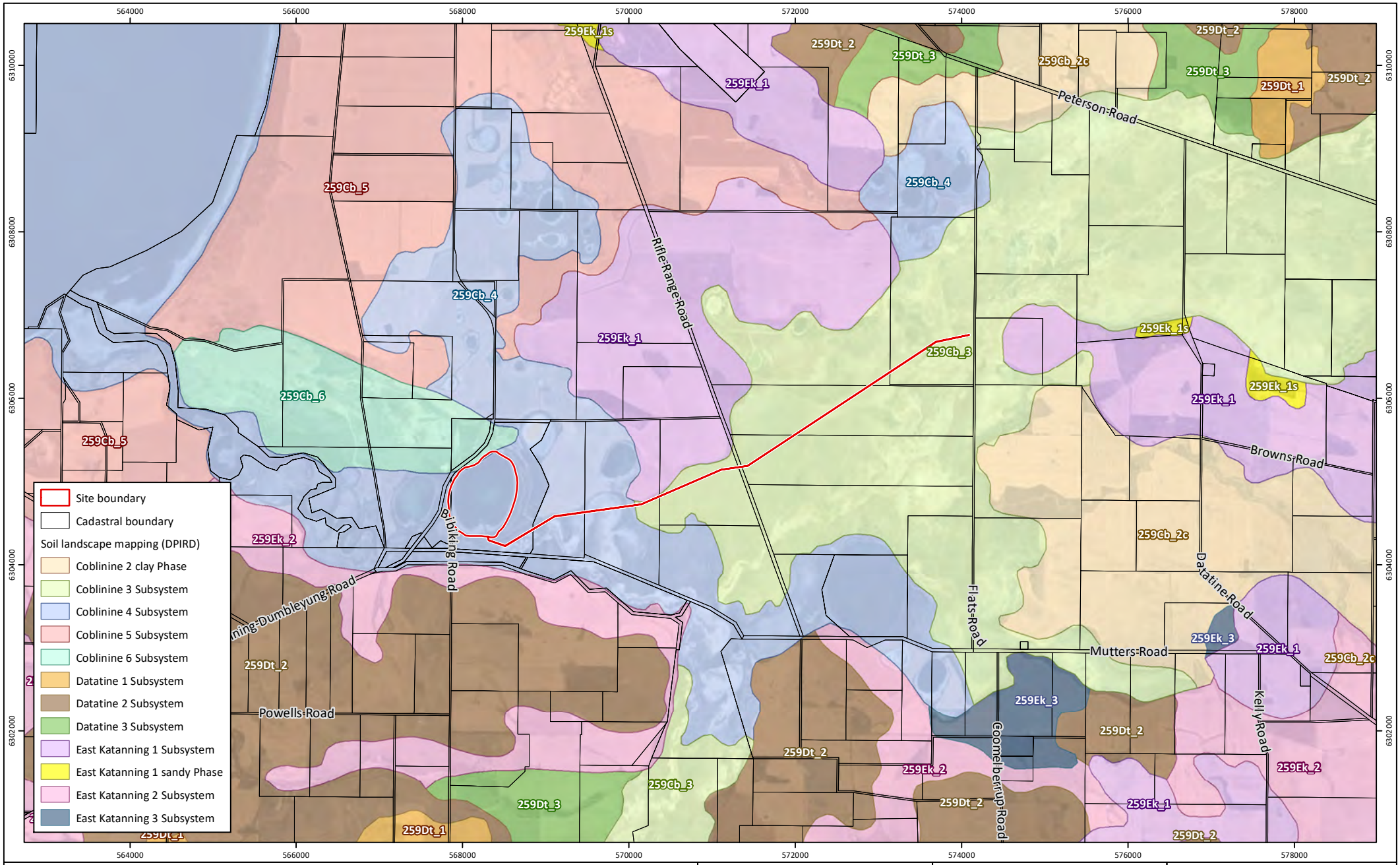

Figure 5: Soils

Project:	Environmental Support Dumbleyung Lake Development
Client:	Shire of Dumbleyung

Plan Number:
EP22-022(01)--F05

Drawn:	GAR
Date:	31/05/2022
Checked:	RAW
Approved:	ADB
Date:	08/07/2022

N

0 1 2
Kilometers

Scale: 1:60,000@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES