

Introduction

As part of the Planning Proposal, the Department of Planning, Industry and Environment requested that Council undertake a number of studies on the land being considered for a proposed Memorial Park.

The full studies and reports can be downloaded from yourvoice.qprc.nsw.gov.au however an overview summary of the studies and reports is provided on the following pages. While care was taken in developing this overview, residents are encouraged to read the full reports to obtain the full context.

Geotechnical Investigation Report – completed April 2017

The report investigates the physical properties of the soil on the site, the stability of natural slopes, the chemical composition of the soil and various other details.

The report provides recommendations for excavation conditions, preparation of subgrades, stability of cut and fill batters and groundwater conditions.

Investigation across ten auger holes resulted in finding that the northern elevated part of the site had shallow bedrock but that the majority of the site did not encounter bedrock above the required 3.5m depth.

Transport Impact Assessment – completed May 2018

This report assesses the impact of the proposal on the adjacent road network, identifies any constraints on the road network and determines if the existing road network can cater for the proposed land use. It considers traffic impact and parking impacts.

Summary of conclusions

- The intersection of Old Cooma Road and Burra Road would likely warrant turn bays on Old Cooma Road under the existing traffic volumes. Notwithstanding this, the intersection currently operates well with minimal vehicle queues and delays on all legs.
- Old Cooma Road and Burra Road are expected to experience considerable growth in the future, approximately 6 per cent per annum as a result of nearby future residential areas.
- It is estimated that the site could generate a peak parking demand of 150 vehicles. Therefore, the site should be designed to accommodate approximately 150 spaces which would ideally be dispersed across the site.
- The car parking provisions would need to accommodate two to three per cent as accessible spaces.
- The site is estimated to generate a peak of 150 vehicles in the AM and PM peak hours. Albeit, the likelihood of the peak traffic generation of the site to overlap with the road network peak hours is considered very low.
- The intersection of Old Cooma Road and Burra Road would continue to operate with minimal queues and delays on all approaches in 2031, following completion of the development and with consideration for 6 per cent annual traffic growth on all movements.
- It is recommended that the site access be provided along Burra Road with some provisions

Flora and Fauna Assessment – completed June 2018

The assessment recommends a series of measures to minimise or mitigate the impacts associated with the proposal as follows:

- Design the proposal to avoid direct impacts to any hollow-bearing trees, paddock trees, or the area of Threatened Ecological Community (TEC) White Box Yellow Box Blakely's Red Gum Grassy Woodland
- Consider developing a Vegetation Management Plan for the site, with a particular emphasis on managing and restoring aquatic habitats and the TEC
- Retain the planted native vegetation. Additional plantings should utilise native species of local provenance to the greatest extent possible
- Any waterway crossings should be designed and constructed in accordance with the national guidelines entitled 'Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings' (Fairfull and Witheridge 2003).
- Develop a Construction Environmental Management Plan (CEMP) to address potential pollution and contamination issues, such as silt control and oil/fuel/chemical storage/spill management, which could arise during construction
- The timing of works should coincide with low flow periods
- If dewatering of pools or farm dams is required, engage a qualified aquatic ecologist to relocate fish and other aquatic fauna upstream

Aboriginal Archaeological Due Diligence Assessment – completed June 2018

This due diligence process provides a framework for determining whether Aboriginal objects will be harmed by the proposed works, as required under Part 6 of the NSW National Parks and Wildlife Act 1974 (NPW Act).

Recommendations of assessment

Recommendation One – Known sites cannot be impacted without an AHIP

All the 11 Aboriginal archaeological sites identified during this assessment are protected under the NPW Act. It is an offence to disturb or damage these sites without first having obtained an Aboriginal Heritage Impact permit (AHIP) from OEH. To obtain an AHIP further archaeological assessment in the form of an Aboriginal Cultural Heritage Assessment (ACHA), including sub-surface testing, will be required

Recommendation Two – More detailed archaeological investigation

If any works or activity that could potentially disturb the ground surface including earthworks, construction, installation of services, landscaping (including planting and stream bank stabilisation measures) are proposed within the identified zone of archaeological sensitivity (Figure 4) then an ACHA including sub-surface testing will be required.

Recommendation Three - General measures

- Aboriginal objects are protected under the NPW Act regardless if they are registered on AHIMS or not. If suspected Aboriginal objects, such as stone artefacts or midden material (shell) are discovered during future works, works must cease in the affected area and an archaeologist called in to assess the finds. If the finds are found to be Aboriginal objects, the OEH must be notified under section 89A of the NPW Act. Appropriate management and avoidance or approval under a section 90 AHIP should then be sought if Aboriginal objects are to be moved or harmed.
- In the extremely unlikely event that human remains are found, works should immediately cease, and the NSW Police should be contacted. If the remains are suspected to be Aboriginal, the OEH may also be contacted at this time to assist in determining appropriate management.

Statement of Heritage Impact – completed June 2018

A statement of heritage impact (SOHI) is conveyed what the impact or impacts of a proposal would be.

Conclusion

There are no significant heritage sites present which may be impacted by the proposed development of a cemetery at Lot 2 DP112382 and Lot 126 DP754881, Old Cooma Road. The proposal will not have a harmful impact on the heritage values of the neighbouring heritage sites Mt Campbell and St Paul's Church of England.

Social Report – completed June 2018

This report outlines potential social issues and impacts for community members living close to the site. It also provides a high level review of the existing social characteristics of the site and its surrounds. It includes a demographic description of the suburb of Googong and compares it with that of the Queanbeyan-Palerang LGA.

Potential social issues during construction

During construction, minor short-term amenity impacts may be experienced at nearby sensitive receptors from noise emissions generated by machinery, heavy vehicles and equipment. Nearby sensitive receptors may also experience minor short-term changes to visual amenity and traffic due to the presence of construction works and vehicles.

Potential social issues during operations

During operations, two sensitive receptors could experience minor amenity impacts from noise emissions associated with mobile machinery operated on site. The site is likely to be visible to sensitive receptors to the west of Old Cooma Road, to the north of Royalla (south of the site), at St Paul's Anglican Church, on higher slopes and ridges between 2 km and 5 km away and on certain roads in proximity to the site. Development of the proposed site will provide improved access to a cemetery facility for the growing population of Queanbeyan. Local businesses such as eating establishments may benefit from increased demand for goods and services during construction and operation of the memorial park. Residents near the proposed site may also be concerned about the potential for development of the site to increase the risk of injury or death from increased traffic volumes on and potential for more frequent accidents to occur during construction and operation. Residents close to the site may also perceive that the proposed development could affect the value of their property.

Noise Impact Assessment – completed July 2018

This assessment was undertaken to assess the potential noise impacts associated with the proposed development. To quantify the existing ambient noise environment surrounding the proposed project site, unattended noise monitoring using remote noise logging equipment, as well as operator-attended observations were undertaken between 23 February and 9 March 2018 (inclusive).

Measurements were conducted at one location within the site along with the identified nearest sensitive receivers. The objective of the noise monitoring was primarily to establish the existing ambient background noise levels, which in turn would be used to determine the project specific trigger levels.

The existing local noise environment was found to be generally dominated by road traffic noise along Old Cooma Road. Contributions from natural sounds such as birds and wind in the trees were also observed.

An assessment of potential noise impacts to nearby sensitive receptors was undertaken, including construction and operational noise. There is potential for mobile outdoor machinery (for example, whipper snippers and lawn mowers) to exceed impact trigger levels at two sensitive receptors located to the south of the site. However, appropriate management actions would be expected to mitigate any impacts

Hydrological assessment – completed July 2018

The assessment was undertaken to identify any potential hydrological and hydrogeological impacts and impacted areas to assess the suitability of the site for the proposed activity. In addition to a desktop review and data search, drainage and flood modelling was undertaken to assess potential flood constraints for the project.

Recommendations:

The following recommendations are made in relation to hydrology, hydrogeology, water quality, and flooding, to better inform the project:

- A detailed survey of the land contours and creek bathymetry needs to be undertaken to be able to accurately model the likely flood extents from Church Creek.
- Hydraulic modelling should be updated based on the recommendation above to provide flood extents for the property from Church Creek
- A climate change assessment of the hydrological aspects in the project area might be undertaken based on Australian Rainfall and Runoff guidelines
- Further data and information on groundwater and potential GDEs in the study area should be collected through a census of the groundwater bores, installation of shallow piezometers (if data from the census suggests groundwater levels may be an issue) and a site-specific survey to verify the presence of any terrestrial GDEs.

Social Impact Assessment – completed January 2019

While not required as part of the Planning Proposal, Council resolved to undertake a Social Impact Assessment to review the social effects of the project. To assist in preparing the assessment:

- A phone survey of 143 residents within the Queanbeyan-Palerang LGA. There were 61 respondents from the suburb of Googong, 82 respondents from surrounding suburbs, with analysis between areas weighted 50:50.
- A Social Impact Assessment focus group with 14 attendees out of 25 invited affected persons.

The assessment found the proposal has a baseline social context of predictable and irreconcilable division between the amenity interests of people living in the area immediate to the site, and the wider public interest in maintaining a right to access interment infrastructure. There was a high degree of alignment found between the identified potential social impact issues for a cemetery on the site and social impact issues identified for other proposed cemeteries throughout NSW and the ACT. Overall, there was a high degree of consensus that a 15-minute travel distance to a rural location such as the site is appropriate for use as a cemetery, however affected people in the immediate geographic area were less likely to agree that the site constitutes the 'outskirts of town'.

Hydrogeological Assessment – completed May 2020

The original hydrological assessment was submitted to the NSW National Resources Access Regulator (NRAR) for consultation. He advised that further monitoring be undertaken prior to finalising the proposed amendment to the Local Environmental Plan. The objective of this assessment was to address the recommendations specified by NRAR and provide evidence on the hydrogeological conditions prevailing across the site.

NRAR provided several specific recommendations that are required to be addressed prior to finalising the proposed amendment to the LEP.

NRAR Recommendation #1

"Further investigation of the baseline groundwater levels and groundwater quality for a minimum 12 month period is undertaken prior to any further action to ensure there is sufficient depth to the water table."

Response

A network of five new monitoring bores (at three locations) have been installed across the Site, with nested sites in the east and west and a shallow bore to the south. Continuous logger monitoring of water levels has been undertaken over the past 15 months and manual spot readings have confirmed the accuracy of the loggers.

NRAR Recommendation #2

"Assessment of the cover-type material and depth to bedrock across the entire site to ensure that natural formations offer protection."

Response

Compilation of all geotechnical reports has provided a comprehensive picture of shallow ground materials allowing a distinction between shallow and deep unconsolidated profiles and demarking a zone with insufficient depth for gravesite development.

NRAR Recommendation #3

"Conduct a hydrogeological assessment of present and future risks should groundwater levels be less than 3 m below the ground surface ... and:

- a) Establish recommendations concerning appropriate management and treatment of leachates
- b) Establish recommendations in order to prevent migration of decomposition products into the substrate and groundwater."

Response

Comparison of water levels with recent rainfall records allows an assessment of response to future events. Water levels respond to definable rainfall events and can be related to past rainfall trends. Rapid response to external stimuli (either addition through indirect rainfall recharge, or extraction through pumping) affords an opportunity to maintain deeper water levels, particularly in the western part of the Site where the current water level is close to 3 m below ground level.

The most appropriate course of management is to prevent water levels rising to depths less than 3 m below ground level through the use of monitoring and pumping as necessary.

- a) Maintenance of the existing clay aquitard between the shallow and deep aquifers will restrict migration of any potential contaminants. No gravesites should be dug that penetrate this layer.
- b) Groundwater from the shallow aquifer naturally uses the existing surficial drainage network and this system should be monitored and bunding and sedimentation ponds could be considered. The existing flow is currently impeded by the road to the west (Eco Logical Australia, 2018) and a suitable containment structure could be established at this location.

NRAR Recommendation #4

"Allowance for climatic effects should be considered."

Response

Current climate predictions for this region suggest a continued drying, punctuated by more severe storm events. Whilst the drying will maintain low water levels, it is likely that extreme events (>100 mm) could induce water level rise in excess of 0.5 m, based on current records. Mitigation actions, such as pumping can effectively reduce this potential and should be coupled with on-going monitoring to continue to build a full understanding of the dynamics of the aquifer systems.

Consolidated response to NRAR generic recommendations

NRAR also noted five relevant (hydrogeological) general recommendations for any new cemetery site (Section 1.2). Based on the studies undertaken to date, the proposed development can satisfy these recommendations through an on-going program of groundwater monitoring and continued awareness of rainfall patterns and the corresponding potential impacts on the water levels. Judicial use of local groundwater pumping can help lower water levels as required, with a natural watercourse providing a suitable discharge pathway. Water quality in the groundwater is good and would not pose any environmental stress to the surface system.

Groundwater could therefore be maintained at greater than 3 m below the ground surface (general recommendation 1) and gravesites can be excavated a minimum of 1.5 m above the water table for a large portion of the Site as dictated by the depth to competent rock (general recommendation 5).

Depth to unaltered or unweathered bedrock is in excess of 6 m for much of the Site. Areas where bedrock is within 3 m of the land surface have been identified and can be avoided (general recommendation 6).

The floodplain adjacent to the creek lines has been determined through examination of digital elevation models and through flood modelling (Eco Logical Australia, 2018) and these zones should be avoided as gravesites (general recommendation 7).

Zonation of the Site allows distinction of areas where there is a high risk of impact from gravesites. Gravesites would be excluded from zones where water levels are consistently shallow; zones which are adjacent to the creek and where the shallow substrate is very permeable (general recommendation 8).