# Kurrajong Road and Mowbray Street Intersection Upgrade, Prestons

# Review of Environmental Factors

**December 2023**

LIVERPOOL CITY COUNCIL

LIVERPOOL THE GREAT SOUTH WEST

# Document control

| SURE ENVIRONMENTAL | | | |
|---|---|---|---|
| Project: | Kurrajong Road and Mowbray Street – intersection upgrade | | |
| Version | Date | Prepared by | Reviewed by |
| Draft | 4/07/2023 | JD | ED |
| Draft v2 | 21/11/2023 | JD | ED |
| Final | 11/12/2023 | JD | ED |

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# Certification

This Review of Environmental Factors (REF) considers, to the fullest extent possible, all matters affecting or likely to affect the environment, for the purpose of protection and enhancement of the environment.

I certify that I have reviewed and endorsed the contents of this REF document and, to the best of my knowledge, it is in accordance with the *Environmental Planning & Assessment Act 1979* (EP&A Act), the Environmental Planning & Assessment Regulation 2021 and the Guidelines approved under clause 170 of the EP&A Regulation, and the information it contains is neither false nor misleading.

| Prepared by: | Reviewed by: |
|---|---|
|  |  |
| Jonathan Dowling | Mahavir Arya |
| Environmental Consultant | Transport Engineer |
| Sure Environmental | Liverpool City Council |
| Date: 11/12/2023 | Date: 14/12//2023 |

# 1 Introduction

## 1.1 Proposal identification

Liverpool City Council (Council) proposes to signalise the Kurrajong Road and Mowbray Street intersection in Prestons from the current seagull intersection treatment with stop control on the Mowbray Street approach. The proposal is required to improve road safety due to increasing crashes and traffic delays.

The proposed intersection upgrade has part Federal funding allocation under its Black Spot Program.

The locality map showing the intersection is shown in Figure 1-1 and an aerial image of the intersection is as shown in Figure 1-2.

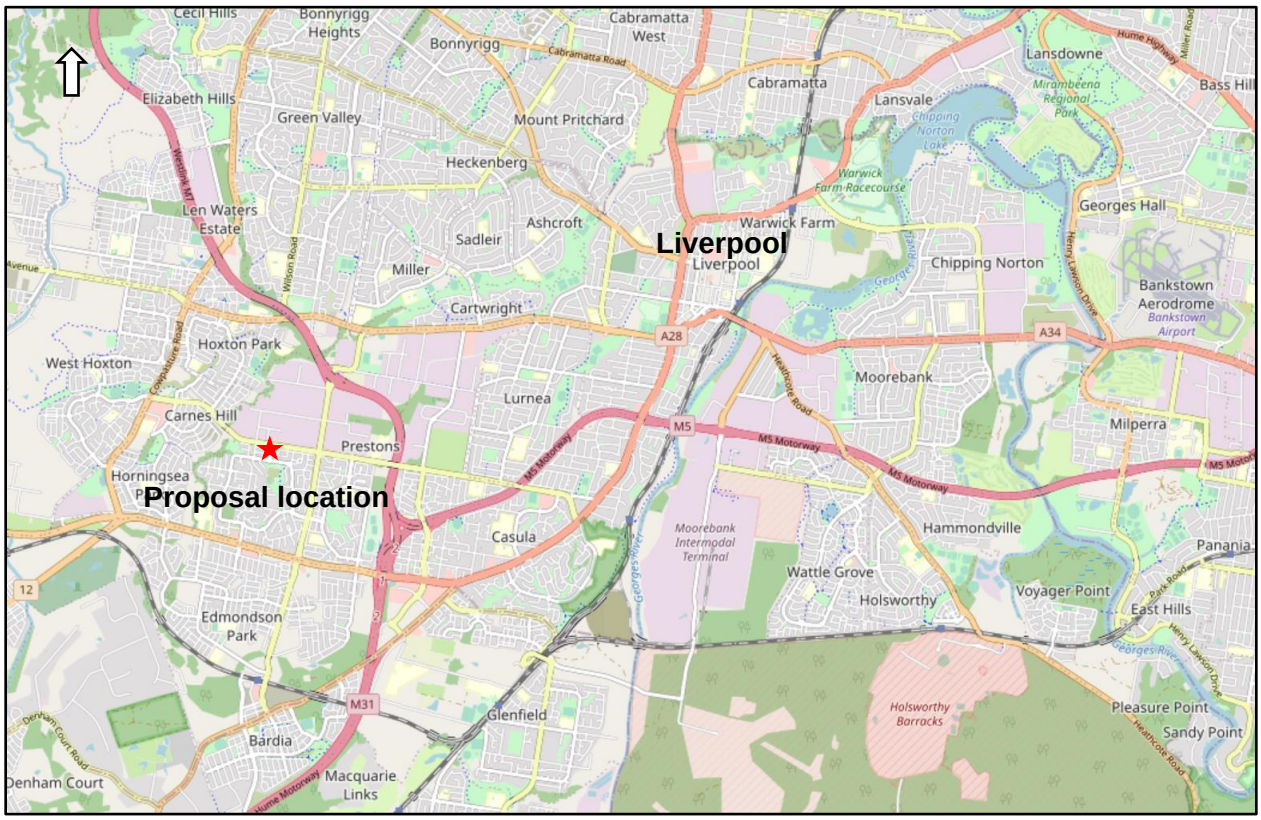


*Figure 1-1 Proposal location – regional context*


*Figure 1-2 Kurrajong Road and Mowbray Street intersection – proposal area*

## 1.2 Purpose of the report

This Review of Environmental Factors (REF) has been prepared for Council to consider and address environmental issues during and on completion of the proposed works. Council is the proponent and the determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The purpose of the REF is to describe likely impacts of the proposed works on the environment, and to detail protective measures to be implemented to reduce likely impact.

The description of the proposed works and associated environmental impacts have been undertaken in context of clause 171 of the *Environmental Planning and Assessment Regulation 2021*, the *Biodiversity Conservation Act 2016* (BC Act), *the Fisheries Management Act 1994* (FM Act), and the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In doing so, the REF helps to fulfil the requirements of section 5.5 of the EP&A Act that Council examine and take into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.

The findings of the REF would be considered when assessing:

- Whether the proposal is likely to have a significant impact on the environment and therefore the necessity for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act
- The significance of any impact on threatened species as defined by the BC Act and/or FM Act, in section 1.7 of the EP&A Act and therefore the requirement for a Species Impact Statement or a Biodiversity Development Assessment Report.
- The potential for the proposal to significantly impact a matter of national environmental significance or Commonwealth land and the need to make a referral to the Australian Government Department of Climate Change, Energy, the Environment and Water for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the EPBC Act.

# 2 Need and options considered

## 2.1 Need and justification

In 2015, a missing link in Kurrajong Road between Carnes Hill and Prestons was constructed. This resulted in increased traffic flow along Kurrajong Road and associated traffic conflicts and traffic delays for turning movements in and out of Mowbray Street.

The Transport for NSW (TfNSW) crash database indicated that there were eight crashes in the five year period ending June 2020, at the intersection. Six of these were injury crashes, three being serious. Four of the crashes involved a right turning vehicle from Mowbray Street and one a right turning vehicle on to Mowbray Street.

The crash history is unacceptable, and meets the warrant for the Federal Blackspot Improvement Program. In addition, Council received numerous requests from residents to upgrade the intersection to a roundabout or to install traffic signals.

Intersection Performance Analysis, using SIDRA, was carried out considering existing and future traffic volumes predicted to increase by approximately 2% annually over the next 10 years.

The existing traffic volumes warrant traffic signals at this intersection. The modelling indicates that with the traffic signals, the intersection is expected to perform with acceptable Level of Service (LoS) during the morning and afternoon peak periods.

With the traffic signals, traffic conflicts would be minimised and road safety would improve, therefore the proposal is justified.

TfNSW supports the proposal for a new traffic signals and is partly funded by Council and the Federal Government.

### Community Requests

Council has received numerous requests from Prestons residents, Councillors and Members of Parliament to upgrade the intersection to either a roundabout or traffic signals. The residents' concerns relate to traffic delays and safe turning movements at the intersection.

## 2.2 Existing environment

Kurrajong Road is an east-west road unclassified regional road linking two classified state roads - Hume Highway and Cowpasture Road. Kurrajong Road provides access to residential precincts along both sides including primary and high schools, regional shopping centres in Casula and Carnes Hill, Carnes Hill Community precinct, and Prestons Industrial Area. The road also provides in-direct access to Hoxton Park and West Hoxton residential precincts.

**Kurrajong Road** has a speed limit of 60 km/hr and has been identified as a future four lane road with two traffic lane carriageways in each direction. The section of Kurrajong Road between Cowpasture Road and Mowbray Street is already a four lane road and Council is planning for the remaining sections to be widened to four lanes when traffic volumes warrant such upgrades within the existing road reserve.

**Mowbray Street** is approximately 11.6m wide and 190m long between Kurrajong Road and Braidwood Drive. The street is a north-south local collector road. The street is a two-lane two-way street with divided carriageway and provides direct access to the adjoining residential area in Prestons. Mowbray Street has a default 50km/h General Urban Speed limit.

The street forms a 'T' intersection with Kurrajong Road with access to an adjoining car park almost opposite Mowbray Street.

**At the intersection**, Kurrajong Road has two westbound, one eastbound through and one right turn lane and Mowbray Street, has one traffic lane on approach but the wider approach additional short lane of one vehicle for left turn exists.

The intersection has currently seagull intersection control; with a dedicated right turn lane from Kurrajong road into Mowbray Street. This reduces the eastbound traffic on Kurrajong Road to a single lane.

A single lane driveway exiting from the existing car park located on the north side of the intersection.

### Land-use

Land-use on the southern side of Kurrajong Road, close to the intersection, is residential with industrial properties on the northern side. Mowbray Street provides access to Braidwood Drive which provides access residential properties having rear fences along Kurrajong Road and Mowbray Street through side streets Bergalia Close and Huskisson Street. The residential properties are higher than the road level and the embankment is retained by retaining walls on both sides of the intersection. The residences are generally single storey and occasionally two-storeys. All residents have timber fences on top of the embankment.

The industrial development on the north has existing car parks at the front. The car park on the east side is a private car park which has two driveways. The driveway closer to the intersection is exit only driveway with an existing left turn only restrictions. The car park on the west side of the intersection is a public car park with an exit only driveway at the intersection.

### Vegetation

The embankment has some planted native vegetation which would be impacted with the road widening. The verge along Mowbray Street contains mature native trees and these trees would be retained as part of the project.

### Car parks

There are two existing car parks on the northern side of Kurrajong Road, close to the intersection. The car park on the western side is a Council owned public car park whilst the car park on the eastern side is a private car park.

The entrance to the public car park is east of Kookaburra Road (N) with an exit at the intersection, opposite Mowbray Street. The private car park has two driveways, and both are on the eastern side of the intersection and the driveway closer to the intersection is exit only with entry restrictions.

Site photographs are shown in Appendix B.

## 2.3 Proposal objectives

The objective of the proposal is:

- Improve safety at the Kurrajong Road and Mowbray Street intersection
- Increase road capacity or eastbound traffic along Kurrajong Road and improve traffic flow.
- Improve pedestrian safety across Kurrajong Road and Mowbray Street, at the intersection.

## 2.4 Alternatives and options considered

### 2.4.1 Consideration of alternatives

#### Option 1 - Do nothing

This option would retain the existing configuration and conditions at the intersection. The SIDRA intersection modelling showing Level-of-Service (LoS), Average Delays (AVD) and queue length in the morning and afternoon peak periods under the existing and future traffic conditions. As indicated above, the future conditions is based on 2% annual growth over the next 10 years as shown in Table 2-1.

*Table 2-1 SIDRA modelling*

| | Existing Traffic | | Future 10Y Traffic with 2% annual growth | |
|---|---|---|---|---|
| LoS | E | C | F | F |
| Average Delay | 12.5 sec | 6.1 sec | 89.6 sec | 32.3 sec |
| Worst Queue length | 169 m | 45 m | 860 m | 307 m |

The results indicate that the existing LoS will worsen from the existing LoS A and C' to LoS 'F' during the morning and afternoon peak respectively in future (over the next 10 years). These traffic delays would result in long queues and worsen crash history at this intersection.

There would be no environmental impacts associated with this option.

#### Option 2 – Intersection upgrade

Two sub options were considered for the intersection upgrade i.e. a dual lane roundabout or new traffic signals.

**Roundabout**

Council proposes to upgrade Kurrajong Road as a four-lane road in future (two lanes in each direction). This requires a dual lane roundabout. The intersection is adjacent next to the Prestons

Industrial Area with high number of heavy vehicles, the dual lane roundabout would require approximately 30m road reserve compared to the available 20m. This would require property acquisitions and relocation of services which will make this option not feasible.

**Traffic Signals**

Traffic signals with four lanes and a short dedicated right turn lane (for turning movements into Mowbray Street) along Kurrajong Road can be accommodated within the existing road reserve and considered to be a viable option.

Option 2 with new traffic signals will improve safety and provide an acceptable LoS during the peak periods. This option would meet the proposal objectives.

**Construction Impact**

There would be construction impacts associated with this option, including noise, dust and traffic impacts. These impacts would be managed and minimised by implementing the safeguards identified in this REF.

### 2.4.2 Selection of the preferred option

The preferred option is Option 2 i.e. installation of a new traffic signals with two traffic lanes in each direction with a short dedicated right turn lane in Kurrajong Road, right and left turn lanes in Mowbray Street, and signalised pedestrian crossings across the intersection carriageways.

# 3 Description of the proposal

## 3.1 The proposal

Liverpool City Council proposes to:

- Signalise the intersection of Kurrajong Road and Mowbray Street, including signalised pedestrian crossing across the intersecting carriageways.
- Widen Kurrajong Road on the southern side, to provide two eastbound lanes, and a short dedicated right turn lane.

### 3.1.1 Traffic lanes

Kurrajong Road would be widened by about 1.8m to provide the following lane configuration:

#### Kurrajong Road, west of Mowbray Street

- Two eastbound lanes - 3.1m and 3.0m wide
- Two westbound lanes - 3.0m and 3.1m wide
- Dedicated right turn lane – 3.0m wide and approximately 40m long.

#### Kurrajong Road, east of Mowbray Street

- Two eastbound lanes - 3.15m and 3.2m wide
- Two westbound lanes - 3.2m and 3.3m wide.
- Installation of a median across the exit driveway of the existing private car park to prevent right turn movements.

The existing pavement markings and signs would be updated to meet the new intersection configuration.

#### Mowbray Street

- Two northbound lanes - 3.45m and 3.2m wide
- One southbound lane – 5.1m wide.

The existing median would be removed in a short section to allow two lane movements (left and right turns) and new road marking for the new road configuration.

#### Car Park Access

The existing exit from the public carpark onto Kurrajong Road will be closed and the western entry driveway would be modified to allow entry and exit movements.

### 3.1.2 Signals, access, drainage and retaining wall

#### Traffic signals

At the new traffic signals, signalised pedestrian crossings would be installed in all directions in accordance with TfNSW approved design.

#### Road Widening

The road widening along Kurrajong would require removal and replacement of the existing 90m concrete block retaining wall, relocation of Sydney Water pipeline and existing street lights on the south-western side of the intersection,

Retaining wall

The existing 90m concrete block retaining wall on the southern side of Kurrajong Road would be removed. A new retaining wall would be constructed about 1.25 metres south of the existing wall.

Kerb and Guttering

About 200m of kerb and gutter on the southern side of Kurrajong Road and on Mowbray Street would be removed and replaced. The new kerb and gutter on Kurrajong Road would be 1.8m south of the existing kerb and gutter. About 45m of kerb would be removed and replaced on the southern side of Kurrajong Road, east of Mowbray Road.

Access and pedestrian facilities

About 140m of the existing shared path on the south side along Kurrajong Road would be impacted by the proposed road widening. The path would be reinstated and alignment maintained. The signalised intersection will incorporate shared path link and pram ramps in accordance with TfNSW requirements.

Additionally, a footpath on the north side of Kurrajong Road linking the existing footpaths between Mowbray Street and Kookaburra Street (N) would also be provided.

#### Car parks

The public car park driveway on the northern side of Kurrajong Road located at the intersection will be closed and additional parking spaces within the car park would be provided. The driveway west of the intersection would be widened to accommodate entry and exit movements.

The existing access arrangements of the private car park, east of the intersection will remain unaffected.

## 3.2 Works method

The proposed works involve the following:

#### Works along Kurrajong Road on the south-west side of the intersection

a) Install traffic controls. The kerb side westbound lane on Kurrajong Road would be closed for the duration of the road widening works involving relocation of Sydney Water

assets and street lights, and construction of retaining wall, kerb and guttering and shared path.

b) Install jersey kerbs (or similar) around the work areas

c) Remove traffic signs

d) Install temporary measures to retain the embankment

e) Relocate light poles

f) Excavate and remove existing retaining wall and footpaths

g) Classify material and reuse or dispose

h) Install new reinforced concrete retaining wall

i) Remove temporary retaining measures and backfill if required

j) Reinstate street light poles

k) Remove and install kerb and gutter

l) Widen the existing driveway near Kookaburra Road (N).

m) Install new footpath and shared paths

n) Reinstate signs

o) Remove controls.

### Work on Mowbray Street on approach to the intersection

a) Install traffic controls. One lane in each direction would be maintained through the work
b) Install environmental controls
c) Remove existing median from Mowbray Street
d) Remove existing road markings and sign
e) Lay asphalt where median was removed
f) New road markings
g) Remove controls.

### Other work

a) Install environmental controls
b) Install traffic signals
c) Install traffic controls
d) Construct new median on Kurrajong Road, east of Mowbray Street
e) Remove driveway access into the public car park and reinstate kerb and gutter
f) Widen the access to the car park on the north side of Kurrajong Road
g) Provide linemarkings in the public car park to provide additional parking spaces.
h) Re-asphalt the intersection
i) Remove controls.

## 3.3 Plant and equipment

The following plant and equipment would be required:

a) Excavator
b) Trucks
c) Concrete truck
d) Generators
e) Light towers
f) Light vehicles
g) Asphalt machine
h) Grader
i) Roller
j) Hand tools.

## 3.4 Ancillary facilities

A compound site would be required for amenities such as toilets, lunchroom and a site office. A laydown area for materials would also be needed. The facilities needed and the location would be decided by the contractor. The car park on the north side of Kurrajong Road could be used. An alternative location can be used provided:

- Vegetation clearing is not required
- Extensive ground disturbance is not required
- Drainage paths are not impacted.

## 3.5 Timeframe and work hours

The timing of the work will depend on project funding and may be completed in stages. Work would be carried out during standard hours and at night. Standard hours are:

Monday to Friday: 7am to 6pm

Saturday: 8am to 1pm

Sunday and public holidays: no work.

In addition, some night works would also be required.

# 4 Statutory and planning framework

## 4.1 Environmental Planning and Assessment Act 1979

This REF has been prepared under Division 5.1 of the EP&A Act and addresses the obligations of the public authority (Liverpool City Council) to consider all factors listed under clause 171 (Appendix A) of the EP&A Regulation when considering the likely impact of an activity on the environment.

## 4.2 State environmental planning policies

### 4.2.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP) aims to facilitate the effective delivery of infrastructure across the State.

In accordance with section 2.109 of the Transport and Infrastructure SEPP, development for the purposes or road or road infrastructure facilities may be carried out by a public authority on any land without development consent.

## 4.3 Local environmental plans

### 4.3.1 Liverpool Local Environmental Plan 2008

The proposed works are located on land zoned as R2 Low density residential and E4 General industrial. The Transport and Infrastructure SEPP removes the need for consent and the proposal is permitted without consent.

## 4.4 Other relevant legislation

### 4.4.1 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) regulates land, air, noise and water pollution in NSW. It includes provisions for clean-up notices, prevention notices, prohibition notices, audits and issuing environment protection licences. It also aims to provide opportunity for increased public involvement and access to information regarding environmental protection. An environment protection licence (EPL) is required for scheduled activities or scheduled development work outlined in Schedule 1 of the POEO Act. The proposed works are unlikely to require an EPL.

Section 148 of the POEO Act requires that any pollution incidents where material harm to the environment is caused or threatened must be reported. Failure to do so is an offence.

### 4.4.2 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) a referral is required to the Australian Government for proposed ‘actions that have the potential to

significantly impact on matters of national environmental significance (MNES) or the environment of Commonwealth land'.

Any action that has potential to have a significant impact on a listed endangered ecological community must be referred to the Commonwealth Department of Climate Change, Energy, the Environment and Water in accordance with Part 3 of the Act.

The proposal is unlikely to have a significant impact on the community and a referral is not required.

# 5 Stakeholder and community consultation

## 5.1 Consultation

Liverpool City Council received requests from local residents to upgrade the intersection to a roundabout or install traffic signals. The proposal would address community concerns about road safety at the intersection.

Council would notify potentially impacted residents and businesses, in particular:

- Residents on Bergalia Close and Huskisson Street
- Businesses that rely on their customers using the car park.

The retaining wall work has potential to impact fences on the embankment and residents are likely to experience noise and dust impacts. Work on the car park access has potential to impact businesses. Council would consult with residents and businesses to ensure that impacts are minimised.

Other potentially impacted stakeholders would be notified of the works. Notifications would include:

- Description and location of the work
- Start and duration of the work
- Potential impacts
- Changed traffic conditions
- Contact details for further information.

## 5.2 Transport and Infrastructure SEPP consultation

Part 2.2 of the Transport and Infrastructure SEPP contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development.

Section 2.17 states that Sections 2.10-2.15 do not apply if the development would require notice to be given to a council that is carrying out the development or on whose behalf it is being carried out.

Consultation for the purpose of Section 2.15 is outlined in Table 5-1. Liverpool City Council is not required to consult with other agencies.

*Table 5-1 Consultation requirements*

| Is consultation with other agencies required under section 2.15 of the Infrastructure SEPP? | |
|---|---|
| (a) development adjacent to land reserved under the National Parks and Wildlife Act 1974 or to land acquired under Part 11 of that Act—the Office of Environment and Heritage | No |
| (b) development on land in Zone C1 National Parks and Nature Reserves or in a land use zone that is equivalent to that zone—the Office of Environment and Heritage | No |
| (c) development comprising a fixed or floating structure in or over navigable waters—Transport for NSW | No |
| (d) development that may increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map—the Director of the Observatory | No |
| (e) development on defence communications facility buffer land within the meaning of clause 5.15 of the Standard Instrument—the Secretary of the Commonwealth Department of Defence | No |
| (f) development on land in a mine subsidence district within the meaning of the Mine Subsidence Compensation Act 1961—the Mine Subsidence Board | No |
| (g) development on, or reasonably likely to have an impact on, a part of the Willandra Lakes Region World Heritage Property—the World Heritage Advisory Committee and Heritage NSW | No |
| (h) development within a Western City operational area specified in the Western Parkland City Authority Act 2018, Schedule 2 with a capital investment value of $30 million or more—the Western Parkland City Authority constituted under that Act | No |

# 6 Environmental assessment

## 6.1 Soil and water

### 6.1.1 Existing environment

The proposal is contained within the existing road corridor. The road corridor contains asphalt traffic lanes, concrete shared path and an embankment with a retaining wall. There is kerb and gutter along Kurrajong Road and Mowbray Street connecting to the stormwater system.

There are no waterways in the vicinity of the proposal. There are no acid sulphate soils in the area. However, the area is mapped as having moderate potential for salinity.

There are no records of contaminated land in Prestons (EPA Contaminated Land record).

### 6.1.2 Potential impacts

The proposal would require excavation to remove the path and existing retaining wall on the southern side of Kurrajong Road. Removing the retaining wall has the potential to result in sediment loss to the stormwater system. However, the embankment has stiff clay and is not expected to subside. In addition, work on the retaining wall would be completed in stages during dry weather to mitigate the risk of collapse. Temporary stockpiles of spoil from the embankment would be required. However, stockpiles would be removed before the completion of the shift. Replacing kerb and gutter would require some ground disturbance. However, this is expected to be minor.

There is potential for fuel or chemical spills to impact stormwater. This would be managed by implementing the safeguards below.

The area has moderate salinity potential. The proposal area is an existing road corridor and any excavation would be shallow. The salinity potential is not expected to result in any impact.

There is potential to encounter unexpected contamination such as asbestos during excavation work.

Overall, the potential impact to soil and water is low.

### 6.1.3 Safeguards and management measures

- An Erosion and Sediment Control Plan (ESCP) will be prepared for the work that will incorporate specifications outlined in the NSW Soils and Construction – Managing Urban Stormwater Volume 1 “the Blue Book” (Landcom, 2004)
- Environmental safeguards are to be installed consistent with “Managing Urban Stormwater: Soils and Construction” (4th Edition Landcom, 2004, aka the Blue Book (see http://www.landcom.com.au/whats-new/the-blue-book.aspx)) to ensure that there is no escape of sediment into any drainage lines
- Erosion and sediment controls will be maintained regularly until the proposed works are completed

- Stop work and seek advice from the Liverpool City Council environmental representative if odours, unusual discolouration or previously unidentified construction and demolition waste are encountered in site soils
- Any asbestos found would be removed by a qualified contractor with the appropriate asbestos removal licence
- Excavated material will be classified in accordance with the Environmental Protection Authority (EPA) Waste Classification Guidelines 2014 prior to disposal
- DPE will be notified of any incidents resulting in environmental harm as per Part 5.7 of the *Protection of the Environment Operations Act 1997*
- Spill kits will be located on site at all times during construction. All staff must be inducted into the incident emergency spill procedures and made aware of the location of emergency spill kits
- All fuels, chemicals, and liquids will be stored in an impervious bunded area. The volume of the bunded area would be at least 110% of the volume of the stored tanks
- The refuelling of equipment will be carried out in an impervious bunded area
- Any material transported onto pavement surfaces will be swept and removed at the end of each working day
- The weather forecast will be monitored daily
- Disturbed areas will be stabilised in advance of heavy rain
- Work on the embankment would be completed in stages and only during dry weather when there is minimal risk of subsidence
- Stockpiled spoil will be stored away from stormwater flow paths.

## 6.2 Air quality

### 6.2.1 Existing environment

The main influence on air quality around the proposal site is vehicle emissions from surrounding roads. Sensitive residential receivers are located at the top of the embankment on the southern side of Kurrajong Road.

### 6.2.2 Potential impact

During the proposed works there would be the potential for a localised deterioration in air quality due to:

- Dust generated from ground disturbance
- Emissions from machinery and vehicles
- Uncovered loads.

Dust has potential to affect people's health, coat windows and cars causing annoyance to residents. Exposed areas and stockpiles will be managed to minimise dust impacts to surrounding residents.

Given the close proximity of residences on Bergalia Close and Huskisson Street there is a high potential for dust impacts. Safeguards would be implemented to minimise dust impacts.

### 6.2.3 Safeguards and management measures

- Smoky emissions will be kept within the standards and regulations under the *Protection of the Environment Operations Act 1997* that no vehicle shall have continuous smoky emissions for more than 10 seconds
- Monitor the weather forecast and minimise work that could generate dust during windy periods
- Measures (including watering or covering exposed areas) will be used to minimise or prevent air pollution and dust
- Trucks transporting material will be covered at all times to prevent dust emissions.

## 6.3 Waste management

### 6.3.1 Policy setting

Waste management would be undertaken in accordance with the Waste Avoidance and Resource Recovery Act 2001.

The objectives of this Act are:

(a) to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development,

(b) to ensure that resource management options are considered against a hierarchy of the following order:

  i) avoidance of unnecessary resource consumption,

  ii) resource recovery (including reuse, reprocessing, recycling and energy recovery),

  iii) disposal,

(c) to provide for the continual reduction in waste generation,

(d) to minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste,

(e) to ensure that industry shares with the community the responsibility for reducing and dealing with waste,

(f) to ensure the efficient funding of waste and resource management planning, programs and service delivery,

(g) to achieve integrated waste and resource management planning, programs and service delivery on a State-wide basis,

(h) to assist in the achievement of the objectives of the *Protection of the Environment Operations Act 1997*.

### 6.3.2 Potential impacts

The following waste would be generated by the proposal:

- Green waste

- Demolition waste
- Concrete
- Asphalt
- Spoil
- Paint
- General waste.

Substantial quantities of waste are not expected to be generated by the proposal. Where possible waste would be recycled. All residual waste would be disposed of at appropriately licensed waste facilities.

### 6.3.3 Safeguards and management measures

- Resource management hierarchy principles are to be followed:
    - Avoid unnecessary resource consumption as a priority
    - Avoidance is followed by resource recovery (including reuse of materials reprocessing, recycling and energy recovery)
    - Disposal is undertaken as a last resort

  (in accordance with the Waste Avoidance & Resource Recovery Act 2001)
- All waste material will be classified in accordance with the EPA Waste Classification Guidelines
- Waste will not be burnt on site
- Waste material will not be left on site once the works have been completed
- Working areas will be maintained, kept free of rubbish and cleaned up at the end of each working shift.

## 6.4 Aboriginal heritage and non-Aboriginal heritage

### 6.4.1 Existing environment

The following heritage databases were searched:

- Aboriginal Heritage Information Management System (AHIMS)
- State Heritage Inventory
- Commonwealth and Heritage lists.

There are no registered Aboriginal or non-Aboriginal heritage items in the vicinity of the proposal.

### 6.4.2 Potential impacts

The proposal area is highly disturbed and is unlikely to contain any heritage potential. The potential to impact heritage is low.

### 6.4.3 Safeguards and management measures

- If unexpected heritage items are uncovered, Liverpool City Council's Aboriginal and Historic Heritage Unexpected Finds Procedure is to be applied.

- If potential heritage items are discovered then all works will stop and the Council's Environmental Officer will be contacted. If any item found on the site is thought to be significant, the Heritage Council NSW will be contacted.

## 6.5 Noise and vibration

A construction and operational noise assessment was prepared by Koikas acoustics. The assessment report is summarised in this section and the full report is provided in Appendix C.

### 6.5.1 Existing environment

Unattended noise loggers were installed at two locations to measure background noise levels (Figure 6-1). Background noise was measured between Wednesday 6 September and 12 September 2023.


*Figure 6-1 Location of background noise loggers*

Results of unattended noise logging are provided in Table 6-1. The results show that ambient noise levels during the daytime are marginally louder at Noise Logger 2, 33 Huskisson Street. However, generally the same levels at both sites during the evening and nighttime.

Prevailing ambient noise conditions on-site and in the local area are generally the result of typical environmental noise such as traffic and localised domestic and industrial noise sources.

*Table 6-1 Unattended noise logging results*

| Location | Period[1] | Ambient noise level $L_{Aeq}$ (dB) | Rating background level $L_{A90}$ (dB) | Traffic noise level $L_{Aeq,\ Period}$ (dB) | Maximum traffic noise level $L_{Aeq,\ 1\text{-}hour}$ (dB) |
|---|---|---|---|---|---|
| Noise logger 1<br>24 Bergalia Cl | Day | 60 | 49 | 60 | 62 |
| | Evening | 60 | 46 | | |
| | Night | 57 | 36 | 57 | 61 |
| Noise logger 2<br>33 Huskisson St | Day | 61 | 47 | 61 | 63 |
| | Evening | 60 | 46 | | |
| | Night | 60 | 36 | 60 | 61 |

Notes:

1 The NSW EPA Noise Policy for Industry (NPfI) refers to:

Daytime: 7 am – 6 pm Monday to Saturday and 8 am to 6 pm Sunday and public holidays.

Evening: 6 pm – 10 pm Monday to Sunday

Night: 10 pm - 7 am Monday to Saturday and 10 pm to 8 am Sunday and public holidays.

2 The EPA/RMS/NSW DoP refers to:

Daytime: 7 am – 10 pm seven days per week.

Night: 10 pm - 7 am seven days per week

Vibration monitoring was also carried out at the locations in Figure 6-1. Vibration levels range from 0.45 to 1.71 mm/2 at 24 Bergalia Close (Noise logger 1) and range from 0.37 to 4.56 mm/s at 33 Huskisson Street (Noise logger 2). The vibration monitoring results are provided in Appendix C.

### 6.5.2 Assessment methodology

#### Construction noise

Construction is assessed in accordance with the Interim Construction Noise Guideline (DECCW, 2009). The focus of the guideline is to provide a means of determining the severity of noise impacts at surrounding affected receiver locations and set a framework for managing construction noise, generally through implementing best practice noise minimisation principles and facilitating communication between construction workers and the local community.

For this assessment, 10 dB above the daytime rating background level (RBL) (47-49 dBA) is $L_{Aeq,\ 15\ minutes}$ 57-59 dB(A). This is defined as the *Daytime Noise Affected Level*. Additionally, 5 dB above the nighttime RBL (36 dBA) is $L_{Aeq,\ 15\ minutes}$ 41 dB(A). This is defined as the *Nighttime Noise Affected Level*. Above these noise levels, it is required that all feasible and reasonable work practices are implemented to minimise impacts.

$L_{Aeq, 15\ minutes}$ 75 dB is defined as the *Highly Noise Affected Level*. At and above this level, additional feasible and reasonable mitigation strategies are implemented such as adopting time restrictions for work activities or providing respite periods throughout the workday that have been agreed upon via a community consultation process.

The potential for noise-induced sleep disturbance should be considered where a noise source or activity from a particular development occurs before 7 am (Monday to Saturday) or 8 am (Sundays or public holidays) and/or after 10 pm (Monday to Sunday). Noise screening levels from the NSW EPA Noise Policy for Industry (NPfI) and the NSW EPA Noise Guide for Local Government (NGLG) were used. Where a screening identifies the potential for sleep disturbance the maximum event noise level inside an affected residence would be assessed against the criteria in the Road Noise Policy (RNP).

Sleep disturbance assessment criteria are provided in Table 6-2.

*Table 6-2 Sleep disturbance assessment levels*

| Description | Assessment period | $L_{Aeq}$ noise level (dB) | $L_{Amax}$ noise level (dB) |
|---|---|---|---|
| Screening assessment 'a' NPfI | Night only<br>10 pm to 7 am (Mon-Sat)<br>10 pm to 8 am (Sun & pub hols | $LA_{eq\ 15\ mins}$ ≤ 40 dB or the RBL + 5, whichever is the greater | $L_{Amax\ outdoors}$ ≤ 52 dB or the RBL + 15, whichever is the greater |
| Screening assessment 'b' NGLG | Night only<br>10 pm to 7 am (Mon-Sat)<br>10 pm to 8 am (Sun & pub hols) | N/A | $L_{Amax\ outdoors}$ ≤ RBL + 15 ($L_{A1}$, 1 minute may also be used where appropriate) |
| Internal $L_{Amax}$ assessment RNP | Night only<br>10 pm to 7 am (Mon-Sat)<br>10 pm to 8 am (Sun & pub hols) | N/A | $L_{Amax\ indoors}$ ≤ 50-55 dB is "unlikely to cause awakenings" |

### Construction vibration

Construction vibration is assessed for human disturbance and impact to structures. The impact on human comfort during construction work is assessed using the vibration standards in British Standard 6472-1992 Evaluation of human exposure to vibration in buildings (1Hz to 80Hz). The maximum vibration dose values (VDV) that correlate with human annoyance at residences is provided in Table 6-3.

*Table 6-3 Acceptable vibration dose value for intermittent vibration (m/s1.75), BS6472:1992*

| Location | Daytime | | Night time | |
|---|---|---|---|---|
| | Preferred value | Max value | Preferred value | Max value |
| Residences | 0.2 | 0.4 | 0.13 | 0.26 |

Structural damage criteria can be taken from British Standard 7385-2:1993 and/or German Standard DIN4150-Part 3.

BS7385-2:1993 recommends a maximum peak component particle velocity when measured at the base of the building of:

- 50 mm/s for reinforced or framed structures – Industrial and heavy commercial buildings.
- 15 mm/s for unreinforced or light framed structures – Residential or light commercial type buildings.

The maximum peak particle velocities recommended by the German standard DIN4150-3 are provided in Table 6-4.

*Table 6-4 DIN4150-3 guideline value for assessing short-term vibration effects*

| Line | Type of structure | Vibration velocity (mm/s) | | | |
|---|---|---|---|---|---|
| | | Foundation | | | Plane of the floor of the uppermost full storey |
| | | Less than 10Hz | 10 to 50Hz | 50 to 100Hz | Frequency mixture |
| 1 | Buildings used for commercial purposes, industrial buildings and buildings of similar design | 20 | 20 to 40 | 40 to 50 | 40 |
| 2 | Dwellings and buildings of similar design and/or use | 5 | 5 to 15 | 15 to 20 | 15 |
| 3 | Structures that, because of their particular sensitivity to vibration, do not correspond to those listed in lines 1 and 2 and are of great intrinsic value (e.g. buildings that are under a preservation order) | 3 | 3 to 8 | 8 to 10 | 8 |

### Operational noise

The Road Noise Policy provides the applicable assessment criteria for road traffic around residences (Table 6-5) for the proposal. Traffic counts were carried out to establish the current traffic volumes during the morning peak period (7:45am to 8:45am).

*Table 6-5 Road traffic noise assessment criteria for residential land use*

| Road category | Type of project/land use | Assessment criteria (dB(A)) | |
|---|---|---|---|
| | | Day (7am to 10pm) | Night (10pm to 7am) |
| Local road | Existing residences affected by noise from redevelopment of existing local roads | $L_{Aeq, (1\ hour)}$ 55 (external) | $L_{Aeq\ (1\ hour)}$ 50 (external) |

## 6.5.1 Potential impacts

### Construction noise

The closest receiver is about six metres from the proposed work. The noise level for 25 types of equipment that may be used was calculated and compared to the day and night noise criteria. The full assessment is provided in Appendix B. In summary:

- The daytime noise affect level of 57-59 dB would be exceeded by all but one piece of equipment
- The night noise affect level of 41 dB would be exceeded by all equipment
- The resident at this location would be highly noise affected when 20 of the 25 pieces of equipment are in use in day or night time.

The nosiest equipment (at 6 metres) are predicted to be:

- Rock breaker – 97 dB
- Rock saw – 94 dB
- Excavator breaking and spreading rubble – 89 dB.

The Interim Construction Noise Guideline outlines that strong justification is usually required for construction works outside of daytime hours. Due to the need to keep the existing road network open, construction works will need to take place during night hours to ensure traffic congestion is minimised. Most of the surrounding receivers are expected to be exposed to high noise emanating from the construction site. This is not surprising as all construction sites produce high levels of noise, and often cannot be effectively reduced at the source, at the boundary and the receiver. It is therefore necessary to consider all practical, feasible and reasonable noise control measures.

Minimising the impact of noise from construction sites to surrounding land uses can be achieved through treatment of the noise sources themselves, treating noise along its propagation path and/or by consulting with the community and scheduling noise-intensive works during less noise sensitive times of the day. Consideration needs to be given to each source in identifying the most practical and efficient noise controls where treatment is necessary. The effectiveness of various form of noise control are provided in Table 6-6.

*Table 6-6 Relative effectiveness of various forms of noise control*

| Control by | Nominal noise reduction possible, in total A-weighted sound pressure level $L_{pA}$ (dB) |
|---|---|
| Distance | Approximately 6 for each doubling of distance |
| Screening | Typically 5 to 10, max 15 |
| Enclosing | Typically 15 to 25, max 30 |
| Silencing | Typically 5 to 10, max 15 |

### Construction vibration

Ground vibration during excavation and earthworks for the road may impact nearby buildings and occupants depending on the local geology. Of particular sensitivity are the residential buildings to the south of Kurrajong Road as they share a site boundary with the works zone. Monitoring of background vibration levels show that vibration is currently below the criteria set in the German standard DIN4150-3.

Excavating loose soil, sand and clays with an excavator and standard bucket and grab attachments is not expected to generate any significant vibration impacts on adjoining residents or structures. Excavation of sandstone bedrock or asphalt/existing road sections will, however, typically require the use of excavators with hydraulic breaker attachments. This equipment can generate significant levels of vibration.

Alternative work practices may be required is safe work distances cannot be achieved (Table 6-7). Rock sawing and/or rock grinding are alternatives to impact-driven rock breaking that generate far less vibration and should be used for the removal of hard rock. If rock breakers are proposed to be used, it is recommended that vibration monitoring is conducted to ensure that safe vibration levels are not exceeded. At the point where excavation with rock breakers results in vibration levels exceeding the nominated threshold levels at the site boundary, alternative excavation methodologies must be implemented such as rock grinding and/or sawing.

*Table 6-7 Safe working distances*

| Plant item | Rating/description | Minimum working distance | |
|---|---|---|---|
| | | Cosmetic damage (BS7385) | Human response |
| Vibratory roller | < 50kN (Typically 1-2 tonnes) | 5 m | 15 m to 20 m |
| | < 100kN (Typically 2-4 tonnes) | 6 m | 20 m |
| Small hydraulic hammer | 300kg – 5 to 12t excavator | 2 m | 7 m |
| Medium Hydraulic Hammer | 900kg – 12 to 18t excavator | 7 m | 23 m |

| Plant item | Rating/description | Minimum working distance | |
|---|---|---|---|
| | | Cosmetic damage (BS7385) | Human response |
| Jackhammer | Handheld | 1 m (nominal) | 2 m |

## Operational noise

Liverpool City Council advised that a 2% increase in annual traffic should be assumed for the purposes of the assessment. It is standard assessment procedure to conduct the assessment to ensure continued compliance over an appropriate planning period, taken as 10 years from the date of the assessment. The predicted increase in noise due to the growth in traffic numbers is provided in Table 6-8.

Where the existing peak hour traffic volume is extrapolated out to account for 2% annual traffic growth over 10 years, traffic noise levels are expected to rise by 0.9 dB in 10 years and are therefore compliant with the 2 dB increase as per the NSW Road Noise Policy. A 0.9 dB increase in traffic noise level is expected to not be perceptible to most people with normal hearing.

Night time traffic volumes have not been provided, and therefore minimal impact is expected as a result of the proposed road widening and installation of traffic signals. Based on a standard 2% annual traffic growth, traffic noise levels at residential properties fronting the Kurrajong Road and Mowbray Street intersection are expected to be minimal, and compliant with the NSW Road Noise Policy.

*Table 6-8 Predicted increase in traffic noise*

| Year in future | Calculated peak period traffic volume (7:45am to 8:45am) | $L_{Aeq}$ noise level (dB) |
|---|---|---|
| 1 | 2236 | 0.1 |
| 2 | 2281 | 0.2 |
| 3 | 2326 | 0.3 |
| 4 | 2373 | 0.3 |
| 5 | 2420 | 0.4 |
| 6 | 2469 | 0.5 |
| 7 | 2518 | 0.6 |
| 8 | 2568 | 0.7 |
| 9 | 2620 | 0.8 |

| Year in future | Calculated peak period traffic volume (7:45am to 8:45am) | $L_{Aeq}$ noise level (dB) |
|---|---|---|
| 10 | 2672 | 0.9 |

### 6.5.1 Safeguards

- Neighbouring residents are to be notified of the anticipated duration, equipment, and work processes involved during each stage of work (demolition - excavation - construction). Notification in the form of a letterbox drop is generally found to best reach the majority of surrounding residents. The notification letter must include a contact phone number for appropriate site management personnel.
- Use appropriately sized plant and equipment and ensure that the equipment is operated in a manner that reduces noise emissions such as turning off equipment when not in use.
- Trucks removing material from the site should not be left idling at any time while on-site and as being filled, especially at night.
- Plant & equipment with broadband reversing alarms should be used instead of tonal reversing alarms.
- Motorised plant and equipment such as excavators shall be fitted with appropriate exhaust silencers to minimise noise emission during their use.
- Ensure that all plant and equipment are appropriately maintained such that it remains in good working order.
- Avoid ‘clustering’ of plant & equipment in localised areas.
- The minimum work distances as tabled within this report should be observed at all times, especially regarding vibration damage guidelines.
- Rock sawing or grinding is recommended along the southern site boundary where the advised minimum safe working distances cannot be achieved.
- Rock breaking must be conducted outside of the safe working distances and should use a hydraulic pointed ‘cone’ type hammer attachment in place of a flat ‘block’ type hammer.
- Extended periods of continuous vibration-generating work should be avoided to limit the potential for dynamic magnification due to resonance in neighbouring buildings/structures.
- Respite periods for high-noise-generating equipment could be considered. For example, a 1-hour respite period is adhered to after every two hours of major construction work.
- Establish a complaints handling procedure.
- If complaints are received consider:
    - Providing respite periods that are agreed upon through consultation with site management and the community.
    - Exhaust silencers could be considered for motorised excavation-type plants & equipment.

- Attended noise monitoring of construction activities could be undertaken surrounding residential receivers at the start of each new construction phase. Attended noise monitoring should be undertaken for at least 15 minutes of major construction work at each surrounding residence.
- Continuous vibration monitoring may need to be considered during piling/excavation to ensure vibration levels do not reach a point where the structural integrity of surrounding buildings is compromised. A Geotechnical engineer would need to consider whether vibration monitoring is warranted.

## 6.6 Traffic and access

### 6.6.1 Existing environment

Kurrajong Road is a Regional Road linking State Roads, Hume Highway and Cowpasture Road. Kurrajong Road provides access to primary and high schools, regional shopping centres in Casula and Carnes Hill, Carnes Hill Community Centre, and Prestons Industrial Area. Mowbray Street is a local street which provide direct access to residential properties in a portion of Prestons, off Kurrajong Road.

Kurrajong Road has a speed limit of 60 km/hr and has two eastbound and two westbound lanes. Mowbray Street has one northbound and one southbound lane. The intersection is a seagull type intersection where eastbound traffic is reduced to one lane and the other lane forms the right turning lane to Mowbray Street. To the east of the intersection one eastbound lane on Kurrajong Road takes right turning traffic from Mowbray Street.

There is a history of crashes at the intersection, with eight crashes occurring between 2015 and 2020.

There is a car park on the north side of Kurrajong Road for retail and commercial properties. The entrance is on Kurrajong Road at the western end of the car park. However the exit is at the intersection with Mowbray Street.

Kurrajong Road is a heavy vehicle route for the following classes of vehicles:

- 19m B-doubles (over 50 tonnes)
- 23m B-doubles.

There are no bus routes on Kurrajong Road or Mowbray Street in the proposal area.

### 6.6.2 Potential impacts

The proposal would be carried out during the day and night to minimise the impact to traffic flow on Kurrajong Road. However, one westbound lane would be closed to traffic for the duration of the project. This would impact traffic flows, particularly during peak periods.

Night works would be used for any road closures or to change traffic conditions during the works. This would minimise the impact to road users. Road users would be notified of the works using signs in advance of the works.

Access to the car park would be impacted during the work. This impact be of short duration and access to the car park would be maintained throughout the work.

The shared path on the southern side of Kurrajong Road, west of Mowbray Street, would be demolished. A pedestrian and cyclist detour would be required, potentially along Mowbray Street, Braidwood Drive and Abbeville Close. This could add about 8-10 minutes to a pedestrian trip.

The proposal would signalise the intersection and widen the road to facilitate dedicated right turning lanes at the intersection. This would improve safety and improve traffic flow by providing two traffic lanes in each direction through the intersection.

### 6.6.3 Safeguards

- Prepare a Traffic Control Plan (TCP)
- Ensure that appropriate approvals, such as Road Occupancy Licences (ROLs), are in place prior to the start of works
- Notify all businesses that reply on the car park of the work and the changed access conditions
- Manage sites to allow safe passage of pedestrians and cyclists. Where detours are used, clear signs must be used to direct pedestrians and cyclists
- Use signs to inform road users of the works and any changed road/traffic conditions
- Work vehicles will not block access to private driveways, public facilities or businesses unless appropriate notification has been provided
- Ensure that heavy vehicles can pass through the proposal site during the works.

## 6.7 Socio economic

### 6.7.1 Existing environment

Land use on the southern side of Kurrajong Road is residential with industrial/retail properties on the northern side. Businesses on the northern side of the road include:

- IFC Global Logistics
- Anytime Fitness
- Tecside Sydney
- Granata's Café
- Everyday Homes.

### 6.7.2 Potential impacts

Work on the car park access has potential to reduce customer access to parking and impact businesses. This work may be carried out at night or during the weekend. This would be decided by the contractor and would be done to minimise impact to businesses. This would minimise impact to businesses.

There would be no ongoing impact to businesses as the proposal would provide suitable access to the car park.

### 6.7.3 Safeguards

- Notify potentially affected businesses of the proposed car park access change, the timing and details of the works.
- Maintain access to the car park during the works
- Work sites will be restored following completion of works

- Work sites will be maintained clean and tidy.

## 6.8 Biodiversity

### 6.8.1 Existing environment

There are no records of threatened species, populations or vegetation communities around the proposal. There are mature native trees along Mowbray Street and some native plants on the embankment on Kurrajong Road:

- 6 callistemon sp.
- 2 melaleuca sp.
- Lomandra.

The embankment is mostly mulched with minimal vegetation.

### 6.8.2 Potential impacts

All callistemons, melaleucas and lomandra would be removed from the embankment. This is not expected to impact biodiversity in the area. The individuals are likely to provide marginal habitat for fauna species in the area.

The existing trees and groundcover impacted with the proposed works would be reinstated and where possible three for each tree removed would be installed at the location or in close vicinity, as required by Council policy.

The trees on Mowbray Street would not be impacted by the work.

### 6.8.3 Safeguards

- A non-go area would be established around the drip line of the trees on Mowbray Street
- Stockpiling of materials and equipment and parking vehicles within the dripline (extent of foliage cover) of any trees must be avoided
- All disturbed areas will be rehabilitated following completion of demolition
- Any fauna encountered during the works will be encouraged to leave the work area. If fauna cannot be removed then an ecologist or other suitably qualified wildlife handler will be called
- The embankment, above the new retaining wall, would be revegetated with native species. Trees would be planted at a ratio of 3:1 to those impacted, in accordance with Council policy. Trees would be plant on the embankment or at a nearby location.

## 6.9 Visual

### 6.9.1 Existing environment

The character of the area on the northern side of Kurrajong Road is industrial and residential on the southern side. Visual features in the area are large commercial buildings.

### 6.9.2 Potential impacts

The proposed road widening is minor and would not impact the landscape character of the area. Mature trees on Mowbray Street would be retained and the overall visual impact is negligible.

### 6.9.3 Safeguards

No safeguards identified.

## 6.10 Cumulative

There are no other works planned in the area that are expected to result in a cumulative impact with the proposal.

# 7 Environmental management

## 7.1 Environmental Management Plan

A Construction Environmental Management Plan (CEMP) will be prepared to describe safeguards and management measures identified. The plan will provide a framework for establishing how these measures will be implemented and who will be responsible for their implementation.

The plan will be prepared prior to the start of works and must be reviewed and certified by Council's Manager Environment Management prior to the start of any on-site works. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements.

## 7.2 Licences, permits and approvals

ROLs must be in place prior to the start of construction.

# 8 Conclusion

## 8.1 Principles of ecologically sustainable development

### The precautionary principle

The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations. The proposal would improve road safety for present and future generations.

### Conservation of biological diversity and ecological integrity

There would be no impact to the biological diversity and the ecological integrity of the locality.

### Improved valuation, pricing and incentive mechanisms

Liverpool City Council is placing a value on road safety.

## 8.2 Conclusion

The proposal is subject to assessment under Division 5.1 of the EP&A Act. The REF has examined and taken into account to the fullest extent all matters affecting or likely to affect the environment by reason of the proposed activity.

The proposal would be unlikely to cause a significant impact on the environment. Therefore, it is not necessary for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning and Homes under Division 5.2 of the EP&A Act. A Biodiversity Development Assessment Report or Species Impact Statement is not required.

The proposal is not likely to have a significant impact on matters of national environmental significance or the environment of Commonwealth land within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999*. A referral to the Australian Department of Climate Change, Energy, the Environment and Water is not required.

# 9 References

koikas acoustics, 2023. Acoustical report proposed traffic lights and road widening Kurrajong Road and Mowbray Street intersection, Prestons NSW. koikas acoustics, Bexley.

# Appendix A Clause 171 of the EP&A Regulation

A public authority is to take into consideration the matters listed in clause 171 of the EP&A Regulation when assessing a development under Division 5.1 of the EP&A Act. The following table lists the matters and the compliance of the proposal.

| Factor | Impact |
|---|---|
| **a) Environmental impact on a community?**<br>The proposal would have a positive impact on the community by responding to community concerns and improving road safety. | Positive impact |
| **b) The transformation of a locality?**<br>The proposal would not transform the locality. | Nil |
| **c) The environmental impact on the ecosystems of the locality?**<br>The proposal would not impact the ecosystem of the locality. | Nil |
| **d) Reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?**<br>The proposed works would not impact the aesthetic value of the area. | Nil |
| **e) The effect on a locality, place or building that has**<br>**i. aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or**<br>**ii. other special value for present or future generations?**<br>The proposed work would not affect any locality, place or building with cultural or heritage significance. | Nil |
| **f) The impact on the habitat of protected fauna (within the meaning of the Biodiversity Conservation Act 2016)?**<br>The proposal would not impact the habitat of protected fauna. | Nil |
| **g) The endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?**<br>The proposal would not endanger any species of animal, plant or other form of life. | Nil |
| **h) Long-term effects on the environment?**<br>There would be no long term impacts. | Nil |

| Factor | Impact |
|---|---|
| **i) Degradation of the quality of the environment?**<br>The proposal would not degrade the environment. | Nil |
| **j) Risk to the safety of the environment?**<br>The proposal would nor risk the safety of the environment. | Nil |
| **k) Reduction in the range of beneficial uses of the environment?**<br>The proposal would not reduce the beneficial use of the environment. | Nil |
| **l) Pollution of the environment?**<br>There is potential for erosion and sedimentation impacts, noise and air quality. Safeguards in section 6 would mitigate the impact. | Potential negative impact |
| **m) Environmental problems associated with the disposal of waste?**<br>There would be no problems associated with the disposal of waste. | Nil |
| **n) Increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?**<br>There would be minimal demand for resources. | Nil |
| **o) The cumulative environmental effect with other existing or likely future activities?**<br>There is unlikely to be a cumulative impact. | Nil |
| **p) The impact on coastal processes and coastal hazards, including those under projected climate change conditions?**<br>The proposal would not impact coastal processes. | Nil |
| **q) applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1**<br>There are no applicable strategies. The proposal is part of the Black Spot program. | Nil |
| **r) other relevant environmental factors**<br>The proposal would not impact other environmental factors. | Nil |

# Appendix B Photographs

Photograph 1 – Kurrajong Road and Mowbray Street intersection

Photograph 2 – Median and native vegetation on Mowbray Street

Photograph 3 – Retaining wall and embankment on the southern side of Kurrajong Road

Photograph 4 – Car park exist on the northern side of Kurrajong Road

# Appendix C Noise and vibration assessment