



Blackwall Road intersection upgrades at Allfield and Farnell Roads

REF Submissions report

Transport for NSW | July 2022

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Document controls

Approval and authorisation

Title	Blackwall Road intersection upgrades at Allfield and Farnell Roads.
Accepted on behalf of Transport for NSW by:	Theodoros Stephanou
Signed:	
Dated:	13 May 2022

Executive summary

The proposal

Transport for NSW proposes to upgrade two intersections along Blackwall Road at Woy Woy. The intersections include the Blackwall Road/Allfield Road intersection and the Blackwall Road/Farnell Road intersection.

Key features of the proposal at the Blackwall Road/Allfield Road intersection include:

- Closure of the eastern approach of Allfield Road at the intersection, preventing traffic from the east accessing Blackwall Road at the intersection
- Provision of a dedicated left-turn lane on Blackwall Road heading north into Allfield Road (west of the intersection).
- Provision for double right turn lanes out of Allfield Road from the west, onto Blackwall Road heading south made possible by the partial closure of Allfield Road (east of the intersection).

To enable the Blackwall Road/Allfield Road intersection upgrade, the proposal will also require changes at the Blackwall Road/Farnell Road intersection including:

- Change from a four-way intersection to a signalised T-intersection with the right turn into Farnell Road removed and closing Farnell Road west of Blackwall Road with a cul-de-sac
- Upgrades to Farnell Road, including the provision of kerb and gutter on the southern side of Farnell Road from Blackwall Road to Burge Road
- Extension of the existing pedestrian and cycle facility along Farnell Road between Brisbane Water Secondary College and Blackwall Road to Burge Road.

Other proposed works include changing the intersection of Blackwall Road and Terry Avenue to left in – left out only.

Construction is expected to start in 2023 and will take around 12 months to complete, weather permitting.

Display of the Review of Environmental Factors

Transport for NSW prepared a review of environmental factors (REF) for the Blackwall Road, Allfield Road and Farnell Road Intersection Upgrade. The REF was publicly displayed between 17 November 2021 and 22 December 2021. The REF was available to view and download on the Transport project website <https://roads-waterways.transport.nsw.gov.au/projects/blackwall-rd-and-memorial-ave-intersection-upgrades/index.html>.

In addition, a virtual information session was held during the public display period to give the community a chance to learn more about the project, ask questions and ‘have their say’.

The REF and information sessions were promoted on NSW Roads Facebook page, via a paid post on Monday 6 December 2021, advertising the information session, which was held on Thursday 9 December. A paid social post reminding people of the close of submission date was also shared for a week from Wednesday 15 December.

More than 6,000 community updates were delivered via email and post to key stakeholders, residents and businesses in the area surrounding the proposal.

Summary of issues and responses

Public display of the REF and the supporting consultation resulted in a total of 20 submissions, of which 19 were from the general community and one was from a business. Two submissions expressed support for the proposal, with 14 stating an objection to the proposed local traffic changes and four with no clear position.

No submission on the REF was received from Central Coast council, however they were contacted separately in mid-2021, and provided detailed feedback during concept design development which can be viewed in Chapter 5 of the REF.

The main issues raised and responses to those issues are summarised below.

Objection to the closure of Farnell Road (west of Blackwall Road) with a cul-de-sac, and concerns over the closure of Allfield Road (east of Blackwall Road) approaching the intersection.

According to the traffic modelling provided in the REF appendices, the proposal provides travel time savings in peak hours to most customers using Blackwall Road. Removing the east approach at the Allfield Road intersection would also reduce waiting times at the signals.

In addition, new traffic signals are provided at Farnell Road to provide a safe and efficient way for customers impacted by the loss of access from Allfield Road to access Blackwall Road at a location nearby. Providing a four-leg crossroad signalised intersection at Farnell Road would require extra stop/go phases for a very small number of vehicles turning in and out of Farnell Road (west). This would increase waiting time for the major traffic movements on Blackwall Road.

There will not be any impact on permanent access with the Farnell Road cul-de-sac. Driveway access crossings will be provided connecting properties to Farnell Road cul-de-sac where the road pavement does not reach the property access.

Objections to more traffic lights on Blackwall Road and concerns that the project will reduce access and requires a larger upgrade

The REF identifies that the Blackwall Road/Allfield Road intersection is already the most congested intersection along the Blackwall Road corridor. Larger upgrades including an expanded intersection, or providing four through lanes on Blackwall Road, would require considerable expense, private property acquisition, building demolition and cause significant community disruption.

Instead the proposal would use as much of the existing roads as possible, and split traffic movements across two signalised intersections, creating two co-ordinated T-intersections instead of a single larger four-way intersection. This would reduce the number of stops at the Allfield Road signals to provide more time for vehicles to travel along Blackwall Road and in and out of Allfield Road to the west.

The need for new traffic lights at Farnell Road is not related to existing congestion at this location. They have been included to complement the changes at Allfield Road intersection, which does have significant congestion issues, by providing a safe and convenient entry point onto Blackwall Road for local traffic that can no longer enter from the east of Allfield Road.

Both sets of signals would be coordinated to improve movement along the Blackwall Road corridor. The proposed double right turn out of Allfield would also improve traffic flow at the traffic lights.

Concerns over drainage issues, extra traffic and road width on Farnell Road (east of Blackwall Road).

The proposal includes improvements to Farnell Road, east of Blackwall Road to Burge Road. These include reconstructed road pavement as well as upgrades to kerbs, paths and drainage. This would improve the condition of the street for the expected small increase in traffic on this section caused by closing the eastern approach of the Allfield Road intersection. The increase is expected to be only around 2-3 vehicles a minute in peak morning and afternoon periods.

Transport is also working with Central Coast Council to design an infiltration drainage system for Farnell Road, east of Blackwall Road. The intention is for the proposal to not impact on existing flooding and drainage.

The REF includes an assessment of traffic noise and modelling of any changes due to the proposal, including the minor upgrade in Farnell Road. Average traffic noise levels for the daytime along Farnell Road remain below the state noise policy levels of 60 decibels, so in both cases further consideration of noise treatment is not required and not proposed. No substantial changes to noise levels are predicted for evening and night periods.

Concerns over the possible loss of on street parking in the proposal area

The angle car parking displayed in the REF for Allfield Road, east of Blackwall Road, has not been finalised and further consultation regarding this layout will be undertaken during detailed design. Other on-street parallel parking in Allfield Road, east of Blackwall Road will remain unchanged.

There will be some loss of on street parking opportunities on Farnell Road east of Blackwall Road as there will be no stopping/parking signs required for the lanes at the Blackwall Road intersection end (20m) and a new stopping area for southbound buses at the Burge Road end.

Proposed kerb, path and drainage works will impact on the southern verge of Farnell Road from Blackwall Road to Burge Road, which will be taken up mostly by driveways and the shared path. On the northern side of Farnell Road in this area, the upgrades will be around sections of existing kerb, trees and driveways that will be retained and already restrict on street parking.

Current opportunities for on street parking remain a short distance around the corner on Burge Road and the new paths will make for safer more convenient access from Burge Road to properties along Farnell Road.

Updates to Environmental Assessment

The NSW Environmental Planning and Assessment Regulation 2021 (The Regulation) came into force from 1 March 2022. The Regulation introduces two additional factors in Section 171 (previously the clause 228 factors) for which all Division 5.1 assessments would be required to consider in determining whether the activity will have a significant impact. Responses to those changes are presented in Section 4.1.

No additional assessment for the proposal is required as a result of these new factors and they have already been addressed in the REF.

Next steps

Transport for NSW as the determining authority will consider the information in the REF and this submissions report and make a decision whether or not to proceed with the proposal.

Transport for NSW will inform the community and stakeholders of this decision and where a decision is made to proceed will continue to consult with the community and stakeholders prior to and during the construction phase.

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1. Introduction and background

1.1 The proposal

Transport for NSW proposes to upgrade two intersections along the Blackwall Road corridor at Woy Woy. The intersections include the Blackwall Road/Allfield Road intersection and the Blackwall Road/Farnell Road intersection.

Key features of the proposal at the Blackwall Road and Allfield Road intersection include:

- Closure of the eastern approach of Allfield Road at the intersection, preventing traffic from the east accessing Blackwall Road at the intersection
- Constructing a new dedicated left-turn lane on Blackwall Road heading north into Allfield Road (west of the intersection).
- Provision for double right turn lanes out of Allfield Road from the west, onto Blackwall Road heading south made possible by the partial closure of Allfield Road (east of the intersection).
- Provision of two through lanes through the Blackwall Road intersection heading south, for a length of about 50 metres, with 90 metre merge to the south of Allfield Road.

To enable the upgrade of the Allfield Road intersection the proposal will require changes at the Blackwall Road and Farnell Road intersection including:

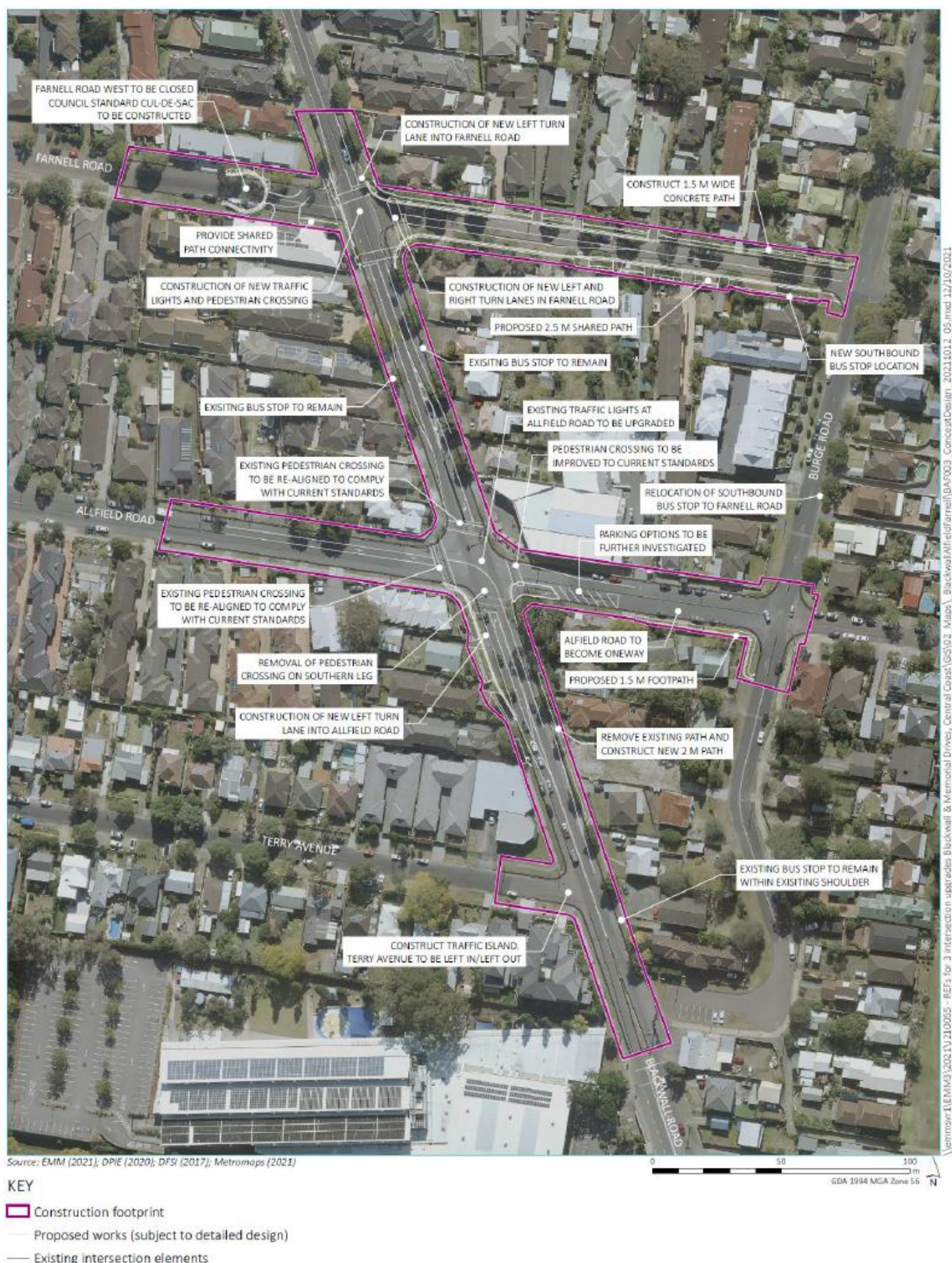
- Change of intersection from a four-way intersection to a signalised T-intersection with the right turn into Farnell Road removed and closure of the western approach of Farnell Road with a cul-de-sac.
- Provision of left-out and right-out lanes into Blackwall Road from the eastern leg of Farnell Road and an upgrade to Farnell Road, including the provision of kerb and gutter on the southern side of Farnell Road between Blackwall Road and Burge Road.
- Extension of existing pedestrian / cycle facility along Farnell Road between Brisbane Water Secondary College and Blackwall Road to Burge Road.

Other proposed works include:

- Minor changes to the existing pedestrian crossings at Allfield Road and Blackwall Road traffic lights.
- Moving the southbound bus stop from the corner of Burge Road and Allfield Road to the corner of Burge Road and Farnell Road.
- Minor changes to existing bus stops along Blackwall Road within the proposal area to accommodate additional lane markings.
- Changing the intersection of Blackwall Road and Terry Avenue to left in – left out only.

Construction is expected to start in mid-2023 and will take around 12 months to complete, weather permitting. A more detailed description of the Proposal is found in the Blackwall Road, Allfield Road and Farnell Road Intersection Upgrade Review of Environmental Factors, prepared by Transport in October 2021.

Figure 1-1: Key features of the proposal



1.2 REF display

Transport for NSW prepared a review of environmental factors (REF) to assess the potential environmental impacts of the proposed works. The REF was publicly displayed for 35 days between Wednesday 17 November 2021 and Wednesday 22 December 2021.

The REF was available for viewing and download on the Transport project website <https://roads-waterways.transport.nsw.gov.au/projects/blackwall-rd-and-memorial-ave-intersection-upgrades/index.html>.

In addition, a virtual information session was held during the public display period to give the community a chance to learn more about the project, ask questions and ‘have their say’.

The REF and information sessions were promoted on NSW Roads Facebook page, via a paid post on Monday 6 December 2021, advertising the information session, which was held on Thursday 9 December. A paid social post reminding people of the close of submission date was also shared for a week from Wednesday 15 December.

More than 6,000 community updates were delivered via email and post to key stakeholders, residents and businesses in the area surrounding the proposal.

1.3 Purpose of the report

This submissions report relates to the REF prepared for the Blackwall Road, Allfield Road and Farnell Road Intersection Upgrade and should be read in conjunction with that document.

The REF was placed on public display and submissions relating to the proposal and the REF were received by Transport for NSW. This submissions report summarises the issues raised and provides responses to each issue (Chapter 2). It details investigations carried out since finalisation of the REF (Chapter 3), describes and where relevant, further assesses the environmental impact of changes to the proposal (Chapter 4) and identifies new or revised environmental management measures (Chapter 5).

2. Response to issues

Transport for NSW received 20 submissions, accepted up until 5pm on Wednesday 22 December 2021.

Table 2-1 lists the respondents and their allocated submission number. The table also indicates where the issues from each submission have been addressed in Chapter 3 of this report.

Table 2-1: Respondents

Respondent	Submission No.	Section number where issues are addressed
Individual	1	2.2, 2.3, 2.4, 2.6, 2.7, 2.8.1, 2.8.4
Individual	2	2.8.1
Individual	3	2.6, 2.8.1
Individual	4	2.2, 2.5, 2.7, 2.8.2, 2.8.3, 2.8.4
Individual	5	2.6, 2.7
Business	6	2.7
Individual	7	2.2, 2.3, 2.4, 2.5
Individual	8	2.2, 2.8.3
Individual	9	2.2, 2.3, 2.4, 2.6, 2.7, 2.8.1, 2.8.4
Individual	10	2.3, 2.7, 2.8.3
Individual	11	2.3
Individual	12	2.8.3
Individual	13	2.8.2, 2.8.5
Individual	14	2.5
Individual	15	2.7, 2.8.1, 2.8.4
Individual	16	2.2
Individual	17	2.5
Individual	18	2.5
Individual	19	2.2, 2.6, 2.8.3
Individual	20	2.4, 2.8.1

2.1 Overview of issues raised

A total of 20 submissions were received in response to the display of the REF. Most submissions were from individuals in the community, with one from a local business. Two submissions expressed support for the proposal, with 14 stating an objection to local traffic changes and four with no clear position.

No submission on the REF was received from Central Coast council, however they were contacted separately in mid-2021, and provided detailed feedback during concept design development and the issues discussed in Chapter 5 of the REF.

Each submission has been examined individually to understand the issues being raised. The issues raised in each submission have been extracted and collated, and corresponding responses to the issues have been provided. Where similar issues or subjects have been raised in different submissions, only one response has been provided. The issues raised and Transport for NSW response to these issues forms the basis of this chapter.

Key issues raised by the community included;

- Objections to the traffic signals on Blackwall Road at Farnell Road and concerns over the closure of Allfield Road approaching from the east to Blackwall Road.
- Objection to the closure of Farnell road (west of Blackwall Road) with a cul-de-sac
- Concerns over resolving drainage issues, additional traffic and shared path conflicts in Farnell Road (east of Blackwall Road)
- Concerns over loss of on street road parking on Farnell Road (east of Blackwall Road) and Allfield Road (east of the intersection)
- Concerns that the proposal will not solve congestion and suggestions that Blackwall Road should be four lanes.

2.2 Objections to the traffic lights on Blackwall Road and concerns over the closure of Allfield Road approaching from the east to Blackwall Road.

Submission number(s)

4, 8, 16, 19, 1, 7, 9

Issue description

- One submission was concerned that a second set of lights at Farnell Road will push the traffic back closer to the public school
- One submission raised a preference for the use of roundabouts over traffic lights as the peninsula has a short busy traffic period and they encourage people to give way
- One submission noted that Farnell is not a busy street and is not the main link to the waterfront, stating there is no reason for lights there. This submission noted Allfield Road is actually the main route, but also suggested that lights at McMasters (further south) would also be better for access to the waterfront.
- Three submissions also raised concern about more traffic signals on an already busy road, less than 100 metres from two sets of existing signals and having two sets of signals in one block or three within 600-700m. One of these submissions also noted that signals were more needed at McMasters Road.
- One submission noted the loss of a right turn on Blackwall Road with the new traffic signals at Farnell Road will cause residents of that street to travel longer on Blackwall Road and use

Bowden Rd and Burge Road, both of which they believe are constricted roads that don't have capacity for vehicles coming from Allfield Rd.

Response

The Blackwall Road and Allfield Road intersection is already the most congested intersection along the Blackwall Road corridor. As such, Transport for NSW investigated ways to improve traffic movements in this area now and into the future. The investigations found that the best solution was to use as much of the existing roads as possible and split traffic movements across two signalised intersections, creating two co-ordinated T-intersections instead of a single four-way intersection.

Therefore, the need for new traffic lights at Farnell Road is not directly related to congestion management. They have been included to complement the changes at Allfield Road intersection, which does have significant congestion issues, by providing a safe and convenient entry point onto Blackwall Road for local traffic that can no longer enter from the east leg of Allfield Road.

Both sets of signals will be coordinated so movement along the Blackwall Road corridor will be improved.

This would reduce the number of stops at the Allfield Road signals to provide more time on green lights for vehicles to travel along Blackwall Road and in and out of Allfield Road to the west. The new double right turn out of Allfield Road west of the intersection, also provides greater capacity for vehicles to exit Allfield Road and provides more time to travel through the intersection to Blackwall Road.

The table below summarises the predicted difference in travel time through the Allfield Road intersection with and without the proposal, which is substantial.

Table 2-2: Predicted difference in travel time through the Allfield Road intersection with and without the proposal

Peak Period	2023 PM	2033 PM
Do nothing	176s	224s
With Project	25.3s	26s

Also refer to Sec 6.1.6 of REF or Appendix E in Part 2 of REF on website.

The right turn into Farnell Road from Blackwall Road is a low volume movement. Residents of Farnell Road and Burge Road travelling in a northbound direction can still access their homes on the eastern side via the improved right turn lane at the Allfield Road signals just to the south.

2.3 Objections to the closure of Farnell Road (west of Blackwall Road) with a cul-de-sac

Submission number(s)

1, 11, 7, 9

Issue description

- One submission stated the closure of Farnell Road will force the residents of Farnell Rd (west) to drive into Edward Street directly opposite to the main entrance of Brisbane Water College Woy Woy Campus increasing the potential danger for students and staff and adding difficulties

for motorists. Further, at the South end of Edward Street there is a difficult intersection with Allfield Rd as it occurs on a bend with limited visibility.

- One submission asked for an explanation for why the proposal would turn Farnell Road (west) into a cul de sac. Concerned that Transport will be forcing everybody out onto Blackwall Road which is already congested. Noted that the street is not used as a short cut, provides access to the shops and local traffic does not interfere with the school.
- Another submission stated strong opposition to turning Farnell Rd into a cul de sac, as they do not believe it will ease congestion on Blackwall Rd when at the moment, they can completely avoid Blackwall Rd by accessing Farnell Rd via Edward St.
- One submission does not agree with closure of Farnell Rd as they are concerned it will lengthen the drive for residents and push them onto local roads that were not designed for high capacity.
- One submission stated they objected to the closure as they use the junction from Farnell Road heading to the shops and the proposal will turn more traffic past the secondary school (at the western end of Farnell).

Response

As mentioned in section 2.2, the proposal provides travel time savings in peak hours to the majority of customers using Blackwall Road. Removing the east approach at the Allfield Road intersection would reduce the number of stops at the signals to provide more time for vehicles to travel on green lights along Blackwall Road and in and out of Allfield Road to the west.

As a result, new traffic signals are provided at Farnell Road for a safe and efficient way for customers impacted by the loss of access from Allfield Road (east of the intersection) to access Blackwall Road at a location nearby.

According to the traffic modelling provided in the REF appendices, there are only small volumes of traffic which move to and from Farnell Road (west) to Blackwall Road at peak morning and afternoon periods, in the range of 9-14 vehicles an hour. The cul-de-sac of Farnell Road (west) will result in this traffic being diverted to the Allfield Road intersection. This small volume of traffic will not cause additional congestion at the improved intersection.

Providing a four-leg crossroad signalised intersection at Farnell Road would require extra stop/go phases for a very small number of vehicles turning in and out of Farnell Road (west of Blackwall Road). This would increase waiting time for the major traffic movements on Blackwall Road and the queues of vehicles at peak time would still extend back south to maintain the congestion at the heavily used Blackwall Road and Allfield Road.

There will not be any impact on permanent access with the Farnell Road cul-de-sac. Driveway access crossings will be provided connecting properties to Farnell Road cul-de-sac where the road pavement does not reach the property access.

2.4 Concerns over drainage issues, extra traffic, road width and shared path conflicts in the eastern leg of Farnell Road.

Submission number(s)

20, 7, 1, 9

Issue description

- One submission raised concern that the footpaths on both sides of Farnell Road stop at Burge Road and requested the footpaths and drainage extended to the end of Farnell Road at the waterfront rather than Burge Road to drain water away from houses.
- The same submission also raised concerns over the width of Burge Road with increased trucks and traffic on Burge Road from the proposal and parked cars. However, this person did not want restrictions placed on parking as a result.
- Another submission was concerned that Farnell Road will become a bus route absorbing buses that now use Allfield Road, stating Farnell Road is a narrow road and a bus stop will only hold up vehicles even more.
- The same submission also stated Farnell Road is a narrow tree lined suburban road unsuitable for a major change, and additional traffic. They were concerned that this change would force trucks and cars up other roads causing more traffic and noise.

Response

Transport proposes significant improvements including reconstructed road pavement, kerbs, paths and drainage on Farnell Road, east of Blackwall Road. These will address the need for short turn lanes at the new traffic signals, provide a shared paths, kerb and a new crossing of Blackwall Road.

This will improve the condition of the street for the small increase in traffic between Burge Road and Blackwall Road which is expected due to the closure of the eastern approach of the Allfield Road intersection. This small increase is expected to be Home Hardware customers, residents of the southern end of Burge Road, and the outbound buses from Burge Road. The small is expected to be only around 2-3 vehicles a minute in peak morning and afternoon periods.

The existing Burge Road, between Allfield Road and Farnell Road already accommodates bus routes in both directions, although the southbound route will be diverted for a short distance through Farnell Road under this proposal.

The changes in the proposal do not modify the existing traffic or access for the short section of Farnell Road east of Burge Road to the foreshore, and with a very low traffic use in this short section a path upgrade is not required or within the scope of this proposal. It would also potentially trigger other kerb and drainage works and additional environmental approvals that could delay the works significantly.

Transport is also working with Central Coast Council to design an infiltration drainage system for Farnell Road, east of Blackwall Road. The intention is for the proposal to not have no further impact on existing flooding and drainage.

Extension of traditional piped stormwater drainage across Burge Road through to the Brisbane Water foreshore with an upgraded outlet was considered in the early stages of planning. Transport did not proceed with this option because it requires an EIS (longer and more complex environmental studies) with consent from external agencies and potential issues with seagrass and coastal processes. There are examples around Woy Woy of piped treatment having problems draining properly due to the flat topography and from tidal waters backing up into pipes and filling them.

The REF includes an assessment of traffic noise and modelling of any changes due to the proposal including the minor upgrade in Farnell Road. This can be found in Volume 2 and Chapter 6.3 of the REF.

Average traffic noise levels for the daytime along Farnell Road remain below the state noise policy levels of 60 decibel, so in both cases further consideration of noise treatment is not required and not proposed. There is also predicted to be no perceptible change to average traffic noise levels for the more noise sensitive evening and night period.

2.5 Concerns that the proposal will not solve congestion, decrease access and amenity or requires a larger upgrade (eg. four lanes).

Submission number(s)

4, 14, 17, 18, 7

Issue description

- One submission raised that they cannot see how changing the lights will be of benefit. The traffic congestion happens at any time of the day. The number of cars travelling on the road has decreased since the pandemic.
- Another submission noted the latest iteration of the upgrade of the Blackwall Road and Allfield Road intersection does very little to solve current traffic problems, but instead requires two lanes of traffic to proceed both north and south on Blackwall Road when the lights are green
- One submission stated the current system works well but there needs to be more time for traffic to turn right out of Allfield onto Blackwall Road especially in the morning and afternoon
- One submission also stated the proposed upgrade on Allfield Road will speed up traffic and channel traffic onto Allfield Road, causing dust and noise from trucks, litter problems, devalued homes on Allfield Road, problems for driveways accessing Allfield Road and safety issues
- The same submission requested noise treatment for the dual lanes on Allfield Road and suggested channelling traffic onto other roads in the area or speed controls (humps)
- One submission supported the proposal but was concerned about the double right turn from Allfield Road to Blackwall Road and problems with the merge heading south, suggested making approach lanes in Allfield Road right and left only or looking at more width of Blackwall Road
- One submission was concerned that the changes will impact the elderly population as service providers may find it harder to access the residents.

Response

The Blackwall Road and Allfield Road intersection is already the most congested intersection along the Blackwall Road corridor. Although the COVID 19 pandemic may have resulted in a temporary reduction in traffic volumes when COVID restrictions were in place, traffic numbers have returned as COVID precautions have been eased. Regardless, Transport for NSW has to investigate ways to improve traffic movements in this area now and also into the future. The investigations found that the best solution was to use the existing roads as much as possible and split traffic movements across two signalised intersections, creating two co-ordinated T-intersections instead of a single four-way intersection.

Modelling of traffic undertaken as part of the REF has shown that this would provide for increased traffic movements through green lights of the existing signals at Allfield and Blackwall Road with

reduced waiting times. The double right turn proposed out of Allfield Road on the west and an improved merge southbound, also provides greater capacity for waiting vehicle's to exit Allfield Road and further increases the time available to travel through the intersection in both directions on Blackwall Road during green lights.

Larger upgrades including an expanded intersection, or providing four through lanes on Blackwall Road, would require considerable expense and cause significant community disruption. This includes a need to possibly acquire and remove large amounts of medium density housing, further reduce footpath areas and space for street trees and gardens, create a longer centre median island blocking local movement and the possible permanent closure or removal of turn movements at other side streets nearby to accommodate wider and longer turn lanes. A larger upgrade would also not necessarily improve congestion and queuing on other major side roads such as Allfield Road.

Part of the proposed works also includes widening Farnell Road, on the eastern side of Blackwall Road, for diversion of a small volume of local traffic. An upgrade here would also provide a shared path and pedestrian crossings at Farnell Road, further supporting active transport links to the foreshore and western areas of Woy Woy and improving access for all road users.

The REF also includes assessment of vehicle emissions as a result of proposal. The proposal will improve local traffic efficiency and reduce congestion. This will reduce the extent of queuing of vehicles and reduce air emissions associated with vehicles idling. The proposal will not channel any large amounts of additional traffic onto Allfield Road which might result in a significant increase in traffic emissions. In addition, no changes to current driveway access on Allfield Road, west of Blackwall Road is proposed. Further information can be found in Chapter 6.7 of the REF.

Other traffic control measures for surrounding streets are not within the scope or objectives of the proposal, which is to increase traffic efficiency on Blackwall Road. Measures such as speed humps on roads like Allfield Road, or encouraging use of narrower local access streets such as Terry Avenue without major upgrades, may be more detrimental and create additional safety issues (eg. crashes from slowing traffic).

The project will include an upgrade of the road verge and footpath areas on Blackwall Road and Farnell Road that will remove a lot of the unsealed edges of the road that may create local dust. The REF includes an assessment of traffic noise and modelling of any changes due to the proposal. This can be found in Volume 2 and Chapter 6.3 of the REF itself. The assessment has identified that for Blackwall Road and around the Allfield Road intersection there is no significant change to noise levels for adjacent residences due to the proposal and no treatment is proposed.

Access to areas around the proposal is expected to either remain or be improved as traffic flow in peak periods increases, and upgrades to verges, footpaths and some roadside areas occurs. There will be some small changes to local vehicle routes, but these are short and generally only in the order of several hundred metres or a block.

2.6 Concerns over the closure of Allfield Road (east) turning out to Blackwall Road.

Submission number(s)

5, 19, 1, 3, 9

Issue description

- One submission objected to the closure of the left hand turn from Allfield Road into Blackwall Road, Woy Woy. This intersection, which has lights, is a major route for residents to proceed

from Woy Woy east of Blackwall Rd to their destination. They will be forced to use other side streets to turn left onto Blackwall Road

- The same submission also stated that vehicles coming out of Campbell's Hardware will be forced to turn left into Allfield Road, and go around the block to be able to access Blackwall Rd
- One submission raised concern that being able to turn right from Allfield Road into Blackwall Road from the waterfront is very necessary for people who live in Burge Road and customers that use Campbell's Home Timber & Hardware
- One submission seeks clarification on why part of Allfield Road east had to be closed, stating the intersection works ok now and the change would force trucks and cars up Burge Road and other roads which causing more traffic and noise
- One submission supported the change at Allfield Road as it would prevent the safety issues with u-turns, particularly with trucks and trailers, at the intersection with Burge Road and increase safety for pedestrians and people with strollers.

Response

The Blackwall Road and Allfield Road intersection is already the most congested intersection along the Blackwall Road corridor. As such, Transport for NSW investigated ways to improve traffic movements in this area now and into the future. The investigations found that the best solution was to use the existing roads wherever possible and split traffic movements across two signalised intersections, creating two co-ordinated T-intersections instead of a single four-way intersection.

The removal of the right and left turn out of Allfield Road (east) is required to allow for a double right turn out of Allfield Road (west) on Blackwall Road and relieve some waiting traffic congestion. This would also reduce the number of stops at the Allfield Road signals to provide more time for vehicles to travel along Blackwall Road and in and out of Allfield Road to the west.

This eastern leg of the Allfield Road intersection has a light local traffic volume mainly influenced by Campbell's Home Timber & Hardware customers and additional traffic on the eastern sides streets is anticipated to be low and mainly during the day. Local drivers on the eastern side of Blackwall Road will still be able to turn right and left to Blackwall Road via Farnell Road and also access the waterfront. This will require a short detour around the block north for 250-300m (less than a minute) for traffic in Allfield Road and southern part of Burge Road.

The proposal will install new traffic lights signals at the Farnell Road intersection and the closure into and out of Farnell Road (west) from Blackwall Road to cater for the changed movements at Allfield Road and to allow for a safe and convenient exit to Blackwall Road. There will also be a new footpath added to the verge of Allfield Road to maintain pedestrian connectivity to the crossings at the existing traffic signals and the foreshore.

2.7 Concerns over the possible loss of on street parking in the proposal area and a proposal to provide angle parking in Allfield Road (east of Blackwall Road)

Submission number(s)

4, 5, 6, 15, 1, 10, 9

Issue description

- One submission stated it will be more of a hindrance for customers and deliveries to Campbell's Home Timber & Hardware and parallel parking will decrease the current spaces
- One submission asked for clarification on keeping the existing parallel parking in Allfield Road adjacent to the hardware store

- The same submission state support for the new angle parking on Allfield Road opposite the hardware store however, strongly objects if it comes at the expense of the existing parallel parking on the other side of Allfield Road
- One submission believed it is completely unacceptable that the current left hand turning lane is being changed into parking for Campbell's Home Timber & Hardware One submission supported the works to close Farnell Road West at Blackwall Road but as part of the design works expected that legal and physical access to properties will be retained and that on street parking will be provided within the landscaping works at the cul-de-sac area. They also emphasised the importance of the retention of on street parking for visitors to residential units
- One submission raised a concern about the provision of parking in the closed section of Allfield Road east, stating the hardware store already has internal parking and there is parallel parking. They hoped the Allfield Road traffic changes were not being done only to create parking
- The same submission also noted that the proposal would impact on street parking in Farnell Road which consists of mostly villas and townhouses with limited or no parking on site for visitors. There are also a number of elderly residents who require carers to attend to them, these carers require street parking
- One submission from Farnell Road also queried why parking was not being provided for secondary college cars.

Response

During construction, access to businesses near the proposal would be maintained although temporary access changes may be required for some businesses. Temporary access changes would be undertaken in consultation with the affected business owner.

The angle car parking displayed in the REF for Allfield Road, east of Blackwall Road, is the concept design and not finalised. Car parking is a potential use of the paved area which will be made available by the partial closure of Allfield Road east. Angle parking, parallel parking and tree plantings are all options that may be considered for the final design. Further consultation regarding the layout of Allfield Road, east of Blackwall Road, will be undertaken during the detailed design phase. Other on street parallel parking on other parts of Allfield Road (east) will remain the same as is currently allowed.

There would be some loss of on street parking opportunities on Farnell Road east of Blackwall Road due to the widening for turning lanes, with no stopping/parking signs only required for the Blackwall Road intersection end (20m) and around a new stopping area for southbound buses at the Burge Road end. Current opportunities for on street parking remain a short distance around the corner on Burge Road. New paths will also make for safer more convenient access to properties along Farnell Road.

Proposed kerb, path and drainage works would restrict full access to the southern verge of Farnell Road up to Burge Road, which will be taken up mostly by driveways and the shared path. On the northern side of Farnell Road in this area where a new footpath and drainage is proposed, the upgrades will be around sections of existing kerb, trees and driveways that already restrict on street parking.

These measures are required to meet the project's road safety, traffic efficiency and active transport connectivity objectives. Changing the proposal to provide for additional width for both paths and on street parking on both sides of Farnell Road east may result in property impacts.

Campbell's Home Timber & Hardware customers and suppliers will need to exit via Burge Road and Farnell Road. However the current entry arrangements will not be permanently impacted and access from Blackwall Road and Allfield Road will still be available. Farnell Road and the intersection of Farnell Road and Blackwall Road are proposed to be upgraded in part to accommodate these movements.

Changes at the western end of Farnell Road for the Brisbane Water Secondary School parking is not part of the objectives or scope of this project and is not included.

2.8 Other submissions.

2.8.1 Support for the proposal or elements of the proposal in increasing safety and reducing congestion

Submission number(s)

2, 3, 15, 20, 1, 9

Issue description

- One submission strongly supported proposal, stating it will reduce though traffic on Allfield Road (east) and congestion at the intersection, will improve safety for pedestrians, users of waterfront, local residents
- One submission stated it will reduce speed and U-turns on Allfield Road (east of Blackwall Road) and Burge Roads, reduce use of Burge and Allfield Roads as “rat run”
- One submission stated the proposed works will provide substantial improvements to the whole of Farnell Road (west) due mainly to the proposed closure of Farnell Road at Blackwall Road. This will stop use of Farnell Rd as a ‘rat run’ to avoid the Allfield Road lights, stop illegal speeding and stop unnecessary use by buses and other heavy vehicles.
- One submission stated the proposal would get traffic moving.
- Another submission stated support for the new shared path to improve active connectivity along with improved kerb and guttering in Farnell Road.

Response

The various statements of support are noted by Transport. The statements reflect the objectives of the proposal which have been key in its development. This includes that proposal changes would significantly reduce congestion, and improve road capacity, traffic efficiency, active transport connectivity and road safety along the Blackwall Road corridor.

2.8.2 Alternative suggestions to the proposal

Submission number(s)

4, 13

Issue description

- One submission suggested the opening of the southern end of Burge Road to left turn to Blackwall Road instead of proposal
- One submission suggested detailed alternatives to remove right hand lanes at the traffic signals with alternative routes on several local roads off Blackwall Road with the intention to improving Blackwall Road north – south traffic efficiency.

Response

The objectives of the project are to improve traffic flow and reduce delays through the Blackwall Road corridor. The objectives are not to reduce demand on Blackwall Road such as by diverting through traffic onto the local road network. The local road network is not designed to provide for the higher traffic volumes.

A submission suggested that northbound traffic heading to Allfield Road east could be accommodated by traffic turning left at Farnell Road, then left onto Edward Street, left onto Allfield Street and through to Allfield Road east. For traffic approaching from Blackwall Road north looking to go west, this could be accommodated by opening the southern end of Burge Avenue so that traffic could turn onto Burge Avenue, then turn left onto Allfield road, and then through to Allfield Road west.

The opening of the southern end of Burge Road is outside the scope of this proposal and would not be possible without major upgrades. Constraints at the southern end of Burge Road include the close proximity of frequently used pedestrian traffic lights, vehicular entry to the Peninsula Leisure Centre, bus stops, footpaths and a key shared path connection and cross over. A major infrastructure upgrade would be required to accommodate the use of Burge Road.

Using other side streets such as Burge Road and Edward Street to divert larger traffic volumes from Blackwall Road and Allfield Road (west) would not be possible without major upgrades to address safety and amenity issues. Diverting even some of the volumes of traffic from Blackwall Road along Edward Street creates additional issues as it is a local road that runs past a major secondary school campus entrance, is a school zone and would already be busy at peak morning and afternoon periods.

Extended upgrades of local roads around Allfield Road is not within the scope of this proposal. These roads are managed by Central Coast Council. The proposed eastern diversion to Farnell Road involves a much lower traffic volume and requires only a short upgrade. Further the Farnell Road upgrade is to address a consequence for the improvements in the signals on Blackwall Road.

2.8.3 Relationship of proposal to new development on the corner of Blackwall and Farnell Road (east) and access to that development.

Submission number(s)

4, 8, 12, 19, 10

Issue description

- One submission questioned how residents of the new build on corner of Blackwall Road and Farnell Road will get out of the units
- One submission questioned the need for lights at Farnell, and whether it was from feedback from local drivers or as a result of the proposed unit development on the corner of Farnell Road
- Three submissions objected to the closure of Farnell Road (west of Blackwall Road) and the new traffic lights which they believed was for the proposed new apartments on the corner of Farnell Road which they were against and were a result of developers.

Response

Traffic investigations and modelling of the Peninsula since 2017 confirms the Allfield Road intersection is congested. Appendix E of the REF also confirms that the Blackwall Road - Allfield Road intersection has the greatest average delay per vehicle on the corridor, and is the source of

corridor wide congestion. A large improvement in traffic flow along Blackwall Road can be provided by modifying this intersection.

Land use potential, including areas zoned for medium density; as well as the planned population growth of the Central Coast are considered when validating and adopting growth rates for the model. Around 30% traffic growth is applied in future projects between 2019 and 2043 (Appendix E Sec 3.5.2 – Part 2 REF on website). Known development and development potential across the locality is considered in predicting future traffic demand and used in traffic modelling.

The proposal need is justified by general population and traffic growth. The proposal need is not influenced by any individual residential development proposal. The observed congestion and delays and queues from the 2019 counts and known user experience clearly identify that the Allfield Road intersection is currently congested at peak periods. The proposal (that also includes traffic lights at Farnell Road) is required even if there was zero growth and no further local development. Appendix E of the REF provides data identifying that the intersection is already highly congested.

The proposal does address vehicular access to Farnell Road and the traffic signals from the group of properties that has a proposed development on the Blackwall Road – Farnell Road corner, the same as it does for all existing adjacent properties.

The Farnell Road traffic lights, western cul-de-sac and Farnell Road upgrade in the east are not being provided as a direct result of development at this location, they are required to complement the lane closure needed to ease current and predicted congestion at the nearby Allfield Road intersection, by allowing for an alternative safe and convenient access for traffic to Blackwall Road from the east.

2.8.4 Loss of trees and footpaths

Submission number(s)

4, 15, 1, 9

Issue description

- One submission raised a concern over how three lanes will fit at the intersection travelling North on Blackwall without losing the trees and footpath
- One submission stated they had no objection to removal of any trees necessary to facilitate the best outcome for retention of on-street parking and also identified a large street tree that they had concerns over.
- One submission stated that installing traffic lights at Farnell Road would require the removal of some trees in a tree lined street. They were concerned over the loss of shade and noted that that the Peninsula needed more trees.

Response

The REF identified a loss of around 20 small and large street trees, most on south side of Farnell Road. This is unavoidable as narrow verges, trenching, drainage and paths will not allow them to be retained in good health and safely. The design does nominate other trees in the construction area to be retained and protected, including the tree identified in one of the submissions above. As part of construction, a qualified arborist will be engaged to check retained trees for any current safety issues and to provide advice on protection.

Where there is space, the proposal would seek to replace some of these 20 trees in the local roadside with species suitable for roadside plantings, but it is likely there will be very few opportunities.

Instead Transport would work with Council to try and reinstate trees where appropriate in other locations nearby in Woy Woy.

To provide the three lanes travelling north, the proposal would impact on a small area of existing footpath and trees/gardens. There is no major acquisition as a result of this project, however, four properties would experience partial acquisition to accommodate the additional lanes and we will be in contact with owners well before work starts once the project is funded.

The footpaths would be reinstated in the wider corridor and private gardens and other private structures impacted by acquisition would be reinstated in negotiation with owners.

2.8.5 Changes to Terry Avenue

Submission number(s)

13

Issue description

- One submission raised concerns over making Terry Avenue left in and left out only, as this will encourage more people to go up Terry Ave to avoid the Allfield Road lights. This person suggested the installation of speed bumps on Terry Avenue.
- The same submission also raised concerns that the intersection upgrade would encourage more people to use Terry Avenue as a short cut.

Response

The provision of left in left out at Terry Avenue is required to accommodate the medians and turn lanes at the nearby Allfield Road intersection and to improve footpath safety. Short cuts along Terry Avenue avoiding the Allfield Road intersection can occur currently, without the proposed changes and are a road-user response to the current performance of the existing Allfield Road intersection.

With the proposal, additional green time for travel through the lights that results may also encourage less drivers to use Terry Avenue as a short cut to avoid queuing vehicles on Blackwall Road, along with the proposed removal of the right turn southbound out of Terry Avenue at Blackwall Road.

Further upgrade or changes to Terry Avenue past the intersection with Blackwall Road are not within the scope or objectives of this proposal and as this road is controlled by Central Coast Council. Concerns over speeding or traffic controls are best raised with Council directly.

3. Updates to environmental assessment

4.1 Statutory changes

In accordance with Section 5.5 of the EP&A Act, Transport, as the proponent and determining authority, must examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the Proposal. Clause 228 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) defines the factors which must be considered when determining if an activity assessed under Division 5.1 of the EP&A Act would have significant impact on the environment.

The factors specified in clause 228(2) of the *Environmental Planning and Assessment Regulation 2000* have been separately considered in Appendix A of the REF. The *Environmental Planning and Assessment Regulation 2021* (The Regulation) comes into force from 1 March 2022. The new Regulation has renumbered sections and provisions, including Clause 228. This clause is now renumbered to Section 171.

The Regulation introduces two additional factors in Section 171 (previously the clause 228 factors) for which all Division 5.1 assessments would be required to consider in determining whether the activity will have a significant impact. Responses to those changes in the Section 171 checklist (previously the 228 factors) are presented below.

(q): Any strategic plans made under Part 3 of the Act, including local strategic planning statements, regional and district plans.

Strategic plans made under Part 3 of the Act, including local strategic planning statements, regional and district plans have been assessed in detail in *Chapter 2.1 Strategic need for the proposal*, in the REF.

The Proposal is consistent with the following key local and regional strategies:

- Central Coast Regional Transport Plan (Transport for NSW, 2013)
- Central Coast Regional Plan 2036 (NSW Department of Planning and Environment, 2016)

Assessment against the Gosford Local Environmental Plan 2014, is also detailed in Chapter 4.1.2 of the REF.

(r) Any environmental factors that may be relevant to the likely impact of an activity on the environment and not just those factors listed in Section 171.

All other relevant environmental factors associated with the Proposal have been considered and assessed in detail in Chapter 6 of the REF.

4. Environmental management

The REF for the Blackwall Road, Allfield Road and Farnell Road Intersection Upgrade identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (section 7 of the REF).

After consideration of the issues raised in the public submissions, no safeguard and management measures have been revised.

Should the proposal proceed, environmental management will be guided by the framework and measures outlined below.

4.1 Environmental management plans (or system)

A number of safeguards and management measures have been identified in order to minimise adverse environmental impacts, including social impacts, which could potentially arise as a result of the proposal. Should the proposal proceed, these management measures would be incorporated into the detailed design and applied during the construction and operation of the proposal.

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

The CEMP will be prepared prior to construction of the proposal and must be reviewed and certified by Transport for NSW environment officer, Environment & Sustainability (Regions), prior to the commencement 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. The CEMP would be developed in accordance with the specifications set out in the: QA Specification G36 – Environmental Protection (Management System), QA Specification G38 – Soil and Water Management (Soil and Water Plan), QA Specification G40 – Clearing and Grubbing and QA Specification G10 – Traffic Management].

4.2 Summary of safeguards and management measures

The REF for the Blackwall Road, Allfield Road and Farnell Road Intersection Upgrade identified a range of environmental outcomes and management measures that would be required to avoid or reduce the environmental impacts.

After consideration of the issues raised in the public submissions, the environmental management measures for the proposal (refer to Chapter 7 of the REF) have been revised. Should the proposal proceed, the environmental management measures in Table 4-1 will guide the subsequent phases of the proposal. Additional and/or modified environmental safeguards and management measures to those presented in the REF have been underlined and deleted measures, or parts of measures, have been struck out.

Table 4-1: Summary of environmental safeguards and management measures

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
GEN1	General - minimise environmental impacts during construction	<p>A CEMP will be prepared and submitted for review and endorsement of the Transport for NSW Environment Manager prior to commencement of the activity.</p> <p>As a minimum, the CEMP will address the following:</p> <ul style="list-style-type: none"> • any requirements associated with statutory approvals • details of how the project will implement the identified safeguards outlined in the REF • issue-specific environmental management plans • roles and responsibilities • communication requirements • induction and training requirements • procedures for monitoring and evaluating environmental performance, and for corrective action • reporting requirements and record-keeping • procedures for emergency and incident management • procedures for audit and review. <p>The endorsed CEMP will be implemented during the undertaking of the activity.</p>	Contractor / Transport for NSW project manager	Pre-construction / detailed design	-

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
GEN2	General - notification	All businesses, residential properties and other key stakeholders (eg schools, local councils) affected by the activity will be notified at least five days prior to commencement of the activity.	Contractor / Transport for NSW project manager	Pre-construction	-
GEN3	General – environmental awareness	<p>All personnel working on site will receive training to ensure awareness of environment protection requirements to be implemented during the project. This will include up-front site induction and regular "toolbox" style briefings.</p> <p>Site-specific training will be provided to personnel engaged in activities or areas of higher risk. These include adjoining residential areas requiring particular noise management measures.</p>	Contractor / Transport for NSW project manager	Pre-construction / detailed design	-
BIO1	Biodiversity	<p>Flora and fauna management measures, including street tree management, will be prepared in accordance with Transport for NSW's <i>Biodiversity Guidelines: Protecting and Managing Biodiversity on Projects</i> (RMS, 2011) and implemented as part of the CEMP. It will include, but not be limited to:</p> <ul style="list-style-type: none"> plans showing areas to be cleared and areas to be protected, including protection measures for trees to be retained requirements set out in the <i>Landscape Guideline</i> (RMS, 2008) 	Contractor	Pre-construction	Section 4.8 of QA G36 <i>Environment Protection</i>

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> pre-clearing survey requirements procedures for unexpected threatened species finds and fauna handling <p>Protocols to manage weeds and pathogens.</p>			
BIO2	Biodiversity	Measures to further avoid and minimise the construction footprint and native vegetation or habitat removal will be investigated during detailed design and implemented where practicable and feasible.	Contractor	Detailed design	Additional measure
GW01	Groundwater	Should subsequent design iterations involve increased depth and duration of excavations and therefore increase the risk of groundwater interception, additional groundwater monitoring as part of the development of a groundwater management plan will be undertaken via either: Bore survey, including water level and quality measurements at existing proximal groundwater bores and/or Monitoring bore drilling campaign, including ongoing groundwater level and quality monitoring proximal to the site.	Transport for NSW	Detailed design	Additional measure
SW01	Soils	The construction environmental management plan (CEMP) will incorporate environmental management procedures and control measures for soil and water, including:	Contractor	Construction	Sections 2.1 and 2.2 of QA G38 Soil and Water Management

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> • An unexpected finds protocol for soil and water contamination, including procedures to identify and manage contamination, if encountered • Procedures for the handling, storage and disposal of waste including contaminated materials • Surface water management and sediment and erosion control measures including a progressive erosion and sediment control plan for the works. • Water quality control measures are to be used to prevent any materials (eg concrete, grout, soil slurry) entering drain inlets or waterways. • Remediation and rehabilitation requirements. 			
SW02	Soils	<p>Erosion and sediment control measures are to be implemented and maintained to:</p> <ul style="list-style-type: none"> • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets • Reduce water velocity and capture sediment on site • Minimise the amount of material transported from site to surrounding pavement surfaces 	Contractor	Construction	Sections 2.1 and 2.2 of QA G38 Soil and Water Management

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> Divert clean water around the site. 			
SW03	Accidental spill	<p>Emergency spill management measures will be developed in the CEMP, and including:</p> <ul style="list-style-type: none"> spill management measures in accordance with the Transport for NSW <i>Code of Practice for Water Management</i> (RTA, 1999) and relevant EPA guidelines. Initial response and containment (e.g. shutting valves, crimping of hoses, use of booms, pads and absorbent material) Notification of emergency services and relevant authorities (including Roads and Maritime and EPA officers). 	Contractor	Construction	Section 4.3 of QA G36 <i>Environment Protection</i>
SW04	Accidental spills	<p>Emergency spill management measures will be developed in the CEMP, and including:</p> <ul style="list-style-type: none"> spill management measures in accordance with the Transport for NSW <i>Code of Practice for Water Management</i> (RTA, 1999) and relevant EPA guidelines. Initial response and containment (e.g. shutting valves, crimping of hoses, use of booms, pads and absorbent material) Notification of emergency services and relevant authorities 	Contractor	Pre-construction	Section 4.3 of QA G36 <i>Environment Protection</i>

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		(including Roads and Maritime and EPA officers).			
SW05	Asbestos management	<p>An Asbestos Management Procedure (AMP) would be developed in the CEMP to address unexpected finds of ACM during construction. Specifically, protocols would be stipulated for separation, monitoring, validation and clearance of asbestos. The AMP and associated Standard Work Procedures would satisfy the requirements of:</p> <ul style="list-style-type: none"> • Work Health and Safety Regulation 2017 • the Safe Work Australia Asbestos Codes of Practice and Guidance Notes: <ul style="list-style-type: none"> ○ Code of Practice: How to Manage and Control Asbestos in the Workplace ○ Code of Practice: How to Safely Remove Asbestos 	Contractor	Construction	Additional measure
SW06	PASS/ASS management	<p>A procedure for the management of PASS at depths below 1m, would be developed in the CEMP (if required).</p> <p>PASS or ASS are to be managed in accordance with the Roads and Maritime Services Guidelines for the Management of Acid Sulphate Materials 2005. If PASS or ASS are encountered during earthworks, these materials will be temporarily stockpiled separately to</p>	Contractor	Construction	Additional measure

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		remaining soils and classified for offsite disposal.			
SW07	Unexpected contamination finds	An unexpected finds procedure would be included in the CEMP. An unexpected find is potential contamination that was not previously identified during this contaminated land review.	Contractor	Construction	Additional measure
SW08	Unexpected contamination finds	<p>The procedure would include (as a minimum) that in the event of an unexpected find:</p> <ul style="list-style-type: none"> • excavation works would temporarily be suspended at the location of the unexpected find, the environment manager contacted and the area of concern appropriately isolated; • subject to the nature of the unexpected find, the area would be inspected by a contaminated land consultant and if required, appropriate sampling and analysis would be undertaken, the sampling works would be documented in a report; • the requirement for additional controls would be assessed by the consultant and implemented by the proponent; and • workplace health and safety and environmental protection requirements would be reviewed, depending on the type of unexpected finds encountered. 	Contractor	Construction	Additional measure

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
TT01	Traffic and transport	<p>Traffic control and signage would be implemented under a traffic management plan (TMP) including a strategy to inform motorists about temporary and permanent detours and maintain safe flow of traffic and minimise delays.</p> <p>The TMP will be prepared in accordance with the 'Traffic control at work sites manual' V6 (TfNSW, 2020) and Australian Standard 1742.3 Manual of uniform control devices.</p>	Contractor	Pre-construction	<p>Section 4.8 of QA G36 Environment Protection</p> <p>QA Specification G10 Control of Traffic.</p>
TT02	Traffic and transport	<p>The TMP will include as a minimum:</p> <ul style="list-style-type: none"> • confirmation of haulage routes • measures to maintain access to local roads and properties • site specific traffic control measures (including signage) to manage and regulate traffic movement • measures to maintain pedestrian and cyclist access • requirements and methods to consult and inform in advance the local community, council and other stakeholders of impacts on the local road network • provision of adequate advance notification of at least three weeks (including the consideration of the use of Variable Message Boards) to alert the local community and 	Contractor	Construction	QA Specification G10 <i>Control of Traffic</i> .

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<p>road users of any permanent change to traffic movements.</p> <ul style="list-style-type: none"> • access to construction sites including entry and exit locations and measures to prevent construction vehicles queuing on public roads. • consideration of haul and travel routes from any Ancillary Facility established for the works including traffic and pedestrian safety impacts from access to the facility which may be located outside the proposal area. • a response plan for any construction traffic incident 			
TT03	Traffic and transport	Where safe and feasible, current traffic movements and property accesses are to be maintained during the works until the permanent works are completed.	Contractor	Construction	Additional measure
TT04	Pedestrian and cyclist access	Where possible, safe public access through the site is to be maintained during works, especially along the existing footpaths and shared paths at Blackwall and Allfield Roads This may require the periodic use of traffic control at peak times.	Contractor	Construction	QA Specification G10 <i>Control of Traffic</i> .
TT05	Pedestrian and cyclist access	During construction the contractor will need to consider in their TMP the need maintain at all times a safe accessible crossing of Blackwall Road at Allfield Road and access to bus stops on Blackwall Road or provide temporary	Contractor	Construction	QA Specification G10 <i>Control of Traffic</i> .

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		accessible and safe access and signage along and across Blackwall Road in the vicinity of the works.			
TT06	Emergency service vehicles and buses	Temporary traffic management measures will be implemented to ensure emergency services vehicles and buses can negotiate the proposal site during construction.	Contractor	Construction	Additional measure
TT07	Emergency services vehicles	Central Coast Council, NSW Police, Brisbane Water Ambulance, Umina Fire and Rescue, and SES will be kept informed of the proposal's construction staging and any relevant changes to traffic management arrangements.	Contractor	Construction	Additional measure
TT08	Buses	Further consultation with Busways during detailed design to optimise route change for Routes 59 and 64.	Transport	Detailed Design	Additional measure
TT09	Parking	Further consultation <u>with local residents and businesses</u> regarding the layout of parking on Allfield Road east of Blackwall Road will be undertaken during detailed design	Transport	Detailed Design	Additional measure
NV01	Noise and vibration	<p>Construction Noise and Vibration Management measures will be prepared and implemented as part of the CEMP. The NVMP will generally follow the approach in the Interim <i>Construction Noise Guideline</i> (ICNG) (DECC, 2009) and identify:</p> <ul style="list-style-type: none"> all potential significant noise and vibration generating activities associated with the activity 	Contractor	Detailed design / pre-construction	Section 4.6 of QA G36 <i>Environment Protection</i>

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> feasible and reasonable mitigation measures to be implemented, taking into account <i>the TfNSW Construction Noise and Vibration Guideline</i>. <p>The CEMP will also outline arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures.</p>			
NV02	Community notification	<p>The community must be notified 5 working days in advance of all works outside standard hours which have the potential to impact noise sensitive receivers.</p> <p>Notification requirements must comply with the TfNSW Road Construction Noise and Vibration Guideline.</p> <p>The notification will at a minimum provide details of:</p> <ul style="list-style-type: none"> the project and the out of hours activity the construction period and construction hours any reasonable and feasible measures taken to minimise noise and vibration impact contact information for project management staff complaint and incident reporting 	Contractor	Detailed design / pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> how to obtain further information. <p>General notification may be done through broader public consultation measures, such as notices in local newspapers, social media and public bulletin boards. More targeted notifications would then be required for significant periods of out of hours work and where receivers are predicted to be potentially highly affected.</p>			
NV03	Noise controls	Where safe and feasible, Works are to be carried out during the normal work hours (ie. 7am to 6pm Monday to Friday; 8am to 1pm Saturdays).	Contractor	Construction	
NV04	Noise controls	Out-of-hours works would be managed in accordance with the Roads and Maritime Construction Noise and Vibration Guidelines (Roads and Maritime Services, 2016) with the consideration of measures to address impacts where reasonable and feasible, including source noise controls, respite periods and notifying affected residents in advance.	Contractor	Construction	
NV05	Noise controls	Any work that is only able to be performed outside normal work hours or on Sundays or public holidays must have reasonable and feasible measures in place to minimise noise impacts. Additional construction noise mitigation measures that can be considered in the CEMP are outlined in the Construction	Contractor	Construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		Noise and Vibration Assessment in Appendix C.			
NV06	Noise controls	Where reasonable and feasible, appropriate respite from night time construction activities will be provided to limit the number of consecutive nights where receivers will experience noise impacts. The number of consecutive nights would be determined based on the activity requirements with consideration given to minimising the overall duration of the project (duration respite), while minimising impacts on receivers.	Contractor	Construction	
NV07	Noise controls	Direct engagement (by specific activity notifications and phone calls, emails or doorknocking) with highly affected receivers (see figure 3) will be required for consecutive periods of night work without respite, such as may be required for road surfacing, concrete traffic islands or drainage and utility crossings.	Contractor	Construction	
NV08	Noise controls	Direct engagement (by specific activity notifications and phone calls, emails or doorknocking) with highly affected receivers (see figure 3) will be required for consecutive periods of night work without respite, such as may be required for road surfacing, concrete traffic islands or drainage and utility crossings.	Contractor	Construction	
NV09	Noise controls	Noise impacts are to be minimised through the CEMP and in accordance	Contractor	Construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		with the RMS Construction Noise and Vibration Guideline and assessed on an activity by activity basis using the Transport for NSW Construction Noise Estimator and the assessment in Appendix C.			
NV10	Construction vibration control	<p>The CEMP will include measures to limit the impact of vibration on surrounding receivers including but not limited to the following, as outlined in the Construction Noise and Vibration Assessment in Appendix C:</p> <ul style="list-style-type: none"> Where vibration intensive construction work is to occur in close proximity to sensitive receivers, then an estimate of the vibration levels of equipment and plant will be undertaken based on historical and known levels, and an assessment of the level of exposure of nearest affected sensitive receivers. Where known levels are not available, then vibration measurements of equipment on site should be carried out to confirm levels. Prior to commencement of construction, dilapidation surveys should be conducted on structures that are observed to potentially be at risk of vibration impacts (such as older or lower condition structures), or where 	Contractor	Construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<p>construction methods are predicted to approach the cosmetic damage limits. The dilapidation survey should document the level of any pre-existing cosmetic damage, and may identify the need for more stringent vibration limits.</p> <ul style="list-style-type: none"> • 5 days prior to commencing vibration intensive works, notification will occur to sensitive receivers, and information on likely levels of vibration (eg information that while vibration levels are expected to be felt during vibratory rolling, the risk of cosmetic damage may be negligible) and a contact for any complaints. • The CEMP will include a site contact for complaints and procedure for management of complaints, including response times, and measurement procedures to confirm vibration levels, if required. • Where vibration levels are found to be excessive, modifications to construction methodology may be required. Examples may include replacement of vibration intensive machinery with smaller 			

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		machinery, such as smaller vibratory rollers, or changed processes that are less likely to produce significant vibration.			
AH01	Aboriginal heritage	<p><i>The Standard Management Procedure - Unexpected Heritage Items</i> (Transport for NSW, 2015) will be followed in the event that an unknown or potential Aboriginal object/s, including skeletal remains, is found during construction.</p> <p>Work will only re-commence once the requirements of that Procedure have been satisfied.</p>	Contractor	Pre-construction	Section 4.9 of QA G36 <i>Environment Protection</i>
LV01	Landscape character and visual impact	<p>A basic Landscaping Plan will be prepared as part of the CEMP. The Landscaping Plan will confirm design treatments for:</p> <ul style="list-style-type: none"> location and identification of existing vegetation to be retained and proposed turf or landscaped areas, including species to be used details of the staging of landscape works procedures for monitoring and maintaining landscaped or rehabilitated areas. <p>The Landscaping Plan will be prepared in accordance with relevant guidelines, including: Landscape Guideline (Roads and Maritime Services, 2019)</p>	Transport for NSW	Detailed design	Standard measure

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
LV02	Visual impact	<p>The contractor will inspect and clearly identify prior to clearing all trees requiring either removal or trimming to safely construct the works. Where safe and feasible, the contractor will further limit street tree removal to the minimum required for the footprint to safely construct the works.</p> <p>The contractor will engage an arborist to provide report on the health and condition of all trees to be retained in the proposal area and consider any recommendations for any tree protection measures where they are close to works, pruning to maintain health or any ongoing hazards associated with their retention.</p>	Contractor	Construction	
LV03	Visual impact	Pruning of retaining mature trees and shrubs may be required for worker safety, and <u>following construction, for pedestrian and cyclist safety along new paths</u> , and is to be in accordance with Part 5 of the Australian Standard 4373-2007 Pruning of amenity trees.	Contractor	Construction	
LV04	Visual impact	<p>Replacement tree plantings will be provided wherever roadside space and utilities allow in the proposal area and Central Coast Council agree.</p> <p>A particular focus will be in areas of the roadside of Farnell Road to the east of Blackwall Road, Burge Road near the</p>	Contractor and Transport for NSW	Detailed Design/ Construction	Additional measure

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<p>proposal and possibly the Brisbane Water foreshore.</p> <p>The number, species and location of trees to be planted will be determined during detailed design in consultation with Central Coast Council and relevant stakeholders.</p> <p>Opportunities for additional replacement plantings outside the proposal road corridor would be further investigated in consultation with Central Coast Council during detailed design and pre-construction.</p>			
LV05	Visual impact	Works site will be regularly inspected and routinely swept with equipment and materials kept in order for the duration of construction works.	Contractor	Construction	Additional measure
LV06	Impact from lighting	Temporary site lighting will be installed and operated in accordance with AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting, and an approved Traffic Management Plan.	Contractor	Construction	Additional measure
LV07	Visual impact	Following the completion of construction works, plant/equipment will be removed, and disturbed areas will be landscaped, turfed or otherwise stabilised, where appropriate.	Contractor	Construction	Additional measure
SE01	Accessibility related to road access changes during construction	Develop and implement measures as part of the CEMP that considers appropriate detours; alternative access	Transport/ Construction contractor	Construction	Section 3.1 and 3.7 of QA G36

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		points; and active consultation and advance public notification.			Environment Protection
SE02	Accessibility related to residential property access and footpaths	Existing access for nearby and adjoining properties is to be maintained at all times during the works unless otherwise agreed to by the affected property owner. Property access disruptions would be outside of peak times, and would be short term during construction, with agreement from impacted residents.	Transport/ Construction contractor	Construction	Section 3.1 and 3.7 of QA G36 Environment Protection
SE03	Livelihood related to reduced access and parking facilities for businesses	Develop and implement measures in the CEMP that considers: <ul style="list-style-type: none"> the provision of alternative parking arrangements; staggering construction works; temporary signage and advance public notification. 	Transport/ Construction contractor	Detailed design/ Construction	Section 3.1 and 3.7 of QA G36 Environment Protection
SE04	Public notification	Notification is to be given to affected community members prior to the works taking place. The notification, which should be a minimum of five working days prior to the start of works, is to include: <ul style="list-style-type: none"> Details of the proposal The duration of the works and working hours Any changed traffic or access arrangements 	Transport/ Construction contractor	Construction	Section 3.6 and 3.7 of QA G36 Environment Protection

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> How to lodge a complaint or obtain more information Contact name and details. 			
SE05	Accessibility related to road access changes	Install permanent or temporary signage that clearly communicates significant road and footpath changes.	Transport/ Construction contractor	Construction Operation	Section 3.7 of QA G36 Environment Protection
AQ01	Air quality	<p>Air quality management measures will be prepared and implemented as part of the CEMP. The CEMP will include, but not be limited to:</p> <ul style="list-style-type: none"> Measures (such as watering or covering exposed areas) are to be used to minimise or prevent air pollution and dust Work (including the spraying of paint and placement of fine road materials) is not to be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely Vegetation or other materials are not to be burnt on site Vehicles transporting waste or other materials that may produce odours on site or dust are to be covered during transportation Ancillary Facilities, accesses and temporary stockpiles are to be managed to suppress dust emissions in accordance with the Roads and Maritime Services 	Contractor	Construction	Section 4.4 of QA G36 Environment Protection

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<p>Stockpile Site Management Guideline (EMS-TG-10).</p> <ul style="list-style-type: none"> progressive rehabilitation for exposed surfaces. 			
WA01	Waste	<p>A Waste Management Plan must be prepared in the CEMP that follows the Environmental Procedure - Management of Wastes on Transport for NSW Land (Transport for NSW, 2014) and relevant Transport for NSW Waste Fact Sheets. The Plan will include as a minimum;</p> <ul style="list-style-type: none"> Resource management hierarchy principles to be followed: <ul style="list-style-type: none"> 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 If vegetation is to be mulched and transported off site for beneficial reuse, it is to be assessed for the presence of weeds, pest, and other disease. There is to be no disposal or re-use of construction waste on to other land, except in accordance with an approved Resource Recovery Exemption from the EPA. Waste is not to be burnt on site 	Contractor	Detailed design / pre-construction	Section 4.2 of QA G36 <i>Environment Protection</i>

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> Waste material, other than vegetation and tree mulch, is not to be left on site once the works have been completed Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day <p>Asbestos removal must be undertaken in accordance with Working with Asbestos: Guide 2008 published by WorkCover Australia.</p>			
WA02	Waste	<p>All construction wastes which has been assessed as not suitable for reuse or cannot be reused would be classified in accordance with the Waste Classification Guidelines (NSW EPA 2014) prior to proper disposal in accordance with the POEO Act.</p> <p>Excavated soil and rock removed as part of road project activities would require characterisation and off-site disposal to an appropriately licensed waste facility or landfill in accordance with the POEO Act and NSW EPA (2014) Waste Classification Guidelines Part 1: Classifying waste.</p> <p>Excavated soil and rock and other public road materials will not be disposed of at private lands without the completion and approval of a s146 certificate under the POEO Act and waste classification and</p>	Contractor	Detailed design / pre-construction	Section 4.2 of QA G36 <i>Environment Protection</i>

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		verification of appropriate planning approvals (as applicable) at the receiving location.			
UT01	Utilities	<p>Prior to the commencement of works the location of existing utilities and relocation details will be confirmed following consultation with the affected utility owners.</p> <p>If the scope or location of proposed utility relocation works falls outside of the assessed proposal scope and footprint, further assessment will be undertaken.</p>	Contractor	Detailed design / pre-construction	
HA01	Hazards and risk management	<p>Measures to manage hazards and risks will be included as part of the CEMP. The CEMP will include, but not be limited to:</p> <ul style="list-style-type: none"> • details of hazards and risks associated with the activity • measures to be implemented during construction to minimise these risks • record keeping arrangements, including information on the materials present on the site, material safety data sheets, and personnel trained and authorised to use such materials • a monitoring program to assess performance in managing the identified risks 	Contractor	Detailed design / pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> contingency measures to be implemented in the event of unexpected hazards or risks arising, including emergency situations. <p>The CEMP will be prepared in accordance with relevant guidelines and standards, including relevant Safe Work Australia Codes of Practice, and EPA or Office of Environment and Heritage publications.</p>			
CU01	Cumulative impacts	If schedule overlap does occur with either the Rawson Road and Ocean Beach Road intersection upgrade or the Blackwall Road and Memorial Avenue corridor upgrades, Transport for NSW would revise the Traffic Management Plan and review network modelling as required.	Transport	Construction	Additional measure

4.3 Licensing and approvals

Table 4-2 provides a summary of license and approval requirements relevant to this proposal. The need for these licenses and approvals will be confirmed during detailed design.

Table 4-2: Summary of licensing and approval required

Instrument	Requirement	Timing
Roads Act 1993 (s138)	Road occupancy licence for lane closures on Blackwall Road, Farnell Road and Allfield Road.	Prior to commencement of construction.

5. References

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