

Local Traffic Network Changes

As part of the project, a number of road reconfigurations are proposed including:

- restricting turning movements at the Gosport Street/Alice Street intersection;
- construction of a cul-de-sac at southern end of Gosport Street; and
- refinements to the Alice Street/Frome Street roundabout.

Submissions raised concerns that the changes would detrimentally affect access to properties and negatively impact businesses, which are reliant on passing traffic. The Department notes Council's position regarding the likelihood of heavy vehicles migrating onto local roads.

As part of this project, the RTA intends to implement a two phase Local Area Traffic Management Plan (LATM), which aims to address the issue of local traffic impacts and encourage vehicles to use Alice Street. Phase 1 measures involve passive changes to the network such as vehicle restrictions and reorientating intersection priorities and the construction of a cul-de-sac on Gosport Street to restrict heavy vehicle movements. Phase 2 measures would involve further physical alterations to the road network by closing streets to through traffic. The RTA has identified that Phase 2 measures will only be employed following complaints from residents and traffic counts indicating a significant increase (50%+) in heavy vehicle volumes.

The Department recognises that it is difficult to predict driver behaviour following commissioning of the Project, however, it notes that the introduction of a Local Area Traffic Management Plan (LATM) aims to offset impacts as far as practicable and supports the restriction of traffic to Alice Street for safety and amenity reasons.



Phase 1 Traffic Management Measures



Phase 2 Traffic Management Measures

The Department considers it appropriate that traffic management measures be staged for this project. This will allow for flexibility in the network and presents options for dealing with traffic issues should they arise.

However, the Department does not consider that the implementation of phase 2 should be solely in response to community complaints and recommends a condition for the efficacy of phase 1 to be assessed at one year following opening of the Gwydir Highway Interim Connection.

The Department notes the concerns raised by the community with respect to the restriction of turning movements on Alice Street/Gosport Street. The RTA contends that the basis for the restriction is to improve the safety of traffic in this location and remove the risk of an accident, presented by stopped and/or turning traffic immediately after the signalised Alice Street/Bypass intersection. A key goal of the project is to remove the risk of conflicts with local and regional traffic and should these movements not be restricted, it is likely to undermine this objective. The Department is of the opinion that whilst certain traffic streams may not be able to directly access properties which front Gosport Street, suitable alternatives are available in the form of a one block diversion using Warialda and River Streets.

To offset any negative impacts, the Department has recommended a condition requiring the RTA to install directional signage on Alice Street to direct traffic along Warialda, River and Gosport Streets to those businesses where access has been affected by the Project.

In relation to concerns that network changes may cause confusion to users, including emergency services, the Department considers these are valid. As driver behaviour will have to be altered, the Department recommends that a condition requiring the Proponent notify the community including emergency services, four weeks from commencement of operations.

The Department notes that there has been no commitment by the RTA to review or remove road restrictions on Alice Street and surrounding areas once the southern section of the project is completed. The Department considers therefore that a condition should be included to require a review of the measures in consultation with the Council and the community.

Pedestrian Access

The Proponent intends to install pedestrian refuges at five locations along Alice Street. These crossings break the road into two discrete sections for pedestrians to traverse a single lane of traffic at a time. Extensions to the curb on each side of the road are also proposed to minimise street crossing distances. Non compliant crossing points along Alice Street will also be rectified. Submissions identified that the introduction of greater traffic flows along Alice Street will result in increased accidents, specifically during the monthly market days at Jellicoe Park.

The RTA considered impacts to pedestrian movement and whether traffic volumes and pedestrian demand warranted the installation of additional pedestrian measures. Further measures are not technically justified and the Department accepts the RTA's justification for not providing additional facilities along Alice Street.

In the context of the pedestrian access, the Department considers the provision of the formalised refuges along Alice Street will provide sufficient safety for pedestrians following the diversion of traffic onto Alice Street.

Alice Street/Frome Street Roundabout

In 2008, the NRMA Motoring and Services group undertook an audit of the Newell Highway in NSW. The Newell Highway Performance Review (Parsons Brinckerhoff, October 2008) was released and analysed the Highway's road condition, traffic volumes and accident history. This report identified that the roundabout where the Newell Highway, Alice Street and the Gwydir Highway converge was a 'black spot'. Submissions raised the relevance of these findings and argued that a change in vehicular direction (i.e. turning traffic) is likely to increase accident rates at this locale.

The NRMA report identified that 13 accidents were recorded at this intersection over the five year analysis period. Of these, five were rear-end accidents. Parsons Brinckerhoff's inspection revealed that in addition to driver behaviour, the roundabout and surrounds were likely contributors to accidents. Key issues were:

- Bridge across Mehi River and northern approach contains a crest and curve which restricts stopping site distance to the roundabout;
- Southbound traffic was observed to be approaching the roundabout above the safe approach speed required for a roundabout. The high speed of approaching traffic was likely to compromise stopping ability to give way to traffic on the roundabout.

- Lack of advanced warning or visual cues (other than an advanced direction sign on the northern side of the bridge), possibly giving impression that the road was appropriate for travel at a higher speed.
- Downhill approach to the roundabout from the southern side of the crest further compromised stopping distance and ability.
- Line marking in the approach to and within the roundabout was confusing. The northern, western and eastern approaches are marked for two lanes, however in the roundabout there is no markings. It is likely to be an omission to allow for heavy vehicle movements (turning).

The Department considers that the designation of a black spot based on 13 accidents over a five year period should be considered in the context of traffic volumes along the Newell Highway and the overall traffic volumes in Moree. The Department notes that the report concluded that a number of the contributors to accidents involved traffic along Balo Street approaching this intersection. Whilst the interim connection will remove through traffic away from this approach, there appears to be scope for improvement at the location, which is evidenced in part by the Proponent electing to make minor changes to the roundabout. These changes, designed to improve heavy vehicle circulation provide an opportunity for the RTA to review these findings and implement changes where considered reasonable and feasible.

Therefore, the Department has recommended a condition requiring the Proponent to consider the NRMA's findings when making changes to the roundabout.

6.3 Noise and Vibration

Issue

Alice Street is an approved heavy vehicle route. As such, properties which front the road already experience traffic noise. The introduction of bypass traffic onto this thoroughfare is likely to further increase impacts. Noise impacts along the Newell Highway south of the Gwydir Highway are not expected to change. However, it is noted that if the approved project was constructed, noise impacts would be reduced.

Issues Raised in Submissions

The key concerns raised in public submissions were:

- Increased noise will impact on residents amenity and impact unreasonably on businesses (i.e. Motels), which rely on passing trade and peace and quiet.
- The predicted change in noise characteristics was concerning.
- The need for ameliorative measures to be implemented along Alice Street.

Moree Council resolved to support residents concerns in relation to the project, including the impact that operational noise will have along the corridor.

DECCW also noted that significant increases in operation noise were predicted. DECCW did state that should the project be approved, an audit of noise levels and effectiveness of operational mitigation measures would be required. Further, application of all reasonable and feasible noise mitigation measures need to be employed during construction and recommended the Proponent undertake a vibration assessment prior to construction.

Consideration

The Proponent undertook unattended noise monitoring along Alice Street to obtain project background levels which are presented in

Table 3. One location was considered representative as the interim connection is a small distance and noise conditions did not vary along its length.

Table 3 – Monitoring Results

Monitoring Location	Day (LAeq(15-hour))	Night (LAeq(9-hour))	Day (L _{AMax})	Night (L _{AMax})
13	64dB(A)	56dB(A)	78dB(A)	74dB(A)

Predicted noise levels were calculated in accordance with the NSW Environmental Protection Authority 1991 Guideline *Environmental Criteria for Road Traffic Noise (ERCTN)*, and the RTA's *Environmental Noise Management Manual (ENMM)*, which guides the selection of acoustic mitigation and management measures for sensitive receivers, where

noise levels exceed nominated criteria. The Project involves the redevelopment of an existing arterial road and, in accordance with the ERCTN, the Proponent must assess the project against the following criteria:

1. **Day:** 7am to 10pm - 60dB(A), ($L_{Aeq(15\text{-hour})}$); and
2. **Night:** 10pm to 7am - 55dB(A) ($L_{Aeq(9\text{-hour})}$).

Where noise criteria are already exceeded, the ERCTN nominates an allowance criterion requiring the redevelopment to be designed so as not to increase existing noise levels by more than 2dB(A). Whilst the guideline requires noise levels from existing roads to be reduced to meet the noise criteria where reasonable and feasible, it notes that in many cases this is not achievable.

The ENMM provides further clarity on the application of the allowance criterion through the prediction of future noise levels along the corridor in the absence of the project, (i.e. noise from natural growth). Triggers for applying mitigation are:

1. exceedence of the ERCTN allowances over 'future existing' noise levels, following commencement of the project operations; and
2. noise levels will not be acute, i.e. either less than 65dB(A) during the day or 60dB(A) during the night.

Compliance with the ERCTN guideline or the ENMM (where base criteria is exceeded) directly influences RTA's consideration of whether a property is eligible for mitigation. The ERCTN also highlights the potential for sleep disturbance at adjoining land uses following changes in the acoustic environment, although does not set defined limits. The ENMM describes sleep disturbance as an event where the maximum noise level over the average of one hour, is equal, or greater than 15dB(A).

The Proponent's assessment of noise impacts from the project indicates that all receivers classified as residential or sensitive land uses (Motels), exceed base criteria specified in the ERCTN during the night and all but one, fall within the acute criterion. The outcomes of the noise assessment is summarised in Table 4.

Table 4 – Predicted Night Impacts ($L_{Aeq(9\text{-hour})}$) at Receivers

Receiver	Future Existing (2010 without project) dB(A)	2020 (with project) dB(A)	Difference dB(A)	Night Noise Criterion (ERCTN)	Exceeds ERCTN Night Criteria	Exceeds acute noise level of 60dB(A) (ENMM)
1	62	63	+1	55	Yes	Yes
5	54	63	+9	55	Yes	Yes
6	54	63	+9	55	Yes	Yes
7	52	60	+8	55	Yes	Yes
8	53	62	+9	55	Yes	Yes
9	53	62	+9	55	Yes	Yes
10	53	61	+8	55	Yes	Yes
11	49	58	+9	55	Yes	No
13	53	62	+9	55	Yes	Yes
19	54	62	+8	55	Yes	Yes

The Department is satisfied with the noise and vibration assessment undertaken by the Proponent and the validation of the noise model found that it was within accepted thresholds. The Department also notes that the Environmental Assessment has focused on impacts during the night, as opposed to the day. Changes to the acoustic environment during the day are likely to be subject to a higher degree of tolerance by receivers, due to ambient levels generally being higher and, daily activities masking traffic noise through distraction. Nonetheless, this impact has also been considered as part of the Department's assessment.



Figure 5: Identification of receivers along Gwydir Highway (Alice Street)

The Department notes that without amelioration night time noise levels identified in the ERCTN will be exceeded at all locations. Expected noise levels in ten years are also anticipated to grow significantly and exceedences of up to 9dB(A) are expected. All but one property will exceed acute level thresholds. Further, whilst the Proponent has not provided data on sleep disturbance, based on the modelled scenario, it is probable that sleep disturbance events would occur without mitigation.

With the exception of one property, which has a negligible 1dB(A) increase, the Proponent has committed to implementing a package of measures to residences in order to mitigate noise to the greatest extent practicable. Building treatments generally consist of a combination of measures including mechanical ventilation, sealing of wall vents, upgraded windows, glazing and doors. This is dependant on the condition and construction of the building, and the ENMM identifies that it can provide a reduction anywhere between 10 and 25dB(A).

Whilst the exact mitigation measures for each affected property will be finalised following detailed inspection and negotiation with the property owners, the Department is satisfied that the assessment provided by the Proponent demonstrates that mitigation at each property is achievable. A reduction in levels by 10dB(A) would reduce noise levels and ensure compliance with the night noise criterion as specified by the ERCTN.

To reinforce these predictions, the Department has recommended revisions to existing conditions of approval requiring the Proponent to submit, for the Director-General's approval, an operational noise management report. This report will outline the proposed operational noise mitigation measures. Further, the Proponent is to undertake monitoring of noise levels between six and twelve months after commencement of operations. The report will confirm whether noise mitigation measures are effective and predicted noise levels are achieved. Where substantial discrepancies are identified, additional measures will be required.

The Department also considers that the number of receivers is low and should be considered against the wider benefits of the Project and, Moree as a whole. Namely:

- properties along Alice Street already are subject to traffic noise, and a similar traffic mix to that proposed; and
- the total number of sensitive receivers has been identified as nine, eight of which are proposed to receive mitigation complying with relevant guidelines. Further, a greater number of receivers along the existing Newell Highway will benefit from the switch of heavy vehicle traffic to the new alignment.

With respect to submissions which questioned the impact changes in traffic characteristics (i.e. compression braking) would have and how it would translate into noise levels, the Department considers these have been reflected in the modelling, through maximum noise level events. These events directly influence average noise levels.

In terms of Jellicoe Park, the Department notes that an exceedence of the ERCTN criteria for passive recreation areas is likely to occur on the edges of the Park. However, the Department notes that the Park fronts the existing Newell Highway and that moving traffic flows onto Alice Street is likely to shift the impacts to an alternate frontage. Irrespective, these changes are unlikely to result in a significant impact to the Park's amenity, functionality or quality, including on Market days due to its size and that open space and facilities are set back from the road network and generally orientated towards the Mehi River.

Vibration Impacts

Vibration impacts were considered under the Department of Environment and Climate Change Document "Assessing Vibration – A technical guideline". The Department notes that some private submissions identified that increased vehicle movements would translate into increased vibration levels at a structure, which is likely to lead to property damage.

The RTA contends that there is no evidence of any vibration impacts at present and a range of vehicle types representing those which will operate on the interim connection use the road. Notwithstanding, construction of the new pavement is predicted to be of higher quality than the existing, and its construction will be in a manner so as to ensure the surface is free of any roughness or irregularity. Further, the Proponent predicts that if there are impacts at adjoining property, improvement of the road surface will translate into a lower risk of vibration being transferred to neighbouring property. The Department is satisfied with this response.

Construction Noise and Vibration Impacts

Reconstruction of Alice Street is proposed as part of the Project and is expected to take approximately four weeks. This will require a range of construction equipment to be deployed to the area. The Department notes that a number of properties directly front Alice Street will be subject to increased noise and vibration levels during construction. A construction noise objective currently applies to the project, which requires activities not to exceed the LA10 noise level measured over a period of not less than 15 minutes should not exceed the background LA90 noise level by more than 10dB(A) at any noise sensitive receiver. Further, an additional 5dB(A) is applied if the noise from an activity is substantially tonal or impulsive in nature. The construction noise goal for the project would be a LA10 level of 68dB(A).

Notwithstanding, it is widely recognised that compliance with these levels is difficult when undertaking linear construction activities, which is evidenced by the Proponent's preliminary assessment of noise levels emanating from road construction equipment at the nearest sensitive receiver, to be up to 81dB(A). In these instances, the Proponent is required to implement all reasonable and feasible measures as opposed to being used as a strict criterion for compliance.

The existing conditions of approval for the Project are considered in this instance appropriate to manage impacts arising from construction activities. This includes limiting construction hours, implementation of operation noise mitigation measures prior to construction (where possible), and the development of a construction noise and vibration management plan. This plan sets out a framework to manage noise and vibration impacts by giving due consideration to implementing a range of mitigation measures, where reasonable and feasible. The Department considers that, the Proponent has demonstrated that the existing framework is being managed effectively, and therefore it is seen as appropriate to extend its scope to incorporate the proposed works.

With respect to construction vibration, the Proponent assessed the activities that would likely impact on neighbouring properties. The assessment concluded that use of a vibratory roller would be a source of annoyance. The Proponent has committed to undertaking dilapidation surveys and monitoring where there is potential for impacts. DECC's submission requested that they be reinforced as a condition of approval for the project.

The existing conditions of approval set vibration criteria for the project in accordance with relevant guidelines and outline requirements for dilapidation surveys. One requirement is to undertake such surveys within 30m of the Activity and those properties which could potentially be impacted, fall within the bounds of this condition.

6.4 Alice Street reconfiguration

Issue

Alice Street, between Balo Street and the bypass corridor is made up of three blocks, which contain a range of land uses typical of a suburban area. Residences, light industrial businesses, Jellicoe Park and commercial businesses, are easily identified. Hotels/Motels and Service Stations reliant on highway traffic are also a feature.

The Proponent has proposed a range of network changes, primarily along Alice Street which involves the reconfiguration of street parking and property access to aid in the flow of traffic and in order to avoid the need for acquisition of private property.

Issues Raised in Submissions

Submissions from both the community and Council raised concern that the interim connection was likely to negatively impact on businesses along Alice Street. Concerns were closely related to road network changes, however business and property impact concerns centred on:

- the loss of car parking along Alice Street, which would impact on market days;
- changes to legal access to some commercial businesses, which rely on passing traffic (i.e. Hotels/Motels);
- access to Gosport Street (from South); and
- lack of access to Moree Pool complex in Anne Street.

Consideration

The overarching concern that was identified by businesses was the removal of 50% of the available parking along Alice Street through the conversion of spaces to parallel parking and that this would translate into a loss of revenue.

The RTA, as part of its traffic assessment, undertook a parking optimisation study of the area. Findings of the study identified that 95% of the time, sufficient parking is available for customers using businesses along Alice Street. Further, the study noted that on the few monthly occasions, i.e. market days, parking is in high demand; however, it is not likely to generate adverse impacts to business as the area becomes a destination in itself and parking is available in the surrounding streets.

The Department, noting that commercial businesses along Alice Street primarily function as a local shopping area, agrees with these findings, and does not consider that businesses would be detrimentally impacted, and notes that highway related businesses on the interim connection may increase trade.

The Department notes the concerns of local businesses in relation to property access arising from changes to turning movements from Alice Street and considers that these issues have been considered as part of the Department's traffic assessment. The Department also considers that access to the Moree Pool complex via Gosport Street would result in only a minor impact. This is due to restrictions being imposed on one street, and that existing access mechanisms along Frome Street would remain. Notwithstanding, the Department has recommended that the RTA, in conjunction with Moree Plains Shire Council review directional signage along the existing Newell Highway and Alice Street to ensure that an equivalent level of access remains for the Spa complex.

The Department has also assessed the modification in relation to other environmental issues such as air quality and visual amenity and considers that these matters have been adequately addressed in the Environmental Assessment and Submissions Report.

7. CONCLUSIONS AND RECOMMENDATIONS

In response to contamination issues, the RTA has sought the Minister's Approval to modify the 2004 consent for the Newell Highway Moree Town Centre Bypass to permit the staged operation of the project, namely the use of Alice Street as an interim connection. As there is no definitive timeframe for the completion of remediation activities and construction is well advanced on the northern component of the project, the modification will permit the removal of traffic from the Moree CBD, prior to the southern works being completed.

The Department has assessed the Environmental Assessment, submissions and Submissions Report having regard to the objects of the *Environmental Planning and Assessment Act 1979* and is satisfied that the likely impacts of the proposal can be mitigated or managed to acceptable levels.

The project involves re-organisation of traffic within part of Moree by redistributing traffic onto the Gwydir Highway (Alice Street). The Department considers that the implementation of a Local Area Traffic Management Scheme is the most effective tool to ensure traffic remains on Alice Street. Further, monitoring of this scheme to determine its effectiveness is also supported, as well as the introduction of additional measures should traffic use alternate routes.

The Department is satisfied with the noise assessment undertaken by the Proponent and the proposed methods to mitigate noise at sensitive receivers. It is noted that, based on modelled results, the Proponent is able to achieve the desired level of mitigation in order to meet noise goals.

The Department recognises that local businesses are concerned that changes to the road network will detrimentally impact on business viability, specifically for those reliant on passing trade. The Department has considered these concerns and notes that alternate access is available. However, to aid in offsetting these impacts, it recommends that directional signage be provided in specific instances.

The Department considers that the interim connection should be considered in the wider context of the Newell Highway Moree Town Centre Bypass and the benefits that the interim connection will provide. The connection is aimed at removing the conflicts between light and heavy vehicles and local and regional traffic. The interim connection will ultimately deliver a key objective by removing through and heavy vehicles from the CBD. Consequently, it is recommended that the Executive Director, Major Projects Assessment as delegate of the Minister for Planning, approve the Modification, subject to the recommended conditions.

APPENDIX A – RECOMMENDED CONDITIONS OF APPROVAL

APPENDIX B – ENVIRONMENTAL ASSESSMENT

APPENDIX C – RESPONSE TO SUBMISSIONS
