Attachment E: Supplementary information in support of Hunter Transmission Project revised traffic and transport impact assessment

Introduction

This memorandum has been prepared in response to the request for information received from the Department of Planning, Housing and Infrastructure (DPHI) concerning the advice from Transport for NSW (TfNSW) and to provide supplementary information on the mitigation and monitoring requirements at key intersections following further discussions with DPHI. It also outlines further changes to the updated mitigation measures as presented in the *Amendment Report* and *Technical report 4 – Revised traffic and transport impact assessment* in response to these matters.

This attachment is supported by:

- Annexure A, which provides specific responses to each matter raised by TfNSW
- Annexure B, which provides a technical advisory note on matters relevant to the SIDRA analysis queries from TfNSW
- Annexure C, which provides the cumulative turn warrant assessment graphs
- Annexure D, which provides a technical advisory note on matters relevant to mitigation measure TT3.
- Annexure E, which provides supplementary Minimum Gap Sight Distance (MGSD) for certain intersections
- Annexure F, which provides the revised strategic concept designs for specific intersections

This attachment is to be read in conjunction with *Technical report 4 – Revised traffic and transport impact assessment* of the Amendment Report (February 2026).

SIDRA analysis assumptions, updates and alignment

TfNSW made comment on the SIDRA assessments documented in *Technical report 4 – Revised traffic and transport impact assessment* and the SIDRA model files supplied to TfNSW. Specifically:

1. discrepancies between the SIDRA models and the summarised results in the technical report for the 2024 'existing' assessment year
2. request for SIDRA models to reflect proposed upgrades at relevant intersections

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3. amend assumptions for pedestrians, signal settings and cycle times at certain intersections
4. inclusion of traffic volumes associated with the Hunter-Central Coast REZ (HCC REZ) transmission line project in the cumulative assessment
5. provision of turn warrant graphs for cumulative traffic volumes.

Annexure B provides a response to the SIDRA items captured in Items 1 to 3. In summary:

- The discrepancies between the SIDRA files and the presentation of the 2024 existing assessment years have been corrected. As discussed with TfNSW and DPHI, these discrepancies did not appear in the assessment year models and have not altered the assessment outcome.
- The SIDRA analysis for the seven intersections that are subject to turn warrant upgrades has been completed. These minor adjustments have not substantially altered the outcome of the assessment, with all intersections performing at an acceptable level of service (LOS C or greater).
- The SCATS signal timing for pedestrian protection at the identified intersections were reviewed. The default model application that pedestrian phases are active during every cycle with default pedestrian clearance times is considered to be a conservative and suitable assumption. As such, no correction has been made.
- Lane widths have been updated based on aerial imagery (December 2025) and cycle timings reported for 21 March 2024. This has not resulted in any major change to the results as presented in *Technical report 4 – Revised traffic and transport impact assessment*, with all intersections continuing to perform at a similar level of service (LOS B or LOS C).

Updated SIDRA files have been separately issued to TfNSW and DPHI based on the responses in Annexure B.

For item 4, traffic volumes for the Hunter-Central Coast REZ (HCC REZ) transmission line project have been applied in the cumulative assessment presented in Chapter 7 of *Technical report 4 – Revised traffic and transport impact assessment* of the Amendment Report (February 2026). This has applied the identified heavy and light vehicle volumes at the nominated locations, as identified in Table 7-1 of the *Technical report 4 – Revised traffic and transport impact assessment* of the Amendment Report (February 2026). The assessment of cumulative stringing activities has not been quantified, given the detail presented in the associated environmental approvals documentation and the status of detailed construction planning. Further discussion of the potential impacts was presented in section 7.1.6 of *Technical report 4 – Revised traffic and transport impact assessment* of the Amendment Report (February 2026) and Section 8.11.5 of the Submissions Report (February

2026) in response to TfNSW. As identified in both documents, a new mitigation measure TT15 was provided to provide for the coordination of these activities with TfNSW and Ausgrid.

The turn warrants for the intersections assessed in the cumulative assessment is presented in Annexure C.

Pre-construction minor works

In response to queries raised by DPHI and TfNSW in relation to vehicle movements proposed during pre-construction minor works, EnergyCo provides the following additional information:

Item	Response
1. Details of the largest vehicle to be used for PCMW and confirmation that it allows safe concurrent turning movement	The largest vehicle for PCMW activities is a 12.5m rigid truck - general access vehicle (GAV) All State road intersections proposed to be utilised are expected to accommodate concurrent GAV movements, with the exception of the following (due to the limited width of the adjoining access track): • Intersection I-31 • Intersection I-69 As such EnergyCo commits to the following: For all intersections which cannot accommodate concurrent vehicle movements during pre-construction minor works, drivers would ensure sufficient advanced warning to potential vehicles exiting the relevant access intersection (ie via UHF radio communication and prior arrangements with landowners).

Item	Response
2. Outline of the mitigation measures for SISD during the PCMW, such as advanced warning signage or prohibiting turn directions.	In addition to drivers providing sufficient advanced warning to potential vehicles exiting the relevant access intersection (I-31 and I-69), HTP will implement the following at these locations: • Inductions and toolbox talks - with records kept by the contractor and made available to the Environmental Representative • Scheduling and planning with the relevant landholders and made available to the Environmental Representative. Additional measures limited to I-31 are; • Left-in/left-out movements only • Advance warning signage (e.g. VMS) to warn motorists travelling on eastbound approach on Putty Rd of potential for vehicles turning in/out of the driveway with limited line of sight.
3. Details of the how construction traffic would be staggered to avoid the network AM/PM peak hours.	HTP commits to PCMW activities only occurring outside of network peak hours. This would be achieved by communicating these requirements during contractor-led inductions and toolbox talks with the relevant PCMW personnel prior to the work.
4. Commit to inform the community and key stakeholders of the increased traffic during this period.	HTP commits to the inclusion of community and stakeholder notifications/information as part of implementing Condition A22 Community Communication Strategy.
5. Commit to no OSOM.	HTP commits to not use OSOM vehicles during pre-construction minor works activities
6. Commit to progression of Works Authorisation Deeds within a reasonable timeframe of commencing pre-construction minor works at the relevant location.	HTP commits to seeking Works Authorisation Deeds within a reasonable timeframe of commencing pre-construction minor works and/or in reasonable time in advance of the use of relevant locations for construction activities.

Item	Response
7. Provide details of how you will monitor and enforce the mitigation measures during this period.	HTP will implement the following monitoring and enforcement of mitigation measures during pre-construction minor works: • Recording inductions and toolbox talks - with records kept by the contractor and made available to the ER • Recording scheduling and planning engagements with the relevant landholder - records to be kept by the contractor and made available to the ER.
Proposed new mitigation measure: TT20	During pre-construction minor works drivers will provide sufficient advanced warning to potential vehicles exiting the relevant access (I-31 and I-69) via UHF radio communication and co-ordination/scheduling with landowners. In addition for I-31, during pre-construction minor works vehicles will be restricted to left-in/left-out movements only and advance warning signage (e.g. VMS) installed to warn motorists travelling on the eastbound approach on Putty Rd of potential for vehicles turning in/out of the driveway with limited line of sight. In addition to the above, the following measures will be implemented: • restrictions identified in TT3 will apply to vehicles associated with pre-construction minor work. • a vehicle log will be kept throughout pre-construction minor works which will be available on request to the Environmental Representative • all vehicles to be used during pre-construction minor works would be no larger than a General Access Vehicle (consistent with the meaning used by the National Heavy Vehicle Regulator) • workers will be briefed on the above requirements as part of Toolbox talks with records kept and made available on request to the Environmental Representative.

Mitigation, monitoring and enforcement matters

TfNSW provided advice that further modelling should be undertaken at Wine Country Drive/Broke Road intersection to demonstrate how impacts would be minimised, and how any mitigation measures would be monitored, reported and complied with. It was also requested in discussions with DPHI concerning the monitoring, auditing and enforcement of the restrictions outlined in mitigation measure TT3 and requested a performance outcome for where EnergyCo had proposed to minimise impacts at two intersections.

The information presented in Annexure D provides reasoning for why road upgrades have not been proposed to address level of service impacts. In response to DPHI feedback, the new mitigation measures have been identified where commitment had been made to minimise construction vehicle movements, specifically:

- limit to the number of construction heavy vehicle movements during the PM network peak at Wine Country Drive / Broke Road (I-14) to 10 heavy vehicle movements. Light vehicles will continue to be directed to use the alternative route, which has load limit restrictions. This would minimise the impact to this intersection, noting it is predicted to perform at a LOS F irrespective of the project.
- limit the number of construction vehicles during the AM peak at Freemans Drive / Martinsville Road intersection (I-23) to no more than 16 heavy vehicles and 40 light vehicle movements. With this control in place, the intersection would perform at a LOS D.

With respect to the request for further information on the monitoring, auditing and compliance frameworks for mitigations that restrict or prohibit certain movements, the following commitments have been made:

- installation of permanent cameras with number plate recognition at the intersections identified in mitigation measure TT3, TT17 and TT18, in addition to GPS tracking in construction vehicles to report the route that construction heavy vehicles are taking at the identified intersections
- inclusion of additional requirements in the overarching Driver Code of Conduct, specifically:
    - expectations on vehicle movements and restrictions at nominated intersections, supported by maps and clear identification of the applicable time of day in which the restrictions apply
    - requirements to arrive or depart work areas or compounds to comply with the restrictions
    - requirements for drivers to understand what monitoring would be implemented (both in-vehicle and at intersections) and communication protocols

    - clear outline of the escalating warning system and imposition of sanctions in the event of a non-compliance. Sanctions would reflect any continued behaviour by an individual
    - requirement to acknowledge these controls and warning system within the driver induction process, and acknowledgement of any corrective actions communicated by notice to all relevant personnel.
- forward scheduling of construction vehicle movements for arrivals and departures to align with the restrictions at the nominated intersections
- the results of vehicle monitoring will be reviewed daily for compliance. Monitoring results would be reported monthly. Any non-compliance and corrective action would be communicated to the construction workforce, and may include in-person spot audits and changes in forward scheduling
- during pre-construction minor works, mitigation measure TT20 commits to drivers providing sufficient advanced warning to potential vehicles exiting the relevant access (I-31 and I-69) via UHF radio communication and co-ordination/scheduling with landowners. In addition for I-31, during pre-construction minor works vehicles will be restricted to left-in/left-out movements only and advance warning signage (e.g. VMS) installed to warn motorists travelling on the eastbound approach on Putty Rd of potential for vehicles turning in/out of the driveway with limited line of sight. In addition to the above, the following measures will be implemented:
    - restrictions identified in TT3 will apply to vehicles associated with pre-construction minor work.
    - a vehicle log will be kept throughout pre-construction minor works which will be available on request to the Environmental Representative
    - all vehicles to be used during pre-construction minor works would be no larger than a General Access Vehicle (consistent with the meaning used by the National Heavy Vehicle Regulator)
    - workers will be briefed on the above requirements as part of Toolbox talks with records kept and made available on request to the Environmental Representative.

Revised strategic concept plans

During the preparation of the EIS, EnergyCo completed investigations and prepared strategic concept designs where works would be required to accommodate construction vehicle movements. This was completed to provided increased assurance to stakeholders on the impact assessments presented in the EIS (and Amendment Report) (including impact footprint). As these were developed to a strategic concept design level, the mitigation measures recognised that further design development would occur in consultation with the relevant road authorities.

The level of design development for the intersection upgrades is appropriate for current stage of design development and planning approvals. The strategic concept designs demonstrate that the intersection works at the identified locations can comply with Austroads and can be delivered within the road corridor.

As outlined in Annexure A, a number of these comments have been addressed in the updated strategic concept designs in Appendix D of *Technical report 4 – Revised traffic and transport impact assessment* or relate to access connections that are no longer proposed, are traffic management controls that will be developed further in the Traffic Management Plan (mitigation measure TT1) or have been updated in the design or swept path analysis provided in Annexure F. Specifically, Annexure F includes revised drawings for:

- Lemington Road and Golden Highway (I-03) to reflect the proposed BAL/CHR and Austroads compliant verge, shoulder and lane widths
- Wine Country Drive and Broke Road (I-04) to demonstrate the swept path of the design vehicle can avoid mounting the median kerb
- Jerry Plains Road (Southbound ramp) and access track (I-69) to update the title block, signage, pavement and verge details requested.

As a result, there remains limited comments made by TfNSW that will be addressed during detailed design. TfNSW retains its approval role under the *Roads Act 1993*, and further engagement during the finalisation of the designs is reflected in mitigation measure TT2. In the unlikely event that additional space is required, then this would be addressed through consistency or modification assessments.

Safe Intersection and Minimum Gap Sight Distance

With respect to Safe Intersection Sight Distance (SISD) assessment, it has always been acknowledged that these are desktop-based 2-dimensional (2-D) assessments that will be verified in the field during detailed design. *Technical report 4 – Revised traffic and transport impact assessment* identified a range of possible solutions for the SISD non-compliances, ranging from adjustments to signage, tree trimming or installation of variable message boards on the basis that speed reductions would not be accepted by TfNSW. Any other controls would be implemented in consultation with TfNSW, and any monitoring requirements (if the control necessitates it) detailed in the TMP (mitigation measure TT1).

Since the completion of the *Technical report 4 – Revised traffic and transport impact assessment*, and in subsequent discussions with TfNSW and DPHI, comments have been made on certain State road intersections with SISD issues, specifically:

- Golden Highway / Lemington Road (I-03)
- Golden Highway/Gouldsville Road (I-07)
- Putty Road / Mitchell Line of Road (I-10)
- Golden Highway / Range Road (I-10b)
- Wine Country Road/Broke Road (I-14)
- Putty Road / Existing Access (I-31)
- Jerrys Plains Road (SB ramp) / access road (I-69).

Additional information is provided below, and supported, where agreed with TfNSW, by additional 3-dimensional (3-D) Minimum Gap Sight Distance (MGSD) checks (refer to Annexure E). The requirement to confirm SISD controls (with consideration of vertical and horizontal conditions) in consultation with the relevant road authority has been emphasised in the revisions to the mitigation measure TT16, with the addition of specific controls at intersections where the SISD issues remain at State road intersections or if the MGSD analysis has identified additional controls. Where a traffic control solution has been nominated, these would be subject to the monitoring, reporting and auditing requirements of mitigation measure TT19.

Golden Highway / Lemington Road (I-03)

The existing SISD non-compliance results from the presence of some vegetation at the bend in the road. Compliance with SISD can be achieved at the intersection with some minor vegetation removal/tree trimming. Further analysis has been completed including a check of the MGSD, and is documented in Annexure E.

This analysis concludes a compliant MGSD at the intersection of Golden Highway and Lemington Road is achieved.

The mitigation measure TT16 has been amended to specify the recommended vegetation removal/tree trimming at this location.

Golden Highway/Gouldsville Road (I-07)

The existing SISD non-compliance results from a vertical embankment plus vegetation at the bend on approach to the intersection. Further analysis has been completed including a check of the MGSD, and is documented in Annexure E. It is the opinion of EnergyCo that the SISD issue at this intersection can be improved by removing some vegetation. The residual risk created by the introduction of construction traffic at this intersection can be managed with the following additional measures as a reasonable and feasible method of control:

- provision of advisory speed signage on approach to the intersection - to note the appropriate speed for drivers to provide appropriate SISD; and
- vegetation clearing at top of embankment

It is further noted the MGSD analysis undertaken by Beca (and detailed in Annexure E) concludes a compliant MGSD at the intersection of Golden Highway and Gouldsville Road is achieved.

The mitigation measure TT16 has been amended to specify these additional measures.

Putty Road / Mitchell Line of Road (I-10)

The existing SISD non-compliance results from the presence of vegetation and an existing sign. Further analysis has been completed including a check of the MGSD, and is documented in Annexure E.

This analysis concludes a compliant MGSD at the intersection of Putty and Mitchell Line of Road is achieved.

The mitigation measure TT16 has been amended to specify the recommended SISD controls at this location.

Golden Highway / Range Road (I-10b)

The existing SISD non-compliance results from the presence of vegetation. Further analysis has been completed including a check of the MGSD, and is documented in Annexure E.

This analysis concludes a compliant MGSD at the intersection of Golden Highway and Range Road is achieved.

The mitigation measure TT16 has been amended to specify the recommended SISD controls at this location.

Wine Country Road/Broke Road (I-14)

The existing SISD non-compliance results from the presence of tourist signage/wall on private property. Further analysis has been completed including a check of the MGSD, and is documented in Annexure E.

This analysis concludes a compliant MGSD at the intersection of Wine Country Drive and Broke Road is achieved.

The mitigation measure TT17 already has a requirement to install variable message signs at this intersection. It has been further amended to specify the requirement to communicate increased traffic activity.

Putty Road / Existing Access (I-31)

This intersection did not identify any non-compliance based on the 2-D assessment presented in *Technical report 4 – Revised traffic and transport impact assessment*. A 3-D assessment of the MGSD has found there is insufficient minimum gap sight distance available for the western approach to the access point, due to the crest which lies approximately 150 metres away.

To mitigate this risk, construction vehicles would be restricted to a left-in, left-out arrangement in the revised mitigation measure TT16. This control would be managed in accordance with TT19. Alternative routes are available on the assessed construction access routes to accommodate this restriction. As identified in the *Technical report 4 – Revised traffic and transport impact assessment* of the Amendment Report worst-case movements have been assumed at all intersections, meaning that this change in movement would not impact the results as presented in *Technical report 4 – Revised traffic and transport impact assessment* of the Amendment Report along the alternative routes.

Jerrys Plains Road (SB ramp) / access road (I-69).

The existing sign on this southbound ramp has the potential to block the sight line on approach to this access. As per the strategic concept design provided for this intersection, this is proposed to be relocated to a position that no longer blocks this sight line, resulting in a proposed layout at this intersection being SISD compliant. There are otherwise no vertical obstructions/topography that would result an insufficient vertical SISD for this access point as evident in street view imagery. As agreed with TfNSW, no further assessment is required on this basis.

High-risk OSOM route analysis

As discussed in section 8.11.4 of the Submissions Report, the high-risk OSOM movements would use common routes from the Port of Newcastle to access the Pacific Motorway and Hunter Expressway, and would deviate from the Port to REZ routes:

- to travel south on the Pacific Motorway to access the Olney switching station or the Eraring Power Station
- to travel north by continuing on the New England Highway to the Bayswater switching station north of the New England Highway / Golden Highway (Mitchell Line of Road) interchange.

The longest rigid component and the heaviest component associated with HTP is shorter and lighter when compared to the OSOM components that were considered in the design and route selection for the Port to REZ program of works. As such, the Port to REZ routes were relied upon for these movements along the common route.

In line with TfNSW's original request, updated swept path assessments have been completed for the pinch points identified in the OSOM Coastal Transport Study and are provided in Appendix F of *Technical report 4 – Revised traffic and transport impact assessment* where issues where identified. This analysis includes pinch points identified on local roads.

The information requested by TfNSW has been provided through the *Technical report 4 – Revised traffic and transport impact assessment*, or are alternatively, are matters:

- that would be provided as part of the Transport Management Plan required to obtain a permit through the National Heavy Vehicle Regulator (NVHR)
- TfNSW has subsequently confirmed (in the case of bridge assessments) or have been addressed through the Port to REZ program of works, or
- EnergyCo do not have the road designs for current TfNSW projects to complete the required overlay. Of these roads, the Hexham Flyover does not form part of the assessed routes. The second, being Jesmond to Rankin Park is located on the common Port to REZ route, and it is reasonable to expect that these works would meet the Port to REZ requirements.

It is also reasonable to assume that future State road projects would not reduce the geometry of these roads from existing and therefore should be able to accommodate high-risk OSOM movements.

Further, based on the assessment to date, EnergyCo has identified what temporary works may be required in section 5.3.4 of *Technical report 4 – Revised traffic and transport impact assessment* of the Amendment Report (February 2026). This would be confirmed as part of the NVHR permitting requirements.

The assessment as presented in *Technical report 4 – Revised traffic and transport impact assessment* satisfies the requirement specified by TfNSW for a concept level route analysis for high-risk OSOM movements. It has been consistently recognised by EnergyCo that the OSOM routes would be subject to further consultation and analysis through the NVHR permitting stage under the National Heavy Vehicle Law (NSW) 2013 and that this approval is not included as a consistent approval under section 5.23 of the Environmental Planning and Assessment Act 1979. This would be undertaken by the construction contractor and their chosen OSOM haulage specialist who would carry out the transportation.

In this respect, it is important to stress that the NVHR permitting process requires a separate Transport Management Plan for OSOM classified as 'High-Risk', distinct from the Construction Traffic Management Plan (mitigation measure TT1), which would further detail the route suitability assessment and the controls required to manage movements along the entire route. Mitigation measure TT9 recognised the ongoing requirement for engagement with TfNSW prior to OSOM

movements occurring, noting they would still have a formal role in assessment and review of the (OSOM) Transport Management Plans through the permitting process. These would be prepared and submitted prior to the OSOM movement(s) occurring and should not be tied to the overarching Construction Traffic Management Plan (mitigation measure TT1), which is required to be completed prior to construction.

In recognition of the residual concerns of TfNSW concerning the required temporary adjustments or impacts to medians, mitigation measure TT9 has been further amended to specify that the following will be confirmed with TfNSW prior to the OSOM movements occurring:

- the required temporary adjustments to any roadside furniture or trimming of vegetation, with reference to the likely mitigations identified in Table 5-58 of the *Technical report 4 – Revised traffic and transport impact assessment* of the Amendment Report
- the medians that may be mounted by OSOM vehicles and the structural capacity and condition of any identified medians to accommodate the OSOM movement
- the required timing for the instatement of roadside furniture, or corrective action required for medians impacted by the OSOM movement.

In the event that the detailed OSOM assessment identifies additional temporary works beyond that identified in *Technical report 4 – Revised traffic and transport impact assessment* of the Amendment Report (February 2026), then this would be addressed through consistency or modification assessments before the required OSOM movement.

Revised mitigation measures

As outline above, several further amendments have been identified and are detailed in Table 1.

Table 1 Revised mitigation measures

Ref	Impact	Mitigation measure	Timing	Relevant location(s)
TT1	Construction traffic impacts	A traffic management plan (TMP) will be prepared as part of the project environmental management strategy. The TMP will be developed in consultation with the relevant road/rail authorities and will include as a minimum: • Confirmation of construction routes • Measures to maintain access to local roads and properties • Driver safety measures, including a driver code of conduct, requirements for in-vehicle monitoring systems, a driver fatigue management plan and the locations of rest areas along construction routes	Detailed design Construction	Construction routes, access tracks, construction support sites and temporary worker accommodation accesses

Ref	Impact	Mitigation measure	Timing	Relevant location(s)
		• Site specific traffic control measures (including signage) to manage and regulate traffic movement prepared in consultation with the relevant road authorities and implemented by licenced traffic management contractors • Measures to maintain pedestrian and cyclist access • Requirements and methods to consult and inform the local community of impacts on the local road network • Coordination with TfNSW and councils for road and intersection works and road crossings • Coordination with ARTC for rail line crossings • Requirements to obtain relevant approvals, including road occupancy licence(s), for any potential works in the road corridor and access by restricted access vehicles or OSOM vehicles required for the project. Where feasible, temporary road closures will be planned to occur outside of the traffic peak periods to minimise impacts to the road network • Access to construction sites including entry and exit locations and measures to prevent construction vehicles queueing on public roads • Maintenance and safety measures required along access tracks and at access points to construction support sites, including appropriate line marking and signage and wheel cleaning facilities as required • **Monitoring systems and auditing processes for the implementation of traffic management controls, and mechanisms to review the effectiveness of monitoring systems, and the frequency of monitoring or auditing requirements** • A response plan for any construction traffic incident, or complaints management process • Requirements for routine inspections of construction routes • Consideration of other developments that may be under construction to minimise cumulative impacts.		

Ref	Impact	Mitigation measure	Timing	Relevant location(s)
TT2	Road and intersection upgrades	Upgrades will be carried out for roads and intersections ~~where turn warrant assessments have determined that works are required for construction vehicles to carry out safe turning movements. Intersections will be upgraded~~ in line with the required works outlined in ~~*Chapter 4 (Project description)*~~ *Appendix A (Updated project description)* of the Amendment Report. ~~In addition, safety measures will be implemented as required at intersections assessed as being non-compliant with safe intersection sight distance criteria, including the provision of additional advance warning signs, temporary reductions in speed limits or clearing of vegetation in consultation with the relevant road authority. Safety measures will be implemented in line with the required works outlined in *Chapter 4 (Project description)* **Appendix A (Updated project description)** of the Amendment Report.~~	Construction	Intersections identified in *Appendix A (Updated project description)* ~~*Chapter 4 (Project description)*~~ as requiring upgrades for turn warrant treatment ~~or safe intersection sight distance~~ Roads identified in *Appendix A (Updated project description)*
TT3	Intersection performance impacts	~~Ongoing investigation will be carried out to determine appropriate measures at the New England Highway/Hebden Road intersection to minimise impacts of right turning construction traffic from Hebden Road onto the New England Highway in the AM and PM peaks. Measures to minimise intersection performance impacts as a result of construction traffic will be investigated in consultation with relevant stakeholders.~~ To minimise intersection performance impacts as a result of construction traffic, the following restrictions will be imposed on construction vehicles during the specified times: • New England Highway / Hebden Road intersection (I-01a): No construction traffic during the HTP AM peak hour (6-7am) except for left out from Hebden Road and no construction traffic during the PM network peak (4.45-5.45pm) except for right into Hebden Road) • New England Highway / Lemington Road intersection (I-02): No construction traffic before 7am and no construction traffic during the PM network peak (4.45 and 5.45pm) • New England Highway / Pikes Gully Road (I-02a): No construction traffic during the HTP AM Peak hour (6–7 am) except for	Detailed design Construction	~~New England Highway/Hebden Road intersection~~ Specified intersections

Ref	Impact	Mitigation measure	Timing	Relevant location(s)
		left out from Pikes Gully Road, and no construction traffic during the PM network peak (4.45-5.45pm) except for left out from Pikes Gully Road • Golden Highway (Putty Road) / Broke Road intersection (I-09): No construction traffic before 7am • Putty Road / Mitchell Line of Road intersection (I-10): No construction traffic during the PM network peak (between 4-5pm) • Golden Highway / Range Road intersection (I-10b): No construction traffic before 7am and during the PM network peak (4-5pm). Compliance with the above restrictions will be monitored and audited in accordance with the TMP and mitigation measure TT19. In addition to these restrictions, variable message signs to communicate possible delays will be installed at the Golden Highway / Range Road intersection (I-10b), and at any other location agreed with Transport for NSW. Putty Road / New site access (I-52) will not proceed.		
~~TT4~~	~~Intersection performance impacts~~	~~Ongoing investigation will be carried out to determine appropriate measures at the Golden Highway/Range Road intersection to minimise the impacts of through and right turning movements in the AM peak. Measures to minimise intersection performance impacts as a result of construction traffic will be investigated in consultation with relevant stakeholders.~~	~~Detailed design~~ ~~Construction~~	~~Golden Highway/Range Road intersection~~
TT4	Construction traffic impacts	Where practicable to do so, shuttle buses will be used to transport construction workers to and from work sites and temporary worker accommodation facilities.	Detailed design	Temporary worker accommodation at Hebden Road, Freemans Drive and Wollombi Road construction support sites
TT5	Road safety – design related	All accesses will be designed to accommodate the required construction vehicle(s) in line with the TTIA and in accordance with relevant Austroads guidelines (where applicable).	Detailed design	Construction routes, access tracks, construction support sites and temporary worker accommodation accesses

Ref	Impact	Mitigation measure	Timing	Relevant location(s)
TT6	Road condition	Pre-construction road dilapidation surveys and routine inspections will be completed along all nominated construction routes on local roads. Where rectification works are required due to project impacts, consultation with the appropriate road authority will be undertaken to confirm the scope of the work required.	Detailed design Construction	Local roads
TT7	Access to properties	Access to properties will be maintained throughout construction where feasible. Where that is not feasible, temporary alternative access arrangements will be provided following consultation with affected landowners and in accordance with the requirements of the construction communication and engagement plan**, or in accordance with the property access sub plan to the TMP as provided in mitigation measure TT14.** **Except as provided in mitigation measure TT14,** disruptions to property access and traffic will be notified to landowners at least 5 business days prior and in accordance with the relevant community consultation processes outlined in the environmental management system (EMS).	Construction	Construction impact area
TT8	Pedestrian and cyclist access	Ongoing consultation will be carried out with local bicycle groups where available and with Forestry Corporation NSW for walking and biking trails in State forests. Safe pedestrian and cyclist access will be maintained where the project interacts with existing pedestrian or bicycle facilities on public roads. Where this is not feasible, temporary alternative access arrangements will be provided following consultation with affected stakeholders and the relevant roads authority.	Construction	Construction impact area
TT9	OSOM vehicle access	Ongoing consultation will be undertaken with Transport for NSW regarding the use of State roads for OSOM vehicle routes **and during the preparation of the Transport Management Plans to confirm:** • **the final schedule of the temporary relocation to any roadside infrastructure or vegetation trimming, with reference to Table 5-58 of Technical report 4 – Revised traffic and transport impact assessment** • **medians that may be mounted by OSOM vehicles and the structural capacity and condition of any identified medians to accommodate these movements**	Detailed design ~~Construction~~ **Prior to OSOM movements**	OSOM routes

Ref	Impact	Mitigation measure	Timing	Relevant location(s)
		• the required timing for the reinstatement of roadside furniture or corrective action required for medians impacted by the OSOM movement ~~and a~~ Appropriate permits will be obtained from the National Heavy Vehicle Regulator for OSOM movements.		
TT10	Cumulative impact with Hunter Valley Operations (HVO) Continuation Projects	~~Further analysis and c~~Coordination with HVO will be undertaken during detailed design and construction planning regarding works required ~~in the vicinity of Lemington Road~~ and any associated staging/timing to minimise adverse performance and road safety impact **on the road network along** ~~on Lemington Road and at its intersections with~~ the New England Highway and Golden Highway.	Detailed design Construction	~~Lemington Road and~~ **The** surrounding roads near HVO in the northern section of the **amended** project impact area
TT11	Access interfaces with operations at HVO and Bulga mining complex	A project co-ordination group will be established with Glencore, EnergyCo, the network operator and the design and construct contractors to manage critical interfaces between construction and mine operations, such as construction access and shared use of haulage roads.	Detailed design	HVO and Bulga mining complex
TT12 ~~TT11~~	Cumulative impact of the Mandalong Road upgrade works by Transport for NSW	~~Further analysis and~~ Coordination with Transport for NSW will be undertaken during detailed design and construction planning on the proposed construction activities requiring access on Mandalong Road and associated staging/timing to minimise adverse performance and road safety impacts at the Mandalong Road/Freemans Drive/Wyee Road intersection. ~~Alternative routes will be used should use of this intersection not be possible.~~	Detailed design Construction	Mandalong Road and surrounding areas in the southern portion of the project impact area
TT13	Interface with Lake Macquarie City Council's upgrade of the Martinsville Road / Freemans Drive intersection	The HTP intersection upgrade to Martinsville Road / Freemans Drive intersection will be delivered in coordination with Lake Macquarie City Council to ensure HTP intersection upgrade works do not preclude the ultimate delivery of Lake Macquarie City Council's planned safety improvements at this intersection.	Detailed design Construction	Martinsville Road / Freemans Drive intersection
TT14	Property access impacts	A property access sub plan to the TMP will be prepared for Pokolbin Mountains Road, parts of Mount View Road and Mount Baker Road, to manage property access impacts during construction. This sub plan will outline	Detailed design Construction	Properties located along Pokolbin Mountains Road, parts of Mount View

Ref	Impact	Mitigation measure	Timing	Relevant location(s)
		measures to maintain property access (unless otherwise agreed with property owner(s)) and road user safety along these roads during road upgrade works (where identified) and general use by construction vehicles. The sub plan will include but not be limited to, unless otherwise agreed with property owners: • A temporary reduction in the posted speed limit and installation of additional signage as needed • Details on how access to properties is maintained during construction, including a maximum wait time under temporary traffic arrangements as per Transport for NSW 'Traffic control at work sites Technical Manual' (the maximum wait time will be 10-15 minutes) • Minimum notification periods for any road works or disruptions, and a direct communication system (SMS/email) for registered residents and businesses • Provision of a 24/7 contact number for access issues and emergencies • Restriction of construction traffic movements to weekdays and standard working hours, except in consultation with property owners to accommodate construction vehicle movements outside standard working hours • Commitment to avoid morning and/or afternoon peak periods in consultation with property owners (e.g. school peak times of 8:30-9:30am and 2:30-3:30pm) • Locations for passing bays and temporary traffic management • Details of any ongoing works required to maintain a suitable level of usability of the road during construction (e.g. drainage at upgrade locations and clearing any impediments to road drainage along Pokolbin Mountains Road, where practicable). Compliance with the implemented traffic management controls will be monitored and audited in accordance with the TMP.		Road and Mount Baker Road
TT15	Coordination of stringing activities over	The methodology and program of stringing activities over the Golden Highway for HTP will be coordinated with TfNSW and Ausgrid with consideration of the Hunter-Central Coast	Detailed design Construction	Golden Highway (Putty Road)

Ref	Impact	Mitigation measure	Timing	Relevant location(s)
	the Golden Highway	REZ transmission project works, scheduled OSOM movements that pass this location and other scheduled road works along the Golden Highway.		
TT16	Safe Sight Distance Assessments	Safety measures will be implemented as required at intersections assessed as being non-compliant with safe intersection sight distance criteria (based on vertical and horizontal sight lines), including the provision of additional advance warning signs, temporary reductions in speed limits (except on State roads) or clearing of vegetation. This includes (but is not limited to): • Golden Highway / Lemington Road (I-03) – vegetation trimming • Golden Highway / Gouldsville Road (I-07) – vegetation trimming and advisory signage • Golden Highway / Mitchell Line of Road (I-10) – vegetation trimming and relocation of signage • Golden Highway / Range Road (I-10b) – vegetation trimming • Putty Road / Existing access (I-31) – restriction for left in / left out. The required controls will be validated based on site inspections and detailed survey and determined in consultation with the relevant road authority. Monitoring at I-31 will be subject to the requirements of TT19.	Detailed design Construction	Intersections identified in Appendix B to Technical report 4 – Revised traffic and transport impact assessment, and as revised by Supplementary information in support of Technical report 4 – Revised traffic and transport impact assessment
TT17	Wine Country Drive / Broke Road intersection	At Wine Country Drive / Broke Road intersection (I-14), no more than 10 heavy vehicle movements can occur at this intersection during the PM network peak (3.15-4.15pm). Light vehicles will use the alternative route (being Mount View Road, Oakey Creek Road, McDonalds Road) during PM network hour. Compliance with the restrictions will be monitored and audited in accordance with the TMP and mitigation measure TT19. In addition, variable message signs to communicate the increase in traffic and possible delays will be installed at the intersection.	Construction	Wine Country Drive / Broke Road intersection

Ref	Impact	Mitigation measure	Timing	Relevant location(s)
TT18	Freemans Drive/Martinsville Road	At Freemans Drive / Martinsville Road intersection (I-23), no more than 15 heavy vehicle and 40 light vehicle movements associated with construction can occur at the intersection during the AM network peak (8.15-9.15am). Compliance with the restrictions will be monitored and audited in accordance with the TMP and mitigation measure TT19.	Construction	Freemans Drive / Martinsville Road intersection
TT19	Compliance monitoring. auditing and reporting	Cameras with number plate recognition and GPS trackers within construction vehicles will be used to monitor compliance with the restrictions set by mitigation measure TT3, TT16, TT17 and TT18. Cameras will be installed and the Driver Code of Conduct prepared prior to the commencement of construction vehicles using the intersections identified in mitigation measure TT3, TT16, TT17 and TT18. The Driver Code of Conduct will include: • requirement for GPS trackers within construction vehicles • expectations on vehicle movements and restrictions at nominated intersections, supported by maps and clear identification of the applicable time of day in which the restrictions apply • requirements to arrive or depart work areas or compounds by certain times to comply with the restrictions • requirements for drivers to understand what monitoring would be implemented (both in-vehicle and at intersections) and communication protocols • clear outline of the escalating warning system and imposition of sanctions in the event of a non-compliance. Sanctions would reflect any continued behaviour by an individual • requirement to acknowledge these controls and warning system within the driver induction process, and acknowledgement of any corrective actions communicated by notice to all relevant personnel. Forward scheduling of construction vehicle movements for arrivals and departures will also occur to manage movements at the	Detailed design Construction	Identified intersections

Ref	Impact	Mitigation measure	Timing	Relevant location(s)
		identified intersections in line with the restrictions. The results of vehicle monitoring will be reviewed daily for compliance, with any corrective action identified and implemented. Monitoring results will reported monthly, with documentation of the action taken in response to a non-compliance. Any non-compliance and corrective action will be communicated to the construction workforce, and may include in-person spot audits and changes in forward scheduling.		
TT20	Traffic management during pre-construction minor works	During pre-construction minor works drivers will provide sufficient advanced warning to potential vehicles exiting the relevant access (I-31 and I-69) via UHF radio communication and co-ordination/scheduling with landowners. In addition for I-31, during pre-construction minor works vehicles will be restricted to left-in/left-out movements only and advance warning signage (e.g. VMS) installed to warn motorists travelling on the eastbound approach on Putty Rd of potential for vehicles turning in/out of the driveway with limited line of sight. In addition to the above, the following measures will be implemented: • restrictions identified in TT3 will apply to vehicles associated with pre-construction minor work. • a vehicle log will be kept throughout pre-construction minor works which will be available on request to the Environmental Representative • all vehicles to be used during pre-construction minor works would be no larger than a General Access Vehicle (consistent with the meaning used by the National Heavy Vehicle Regulator) • workers will be briefed on the above requirements as part of Toolbox talks with records kept and made available on request to the Environmental Representative.	Pre-construction minor works	State road intersections

Annexure A – TfNSW comments and response

	TfNSW outstanding additional information post review of the RTS for HTP		
	Review and resolution of the SIDRA analysis and mitigation measures		
	Priority / Status	Issue summary / TfNSW comment	Remaining action needed	Response/ Alternative action suggested (EnCO)
1	Open	s4.3.2 of the SCT TIA-Table 4-8 and Table 4-10 It is unclear whether the table values are site-acquired data or copied from SIDRA outputs; most values match SIDRA exactly, but some differ and the file appears to use Network Peak + HTP peak assumptions.Furthermore, the SIDRA file has Network Peak + HTP peak for some sites,but only Network peak for others. The report includes output for both Network and HTP peak results.	Clarify the source of Table 4-8 data and reconcile any mismatch between the table and the SIDRA model outputs, including the modelling period / peak assumption used and update the TIA and SIDRA analysis to address discrepancies/mismatches	Historic results had remained in Table 4-8 of the report. However, these results are for 2024 AM base models and do not impact the reported 2028 construction or cumulative scenarios. Therefore, this does not impact the assessment outcome. Updated SIDRA files and presentation of the results has been provided in this RFI response (Annexure B)
2	Open	s4.3.2 of the SCT TIA-Table 4-10-New England/Lemington Rd is performing at LOS F in the SIDRA model but Table 4-10 states LOS B.	Reconcile Table 4-10 against the SIDRA model and correct any LOS / data-source mismatch, especially at New England Hwy / Lemington Rd.	As for item 2, historic results had remained in Table 4-10 of the report. Again, these results are for 2024 PM base models and do not impact the reported 2028 construction or cumulative scenarios. Therefore, this does not impact the assessment outcome. For NHE/Lemington - The intersection has a seagull arrangement, but the base PM SIDRA model had a prioritisation error, which had the right turning traffic from Lemington Road giving way to the through traffic on the New England Highway. When this is corrected, the intersection operates at LoS B. This has already been corrected for the models used in the 2028 construction and cumulative scenarios. Therefore, this does not impact the assessment and does not warrant further action. Updated SIDRA files and presentation of the results has been provided in this RFI response (Annexure B)
3	Open	SIDRA Analysis model-Sites identified in the TIA as requiring turn treatment upgrades have not been modelled with the upgrade for construction scenarios within SIDRA.	Model the construction scenarios with the proposed upgrade treatments in place and provide an assessment of whether those upgrades are suitable.	There were seven State road intersections identified for turn treatment upgrades. Updated SIDRA files and presentation of the SIDRA assessment prior to and following SIDRA analysis has been provided in this RFI response (Annuxure B)
4	Open	SIDRA Analysis model- pedestrians-16a, I-16b, I-22a, I-22b (signalised sites)-These sites have been modelled with default pedestrian volumes, which affect how many actuations occur during the hour.	Replace default pedestrian volumes with site-appropriate values for the signalised sites.	SCATS signal timing for pedestrian protection at the intersections was reviewed, which revealed that pedestrian phases at the intersections showed minimal actuations during modelled peak periods. As such, the default model application that pedestrian phases are active during every cycle with default pedestrian clearance times is deemed a conservative and suitable assumption.
5	Open	SIDRA Analysis model-lane geometry--16a, I-16b, I-22a, I-22b (signalised sites)-These sites have been modelled with default lane widths even though lane widths are part of the saturation flow assumptions. ane widths are a part of the saturation flows calculations and can be significant in modelling outcomes.	Update the SIDRA models to use actual lane widths for the signalised sites.	Lane widths in the SIDRA models were updated to match the stop line lane widths measured from Nearmap aerial imagery dated 3 December 2025. Updated SIDRA files and presentation of the results has been provided in this RFI response (Annexure B)
6	Open	SIDRA Analysis model-phasing-16a, I-16b, I-22a, I-22b (signalised sites)-These sites have been modelled with default pedestrian protection times; site values should be checked.	Confirm and apply the correct pedestrian protection times / signal settings for the modelled sites.	As noted for item 4, SCATS signal timing for pedestrian protection at the intersections revealed that pedestrian phases at the intersections showed minimal actuations during modelled peak periods. As such, the default model application that pedestrian phases are active during every cycle with default pedestrian clearance times is deemed a conservative and suitable assumption
7	Open	SIDRA Analysis model-phase-16a, I-16b, I-22a, I-22b (signalised sites)-These sites have been modelled with 150-second cycle times even though SCATS maximum is noted as 120 seconds.	Confirm the allowable phasing / cycle times and update the SIDRA models if the 150-second assumption is not valid.	The intersections have been modelled with signal cycle timings as reported for 21 March 2024. Future year model cycle times do not exceed 120 seconds. Updated SIDRA files and presentation of the results has been provided in this RFI response (Annexure B)
8	Open	All cumulative traffic volumes do not appear to be captured in the Turn Warrants.	Proponent notes that detail and volumes from nearby projects such as HCC is not available at this stage, however TfNSW understands this is also an EnergyCo led project and recommends discussing cumulative impacts and including in the project. Cumulative volumes from any other nearby project must be included in the warrants.	Traffic volumes for the Hunter-Central Coast REZ (HCC REZ) transmission line project have been applied in the cumulative assessment presented in Chapter 7 of Technical paper 4 – Revised traffic and transport impact assessment. This has applied the identified heavy and light vehicle volumes at the nominated locations, as identified in Table 7-1 of the Technical paper 4 – Revised traffic and transport impact assessment. The assessment of cumulative stringing activities has not been quantified, given the detail presented in the associated environmental approvals documentation and the status of detailed construction planning. Further discussion of the potential impacts was presented in section 7.1.6 of Technical paper 4 – Revised traffic and transport impact assessment and Section 8.11.5 of the Submissions Report in response to TfNSW. As identified in both documents, a new mitigation measure TT15 was provided to provide for the coordination of these activities with TfNSW and Ausgrid. Turn warrant plots for the cumulative assessment have been provided in Annuxure C of this response.
9	Open	SIDRA Analysis- Wine Country Drive/Broke Road- TfNSW notes the proposed mitigation measures to minimise heavy vehicle movements during PM peak (3:15-4:15) and redirect light vehicles to alternate routes. TfNSW requests further modelling on what is the expected heavy vehicle reduction and how it will mitigate increased safety and efficency impacts. Noting that exiting vehicles from Broke Road, even without construction traffic would experience LoS F with queue length of 400m the construction traffic extends this queue length to 600m.	Model the proposed reduction in the construction of heavy vehicle movements at the intersection of Broke Road/Wine Country Drive during the PM network peak hour (3:15-4:15) during the peak of construction in 2028. The revised TIA must include a protocol that demonstrates how the project will monitor, record and achieve compliance with the proposed mitigation measures for this intersection.	EnergyCo acknowledges that the intersection is performing poorly without and with the project during the PM network peak, and continues to commit to minimising this impact. However, this intersection is important for the construction access routes and avoids the need to rely on local roads to provide access to/from Wollombi construction support site in the mid- to late afternoon period. To minimise this impact, an amended mitigation measure has been provided to limit heavy vehicle movements to 10 movements within the PM network peak. An additional mitigation measure has also been proposed to provide further detail on the monitoring, auditing and enforcement of this control.

TfNSW Note: EnergyCo consultants have since provided further information to close out the above points on 20 March 2026. However, the TIA and SIDRA modelling must still be updated to reflect the information provided by EnergyCo consultants and provided to TfNSW for review to ensure that the comments are entirely closed out and documented within the TIA.

	Review of Strategic Designs			
	Priority / Status	Issue summary / TfNSW comment	Remaining action needed	
10	Open	SISD assessments do not include the vertical long sections for each intersection/access point proposed to be upgraded and identifying that temporary traffic controls will be implemented where SISD is not achieved to mitigate the safety risk. Applicable to the strategic concept designs for the intersections/access points where SISD is not achieving compliance. 2583080-CA-ANC-1336, 1337, 1341.	Prepare long sections for intersections and access points (as per the requirements of AGRD Pt 4A), and clarify which mitigation measures will be implemented (e.g., restrictions on turn movements or temporary traffic control). Confirm what 'temporary controls' means, how long temporary traffic controls will be implemented, if temporary traffic controls will be implemented sequentially as the project progresses or intended to be used concurrently, if the temporary traffic control will be implemented outside of hours of operation, and how monitoring and compliance will be achieved when the temporary traffic controls are implemented.	Additional 3-D assessments have been undertaken at the intersections subsequently identified in consultation with TfNSW and DPHI. The Mitigation measure TT16 has been further amended to specify the requirements to manage SISD non-compliances. Further discussion, including the 3-D assessments are provided in the Supplementary information response. The requirement to confirm SISD controls (with consideration of vertical and horizontal sight lines) in consultation with the relevant road authority has also been emphasised in the revisions to the proposed mitigation measures, with certain controls also linked to the Mitigation measure TT19 concerning monitoring and enforcement
11	Open	Needs revised strategic concept design / controls-I-31 / 2583080-CA-ANC-0611-2 / Putty Road - existing access track	Demonstrate how right turns are physically prevented through the use of enforceable mitigation measures that will be implemented, monitored, and recorded to confirm compliance with the right turn ban.	Project traffic is expected to be limited to left in/right out at this location - i.e. there is no proposal to physically prevent right turning vehicles at this driveway access. EnergyCo propose any safety aspects of these movements to be managed under the TMP to be developed by the contractor (i.e. as per mitigation measure TT1)
12	Open	Needs revised strategic concept design-I-31 / 2583080-CA-ANC-0611-3 / Putty Road - existing access track	Provide the missing / current sheet and clearly demonstrate verge, shoulder and cross-section detail for the latest design version.	This has been provided as **drawings 2583080-CA-ANC-0611-2 and -3 in Amended TTIA Appendix D.**
13	Open	Needs revised plan-I-31 / 2583080-CA-ANC-0611-3 / Putty Road - existing access track	Provide further information within the designs and the TIA to confirm the design-speed lane lengths, storage for large vehicles near the rail crossing, shoulder / BAR requirements, verge treatment and whether a wide centreline is actually proposed in section.	This information has been provided as **drawings 2583080-CA-ANC-0611-2 and -3 in Amended TTIA Appendix D.** It is noted there is no rail crossing in the vicinity of this intersection - we assume TfNSW refers to intersection I-32 for this comment where it is noted sufficient space is available (32m) for storage between the intersection on the side road and the rail crossing.
14	Open	Needs revised strategic concept design-I-03 / 2583080-CA-ANC-0617-2 / Golden Highway - Lemington Road	Re-issue a reviewable strategic concept design for I-03 and resolve the intersection form, lane lengths and associated safety measures before progressing further.	The strategic concept design (drawing 2583080-CA-ANC-0617-2 and -3) has been updated to reflect the proposed BAL/CHR and Austroads compliant verge, shoulder and lane widths
15	Open	Needs resolution prior to determination through clarification on how the right turn will be managed-I-03 turning controls / access management / Golden Highway - Lemington Road	Show how prohibited turns will actually be controlled, where U-turns occur, and whether land acquisition is required at the corners as a result of swept-path needs.	There is no proposal to prohibit right turns into or out of Lemington Road (however construction traffic is expected to be right-in and left out based on the construction traffic routes). EnergyCo confirms land acquisition is not required at the corners based on cadastral survey obtained in this area.
16	Open	Needs revised strategic concept designs- I-03 / 2583080-CA-ANC-0617-3 / Golden Highway - Lemington Road	Provide the revised geometric cross section and lane / shoulder detail for I-03, including verge width, shoulder width and through-lane widths suitable for the route.	The strategic concept design (drawing 2583080-CA-ANC-0617-2 and -3) has been updated to reflect the proposed BAL/CHR and Austroads compliant verge, shoulder and lane widths
17	Open	Need further information on the drainage scope of workto confirm compliance with Austroads- I-03 / 2583080-CA-ANC-0617-3 / Golden Highway - Lemington Road	Show the full extent of drainage detail and confirm whether swales / table drains are lined, sufficiently deep and compatible with the pavement / environmental footprint.	The geometry of these elements have been provided in cross-sections which were requested by TfNSW. Further detail cannot be achieved due to the lack of pavement / geotechnical data available at this stage. As per the previous response to this comment (provided to TfNSW via comments response sheet on 13/02/2026), EnergyCo propose this would be undertaken at the appropriate detailed design stage when these investigations are completed.
18	Open	Need further information on the drainage scope of work to confirm compliance with Austroads-I-33 / 2583080-CA-ANC-0623-4 / Golden Highway - Unknown Road (east of Lemington)	Confirm whether any widening or verge changes are part of the approved footprint, and show them on strategic plans where they could affect the environmental assessment.	The strategic concept design **provided as drawings 2583080-CA-ANC-0623-3 and -4 in Amended TTIA Appendix D** generally demonstrates the proposed intersection works can be accommodated within the road corridor at this location. EnergyCo propose any further refinements of the design to be developed and resolved in detailed design.
19	Open	Alternative access arrangement required (I-52 / Putty Road - new access area) / 2583080-CA-ANC-0629-1	Review and present a more suitable access arrangement for the three towers north of Putty Road and confirm the treatment that will actually be pursued.	As confirmed in the Amended TTIA, the access at I-52 has been removed. The towers can otherwise be accessed via intersection I-31 / 2583080-CA-ANC-0611-3 / Putty Road - existing access track, as discussed in the workshop with TfNSW on 11/12/2025. The TTIA has conservatively assumed the peak project traffic generation at this intersection, so the assessment will not change as a result of removing of the access at I-52.
20	Open	Needs updated swept-path plan - Wine Country Drive / Broke Road - I-14 / 2583080-CA-ANC-0636	Provide an updated swept-path plan that demonstrates the design / check vehicle does not track over the raised island, or revise the geometry to accommodate it.	The swept path for the right turning vehicle has been adjusted to avoid mounting of the median (it is also noted both Wine Country Drive and Broke Road are approved B-double routes so it is expected these movements can be accommodated under the current intersection layout)
21	Open	Revised strategic concept designs have not been provided / Golden Highway - Long Point Road - I-06 / 2583080-CA-ANC-0638	Provide the typical section for the right-turn-bay extension and show how drainage / shoulders / verge tie into the existing road.	The **Amended TTIA (section 5.3.2.6)** clarifies the required treatment at this location is a CHR(s) / BAL, which is already accommodated at the intersection, therefore the project does not warrant any upgrades.
22	Open	Revised strategic concept designs required-/ 2583080-CA-ANC-0667-1 to 0667-2 - Jerry Plains Road southbound ramp	Add the I-number, correct line-marking treatment, show the missing pavement area and required signage / one-way direction control, and clarify associated drainage treatment.	The strategic concept design (drawing 2583080-CA-ANC-0667-1) has been updated to provide the updated title block, signage, pavement and verge details requested

	Review of High Risk OSOM Routes			
	Priority / Status	Issue summary/TfNSW comments	Remaining action needed	
23	Open	Bridge assessments still need to be completed to confirm route suitability.	Provide bridge assessment results for the nominated route infrastructure before closeout.	As per TfNSW request, the OSOM information was provided to the Transport Special Permits Unit on 20/11/2025 to carry out this assessment. The route suitability was confirmed via email on 2/3/2026 - EnergyCo do not believe any further action is required on this issue.
24	Open	The swept path modelled high-risk OSOM vehicle appears inconsistent with the high-risk OSOM dimensions in the Coastal Transport Study; the swept path should be based on the designed vehicle.	Confirm the correct laden vehicle / trailer / push-pull combination and re-run the swept paths using the agreed design vehicle.	A response to this query has been previously provided to TfNSW on the 16/02/2026 in response to comments raised on the OSOM report. The swept paths provided in appendix F of the Amended TTIA are based on the vehicle nominated by Coastal (these are consistent with, or more conservative than the trailer configuration noted in the Coastal report).
25	Open	Provide swept paths for all pinch points along the nominated route, not only selected locations.	Provide a complete route-wide swept path set inside the revised Coastal study, with clear route references.	Swept paths for all pinch points have been provided for the HTP (with the exception of intersections overlapping the EnergyCo/TfNSW intersections upgrades as part of the Port to REZ project, which have been, or will be upgraded for a much larger OSOM design vehicle than would be required for the HTP). These are provided in appendix F of the Amended TTIA.
26	Open	Provide swept paths for Mayfield West, Sandgate; the photographs indicate signals and median impacts.	Show swept paths and demonstrate whether the updated works remain suitable for the project.	A response to this query has been previously provided to TfNSW on the 16/02/2026 in response to comments raised on the OSOM report. EnergyCo understand this intersection (Maitland Road / Newcastle Inner City bypass) is part of the upgrade to accommodate 100m long wind turbines blades delivered by TfNSW's Hexham Straight project, and has now been completed and opened to traffic. It is understood these works are more than sufficient to accommodate the HTP OSOM vehicles.
27	Open	Provide swept path analysis for the Palmers Road Exit from the M1 at Freemans Waterhole.	Provide swept path analysis and strategic designs if the median or other infrastructure is traversed.	Swept paths at the M1 / Palmers Road exit were provided in Appendix F (drawing 2583080-CA-ANC-1212) of the Amended TTIA. These demonstrate the OSOM vehicles can make the required movement without impacting these mountable medians. On this basis, EnergyCo do not believe any further information is required to close this issue.
28	Open	Provide swept path analysis and review of the vertical geometry of the Inner-City Bypass route, noting the known 5.2 m height restriction.	Confirm route suitability and any required works before determination rather than leaving it to detailed design.	The route assessment notes 5.2m as the lowest allowable route constraint elsewhere along the route, so this is not an issue. We note that based on survey undertaken by EnergyCo as part of the P2R project the lowest physical height constraint along the Inner City bypass was measures at 5.4m. This information was provided to TfNSW at the time of the survey collection as part of the Port to REZ project
29	Open	Provide swept path analysis to confirm clearance is achieved to the lane splitting devices and concrete bollards on Mount Waring Road, Toronto.	Demonstrate clearance to the bollards / lane splitting devices or provide concept / strategic works.	Swept paths showing this have been provided in appendix F (drawing 2583080-CA-ANC-1208) of the Amended TTIA
30	Open	The route study notes that crests and sweeping corners after Singleton may be an issue. Clarify and provide details.	Provide swept paths / suitability evidence for the tight corners and any required works.	The Coastal report notes these crests a sweeping corners after Singleton are *"sufficient for travel to site, dual lane still allows for the safe movement of oversize over mass items, however care needs to be taken on all crests and sweeping corners associated with the movement"* . This has been raised as a management issue during haulage, not a geometric issue associated with the road. EnergyCo assert that traffic management measures to address this issue would be provided as part of the Transport Management Plan required to obtain a permit through the NHVR. The contractor and their chosen OSOM haulage specialist who would carry out the transportation are best placed to provide these details at that stage
31	Open	Clarify the purpose of the pullover at Awaba Road / Freemans Drive and whether there is an alternative pull-over / rest area.	Provide a swept path and confirm whether the location is suitable or whether an alternative is required.	EnergyCo understand traffic management measures to address this issue would be provided as part of the Transport Management Plan required to obtain a permit through the NHVR. The contractor and their chosen OSOM haulage specialist who would carry out the transportation are best placed to provide these details at that stage
32	Open	Check clearance to the cantilevered traffic control signal arm at Boulevarde Road / Cary Street and clarify whether removal of five sets of lights / signs is still required.	Confirm clearance and provide strategic designs if footpath / signal works are needed.	Swept paths showing this have been provided in appendix F (drawing 2583080-CA-ANC-1204) of the Amended TTIA

Key

- Comment has been addressed in the documentation, workshops with TfNSW, or resolved with updated information provided
- Comment is acknowledged, however EnergyCo's view is the issue can be resolved in post approval stage, or does not impact the outcomes of the impact assessment

33	Open	All locations where contraflow or road closure is required need detailed management descriptions.	Provide detailed location-by-location traffic-management actions rather than deferring them to later TMPs only.	EnergyCo have provided a concept level route assessment identifying the need for certain traffic controls measures along the proposed OSOM routes. Detailed traffic management measures to are proposed to be provided (and would be required) as part of the Transport Management Plan required to obtain a permit through the NHVR. The contractor and their chosen OSOM haulage specialist who would carry out the transportation are best placed to provide these details at that stage
34	Open	Provide a list of all locations traversed by the high-risk OSOM on all proposed routes so TfNSW can consult the relevant infrastructure experts.	Provide a complete traversed-assets register, including all medians / affected state-road infrastructure locations.	EnergyCo provided this information via email on 11/12/2025.
35	Open	Overpasses on New England Highway - There are a number of low-height overpasses along the New England Highway - Rixs Creek Mine Bridge, Liddel Interchange and Coal Conveyor Bridge No.3.	Vertical clearance will need to be assessed for these bridges. This is vital as the Liddel Bridge, for example, sustained damage following a collision in December 2025,requiring repair works.	Vertical clearances along the route have been considered by the OSOM transportation specialist who have noted 5.2m as the minimum bridge height clearance that would be encountered along the OSOM routes. Furthermore, EnergyCo note the vertical clearance at Rixs Creek Mine bridge is 5.8m - i.e. greater clearance than the key constraint of 5.2m identified in the report. Liddel interchange is not traversed by HTP OSOM (OSOM vehicles will exit at the interchange prior to the bridge to access the Bayswater power station as described in the report)
36	Open	Maximum laden height of transformers for the Erarings route is 5.2m and the laden load exceeds 5.4m.	This will require an assessment of locations for lowering and raising of the load to achieve the 200mm clearance pre and post bridge. Pullover bays, rest areas etc will need to be identified pre and post bridge outside of the through lanes.	EnergyCo understand traffic management measures to address this issue would be provided as part of the Transport Management Plan required to obtain a permit through the NHVR. The contractor and their chosen OSOM haulage specialist who would carry out the transportation are best placed to provide these details at that stage.
37	Open	The proposal will need to consider TfNSW works occuring on the network, and update the TIA with considerations to these projects. i.e., Hexham Flyover and Jesmond to Rankin Park.	Swept path analysis overlaid on the project designs for the high-risk OSOM design vehicle for the Hexham Flyover and the Jesmond to Rankin Park TfNSW projects must be completed and any further identifed impacts to assets must be mitigated through managed measures,modifications to infrastrucutre or road upgrades.	The HTP OSOM assessment as considered the existing road network. Noting this is a new request from TfNSW, and these designs have not been made available to EnergyCo by TfNSW at this stage, swept path analyses have not been undertaken on the TfNSW design information. However it is reasonable to assume that if the current route can accommodate the OSOM vehicles proposed by the HTP (as confirmed in the Coastal report), the newly designed highways would not have reduced geometry from the existing, and therefore the ability for these routes to accommodate the HTP OSOM vehicles. Therefore EnergyCo believe this is not an issue that needs to be addressed prior to determination. The following is also noted: - The assessed route is not reliant on the Hexham Flyover, but would be subject to further post-approval assessment should it be open when the OSOM components need to be transported (see response to Item 42). - The Jesmond to Rankin Park project is occuring on HTP OSOM route, which also forms part of the Port to REZ OSOM route. Transport for NSW and EnergyCo are jointly delivering road improvements along the Port to REZ to enable OSOM movements to occur, and as such, it is reasonable to assume that any road improvements completed as part of the Jesmond to Rankin Park would cater for REZ OSOM loads. The longest rigid component and the heaviest component associated with HTP is shorter and lighter when compared to the OSOM components that were considered in the design and route selection for the Port to REZ program of works
38	Open	Gowrie Gates- vertical clearance - Singleton Bypass considerations.	If the Singleton Bypass has not yet been completed, the proponent will need to consider the route through this section, including the Gowrie Gates. Once completed, the overhead offramp bridge to the north clearance will need to be met. TfNSW notes that the current route analysis does not include the Singleton Bypass.	As confirmed previously to TfNSW, the OSOM route assessment relies on these projects being completed.
39	Open	There is a discrepancy between the high-risk OSOM modelled in swept path analysis compared to what is presented and assessed in the Coastal Transport Study.	TfNSW revised swept paths analysis to model the actual swept path of what is presented in the coastal study.	A response to this query has been previously provided to TfNSW on the 16/02/2026 in response to comments raised on the OSOM report. The swept paths provided in appendix F of the Amended TTIA are based on the vehicle nominated by Coastal (these are consistent with, or more conservative than the trailer configuration noted in the Coastal report).
40	Open	Clarification is required on whether TCS are required to be removed and for how long for the Cary Street, Toronto and Excesior Parade, Toronto turn.	Provide this detail in the updated OSOM route study and TIA.	As per response to item 32, swept paths have been provided demonstrating these do not need to be removed.
41	Open	The Planning Notes and Key Milestone section identifies that if Hexham Flyover is completed prior to delivieres that this route will be used instead of the Newcastle Inner City Bypass.	Confirm if the Newcastle Inner City Bypass or Hexham flyover will be used for the high risk OSOM routes presented in the Coastal Transport Study	For the purposes of the HTP EIS, the Newcastle Inner City bypass has been assessed for the OSOM route as noted in the Amendment Report. It may be sensible to consider using the new flyover being constructed as part of the M1 to Raymond Terrace project (should it be opened when the OSOM components are required to be transported for the HTP), however this would be subject to further assessment at a stage following determination.
42	Open	Confirm that the loads will be coming from Port of Newcastle as the Coastal Transport Study uses language such as to be confirmed and alternate routes may be advised at NHVR permit stage.	The proponent is to remove discrepencies and confirm all references in the report that the Port of Newcastle will be the Port of origin for the projects high risk OSOM deliveries.	As per previous advice, EnergyCo confirms the port of origin for HTP will be the Port of Newcastle.
	Advisory note: Any road upgrades or modifications to the state road network required based on the comprehensive revisions to the high risk OSOM route analysis will require strategic concept designs and environmental approvals (Part 4 or Part of the EP and A Act 1979) to approve the scope of the road upgrades/modifications required to facilitate the high risk OSOM laden configurations for this project.			

3 - EnergyCo responses to TfNSW points raised on the High Risk OSOM route analysis prepared by Coastal Transport Services (email dated 11/12/2025)				EnergyCo response
Item	**TfNSW Comment**	**EnergyCo Response**	**TfNSW Response to RtS - March 2026**	**1/05/2026**
9	Require swept path analysis for the Palmers Road Exit from the M1, Freemans Waterhole intersection.	Included refer to 2583080-CA-ANC-1212	TfNSW updated comments (28/04/2026)- Swept path analysis has been provided for the Palmers Road off-ramp. This appears to be tracking directly over the median. Strategic designs will need to be provided for the works at this location to rectify this issue.his matter can be addressed as part of TTMP condition for a route suitability check and should be completed in advance of movements to allow for sufficient time for approvals for any modifications or adjustments to the network if road infrastructure traversal is not supported by TfNSW.	Noted. These requirements would be documented in the Transport Management Plan that is prepared for the NHVR permitting process/ Mitigation measure TT16 has been further amended to outline the consultation with TfNSW during the preparation of these plans, as well as confirming any required temporary adjustments or median suitability prior to the OSOM movement. The timing risk expressed by TfNSW for approving any required modification or adjustment is noted. It is EnergyCo's opinion that the Transport Management Plan is the most suitable mechansim for these requirements, not the TTMP or Traffic Management Plan (as required by mitigation measure TT1), as OSOM movements and planning for these should not constrain the commencement of construction of the project
11	Provide swept path analysis to confirm that the lane splitting devices and concrete bollards on Mount Waring Road, Toronto, will be managed (i.e is there sufficient clearance between the laden load and the lane splitting devices and concrete bollards).	Multiple swept paths have been run for Wangi Road, refer to drawing set.	TfNSW updated comment (28/04/2026)- This matter can be addressed as part of TTMP condition for a route suitability check and should be completed in advance of movements to allow for sufficient time for approvals for any modifications or adjustments to the network if road infrastructure traversal is not supported by TfNSW.	As per response to Item 9
12	Page 27 of the route study notes that crests and sweeping corners on the New England Highway after Singleton may be an issue for movement. Please clarify and provide details on this.	Further detailed route planning will be provided by the Contractor in detailed design. As noted in the Coastal Transport Services Report, night travel with sufficient escorts will be required in these locations.	TfNSW updated comments (28/04/2026)- This matter can be resolved through a swept path suitability check and adoption of enforceable mitigation measures as part of the TTMP and should be completed in advance of OSOM movements to allow for sufficient time for approvals for any modifications or adjustments to the network if road infrastructure traversal is not supported by TfNSW.	As per response to Item 9
13	Clarify the purpose of the pullover location at the intersection of Awaba Road and Freemans Drive. Is there an alternative location for a pull-over/rest area?	The purpose of this stop has been included in the updated Coastal Transport Services Report, i.e. "to aid in any additional side road or main road closures further in the journey into Toronto". This would be a short duration stop only.	TfNSW updated comments (28/04/2026)- This matter can be resolved through a swept path suitability check and adoption of enforceable mitigation measures as part of the TTMP and should be completed in advance of OSOM movements to allow for sufficient time for approvals for any modifications or adjustments to the network if road infrastructure traversal is not supported by TfNSW.	As per response to Item 9
16	Check clearance to the cantilevered arm of the TCS at the intersection of Boulevarde Road/Cary Street. Clarify if the removal of five sets of lights and traffic signs is still required for this manoeuvre.	Swept path has been run refer to 2583080-CA-ANC-1204, no removal has been identified as required.	TfNSW updated comments (28/05/2026)-Updated swept path demonstrates tracking close to the sidewalk. This matter can be resolved through a swept path suitability check and adoption of enforceable mitigation measures as part of the TTMP and should be completed in advance of OSOM movements to allow for sufficient time for approvals for any modifications or adjustments to the network if road infrastructure traversal is not supported by TfNSW.	As per response to Item 9
19	All locations where contraflow or road closure is required will need to describe in detail how this will be managed. Locations identified in the study include: Palmers Rd (if still required), Cessnock Road, Awaba Road, Wangi Road at Dorrington Rd, Wangi Road near bollard (pg 14), Rocky Point Road, Thomas Street, Wallsend ("Streets adjoining will need to be blocked" page 32),	Further detailed route planning will be provided by the Contractor in detailed design/planning phase. Traffic management details would be necessarily provided as part of the TMP required to obtain a permit for these OSOM vehicles.	TfNSW updated comments (28/04/2026)- Refer to Cell B24.	Refer to response to Cell B24
21	Locations traversed by the high-risk OSOM on all proposed routes are to be provided in a list to TfNSW. Action for TfNSW after receipt of this list will be to discuss the suitability of traversing this infrastructure with the relevant subject-matter experts within TfNSW.	Table 5.4 of the Amended Traffic and Transport Impact Assessment Report provides a list of roads/locations proposed to be used by OSOM vehicles for the project	TfNSW updated comment (28/04/2026)- This matter can be addressed as part of TTMP condition for a route suitability check and should be completed in advance of movements to allow for sufficient time for approvals for any modifications or adjustments to the network if road infrastructure traversal is not supported by TfNSW.	As per response to Item 9
EnergyCo responses to TfNSW points raised on the High Risk OSOM route analysis on TfNSW letter				
Item	**TfNSW Comment**	**EnergyCo Response**	**TfNSW Response to RtS - March 2026**	
b	Scope and Concept Design – Clarify the scope of works for all state road infrastructure modifications required between the Port of Newcastle and the Eraring Power Station, supported by Strategic Concept Designs (see Note 1), for each modification identified in Coastal Transport Services' high-risk OSOM route analysis (Appendix F).	Required adjustments to State road infrastructure to accommodate OSOM movements (Item b) The swept path analysis provided in Technical Report 4 – Revised Traffic and transport impact assessmenthas confirmed the following adjustments to State road infrastructure, initially identified in the concept level high-risk OSOM assessment: •Newcastle Road, Jesmond to Wallsend – tree trimming •Palmers Rd exit, Freemans Waterhole (exit ramp off M1) – temporary removal of signs within medians •The Boulevarde, Toronto (Awaba Street to Cary Street) – temporary removal of signs and barriers •The Boulevarde/Cary Street intersection, Toronto - potential relocation of traffic signals •Mount Waring Road, Toronto – tree trimming •Unknown, Rathmines – Roundabout at Dorrington and Wangi Road – temporary use of the opposite side of road through roundabout with the temporary removal of signs within the median. TfNSW will continue to be consulted during detailed design on required adjustments to State road infrastructure.	TfNSW updated comment (28/04/2026)- The scope of works listed in Cell C12 and anywhere else in the Coastal Transport Study must form part of the schedule of Road Upgrades table within the consent.	Mitigation measure TT16 has been amended to make reference to the likely adjustments to accommodate OSOM movements, noting that this would require confirmation through the further engagement with TfNSW on the Transport Management Plan
d	Route Suitability Re-Assessment – Re-run the high-risk OSOM route analysis using the laden dimensions provided under (a), confirming suitability and constraints (vertical/horizontal geometry, bridge capacity/clearance limits), with particular emphasis on height restrictions along Awaba Road on the approach to the Eraring Power Station.	Route suitability re-assessment (Item d) The revised OSOM assessment and OSOM swept path analysis is presented in Appendix E and Appendix F of Technical Report 4 – Revised Traffic and transport impact assessment. The OSOM route assessment has considered overhead obstruction clearances and known bridge and culvert mass limitations as part of the selection of the most appropriate route for the given components and OSOM vehicle combinations. The chosen route to the Eraring Power Station has been selected after consideration of multiple bridge and clearance constraints. Utilising Awaba Road avoids height and width restrictions through Morriset. It is acknowledged that there is a bridge height limit of 5.2 metres on Awaba Road. To navigate below the low height bridge, there will be the need to limit the maximum height or configuration of the OSOM trailer. EnergyCo has provided the detail concerning the OSOM routes and loads to the TfNSW assets/road access team to assess bridge loads. At the time of writing, this advice has yet to be provided to EnergyCo. Drafting note: Track if this is received prior to finalisation	TfNSW updated comment (28/04/2026)- UGL and other third party assets are required to be assessed for the routes to confirm route suitability. This can be managed through a requirement to review and confirm route suitability as part of the TTMP.	As per response to Item 9
e	Additional Destinations – Confirm and, if necessary, revise the high-risk OSOM route analysis for any overmass/oversize loads in the high-risk category that are required to the Olney and Bayswater switching stations. The existing Coastal Transport Services within Technical Report 4-Traffic and Transport Impact Assessment, does not identify a requirement for high-risk OSOM loads.	Additional destinations (Item e) The project would require 12 high-risk OSOM loads, 4 of which are anticipated to Bayswater South switching station, and a single high-risk OSOM load anticipated to the Olney switching station. The remainder would travel to the Eraring Power Station. Following discussions with TfNSW, the concept level high-risk OSOM assessment and swept path analysis has been updated to reflect the high-risk OSOM movements occurring from the Port of Newcastle. This is presented in Appendix E and Appendix F of Technical Report 4 – Revised Traffic and transport impact assessment.	TfNSW updated comment (28/04/2026)- This matter can be addressed as part of TTMP condition for a route suitability check.	As per response to Item 9
TfNSW additional comments that provide context and direction forward post consent				
	No travel permitted to Bayswater until completion of the Singleton Bypass- Refer to page 44 of Coastal Transport Services OSOM route assessment (Appendix F of the Revised TTIA)**TfNSW updated comments 28/04/2026- require a point in TTMP condition to ensure that the OSOM movements don't occur until post completion of Singleton Bypass to the Bayswater substation along this route**.			No objection. This requirement has been made clear in the EIS and associated documentation. However, these controls would be documented in the Transport Management Plan, not the Traffic Management Plan
	Rankin to Jesmond Park for Sections 1,2 and 4 which all have portions of the journey through Rankin to Jesmond Park (Newcastle Inner City Bypass). The Coastal Transport OSOM advises that further assessments will need to be conduted prior to issuance of transport to confirm the route assessed is optimal for the transport of the items (page 44 of Coastal Transport Services OSOM report Appendix F. **TfNSW updated comments in response to this statement (28/04/2026)-TTMP will need to capture the requirement to undertake this assessment and confirm suitability of the route and if any further road upgrades or mitigations will need to be employed to manage impacts.**			Transport Management Plan would contain the route suitability analysis, and would account for these road upgrades at that point in time (not the Traffic Management Plan)
	Project Scope 1A (transformer route) Coastal Transport Services deemed the route high risk as road will need to be complely closed in segments from Cessnock Road to the completion of the journey at Rocky Point Road.**TfNSW updated comments in response to this statement (28/04/2026)- Further management and mitigation mesures will need to be addressed as part of the TTMP to determine if the traffic maangement would be suitable to ensure the route was viable.**			Noted. However, these controls would be documented in the Transport Management Plan, not the Traffic Management Plan
	Coastal Transport Services Project Scope Route 2-Newcastle Road, [Jesmond - Wallsend] – Tree Maintenance will be required along the tighter portions of the road up the hill.**TfNSW updated comments in response to this statement (28/04/2026). Need to include, in the schedule of road upgrades, conditions of consent, potentially.**			Noted. The adjustments/controls have been identified in the concept level route analysis and presented in the technical report. These would be confirmed as part of the Transport Management Plan Refer to response to Item 9.
	Coastal Transport Services Project Scope Route 2-Unknown, Wallsend – Roundabout will require planning to ensure safe passage through to Thomas Street. Street Signs will need to be temporarily removed due to the width of the load and turning circle. **TfNSW updated comments in response to this statement (28/04/2026)- must be checked as part of TTMP to confirm that the route is suitable and no further road upgrades required. Need to address as part of TTMP.**			Noted. The adjustments/controls have been identified in the concept level route analysis and presented in the technical report. These would be confirmed as part of the Transport Management Plan Refer to response to Item 9.
	Coastal Transport Services Project Scope Route 2-Newcastle Link Road, [Wallsend - Cameron Park] – No issues once on the Link Road, highlighting that the first roundabout is not developed on either side, and should be checked prior to applying for permit when transport is required, and that the Minmi Roundabout is very busy at all times. T**fNSW updated comment 28/04/2026- must be checked as part of TTMP to confirm that the route is suitable and no further road upgrades required. Need to address as part of TTMP.**			Noted. These would be confirmed as part of the Transport Management Plan Refer to response to Item 9.

Coastal Transport Services Project Scope Route 2- New England Highway, [Lower Belford - Singleton] – Noting that this road has numerous narrow bridges, crests and blind sweeping corners along the road. Additional care should be taken on this portion of the journey. Night Travel with all required escorts and police intervention in place will alleviate any further risks. **TfNSW updated comment 28/04/2026 - must be checked as part of TTMP and identify what mitigation measures will be implement to confirm that the route is suitable and no further road upgrades are required. Need to address as part of TTMP.**			These constraints have been identified in the OSOM assessments to date, with the OSOM assessment concluding that transport along these routes would need to occur when traffic volumes are low (Night) to manage these risks. These would be confirmed as part of the Transport Management Plan Refer to response to Item 9.
Coastal Transport Services- Project Scope Route 2-Transport should only be conducted on Weeknights, no weekend travel for these loads. Police will be required for side street closures and lane blocking for the length of the journey. **TfNSWupdated comments 28/04/2026 - TTMP will need to address how this will be enforced and detail the mitigation measures to block side streets closures for TfNSW to review and confirm acceptance. Request inclusion of this matter as part of TTMP condition.**			Note. This would be confirmed as part of the Transport Management Plan, including required controls and enforcement. Refer to response to Item 9.
Coastal Transport Study- Project Scope 3A-Newcastle to Olney- Switching Station- over height- Palmers Road Exit, Freemans Waterhole – Tree Maintenance required, hard right turn onto Freemans Drive. Police and escort vehicles to block both lanes to ensure safe turn from Freeway. Street Signs will need to be removed on the median strip prior to conducting the turn. Palmers Road, Freemans Waterhole – Roundabout at the bottom of Palmers Road and Freemans Drive will require temporary removal of signage on the median strips for the combination to navigate safely. Block all traffic onto the roundabout from all directions to allow for the combination to navigate the corner. Median Strips to be assessed by the selected transport provider to ensure the height and turning circle allow for safe mounting of all median strips to allow for load stability. **TfNSW updated comments 28/04/2026: the blocking of traffic on any state road, and how this will be managed on the freeway, will need to be detailed in the TTMP; request that comments be included in the TTMP condition.** **A list of the medians to be traversed must be provided to assess the suitability of the traversal as part of the TTMP. If modifications to assets are required, approval will need to be obtained and occur in advance of any OSOM trips along this route. Will need a point as part of TTMP condition on this matter.** **Include street signage required to be removed and tree maintenance required for the Palmers Road/Freemans Drive exit as part of the conditions of consent.**			Refer to response to Item 9

Annexure B – Response to SIDRA TfNSW queries

Technical Advisory Note

Project	HTP EIS – Amendment & Submissions Reports	**Project Number**	SCT_00822
Client	EnergyCo		
Document Name	HTP EIS – SIDRA revisions		
Version	3.0	**Date**	16 April 2026
Author	Daniel Lee	Principal Consultant	
Reviewer	Nick Bernard	Director	
Authoriser	Nick Bernard	Director	

1.0 Background

Following the submission of the revised Traffic and Transport Impact Assessment (TTIA) prepared to support and inform the Amendment Report for the amended Hunter Transmission Project (HTP, the amended project), Transport for NSW (TfNSW) provided a request for additional information with comments. This technical advisory note (TAN) provides responses to the requests related to the SIDRA modelling undertaken for the amended project. **Table 1-1** summarises these comments, responses and where the information can be found in the TAN.

Table 1-1 Responses to request for additional information and where it is provided in this TAN

No.	TfNSW comments	Response
1	s4.3.2 of the SCT TIA-Table 4-8 and Table 4-10: It is unclear whether the table values are site-acquired data or copied from SIDRA outputs; most values match SIDRA exactly, but some differ and the file appears to use Network Peak + HTP peak assumptions. Furthermore, the SIDRA file has Network Peak + HTP peak for some sites, but only Network peak for others. The report includes output for both Network and HTP peak results.	Historic results remained in Table 4-8 and 4-10 of the revised TTIA report. SIDRA outputs that match the provided SIDRA files are now provided in updated Table 4-8 and Table 4-10 in **Section 2.0**. It is noted that these results were for 2024 AM base models and did not impact the reported 2028 construction or cumulative scenarios.
2	s4.3.2 of the SCT TIA-Table 4-10: New England / Lemington Rd is performing at LOS F in the SIDRA model, but Table 4-10 states LOS B.	LoS B is correct. The base PM SIDRA model had a prioritisation error, with the right turning traffic from Lemington Road giving way to the through traffic on the New England Highway. When this is corrected, the intersection operates at LOS B, as indicated in updated Table 4-10 in **Section 2.0**. This was already corrected for the models used in the 2028 construction and cumulative scenarios.
3	SIDRA Analysis model: Sites identified in the TIA as requiring turn treatment upgrades have not been modelled with the upgrade for construction scenarios within SIDRA.	The seven State road intersections identified for turn treatment upgrades have been modelled with the proposed upgrade treatments in place. Results are presented in **Section 3.0**.
4	SIDRA Analysis model-pedestrians-16a, I-16b, I-22a, I-22b (signalised sites): These sites have been modelled with default pedestrian volumes, which affect how many actuations occur during the hour.	SCATS signal timing for pedestrian protection at the intersections was reviewed, which revealed that pedestrian phases at the intersections showed minimal actuations during modelled peak periods. As such, the default model application that pedestrian phases are active during every cycle with default pedestrian clearance times is deemed a conservative and suitable assumption.

No.	TfNSW comments	Response
5	SIDRA Analysis model-lane geometry-16a, I-16b, I-22a, I-22b (signalised sites): These sites have been modelled with default lane widths even though lane widths are part of the saturation flow assumptions. Lane widths are a part of the saturation flows calculations and can be significant in modelling outcomes.	Lane widths in the SIDRA models were updated to match the stop line lane widths measured from Nearmap aerial imagery dated 3 December 2025. Updated results are presented in **Section 4.0**.
6	SIDRA Analysis model-phasing-16a, I-16b, I-22a, I-22b (signalised sites): These sites have been modelled with default pedestrian protection times; site values should be checked.	As noted for item 4, SCATS signal timing for pedestrian protection at the intersections revealed that pedestrian phases at the intersections showed minimal actuations during modelled peak periods. As such, the default model application that pedestrian phases are active during every cycle with default pedestrian clearance times is deemed a conservative and suitable assumption.
7	SIDRA Analysis model-phase-16a, I-16b, I-22a, I-22b (signalised sites): These sites have been modelled with 150-second cycle times even though SCATS maximum is noted as 120 seconds.	The intersections have been modelled with signal cycle timings as reported for 21 March 2024. Future year model cycle times do not exceed 120 seconds. Updated results are presented in **Section 4.0**.

2.0 Base model (2024) intersection performances

Table 2-1 presents the updated 2024 AM peak hour intersection performance, while **Table 2-2** presents the updated 2024 PM peak hour intersection performance, for the State road intersections.

Table 2-1 2024 Weekday AM peak hour intersection performance – State road intersections (Updated Table 4-8 from the revised TTIA report)

ID	Intersection	Control	Road network peak hour				HTP traffic peak hour			
			DoS	Delay & approach	LoS	Worst 95th %ile queue (m) & approach	DoS	Delay & approach	LoS	Worst 95th %ile queue (m) & approach
Intersections on or with the State road network										
I-01a	New England Highway / Hebden Road	Give way	0.25	10.5 sec (New England Highway [S])	A	5.3 m (New England Highway [S])	0.39	11.2 sec (New England Highway [S])	A	5.5 m (New England Highway [S])
I-02	New England Highway/Lemington Road	Stop	0.54	67.0 sec (Lemington Road [S])	E	10.2 m (New England Highway [W])	0.35	25.7 sec (Lemington Road [S])	C	6.7 m (Lemington Road [S])
I-02a	New England Highway/Pikes Gully Road	Give Way	0.45	9.8 sec (New England Highway [E])	A	4.8 m (New England Highway [E])	0.45	10.2 sec (New England Highway [E])	A	1.5 m (New England Highway [E])
I-03	Golden Highway/Lemington Road	Give Way	0.12	8.8 sec (Lemington Road [N])	A	0.4 m (Golden Highway [E])	0.12	8.4 sec (Lemington Road [N])	A	3.1 m (Golden Highway [E])
I-04	Golden Highway/Comleroi Road	Give Way	0.13	9.0 sec (Comleroi Road [N])	A	0.1 m (Comleroi Road [N])	0.07	8.9 sec (Comleroi Road [N])	A	0.9 m (Comleroi Road [N])
I-06	Golden Highway/Long Point Road	Give Way	0.34	18.4 sec (Long Point Road West [N])	B	0.4 m (Long Point Road West [N])	0.18	14.0 sec (Long Point Road West [N])	A	0.2 m (Long Point Road West [N])
I-07	Golden Highway/Gouldsville Road	Give Way	0.35	17.2 sec (Gouldsville Road [N])	B	0.6 m (Golden Highway [E])	0.19	13.0 sec (Gouldsville Road [N])	A	0.8 m (Golden Highway [E])
I-08a	Jerrys Plains Road (NB Ramp)/Putty Road	Stop	0.38	32.8 sec (Mount Thorley Road [S])	C	16.2 m (Putty Road [E])	0.22	17.2 sec (Mount Thorley Road [S])	B	7.1 m (Putty Road [E])
I-08b	Jerrys Plains Road (SB Ramp)/Putty Road	Give Way	0.39	20.7 sec (Mount Thorley Road [N])	B	0.9 m (Woodland Road [E])	0.23	13.1 sec (Mount Thorley Road [N])	A	0.5 m (Woodland Road [E])
I-09	Putty Road/Broke Road	Give Way	0.99	207.6 sec (Broke Road [S])	F	34.7 m (Broke Road [S])	0.38	22.3 sec (Broke Road [S])	B	4.1 m (Broke Road [S])
I-10	Putty Road/Mitchell Line of Road	Give Way	0.63	16.2 sec (Mitchell Line of Road [S])	B	4.8 m (Putty Road [W])	0.39	17.7 sec (Mitchell Line of Road [S])	B	8.3 m (Putty Road [W])
I-10b	Golden Highway/Range Road	Stop	1.07	519.5 sec (Range Road [N])	F	35.7 m (Range Road [N])	0.47	127.6 sec (Range Road [S])	F	10.7 m (Range Road [N])
I-14	Wine Country Drive/Broke Road	Stop	0.11	15.4 sec (Broke Road [W])	B	3.1 m (Wine Country Dr [S])	0.35	23.4 sec (Broke Road [W])	B	11.7 m (Broke Road [W])
I-16a	Wollombi Road/Allandale Road	Signal	0.89	26.1 sec (Average delay)	B	140.3 m (Allandale Road [N])	0.62	21.0 sec (Average delay)	B	48.3 m (Wollombi Road [W])
I-16b	Wollombi Road/Vincent Street	Signal	0.50	20.5 sec (Average delay)	B	62.4 m (Maitland Road [E])	0.21	10.2 sec (Average delay)	B	19.6 m (Maitland Road [E])
I-27	Mandalong Road/Freemans Drive/Wyee Road	Roundabout	0.86	27.9 sec (Wyee Road [S])	B	113.5 m (Wyee Road [S])	0.46	15.6 sec (Freemans Drive [N])	B	26.2 m (Wyee Road [S])
I-29a	Wangi Road/Rocky Point Road (west)	Give Way	0.10	6.4 sec (Wangi Road [S])	A	0 m (Wangi Road [S])	0.10	6.4 sec (Wangi Road [S])	A	0 m (Wangi Road [S])
I-29b	Wangi Road/Rocky Point Road (east)	Give Way	0.11	7.1 sec (Rocky Point Road [W])	A	0.2 m (Rocky Point Road [W])	0.11	7.1 sec (Rocky Point Road [W])	A	0.2 m (Rocky Point Road [W])
I-32	Golden Highway/ Existing Track Across Rail Track	Give Way	0.31	11.1 sec (Existing track)	A	0.1 m (Existing track)	0.19	9.8 sec (Existing track)	A	0.1 m (Existing track)
I-33	Golden Highway/Unknown Road (east of Lemington Road)	Give way	0.09	7.8 sec (Golden Highway [N])	A	0.1 m (Unknown Road)	0.00	0 sec (no turning movements)	A	0 m
I-59	New England Highway/Thomas Mitchell Drive	Stop	0.34	14.9 sec (Thomas Mitchell Dr [S]]	B	12.0 m (Thomas Mitchell Dr [S]]	0.38	15.9 sec (Thomas Mitchell Dr [S]]	B	14.2 m (Thomas Mitchell Dr [S])
I-60	Denman Road/Thomas Mitchell Drive	Give Way	0.25	17.9 sec (Thomas Mitchell Dr [S]]	B	9.7 m (Denman Road [N])	0.29	15.9 sec (Thomas Mitchell Dr [S])	B	9.1 m (Thomas Mitchell Dr [S])
I-61	Denman Road/Edderton Road	Stop	0.10	11.6 sec (Edderton Road [S])	A	2.9 m (Edderton Road [S])	0.07	11.7 sec (Edderton Road [S])	A	2.0 m (Edderton Road [S])

Table 2-2 2024 Weekday PM peak hour intersection performance – State road intersections (Updated Table 4-10 from the revised TTIA report)

ID	Intersection	Control	Road network peak hour				HTP traffic peak hour			
			DoS	Delay & approach	LoS	Worst 95th %ile queue (m) & approach	DoS	Delay & approach	LoS	Worst 95th %ile queue (m) & approach
Intersections with the State road network										
I-01a	New England Highway / Hebden Road	Give way	0.41	13.4 sec (New England Highway [S])	A	2.9 m (New England Highway [S])	0.39	12.9 sec (New England Highway [S])	A	3.2 m (New England Highway [S])
I-02	New England Highway/Lemington Road	Stop	0.38	24.1 sec (Lemington Road [S])	B	12.3 m (Lemington Road [S])	0.36	24.2 sec (Lemington Road [S])	B	11.5 m (Lemington Road [S])
I-02a	New England Highway/Pikes Gully Road	Give Way	0.38	13.1 sec (New England Highway [E])	A	3.2 m (New England Highway [E])	0.35	12.1 sec (New England Highway [E])	A	2.7 m (New England Highway [E])
I-03	Golden Highway/Lemington Road	Give Way	0.09	8.4 sec (Lemington Road [N])	A	2.$ m (Lemington Road [N])	0.06	8.3 sec (Lemington Road [N])	A	0.7 m (Lemington Road [N])
I-04	Golden Highway/Comleroi Road	Give Way	0.14	10.5 sec (Comleroi Road [N])	A	0.5 m (Comleroi Road [N])	0.09	8.6 sec (Comleroi Road [N])	A	0.1 m (Comleroi Road [N])
I-06	Golden Highway/Long Point Road	Give Way	0.24	17.3 sec (Long Point Road West [N])	B	0.4 m (Long Point Road West [N])	0.13	10.6 sec (Long Point Road West [N])	A	0.1 m (Long Point Road West [N])
I-07	Golden Highway/Gouldsville Road	Give Way	0.24	10.6 sec (Golden Highway [E])	A	1.2 m (Golden Highway [E])	0.13	10.8 sec (Long Point Road West [N])	A	0.3 m (Long Point Road West [N])
I-08a	Jerrys Plains Road (NB Ramp)/Putty Road	Stop	0.61	17.2 sec (Mount Thorley Road [S])	B	39.6 m (Mount Thorley Road [S])	0.41	15.9 sec (Mount Thorley Road [S])	B	16.2 m (Mount Thorley Road [S])
I-08b	Jerrys Plains Road (SB Ramp)/Putty Road	Give Way	0.25	13.4 sec (Mount Thorley Road [N])	A	0.6 m (Mount Thorley Road [N])	0.17	13.0 sec (Mount Thorley Road [N])	A	0.7 m (Woodland Road [E])
I-09	Putty Road/Broke Road	Give Way	0.44	10.7 sec (Mount Thorley Road [S])	A	7.2 m (Broke Road [S])	0.29	12.9 sec (Broke Road [S])	A	9.4 m (Broke Road [S])
I-10	Putty Road/Mitchell Line of Road	Give Way	0.55	35.2 sec (Broke Road [S])	C	36.2 m (Putty Road [W])	0.38	27.9 sec (Mitchell Line of Road [S])	B	14.6 m (Putty Road [W])
I-10b	Golden Highway/Range Road	Stop	0.51	122.6 sec (Range Road [N])	F	11.7 m (Range Road [N])	0.26	45.9 sec (Range Road [N])	D	1.5 m (Range Road [N])
I-14	Wine Country Drive/Broke Road	Stop	0.96	60.0 sec (Broke Road [S])	E	117.2 m (Broke Road [S])	0.55	22.3 sec (Broke Road [S])	B	24.4 m (Broke Road [S])
I-16a	Wollombi Road/Allandale Road	Signal	0.90	26.5 sec (Average delay)	B	150.7 m (Allandale Road [N])	0.75	25.0 sec (Average delay)	B	102.4 m (Singleton Street [N])
I-16b	Wollombi Road/Vincent Street	Signal	0.74	29.7 sec (Average delay)	C	112.5.5 m (Maitland Road [E])	0.57	28.0 sec (Average delay)	B	99.7 m (Maitland Road [E])
I-27	Mandalong Road/Freemans Drive/Wyee Road	Roundabout	0.91	38.7 sec (Freemans Drive [N])	C	139.7 m (Mandalong Road [W])	0.53	14.4 sec (Freemans Drive [N])	A	31.8 m (Mandalong Road [W])
I-29a	Wangi Road/Rocky Point Road (west)	Give Way	0.07	6.2 sec (Wangi Road [S])	A	0.1 m (Wangi Road [S])	0.02	6.6 sec (Wangi Road [S])	A	0.1 m (Wangi Road [S])
I-29b	Wangi Road/Rocky Point Road (east)	Give Way	0.08	6.4 sec (Rocky Point Road [E])	A	2.8 m (Rocky Point Road [W])	0.02	5.9 sec (Rocky Point Road [W])	A	0.7 m (Rocky Point Road [W])
I-32	Golden Highway/ Existing Track Across Rail Track	Give Way	0.25	10.3 sec (Existing track [E])	A	0.1 m (Existing track [E])	0.14	9.4 sec (Existing track [E])	A	0.1 m (Golden Highway [S])
I-33	Golden Highway/Unknown Road (east of Lemington Road)	Give way	0.09	7.5 sec (Golden Highway [S])	A	0.1 m (Golden Highway [S])	0.0	0.0 sec (No turning movements)	A	0 m
I-59	New England Highway/Thomas Mitchell Drive	Stop	0.46	15.8 sec (Thomas Mitchell Dr [S])	B	19.3 m (Thomas Mitchell Dr [S])	0.34	14.2 sec (Thomas Mitchell Dr [S])	A	11.6 m (Thomas Mitchell Dr [S])
I-60	Denman Road/Thomas Mitchell Drive	Give Way	0.53	15.3 sec (Thomas Mitchell Dr [S])	B	24.9 m (Thomas Mitchell Dr [S])	0.35	12.6 sec (Thomas Mitchell Dr [S])	A	12.3 m (Thomas Mitchell Dr [S])
I-61	Denman Road/Edderton Road	Stop	0.09	12.8 sec (Edderton Road [S])	A	2.0 m (Edderton Road [S])	0.08	12.0 sec (Edderton Road [S])	A	2.0 m (Edderton Road [S])

3.0 Updated intersection results with turn treatments

The following State road intersections were identified for turn treatment upgrades:

- I-03 Golden Highway / Lemington Road: Upgrade from BAL/BAR to BAL/CHR
- I-04 Golden Highway / Comleroi Road: Upgrade from AUL/BAR to AUL/CHR(s)
- I-07 Golden Highway / Gouldsville Road: Upgrade from AUL(s)/BAR to AUL/CHR
- I-31 Putty Road / Existing track: Upgrade from BAL/BAR to AUL/BAR
- I-32 Golden Highway / Existing Track Across Rail Track: Upgrade from BAL/BAR to AUL/BAR
- I-33 Golden Highway / Unknown Road (east of Lemington Road): Upgrade from BAL/BAR to BAL/CHR
- I-69 Jerrys Plains Road (SB Ramp) / New Access track: Upgrade to AUL(s)/BAR.

The SIDRA results without and with the turn treatment upgrades are presented in **Table 3-1** to **Table 3-7**.

Table 3-1 I-03 Golden Highway / Lemington Road intersection – with and without upgrades

2028 with construction traffic				2028 with construction traffic + turn treatments			
DoS	**Delay (s)**	**LoS**	**Worst queue (m)**	**DoS**	**Delay (s)**	**LoS**	**Worst queue (m)**
AM peak hour (10.45-11.45)							
0.22	9.5 (Lemington Rd (N))	A	8.1 (Golden Hwy (E))	0.12	9.7 (Lemington Rd (N))	A	4.5 (Golden Hwy (E))
PM peak hour (16.00-17.00)							
0.17	9.1 (Lemington Rd (N))	A	6.0 (Lemington Rd (N))	0.18	8.8 (Lemington Rd (N))	A	0.6 (Lemington Rd (N))

Table 3-2 I-04 Golden Highway / Comleroi Road intersection – with and without upgrades

2028 with construction traffic				2028 with construction traffic + turn treatments			
DoS	**Delay (s)**	**LoS**	**Worst queue (m)**	**DoS**	**Delay (s)**	**LoS**	**Worst queue (m)**
AM peak hour (6.00-7.00)							
0.13	9.5 (Comleroi Rd (N))	A	4.0 (Golden Hwy (E))	0.13	9.5 (Comleroi Rd (N))	A	4.0 (Golden Hwy (E))
PM peak hour (14.30-15.30)							
0.14	11.0 (Comleroi Rd (N))	A	4.5 (Comleroi Rd (N))	0.14	11.1 (Comleroi Rd (N))	A	4.5 (Comleroi Rd (N))

Table 3-3 I-07 Golden Highway / Gouldsville Road intersection – with and without upgrades

2028 with construction traffic				2028 with construction traffic + turn treatments			
DoS	**Delay (s)**	**LoS**	**Worst queue (m)**	**DoS**	**Delay (s)**	**LoS**	**Worst queue (m)**
AM peak hour (6.00-7.00)							
0.19	13.6 (Gouldsville Rd (N))	A	5.7 (Gouldsville Rd (N))	0.25	19.8 (Gouldsville Rd (N))	B	8.9 (Gouldsville Rd (N))
PM peak hour (16.00-17.00)							
0.28	12.3 (Golden Hwy (E))	A	6.2 (Golden Hwy (E))	0.25	15.3 (Gouldsville Rd (N))	B	3.4 (Golden Hwy (E))

Table 3-4 I-31 Putty Road / Existing Access intersection – with and without upgrades

2028 with construction traffic				2028 with construction traffic + turn treatments			
DoS	Delay (s)	LoS	Worst queue (m)	DoS	Delay (s)	LoS	Worst queue (m)
AM peak hour (6.00-7.00)							
0.27	11.0 (Golden Hwy (W))	A	0	0.21	13.3 (Golden Hwy (E))	C	0
PM peak hour (16.00-17.00)							
0.48	24.7 (Northern access (N))	C	12.3 (Northern access (N))	0.61	39.0 (Northern access (N))	C	18.8 (Northern access (N))

Table 3-5 I-32 Golden Highway / Existing Access Across Rail Track intersection – with and without upgrades

2028 with construction traffic				2028 with construction traffic + turn treatments			
DoS	Delay (s)	LoS	Worst queue (m)	DoS	Delay (s)	LoS	Worst queue (m)
AM peak hour (6.00-7.00)							
0.21	8.9 (Golden Hwy (N))	A	0	0.21	8.9 (Golden Hwy (N))	A	0
PM peak hour (16.15-17.15)							
0.28	13.5 (Existing track (E))	A	7.0 (Existing track (E))	0.32	20.1 (Existing track (E))	B	11.7 (Existing track (E))

Table 3-6 I-33 Golden Highway / Unknown Road (east of Lemington Road) intersection – with and without upgrades

2028 with construction traffic				2028 with construction traffic + turn treatments			
DoS	Delay (s)	LoS	Worst queue (m)	DoS	Delay (s)	LoS	Worst queue (m)
AM peak hour (10.45-11.45)							
0.19	9.4 (Golden Hwy (S))	A	7.3 (Golden Hwy (S))	0.09	9.3 (Golden Hwy (S))	A	3.8 (Golden Hwy (S))
PM peak hour (15.45-16.45)							
0.09	7.8 (Golden Hwy (S))	A	3.1 (Unknown Rd (E))	0.09	7.9 (Golden Hwy (S))	A	3.2 (Unknown Rd (E))

Table 3-7 I-69 Jerrys Plains Road (SB Ramp) / New access track intersection – with and without upgrades

2028 without construction traffic				2028 with construction traffic + turn treatments			
DoS	Delay (s)	LoS	Worst queue (m)	DoS	Delay (s)	LoS	Worst queue (m)
AM peak hour (6.00-7.00)							
0.17	7.7 (SB Ramp (N))	A	0	0.10	7.7 (SB Ramp (N))	A	0
PM peak hour (16.00-17.00)							
0.25	9.3 (New Access Rd (E))	A	4.4 (New Access Rd (E))	0.25	9.3 (New Access Rd (E))	A	4.4 (New Access Rd (E))

4.0 Signalised intersection results with updated SIDRA parameters

Table 4-1 to **Table 4-3** provides a comparison of the isolated SIDRA model outputs, as previously prepared for the revised TTIA, and the updated results following the amendments to the lane widths and signal cycle times as requested in the TfNSW comments. All comparisons show that there is no major differences in the operational performances of the intersections.

For completeness, a comparison of the network assessment of the intersections using the common network cycle time is presented in **Table 4-4** to **Table 4-6**, noting the cycle times do not diverge greatly from the existing operating times. All comparisons show that there is no major differences in the operational performances of the intersections.

Table 4-1 I-16a Wollombi Road | Allandale Road intersection performance comparison (isolated assessment)

Scenario	EIS modelling				Updated modelling			
	DoS	Delay (s)	LoS	Worst queue (m)	DoS	Delay (s)	LoS	Worst queue (m)
2024 AM (Base)	0.89	26.0	B	86.0 (Allandale Rd (N))	0.67	19.3	B	72.0 (Allandale Rd (N))
2024 PM (Base)	0.88	26.0	B	88.9 (Allandale Rd (N))	0.75	21.1	B	91.9 (Allandale Rd (N))
2028 AM (without HTP)	0.73	20.5	B	85.1 (Allandale Rd (N))	0.74	20.7	B	83.2 (Allandale Rd (N))
2028 AM (Without HTP)	0.79	21.6	B	91.0 (Allandale Rd (N))	0.77	21.7	B	93.2 (Allandale Rd (N))
2028 AM (With HTP)	0.73	20.2	B	84.8 (Allandale Rd (N))	0.73	20.1	B	83.0 (Allandale Rd (N))
2028 PM (With HTP)	0.78	24.6	B	123.5 (Allandale Rd (N))	0.78	25.0	B	121.6 (Allandale Rd (N))

Table 4-2 I-16b Wollombi Road | Vincent Street intersection performance comparison (isolated assessment)

Scenario	EIS modelling				Updated modelling			
	DoS	Delay (s)	LoS	Worst queue (m)	DoS	Delay (s)	LoS	Worst queue (m)
2024 AM (Base)	0.48	21.2	B	38.3 (Maitland Rd (W))	0.83	17.5	B	54.2 (Maitland Rd (W))
2024 PM (Base)	0.70	28.1	B	61.5 (Maitland Rd (W))	0.67	18.9	B	61.1 (Maitland Rd (W))
2028 AM (without HTP)	0.65	19.0	B	58.0 (Maitland Rd (W))	0.61	18.0	B	56.1 (Maitland Rd (W))
2028 AM (Without HTP)	0.78	20.7	B	73.8 (Maitland Rd (W))	0.74	19.6	B	70.6 (Maitland Rd (W))
2028 AM (With HTP)	0.69	21.1	B	90.2 (Maitland Rd (W))	0.82	20.1	B	96.9 (Maitland Rd (W))
2028 PM (With HTP)	0.78	20.5	B	73.4 (Maitland Rd (W))	0.74	19.4	B	70.3 (Maitland Rd (W))

Table 4-3 I-22a Freemans Drive | Alton Road intersection performance comparison (isolated assessment)

Scenario	EIS modelling				Updated modelling			
	DoS	Delay (s)	LoS	Worst queue (m)	DoS	Delay (s)	LoS	Worst queue (m)
2024 AM (Base)	0.88	14.9	B	27.0 (Freemans Dr (W))	0.61	19.6	B	65.6 (Freemans Dr (E))
2024 PM (Base)	0.88	14.9	B	27.0 (Freemans Dr (W))	0.69	21.3	B	69.5 (Freemans Dr (E))
2028 AM (without HTP)	0.70	20.3	B	79.1 (Freemans Dr (E))	0.68	20.2	B	77.7 (Freemans Dr (E))
2028 PM (Without HTP)	0.70	23.3	B	90.9 (Freemans Dr (E))	0.69	23.2	B	89.3 (Freemans Dr (E))
2028 AM (With HTP)	0.82	25.6	B	133.3 (Freemans Dr (E))	0.81	25.2	B	129.8 (Freemans Dr (E))
2028 PM (With HTP)	0.70	22.8	B	90.0 (Freemans Dr (E))	0.70	22.8	B	90.9 (Freemans Dr (E))

Table 4-4 I-16a Wollombi Road | Allandale Road intersection performance comparison (network assessment)

Scenario	EIS modelling				Updated modelling			
	DoS	Delay (s)	LoS	Worst queue (m)	DoS	Delay (s)	LoS	Worst queue (m)
2024 AM (Base) (109 sec cycle)	0.91	26.6	B	145.9 (Allandale Rd (N))	0.91	20.5	B	145.9 (Allandale Rd (N))
2024 PM (Base) (109 sec cycle)	0.88	26.0	B	88.9 (Allandale Rd (N))	0.90	26.5	B	92.4 (Allandale Rd (N))
2028 AM (without HTP) (109 sec cycle)	0.98	29.0	C	184.5 (Allandale Rd (N))	0.99	30.5	C	197.9 (Allandale Rd (N))
2028 PM (Without HTP) (109 sec cycle)	0.97	29.8	C	190.3 (Allandale Rd (N))	0.99	31.2	C	204.0 (Allandale Rd (N))
2028 AM (With HTP) (109 sec cycle)	0.97	29.0	C	183.2 (Allandale Rd (N))	0.99	28.6	C	196.4 (Allandale Rd (N))
2028 PM (With HTP) (115 sec cycle)	0.97	33.7	C	236.3m (Allandale Rd (N))	0.99	35.5	C	252.9 (Allandale Rd (N))

Table 4-5 I-16b Wollombi Road | Vincent Street intersection performance comparison (network assessment)

Scenario	EIS modelling				Updated modelling			
	DoS	Delay (s)	LoS	Worst queue (m)	DoS	Delay (s)	LoS	Worst queue (m)
2024 AM (Base) (109 sec cycle)	0.50	20.5	B	38.2 (Maitland Rd (E))	0.51	20.6	B	62.4 (Maitland Rd (E))
2024 PM (Base) (109 sec cycle)	0.70	28.1	B	61.5 (Maitland Rd (E))	0.74	29.7	C	68.9 (Maitland Rd (E))
2028 AM (without HTP) (109 sec cycle)	0.55	24.7	B	82.3 (Maitland Rd (E))	0.55	24.7	B	82.4 (Maitland Rd (E))
2028 AM (Without HTP) (109 sec cycle)	0.85	33.1	C	144.6 (Maitland Rd (E))	0.86	33.7	C	146.9 (Maitland Rd (W))
2028 AM (With HTP) (109 sec cycle)	0.78	25.3	C	87.9 (Maitland Rd (E))	0.61	23.3	B	78.5 (Maitland Rd (E))
2028 PM (With HTP) (115 sec cycle)	0.94	40.7	C	185.0 (Maitland Rd (E))	0.95	42.4	C	190.8 (Maitland Rd (E))

Table 4-6 I-22a Freemans Drive | Alton Road intersection performance comparison (network assessment)

Scenario	EIS modelling				Updated modelling			
	DoS	Delay (s)	LoS	Worst queue (m)	DoS	Delay (s)	LoS	Worst queue (m)
2024 AM (Base) (55 sec cycle)	0.88	14.9	B	44.0 (Freemans Dr (W))	0.87	14.6	B	44.2 (Freemans Dr (W))
2024 PM (Base) (56 sec cycle)	0.98	18.0	B	58.3 (Freemans Dr (W))	0.97	17.2	B	58.6 (Freemans Dr (W))
2028 AM (without HTP) (55 sec cycle)	0.99	17.7	B	51.1 (Freemans Dr (W))	0.98	16.7	B	51.3 (Freemans Dr (W))
2028 PM (Without HTP) (67 sec cycle)	0.97	23.7	B	71.1 (Freemans Dr (W))	0.95	22.4	B	71.4 (Freemans Dr (W))
2028 AM (With HTP) (67 sec cycle)	0.97	23.7	B	71.1 (Freemans Dr (W))	0.97	23.7	B	71.1 (Freemans Dr (W))
2028 PM (With HTP) (64 sec cycle)	0.87	21.4	B	85.4 (Freemans Dr (W))	0.86	21.1	B	85.4 (Freemans Dr (W))

Annexure C – Cumulative turn warrant graphs

Technical Advisory Note

Project	HTP EIS – Amendment & Submissions Reports	**Project Number**	SCT_00822
Client	EnergyCo		
Document Name	HTP EIS – TfNSW additional traffic information request		
Version	1.0	**Date**	9 April 2026
Author	Daniel Lee	Principal Consultant	
Reviewer	Andy Yung	Director	
Authoriser	Andy Yung	Director	

Background

As part of the revised Traffic and Transport Impact Assessment (TTIA) prepared to support and inform the Amendment Report for the amended Hunter Transmission Project (HTP, the amended project), turn warrant assessments were undertaken and presented for key intersections that the HTP vehicles would access during the construction phase.

In addition, cumulative impact assessments, which considered other nearby major projects likely to coincide with HTP, was also undertaken for the following classified state road intersections:

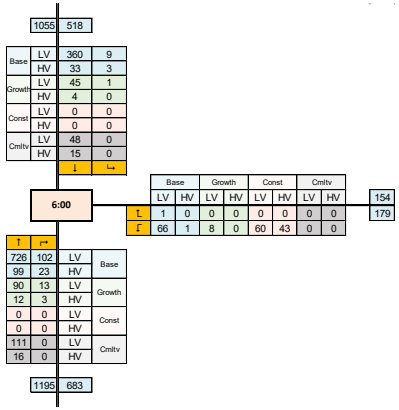
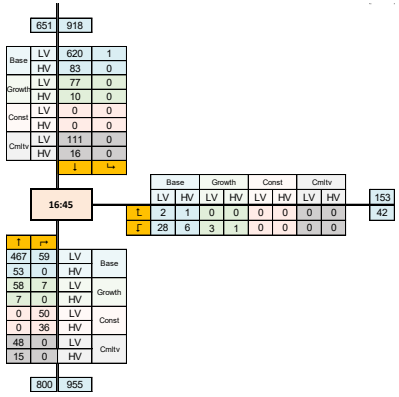
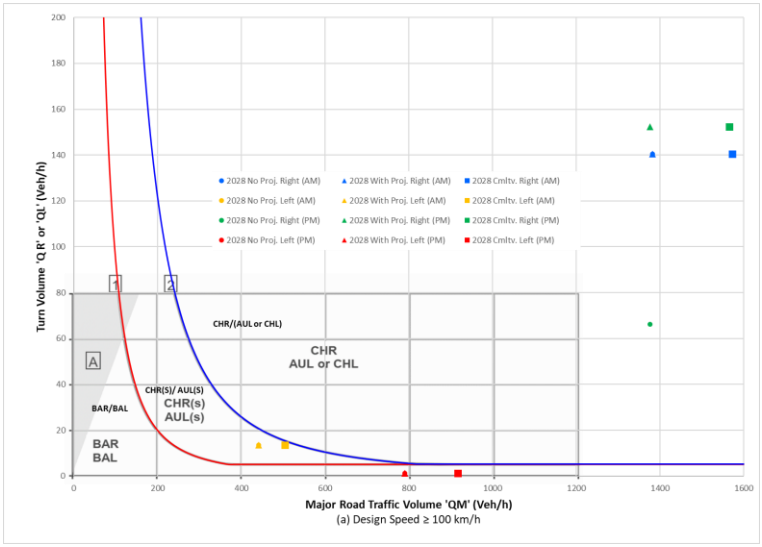
- I-01a New England Highway / Hebden Road
- I-02 New England Highway / Lemington Road
- I-03 Golden Highway / Lemington Road
- I-04 Golden Highway / Comleroi Road
- I-06 Golden Highway / Long Point Road
- I-07 Golden Highway / Gouldsville Road
- I-09 Golden Highway (Putty Road) / Broke Road
- I-10 Putty Road / Mitchell Line of Road
- I-10b Golden Highway / Range Road
- I-31 Putty Road / Existing Track
- I-32 Golden Highway / Existing Access across rail track
- I-33 Golden Highway / Unknown Road (east of Lemington Road)

The cumulative assessment volumes applied at these intersections were developed in consultation with Transport for NSW (TfNSW). The analysis showed that the intersection turn warrants identified for the listed state road intersections with the cumulative traffic volumes were the same as for the HTP project, and that no additional intersection arrangements, due to the cumulative traffic, were required based on the turn warrants.

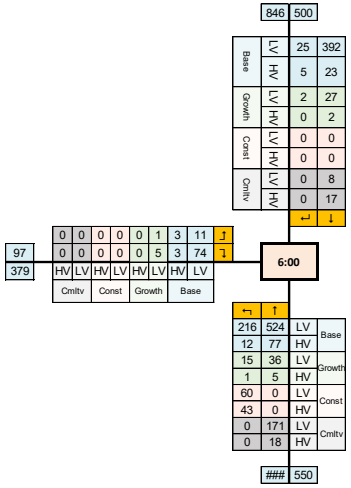
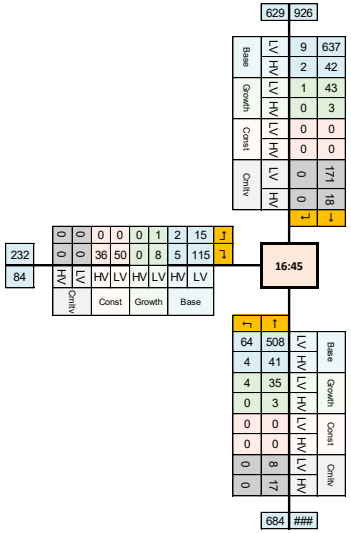
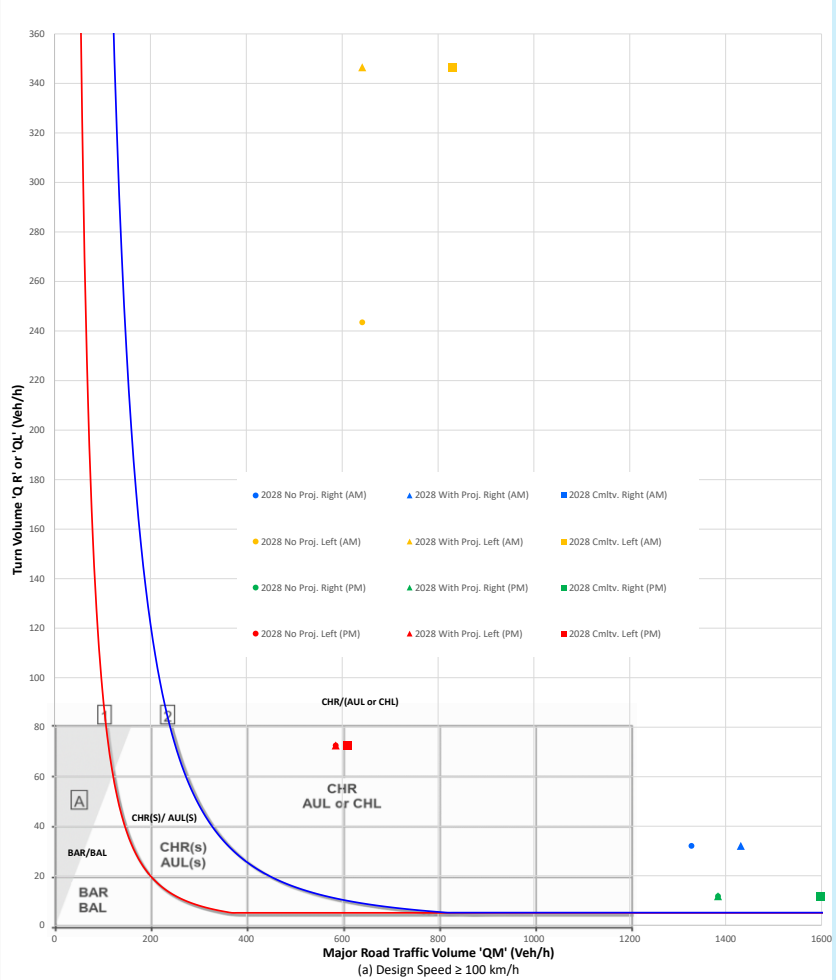
Analysis

The following figures show the individual turn warrants for the key state road intersections based on the forecast ‘no project’, ‘with project’ and ‘cumulative’ scenarios. For all intersections, it shows that the warrants for the “with project’ scenario correspond with the ‘cumulative scenario warrants.

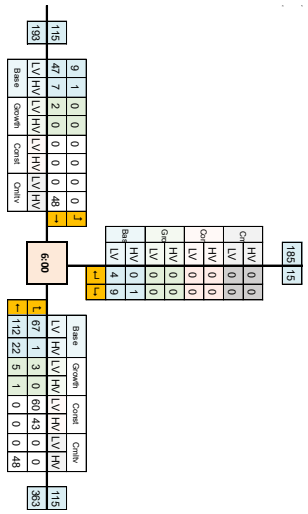
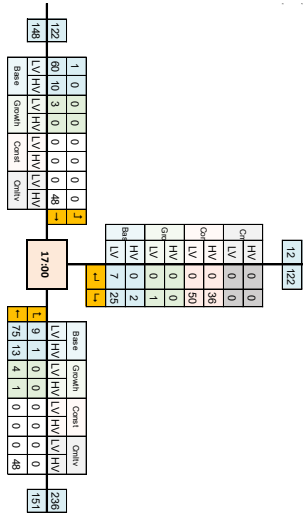
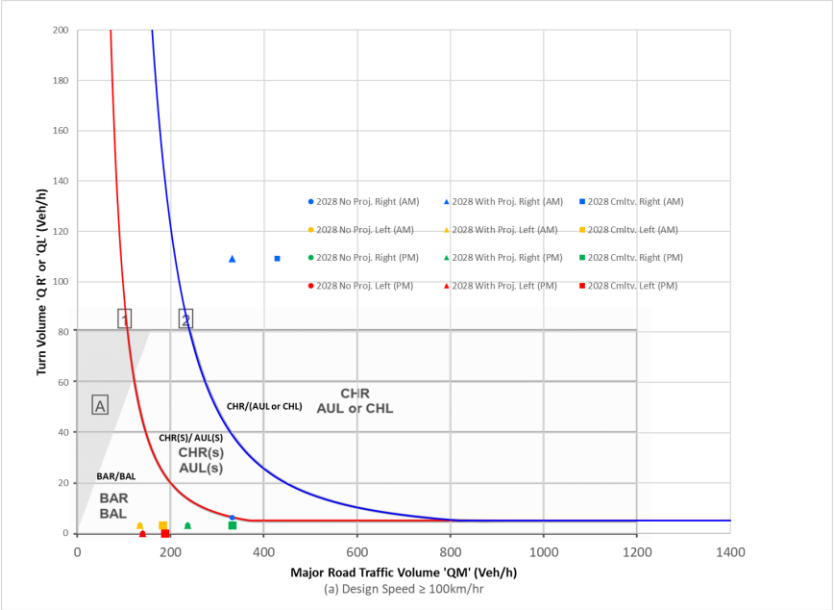
I-01a: New England Highway/Hebden Road (north) – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-01a	New England Highway and Hebden Road	Give way	AM Peak  PM Peak  	 	Currently, CHR and AUL are provided and are compliant with the current demand. During construction and the cumulative scenarios, the requirement for CHR/AUL is maintained. Thus, no upgrade is required at this intersection.

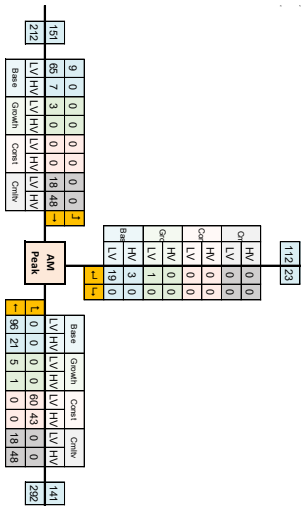
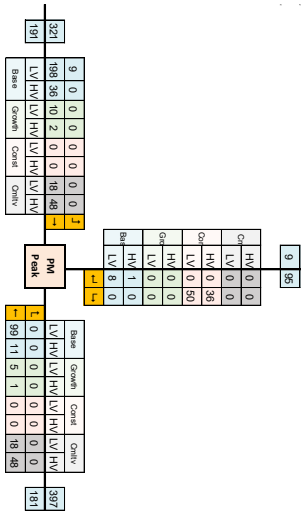
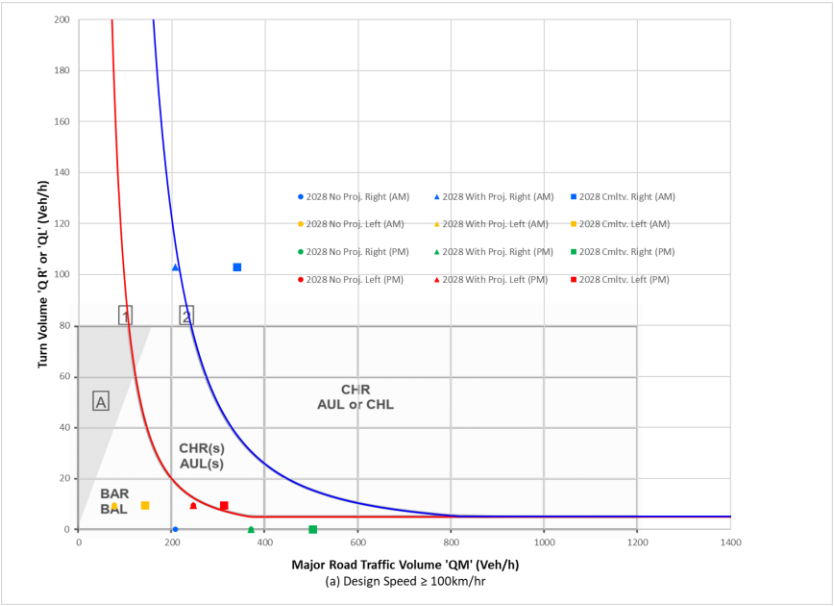
I-02: New England Highway/Lemington Road – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-02	New England Highway and Lemington Road	Stop	AM Peak  PM Peak  	 	Currently, CHR and AUL are provided and are compliant with the current demand. During construction and the cumulative scenarios, the requirement for CHR/AUL is maintained. Thus, no upgrade is required at this intersection.

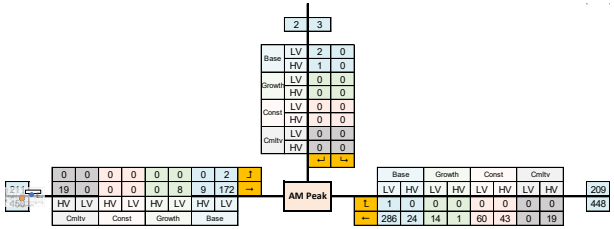
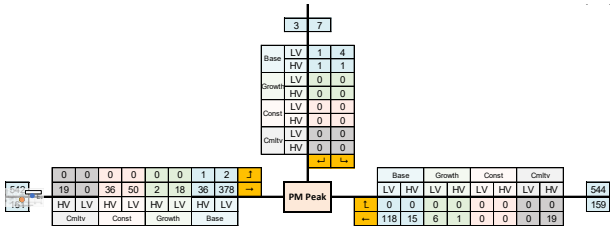
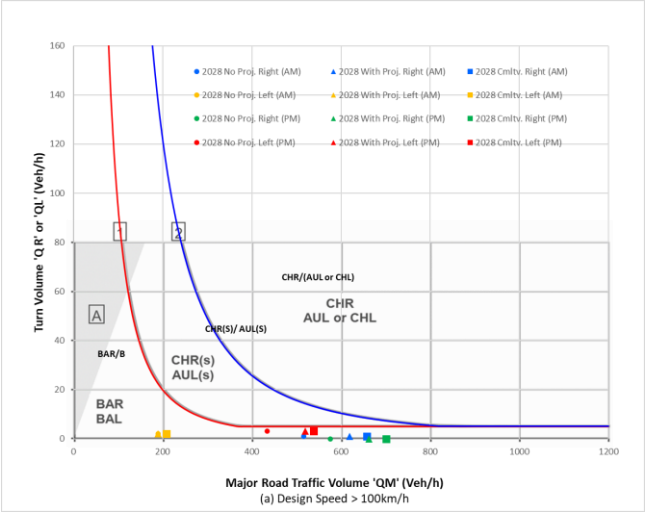
I-03: Golden Highway/Lemington Road – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-03	Golden Highway and Lemington Road	Give Way	AM Peak  PM Peak 		Currently, BAR and BAL are provided which is not compliant with the current demand. Current demand requires a CHR. An upgrade is required at this intersection. During the construction and cumulative scenarios, the requirement for a CHR is maintained.

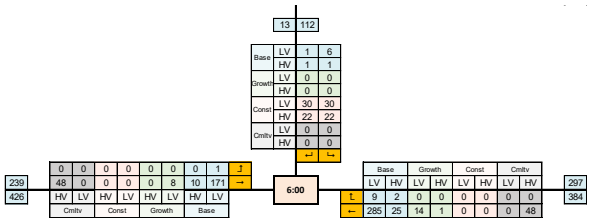
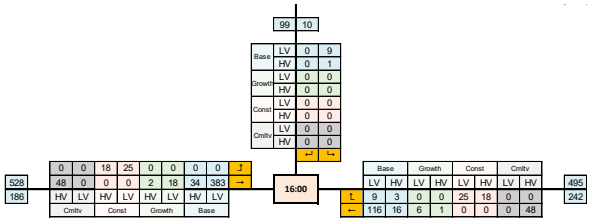
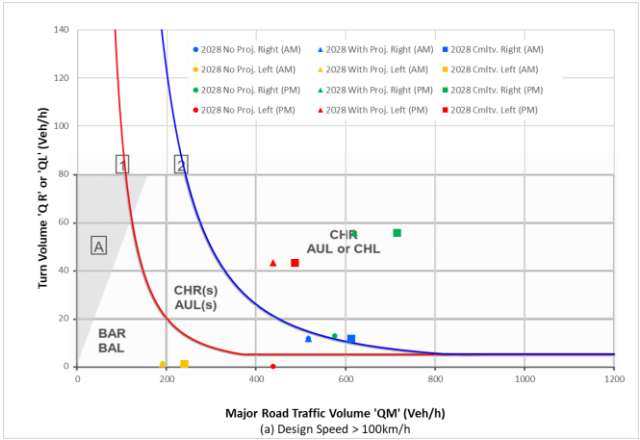
I-04: Golden Highway/Comleroi Road – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-04	Golden Highway and Comleroi Road	Give Way	AM Peak  PM Peak 		Currently, AUR and AUL are provided and are compliant with the current demand which requires BAR/BAL. As part of the construction design, CHR is required at the intersection. This requirement is also applicable under the cumulative scenario.

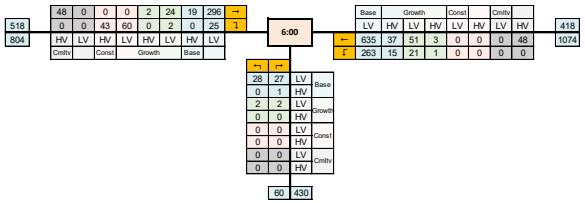
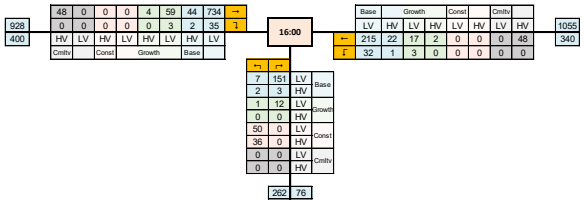
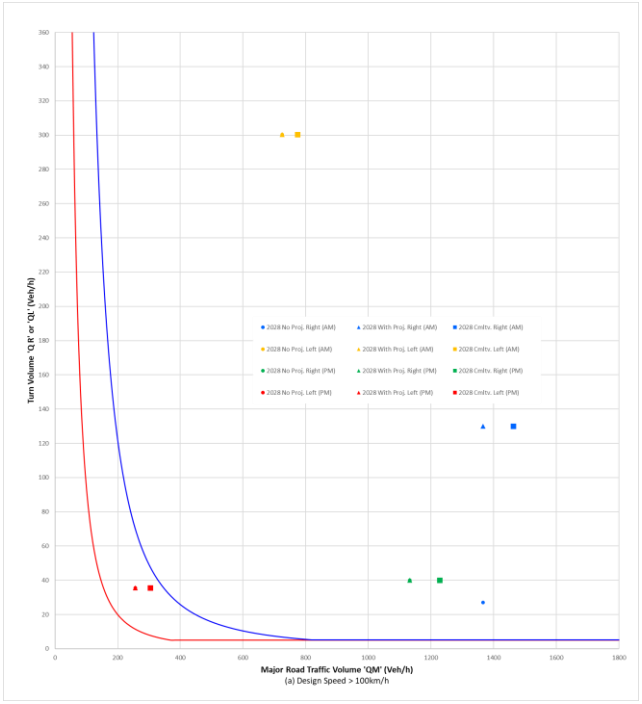
I-06: Golden Highway/Long Point Road (west) – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-06	Golden Highway and Long Point Road (west)	Give Way	AM Peak  PM Peak  	 	Currently, CHR(s) and BAL are provided and are compliant with the current demand which requires BAR/BAL. During the construction and the cumulative scenarios, the requirement for BAR/BAL is maintained. Thus, no upgrade is required.

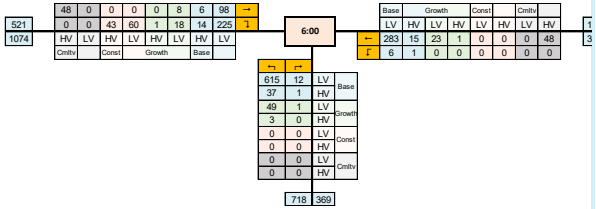
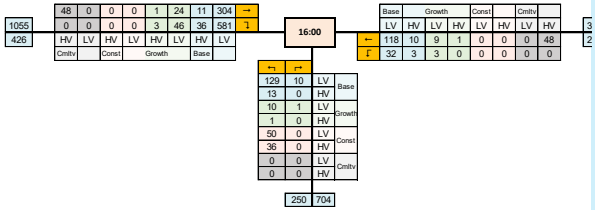
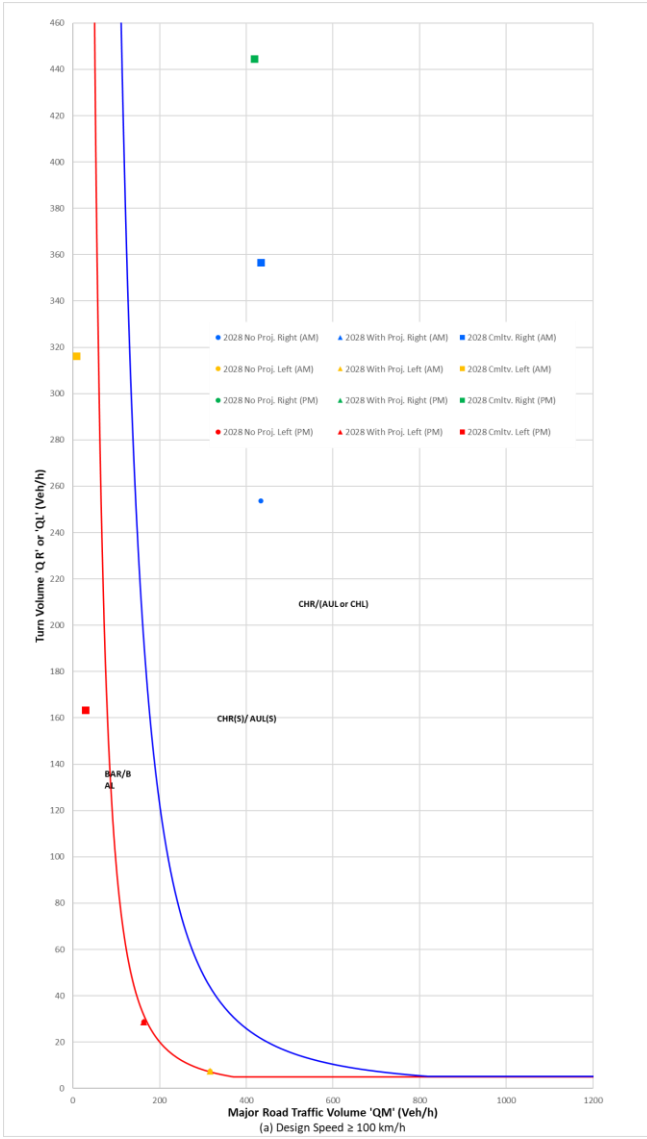
I-07: Golden Highway/Gouldsville Road – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-07	Golden Highway and Gouldsville Road	Give Way	AM Peak  PM Peak  	 	Currently, BAR and AUL(s) are provided which is not compliant with the current demand. Current demand requires a CHR. An upgrade is required at the intersection. As part of the construction design, the CHR is maintained, whilst AUL upgrade is required. This requirement is also applicable under the cumulative scenario.

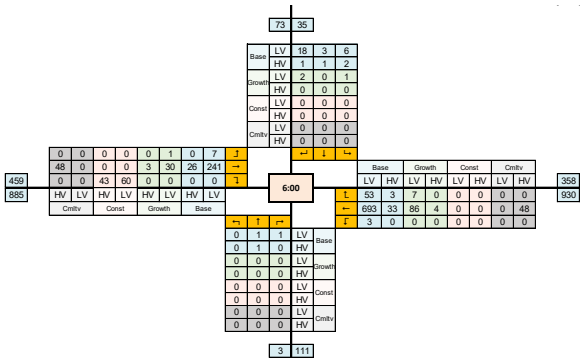
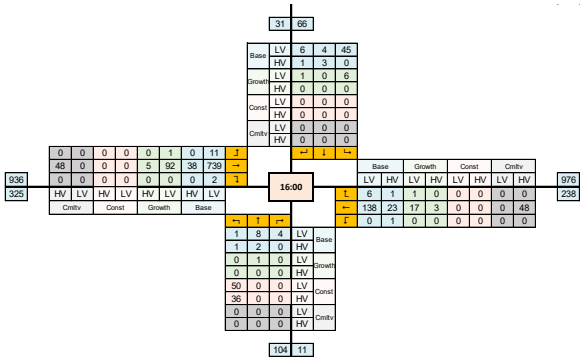
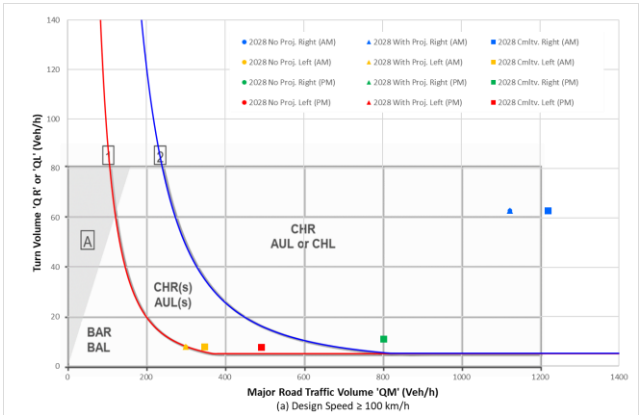
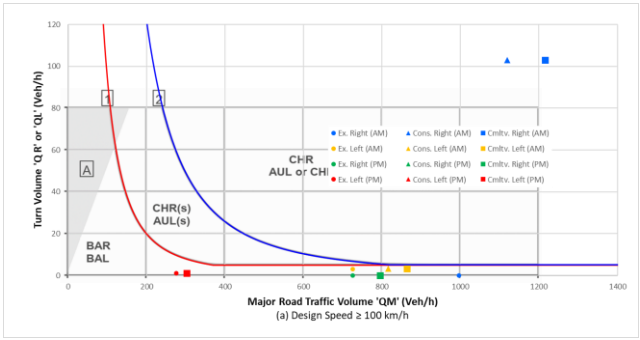
I-09: Putty Road/Broke Road – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-09	Putty Road and Broke Road	Give Way	AM Peak  PM Peak  	 	Currently, CHR and CHL are provided and are compliant with the current demand. During the construction and the cumulative scenarios, the requirement for CHR/AUL is required. Thus, no upgrade is required at this intersection.

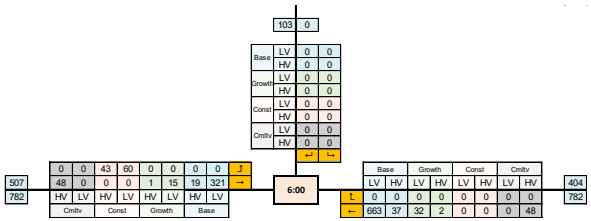
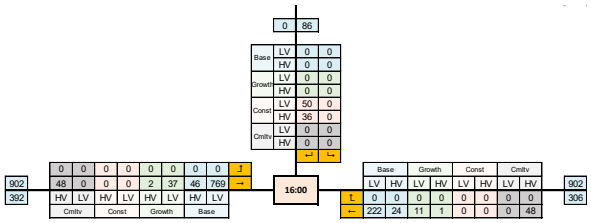
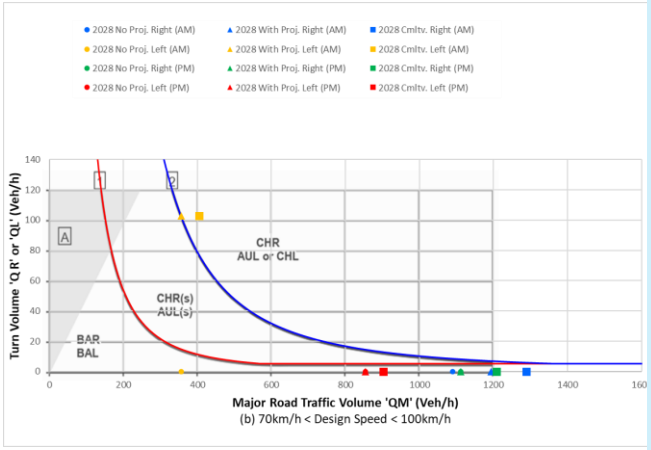
I-10: Putty Road/Mitchell Line of Road – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-10	Putty Road and Mitchell Line of Road	Give Way	AM Peak  PM Peak  	 	Currently, CHR and AUL are provided and are compliant with the current demand. During the construction and the cumulative scenarios, the requirement for CHR/AUL is maintained. Thus, no upgrade is required at this intersection.

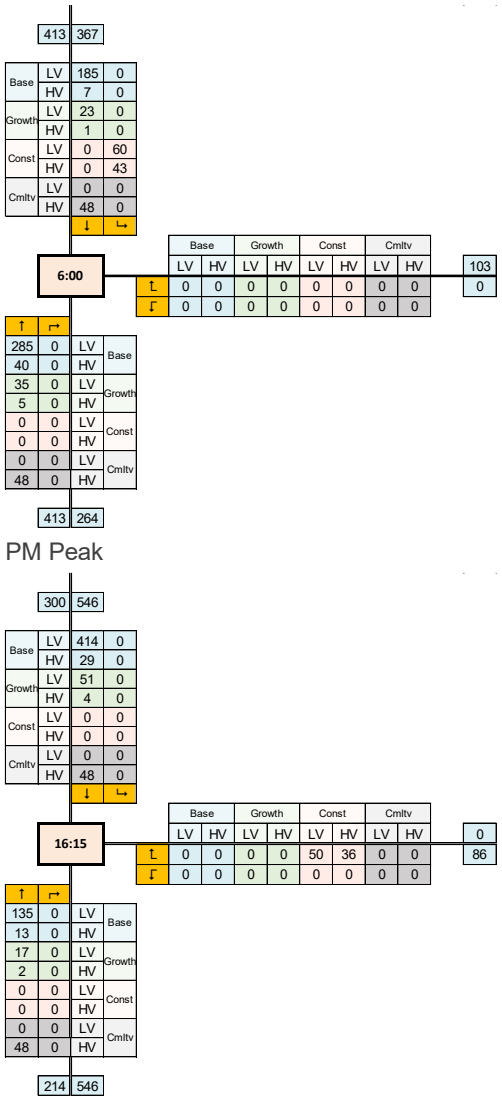
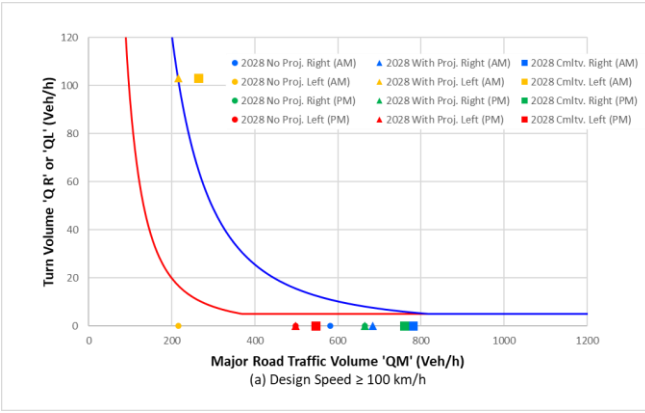
I-10b: Range Road/Golden Highway (Mitchell Line of Road) – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-10b	Range Road and Golden Highway (Mitchell Line of Road)	Give Way	AM Peak  PM Peak  	North  South  	Currently, CHR and AUL are provided and are compliant with the current demand. During the construction and the cumulative scenarios, the requirement for CHR/AUL is maintained. Thus, no upgrade is required at this intersection.

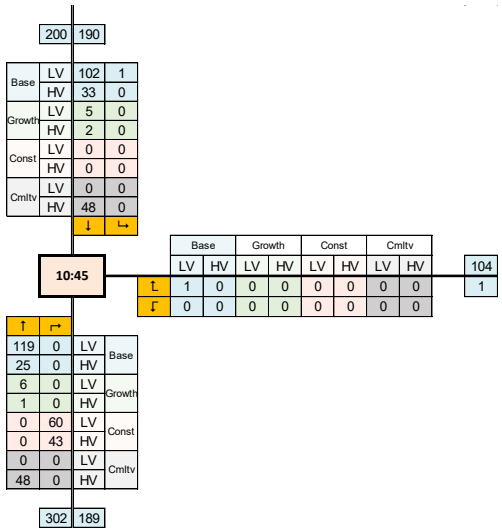
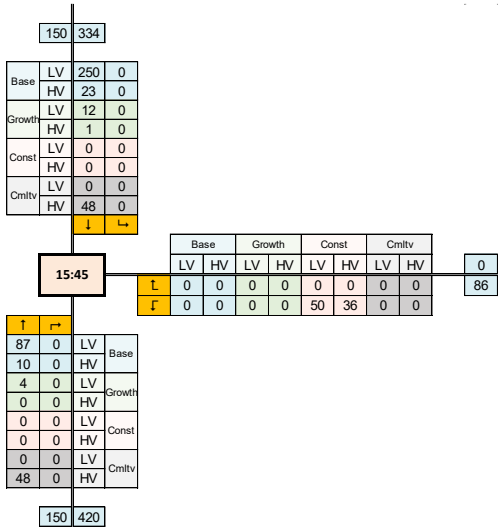
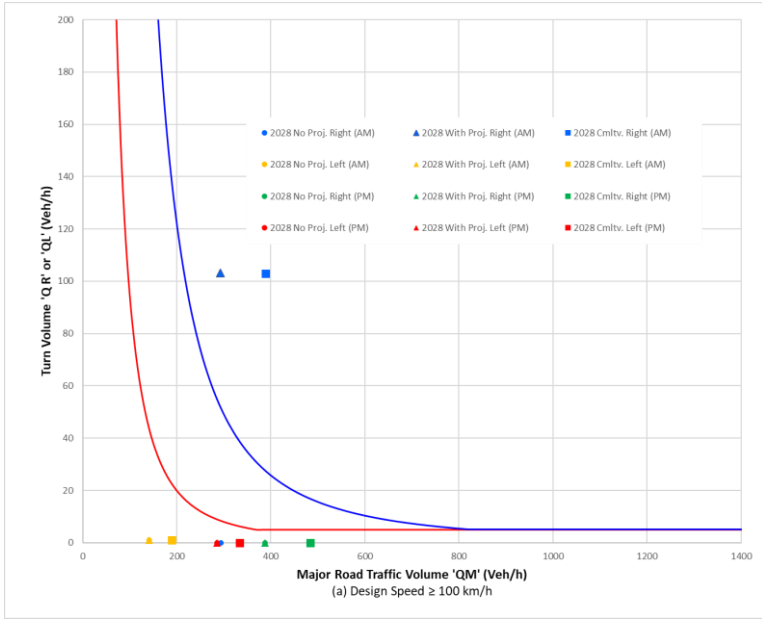
I-31: Putty Road/Existing Track – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-31	Putty Road and Existing Track	Give Way	AM Peak  PM Peak  	 	Currently, AUR and BAL are provided and are compliant with the current demand, which requires BAR/BAL. During the construction and the cumulative scenarios, the requirement of AUL is met. Thus, an upgrade is required at the intersection.

I-32: Golden Highway/Existing Access Across Rail Track (MTW) – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-32	Golden Highway and Existing Access Across Rail Track	Give Way	AM Peak  PM Peak 		Currently, BAR and BAL are provided and are compliant with the current demand. As part of the construction design, AUL upgrade is required. This requirement is also applicable under the cumulative scenario.

I-33: Golden Highway/Unknown Road (east of Lemington Road) – proposed access intersection turn warrant assessment

ID	Intersection	Control	HTP 2028 with Construction Peak Volumes	Turn Warrant Assessment	Impact
I-33	Golden Highway and Unknown Road (east of Lemington Road)	Give Way	AM Peak  PM Peak 		Currently, BAR and BAL are provided and are compliant with the current demand. As part of the construction design, CHR upgrade is required. This requirement is also applicable under the cumulative scenario.

Annexure D - Technical Advisory Note for HTP EIS – State road intersection TT3 mitigation measures

Technical Advisory Note

Project	HTP EIS – Amendment & Submissions Reports	**Project Number**	SCT_00822
Client	EnergyCo		
Document Name	HTP EIS – State road intersection TT3 mitigation measures		
Version	3.0	**Date**	17 March 2026
Author	Daniel Lee	Principal Consultant	
Reviewer	Nick Bernard	Director	
Authoriser	Nick Bernard	Director	

1.0 Introduction

As part of the revised Traffic and Transport Impact Assessment (TTIA) prepared to support and inform the Amendment Report for the amended Hunter Transmission Project (HTP, the amended project), measures were identified to mitigate potential traffic and transport impacts of the amended project at State road intersections.

Some of these mitigation measures (referenced as TT2) were infrastructure upgrades, such as turning lanes. Other mitigation measures (referenced as TT3) were restrictions on times that HTP construction traffic should use particular intersections, including seven State road intersections, to avoid peak traffic times and/or restrictions on certain turning movements at these intersections during the peak traffic times.

While the main objective of these TT3 mitigation measures is to avoid adding to particular intersection movements that are forecast to operate poorly at peak traffic times, restricting these construction traffic movements at peak traffic times also addresses a perceived safety risk that drivers who have to wait a long time to enter the State road from a side road may engage in risky driving behaviour by making an unsafe turn onto the State road. By restricting construction traffic turning movements, no construction traffic is added to the movements that are forecast to experience long delays at peak traffic times. In addition, variable message signs (VMS) will be installed at locations agreed with Transport for NSW (TfNSW) to communicate possible additional delays at intersections during the HTP construction period.

It is also noted that, of the seven State road intersections at which the TT3 mitigation measures are proposed, at two of the intersections (New England Highway / Hebden Road and Golden Highway / Range Road), measures would be required without HTP construction traffic, and at another two intersections (Golden Highway (Putty Road) / Broke Road and Putty Road / Mitchell Line of Road), measures are only required in the cumulative traffic scenario. This cumulative scenario, defined in the revised TTIA, involves the consideration of other major projects with the potential for cumulative traffic and transport impacts alongside the amended project. As requested by TfNSW, it also included additional renewable energy projects that had not yet been granted access rights, and is therefore considered a conservative future traffic scenario, as some of these projects may not progress.

The purpose of this technical advisory note (TAN) is to:

– Provide further detail on the seven State road intersections where TT3 mitigation measures are proposed and why it was identified that time-restriction mitigation measures were the most appropriate mitigation for those intersections during construction of the HTP.

– Provide an indication of how these proposed TT3 mitigation measures would be implemented as part of the project's construction traffic management plan and how compliance could be monitored.

A summary of the seven State road intersections with proposed time-restricted mitigation measures is presented in **Table 1**, along with the proposed measures. Each intersection is discussed in turn in the analysis section following.

Table 1 Proposed time-restricted traffic and transport mitigation measures

Ref	Intersection	Mitigation measure
TT3	To minimise intersection performance impacts as a result of construction traffic, the following restrictions will be imposed on construction vehicles during the specified times:	
	– New England Highway / Hebden Road (I-01a)	– No construction traffic during the HTP AM peak hour (6-7am) except for left out from Hebden Road. – No construction traffic during the PM network peak hour (4.45-5.45pm) except for right into Hebden Road
	– New England Highway / Lemington Road (I-02)	– No construction traffic before 7am. – No construction traffic during the PM network peak hour (4.45-5.45pm)
	– New England Highway / Pikes Gully Road (I-02a)	– No construction traffic during the HTP AM peak hour (6-7 am) except for left out from Pikes Gully Road – No construction traffic during the PM network peak hour (4.45-5.45pm) except for left out from Pikes Gully Road [*This PM peak hour restriction was missing from the set of mitigation measures submitted in the revised TTIA, but it is required, based on the analysis*]
	– Golden Highway (Putty Road) / Broke Road (I-09)	– No construction traffic before 7am
	– Putty Road / Mitchell Line of Road (I-10)	– No construction traffic during the PM network peak hour (4-5pm)
	– Golden Highway / Range Road (I-10b)	– No construction traffic before 7am – No construction traffic during the PM network peak hour (4-5pm).
	– Wine Country Drive / Broke Road (I-14)	– Minimise heavy vehicle movements during the PM network peak hour (3.15-4.15pm). – Light vehicles directed to use alternative route (Mount View Road, Oakey Creek Road, McDonalds Road).
	Compliance with the above restrictions will be monitored and audited in accordance with the project's Traffic Management Plan (TMP). In addition to these restrictions, variable message signs to communicate possible delays will be installed at the Golden Highway / Range Road intersection (I-10b), Wine Country Drive / Broke Road intersection (I-14), and at any other location agreed with Transport for NSW.	

Source: Hunter Transmission Project Amendment Report: Revised Traffic and Transport Impact Assessment, 17 February 2026

2.0 Analysis

2.1 New England Highway / Hebden Road intersection (I-01a)

The intersection is a T-intersection, under priority control. It has a channelised right (CHR) turn bay and an auxiliary left (AUL) turn bay. The New England Highway also provides two northbound through lanes in the vicinity of the intersection and two southbound lanes south of the intersection. The layout of the intersection is shown in **Figure 1**.

Figure 1 New England Highway / Hebden Road intersection (I-01a) – existing layout

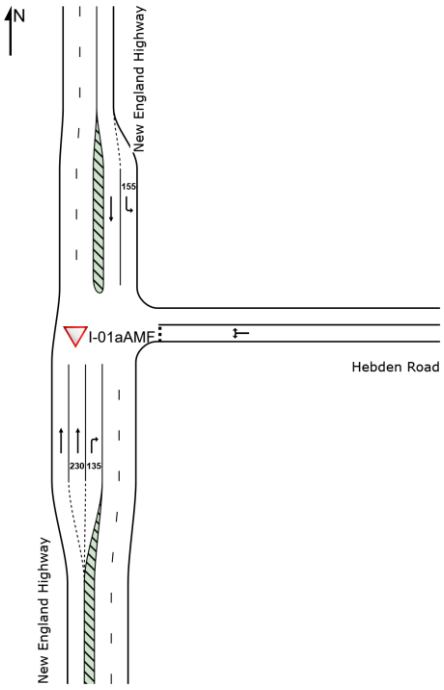


Figure 2 presents the base, growth and construction traffic volumes in the 2028 AM and PM peak hours. The construction traffic volumes shown are construction vehicles travelling from the Hebden Road construction support site to the HTP corridor and Bayswater South Switching Station in the south in the AM peak hour and then returning from the south in the PM peak hour.

Figure 2 New England Highway / Hebden Road intersection (I-01a) – 2028 traffic volumes

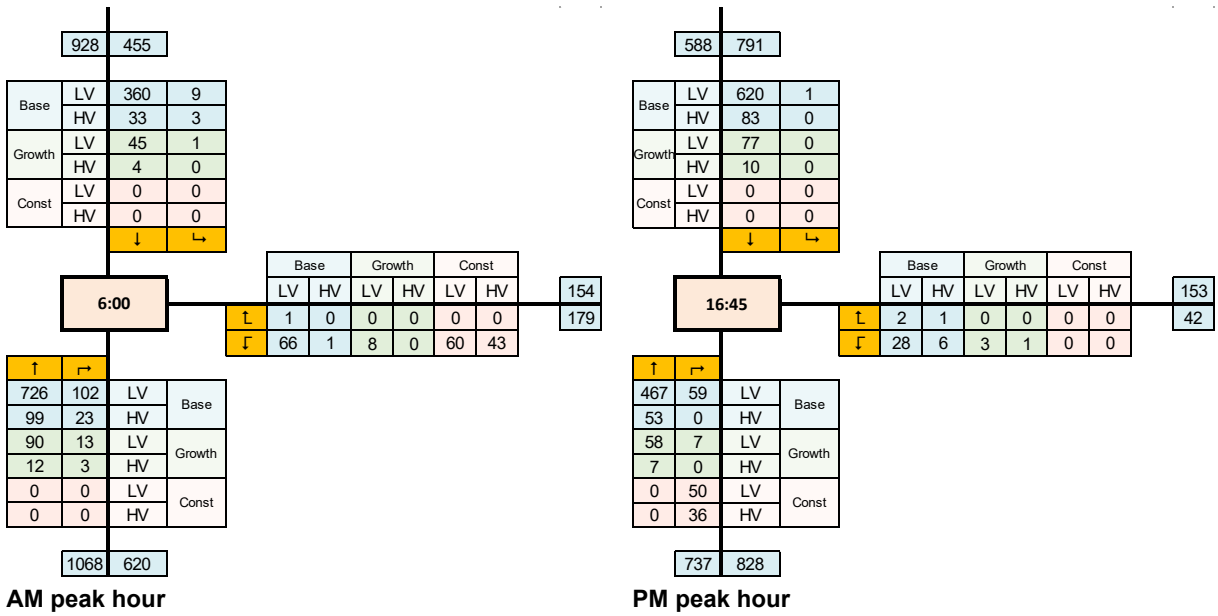


Table 2 compares the overall intersection performance, including predicted background traffic growth, with and without construction traffic for the 2028 weekday AM and PM peak hours.

Without the project construction traffic, the intersection is forecast to perform at LoS F in the 2028 weekday AM and PM peak hours. This due to a small number of vehicles (one vehicle in the AM peak hour and three vehicles in the PM peak hour) turning right from Hebden Road onto the New England in the peak hours. All other movements at the intersection operate at a satisfactory level of service and any queuing along the New England Highway is small and retained within the turn bays.

With construction traffic, the right turn out of Hebden Road continues to perform at LoS F due to these future base conditions, i.e. not as a result of construction traffic.

Table 2 New England Highway / Hebden Road intersection (I-01a) performance impact – with and without project scenario

Intersection	Approach	Turn	2028 AM without construction					2028 AM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
New England Highway-Hebden Road 6:00 - 7:00 AM	South: New England Highway	Through	976	0.27	0.0	A	0.0	976	0.27	0.0	A	0.0
		Right	148		11.6	A	6.7	148		11.8	A	6.7
	East: Hebden Road	Left	79	0.12	9.5	A	2.9	187	0.32	12.1	A	11.5
		Right	1		81.6	F	2.9	1		94.0	F	11.5
	North: New England Highway	Left	14	0.25	8.2	A	0.0	14	0.25	8.4	A	0.0
		Through	465		0.0	A	0.0	465		0.0	A	0.0
	All Vehicles		**1683**	**0.27**	**81.6**	**F**	**6.7**	**1791**	**0.32**	**94.0**	**F**	**11.5**

Intersection	Approach	Turn	2028 PM without construction					2028 PM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
New England Highway-Hebden Road 16:45 - 17:45 PM	South: New England Highway	Through	616	0.17	0.0	A	0.0	616	0.54	0.0	A	0.0
		Right	69		15.1	B	3.8	160		25.8	B	19.4
	East: Hebden Road	Left	40	0.38	20.9	B	6.8	40	0.52	22.2	B	8.3
		Right	3		152.2	F	6.8	3		139.3	F	8.3
	North: New England Highway	Left	1	0.46	7.8	A	0.0	1	0.46	7.8	A	0.0
		Through	832		0.1	A	0.0	832		0.1	A	0.0
	All Vehicles		**1561**	**0.46**	**152.2**	**F**	**6.8**	**1652**	**0.54**	**139.3**	**F**	**19.4**

Table 3 presents more detail modelling output for the **cumulative scenario** for the 2028 weekday AM and PM peak hours. The cumulative scenario is defined in the revised TTIA and involves the consideration of other nearby major projects with the potential for cumulative traffic and transport impacts alongside the amended project.

In the cumulative scenario, the right turn out of Hebden Road is still forecast to operate at LoS F. The red circles highlight the low volumes of right turning vehicles from Hebden Road.

Table 3 New England Highway / Hebden Road intersection (I-01a) performance – cumulative scenario

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
New England Highway / Hebden Road (6:00-7:00)	South: New England Highway	Through	1109	0.31	0.0	A	0
		Right	148		12.9	A	7.7
	East: Hebden Road	Left	187	0.37	13.7	A	13.8
		Right	1		151.3	F	13.8
	North: New England Highway	Left	14	0.29	8.4	A	0.0
		Through	532		0.1	A	0.0
	All Vehicles		**1992**	**0.37**	**151.3**	**F**	**13.8**

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
New England Highway / Hebden Road (PM peak: 16:45-17:45)	South: New England Highway	Through	686	0.86	0.0	A	0
		Right	161		55.0	D	38.4
	East: Hebden Road	Left	41	0.79	50.5	D	17.3
		Right	3		202.4	F	17.3
	North: New England Highway	Left	1	0.54	7.8	A	0.0
		Through	973		0.1	A	0.0
	All Vehicles		**1865**	**0.86**	**202.4**	**F**	**38.4**

Several infrastructure options were tested to see if they would assist in providing a better level of service for the right turn out of Hebden Road, including a separate left turn lane out of Hebden Road and a seagull intersection arrangement. However, in both instances, the right turn out of Hebden Road remained at LoS F.

Other infrastructure options that would relieve the LoS F performance for the right turn movement out of Hebden Road would be converting the intersection into a roundabout or a signalised intersection. However, this would have the effect of introducing delay for through vehicles on the New England Highway for the benefit of a very low volume of vehicles seeking to turn right out of Hebden Road. For this reason, along with the significant expense of converting the intersection, these options were not considered appropriate.

This was discussed with TfNSW in a meeting on 13 November 2025 and it was agreed that, as an infrastructure upgrade would not relieve the issue at this intersection, the best solution was a time restriction for certain movements so as not to add vehicles to the right turn movement from Hebden Road in the peak hours.

As construction traffic from the Hebden Road construction support site would be exiting from Hebden Road in the AM peak hour and then returning in the PM peak hour, it was agreed that the most appropriate restrictions would be no construction traffic during the HTP AM peak hour (6-7am), except for left out from Hebden Road, which would not cause any further delay to the right turn out, and no construction traffic during the PM network peak (4.45-5.45pm) except for right into Hebden Road.

2.2 New England Highway / Lemington Road (I-02)

The intersection is a T-intersection, with stop control on Lemington Road and a seagull intersection arrangement. It has a channelised right (CHR) turn bay and an auxiliary left (AUL) turn bay. The layout of the intersection is shown in **Figure 3**.

Figure 3 New England Highway / Lemington Road intersection (I-02) – existing layout

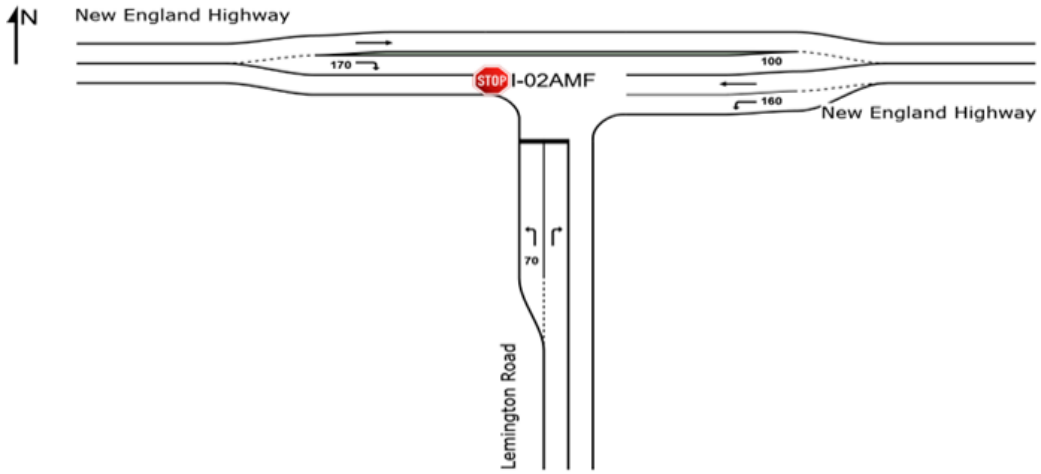


Figure 4 presents the base, growth and construction traffic volumes in the 2028 AM and PM peak hours. The construction traffic volumes shown are construction vehicles travelling from the Gouldsville Road construction support site and the HTP corridor in the AM peak hour and then returning in the PM peak hour.

Figure 4 New England Highway / Lemington Road intersection (I-02) – 2028 traffic volumes

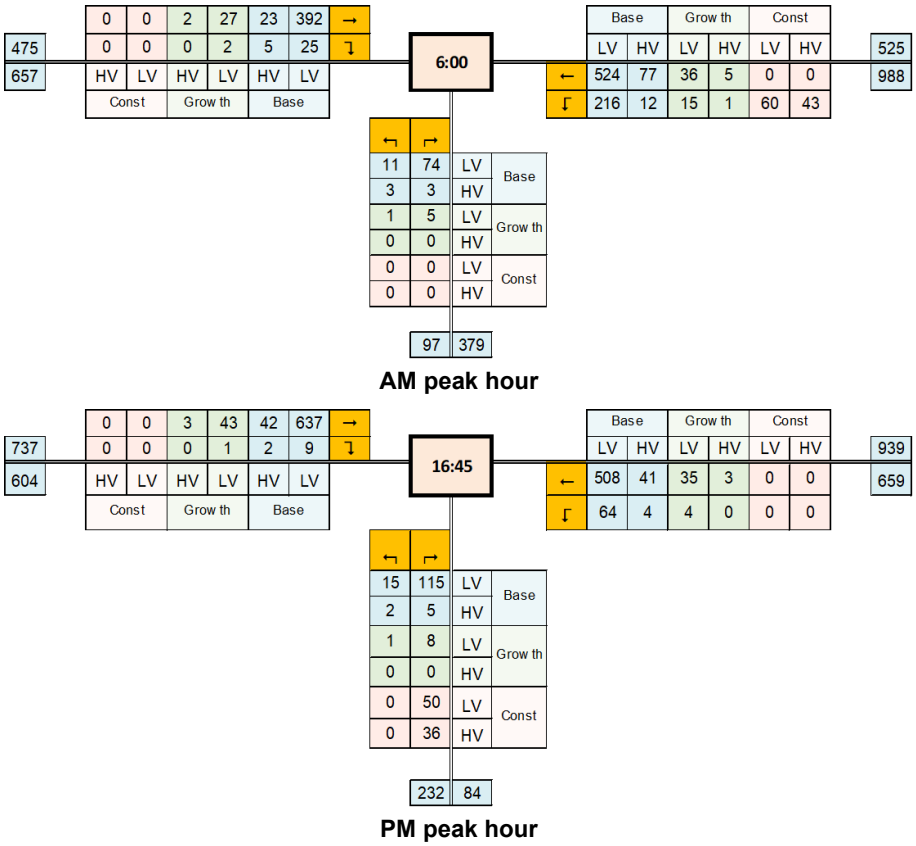


Table 3 compares the overall intersection performance, including predicted background traffic growth, with and without construction traffic for the 2028 weekday AM and PM peak hours.

With construction traffic, the intersection is forecast to continue to operate at LoS C during the AM peak hour, similar to conditions without construction traffic. However, during the PM peak hour, the intersection performance is forecast to worsen to LOS E, due to construction volumes adding to the right turn from Lemington Road onto the New England Highway. All other movements at the intersection operate at a satisfactory level of service and any queuing along the New England Highway is small and retained within the turn bays.

Table 4 New England Highway / Lemington Road intersection (I-02) performance impact – with and without project scenario

Intersection	Approach	Turn	2028 AM without construction					2028 AM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
New England Hwy-Lemington Rd 6:00 - 7:00 AM	South: Lemington Road	Left	16	0.42	19.2	B	0.0	16	0.49	19.2	B	1.1
		Right	86		33.2	C	12.1	86		38.4	C	13.9
	East: New England Highway	Left	257	0.38	7.8	A	0.0	365	0.38	7.4	A	0.0
		Through	676		0.1	A	0.0	676		0.1	A	0.0
	West: New England Highway	Through	467	0.25	0.0	A	0.0	467	0.25	0.0	A	0.0
		Right	34		18.6	B	2.6	34		21.9	B	3.1
			1536	**0.42**	**33.2**	**C**	**12.1**	**1644**	**0.49**	**38.4**	**C**	**13.9**

Intersection	Approach	Turn	2028 PM without construction					2028 PM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
New England Hwy-Lemington Rd 16:45 - 17:45 PM	South: Lemington Road	Left	19	0.45	16.1	B	0.0	19	0.93	16.1	B	1.0
		Right	135		27.0	B	14.9	225		69.2	E	81.3
	East: New England Highway	Left	76	0.33	8.0	A	0.0	76	0.33	8.0	A	0.0
		Through	618		0.0	A	0.0	618		0.0	A	0.0
	West: New England Highway	Through	763	0.41	0.1	A	0.0	764	0.41	0.1	A	0.0
		Right	13		13.7	A	0.7	13		13.7	A	0.7
			1623	**0.45**	**27**	**B**	**14.9**	**1715**	**0.93**	**69.2**	**E**	**81.3**

Table 5 presents the modelling output for the **cumulative scenario** for the 2028 weekday AM and PM peak hours. The right turn out of Lemington Road is forecast to worsen to LoS F in both AM and PM peak hours in the cumulative scenario.

Table 5 New England Highway / Lemington Road intersection (I-02) performance – cumulative scenario

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
New England Highway / Lemington Road (6:00-7:00)	South: Lemington Road	Left	16	0.88	28.1	B	1.8
		Right	86		105.7	F	32.5
	East: New England Highway	Left	365	0.48	8.3	A	0
		Through	875		0.1	A	0
	North: New England Highway	Through	494	0.27	0.0	A	0.0
		Right	34		35.2	C	5.1
	All Vehicles		**1869**	**0.88**	**105.7**	**F**	**32.5**

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
New England Highway / Lemington Road (PM peak: 16:45-17:45)	South: Lemington Road	Left	19	1.03	16.8	B	1.1
		Right	225		112.8	F	126
	East: New England Highway	Left	76	0.35	8.0	A	0
		Through	644		0.0	A	0
	North: New England Highway	Through	963	0.52	0.1	A	0.0
		Right	13		14.2	B	0.7
	All Vehicles		**1940**	**1.03**	**112.8**	**F**	**126**

As the intersection already includes a separate left turn lane on the Lemington Road approach and a seagull intersection arrangement, the only infrastructure options that would relieve the LoS F performance for the right turn out of Lemington Road would be converting the intersection into a roundabout or a signalised intersection. However, this would have the effect of introducing delay for the through movement on the New England Highway, which is the dominant movement at the intersection. For this reason, along with the significant expense of converting the intersection, these options were not considered appropriate.

This was discussed with TfNSW in a meeting on 13 November 2025 and it was agreed that, as an infrastructure upgrade would not relieve the issue at this intersection, the best solution was a time restriction for construction vehicles in the peak hours. It was agreed that the most appropriate restrictions would be no construction traffic before 7am and during the PM network peak (4.45-5.45pm).

2.3 New England Highway / Pikes Gully Road (I-02a)

The intersection is a T-intersection, under priority control. It has a channelised right (CHR) turn bay and an auxiliary left (AUL) turn bay. The layout of the intersection is shown in **Figure 5**.

Figure 5 New England Highway / Pikes Gully Road intersection (I-02a) – existing layout

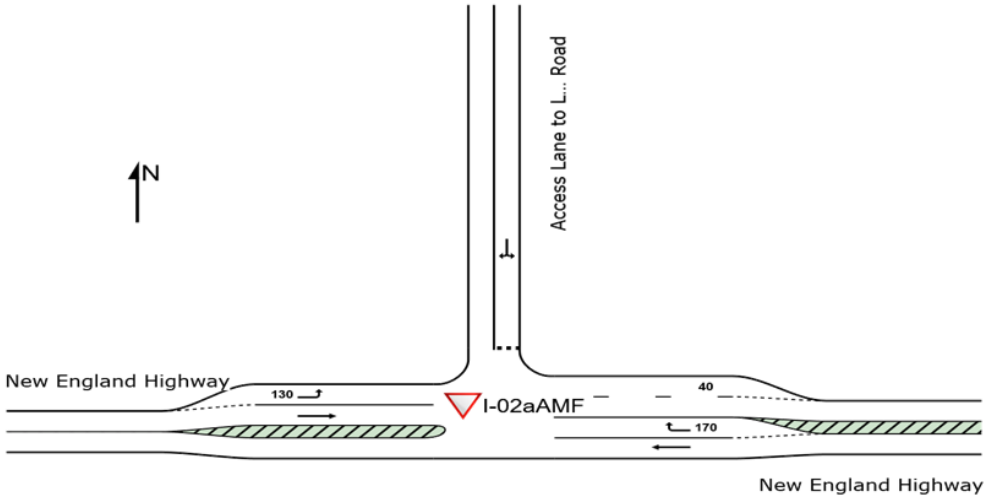


Figure 6 presents the base, growth and construction traffic volumes in the 2028 AM and PM peak hours. The construction traffic volumes shown are construction vehicles travelling from the Pikes Gully Road construction support site to the HTP corridor and the existing transmission line to support restringing / tower strengthening in the AM peak hour and then returning in the PM peak hour.

Figure 6 New England Highway / Pikes Gully Road intersection (I-02a) – 2028 traffic volumes

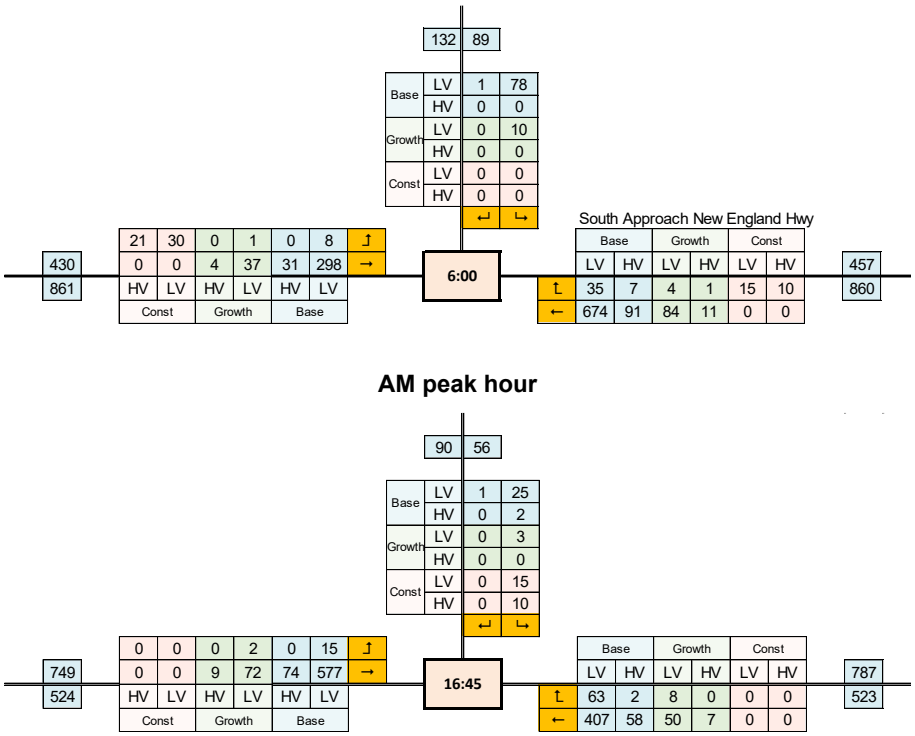


Table 6 compares the overall intersection performance, including predicted background traffic growth, with and without construction traffic for the 2028 weekday AM and PM peak hours.

During the AM peak hour, the intersection performance is forecast to worsen to LoS E with construction traffic due to an eight second delay increase for a single vehicle turning right from Pikes Gully Road onto the New England Highway. All other movements at the intersection operate at LoS A and any queuing along the New England Highway is small and retained within the turn bays.

During the PM peak hour, the intersection is forecast to operate at a similar level with and without construction traffic.

Table 6 New England Highway / Pikes Gully Road intersection (I-02a) performance impact – with and without project scenario

Intersection	Approach	Turn	2028 AM without construction					2028 AM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
New England Highway-Pikes Gully Road 6:00 - 7:00 AM	East: New England Highway	Through	905	0.50	0.1	A	0.0	905	0.50	0.1	A	0.0
		Right	49		10.6	A	1.8	76		11.7	A	3.5
	North: Access Lane to Liddell Station Road	Left	93	0.12	7.6	A	2.9	93	0.09	6.4	A	2.2
		Right	1		52.9	D	2.9	1		60.7	E	2.2
	West: New England Highway	Left	9	0.21	7.8	A	0.0	63	0.21	8.7	A	0.0
		Through	389		0.0	A	0.0	389		0.1	A	0.0
	All Vehicles		**1447**	**0.50**	**52.9**	**D**	**2.9**	**1527**	**0.50**	**60.7**	**E**	**3.5**

Intersection	Approach	Turn	2028 PM without construction					2028 PM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
New England Highway-Pikes Gully Road 16:45 - 17:45 PM	East: New England Highway	Through	549	0.31	0.0	A	0.0	549	0.31	0.0	A	0.0
		Right	77		14.5	B	4.1	77		14.5	B	4.1
	North: Access Lane to Liddell Station Road	Left	32	0.09	12.6	A	2.0	58	0.19	15.5	B	4.7
		Right	1		49.5	D	2.0	1		51.8	D	4.7
	West: New England Highway	Left	18	0.42	7.8	A	0.0	18	0.42	7.8	A	0.0
		Through	771		0.1	A	0.0	771		0.1	A	0.0
	All Vehicles		**1447**	**0.42**	**49.5**	**D**	**4.1**	**1474**	**0.42**	**51.8**	**D**	**4.7**

Table 7 presents more detail modelling output for the **cumulative scenario** for the 2028 weekday AM and PM peak hours. The single vehicle turning right out of Pikes Gully Road is forecast to operate at LoS F. The red circles highlight the low volume of right turning vehicles from Pikes Gully Road.

Table 7 New England Highway / Pikes Gully Road intersection (I-02a) performance – cumulative scenario

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
New England Highway / Pikes Gully Road (6:00-7:00)	East: New England Highway	Through	1104	0.61	0.1	A	0
		Right	98		12.0	A	4.6
	North: Access lane to Liddell Station Road	Left	115	0.13	6.8	A	3.3
		Right	1		136.5	F	3.3
	West: New England Highway	Left	63	0.23	8.7	A	0.0
		Through	416		0.2	A	0.0
	All Vehicles		**1797**	**0.61**	**136.5**	**F**	**4.6**

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
New England Highway / Pikes Gully Road (16.45-17.45 PM) Cumulative	East: New England Highway	Through	576	0.35	0.1	A	0.0
		Right	99		22.6	B	9.3
	rth: Access Lane to Liddell Station Ro	Left	80	0.12	10.6	A	3.4
		Right	1		108.4	F	3.4
	West: New England Highway	Left	18	0.53	7.8	A	0.0
		Through	969		1.1	A	0.0
	All Vehicles		**1743**	**0.53**	**108.4**	**F**	**9.3**

Similar to the Hebden Road intersection (I-01), infrastructure options were tested to see if they would assist in providing a better level of service for the right turn out of Pikes Gully Road, including a separate left turn lane out of Pikes Gully Road and a seagull intersection arrangement. However, in both instances, the right turn out of Pikes Gully Road remained at LoS F in the cumulative scenario.

Converting the intersection into a roundabout or a signalised intersection would relieve the LoS F performance for the right turn movement. However, this would have the effect of introducing delay for through vehicles on the New England Highway for the benefit of a very low volume of vehicles seeking to turn right out of Pikes Gully Road. For this reason, along with the significant expense of converting the intersection, these options were not considered appropriate.

This was discussed with TfNSW in a meeting on 13 November 2025 and it was agreed that, as an infrastructure upgrade would not relieve the issue at this intersection, the best solution was a time restriction for certain movements so as not to add vehicles to the right turn movement from Pikes Gully Road in the peak hours. It was agreed that the most appropriate restrictions would be no construction traffic, except for left out from Pikes Gully Road, during the HTP AM peak hour (6-7am) and the PM network peak (4.45-5.45pm).

2.4 Golden Highway (Putty Road) / Broke Road intersection (I-09)

The intersection is a T-intersection, with priority control, and a modified seagull intersection arrangement. It has a channelised right (CHR) turn bay and a channelised left (CHL) turn bay. The layout of the intersection is shown in **Figure 7**.

Figure 7 Golden Highway (Putty Road) / Broke Road intersection (I-09) – existing layout

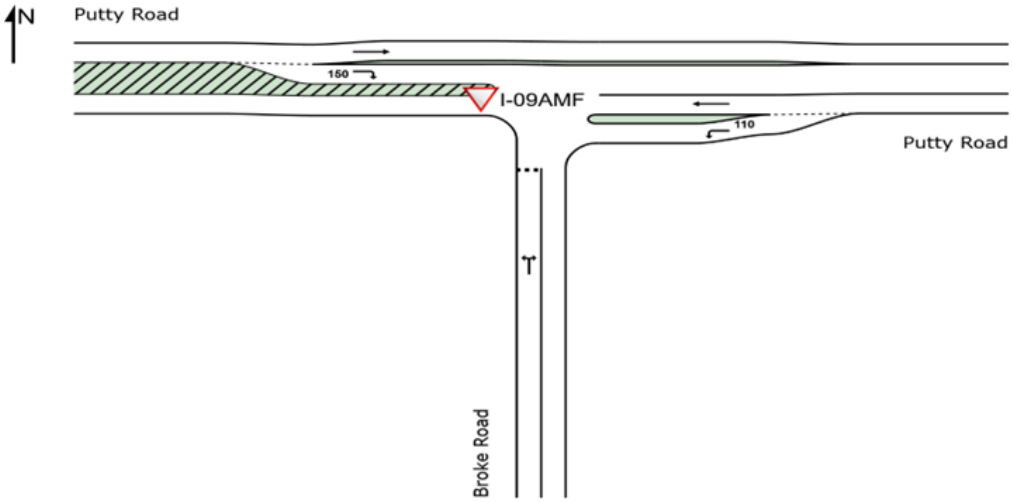
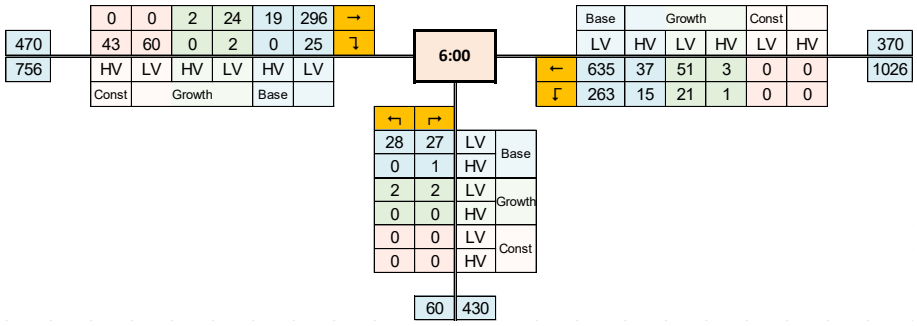
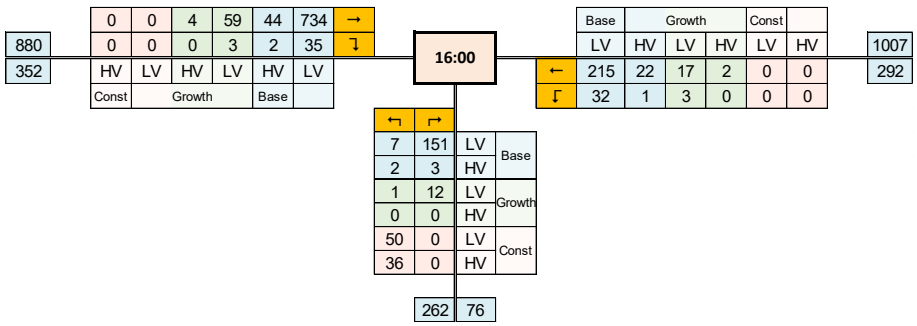


Figure 8 presents the base, growth and construction traffic volumes in the 2028 AM and PM peak hours. The construction traffic volumes shown are construction vehicles travelling from the Gouldsville Road construction support site to the HTP corridor in the AM peak hour and then returning in the PM peak hour.

Figure 8 Golden Highway (Putty Road) / Broke Road intersection (I-09) – 2028 traffic volumes



AM peak hour



PM peak hour

Table 8 compares the overall intersection performance, including predicted background traffic growth, with and without construction traffic for the 2028 weekday AM and PM peak hours.

The intersection performance during the AM peak hour is forecast to worsen from LoS B to LoS D due to the additional construction vehicle demands turning right into Broke Road from the western approach of Putty Road. Although the delays are forecast to increase, the maximum forecast queue for this movement would be contained within the existing auxiliary turn bay. For the PM peak hour, the intersection is forecast to continue to operate LoS A.

Table 8 Golden Highway (Putty Road) / Broke Road intersection (I-09) performance impact – with and without project scenario

Intersection	Approach	Turn	2028 AM without construction					2028 AM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
Putty Rd-Broke Rd 6:00 - 7:00 AM	South: Broke Road	Left	32	0.22	14.2	B	5.2	32	0.26	14.9	B	6.1
		Right	32		25.8	B	5.2	32		31.6	C	6.1
	East: Putty Road	Left	316	0.41	8.0	A	0.0	316	0.41	8.0	A	0.0
		Through	764		0.0	A	0.0	764		0.0	A	0.0
	West: Putty Road	Through	359	0.19	0.0	A	0.0	359	0.73	0.0	A	0.0
		Right	28		17.5	B	2.0	137		44.4	D	28.9
	All Vehicles		**1531**	**0.41**	**25.8**	**B**	**5.2**	**1640**	**0.73**	**44.4**	**D**	**28.9**

Intersection	Approach	Turn	2028 PM without construction					2028 PM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
Putty Rd-Broke Rd 16:00 - 17:00 PM	South: Broke Road	Left	11	0.27	10.2	A	8.2	101	0.38	12.0	A	16.9
		Right	175		11.1	A	8.2	175		12.0	A	16.9
	East: Putty Road	Left	38	0.15	7.9	A	0.0	38	0.15	7.9	A	0.0
		Through	271		0.0	A	0.0	271		0.0	A	0.0
	West: Putty Road	Through	887	0.47	0.1	A	0.0	887	0.47	0.1	A	0.0
		Right	42		9.2	A	1.2	42		9.2	A	1.2
	All Vehicles		**1423**	**0.47**	**11.1**	**A**	**8.2**	**1514**	**0.47**	**12.0**	**A**	**16.9**

Table 9 presents more detail modelling output for the **cumulative scenario** for the 2028 weekday AM and PM peak hours. With the additional cumulative through traffic on Putty Road, the eastbound right turn into Broke Road is forecast to operate at LoS F in the AM peak hour, while remaining at LoS A in the PM peak hour.

As the intersection already includes a seagull intersection arrangement, the only infrastructure options that would relieve the LoS F performance for the right turn would be converting the intersection into a roundabout or a signalised intersection. However, this would have the effect of introducing delay for the through movement on Putty Road, which is the dominant traffic movement at the intersection. For this reason, along with the significant expense of converting the intersection, these options were not considered appropriate.

This was discussed with TfNSW in a meeting on 13 November 2025 and it was agreed that the best solution was a time restriction for construction vehicles in the AM peak hour. The adjacent shoulder peak hour was assessed to identify the potential to shift construction vehicle movements outside the network peak hour, and as shown in **Table 10**, the intersection is forecast to operate at LoS B in the 7-8am time period. It was therefore agreed that the most appropriate restriction would be no construction traffic before 7am.

Table 9 Golden Highway (Putty Road) / Broke Road intersection (I-09) performance – cumulative scenario

Intersection	Approach	Turn	2028 AM with construction traffic - cumulative				
			Volume	DOS	Delay	LOS	95th &ile
Putty Rd-Broke Rd 6:00 - 7:00 AM	South: Broke Road	Left	32	0.31	17.2	B	7.4
		Right	32		38.0	C	7.4
	East: Putty Road	Left	316	0.45	8.0	A	0.0
		Through	815		0.3	A	0.0
	West: Putty Road	Through	409	0.91	0.5	A	0.0
		Right	137		76.9	F	47.2
	All Vehicles		**1741**	**0.91**	**76.9**	**F**	**47.2**

Intersection	Approach	Turn	2028 PM with construction traffic - cumulative				
			Volume	DOS	Delay	LOS	95th &ile
Putty Rd-Broke Rd 16:00 - 17:00 PM	South: Broke Road	Left	101	0.40	12.4	A	17.8
		Right	175		12.5	A	17.8
	East: Putty Road	Left	38	0.16	7.9	A	0.0
		Through	285		0.2	A	0.0
	West: Putty Road	Through	901	0.48	0.1	A	0.0
		Right	42		9.3	A	1.2
	All Vehicles		**1542**	**0.48**	**12.5**	**A**	**17.8**

Table 10 Golden Highway (Putty Road) / Broke Road intersection (I-09) performance – cumulative scenario (7-8am)

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
Putty Road / Broke Road (7:00-8:00) Cumulative	South: Broke Road	Left	17	0.45	15.8	B	15.2
		Right	141		21.4	B	15.2
	East: Putty Road	Left	98		8.1	A	0.0
		Through	518	0.30	0.3	A	0.0
	West: Putty Road	Through	326		0.5	A	0.0
		Right	127	0.29	16.7	B	10.6
	All Vehicles		**1227**	**0.45**	**21.4**	**B**	**15.2**

2.5 Putty Road / Mitchell Line of Road intersection (I-10)

The intersection is a T-intersection, under priority control. It has a channelised right (CHR) turn bay and an auxiliary left (AUL) turn bay. Putty Road provides two eastbound through lanes in the vicinity of the intersection. The layout of the intersection is shown in **Figure 9**.

Figure 9 Putty Road / Mitchell Line of Road intersection (I-10) – existing layout

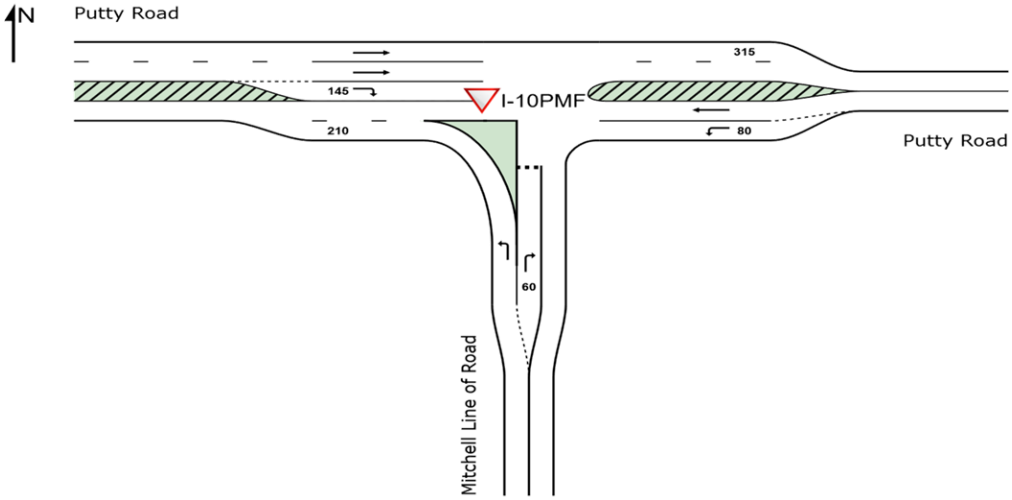


Figure 10 presents the base, growth and construction traffic volumes in the 2028 AM and PM peak hours. The construction traffic volumes shown are construction vehicles travelling from the Gouldsville Road construction support site to the HTP corridor in the AM peak hour and then returning in the PM peak hour.

Figure 10 Putty Road / Mitchell Line of Road intersection (I-10) – 2028 traffic volumes

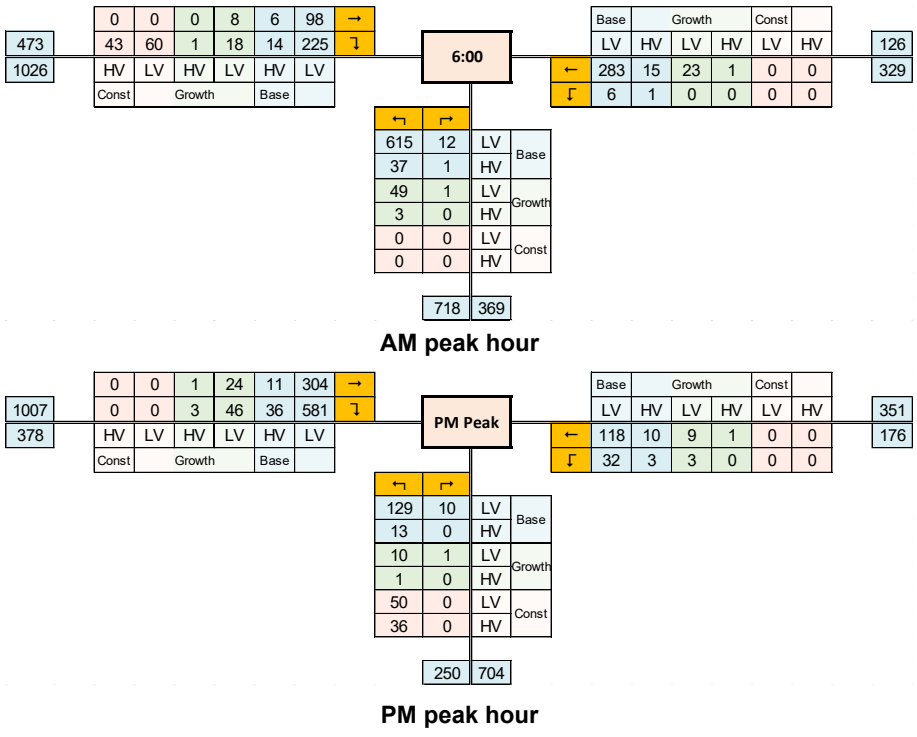


Table 11 compares the overall intersection performance, including predicted background traffic growth, with and without construction traffic for the 2028 weekday AM and PM peak hours.

The results show that there would be no difference in performance levels with the introduction of the HTP construction vehicles at the intersection during the weekday AM and PM network peak hours. In addition, queuing along Putty Road would be retained within the turn bays.

Table 11 Putty Road / Mitchell Line of Road intersection (I-10) performance impact – with and without project scenario

Intersection	Approach	Turn	2028 AM without construction					2028 AM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
Putty Rd-Mitchell Line of Rd 6:00 - 7:00 AM	South: Mitchell Line of Road	Left	741	0.42	9.0	A	0.0	741	0.42	9.0	A	0.0
		Right	15		19.1	B	1.3	15		23.4	B	1.6
	East: Putty Road	Left	7	0.18	8.2	A	0.0	7	0.18	8.2	A	0.0
		Through	339		0.6	A	0.0	339		0.6	A	0.0
	West: Putty Road	Through	118	0.29	0.0	A	0.0	118	0.43	0.0	A	0.0
		Right	272		10.1	A	9.4	380		11.8	A	21.8
	All Vehicles		**1492**	**0.42**	**19.1**	**B**	**9.4**	**1600**	**0.43**	**23.4**	**B**	**21.8**

Intersection	Approach	Turn	2028 PM without construction					2028 PM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
Putty Rd-Mitchell Line of Rd 16:00 - 17:00 PM	South: Mitchell Line of Road	Left	162	0.12	9.0	A	0.0	253	0.16	9.3	A	0.0
		Right	12		43.2	D	2.4	12		43.2	D	2.4
	East: Putty Road	Left	40	0.08	8.0	A	0.0	40	0.08	8.0	A	0.0
		Through	146		0.0	A	0.0	146		0.1	A	0.0
	West: Putty Road	Through	359	0.61	0.0	A	0.0	359	0.61	0.0	A	0.0
		Right	703		10.8	A	48.7	703		10.8	A	48.7
	All Vehicles		**1422**	**0.61**	**43.2**	**D**	**48.7**	**1513**	**0.61**	**43.2**	**D**	**48.7**

Table 12 presents modelling output for the **cumulative scenario** for the 2028 weekday AM and PM peak hours. The intersection performance during the AM peak hour is forecast to operate at LoS C, but in the PM peak hour, the additional cumulative through traffic on Putty Road is forecast to cause the right turning traffic from Mitchell Line of Road to operate at LoS E.

As the intersection already includes a separate left turn lane on the Mitchell Line of Road approach, a seagull intersection arrangement was tested, but the right turn out of Mitchell Line of Road remained at LoS E in the PM peak hour. Infrastructure options that would relieve the LoS E performance for the right turn, such as converting the intersection into a roundabout or a signalised intersection, would have the effect of introducing delay for through and right-turning movement on Putty Road, which are the dominant traffic movements at the intersection. For this reason, along with the significant expense of converting the intersection, these options were not considered appropriate.

This was discussed with TfNSW in a meeting on 13 November 2025 and it was agreed that the best solution was a time restriction for construction vehicles in the PM network peak hour. The adjacent shoulder peak hour was assessed to identify the potential to shift construction vehicle movements outside the network peak hour, and as shown in **Table 13**, the intersection is forecast to operate at LoS D in the 3-4pm time period. It was therefore agreed that the most appropriate restriction would be no construction traffic during the PM network peak (4-5pm).

Table 12 Putty Road / Mitchell Line of Road intersection (I-10) performance – cumulative scenario

Intersection	Approach	Turn	2028 AM with construction traffic - cumulative				
			Volume	DOS	Delay	LOS	95th &ile
Putty Rd-Mitchell Line of Rd 6:00 - 7:00 AM	South: Mitchell Line of Road	Left	741	0.42	9.1	A	0.0
		Right	15		29.9	C	2.0
	East: Putty Road	Left	7	0.22	8.2	A	0.0
		Through	389		1.6	A	0.0
	West: Putty Road	Through	168	0.48	0.9	A	0.0
		Right	380		13.1	A	25.4
	All Vehicles		**1700**	**0.48**	**29.9**	**C**	**25.4**

Intersection	Approach	Turn	2028 PM with construction traffic - cumulative				
			Volume	DOS	Delay	LOS	95th &ile
Putty Rd-Mitchell Line of Rd 16:00 - 17:00 PM	South: Mitchell Line of Road	Left	253	0.17	9.3	A	0.0
		Right	12		59.1	E	3.3
	East: Putty Road	Left	40	0.12	8.0	A	0.0
		Through	197		0.1	A	0.0
	West: Putty Road	Through	409	0.66	0.1	A	0.0
		Right	703		12.4	A	59.2
	All Vehicles		**1614**	**0.66**	**59.1**	**E**	**59.2**

Table 13 Putty Road / Mitchell Line of Road intersection (I-10) performance – cumulative scenario (3-4pm)

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
Putty Road / Mitchell Line of Road (PM peak: 15.00-16.00)	South: Mitchell Line of Road	Through	201	0.24	9.5	A	0
		Right	19		56.3	D	4.8
	East: Putty Road	Left	38	0.12	8.1	A	0
		Right	203		0.1	A	0
	West: Putty Road	Left	357	0.55	0.1	A	0.0
		Through	569		11.3	A	36.3
	All Vehicles		**1387**	**0.55**	**56.3**	**D**	**36.3**

2.6 Golden Highway / Range Road intersection (I-10b)

The intersection is a four-legged intersection, with stop control on the Range Road approaches. It has channelised right (CHR) turn bays on both of the Golden Highway approaches and an auxiliary left (AUL) turn bay on the eastern Golden Highway approach. The layout of the intersection is shown in **Figure 11**.

Figure 11 Golden Highway / Range Road intersection (I-10b) – existing layout

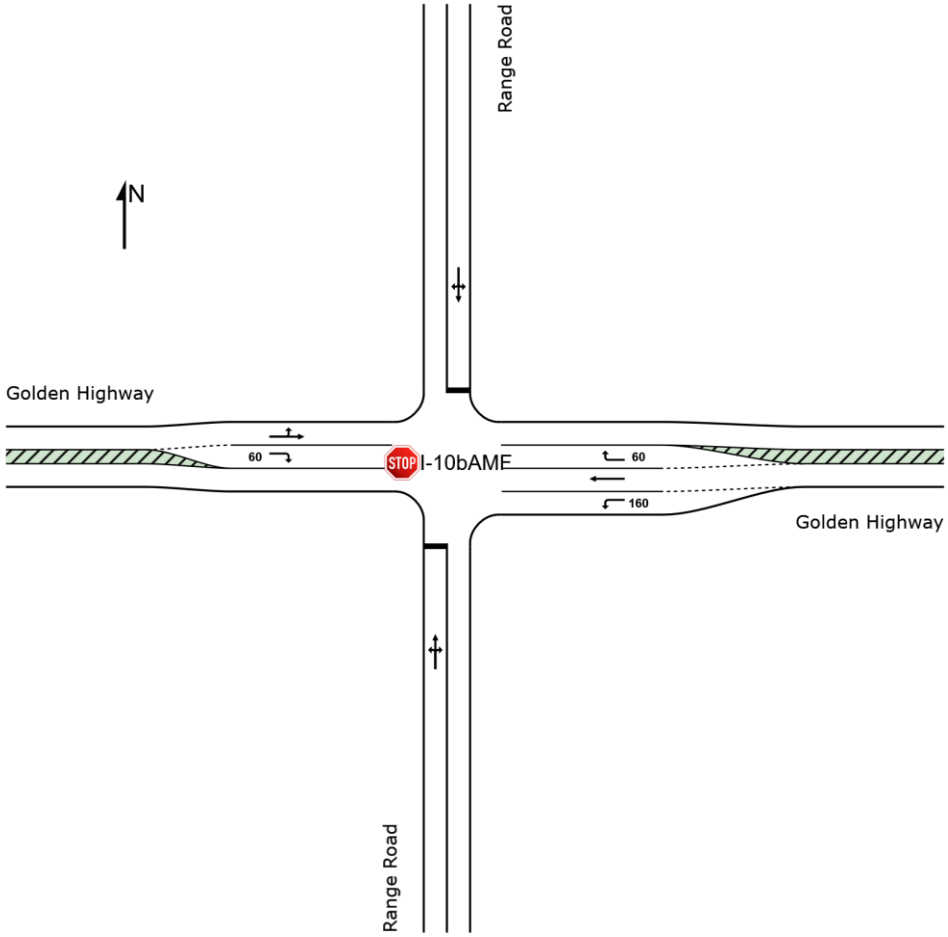
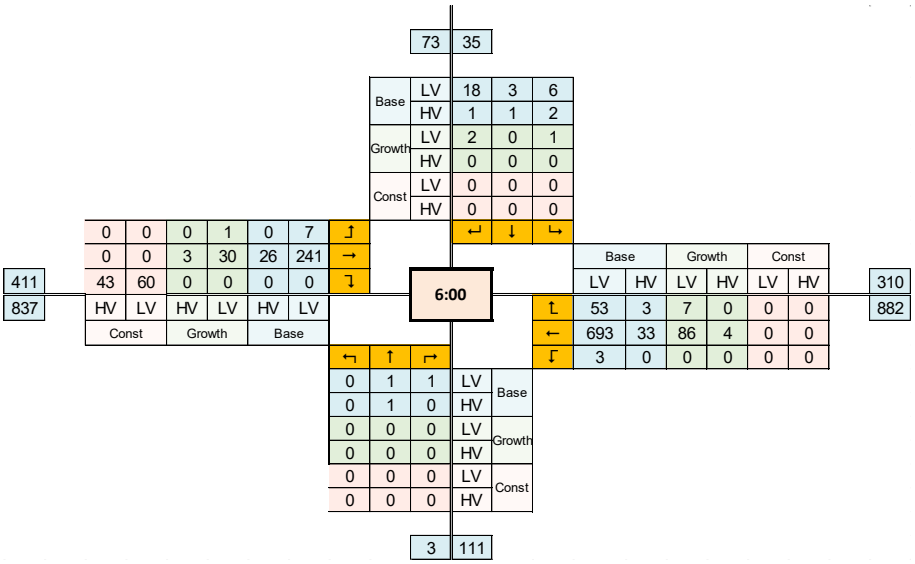
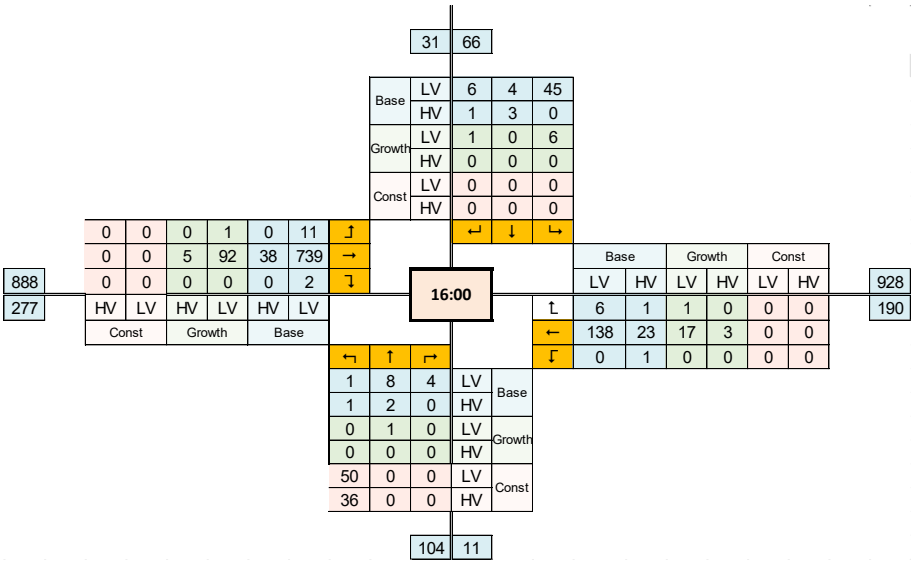


Figure 12 presents the base, growth and construction traffic volumes in the 2028 AM and PM peak hours. The construction traffic volumes shown are construction vehicles travelling from the Gouldsville Road construction support site to the HTP corridor in the AM peak hour and then returning in the PM peak hour.

Figure 12 Golden Highway / Range Road intersection (I-10b) – 2028 traffic volumes



AM peak hour



PM peak hour

Table 14 compares the overall intersection performance, including predicted background traffic growth, with and without construction traffic for the 2028 weekday AM and PM peak hours. Without the project construction traffic, the intersection is forecast to perform at LoS F in the 2028 weekday AM and PM peak hours. Increased demands of the construction vehicles would only worsen the forecast intersection performance levels during the AM and PM periods.

Table 14 Golden Highway / Range Road intersection (I-10b) performance impact – with and without project scenario

Intersection	Approach	Turn	2028 AM without construction					2028 AM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
Range Road-Golden Highway (Mitchell Line of Road) 6:00-7:00 AM	South: Range Road	Left	1		122.2	F	2.9	1		139.9	F	3.9
		Through	1	0.2	214.7	F	2.9	1	0.2	316.7	F	3.9
		Right	1		221.9	F	2.9	1		327.4	F	3.9
	East: Golden Highway	Left	1		7.8	A	0.0	1		7.8	A	0.0
		Through	1472	0.8	0.2	A	0.0	1472	0.8	0.3	A	0.0
		Right	37		8.1	A	0.8	37		7.9	A	0.8
	North: Range Road	Left	13		116.1	F	25.1	13		373.2	F	49.6
		Through	1	0.9	338.4	F	25.1	1	1.3	>600	F	49.6
		Right	13		339.1	F	25.1	13		>600	F	49.6
	West: Golden Highway	Left	11		7.8	A	0.0	11		>600	F	633.6
		Through	179	0.1	0.0	A	0.0	179	9.4	>600	F	633.6
		Right	1		61.2	E	0.3	108		>600	F	584.8
	All Vehicles		**1731**	**0.9**	**339.1**	**F**	**25.1**	**1838**	**9.4**	**>600**	**F**	**633.6**

Intersection	Approach	Turn	2028 PM without construction					2028 PM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
Range Road-Golden Highway (Mitchell Line of Road) 16:00-17:00 PM	South: Range Road	Left	2		35.4	C	10.5	93		21.2	B	31.9
		Through	13	0.5	147.6	F	10.5	13	0.6	185.8	F	31.9
		Right	5		107.4	F	10.5	5		127.6	F	31.9
	East: Golden Highway	Left	1		10.4	A	0.0	1		10.4	A	0.0
		Through	192	0.1	0.0	A	0.0	192	0.1	0.0	A	0.0
		Right	9		17.5	B	0.7	9		17.5	B	0.7
	North: Range Road	Left	54		112.8	F	39.7	54		171.0	F	58.7
		Through	11	1.0	292.0	F	39.7	11	1.1	348.4	F	58.7
		Right	8		228.0	F	39.7	8		282.8	F	58.7
	West: Golden Highway	Left	13		7.9	A	0.0	13		7.9	A	0.0
		Through	924	0.5	0.1	A	0.0	924	0.5	0.1	A	0.0
		Right	2		8.1	A	0.0	2		8.1	A	0.0
	All Vehicles		**1234**	**1.0**	**292.0**	**F**	**39.7**	**1325**	**1.1**	**348.4**	**F**	**58.7**

Table 15 presents modelling output for the **cumulative scenario** for the 2028 weekday AM and PM peak hours. The intersection is still forecast to operate at LoS F in the 2028 AM and PM peak hours.

Table 15 Golden Highway / Range Road intersection (I-10b) performance – cumulative scenario

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
Range Road / Golden Highway (Mitchell Line of Road) (6:00-7:00)	South: Range Road	Left	1	0.29	174.2	F	4.7
		Through	1		391.0	F	4.7
		Right	1		404.1	F	4.7
	East: Golden Highway	Left	1	0.78	7.8	A	0.0
		Through	1487		0.3	A	0.0
		Right	37		8.2	A	0.8
	North: Range Road	Left	13	1.58	599.1	F	63.0
		Through	1		963.0	F	63.0
		Right	13		964.4	F	63.0
	West: Golden Highway	Left	11	10.58	1977.3	F	779.2
		Through	195		1969.5	F	779.2
		Right	108		8825.1	F	592.9
	All Vehicles		**1,868**	**10.58**	**8825.1**	**F**	**779.2**

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
Range Road / Golden Highway (Mitchell Line of Road) (PM peak: 16.00-17.00)	South: Range Road	Left	93	1.10	135.6	F	108.6
		Through	13		347.8	F	108.6
		Right	5		313.0	F	108.6
	East: Golden Highway	Left	1	0.15	10.4	A	0.0
		Through	242		0.0	A	0.0
		Right	9		20.1	B	0.8
	North: Range Road	Left	54	1.83	782.3	F	170.3
		Through	11		989.2	F	170.3
		Right	8		913.3	F	170.3
	West: Golden Highway	Left	13	0.54	7.9	A	0.0
		Through	975		0.1	A	0.0
		Right	2		8.5	A	0.1
	All Vehicles		**1,425**	**1.83**	**989.2**	**F**	**170.3**

The delays are predominantly experienced on the Range Road approaches to the intersection, so infrastructure options were tested to see if they would assist in providing a better level of service for the intersection, including a separate left slip lane out of the Range Road (south) approach and a separate left and right turn lane on the Range Road (north) approach. However, these did not relieve all the operational performance issues and physical and property constraints meant that these were not considered feasible mitigation solutions.

More significant infrastructure options, such as converting the intersection into a roundabout or a signalised intersection, would have faced the same physical constraint issues, along with the effect of introducing delay for the through movement on the Golden Highway, which is the dominant traffic movement at the intersection. For this reason, along with the significant expense of converting the intersection, these options were not considered appropriate. This was discussed with TfNSW in a meeting on 13 November 2025, and while the construction traffic is not causing the poor intersection operational performance, it was agreed that the best solution was a time restriction for construction vehicles, so as not to add to the existing performance issues.

The adjacent shoulder peak hours were assessed to identify the potential to shift construction vehicle movements outside the network peak hour, and as shown in **Table 16**, the intersection is forecast to operate at LoS B in the 7-8am time period. It was therefore agreed that the most appropriate restriction would be no construction traffic before 7am.

As shown in **Table 16**, in the PM shoulder peak hour (3-4pm), the right turn movement on the Range Road (north) approach is still forecast to operate at LoS F, however it was noted that the right turn volume is small in comparison to the other movements at the intersection, at fewer than 10 vehicles. It was therefore agreed that an appropriate restriction would be no construction traffic in the PM road network peak hour (4-5pm), and that advanced Variable Message Signs (VMS) will also be installed to warn of construction vehicle activity at the intersection.

Table 16 Golden Highway / Range Road intersection (I-10b) performance – cumulative scenario (AM and PM shoulder peak hours)

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
Range Road / Golden Highway (Mitchell Line of Road) (7:00-8:00)	South: Range Road	Left	1	0.02	10.0	A	0.4
		Through	3		19.2	B	0.4
		Right	1		20.1	B	0.4
	East: Golden Highway	Left	14	0.19	8.2	A	0.0
		Through	351		0.0	A	0.0
		Right	89		8.4	A	2.1
	North: Range Road	Left	14	0.22	13.0	A	5.8
		Through	27		24.9	B	5.8
		Right	18		25.5	B	5.8
	West: Golden Highway	Left	9	0.17	8.1	A	0.0
		Through	264		0.0	A	0.0
		Right	121		11.6	A	6.2
	All Vehicles		**913**	**0.22**	**25.5**	**B**	**6.2**
Range Road / Golden Highway (Mitchell Line of Road) (15:00-16:00)	South: Range Road	Left	91	0.36	13.4	A	15.7
		Through	18		40.1	C	15.7
		Right	13		53.4	D	15.7
	East: Golden Highway	Left	1	0.11	7.8	A	0.0
		Through	167		0.0	A	0.0
		Right	8		10.6	A	0.3
	North: Range Road	Left	77	0.46	19.9	B	11.6
		Through	4		60.8	E	11.6
		Right	9		114.5	F	11.6
	West: Golden Highway	Left	12	0.38	8.6	A	0.0
		Through	651		0.0	A	0.0
		Right	1		8.1	A	0.0
	All Vehicles		**1,052**	**0.46**	**114.5**	**F**	**15.7**

2.7 Wine Country Drive / Broke Road intersection (I-14)

The intersection is a four-legged intersection, with stop control on the Broke Road approach. The fourth approach is a private driveway for De Bortoli winery. The intersection has channelised right (CHR) turn bays and auxiliary left (AUL) turn bays on both Wine Country Drive approaches and separated left and right turn lanes on Broke Road and the private driveway. The layout of the intersection is shown in **Figure 13**.

Figure 13 Wine Country Drive / Broke Road intersection (I-14) – existing layout

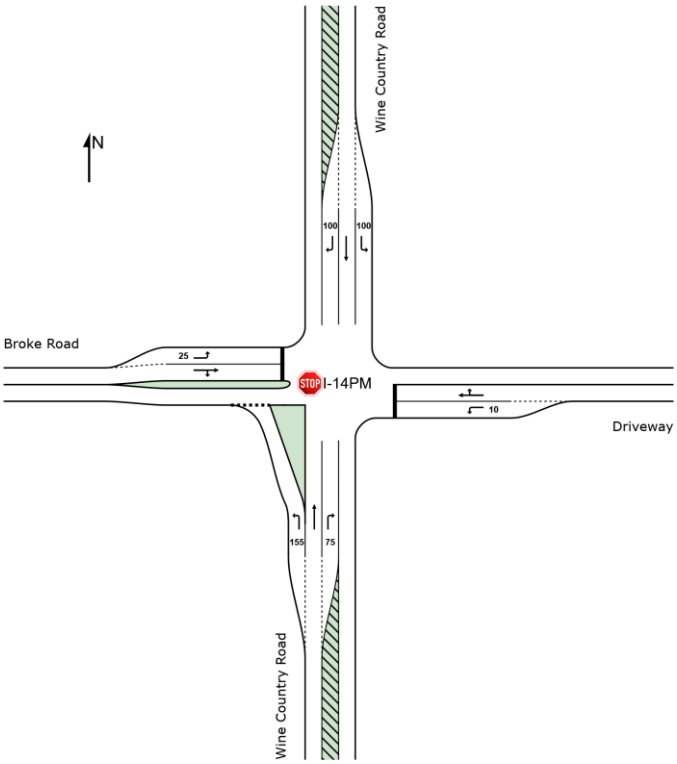


Figure 14 presents the base, growth and construction traffic volumes in the 2028 AM and PM peak hours. The construction traffic volumes shown are construction vehicles travelling from the Wollombi Road construction support site to the HTP corridor in the AM peak hour and then returning in the PM peak hour.

Figure 14 Wine Country Drive / Broke Road intersection (I-14) – 2028 traffic volumes

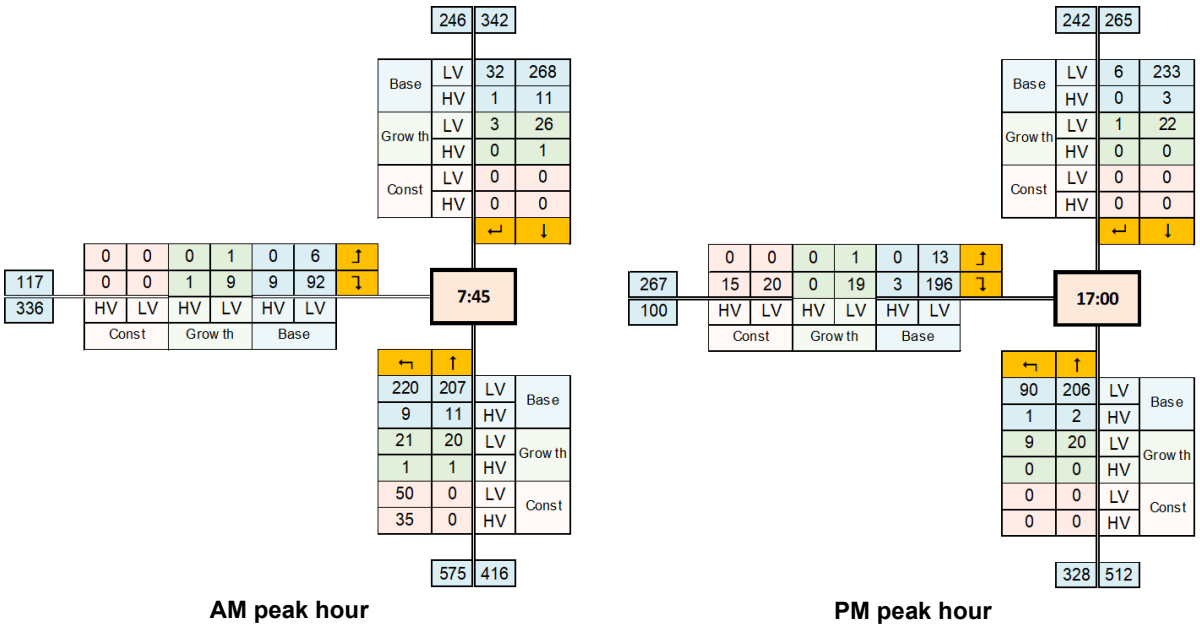


Table 17 compares the overall intersection performance, including predicted background traffic growth, with and without construction traffic for the 2028 weekday AM and PM peak hours.

During the AM road network peak hour, the intersection is forecast to operate well with and without construction traffic.

During the PM road network peak hour, which occurs at 3.5-4.15pm, it is forecast that the intersection would perform poorly by 2028 with just the assumed background traffic growth. This is due to the right turn movement out of Broke Road, which is forecast to operate at LoS F. All other movements at the intersection are forecast to operate at LoS A and any queuing along Wine Country Drive is small and retained within the turn bays.

It is noted that the peak project construction traffic volumes are unlikely to occur during the road network peak of 3.15-4.15pm. As such, the construction peak hour of 5-6pm is presented for comparison, which shows better conditions than the road network peak hour without the construction vehicles, although the right turn movement out of Broke Road is still forecast to operate at LoS F.

Table 17 Wine Country Drive / Broke Road intersection (I-14) performance impact – with and without project scenario

Intersection	Approach	Turn	2028 AM without construction					2028 AM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
Broke Rd-Wine Country Rd) 7:45 - 8:45 AM	South: Wine Country Road	Left	264	0.2	7.5	A	5.6	364	0.2	7.3	A	9.4
		Through	252		0.0	A	0.0	252		0.0	A	0.0
	North: Wine Country Road	Through	322	0.2	0.0	A	0.0	322	0.2	0.0	A	0.0
		Right	38		7.8	A	0.8	38		7.8	A	0.8
	West: Broke Road	Left	6	0.4	10.1	A	0.2	6	0.5	10.1	A	0.2
		Right	117		27.8	B	15.4	117		31.3	C	17.2
	All Vehicles		**1005**	**0.4**	**27.8**	**B**	**15.4**	**1105**	**0.5**	**31.3**	**C**	**17.2**

Intersection	Approach	Turn	2028 PM without construction					2028 PM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
Broke Rd-Wine Country Rd) 15:15 - 16:15 PM	South: Wine Country Road	Left	156	0.1	7.3	A	2.9	156	0.1	7.3	A	2.9
		Through	267		0.0	A	0.0	267		0.0	A	0.0
	North: Driveway	Through	268	0.1	0.0	A	0.0	268	0.1	0.0	A	0.0
		Right	14		7.7	A	0.3	14		7.7	A	0.3
	West: Broke Road	Left	17	1.2	10.6	A	0.5	17	1.6	11.2	A	0.5
		Right	367		188.8	F	302.9	452		557.6	F	825.4
	All Vehicles		**1095**	**1.2**	**188.8**	**F**	**302.9**	**1180**	**1.6**	**557.6**	**F**	**825.4**

Intersection	Approach	Turn	2028 PM without construction					2028 PM with construction traffic				
			Volume	DOS	Delay	LOS	95th &ile	Volume	DOS	Delay	LOS	95th &ile
Broke Rd-Wine Country Rd) 17:00 - 18:00 PM	South: Wine Country Road	Left	105	0.1	7.3	A	1.9	105	0.1	7.3	A	1.9
		Through	238		0.0	A	0.0	238		0.0	A	0.0
	North: Driveway	Through	272	0.1	0.0	A	0.0	272	0.1	0.0	A	0.0
		Right	7		7.6	A	0.2	7		7.6	A	0.2
	West: Broke Road	Left	15	0.7	10.0	A	0.4	15	1.0	10.0	A	0.4
		Right	229		26.6	B	32.7	314		89.4	F	161.1
	All Vehicles		**872**	**0.7**	**26.6**	**B**	**32.7**	**957**	**1.0**	**89.4**	**F**	**161.1**

The cumulative scenario tested in the revised TTIA did not have cumulative traffic routing through the Wine Country Drive / Broke Road intersection and so no cumulative scenario was tested for the intersection.

As the intersection already includes a separate left and right turn lane on the Broke Road approach, the only infrastructure options that would relieve the LoS F performance for the right turn out of Broke Road would be converting the intersection into a roundabout or a signalised intersection. However, this would have the effect of introducing delay for the through movement on Wine Country Drive, which is the dominant movement at the intersection through the day. For this reason, along with the significant expense of converting the intersection, these options were not considered appropriate.

A scenario with light vehicles using an alternative route (via Mount View Road, Oakey Creek Road, and McDonalds Road) between the Wollombi Road construction support site and the HTP corridor and therefore not travelling through the intersection was tested. With only the 30 heavy vehicles turning right from Broke Road into Wine Country Drive, the intersection is forecast to operate at an acceptable LoS D in the construction peak hour (5-6pm).

Table 18 presents modelling output for the 2028 PM peak hour with the light vehicles using an alternative route.

Table 18 Wine Country Drive / Broke Road intersection (I-14) performance with mitigation

Intersection	Approach	Turn	Volume	DOS	Delay	LOS	95th %ile Queue (metres)
Broke Road / Wine Country Drive (17:00-18:00)	South: Wine Country Road	Left	105	0.12	7.3	A	1.9
		Through	238		0.0	A	0.0
	North: Wine Country Road	Through	272		0.0	A	0.0
		Right	7	0.14	7.6	A	0.2
	West: Broke Road	Left	15		10.0	A	0.4
		Right	314	1.02	89.4	F	161.1
	All Vehicles		**951**	**1.02**	**89.4**	**F**	**161.1**
Putty Road / Broke Road (17:00-18:00) Construction HVs only	South: Wine Country Road	Left	105	0.12	7.3	A	1.9
		Through	238		0.0	A	0.0
	North: Wine Country Road	Through	272		0.0	A	0.0
		Right	7	0.14	7.6	A	0.2
	West: Broke Road	Left	15		10.0	A	0.4
		Right	261	0.87	45.8	D	73.4
	All Vehicles		**898**	**0.87**	**45.8**	**D**	**73.4**

This mitigation measure of light vehicles using an alternative route (via Mount View Road, Oakey Creek Road, and McDonalds Road) was discussed and agreed with TfNSW in a meeting on 11 December 2025. It was also agreed that heavy vehicle movements should be minimised as much as possible during the PM road network peak (3.15-4.15pm) and that advanced Variable Message Signs (VMS) will be installed to warn of construction vehicle activity at the intersection.

3.0 Implementation through the project Traffic Management Plan

A traffic management plan (TMP) will be prepared as part of the project environmental management strategy. The TMP will be developed in consultation with the relevant road/rail authorities to confirm the traffic management protocols and will be implemented prior to any construction occurring. The TMP will include:

- Confirmation of construction routes
- Measures to maintain access to local roads and properties
- Driver safety measures, including a driver code of conduct, requirements for in-vehicle monitoring systems, a driver fatigue management plan and the locations of rest areas along construction routes
- Site-specific traffic control measures (including signage) to manage and regulate traffic movement prepared in consultation with the relevant road authorities and implemented by licenced traffic management contractors. This would include the TT3 mitigation measures discussed in this TAN.
- Measures to maintain pedestrian and cyclist access
- Requirements and methods to consult and inform the local community of impacts on the local road network
- Coordination with TfNSW and councils for road and intersection works and road crossings
- Coordination with ARTC for rail line crossings
- Requirements to obtain relevant approvals, including road occupancy licence(s), for any potential works in the road corridor and access by restricted access vehicles or OSOM vehicles required for the project. Where feasible, temporary road closures will be planned to occur outside of the traffic peak periods to minimise impacts to the road network
- Access to construction sites including entry and exit locations and measures to prevent construction vehicles queueing on public roads
- Maintenance and safety measures required along access tracks and at access points to construction support sites, including appropriate line marking and signage and wheel cleaning facilities as required
- Monitoring systems and auditing processes for the implementation of traffic management controls, and mechanisms to review the effectiveness of monitoring systems, and the frequency of monitoring or auditing requirements. Various approaches could be used to report / demonstrate compliance with the TT3 mitigation measures, such as:
    - GPS tracking in construction vehicles to report the route that construction trucks are taking at the seven State road intersections during the restricted time periods.
    - Cameras could be set up at the seven State road intersections, similar to those used to undertake intersection traffic surveys, to report on intersection turning movements at the restricted time periods. This could be installed for a specific day / week or set up for the duration of the peak construction period.
    - In-person surveyors could undertake traffic turn counts at the seven State road intersections during the restricted time periods.

    The data gathered using whichever approach the contractor nominates to use could be reported at the same time as other compliance monitoring is required to be reported for the project, such as for air quality, noise, etc.
- A response plan for any construction traffic incident, or complaints management process
- Requirements for routine inspections of construction routes
- Consideration of other developments that may be under construction to minimise cumulative impacts.

The TMP provides several mechanisms for impacts on State road intersections to be mitigated and managed, as well as how the effectiveness of the mitigation measures will be monitored and reported.

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Annexure E – Supplementary MGSD assessments

To:	Tim Willatt, Will Hammond	**Date:**	1 May 2026
From:	Ben Strang	**Our Ref:**	2583080-215665904-31675
Copy:	Adriana Loretto, Tom Berryman	**ABN:**	85 004 974 341
Subject:	Intersection SISD/MGSD Memo		

1. Introduction

Energy Corporation of NSW is the Infrastructure Planner for the Hunter Transmission Project (HTP). HTP is a 500 kV double circuit lattice steel tower transmission line between Bayswater Power Station and a new 500 kV switching station approximately 20 km south of Eraring Power Station.

The purpose of this memo is to provide a review of Minimum Gap Sight Distance (MGSD) for intersections proposed to be used by HTP construction traffic where Safe Intersection Sight Distance (SISD) could be insufficient or constrained by private property, existing road geometry, vegetation or other factors.

Vertical MGSD checks have been undertaken where vertical topography has the potential to obstruct sight lines. LiDAR data has been adopted as the surface for these vertical checks with ELVIS data used if LiDAR extents are not sufficient. The vertical MGSD review is limited to identified pavement areas, with LiDAR data having inaccuracies in vegetated areas.

2. Assessment Parameters

The following critical parameters have been adopted.

Parameter	Reference
Design Speed	A design speed of +10 km/h of posted speed has been used as per Table 1 of Section 6.3 of TS 02642:1.0 Supplement to Austroads Guide to Road Design (2023).
Critical Acceptance Gap	Critical Acceptance gaps and follow-up headways have been taken from Table 3.5 Guide to Road Design Part 4A: Unsignalised and Signalised Intersections
MGSD	MGSD has been taken from Table 3.6 Guide to Road Design Part 4A: Unsignalised and Signalised Intersections.
SISD	SISD where applicable has been calculated using 3.2.2 Guide to Road Design Part 4A: Unsignalised and Signalised Intersections.
Sight Dist. Checks	Table 3.3 Guide to Road Design Part 4A: Unsignalised and Signalised Intersections has been used for sight distance check cases for cars and trucks
Eye Height and Conflict Point	Figure 3.2 Guide to Road Design Part 4A: Unsignalised and Signalised Intersections has been used to determine conflict point and eye heights for the sight distance checks against survey.

3. Key Intersections

3.1-Golden Highway/Lemington Rd (I-03)

As a 2 lane/2-way road, the critical acceptance gap is 5 seconds for a right turn from a minor road. At 110km/h (100 km/h posted +10km/h TfNSW supplement), the MGSD required is 153m.

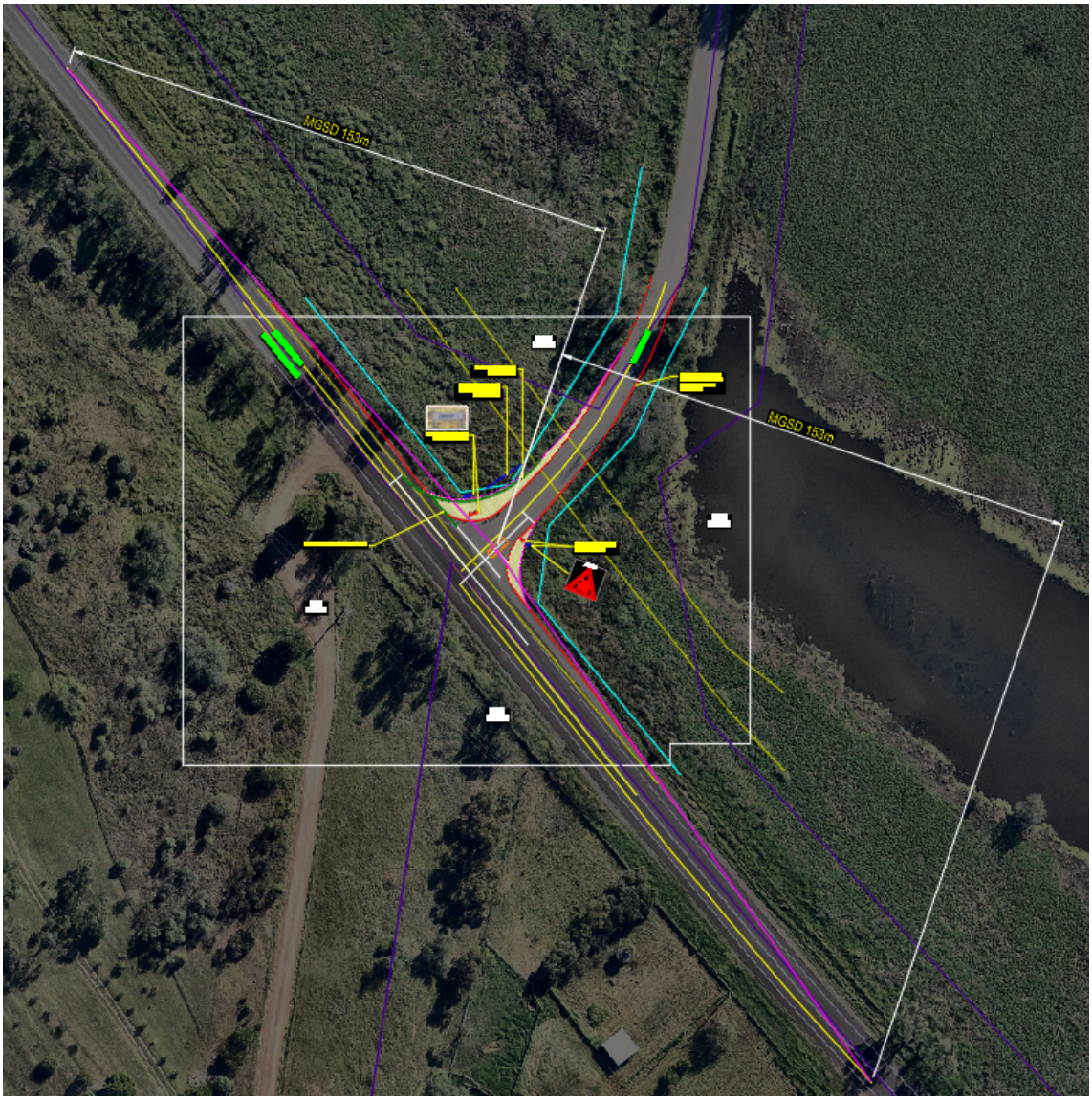


Image 3.1- MGSD Sight Lines- Golden Highway & Lemington Rd

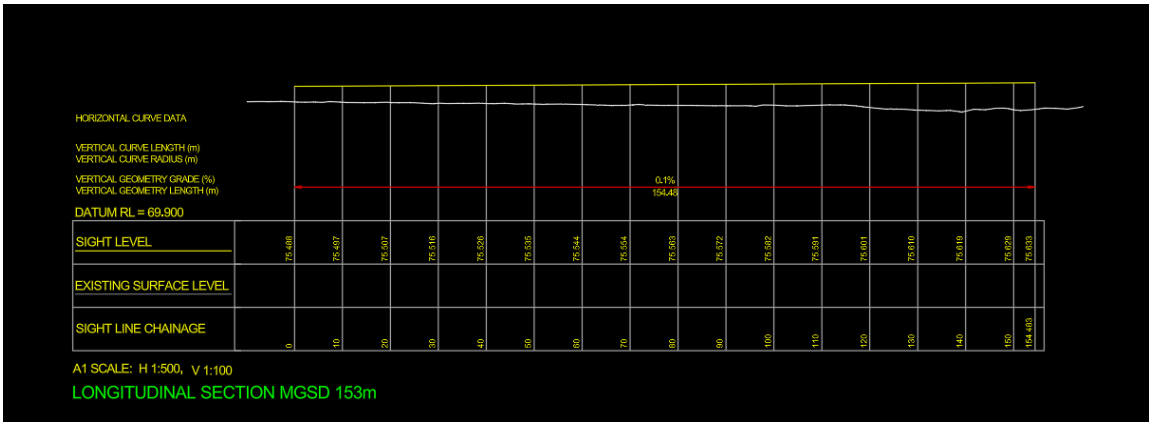


Figure 3.1- MGSD Sight Line- Golden Highway & Lemington Rd Left Sight Line

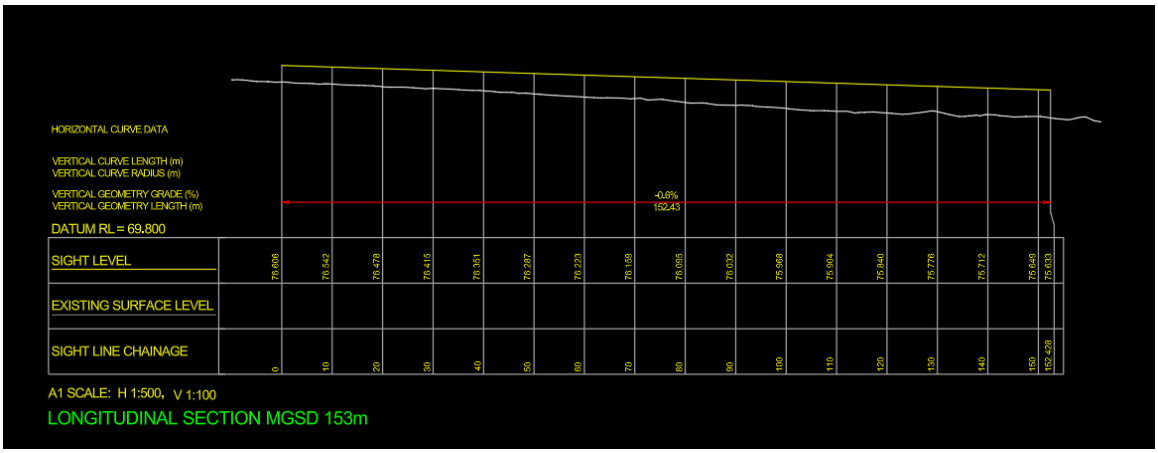


Figure 3.2- MGSD Sight Line- Golden Highway & Lemington Rd Right Sight Line

As shown in Figure 3.1 and Figure 3.2, **MGSD is achieved in both directions**.

3.2-Golden Highway/Gouldsville Rd (I-07)

As a 4 lane/2-way road, the critical acceptance gap is 8 seconds for a right turn from a minor road. At 110km/h (100 km/h posted +10km/h TfNSW supplement) the MGSD required is 244m.

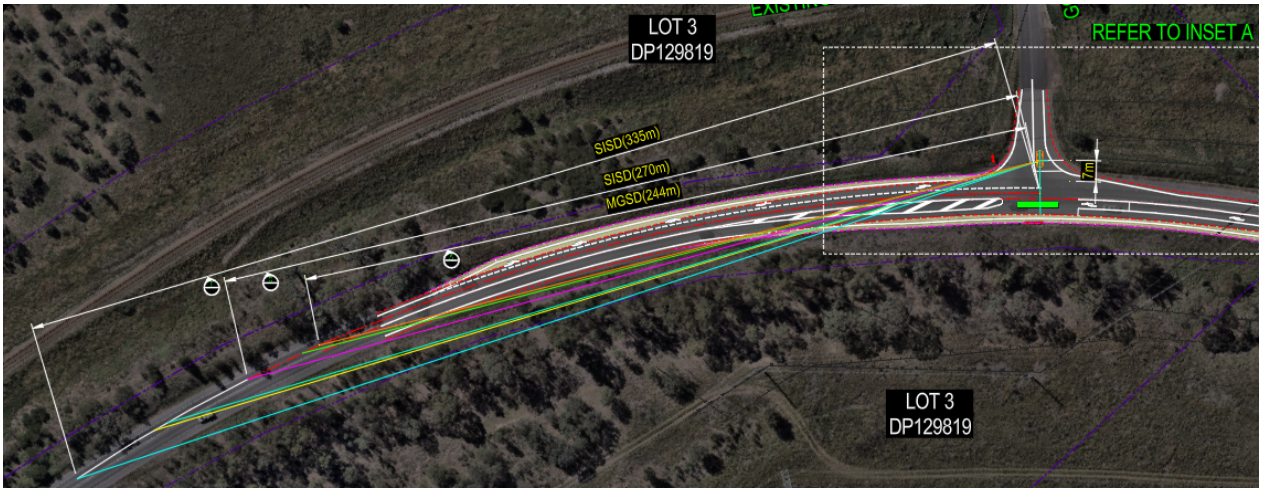


Image 3.2- MGSD Sight Lines- Golden Highway & Gouldsville Rd Right Sight Line

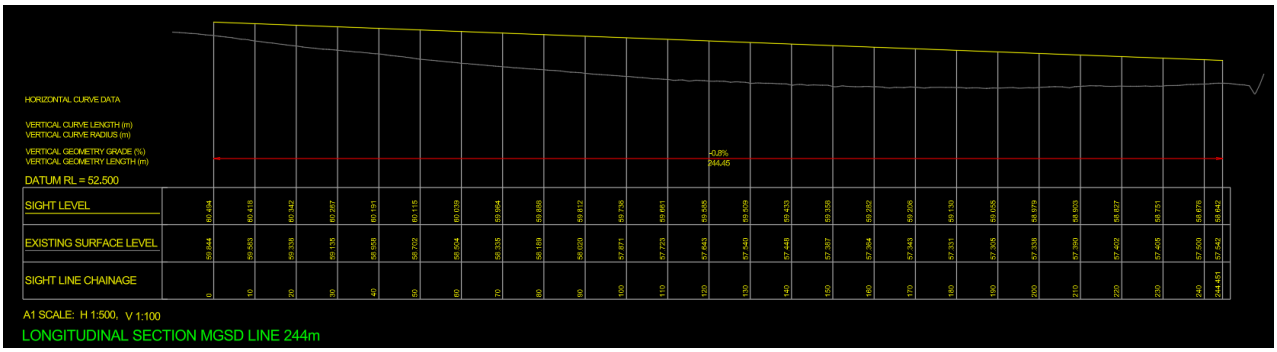


Figure 3.3- MGSD Sight Line- Golden Highway & Gouldsville Rd Right Sight Line

As shown in Figure 3.3, **MGSD is achieved**.

3.3-Golden Highway/Putty Rd (I-10)

As a 6 lane/2-way road, the critical acceptance gap is 8 seconds for a right turn from a minor road. At 110km/h (100 km/h posted +10km/h TfNSW supplement) the MGSD required is 244m.



Image 3.3- MGSD Sight Line- Golden Highway & Putty Rd Left Sight Line



Image 3.4- MGSD Sight Line- Golden Highway & Putty Rd Right Sight Line

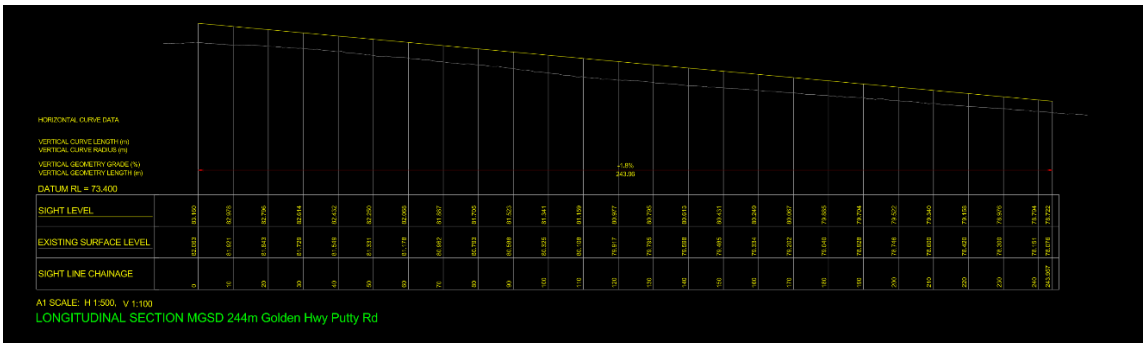


Figure 3.4- MGSD Sight Line- Golden Highway & Putty Rd Right Sight Line

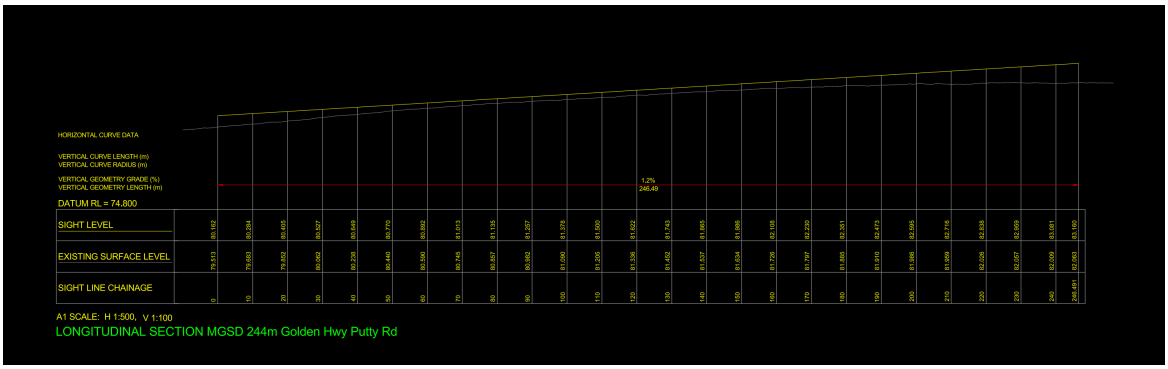


Figure 3.5- MGSD Sight Line- Golden Highway & Putty Rd Left Sight Line

As shown in Figure 3.4 and Figure 3.5, **MGSD is achieved**.

3.4-Golden Highway/Range Rd (I-10b)

As a 4 lane/2-way road, the critical acceptance gap is 8 seconds for a right turn from a minor road. At 110km/h (100 km/h posted +10km/h TfNSW supplement) the MGSD required is 244m.



Image 3.5- MGSD Sight Line- Golden Highway & Range Rd Left Sight Line



Image 3.6- MGSD Sight Line- Golden Highway & Range Rd Right Sight Line

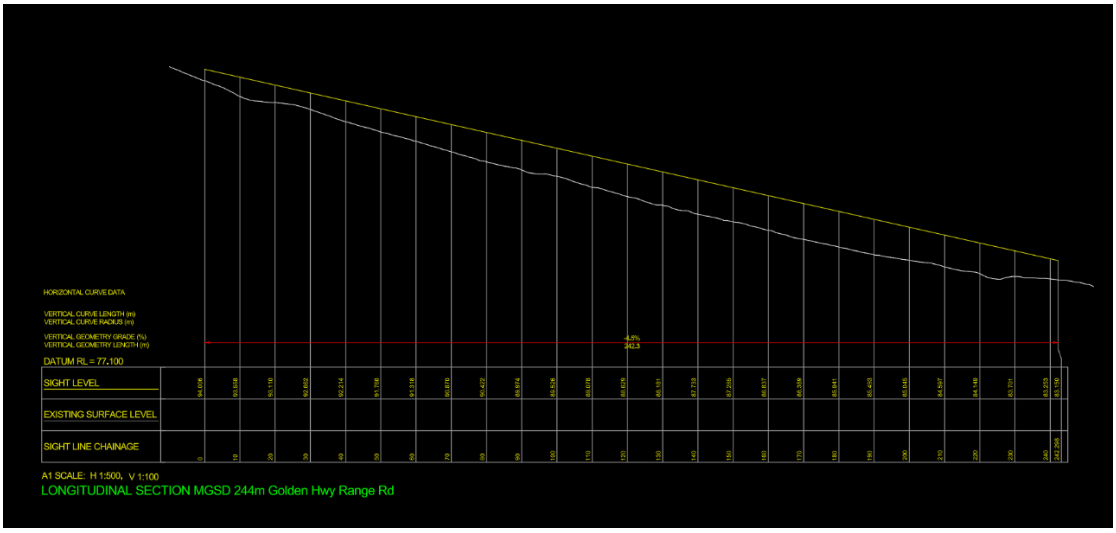


Figure 3.6- MGSD Sight Line- Golden Highway & Range Rd Right Sight Line

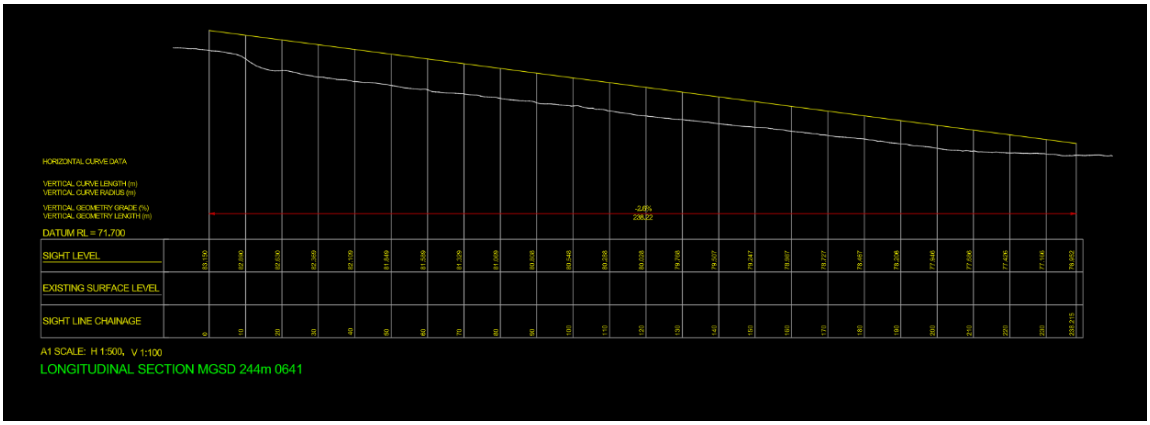


Figure 3.7- MGSD Sight Line- Golden Highway & Range Rd Left Sight Line

As shown in Figure 3.6 and Figure 3.7, **MGSD is achieved**.

3.5-Wine Country Drive/Broke Rd (I-14)

As a 6 lane/2-way road, the critical acceptance gap is 8 seconds for a right turn from a minor road. At 110km/h (100 km/h posted +10km/h TfNSW supplement) the MGSD required is 244m.

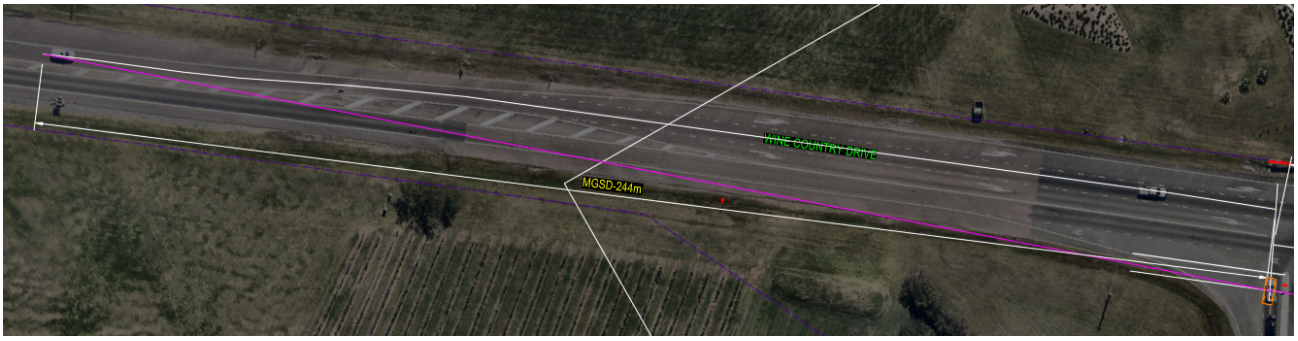


Image 3.7- MGSD Sight Line- Wine Country Drive & Broke Rd Right Sight Line

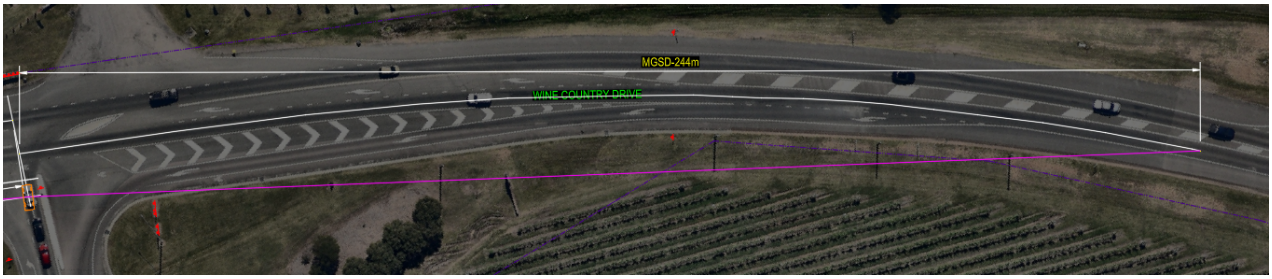


Image 3.8- MGSD Sight Line- Wine Country Drive & Broke Rd Left Sight Line

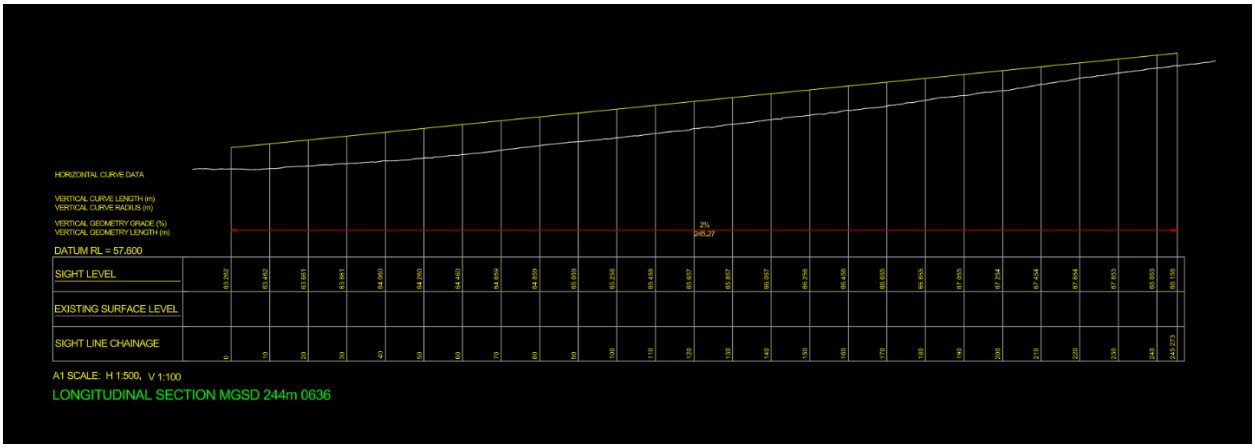


Figure 3.8- MGSD Sight Line- Wine Country Drive & Broke Rd Left Sight Line

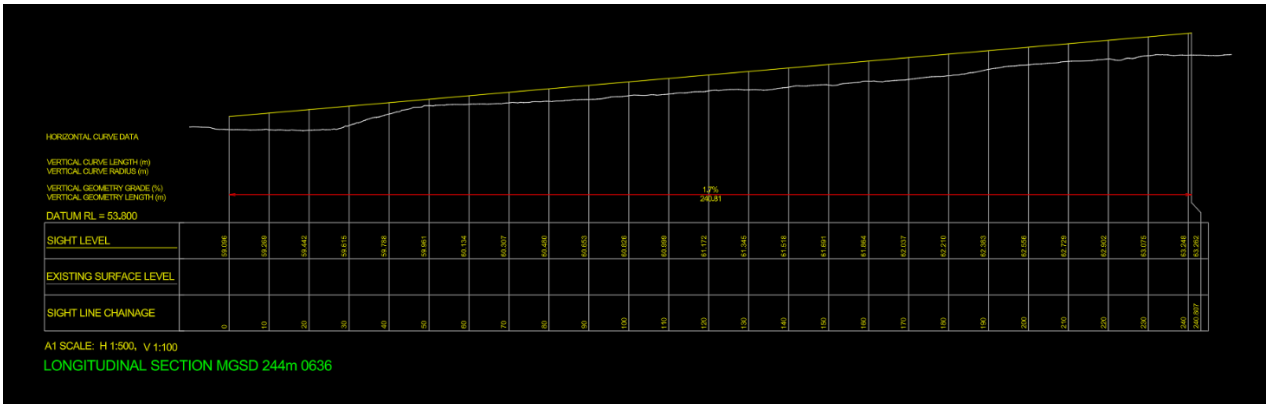


Figure 3.9- MGSD Sight Line- Wine Country Drive & Broke Rd Right Sight Line

As shown in Figure 3.8 and Figure 3.9, **MGSD is achieved**.

3.6-Putty Rd/Existing Access Track (I-31)

As a 4 lane/2-way road, the critical acceptance gap is 8 seconds for a right turn from a minor road. At 110km/h (100 km/h posted +10km/h TfNSW supplement) the MGSD required is 244m.

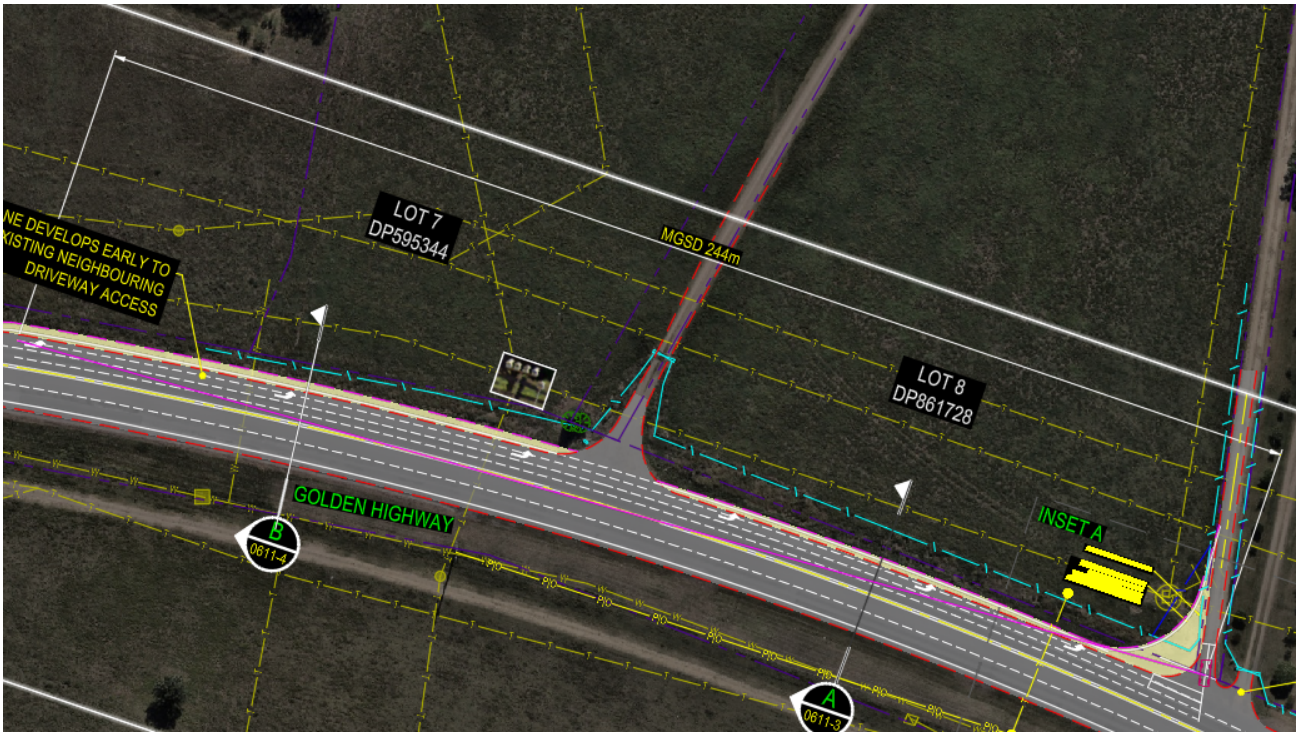


Image 3.9 - MGSD Sight Line- Putty Rd & Existing Access Track Right Sight Line

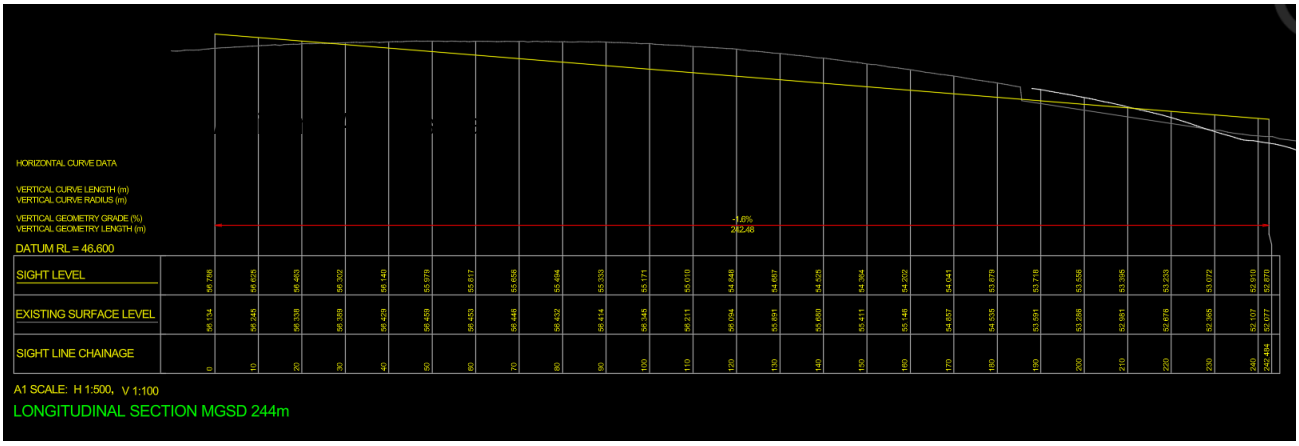


Figure 3.10- MGSD Sight Line- Putty Rd & Existing Access Track Right Sight Line

As shown in Figure 3.10, **MGSD is not achieved at 244m given the existing topography of the road**.

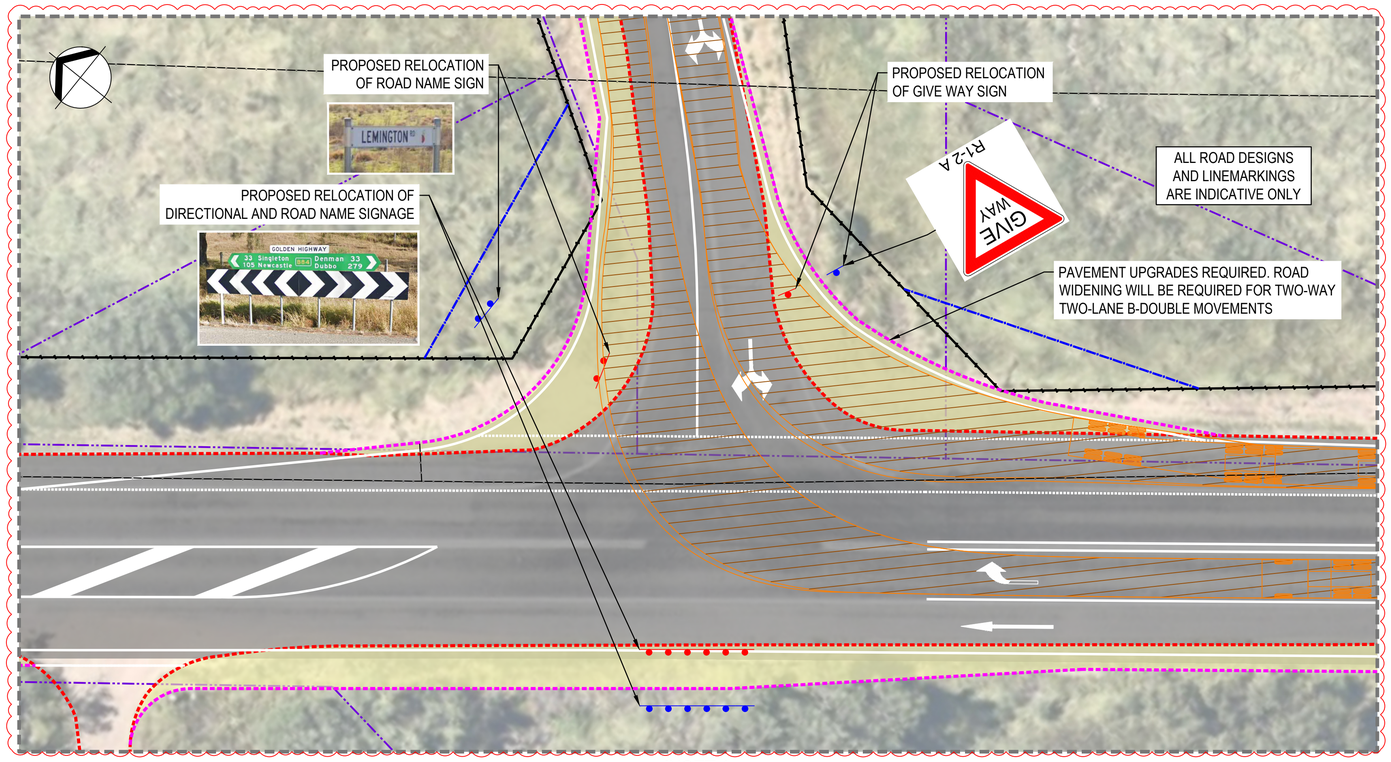
4. Conclusion

All the above intersections meet MGSD requirements except for 3.6- Putty Rd and Existing Access Track. This has been ascertained through a desktop study for the supplied intersections utilising the assessment parameters given in Section 2, and LiDAR data or ELVIS data for existing surfaces where applicable.

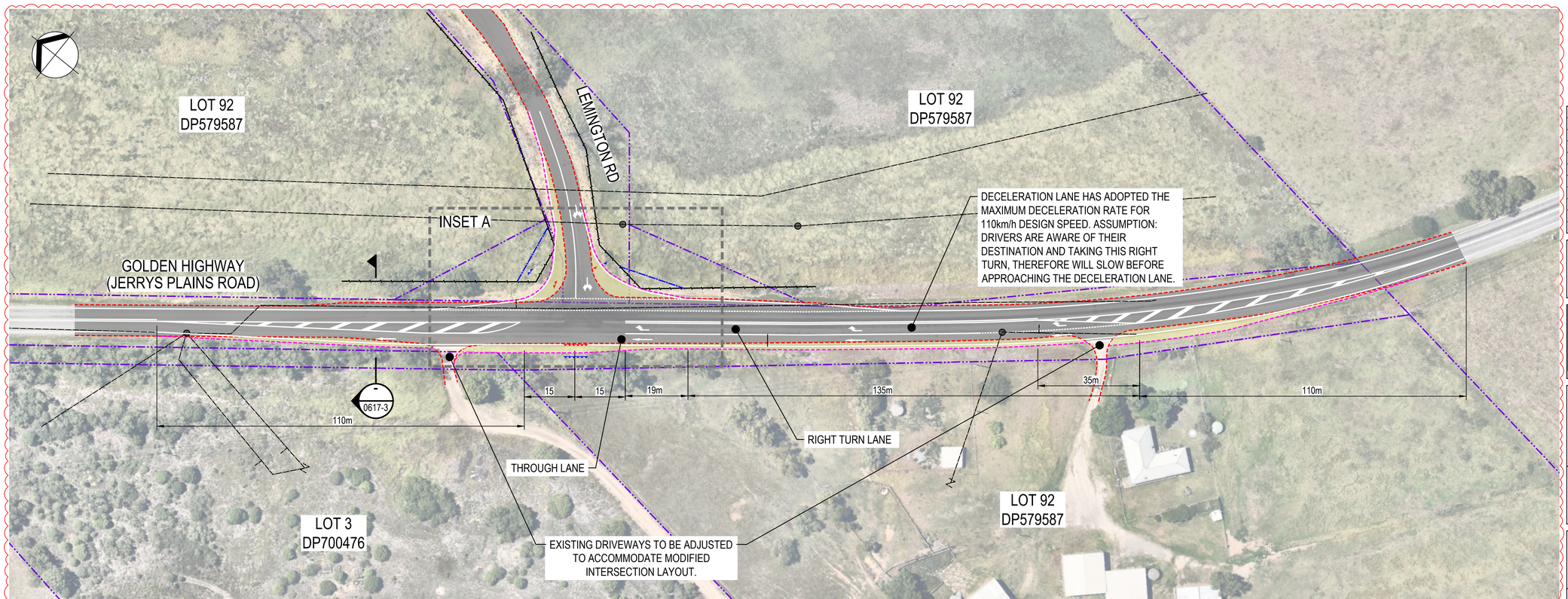
Intersection	MGSD Check
3.1-Golden Highway/Lemington Rd (I-03)	MGSD Requirement- 153m- **Achieved**
3.2-Golden Highway/Gouldsville Rd (I-07)	MGSD Requirement- 244m- **Achieved**
3.3-Golden Highway/Putty Rd (I-10)	MGSD Requirement- 244m- **Achieved**
3.4-Golden Highway/Range Rd (I-10b)	MGSD Requirement- 244m- **Achieved**
3.5-Wine County Drive/Broke Rd (I-14)	MGSD Requirement- 244m- **Achieved**
3.6-Putty Rd/Existing Access Track (I-31)	MGSD Requirement- 244m- **Not Achieved** (Existing road crest prevents adequate sight line for right turn movement)

Annexure F – Strategic concept design update

Drawing Plotted: 10:27 AM



INSET A
1:200 @ A1



LAYOUT
1:700 @ A1

COORDINATE SYSTEM : GDA2020 / MGA ZONE 56

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4. ALL LINE MARKINGS, DELINEATIONS, RUMBLE STRIPS OR SIMILAR SHAL BE REINSTATED AS REQUIRED TO MATCH EXISTING INTENT OR AUTHORITY REQUIREMENTS.

LEGEND

- EXISTING TELSTRA (BYDA)
- CADASTRE (INDICATIVE ONLY)
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN / EDGE OF FORMATION
- EXISTING FENCE
- EXISTING SIGNAGE
- PROPOSED EDGE OF BITUMEN / EDGE OF FORMATION
- PROPOSED FENCE
- PROPOSED SIGNAGE
- PAVEMENT
- AREA REQUIRE ROAD WIDENING
- SWEPT PATH 26m B-DOUBLE TURN SPEED 15km/h

No.	Revision	By	Chk	Appd	Date
0C	DRAFT	S.C.	B.S.	A.L.	27.03.26
0B	FOR INFORMATION	L.C.	B.S.	A.L.	16.02.26
0A	RE-ISSUED FOR TENDER	C.R.L.	B.S.	A.L.	28.11.25
0	ISSUED FOR TENDER	W.G.	B.S.	A.L.	24.01.25

Original Scale (A1) AS SHOWN	Design	A.SEIP	24.01.25	Approved For Construction*
	Drawn	W.GOH	24.01.25	
	Dsg Verifier	D.FINN	24.01.25	
Reduced Scale (A3) AS SHOWN	Drg Check	B.STRANG	24.01.25	Date
	* Refer to Revision 1 for Original Signature			

Client: ENERGY CORPORATION OF NSW

Project: HUNTER TRANSMISSION PROJECT (HTP1)

Title: INTERSECTION ASSESSMENT - I-03 LEMINGTON RD AND GOLDEN HWY JERRYS PLAINS - BAL/CHR

Discipline: CIVIL - GENERAL

Drawing No.: 2583080-CA-ANC-0617-2 Rev.: 0C

0 2 4 8 12
Full Size A1 1:200 ; Half Reduction A3 1:400
SCALE (m)

0 7 14 28 42
Full Size A1 1:700 ; Half Reduction A3 1:1400
SCALE (m)

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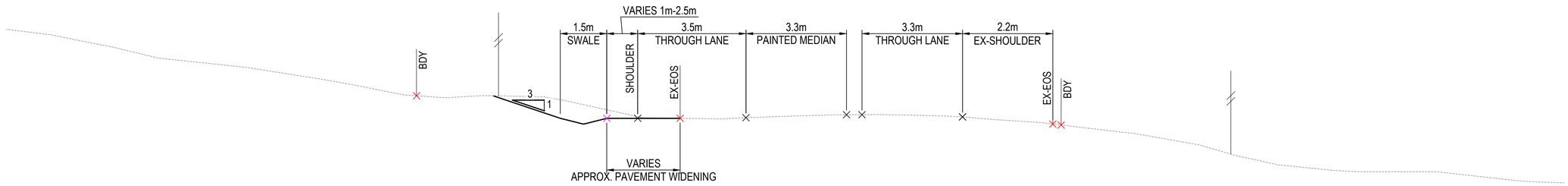
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LEGEND

- EXISTING SURFACE (LiDAR)
- DESIGN SURFACE
- EXISTING BOUNDARY (BDY)
- EXISTING EDGE OF SEAL (EX-EOS)
- EXISTING FENCE
- PROPOSED LINEMARKING
- PROPOSED EDGE OF SEAL



- / 0617-2 TYPICAL SECTION - GOLDEN HWY & LEMINGTON RD
SCALE: NTS

No.	Revision	By	Chk	Appd	Date
0B	DRAFT	S.C.	B.S.	A.L.	20.03.26
0A	FOR INFORMATION	L.C.	B.S.	A.L.	16.02.26
0	ISSUED FOR INFORMATION	R.A.	B.S.	A.L.	28.11.25

Original Scale (A1) AS SHOWN Reduced Scale (A3) AS SHOWN	Design			Approved For Construction*
	Drawn			
	Dsg Verifier			
	Drg Check			Date

* Refer to Revision 1 for Original Signature

Client: ENERGY CORPORATION OF NSW

Project: HUNTER TRANSMISSION PROJECT (HTP1)

Title: INTERSECTION ASSESSMENT - I-03 LEMINGTON RD AND GOLDEN HWY TYPICAL CROSS SECTION

Discipline: CIVIL - GENERAL

Drawing No.: 2583080-CA-ANC-0617-3 Rev.: 0B

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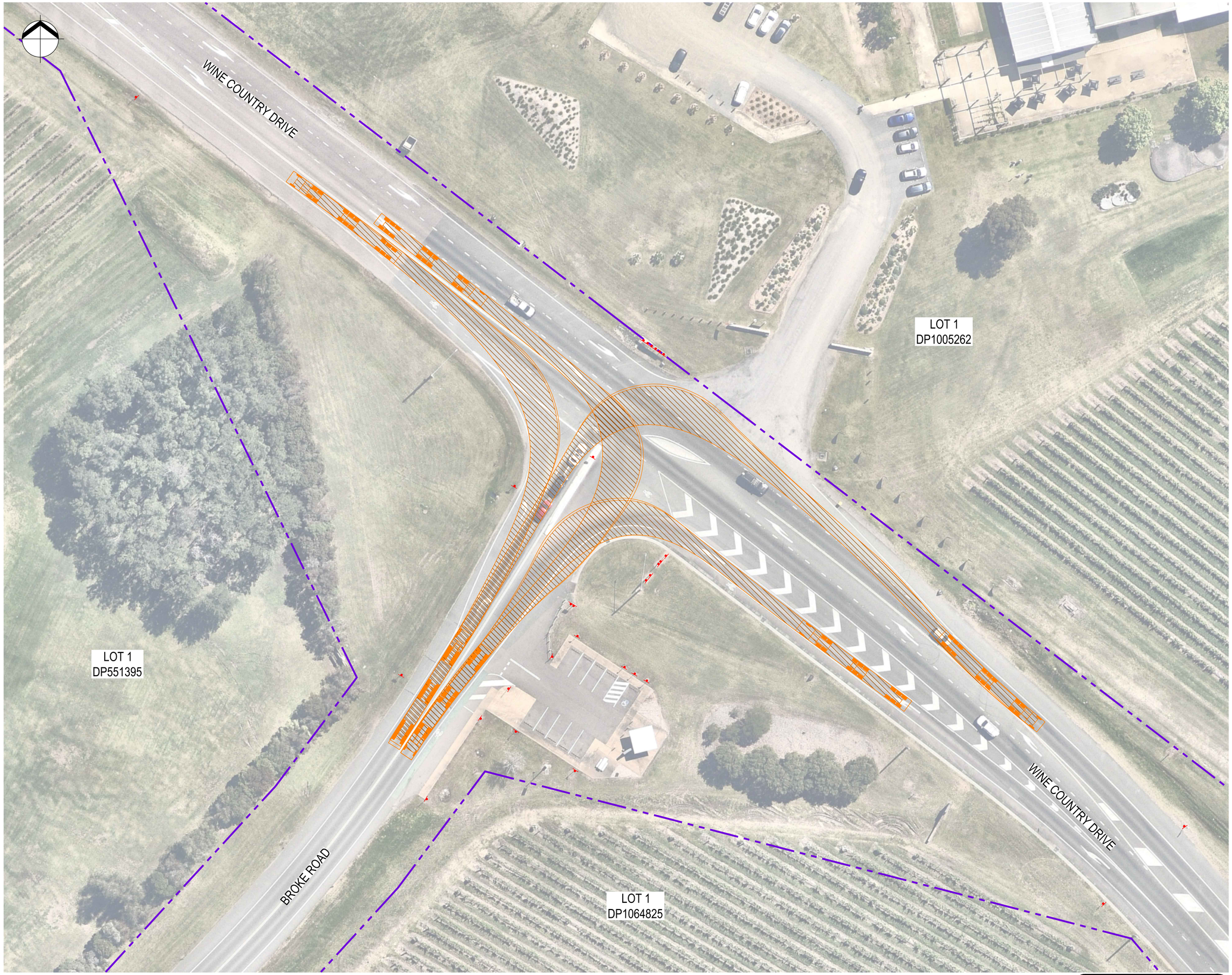
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LEGEND

- CADASTRE (INDICATIVE ONLY)
- EXISTING SIGNAGE
- SWEPT PATH - 26m B-DOUBLE VEHICLE TURN SPEED 15km/h

No.	Revision	By	Chk	Appd	Date
0B	DRAFT	S.C.	B.S.	A.L.	20.03.26
0A	RE-ISSUED FOR TENDER	C.R.L	B.S.	A.L.	28.11.25
0	ISSUED FOR TENDER	W.G.	B.S.	A.L.	24.01.25

Original Scale (A1) 1:350m	Design	B.STRANG	24.01.25	Approved For Construction*
	Drawn	C.R.LAWRENCE	24.01.25	
	Dsg Verifier	D.FINN	24.01.25	
Reduced Scale (A3) 1:700m	Drg Check	B.STRANG	24.01.25	Date
	* Refer to Revision 1 for Original Signature			

Beca

Client: ENERGY CORPORATION OF NSW

Project: HUNTER TRANSMISSION PROJECT (HTP1)

Title: INTERSECTION ASSESSMENT - I-14 WINE COUNTRY DR AND BROKE RD LOVERDALE - AUL/CHR

Discipline: CIVIL - GENERAL

Drawing No.: 2583080-CA-ANC-0636 Rev.: 0B

0 3.5 7 14 21
Full Size A1 1:350 ; Half Reduction A3 1:700
SCALE (m)

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COORDINATE SYSTEM : GDA2020 / MGA ZONE 56

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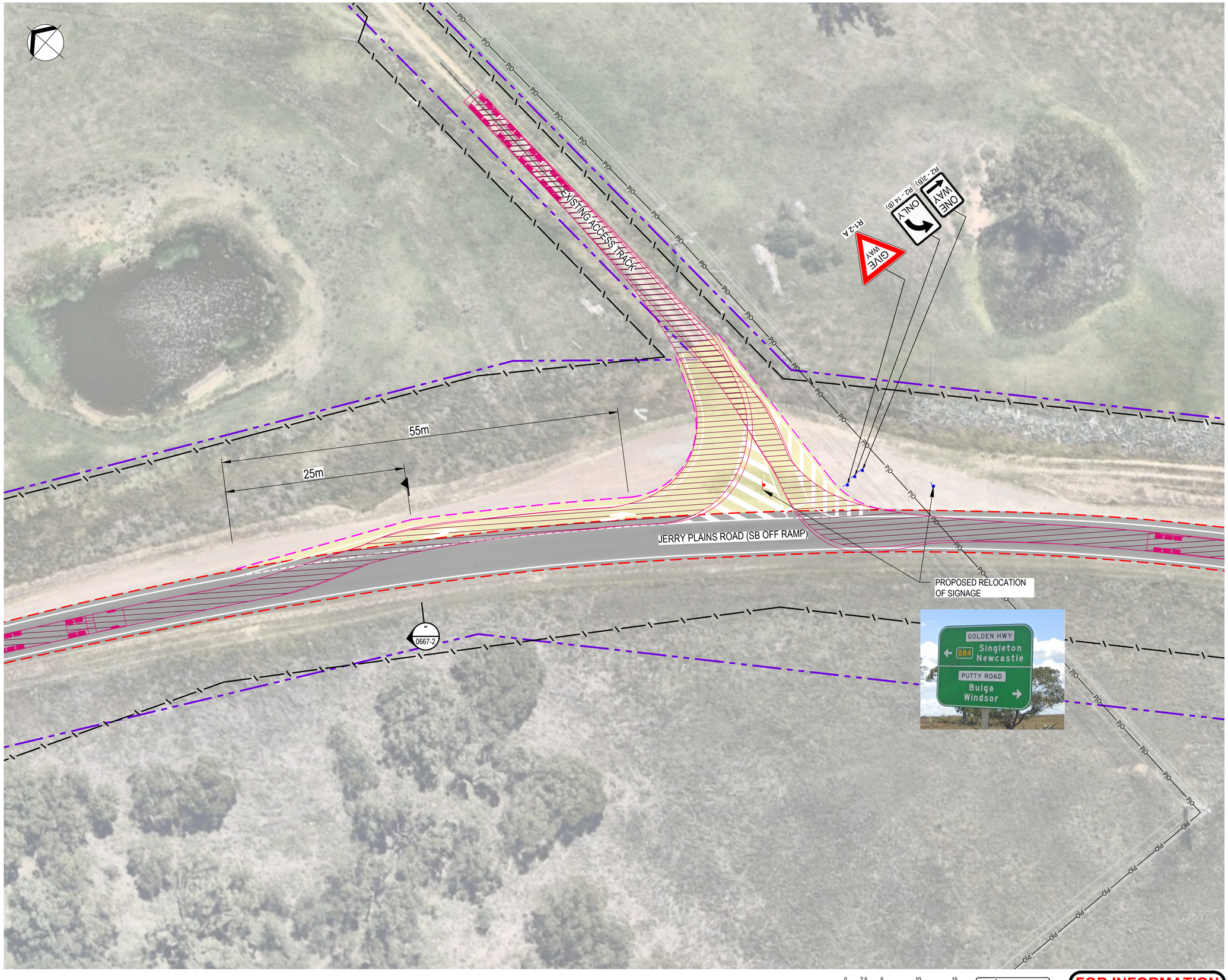
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1. ALL EXISTING INFRASTRUCTURE ARE INDICATIVE ONLY.
2. IMPACTS TO CATCHMENT FLOODING AND DRAINAGE DUE TO SITE WORKS HAVE NOT BEEN ASSESSED IN DETAIL AS PART OF THIS PACKAGE OF WORKS.
3. SURVEY-ACCURATE CADASTRE MODELS (SACM) BY ENCO ARE PREDOMINANTLY SHOWN BUT COVERAGE IS LIMITED. AS FOR AREAS NOT COVERED BY SACM, NSW GIS OPEN DATA (SIXMAPS) CADASTRES ARE SHOWN.
4. ALL LINE MARKINGS, DELINEATIONS, RUMBLE STRIPS OR SIMILAR SHAL BE REINSTATED AS REQUIRED TO MATCH EXISTING INTENT OR AUTHORITY REQUIREMENTS.

LEGEND

- EXISTING TELSTRA (BYDA)
- EXISTING WATER MAIN (BYDA)
- EX. POWER LINES - OVERHEAD
- EXISTING DRAINAGE (BYDA)
- CADASTRE (INDICATIVE ONLY)
- EXISTING ROAD CENTRELINE
- EXISTING EDGE OF BITUMEN / EDGE OF FORMATION
- EXISTING FENCE
- EXISTING GUARDRAIL
- EXISTING SIGNAGE
- EXISTING GATE
- EXISTING TREE
- PROPOSED EDGE OF BITUMEN / EDGE OF FORMATION
- PAVEMENT
- AREA REQUIRING ROAD WIDENING
- SWEPT PATH - 19m SEMI-TRAILER VEHICLE TURN SPEED 15km/h

No.	Revision	By	Chk	Appd	Date
0B	DRAFT	S.C.	B.S.	A.L.	20.03.26
0A	FOR INFORMATION	L.C.	B.S.	A.L.	13.02.26
0	ISSUED FOR TENDER	L.C.	B.S.	A.L.	05.12.25

Original Scale (A1) 1:250m	Design	R.ANDERSON	05.12.25	Approved For Construction*
	Drawn	L.COLE	05.12.25	
Reduced Scale (A3) 1:500m	Dsg Verifier	D.FINN	05.12.25	
	Drg Check	B.STRANG	05.12.25	Date
* Refer to Revision 1 for Original Signature				

Client: ENERGY CORPORATION OF NSW

Project: HUNTER TRANSMISSION PROJECT (HTP1)

Title: INTERSECTION ASSESSMENT - I - 69 JERRY PLAINS RD (SB RAMP) AND EX TRACK MOUNT THORLEY - AUL(s)

Discipline: CIVIL - GENERAL

Drawing No.: 2583080-CA-ANC-0667-1 Rev.: 0B

0 2.5 5 10 15
Full Size A1 1:250 ; Half Reduction A3 1:500
SCALE (m)

BEFORE YOU DIG www.byda.com.au

FOR INFORMATION
NOT FOR CONSTRUCTION

COORDINATE SYSTEM : GDA2020 / MGA ZONE 56

DO NOT SCALE FOR SET OUT DIMENSIONS

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