North East Link Project
Supplementary Traffic Review

As requested by Carey Grammar, Ratio Consultants has prepared a supplementary submission to the previous traffic review of the Environmental Effects Statements (EES) prepared for the North East Link Project (NELP).

The purpose of the supplementary submission is as follows:

1. Review the amended Environmental Performance Requirements (EPRs) and advise whether the EPRs reflect Ratio Consultants previous recommendations and agreements reached at the traffic Conclave with NELP’s traffic expert (John Kiriakidis).
2. Review the Alternative Bulleen Road Design (“switch” design) and advise the implications of this design as they relate to Carey Grammar.
3. Review the O’Brien Traffic Alternative Design and advise the implications of this design as they relate to Carey Grammar.

Accordingly, we report as follows:

1. Amended EPRs

The following table lists the amended EPRs (dated 12 August 2019) relevant to the traffic review, with the amendments underlined and deletions in strikethrough text as per that document.

Table 1.1: Amended EPRs

<table>
<thead>
<tr>
<th>EPR Code</th>
<th>Environment Performance Requirement</th>
<th>Phase</th>
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<tbody>
<tr>
<td>T1</td>
<td>Optimise design performance</td>
<td>Design</td>
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<td></td>
<td>Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to:</td>
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- Minimise adverse impact on travel times for all transport modes, including walking and cycling
- Maintain, and where practicable, enhance the existing traffic movements at interchanges
- Design the road, walking and cycling and public transport elements interchanges and intersections to meet relevant road and transport authority requirements
- Maintain, and where practicable, enhance pedestrian movements, bicycle connectivity, and shared use paths, including access (both vehicular and pedestrian) to public open space and reserves
- Work with relevant public transport authorities to minimise impacts on buses, trams and rail and, where practicable, enhance public transport facilities and services that cross or run parallel to the alignment of North East Link

Minimise loss of car parking in consultation with relevant local councils.

<table>
<thead>
<tr>
<th>Transport Management Plan (s) (TMP)</th>
<th>Construction</th>
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<tbody>
<tr>
<td>Prior to commencement of relevant works, develop and implement Transport Management Plan(s) (TMP) to minimise disruption to affected local land uses, traffic, car parking, public transport (rail, tram and bus), pedestrian and bicycle movements and existing public facilities during all stages of construction.</td>
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<td>The TMP must be informed and supported by an appropriate level of transport modelling and must include:</td>
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<td>- Requirements for maintaining transport capacity for all travel modes in the peak periods</td>
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<td>- Requirements for limiting the amount of construction haulage during the peak periods</td>
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<td>- A monitoring program to assess the effectiveness of the TMPs on all modes of transport</td>
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<td>- Where monitoring identifies adverse impacts, implement practicable mitigation measures</td>
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<td>- Consideration of construction activities for other relevant major projects occurring concurrently with construction activities for North East Link and potentially impacting modes of transport in the same area</td>
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<td>- Potential routes for construction haulage and construction vehicles travelling to and from the project construction site, recognising sensitive receptors and avoiding the use of local streets where practicable</td>
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<td>- Suitable measures, developed in consultation with emergency services, to ensure emergency service access is not inhibited as a result of project construction activities</td>
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- Provision of alternative parking where practicable to replace public and commuter parking lost as a result of project construction activities
- Requirements to minimise impacts on local streets, community and commercial facilities by providing parking for construction workers at construction compounds where practicable
- Measures to ensure connectivity and safety for all transport network users during construction
- Measures to limit the extent of road closures
- Consultation with VicRoads, the Department of Transport and relevant transportation authorities.

A TMP may be split into precincts where appropriate but must consider other precinct TMPs through the Transport Management Liaison Group as per EPR T3. TMPs must be submitted to the relevant authority for approval.

<table>
<thead>
<tr>
<th>T3</th>
<th>Transport Management Liaison Group</th>
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<td></td>
<td>A Transport Management Liaison Group (TMLG) must be established and convene prior to the commencement of any works that may impact on existing roads, paths or public transport infrastructure. The TMLG must include representatives from the State, VicRoads, the Department of Transport, emergency services, the project, relevant transportation authorities and relevant local councils.</td>
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<td></td>
<td>The TMLG will be a forum for exchange of information and discussion of issues associated with Transport Management Plans. This must include review of proposed haulage routes for construction sites south of the northern tunnel portal to minimise reliance on a single haulage route between Bell Street and the M80 Ring Road and facilitate different sites using different haulage routes.</td>
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<td>The TMLG must be provided with the Transport Management Plans, details as to timing of implementation, information about construction traffic monitoring conducted by the project, and other reports as relevant.</td>
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<td>Where construction activities have the potential to significantly impact on specific stakeholder or community group facilities, the TMLG should be satisfied that there has been adequate consultation to inform the Transport Management Plans.</td>
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<td>The TMLG must meet at least monthly until the completion of construction.</td>
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<td>Design, Construction</td>
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<tr>
<th>T4</th>
<th>Road safety design</th>
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<td>Undertake independent road safety audits after each stage of detailed design and after construction. The project design and operational activities must meet all relevant road and transport authority requirements with respect to transport network user safety.</td>
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<td>Design, construction, operation</td>
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</table>
Undertake traffic monitoring on selected roads (arterial and non-arterial) identified in consultation with the relevant transportation authorities and local council pre-construction, at six monthly intervals during construction, and up to two years after construction is complete. As part of the selection process, consideration must be given to roads that carry public transport services. Implement local area traffic management works in consultation with the local relevant councils.

Develop and implement traffic performance management to monitor conditions during construction. Real time traffic information must be provided to drivers.

An assessment of the adequacy of the amended EPR’s is undertaken below, with reference to the recommendations made in the Traffic Evidence Statement prepared by Brett Young on behalf of Carey Grammar Baptist School and the agreements reached in the Carey Baptist Grammar School Traffic Expert Conclave (Tabled Document 110):

<table>
<thead>
<tr>
<th>Item</th>
<th>Discussion</th>
<th>Recommendation</th>
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<tr>
<td><strong>Recommendation 1</strong></td>
<td>The Construction Compound Boundary be amended to lie outside of the Bulleen Park access road so that unfettered access to CGSC via the three existing gates is maintained throughout construction.</td>
<td>As per Tabled Document 110 – Carey Baptist Grammar School Traffic Expert Conclave, the following conclusion was reached: Experts agree that the construction compound boundary should be revised to maintain access to Bulleen Park Drive along the northern access to gates 1, 2, 3 during construction. Despite this agreement, we are not aware of an amended Reference Design having been produced by NELP to reflect this, nor do the amended EPR’s reflect this outcome being achieved. The Reference Design should be amended to relocate the construction compound outside the Bulleen Park carriageway to reflect the agreement. Alternatively, it is suggested that the Panel recommend this amendment be made to the Reference Design or that an alternative requirement be imposed on the project to achieve the same outcome (e.g. a contract requirement).</td>
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<td><strong>Recommendation 2+3</strong></td>
<td>The Project Boundary line be shifted outside the CGSC boundary, including the Bulleen Park access road that is relied on to access the carpark located to the north of Wilcox Field. The Project Boundary be shifted clear of the circulation road</td>
<td>EPR T3 has been amended to include the following: Where construction activities have the potential to significantly impact on specific stakeholder or community group facilities, the TMLG should be satisfied that there has been adequate consultation to inform. It is recommended that an EPR be included that requires access to key community facilities (such as schools) being maintained throughout the project.</td>
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within CGSC to ensure that the existing vehicle circulation arrangements within CGSC are maintained.

the Transport Management Plans.

Mr Kiriakidis’ presentation to the Panel also noted that invitees would include Corridor Schools (e.g. Marcellin, Carey).

This amendment to EPR T3 provides certainty that Carey Grammar would be consulted as part of the preparation of the Transport Management Plans. It does not however, provide certainty for Carey that access will be maintained to an acceptable level throughout the project.

Recommendation 4
If access to any existing on-site car parking is likely to be restricted during construction, it is recommended that the Reference Design be amended to include construction of temporary parking in proximity but outside the boundary of CGSC and for the exclusive use of CGSC, or alternatively that an Environmental Performance Requirement with an outcome to this effect be included.

As per Tabled Document 110, there was no agreement that displaced parking should be provided for exclusive use by Carey Baptist Grammar School.

It is recommended that EPR T2 be amended to also consider private parking that may be lost as part of the project as per below.

Provision of alternative parking where practicable to replace public, private and commuter parking lost as a result of project construction activities.

Recommendation 5
To prevent construction workers from parking in the publicly available car parking spaces within Bulleen Park (which is currently relied upon to accommodate the parking demand of users of both Bulleen park and CGSC), an Environmental Performance Requirement should be incorporated to ensure that workers are provided with their own dedicated parking.

As per Tabled Document 110, there was discussion between experts at the conclave that the 9th dot point of EPR be amended to include the word ‘sufficient’ and read:

Requirements to minimise impacts on local streets, community and commercial facilities by providing sufficient parking for construction workers at construction compounds where practicable

This was not agreed upon by all experts at the conclave and the amended EPRs do not reflect this change.

It is recommended that the word ‘sufficient’ be added to ensure that construction worker parking demands are adequately considered to reduce their impact on surrounding land uses.

Recommendation 6
For the project to adhere to the project’s commitment to a zero loss of car parking, and to offset the loss of on-site car parking at

As per Tabled Document 110, there was no agreement between the experts that the parking potential lost from the Carey grammar site (as per their Masterplan) as part of the project

The following options are suggested as a means of ensuring that Carey Grammar continues to enjoy the same level of parking provision
CGSC, it is recommended that the Reference Design be amended to include construction of additional permanent parking in proximity but outside the boundary of CGSC and for the exclusive use of CGSC, or alternatively that an Environmental Performance Requirement with an outcome to this effect be included. Should be replaced beyond the project boundary for their exclusive use.

The amended EPR's do not reflect Mr Young's recommendation.

Recommendation 7

It is noted that the peak period of activity for CGSC is Saturday Sport. It is therefore recommended that construction haulage activity in the vicinity of the site should also seek to avoid Saturday. This could be achieved through an amendment to EPR T2 such as follows:

Requirements for limiting the amount of construction haulage during the peak periods, including during peak periods of activity for significant land uses such sporting facilities.

As per Tabled Document 110, it was agreed between Carey and NELP traffic experts that the first dot point of EPR 2 be amended to state:

Requirements for maintaining transport capacity in the peak periods, ‘not limited to the AM and PM weekday peak periods’

Furthermore, Mr Kiriakidis' Evidence in Chief to the Panel recommended that this change be made but is not reflected in the latest EPR's.

Recommendation 8

Further clarification required on whether it is in fact proposed to install temporary signals at the existing access to Bulleen Road, including details of the configuration, so that the impacts of this scenario can be further assessed as it relates to CGSC.

No further information was forthcoming on this point.

Recommendation 9

To ensure that road closures along Bulleen Road during construction do not impact on

As per Tabled Document 110, it was agreed between Carey and NELP traffic experts that the first

It is recommended that this change be made to EPR T2:

Requirements for maintaining transport capacity in the peak periods, 'not limited to the AM and PM weekday peak periods.'
access to CGSC, it is recommended EPR T2 is amended as follows:

Requirements for maintaining transport capacity in the peak periods, including weekend peak periods associated with land uses such as sporting grounds. Short term road closures in the vicinity of sporting grounds should be limited to overnight periods.

dot point of EPR 2 be amended to state:

Requirements for maintaining transport capacity in the peak periods, not limited to the AM and PM weekday peak periods

Furthermore, Mr Kiriakidis’ Evidence in Chief to the Panel recommended that this change be made but is not reflected in the latest EPR’s.

Recommendation 10

It is recommended the Reference Design of the new signalised access to Bulleen Road should be modified to show a larger footprint that caters for one of the following options:

– Double right turn lanes on the western leg of the intersection and an increased right turn lane on Bulleen Road to a length of 200 metres; or
– Double right turn lanes on the western leg of the intersection and double right-turn lanes along Bulleen Road (northern leg).

As per Tabled Document 110, the infrastructure should be designed in accordance with existing, endorsed VicRoads guidelines, with sufficient analysis to provide the assurance the infrastructure can function at an adequate Level of Service.

It was agreed that weekend analysis should be completed along the Bulleen Road precinct/corridor, including weekend surveys of all uses that have access off Bulleen Road.

An EPR should be included that reflects this agreement and the recommendation by NELP’s own expert that further modelling is required.

2 Alternative Bulleen Road Design

An alternative design of the southern portal of the North East Link Project has been developed by the proponent, referred to as the Alternative Bulleen Road Design, or “switch” design.

The alternative design is shown in Figure 1.
The following section outlines the impact of the Alternate Bulleen Road Design on Carey Grammar Sports Complex relative to the Reference Design.

**Positive impacts relative to Reference Design**

— The alternative design now shows the Veneto club as having its own separate Bulleen Road access, located to the north of the new Bulleen Park Drive intersection. This should improve access conditions to and from the Carey site as it would reduce the level of traffic relying on Bulleen Park Drive.

— The alternative design is likely to have less impact on operations at CGSC as a result of the single-stage construction of Bulleen Road as
it reduces the amount of time when access to Bulleen Road is disrupted during the transition phases when compared to the Reference Design which involves two “switches” during the reconstruction of Bulleen Road.

— In the alternative design, the realigned Bulleen Road abuts the site frontage and therefore there would be more direct access to the shared paths that abut Bulleen Road, which improves access for those pupils and staff that ride or walk to the site.

**Negative impacts relative to Reference Design**

— The alternative design pushes the road edge closer to Dunshea Oval than the reference design, which will result in additional impacts on landscaping and/or car parking in the area adjoining the internal circulation road i.e. more land take from the CGSC appears to be required. This is highlighted in Figure 2 below which shows that there is approximately 25 metre separation between Dunshea Oval and the road edge in the Reference Design and only 12 metres separation between Dunshea Oval and road edge in the alternative design.

**Figure 2: Separation between Dunshea Oval and road edge**

— The Alternative Design shows an alignment for Bulleen Park Drive that is a less direct connection to the main Carey entrance than what the Reference Design shows. This is highlighted in Figure 3. A further amended design was produced at Traffic Engineering Group Expert Conclave (see Tabled Document 217) that showed where the realigned Bulleen Park Drive would connect to the existing alignment. It was discussed at this conclave that the alignment of Bulleen Park Drive could be modified to run in a similar alignment to the Reference Design. If this option is chosen, it is recommended that Carey Grammar be consulted regarding the optimal alignment of the new Bulleen Park Drive.
Figure 3: Alignment of Bulleen Park Drive (as per Tabled Document 217)

Noted

— The Alternative Design now shows a four-legged intersection which now carries Marcellin and Manningham Club traffic and accordingly will be under different signal phasing. No traffic modelling has been undertaken of the new intersection, however this work will need be undertaken (as was agreed at the Conclave) to ensure that the design of the signals is sufficient to maintain an appropriate level of service.

3 O'Brien Traffic Alternative Design

An alternative design of the North East Link Project has been developed by O’Brien Traffic on behalf of BBW (Boroondara, Banyule & Whitehorse Council’s).

The alternative design prepared by O’Brien Traffic is shown below in Figure 4.
The O'Brien design retains Bulleen Road in its current location and moves the southern tunnel portal of the North East Link towards the Eastern Freeway. The design shows an at-grade on-ramp from the Eastern Freeway running along Carey Grammar Sports Complex and leading to a tunnel entrance just to the north of Bulleen Park Drive. This necessitates the relocation and reconstruction of the Bulleen Park Drive intersection. It is unclear from the alternative design if this new intersection would be signalised, however this would likely be the case given the level of traffic using this intersection warranting signalisation.

The following section outlines the impacts of the O'Brien Traffic Alternative Design on Carey Grammar Sports Complex as compared to the Reference Design.
Positive impacts relative to Reference Design

— The project acquires less land from the Carey Grammar Sports Complex site. This means potentially more courts and car parking spaces are retained.

— Less disruptions in accessing the Carey Grammar Sports Complex are likely during the construction phase of the project as Bulleen Road remains in its current position (as opposed to the Reference Design which requires Bulleen Road to be temporarily reconstructed).

— Access to Carey Grammar Sports Complex remains in close proximity to the existing access to Bulleen Road meaning a more direct access to the campus (and potentially a better sense of address for Carey Grammar).

— Separate access points to Carey Grammar Sports Complex & the Veneto Club are provided in this alternate design. This should improve access conditions to and from the Carey Site.

Negative Impact

— No apparent traffic related negative impacts have been identified on Carey Grammar Sports Complex from the O’Brien Traffic Alternative Design.

Areas of uncertainty:

— It is unclear whether the new access to Bulleen Road would be signalised as part of this alternative design. We do note however that being a new intersection it would need to be considered for signalisation and would meet the traffic volume warrants for signalisation. On this basis, it is likely that it would be signalised, despite not being made clear on the plans provided.
The information above is considered to have addressed the additional items. Should you wish to discuss anything further, please contact the undersigned on 03 9429 3111.

Brett Young
Director: Traffic
Ratio Consultants