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Transport
Roads & Maritime
Services

CE12/0536
NWRL EIS1

Manager – Rail & Ports (Infrastructure Projects)
NSW Planning & Infrastructure
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Department of Planning
Received
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Scanning Room

Attention: Diane Sarkies

MP 06_0157 NORTH WEST RAIL LINK (NWRL) – STAGED STATE SIGNIFICANT INFRASTRUCTURE MODIFICATION AND STATE SIGNIFICANT INFRASTRUCTURE APPLICATION – MAJOR CIVIL CONSTRUCTION WORKS (SSI-5100).

Dear Ms Sarkies,

I refer to the Department of Planning and Infrastructure's letter dated the 3 April 2012 (Ref: SSI-5100), regarding the above mentioned State Significant Infrastructure (SSI) application referral to the Roads and Maritime Services (RMS) for comment in accordance with *Clause 115Z(5) of the Environmental Planning and Assessment Act, 1979* and for concurrence in accordance with *Section 138 (2) of the Roads Act, 1993*.

RMS has formed a dedicated NWRL working party to actively support and assist with the delivery of the state significant project. TfNSW and RMS have agreed to enter into a formal agreement to administer the delivery of works within the classified road corridor (for those roads are under the care and control of RMS). The agreement is currently being drafted as a Works Authorisation Deed. RMS expects execution of the Agreement will form a condition of consent as proposed below.

RMS supports TfNSW's collaborative approach to the further development of the SSI reference design to meet whole of government transport objectives and operational requirements.

RMS has reviewed the SSI application and provides the following comments to the Department of Planning and Infrastructure (provided separately to TfNSW as part of the ongoing consultation) for consideration in the determination of the SSI application:

1. Section 138 concurrence

1. The design and construction of any new construction site's vehicular access to any classified road shall be in accordance with Austroads, AS2890.1 – 2004, AS2890.2 – 2002 and the RMS's requirements.

A certified copy of the design plans shall be submitted to RMS for consideration and concurrence prior to site establishment and commencement of road works.

2. Any proposed road infrastructure works, road restoration works, vehicular accesses or signalised intersections located along the state classified road system, and any new signalised intersections and/or other modifications to existing signals located on the local road system shall be designed to meet RMS requirements. The design requirements shall be in accordance with Austroads, RMS supplements and technical directions and other Australian Codes of Practice. The certified copies of the civil, structural and traffic signal design plans shall be submitted to RMS for consideration and acceptance prior to site establishment and commencement of road works.

The proponent will be required to enter into a Works Authorisation Deed (WAD) for the abovementioned road/bridge works and traffic control facilities identified on the state classified and local road systems.

2. General

3. The project shall be designed with the objective of minimising adverse changes to existing access arrangements and services for all transport modes and, where reasonable and feasible, facilitate an improved level of access and service comparable to the existing situation. In all instances where the relocation/removal of bus stops/interchanges/transit ways is required to facilitate construction/access, approval is to be obtained from the relevant agency.
4. Where any construction activities are likely to obstruct or have the effect of restricting, closing, interfering with or obstructing the free flow of traffic on any road or road related area, the NWRL contractor(s) must investigate, develop and implement traffic management protocols, processes and arrangements with regard to all temporary traffic arrangements. This must be done in consultation with and obtain approval from RMS and TMC for the safe and efficient management and operation of the road network.
5. Where existing parking, either on-street or in car parks, is removed (suggested for periods greater than four weeks) to facilitate construction activities, either alternate arrangements must be provided or the proponent must identify where the displaced vehicles can be satisfactorily accommodated. Displaced vehicles must not be accommodated on the state road network.
6. The proponent shall prepare and submit the following traffic management plans as described below to address construction and operational traffic impacts:
 - a) Construction Site Parking Management Plan – details construction workforce impacts.
 - b) Construction Traffic Management Plan and Haulage Management Plan – details construction activity impacts.
 - c) Traffic Management Plan (Operational) – details permanent changes to the road network following rail opening.
7. Prior to construction site establishment for all construction sites associated with the NWRL the proponent must prepare and submit a "Construction Site Parking Management Plan" to RMS and Local Council(s) for approval. The Plan must address the following key issues:
 - a) Where feasible the proponent must provide significant levels of worker parking, either onsite or remotely.
 - b) Where remote parking is provided detailed information must be provided indicating how staff will be transferred to construction sites (i.e. shuttle bus routes, frequencies) and the locations of the remote parking sites.
 - c) Details of local traffic impacts to nearby roads and intersections due to remote parking locations.

- d) Details of on-street parking availability/occupancy in areas likely to be affected by staff parking on the local street network and how areas with limited on-street parking availability would be appropriately managed.
 - e) Where feasible details should be provided on the use of shuttle bus services to ferry workers to construction sites from more distant public transport nodes.
 - f) Provide details of car-pooling mechanisms to reduce the traffic impacts on the surrounding road system.
 - g) Provision of details indicating how the proponent will proactively manage their staff parking and adequately respond to community concerns.
8. The proponent must prepare and submit a Construction Traffic Management Plan and a Haulage Management Plan to RMS and TMC for review and approval. The Plan(s) shall identify the full haulage routes from all construction sites to destinations and return trips, and more accurately define haulage and construction vehicle volumes at each site access, noting that TMC are likely to prohibit haulage operations that will adversely impact traffic operations during peak traffic periods.
 9. Haulage operations and the use of any construction vehicle access/egress which will adversely impact traffic operations during peak traffic periods (i.e. Monday to Friday 6-10am and 3-7pm) will be prohibited from use during these times, unless approved otherwise by the TMC.
 10. All Construction Traffic Management Plans including Haulage Management Plans must be developed in consultation with, RMS, TMC, relevant Council(s) and emergency services to ensure that the construction impacts of the project are satisfactorily managed. Approval of all Construction Traffic Management Plans and Haulage Management Plans must be obtained from RMS, TMC, and the relevant Council(s) prior to the commencement of any of the associated construction activities.
 11. The Construction Traffic Management Plan(s) must include, but not be limited to:
 - a) Identifying haulage routes and access points from construction sites to local and arterial roads detailing measures to minimise potential access and land use conflicts.
 - b) Identifying haulage and construction vehicle volumes and detailing measures to minimise peak time congestion and intersection impacts at local and arterial roads.
 - c) Identifying construction activities that would require disruption of traffic, such as bridge and lane closures, and measures to minimise impacts.
 - d) Identifying designated construction personnel parking areas.
 - e) Detailing measures to minimise the period of time during which full or partial road closures occur and as soon as practicable, remove local traffic detours and reinstate pre-existing road network restrictions and access arrangements to the satisfaction of the relevant road authority.
 12. The Traffic Management Plan(s) (Operational) is required for permanent changes on the road network in accordance with the RMS's Delegation to Councils. The TMP must be approved by RMS prior to being formally considered by the Local Traffic Committee and approved by Council.
 13. A Road Occupancy Licence (ROL) must be obtained from the TMC for any activity likely to impact on the operational efficiency of the (state) road network and/or for works within 100m of traffic signals. This includes Local Roads, Regional Unclassified and Classified Roads for which RMS has assumed road authority status. The ROL allows the applicant to use a specified road space at approved times, provided certain conditions are met. Proponents must allow a minimum of 10 working days for processing from date of receipt. Traffic Control Plans are to accompany each ROL application.

14. Where construction vehicle routes directly pass schools or child care centres heavy vehicle movements shall be minimised (where reasonable and feasible), between 8-9:30am and 2:30-4pm Mon-Fri (on school days).
15. The use of traffic controllers to stop general traffic to allow access/egress into the construction sites will be subject to assessment by the TMC and will likely only be permitted outside of peak periods. Ideally accesses should be designed to ensure that traffic controllers are not required to stop general traffic.
16. Safe pedestrian and cyclist access through or around worksites shall be maintained during construction. In circumstances where pedestrian and cyclist access is restricted due to construction activities, a satisfactory alternate route shall be provided and signposted in consultation with RMS and Local Council(s).
17. The T-Way is not to be used as an access or haul road to the Construction Sites (unless approved otherwise by RMS).
18. The proponent shall retain access to all properties during construction and operation of the NWRL, unless otherwise agreed by the relevant property owner and reinstate any access physically affected to at least an equivalent standard.
19. The proponent must ensure that existing sight lines to T-Way stops and within T-Way car parks for passive surveillance are maintained. If this is not possible, then the proponent must implement suitable alternative measures (e.g. CCTV with active surveillance).
20. At all proposed new traffic signal sites, turning bays of sufficient length are to be provided to fully accommodate the expected construction traffic volumes to prevent turning vehicles queuing back blocking through lanes at any time.
21. All vehicles are to enter and exit the worksites in a forward direction (unless approved otherwise by RMS).
22. The layout of the proposed construction site car parking areas associated with the subject development (including, driveways, grades, turn paths, sight distance requirements, aisle widths, aisle lengths, and parking bay dimensions) should be in accordance with AS 2890.1- 2004 and AS 2890.2 – 2002 for heavy vehicle usage.
23. All existing and proposed vehicular accesses to each construction site must be designed to ensure that the largest vehicle servicing each site can enter and exit the site in the following manner:
 - a) Left-in or left-out movements can occur within the kerbside lane (where feasible).
 - b) Vehicles must not encroach onto the wrong side of the road when entering or exiting the site.
24. The proponent is to submit an Incident Response Plan (IRP) for the management of traffic flows in the local area should a major problem/emergency occur to the (tunnel works and/or viaduct) which directly affects any road carriageway located above, below, or alongside the proposed NWRL alignment. The IRP must be submitted to RMS (including consultation with Emergency Services and relevant Councils) for approval prior to the commencement of any roadworks.

25. All works and traffic activities associated with the construction of the NWRL shall be designed and operated with the objective of not exceeding the road noise criteria outlined in the *NSW Road Noise Policy* (DECCW, 2011).
26. Appropriate measures are to be implemented at each construction site to ensure that all vehicles and machinery leaving each construction site will not track material onto public roads.
27. All proposed road infrastructure works, road restoration works, vehicular accesses or signalised intersection works will require Road Safety Audit(s) to be conducted and submitted to RMS for approval.
28. Any temporary road infrastructure works (on public roads) must be designed in accordance with RMS requirements (i.e. for long term use).
29. In relation to new or modified road, parking, pedestrian and cycle infrastructure, the NWRL construction works shall be designed:
 - a) In consultation with the RMS and Councils.
 - b) In consideration of existing and future demand, road safety and traffic network impacts.
 - c) To meet relevant design, engineering and safety guidelines, including Austroads Guide to Traffic Engineering Practice, RMS supplements.
 - d) Is certified by an independent Project Verifier as described in the TfNSW/RMS Works Authorisation Deed.
30. The proponent shall be responsible for identification of all utilities/services potentially affected by the works and make suitable arrangements for access to, diversion, protection, and/or support of the affected infrastructure as required by the relevant owner/service provider in consultation with RMS. The cost of any such arrangements shall be borne by the Proponent.

3. Bridgeworks/Structures

31. With the exception of the proposed support pier located within the median area of the Windsor Road corridor at Rouse Hill, all viaduct support piers must be adequately located outside of the existing and proposed road corridors for the following roads, or as agreed with RMS:
 - a) Old Windsor Road
 - b) Windsor Road
 - c) North West Transitway
 - d) Memorial Avenue
 - e) White Hart Drive
 - f) Samantha Riley Drive

Note: Potential localised road corridor impacts will be better understood as part of EIS 2.

32. A minimum of 5.5m clearance must be maintained between the underside of all rail structures (including any gantry or launch structures for viaduct construction) and the road pavement (including future proposed carriageways) within the classified road corridor.

4. Pavements/Tunnelling/Excavation

33. A condition survey of the significant RMS assets must be carried out prior to and at the completion of construction of the project. Specific details of the scope of the survey and appropriate limits are to be agreed between RMS and TfNSW. The condition survey is to include all affected slopes, structures (e.g. bridges, retaining walls, noise walls, culverts, significant subsurface drainages, signages and the like as advised by RMS), utilities and pavements that lie within the following catchment criteria for all supported excavations:

- a) 1.0 times the depth of excavation in rock, or
- b) 2.0 times the depth of excavation in other than rock.

34. All excavations adjacent to RMS road infrastructure must meet the requirements of RMS Technical Direction GTD 2012/0001 "Excavation adjacent to RMS infrastructure".

35. The Proponent is to submit an Infrastructure Asset Management Plan (IAMP) for monitoring the road surface and structures during tunnelling, for RMS approval prior to bulk earthworks. The Plan shall outline the following:

The road surface above the tunnel construction must be monitored during construction, according to the (IAMP) to ensure the pavement surface remains safe and trafficable at all times in accordance with agreed limits. In addition, RMS retaining walls and other significant structures above the tunnel must be monitored/inspected regularly during construction. The selection criteria of such structures for monitoring/surveillance are as follows.

- a) Lying within a distance of half the depth of excavation for supported excavations, or
- b) Lying within a distance of the full depth of excavation for unsupported excavations.

In either of the above cases, the plan distance from the near edge of the excavation shall not be less than 20m. Depending on the significance and sensitivity of the structures, RMS may vary the above conditions and include additional elements within the excavation influence zones to be monitored. RMS will review the monitoring requirements and confirm the elements for monitoring when the tunnel alignment and support details are finalised.

The Plan shall also outline the details of monitoring, minimum requirements for the tunnelling/excavation works during and post construction, trigger action response plan (TARP) and reporting structures. The Plan is to be developed in consultation with RMS, or be jointly developed by a Technical Committee comprising RMS and other subject matter experts.

36. As part of the IAMP, access to data collected at various sites must be accessible by RMS subject matter experts at regular intervals as per the Plan for information.

37. If during and after construction a RMS slope has a risk rating falling below 3 (in accordance with the current edition of RMS Guide to Slope Risk Analysis), or other structures showing unusual deformation, RMS may insist on the installation of additional above and below ground monitoring instrumentation to evaluate the underlying mechanisms and ongoing management of the technical risks.

38. Upon determining the haulage route(s) for construction vehicles associated with the NWRL, and prior to construction, an independent and qualified person or team shall undertake a Road Dilapidation Report. The report shall assess the current condition of the road(s) and describe mechanisms to restore any damage that may result due to traffic and transport related to the construction of the NWRL. The Report shall be submitted to RMS for review and concurrence prior to the commencement of haulage.

Following completion of construction, a subsequent report shall be prepared to assess any damage that may have resulted from the construction of the NWRL.

Specific details of the scope of the Road Dilapidation Survey and Report, technical standards for condition measurement and assessment are to be agreed between RMS and the Proponent.

Measures undertaken to restore or reinstate roads and/or other RMS infrastructure affected by the NWRL shall be undertaken in a timely manner, in accordance with the requirements of RMS, and at the full expense of the Proponent.

39. The design and maintenance of RMS managed road pavements must be carried out to RMS specifications and design technical documents and supplements. In the case of pavement wearing surfaces, where the contractor has to remediate an existing wearing surface, 'like for like' must be applied by the contractor. Any changes to existing lane configuration that results in changes to existing line marking shall require a full pavement re-sheet for the affected carriageway.
40. All NWRL Tunnel designs which are located under any existing or proposed classified state roads are to be submitted to RMS for review and concurrence.
41. The proposed minimum distance of 5.0m between the tunnel crown and the pavement (ground) surface must not be reduced, without RMS approval.
42. Permanent rock anchors associated with tunnel construction are not to be located within RMS easements.
43. As part of the station excavation/construction works, temporary anchors or rock bolts may be installed within RMS easements, subject to RMS approval. Temporary anchors must be completely isolated, if not removed, from the permanent structures upon completion of construction. Installation of permanent anchors/bolts within the RMS easement is not permitted without prior RMS approval.
44. There is no identification of specific geological structures/defects/joint swarms and regional/local stress field relevant to the proposed development. Detail discussion of these topics must be provided within the geotechnical design. Identification of paleochannels and presentation of the mass permeability of the ground in relation to the proposed design are also expected within the geotechnical design report.
45. The proposed development is not to cause any material damage to RMS infrastructure, both during and after construction. The deformation criteria of all RMS assets shall be defined and agreed with RMS as a part of the design input. It is noted that the geotechnical design has not been finalised and the ground water draw down from tunnel/station or other excavations may be significant in some cases. Consolidation and creep settlements are to be evaluated demonstrating their conformance to the agreed criteria.

46. The soil profiles affecting RMS assets could be different from those used for the proposed development. Therefore sufficient site investigation must cover RMS asset areas where the ground stratigraphy is expected to be variable and where the groundwater draw down is significant.

5. Comments on the proposed Construction Sites

48. Epping Services Facility:

- To facilitate construction vehicle access to the site, the proponent should provide a deceleration lane with a minimum storage length of 60m.
- Movements to/from Beecroft Road must be restricted to left-in/left-out movements. Note: The existing provision of a median island along Beecroft Road can enforce this requirement.
- Cut and cover works along Beecroft Road must be limited to night works and is appropriately staged to ensure that the existing lane capacity along Beecroft Road is maintained at all times, unless approved otherwise by RMS/TMC.
- Cut and cover works must promptly reinstate any median island that is removed as part of such works.
- Due to signal phasing and competing traffic movements , a 'No Right Turn' ban will be enforced for construction vehicles turning from Ray Road onto Carlingford Road (westbound) during the following times (Mon-Fri 6am-10am & 3pm-7pm)
- RMS notes that the Epping Decline site has potential road safety issues and may impact works associated with permanent infrastructure for the Northern Sydney Freight Corridor. Hence, given the above any additional construction access at the Epping Decline site would not be supported. Potential changes to construction sites and construction vehicle movements at Epping have been investigated in consultation with RMS.

49. Cheltenham Services Facility:

- Proposed direct heavy vehicle access to the M2 Motorway is unlikely to be supported.
- RMS will not support the provision of a temporary signalised intersection to the Kirkham Street access.
- Right turn movements out of the site onto Kirkham Street must be managed through Traffic Controllers.
- Due to safety concerns and queuing along Beecroft Road, all construction vehicles accessing Kirkham Street from Beecroft Road must be restricted to left-in/left-out movements at the intersection of Beecroft Road/Kirkham Street.

50. Cherrybrook Station Construction Site:

- The proposed signalisation of the intersection of Castle Hill Road/Glenhope Road must be designed to include the following:
 - The provision of a fourth leg.
 - Designed to ensure double-diamond phasing operation.
 - The provision of separate right turn bays.
 - The provision of a separate left turn lane from Castle Hill Road into Glenhope Road.
 - Pedestrian crossing facilities.

Signalisation of this intersection would be subject to provision of technical assessment against the warrants for traffic signals and the provision to a suitably designed layout and appropriate consultation with Council/affected parties.

- The proposed signalisation of the Castle Hill Road/Franklin Road intersection must be designed to include the following:

- Comply with relevant Austroads and RMS supplements sight line requirements,
- The banning of right turn movements from Castle Hill Road into Franklin Road,
- Provision of separate left and right turn approach lanes within Franklin Road,
- Separate long left turn lane from Castle Hill Road into Franklin Road,
- Appropriate pedestrian crossing facilities.

Signalisation of this intersection would be subject to the provision to a suitably designed layout and appropriate consultation with Council/affected parties.

Approval to the signalisation of the intersection will only be granted in consideration of the construction activities, RMS reserves the right to remove the proposed signals at the Castle Hill Road/Franklin Road intersection at any time after the completion of the construction of the NWRL.

51. Castle Hill Station Construction Site:

- As the primary access would be at the intersection of Old Northern Road/Terminus Street RMS requires the signalisation of this intersection.
- Due to heavy volumes of traffic turning from Old Northern Road into McMullen Avenue, the secondary access off McMullen Avenue must be designed to ensure that left turn entry movements are sheltered (i.e. through the provision of an adequately dimensioned deceleration lane or via possible modifications to the existing left turn slip lane at the intersection of Old Northern Road/McMullen Avenue).
- The bus interchange relocation to Old Castle Hill Road shall require the following:
 - Provision for two way bus traffic along Old Castle Hill Road (between Eric Felton Street and Castle Street/Crane Road).
 - Maintaining the existing one-way northbound flows for general traffic.
 - Physical separation (by means of a concrete median island) for general traffic and bus movements along Old Castle Hill Road (between Eric Felton Street and Castle Street/Crane Road).
- The changes to the traffic signal arrangements at the Old Northern Road/Old Castle Hill Road/Castle Street/Crane Road intersection would be subject to the following:
 - The provision of suitable designs for approval and detailed traffic modelling demonstrating that this arrangement can operate satisfactorily during the entire construction period. Note: The modelling must also examine the subsequent changes to traffic volumes at this intersection as a result of the expansion to Castle Towers Shopping Centre.
- The proponent must satisfactorily resolve, prior to site establishment, where existing bus layover facilities will be relocated. This must occur in consultation with RMS, TfNSW, Council and local bus operators.
- The bus layover area must be adequately maintained and provide adequate space for the growth in bus numbers.
- Adequate provision must be provided for bus stops/bays to maintain satisfactory operations.
- Appropriate maintenance/enhancement of passenger amenities and safety/security during and after construction shall be included in for the site.

52. Hills Centre Station Construction Site:

- RMS will not approve the proposed traffic signal site along Showground Road (i.e. west of Gilbert Road – slightly east of Cattai Creek) on traffic safety grounds. Concerns include the following:
 - Increased rear-end accident potential (i.e. due to light vehicles being able to stop in less distance than a trailing heavy vehicle).
 - Traffic efficiency impacts (i.e. potentially due to heavy vehicles climbing the hill from a standing start).
 - Vehicles speeding through the intersection.
- RMS recommends a more feasible alternative access to Showground Road may be via a fourth leg at the intersection of Showground Road/Gilbert Road.
- Traffic analysis for the intersection of Showground Road/Carrington Road shows that vehicles occasionally queue out of the existing right turn bay and subsequently impede eastbound through traffic along Showground Road during the AM peak. This will worsen as a result of the NWRL construction vehicle traffic associated with the Hills Centre Station Construction Site.

To address this concern, the proponent will be required to lengthen the existing right turn bay for the movement from Showground Road into Carrington Road to provide adequate storage.

- RMS raises no objections to the future need to signalise the intersection of Carrington Road/Doran Drive. This would be subject to the provision of technical assessment against the warrants for traffic signals and suitable designs which include the following:
 - Separate right turn bay for the Carrington Road approach.
 - Satisfactorily accommodating the turning paths of the largest vehicle using the intersection.
- RMS requires the proponent to confirm if 25m B-doubles are to be used for haulage from The Hills Centre with access via Carrington Road and also a new entrance off Showground Road. Currently Carrington Road is not an approved B-Double route and would not comply with route assessment guidelines in its current form.

53. Norwest Station Construction Site:

- Signalisation (to RMS satisfaction) of the Norwest Boulevard/Brookhollow Ave/Century Cct intersection will be required prior to site establishment. This is likely to be in the form of an interim layout which will require RMS approval prior to implementation.
- The proponent must ensure that the existing road capacity along Norwest Boulevard is not reduced during construction and that the performance of the Norwest Boulevard/Brookhollow Ave/Century Cct intersection during construction operates at existing levels of service.
- Should the interim signalised layout be unable to accommodate the provision of right turn bays along one or both of the Norwest Boulevard approaches, then the following alternative arrangements shall be considered:
 - If coming from Windsor Road heading west – turn left into Brookhollow Ave at the Norwest Boulevard/Brookhollow Ave/Columbia Court roundabout then follow Brookhollow Ave through to the Norwest Boulevard/Brookhollow Ave/Century Cct intersection and then enter Century Cct (i.e. G-Turn).

- If the above is not possible, head westbound along Norwest Boulevard to the Norwest Boulevard/Solent Cct/Reston Grange roundabout and perform a U-turn and then head eastbound back to Century Cct.
 - If coming from Old Windsor Road heading east – turn left into Century Cct, perform a U-turn at the roundabout along Century Cct, head back to the Norwest Boulevard/Brookhollow Ave/Century Cct intersection and then enter Brookhollow Ave.
- The Proponent is to continue to liaise with RMS regarding the ultimate design for Norwest Boulevard, including delivery of the Norwest Boulevard/Brookhollow Ave/ Century Cct intersection and the provision for set down and pick up for buses outside of the station in each direction (T-way standard). RMS understands that this will be dealt with as part of EIS 2 along with Station Accessibility.

54. Bella Vista Station Construction Site:

- The intersection of Old Windsor Road/Celebration Drive suffers from significant traffic congestion during the morning and afternoon peaks due to the following:
 - AM – Heavy left turn and right turn movements from Old Windsor Road turning into Celebration Drive.
 - PM – Heavy right turn movement exiting Celebration Drive hitting the back of the lengthy queue (>1km) along Old Windsor Road caused by the Old Windsor Road/Sunnyholt Road/Memorial Avenue intersection operating at capacity.

This site will generate significant heavy vehicle movements which will further exacerbate the abovementioned issues in this location.

To address the abovementioned concerns, the proponent will be required to implement the following:

- Direct vehicle access to Celebration Drive be restricted from use during the following periods (Mon-Fri: 6:30-9:30am & 3-7pm).
 - During the above time restriction, consideration should be given to the use of the local access road which runs parallel to the T-Way as a means of vehicular access to this site (with access back to Balmoral Road or Memorial Ave).
 - Strategies to ensure that heavy vehicles do not lay over in Old Windsor Road or Celebration Drive.
- RMS does not support the proposed signalisation of the Celebration Drive/Lexington Drive intersection. To address traffic concerns the proponent will be required to implement other alternative measures to improve the capacity of this roundabout which may include:
 - Enhancing the capacity of the existing roundabout.
 - Provision of two eastbound through lanes along Celebration Drive (between Old Windsor Road and Lexington Drive).
 - RMS does not support the provision of a pedestrian crossing across the northern leg of the Old Windsor Road/Celebration Drive intersection.
 - The proponent must ensure that the T-Way services are not detrimentally impacted by construction traffic/activities.

55. Balmoral Road & Memorial Ave Construction Sites:

- Should significant traffic movements be pushed onto Balmoral Road, RMS may consider making modifications to the operation of the Old Windsor Road/Miami Street/Balmoral Road signals (if required).

- To reduce road network impacts, construction vehicle access must be designed to allow vehicle movements to occur directly across Balmoral Road between the Balmoral Road Construction Site and the Memorial Avenue Construction Site (ie: paired access). This may also include relocating the “paired access” closer to Old Windsor Road in order to align with the proposed location of the ultimate Spine Road.
- To minimise the potential for queuing back along Balmoral Road, adequate heavy vehicle storage must be provided within each construction site before construction vehicles are required to stop.
- The T-Way is to maintain absolute priority over any additional local roads constructed as part of any precinct works.
- Any relocation of the T-Way is to have the same asset quality and level of priority at “all” intersections as per existing arrangements.
- RMS objects to the proposed new signalised intersection along Memorial Avenue (located east of the existing T-way intersection) due to road safety concerns as well as this resulting in the provision of four signalised intersections over a distance of 400m as indicated below:
 - Old Windsor Road/Sunnyholt Road/Memorial Avenue (existing)
 - Memorial Avenue/North West T-Way (existing)
 - Memorial Avenue/NWRL Construction Access (proposed)
 - Memorial Avenue/Arnold Avenue (west) – (to be implemented via BRRR Section 94 Plan)

Alternative options shall be pursued such as combining construction access with the existing Memorial Avenue/North West T-Way signals. However, any modifications to this intersection must ensure that T-Way services are not detrimentally affected.

- The proponent must ensure that the existing building located within the North West T-Way car park (i.e. Traffic Signal Cabin and any underground services) is replaced with a similar or improved building, relocated to a suitable alternate location (in consultation with the RMS/TMC).
- The proposed NWRL viaduct and support structures must be located/constructed to ensure that it does not preclude the future construction of Old Windsor Road/Sunnyholt Road/Memorial Ave grade separation (see Attachment No 1). In addition, the NWRL viaduct support structure within the road reserve shall not encumber the constructability of future road enhancements.

56. Kellyville Station Construction Site:

- To minimise impacts upon reduced T-Way patronage, the proponent must ensure that the proposed relocated T-Way temporary parking area is designed/located to minimise walking distance from the existing Samantha Riley T-Way station.
- The proposed construction vehicle access across the North West T-way may be limited to off peak times and/or be regulated to set durations during nominated times of the day. Such timeframes must be satisfactorily resolved between the proponent, RMS, TfNSW and local bus operators prior to site establishment.

57. Old Windsor Road to White Hart Drive Construction Site:

- The proponent must ensure that the NWRL viaduct support piers are located to ensure that it does not preclude the potential future widening of the White Hart Drive (southern side) approach to Windsor Road by an additional lane.

- The proponent must provide small indented right turn and left turn bays of appropriate length within Sanctuary Drive at the Bellcast Road intersection to ensure that turning construction vehicles do not impede the dual right turn movement from Windsor Road into Sanctuary Drive.

58. Rouse Hill Station Construction Site:

- Impacts to the T-Way operation in and around the Rouse Hill Town Centre (i.e. future interim and ultimate routes) need to be satisfactorily resolved between the RMS, TfNSW, local bus operators and owners of the Rouse Hill Town Centre (Lend Lease/GPT) prior to site establishment.

This will require the proponent to demonstrate through modelling or similar:

- Provision of sufficient bus set down/pick up locations as per existing.
 - Cumulative impacts and integration of Rouse Hill Town Centre (Northern Precinct) expansion with project and effect on bus operations.
 - Reinstatement/replacement of existing T-Way facilities to equal or higher standard.
 - How buses will access/exit the proposed temporary stops and layover.
 - Pedestrian access and amenity to/from T-Way.
 - Impacts along Windsor Road should bus services be diverted from the T-Way or Town Centre to Windsor Road.
 - That provision of adequate, high quality facilities are provided and maintained (i.e. DDA compliant facilities, shelters, CCTV, real-time information) if buses are relocated.
- The central foundation/pier structure supporting the rail bridge viaduct over Windsor Road is to be constructed to ensure;
 - That it is constructed in a manner that allows continuous traffic flow along Windsor Road during construction.
 - That the existing traffic capacity along Windsor Road is not compromised.
 - That it does not preclude the future grade separation of the Windsor Road/Schofields Road intersection.
 - That it will not preclude the future need to lengthen the existing dual right turn storage bay for the movement from Windsor Road into Commercial Road (likely ultimate storage lengths are indicated within Attachment No 2).
 - That the central foundation/pile structure is constructed deep enough below ground level to ensure that future grade separation construction would not impact upon the structural integrity of the rail bridge viaduct support structure or impact rail operations.
- The proponent must ensure that the NWRL rail viaduct and support piers are located to ensure that they do not impact upon the following:
 - Future Rouse Hill Town Centre (Northern Precinct) Car park access – Western Gateway, and (interim/ultimate bus routes adjacent to the Windsor Road/Schofields Road intersection).
 - Future grade separation footprint of the Windsor Road/Schofields Road intersection.
- The proponent will need to consult with the Castlebrook Lawn Cemetery and crematorium in order to determine if the proposed area identified for temporary road realignment is affected by grave sites. Should this be the case, then the proponent will need to identify alternative arrangements for temporary road realignment to the satisfaction of the RMS. These matters must be satisfactorily resolved prior to site establishment.

59. Schofields Road Construction Sites:

- It is understood that the proponent must ensure that through connections for Tallawong Road, Cudgegong Road, proposed Terry Road and Hambledon Road extensions are not excluded by the NWRL. If otherwise, then concurrence from the RMS will be required.

6. Specific comments on EIS

Technical Paper No 3 – European Heritage Report

Section 3.3.7 Bella Vista Station

Heritage Item No.3252 – a weatherboard house at 36 Old Windsor Road, Kellyville.

This property was acquired by Department of Planning in 2008 and the weatherboard house was demolished some time after 2010. The statement in this report “believed to have been demolished” is therefore incorrect, it has been demolished.

As it is no longer existent, the Proponent is to confirm that the site is not viewed to have any archaeological potential. If it does not have archaeological potential, all reference to it should be removed from the report. References to it on p.31, p.33, p.58 (Map 9), p.59 (Map 9) and p.70 (Table 4.1) should be removed.

Section 3.3.12 Old Windsor Road to White Hart Drive

Windsor Road and Old Windsor Road – incorrectly listed as being on the State Heritage Register. This component of the listing should be removed.

7. Urban design issues

In accordance with the intentions stated in the Stage 1 EIS, it is necessary to ensure that the Stage 2 EIS integrates urban design into the overall design of the project, as follows:

- (i) It will include each of the station precinct design concepts (showing the overall form and character of both stations and their precincts).
- (ii) It will include conceptual architectural designs for each station within a precinct.
- (iii) It will include the principles for civil construction works.
- (iv) It will also include concept designs for elements (such as noise attenuation), landscaping, and the maintenance of elements.

The integration of urban design into the overall design of the project needs to include the following principles to which the Stage 1 EIS additionally makes a commitment:

- (v) Reinforce the role of station and interchange design with the surrounding neighbourhood, locality and activities.
- (vi) Achieve good links.
- (vii) Design a hierarchy of access.
- (viii) Address context.
- (ix) Produce an inviting pedestrian environment.
- (x) Design precincts in a way that facilitates new development.

In addition, the rail viaduct should satisfy the following design principles:

- (xi) A structure which sits as an element within the broader landscape context, consistent with the RMS guideline “Beyond the Pavement”.
- (xii) It will include conceptual architectural designs for the viaduct at all key locations (in particular all state road crossings).

Any specific inquiries in relation to these matters can be directed to Cath Dunstan – RMS's Interface Manager, North West Rail Link on telephone (02) 8588 5190 or via email at: Cath.Dunstan@rms.nsw.gov.au.

Yours sincerely

 17.5.2012

Peter Duncan
Chief Executive
Roads and Maritime Services



Note: "Yellow" and "Red" lines indicate the potential ultimate requirements for lengthening the right turn bay for the movement from Windsor Road into Commercial Road.

