



CBD & South East Light Rail Project

Environmental Impact Statement

Randwick City Council Submission
December 2013

CONTENTS

Executive Summary	4
Summary of Recommendations	8
1. Introduction and general comments	29
1.1 Overview	29
1.2 Structure of submission	30
1.3 General comments	31
2. Major location-based issues	33
2.1 Randwick Interchange (High Cross Park)	33
2.2 Kingsford Interchange	34
2.3 Wansey Road alignment	35
2.4 Light Rail Vehicle (LRV) stabling facility	36
2.5 Anzac Parade: reduction of footpath widths	37
2.6 Construction compounds	38
2.7 Substations	39
3. Traffic, transport and access issues	40
3.1 Light rail operations	40
3.2 Transport/traffic operations	41
3.3 Parking	45
3.4 Bus operations	50
3.5 Pedestrian and cycle network	52
3.6 Construction related traffic, transport & access impacts	56
4. Design and operational issues	59
4.1 Urban design and public domain	59
4.2 Visual impact and landscape	64
4.3 Significant trees	73
4.4 Biodiversity	74
4.5 Heritage and archaeology	76

CONTENTS (continued)

4.6 Environmental sustainability	81
4.7 Social impact	82
4.8 Economic impact	84
4.9 Noise and vibration	85
4.10 Air quality	88
4.11 Utilities and infrastructure	91
4.12 Hydrology, drainage and flooding	93
4.13 Randwick Urban Activation Precinct	95
 5. Consultation	 97
5.1 Consultation and communications	97

EXECUTIVE SUMMARY

The CBD and South East Light Rail (CSELR) proposal is intended to deliver a step change in the transport network in Sydney CBD and south-eastern suburbs. Key drivers of the light rail project are a need to improve the capacity and reliability of public transport between central Sydney and key destinations in the south-east, and reduce bus-based congestion in Sydney CBD.

The CSELR project is consistent with key State strategies and actions in the NSW State Plan 2021 and Long Term Transport Master Plan, and Randwick City Council's Community Strategic Plan; the Randwick City Plan.

Randwick City Council has been consistently planning and advocating for rail-based public transport to serve our major destinations, employment precincts and our community. Council identified the need for high capacity rail service in the 2003 Citywide Transport Study and its 20 year City Plan. More recently Council has actively engaged with the community, local businesses and landowners, conducting an award-winning consultation program, and partnering with the University of NSW and Australian Turf Club to jointly investigate and promote rail to Randwick City.

On 4 July 2013 Randwick City Council, the University of NSW, Australian Turf Club and the NSW Government signed a Memorandum of Understanding to support the delivery of the project. Council has worked collaboratively with Transport for NSW (TfNSW) with the aim of achieving the best result for our community.

The CSELR proposal comprises the construction and operation of a new light rail service in Sydney, including approximately 12km of new track running from Circular Quay to Central, Kingsford and Randwick via Surry Hills and Moore Park. The proposal includes 20 stops (with 10 in Randwick City), light rail vehicle stabling facilities in Randwick, a maintenance depot in Rozelle and 12 traction power substations (with 5 in Randwick City).

The light rail operation will offer a reliable high frequency, high capacity service, able to carry up to 9000 passengers per hour in each direction, with peak services from Randwick and Kingsford every 5 to 6 minutes, and every 2 to 3 minutes within the CBD. The light rail proposal will also cater for additional special event services from Central to Moore Park and to Randwick Racecourse.

The terminus stops at Randwick and Kingsford will operate as light rail and bus interchanges, with the south-east bus system to be re-designed (separately to the light rail EIS) to integrate with the light rail once it is operational (estimated in 5-6 years).

The project is intended to be delivered via a Public Private Partnership (PPP) process, with the main project construction commencing in early 2015, and a

separate Early Works program commencing mid-late 2014 under a managing contract arrangement.

The Environmental Impact Statement (EIS) for the light rail project describes the background and strategic need for the proposal, the project objectives, the targeted benefits, the development of the proposal including options considered, and the proposed light rail project design, its construction and operation. Impacts of the proposal are assessed on a regional and local (precinct) basis, and environmental management and mitigation measures are proposed to address identified impacts.

Key points and major issues

Randwick City Council expresses overall support for the project, which aims to deliver a world-class transport system to our LGA. Council would like to ensure the system is able to deal with not only the current but the future needs of this area. Council has reviewed the EIS, and the attached detailed submission identifies the following major issues:

- Overall support for the project, and support for a partnership approach to finalising the CSELR design and construction in ongoing phases of the project
- Support for a more reliable, convenient, comfortable high capacity service
- Support for two light rail branches serving Randwick via Alison Road and Kingsford via Anzac Parade
- Support for the project objectives and targeted benefits
- Support for the proposal's generally high level of accessibility
- Support for the project sustainability aspirations
- General support for proposed station locations (with exceptions noted below)

Specific objections or concerns are raised in relation to the following aspects of the proposal:

- Objection to the location of the Randwick Interchange at High Cross Park
- Objection to the location and, in particular, the layout of the Kingsford Interchange
- Objection to the location of the proposed Randwick light rail vehicle stabling facility at 66A Doncaster Avenue
- Objection to the proposed light rail alignment on Wansey Road
- Objection to the loss of substantial on-street parking along Anzac Parade, High Street, Wansey Road, Alison Road and within the Anzac Parade median island carpark outside South Sydney Junior Rugby League Club
- Objection to any reduction in footpath width or capacity as a result of the light rail alignment
- Concern about the impact of the project on traffic flows both on the light rail alignment and in the local street network

- Concern about the lack of certainty about changes to the south-eastern bus network
- Concern about noise and vibration impacts on sensitive locations
- Concern that the ticket pricing of the light rail system may not be consistent with existing bus services or other public transport network pricing

Matters for further discussion and resolution

This submission recognises that the CSELR design is still progressing, and that investigations are ongoing regarding some significant design aspects of the proposal. It is noted that discussions with TfNSW are continuing to resolve these issues.

With this in mind, the submission supports further investigation and liaison with the Council and relevant stakeholders on:

- An alternate location of the Randwick Interchange being within High Street, opposite Prince of Wales Hospital
- An alternate alignment of the light rail route on Wansey Road into Royal Randwick Racecourse land to retain a higher proportion of significant trees, and to reduce the impacts upon the adjacent residential properties
- Alternate solution for Kingsford interchange located further south and/or an extension of the route to Maroubra Junction
- Options to retain/provide parking to serve commercial and residential requirements
- An alternate light rail stabling location at the south-eastern corner of Randwick Racecourse
- Options for retention of more significant trees
- Traffic modelling and intersection performance in the wider street network

Matters requiring additional information and investigation

A number of aspects of the proposal are still in the early design stages, with the EIS noting that further investigation, coordination and resolution is intended to be undertaken during the detailed design phase of the project. This submission therefore notes the issues of interest and/or concern for Council, and makes recommendations for ongoing consultation, information and coordination.

These issues include:

- The need to investigate the impact of the project on flooding, and adjust the design if necessary to ensure there are no adverse flood impacts on surrounding areas / properties / structures or downstream receiving waters
- Concern of the project's impact on existing drainage, utilities services and infrastructure, and the future ability for servicing and augmentation

- The need to coordinate the public domain and landscape design with the light rail infrastructure
- Opportunities for undergrounding of power along Anzac Parade (at commercial centres)
- Concern about the potential economic impact of the project on local commercial centres during construction and operation
- More information on the design, visual and amenity impacts of buildings and structures (including light rail stabling facility, interchanges and substations)
- Addressing the impacts of future population demands, including coordination with Urban Activation Precinct investigations in the LGA
- The need for ongoing stakeholder input and liaison into the formulation of any management plans related to the project, to ensure agreed and appropriate standards are applied
- Consultation through the future stages of the project

SUMMARY OF RECOMMENDATIONS

MAJOR LOCATION-BASED ISSUES

Randwick interchange/High Cross Park

The Council is opposed to the High Cross Park design as detailed within the EIS. The Council notes, however, there have been ongoing discussions between TfNSW and stakeholders (including Council, NSW Health Infrastructure and UNSW) about the location and design of the Randwick terminus/interchange.

It is noted these discussions are still progressing with a view of providing an alternative terminus/station/interchange at High Street to better serve the Randwick Hospitals Campus. Council supports ongoing discussions to progress detailed study and modelling of the relocation of the Randwick interchange from High Cross Park to the eastern end of High Street opposite Prince of Wales Hospital.

Should the Randwick terminus and interchange be retained at High Cross Park, the Council seeks provision of an additional stop on High Street to serve the Randwick Hospitals Campus.

Kingsford Interchange

Council has major concerns about pedestrian safety at the Kingsford interchange and does not support the proposed location. Council would prefer the option of extending the light rail alignment to Maroubra Junction, or as a minimum create an additional stop (comprising the interchange) further south near Botany Street.

Wansey Road Alignment

Council recommends the light rail alignment is relocated within Randwick Racecourse. It is also recommended the alternative option of a one-way traffic system is further explored in consultation with stakeholders and the Council, including traffic modelling, retention of one-way kerbside parking, and maximising potential for significant tree retention. Council also supports further investigation and discussion on the re-location of the Wansey Road stop onto Alison Road.

Randwick Light Rail Vehicle (LRV) stabling facility

It is recommended that the LRV stabling area is located at the south eastern corner of the Racecourse.

If the project proceeds with the LRV Stabling facility as proposed at 66A Doncaster Avenue, Council recommends:

- a review of spatial needs, including consideration of potential alternative stabling locations and capacity needs if the light rail network is extended in the future;
- that the facility be completely housed within a building to minimise noise impacts;
- further investigation and liaison into the design of any buildings or structures, including flooding, visual, landscape and amenity impacts;
- That the overland flow path within the site be maintained, and the design should not cause an increase in flood levels
- Review and coordination of the layout with a safe and well-designed cycle path connecting through the Racecourse to UNSW.

Footpath widths – Anzac Parade

Council objects to any loss of effective footpath capacity as a result of the light rail alignment, and recommends further investigation and modelling of the pedestrian network around the light rail route, to ensure the pedestrian network is safe and contains adequate capacity for expected movement.

The minimum (standard) footpath width of 3.6m should be maintained. Investigation should involve liaison with the Council, and include an assessment of the cumulative impacts on increased population and/or pedestrian activity in and around the commercial centres.

Construction compounds

Council recommends review of the proposed construction sites to minimise impacts on Randwick City's key entry points and parks, including Tay Reserve, University of NSW and High Cross Park. The review should include investigation of alternative locations, and measures to ensure the compounds are visually and operationally safe, and any enclosures are attractive and of a high quality design that complements the character of the area.

Council recommends the design of construction compounds includes use of graphic design or other elements to create visual interest, high quality, well-resolved enclosure materials and details, opportunities for public art, community information, and maintenance of pedestrian and vehicular safety.

If the Randwick terminus/interchange is relocated from its current proposed location at High Cross Park, Council requests investigation of an alternative construction site, and if retained in High Cross Park, will strongly object to any loss of trees for the purposes of establishing a construction compound.

Substations

Council objects to an above ground substation at High Cross Park. Further design investigations into substation location and design in Randwick City should be

undertaken in consultation with the Council and stakeholders to integrate the design of buildings and other structures with the surrounding context and minimise visual impact and occupation of public open space. Council requests that the proposed substation at High Cross Park is relocated or placed underground.

TRAFFIC, TRANSPORT AND ACCESS ISSUES

Light Rail operations

As noted previously Council does not support the proposed location of the Randwick light rail stabling facility, and recommends the stabling facility to be located at the south-eastern corner of Randwick Racecourse (near Wansey Road and High Street).

Council requests confirmation that the capacity of the light rail system will accommodate future demands for the service.

Council seeks assurance that the pricing of light rail ticketing is equitable and consistent with existing bus services and other components of the public transport system. It is important that pricing aspects of the service do not act as a disincentive to the success of the light rail system, and achieving the broader goal of increased public transport use.

Traffic Flows

Council requests TfNSW provides the option models for traffic flows not only along the rail alignment but also the neighbouring local area.

Modelling should address:

- traffic flow changes along the rail alignment & impact on the whole local area, including local streets surrounding the light rail route
- extent of traffic redirection and mitigation measures proposed
- impacts/reductions on travel time for private vehicles
- impacts on the operation of intersections, including traffic impacts of changed Anzac Parade right turn provisions and signalisation of the Kingsford roundabout (including impacts on local streets).

It is necessary to quantify the likely increased traffic volumes, which will be concentrated upon Barker Street and to assess how the Kensington internal local streets will manage these significant traffic increases. This information and measures for mitigation, management and/or design changes should be further discussed with the Council.

Restrictions of right hand turns

Council recommends retention of the right turn for southbound Anzac Parade traffic at Day Avenue. This may have benefits for the University of NSW in that the pedestrian crossing would be shifted to the Day Avenue intersection and the light rail stop could be shifted closer to the main pedestrian spine in UNSW. Also, the signalling of Day Avenue may improve efficiencies in light rail / pedestrian operations which may be able to operate concurrently. This needs further detailed investigation.

Council requests review of the proposed dedicated left turn taper lane for southbound Anzac Parade motorists, at Meeks Street. This introduces a tight radius curve for the no.2 and no.3 lanes in this direction, and Council is concerned about safety implications.

Separated running of light rail and traffic lanes

On Anzac Parade Council recommends investigation into shared running outside of peak periods. There are no technical impediments to such arrangements. Pavement lights, vehicle detectors, camera infringements, dynamic signage and 'swing gates' are all elements which are in common use on Sydney roads managed by RMS. Allowing vehicles onto the tracks may retain great numbers of parking spaces along the corridor, with only minimal impact upon the non-peak passenger flows. This will retain viable centres, have more pleasant public spaces and will appease, in a great way, the concerns of business operators along the Anzac Parade alignment.

Kensington LATM project

It is recommended that TfNSW holds further discussions with Council on coordination of the Kensington LATM and light rail projects.

Parking

It is recommended that given the proposed loss of parking (many hundreds of spaces along the alignment) TfNSW should work closely with the Council to regain parking spaces within a block of each alignment. This would require an examination of each and every street block along each alignment to ascertain whether angle parking and or one-way systems could be introduced in order to recover, in close proximity, all of the parking spaces removed from the alignment.

This study should be undertaken before the EIS assessment process is concluded, and the requirements should be included in conditions of consent. The proposed outcomes from the study would need to be implemented as an early component of the project because parking will be immediately impacted with early works.

It is recommended that further investigations are undertaken in consultation with Council and stakeholders to review pedestrian safety impacts and possible mitigation measures in all locations where kerbside travel lanes are introduced.

It is recommended that TfNSW introduce dynamic lane control to permit parking within the Kensington and Kingsford activity centres by having co-running of light rail vehicles with other vehicles outside of peak periods, thus permitting kerbside parking at these times.

Bus operations

It is recommended that the layout of bus/light rail interchanges at Randwick and Kingsford are designed with sufficient capacity and flexibility to accommodate changing bus services and passenger capacity needs over time, and that details of the future bus routes and schedules servicing the interchanges that have been used to inform the proposed design are provided to the Council, including pedestrian modelling.

It is recommended that consideration to be given to an in-lane bus stop in High Street, just east of Clara Street (eastbound), and also for a half closure of Blenheim Street, at Clara Street, in order to gain the required length for a bus stop just north of High Street.

Ongoing community information and consultation must be provided to advise the community of future bus services in the south-east.

Pedestrian and Cycle Network

Pedestrian network

Council requests that there is no reduction in effective footpath capacity on the route and recommends that further investigation, coordination and design development is needed in consultation with the Council to resolve any areas of conflict between light rail and pedestrian networks – including cumulative impact of future development/increased population on the route, particularly arising from Urban Activation Precinct investigations.

Council recommends that the location and detailed design of modified or new pedestrian and cycle paths must ensure adequate levels of safety for the community (adopting the principles of CPTED), be well lit, highly accessible and promote public use.

Council recommends the existing shared bus way / proposed light rail way along the boundary of Centennial Park should shift laterally north to the foot of the Centennial Park embankment, and realign the pedestrian / cyclist path/s to the south of the bus / light rail alignment, in order to meet the objectives of crime prevention through environmental design (CPTED).

Council also recommends consultation with Centennial Park and Moore Park Trust, specifically to strengthen and improve pedestrian access into the Park in the vicinity of Doncaster Avenue, consistent with the draft Centennial Parklands master plan.

Pedestrian safety

Council requests that further investigations are undertaken in consultation with Council and stakeholders to review pedestrian (and cycle) safety impacts and possible mitigation measures in all locations where kerbside travel lanes are introduced.

Cycle Network

Council recommends a more holistic approach to integration of the light rail with the cycle network, including:

- provisions to transport bicycles on the light rail vehicles
- cycle crossing signals at all signalised intersections where the light rail route crosses cycle paths
- further consultation with the Council to ensure cycle routes in the vicinity of the light rail route are maintained.

Council also recommends consideration must be given to a bike / pedestrian facility to cross from the Wansey Road shared path to Arthur Street, Randwick.

Construction related traffic, transport and access issues

Council supports the general principles behind the mitigation measures proposed for the construction period to:

- retain a safe and accessible pedestrian and cycle network
- maintain property and emergency access
- provide thorough information and advice through several channels to advise in real time and in advance of construction impacts

Council requests further discussions with DP&I and TfNSW and stakeholders on mitigation measures during construction on:

- parking supply
- bus priority measures and possible diversions
- public transport access to the University of NSW
- access to Randwick Racecourse for events
- details of the communication/consultation/information program to ensure timely and widely accessible information is provided to residents, businesses and people travelling to and from Randwick City

Council requests more information and discussion on construction staging implications and options, both prior to the early works contractor appointment, and on an ongoing basis, to address key issues such as:

- scope of the early works program including new signalised intersections
- staging options to minimise negative impacts on the local road network
- staging options to retain a proportion of kerbside parking

DESIGN AND OPERATIONAL ISSUES

Urban Design and Public Domain

In reference to the design of any buildings or structures and the public domain palette in general, Council recommends some flexibility be considered for their customisation/adaptation to suit specific locations, and to reflect current use, history, cultural significance or other site specific attributes (including UNSW stops, Racecourse stop, stops and alignment along the Randwick Education and Health Specialised Centre on High St, etc.)

Further investigation, coordination and design development in consultation with Council should be undertaken to prepare a public domain plan for each precinct. The plan should include:

- a planting species palette consistent with Council's requirements
- materials and furniture palette consistent with Council's design and quality standards
- provision of specific quantities for urban elements (seats, signage, bubblers/water bottles filling stations, bins, cycle hubs / lockers, etc) for each stop and surrounding area.
- integrated design, planning and layout of urban elements, landscape, way-finding and infrastructure to minimise clutter and create a high quality, safe and accessible public domain
- consideration of the use of multi-function poles for the support of catenary (as indicated by TfNSW within the draft definition design report comments register). This will also allow for opportunities to improve the urban environment by undergrounding power lines and by retaining the ability to have banners along appropriate lengths of the alignment;
- provision of suitable footpath capacity around and between light rail stops to accommodate expected customer flows and future development along the route
- the treatment and type of any proposed physical separation between light rail and general traffic or pedestrian and general traffic on medians or road verge is to be discussed with Council and be in accordance with Council's design standards.
- provision of footpath verge planting or other treatments to provide pedestrian safety & act as a buffer from adjacent traffic lane, to enhance

visual amenity and reinforce the Boulevard Precinct typology for the Anzac Parade. All planting species to be in accordance with Council'

- Provision of additional information in regard to ownership, maintenance requirements and responsibilities associated with urban elements and utilities; eg: multi function poles.

Advertising

Council requests confirmation that no advertising will be permitted on light rail structures, urban elements or stops.

Wayfinding

Council recommends that an access map be included showing local destinations & key sites in the vicinity in addition to connecting transport routes (including bicycle routes). Council also recommends information to include distances in metrics and time. Council also recommends that there is a provision included for each stop to cater for temporary information for events at the Racecourse, UNSW, local festivals, etc.

Public Art

Council recommends that a requirement to provide public art, both permanently and during construction of the light rail, be included in a condition of consent and that the strategy be consistent with Randwick Council Public Art Strategy 2010.

Platform lighting should not be obtrusive to the surrounding environment, and should be coordinated with street lighting in the immediate surroundings (flooding rather than directional lighting).

Lighting and poles

Council recommends for all poles to be multi-function poles catering for not only holding the catenary, but also the incorporation of street lights, banner, signage, traffic signals, options for hanging planter baskets, etc.

Council requests that the existing Council banner poles located at the central median of Anzac Parade are to be returned to Randwick City Council if their removal is required.

Substations

Council objects to the proposed above-ground substation in High Cross Park, and is concerned about the visual and noise impacts and large spatial footprint in all substation locations within Randwick City. Council requests further information on the substations, and seeks discussion on alternative locations and/or designs. Refer also to discussion under 2: Major Issues

Built form

It is recommended that further details of all proposed buildings are provided, addressing the following matters, and that the Council has a further opportunity to provide feedback on the impacts of the design:

- building envelopes including details of location, proposed footprints and heights
- materials, colours and details
- access arrangements
- specific function & layout of internal space – for amenities buildings at interchanges (eg. provision of parents rooms /accessible toilet, provision of lockers / showers for cyclists, etc)
- flooding implications where relevant
- amenity impacts including overshadowing and visual character

Construction compounds

It is recommended that hoardings, fences or other barriers around construction compounds are of a high quality and incorporate the following:

- public art
- project information
- suitable lines of sight for safe pedestrian and vehicular circulation

Extent and scope of work for footpaths

The EIS states that design development was undertaken on the preferred route to take into account, and address where possible, “streetscapes including loss of existing trees, green spaces and public spaces”, amongst other matters. Strong concerns are held that the EIS is not addressing public space concerns especially along Anzac Parade.

It is recommended that any works requiring the lifting or braking of any footpath pavement be re-established from kerb to boundary of property to avoid visual inconsistencies in finish/surface colour, etc. All paving re-establishment is to be in accordance with Council’s design guidelines.

Further clarification and discussions with Council is requested in regards to the exact boundary for the extent of works.

Landscape and Visual impact

Tree Loss

Council requests a re-evaluation of tree rankings along Anzac Parade to include their contribution to pedestrian and residential amenity, by providing a buffer from busy streets and improving the microclimate. It is considered that trees in the

mixed use commercial centres of Kensington and Kingsford should be valued highly in this regard.

Council also recommends the usage of other landscape design options in addition to street trees, such as verge planting to improve the visual soft landscape amenity of the light rail corridor.

Tay Reserve

Council recommends that alternative options are explored in relation to the light rail track alignment in order to minimise the impact on Tay Reserve and impact on significant trees on the corner of Alison Road and Anzac Parade.

If the route alignment is to go through this location and both trees are to be removed, Council recommends that both species are to be relocated to a new location agreed by relevant stakeholders, or that they are to be replaced with semi-mature trees.

Any additional planting on Tay Reserve needs to reflect its historical significance through plant selection, hardscape and urban elements.

Wilson Place

Council recommends that any new design for Wilson Place is sympathetic to the historical qualities of the site and integrates the pair of sandstone horse trough supports with the bronze plaques. The detail design for Wilson Place needs to be undertaken in close consultation with Council.

Randwick Racecourse – landscape and visual impact

The detailed design stage should further investigate design options for this section of the track to retain significant trees, and those that positively contribute to the visual and landscape character in and around the Racecourse. Where tree removal is unavoidable the existing tree alignment is to be replaced with mature tree species equivalent to those currently on site. See also separate comments in Section 4.3 on significant trees.

Council prefers retention of the remaining significant heritage fabric on the racecourse, but if removed, supports relocation and reconstruction of the Swab building. Council can provide further detail in relevant suggested conditions of consent for heritage and archaeological impacts of the proposal when appropriate to assist in the assessment process.

LRV Stabling Facility

Council objects to the proposed location for the stabling facility at 66A Doncaster Avenue (near the corner of Alison Road and Doncaster Avenue) for the following visual and landscape reasons:

- it would have a significant negative visual impact to the area.
- it is in closed proximity to residential properties along the western boundary. A substantial level of screening for privacy and environmental amenity would be required between the stabling location and back boundary of private properties along Doncaster Avenue.
- issues in relation to noise and vibration, especially as the facility is not proposed to be enclosed.

Not enough information has been submitted with the EIS in relation to flood analysis for this location and surrounding area. Refer to Section 4.12 for more discussion on issues/recommendations in relation to flood impacts.

Wansey Road stations

Council notes and supports recent and ongoing discussions on an alternative location for the light rail stop near the corner of Alison Road – to be fully located on Alison Road, adjacent to the Racecourse, and requests further investigation and discussion with the Council and stakeholders on the design and visual impact of this location. This location would provide better passive surveillance for pedestrians from passing traffic and would be away from overshadowing effects of the dense tree canopy located at Dan Reserve.

Council requests further review of the design of the proposed light rail stop at the corner of Wansey Road and High Street in coordination with the public domain and open space improvements to be recommended in the Randwick Urban Activation Precinct proposal. See also Council's recommendations regarding review of passenger capacity needs and station design in Section 3.5.

Landscape design

Landscape options and species selections should be reviewed and refined in consultation with the Council, to clarify the extent of planting, address species consistency with urban and landscape character, habitat potential, the suitability of growing conditions and maintenance needs, and include options such as verge treatments to assist with visual buffer/noise protection to protect the visual and pedestrian amenity of Kensington and Kingsford town centres in particular.

In order to complement the broad objectives of Council's Street Tree Masterplan it is generally a requirement that stakeholders plant trees and shrubs contained within that Masterplan document. Nominated trees are a mix of native, exotic and indigenous species. These tree/shrub species are described in detail in Council's Street Tree Identification Manual and this directly correlates with those species listed in its Street Tree Masterplan. In designated commercial areas and urban activation zones it may be more preferable to plant broad domed exotic species to

create a distinctive character and add dramatic impact to those hubs and to recognise the historical significance of certain areas.

Council also recommends further consideration of the landscape design and tree planting proposed for Anzac Parade to ensure the important boulevard nature of this corridor is enhanced, and that the value of existing trees in the Kensington-Kingsford precinct in terms of their amenity and visual contribution to these high pedestrian areas is more strongly recognised in the detailed design.

Tree Planting

Council recommends review and adjustment of the light rail design to minimise loss of existing mature, healthy trees. Review should include the potential for wire-free running to avoid impacts on tree canopies, and localised alignment adjustments. Council also recommends investigation into the potential to transplant existing trees that would otherwise require removal.

Any tree confirmed for removal should be replaced with an appropriate number of suitable replacement trees. The number, size, species and locations of replacement trees should be resolved in discussion with the Council, and recognise the high amenity value of trees in high pedestrian and mixed-use areas along the corridor.

Any replacement planting should also be nurtured and maintained in a healthy and vigorous state for a period of at least two years, especially when the removal of the original tree or trees impacts adversely on the streetscape or adjacent property owners.

Significant Trees

The retention of as many trees as possible along the proposed light rail route will be essential to minimise the loss of visual amenity the project will have on the urban environment within Randwick City.

Further investigation and consultation with the Council is recommended to explore options for retaining and protecting a proportion of significant trees. Specific priority locations for Council are:

- High Cross Park
- Alison Road/Randwick Racecourse
- Anzac Parade/Alison Road
- Wansey Road/Randwick Racecourse

Additionally, detailed conditions are recommended to require appropriate processes to be followed relating to tree protection, removal, replacement, pruning or crown lifting activities.

Council supports the compensatory tree planting measures proposed in the EIS to provide replacement trees in the ratio between 2:1 and 8:1 depending on the size of the tree to be removed in accordance with the TfNSW '*Vegetation Offset Guide*' (2013d), which includes a principle of replacing the amenity/visual landscape value of vegetation removed. Council recommends re-evaluation of the tree ranking in the EIS to include a higher value placed on the amenity contribution of trees in high pedestrian and mixed use areas on the light rail corridor.

Council also supports the EIS recommendation for the selection of tree species, size and planting locations which are proposed to be undertaken in close consultation with Council.

Council recommends that where significant trees listed in Randwick City Council's Significant Trees Register are removed, the detail design provides the opportunity for the replacement of semi mature species.

Biodiversity

In relation to threatened species Council recommends recognition of ESBS in Centennial Parklands in the Flora and Fauna Table as an endangered ecological community. Assessment should be undertaken of any potential adverse impact on the ESBS during construction and operation, including (but not limited to) erosion of soils, siltation of streams and waterways, overland flows and stormwater runoff, planting of inappropriate/ invasive species and overshadowing from the new plantings, to ensure the protection of the environmental processes and genetic integrity of the endangered community.

The assessment of existing habitat should also take into account the soils, which may contain seeds and/or propagules of the native vegetation (ESBS). It is important that this be considered, especially when the need for translocation of original soils arises in the construction phase.

Mitigation measures should be included to protect ESBS, both during construction and operation of the CSELR.

Heritage and Archaeology

Council recommends that heritage specialists (for built and landscape heritage and aboriginal and historical archaeology) are involved in the detailed design and documentation phases of the project, to assist in identifying opportunities to reveal and where possible, interpret, the significance of heritage items and archaeological sites. Detailed suggested conditions of consent can be provided to assist the assessment process, and address specific design and implementation aspects related to heritage and archaeology.

High Cross Reserve

The Council does not support the use of High Cross Park for a light rail terminus/interchange, and notes the current discussions on an alternative location.

Randwick Racecourse

It is recommended that the detailed design process investigates potential to retain or minimise impact on significant built elements and landscaping, and that this is further discussed with the Council and stakeholders. Council can provide further detail in relevant suggested conditions of consent for heritage and archaeological impacts of the proposal when appropriate to assist in the assessment process.

Council prefers retention of the remaining significant heritage fabric on the racecourse, but if removed, supports relocation and reconstruction of the Swab building. Council can provide further detail in relevant suggested conditions of consent for heritage and archaeological impacts of the proposal when appropriate to assist in the assessment process.

Randwick LRV Stabling facility

As noted previously, the Council does not support the proposed location for light rail vehicle stabling at 66A Doncaster Avenue.

Should the stabling facility remain in this location, Council requests further investigation and information on the design and layout of the facility, and the heritage impact on identified significant structures in the location, and also on the broader heritage conservation area. Council would prefer the heritage significance of this area to be retained, and can provide detailed heritage and archaeological recommendations in the form of suggested conditions of consent, to assist in the assessment process.

Tay Reserve

It is recommended the light rail alignment is reviewed to avoid not only impact on significant trees, but also the impact on the heritage/archaeological significance of the site, and minimise negative impacts. Additional detail can be provided in relevant suggested conditions of consent for heritage and archaeological impacts of the proposal when appropriate to assist in the assessment process.

Wilson Place

Council would prefer the horse troughs to remain in site, and requests this be considered in the reconfiguration and detailed design of the nineways roundabout. However, if this is not possible, it is recommended TfNSW seek Council's advice on suitable preservation, interpretation and re-location of the horse trough supports. Additional detail can be provided in relevant suggested conditions of consent for heritage and archaeological impacts of the proposal when appropriate to assist in the assessment process.

Environmental Sustainability

Council supports the strong and ambitious commitments in the proposal, which if properly implemented and accounted for will add to the reputation and success of the light rail project and its various government agencies, partners and supporters.

It is recommended that the EIS be conditioned to ensure that the projects' key sustainability objectives as outlined are implemented and accounted as proposed in the EIS, and that further details over the proposed compliance, auditing and surveillance of the various Environmental Management Plans are clarified and provided to the Council.

Social Impact

See detailed comments regarding the High Street/High Cross Park stop at Section 2.1.

Council supports the high level of accessibility of the light rail service, and recommends the detailed design continues to ensure that all the rail stop shelter and related facilities/infrastructure provided meet accessibility standards.

Economic impact

It is recommended that the three plans noted in the EIS (Construction Environmental Management Plan, Access Management Plan and Business Landowner and Engagement Plan) are developed with further discussion with the Council and affected stakeholders and businesses, including input to the critical components of the plans at detailed design stage, as well as ongoing input and feedback during construction and implementation. The plans should specifically address economic impacts and business continuity strategies for the commercial centres on the corridor, and particularly in Kingsford.

Council also notes the specific and varied needs of different businesses and institutions on and around the light rail route, including major operators and revenue generators for the State economy such as UNSW and Randwick Racecourse. It is recommended that detailed economic impact mitigation and management measures are tailored to these key institutions, based on a detailed understanding of respective needs and potential impacts.

Noise and Vibration

Light rail vehicles

The specification for the Light Rail Vehicle should be as stringent as possible and Council supports the suggestion in the Technical Paper of the EIS that speed restrictions should apply at the more sensitive night time period where it has no influence on headway or operations.

Vibration impacts and light rail track forms

Council recommends that the rail should be isolated for vibration as a minimum, wherever adjacent to educational, research or health properties, and especially along the length of High Street and Anzac Parade at UNSW, so that any future redevelopment close to the light rail that may house sensitive equipment is accounted for in the construction of the CSELR.

In such locations the light rail should adopt the high resilience or very high attenuation tracks as part of the detailed design stage.

The light rail tracks should also be designed to reduce noise and vibration impacts on residents along the route, particularly given the mixed-use character of the area, and significant numbers of dwellings along both the Randwick and Kensington/Kingsford branches of the corridor.

The selection of the track system should be specified as a condition of consent to address noise and vibration impacts, and should not be a matter for discretion of the PPP operator.

Randwick LRV stabling facility

Council does not support the proposed LRV stabling location, as noted in Section 2. Council requests a study showing noise and vibration comparisons between this location and the alternative at the south-eastern corner of Randwick Racecourse.

Given the noise assessment for the proposed stabling area at Doncaster Avenue indicates significant non compliances, Council requests a review of the facility's layout and design should the LRV stabling remain in this location, including:

- review location of buildings and noise-generating activities relative to existing residences
- modelling of noise from cleaning and plant/equipment operation
- investigation of impacts of complete enclosure of the facility
- further information on the modelling provided to Council

Council further recommends that benchmarks for noise level amenity should adopt the "recommended" rather than "maximum" noise levels (as used in the noise report), and that any noise attenuation measures should be designed to meet the recommended amenity standard.

Council also requests the public address (PA) system should be certified as being set up to minimise noise prior to occupation. Once operational any testing of the PA system or other noise producing equipment should occur at daytime only.

Air quality

It is considered that further detail is necessary to define appropriate air quality management, and Council requests confirmation that the following measures will be addressed:

- Ambient air quality monitoring during construction: air monitoring should be set at sensitive receptors where set objectives are met in regards to the emissions of particulate matter (PM₁₀, PM_{2.5}, Total Suspended Particulates and deposited dust).
- Equipment selection shall consider low emissions to air, high energy and fuel efficiency.
- The CSELR will not involve any emissions or discharges which will give rise to a public nuisance or result in an offence under the Protection of the Environment Operations Act 1997 and Regulation.

Council also recommends that the proposed Dust Management Plan (DMP) is prepared in consultation with the NSW EPA (as the appropriate regulatory authority) and include an air quality monitoring program within sensitive receptors that;

- uses a combination of real-time and supplementary monitors to evaluate the performance of the construction phase
- adequately supports the proactive and reactive air quality management system
- includes PM_{2.5} monitoring
- evaluates and reports on the effectiveness of the air quality management system (including results example online)
- Includes a protocol for determining any exceedances of the relevant objectives in regards to the emissions of particulate matter (PM₁₀, PM_{2.5}, Total Suspended Particulates and deposited dust).
- Include a protocol that has been prepared in consultation with nearby sensitive receivers (residential areas along Wansey Road, Randwick, Doncaster Avenue, Randwick, UNSW precinct along High Street Randwick, Prince of Wales Hospital precinct, which includes a complaint management system.
- Implement adequate and robust strategies to manage dust/air pollutants
- Meteorological station nearby sensitive receivers to ensure compliance with the requirements of the Department of Environment and Conservation (EPA) document Approved Methods for Modelling and Assessment of Air Pollutants in NSW 2005
- The complaints management system must include (but not limited to) a protocol for managing and reporting any incidents, complaints, non-compliances with statutory requirements, exceedances of the impact assessment criteria and/or performance criteria. It should also include processes to keep the local community and relevant agencies informed about any exceedances; receive, handle, respond to, and record complaints, resolve any disputes that may arise, respond to any non-compliance, and respond to emergencies.

Utilities and infrastructure

Further investigations in consultation with the Council are needed to ensure the light rail project can be delivered with minimal impact on existing infrastructure and services, the lowest possible ongoing maintenance cost and maintenance of overall service delivery to the community. Council requests these discussions are undertaken before appointment of an early works contract, to ensure the scope of works reflects resolution of the issues noted below.

Specific recommendations include:

- Clear definition of ownership and responsibility for assets at the infrastructure interfaces.
- Identification of and agreement to any new assets intended to be handed over to Council to maintain
- Identification of any shallow stormwater infrastructure which may be impacted by the works
- Identification of any stormwater infrastructure that may become inaccessible as a result of the light rail system, and agreement on a maintenance/replacement regime
- Identification of all services proposed to be relocated or where service access changed, and their impact on the public domain generally, and pedestrian accessibility.
- Consultation with and approval from Council on the location of Council's services along the alignment, and inclusion of conduits dedicated for Council services where relevant.

The arrangements and locations proposed for service relocation/ replacement must be discussed with Council and reviewed for acceptability in terms of maintenance access and consistency with Council specifications. All services must be permanently relocated (preferably in the footway) prior to commencement of the rail construction.

Further consideration and coordination of the design and layout of light rail infrastructure and urban elements is needed. A detailed design should be prepared in consultation with the Council to provide:

- a high level of safety, capacity, accessibility and amenity for the public
- minimisation of urban clutter, including investigating the potential for undergrounding of power and use of multi-function poles to combine power, lighting, street banners, signage etc
- integration with street tree planting
- consistency with Council's design standards
- accessibility and responsibility for maintenance

Hydrology, drainage and flooding

Flooding and stormwater

Council requests that consideration of stormwater issues and proposals for their mitigation should be outlined in a light rail catchment plan, to be prepared in consultation with the Council. Specific investigations and performance standards to inform the plan shall be consistent with the NSW Floodplain Development Manual, and relevant Council studies and standards, including:

- maintenance of all overland flows
- maintenance of flood storage volumes
- no increase in the 1:100 ARI flood levels

Council can provide further detail of relevant performance standards and technical criteria through suggested conditions of consent.

Groundwater

Council supports a groundwater testing and monitoring program to establish details of groundwater conditions, to be prepared in consultation with appropriate authorities including the NSW Office of Water, and advised to the Council.

This program should inform appropriate construction and operational activities to be defined in the Construction Groundwater Management Plan, and ensure surrounding areas and the water quality of the Botany Sands aquifer are adequately protected.

Randwick Urban Activation precinct

Council recommends that the CSELR design is reviewed and coordinated with the UAP recommendations (when available) for infrastructure, public space and footpaths/ streetscapes, as well as ensuring the CSELR design is robust to accommodate the demands of future increased population/activity generated by the UAP process.

CONSULTATION

Consultation and communications program

Randwick City Council encourages Transport for NSW to develop detailed communication and engagement programs of a scale commensurate with the proposed \$1.6 billion project. Randwick City Council acknowledges the significant benefit that light rail to Randwick will bring, but suggests a detailed engagement process with affected stakeholders.

These plans should aim to:

- be open and transparent
- provide full and accurate information
- provide timely updates and advanced notice
- listen and respond to the concerns of affected stakeholders
- partner with affected stakeholders to find solutions
- minimise construction impact as much as possible
- respect the community's right to have a say
- use new and innovate communication media
- actively and regularly communicate with all stakeholders

Randwick City Council recommends the following four key strategies and plans to engage with the community.

1. Continue the Sydney Light Rail Round Table Group with senior executives representing key stakeholders for regular updates, and provide local expertise and feedback at key milestones.
2. Develop clear, recognisable and consistent branding for use across all communication channels.
3. Developed business continuity and support plans in conjunction with local businesses and chambers of commerce. These plans should set out how local businesses along the construction route and surrounding affected streets will be supported and promoted during the construction period. These plans should go further than just "maintaining public access" but develop strategies to assist businesses in remaining economically viable during the construction phase of the project.
4. Develop clear, detailed and flexible stakeholder engagement and communication plans.

The plans should contain details of actions, communication channels, timeframes and measurable targets. They should consider and respond to the impact on such affected groups as residents, ratepayers, visitors, businesses, workers, students and commuters.

The draft engagement plans should be available for community comment and feedback. They should be publicly available, reported on regularly and updated in response to circumstances as they arise.

One of the key principles in providing information should be the timeliness of information. Residents and businesses not only will need information about impending construction activities, but also need information on indicative timeframes for construction activities so they can make plans well in advance of construction impacts. Therefore actions in the communication and engagement plans should be linked to the proposed construction time timeframe and milestones.

Randwick Council recommends that the engagement and communication plans include the following elements:

- dedicated community liaison staff with clearly defined responsibilities linked to the implementation of the engagement and communication plans
- onsite information centres in locations easily accessible to the community
- information project boards and signage along construction routes which may be part of hoarding that minimises the visual impact of construction
- regular media updates on the project
- regular paid advertising in the local print media
- door knocking of all affected properties linked to the construction timetable
- regular letterbox drops to affected properties and letter mail outs to residents and property owners
- dedicated regular e-newsletters for local residents and businesses
- dedicated social media channels providing the opportunities for project information updates, questions by residents and responses to questions raised
- a dedicated project website that includes up to date information, with all current documents, and on-line forums where the project team and those affected by the project can exchange information, participate in discussions and access current information
- a dedicated project telephone information line
- a dedicated email address to facilitate information on the project partner and support local organisations and institutions - such as chambers of commerce, schools, TAFE, local precincts groups, councils, UNSW, local hospitals and other major employers - to share information through their existing networks.

1. INTRODUCTION AND GENERAL COMMENTS

1.1 Overview

Background

Key drivers of the light rail project are a need to improve the capacity and reliability of public transport between central Sydney and key destinations in the south-east, and to reduce bus-based congestion in Sydney CBD. The CSELR project is consistent with state key strategies and actions in the NSW State Plan 2021 and Long Term Transport Master Plan, and Randwick City Council's Community Strategic Plan; the Randwick City Plan.

Overview of the Proposal

The CBD and South East Light Rail (CSELR) proposal comprises the construction and operation of a new light rail service in Sydney, including approximately 12km of new track running from Circular Quay to Central, Kingsford and Randwick via Surry Hills and Moore Park. The proposal includes 20 stops, light rail vehicle stabling facilities in Randwick, a maintenance depot in Rozelle and 12 traction power substations.

The light rail operation will offer a reliable high frequency, high capacity service, able to carry up to 9000 passengers per hour in each direction, with peak services from Randwick and Kingsford every 5 to 6 minutes, and every 2 to 3 minutes within the CBD. The light rail proposal will also cater for additional special event services from Central to Moore Park and to Randwick Racecourse.

The terminus stops at Randwick and Kingsford will operate as bus interchanges, with the south-east bus system to be re-designed (separately to the light rail EIS) to integrate with the light rail once it is operational (estimated in 5-6 years).

The proposed light rail service is expected to commence construction in mid to late 2014 with an early works package, with the main construction and commissioning process commencing in 2015, and estimated to take 5 years.

Structure of the EIS

The Environmental Impact Statement (EIS) for the light rail project describes the background and strategic need for the proposal, the project objectives, the targeted benefits, the development of the proposal including options considered, and the proposed light rail project design, operation and construction. Impacts of the proposal are assessed on a regional and local (precinct) basis, and include both positive and negative impacts. Environmental management and mitigation measures are proposed to address identified impacts.

The EIS describes the impacts of the proposal in terms of impacts affecting the entire light rail route, and local impacts that are relevant to specific precincts.

Five precincts are described:

- City Centre
- Surry Hills
- Moore Park
- Randwick
- Kensington and Kingsford

The Randwick Precinct extends from the intersection of Alison Road and Anzac Parade, and follows the light rail alignment along Alison Road, Wansey Road and High Street to its proposed terminus at High Cross Park.

The Kensington-Kingsford precinct follows the proposed light rail alignment along Anzac Parade from the intersection with Alison Road to its termination at Kingsford, near the intersection with Sturt Street (opposite South Sydney Junior Rugby Leagues Club).

1.2 Structure of submission

This submission is structured in 5 sections as noted below. Within each issue the submission includes an overview of what is proposed in the EIS, a discussion of key issues for Randwick City Council and Council's recommendations for consideration in the assessment process. Some overlapping issues occur within the submission, to allow for each subject to be addressed individually, as well as allowing a coordinated discussion of common aspects.

1. Introduction and general comments
2. Major location-based issues
3. Traffic, transport and access issues
4. Design and operational issues
5. Consultation

1.3 General comments

Support for public transport improvements

The Council has been consistent in its planning and advocacy for the introduction of world class rail-based public transport to Randwick City, and has been liaising closely with both the University of NSW (UNSW) and the Australian Turf Club (ATC), the operators of the Royal Randwick Racecourse) to work towards this goal.

Partnership process

Prior to the announcement of Light Rail to Randwick by the State Government, the Council conducted an award-winning community consultation and engagement program, and in partnership with UNSW and the ATC, co-funded a pre-feasibility study into light rail, and participated in the Minister for Transport's light rail planning round table.

Council officers have participated in regular strategic and technical meetings. On 4 July 2013 the Council, University of NSW and the Australian Turf Club (ATC) signed a MOU with the NSW Government to support the delivery of the project. This partnership approach has been valuable and has created a strong understanding between these main trip generators as to the common and particular requirements associated with the introduction of a light rail service. This cooperation has been beneficial and its continuation should be supported.

The Council notes the proposed light rail route mostly aligns with the route investigated by Council and its partners in the pre-feasibility study. The proposed CSELR general alignment is supported in principle, and Council notes there are ongoing discussions as well as further detailed design processes that will refine specific aspects of the route and light rail operations. Council's comments on key issues/areas recommended for change or ongoing investigation and refinement are included in the following sections.

Ongoing consultation and information

Critical to the ongoing success of the CSELR project is thorough and meaningful consultation and information provided to the community, including residents, workers, visitors, students and businesses in all future project stages from detailed design through to construction and the on-going operation of the light rail service. It is noted that the Projector Director for the current Inner West extension has stressed the vital importance of communications with the wide community.

Council supports the establishment of a dedicated Place Manager for the Randwick and Kensington-Kingsford precincts as a first point of contact for community and stakeholder communication and liaison, and is pleased to note that the Place Manager has been engaged and is already working with local businesses.

The EIS notes that early works construction is anticipated to commence in mid-late 2014, involving relocation of services and other preparatory works. It is critical that a well-developed consultation and information program is established and communicated to the community and general public well in advance of any works commencement.

2. MAJOR LOCATION-BASED ISSUES

2.1 Randwick Interchange (High Cross Park)

Overview

The EIS proposes a terminus of the light rail at High Cross Park in Randwick, which also incorporates a bus interchange. The terminus, interchange, associated structures and passenger circulation requirements will occupy the majority of the park. The EIS describes two alternative interchange options on High Street, located opposite the entry to Prince of Wales Hospital. The EIS compares these options and identifies High Cross Park as preferred, primarily considering its relative advantages for interchange efficiency.

Issues

Council objects to the EIS proposal to locate a light rail station / terminus and bus interchange at High Cross Park. Key issues and concerns for Council are summarised below (and addressed more fully in subsequent sections):

- Risk that High Cross Park has insufficient bus drop-off/pick-up capacity or layover space to operate effectively as an interchange.
- Concern that the re-design of the south east bus network to coordinate with light rail is unconfirmed, and that the fixed size and isolated nature of High Cross Park will not be able to accommodate changing bus requirements over time.
- High Cross Park is poorly connected to the Randwick Hospitals Campus relative to the High Street alternatives.
- The proposal will result in the change of High Cross Park from a passive green park to an active urban square.
- The loss of numerous significant trees
- Adverse impact on heritage values of High Cross Park and surrounds
- Impact on a number of important civic and community ceremonies such as Anzac Day, Remembrance Day, and White Ribbon Walk.
- High Cross Park interchange is poorly connected to Randwick Commercial Centre local shops and services used by the community, as compared to the High Street alternatives

Recommendation

The Council is opposed to the High Cross Park design as detailed within the EIS.

The Council notes, however, there have been ongoing discussions between TfNSW and stakeholders (including Council, NSW Health Infrastructure and UNSW) about the location and design of the Randwick terminus/interchange.

It is noted these discussions are still progressing with a view of providing an alternative terminus/station/interchange at High Street to better serve the Randwick Hospitals Campus. Council supports ongoing discussions to progress detailed study and modelling of the relocation of the Randwick interchange from High Cross Park to the eastern end of High Street opposite Prince of Wales Hospital.

Should the Randwick terminus and interchange be retained at High Cross Park, the Council seeks provision of an additional stop on High Street to serve the Randwick Hospitals Campus.

2.2 Kingsford Interchange

Overview

The proposed terminus and interchange at Kingsford is located within the wide central median island of Anzac Parade, south of the nineways intersection (ie. the Anzac Pde / Rainbow St / Gardeners Rd intersection currently controlled by a large roundabout). This is opposite South Sydney Junior Rugby League Club (known as 'Souths Juniors'). It is intended to serve both a local and wider catchment of suburbs to the south, and reduce the need for bus services to the CBD. The proposed layout of the interchange focuses on smooth and convenient passenger transfer between bus and light rail modes.

Three layout options for the interchange are tabled in the EIS. Options 1 and 2 show a crossover platform layout, with buses stopping on the inside of the platform, and passengers transferring to light rail on the outside of the platform. Option 3 shows separated platforms for buses and light rail, with passengers needing to cross the bus lane and walk to a different platform to transfer. Option 1 is preferred in the EIS as it provides for a more efficient passenger transfer, especially in the morning peak.

Issues

The options for the interchange do not consider the suitability of the location of the interchange, its proximity to the nineways intersection, or evaluate how pedestrians can safely access the platforms from the sides of Anzac Parade. Council has significant concerns about pedestrian safety at this location (further details noted in Section 3.5). The crossfall across the interchange also introduces significant design complexities.

TfNSW has advised the Council that a Pedestrian Safety Report has been prepared (subsequent to the EIS), however at the time of writing this submission Council has not been provided with the findings of this report.

Council also has concerns about the impact of the loss of substantial parking at the interchange location, and the complexity of the traffic operations at the proposed new signalised intersection at nineways.

It is considered that separating the interchange from the complex nineways intersection would be a superior outcome as it would be a simpler arrangement for motorists and pedestrians / passengers, reduce parking loss outside Souths Juniors and allow an interchange which did not have 'level variations' from one side to the other.

The Council has engaged a specialist transport consultant to review technical and safety aspects of the proposed Kingsford interchange and surrounds. Detailed feedback from this investigation, once concluded, will be provided separately.

Recommendation

Council has major concerns about pedestrian safety at the Kingsford interchange and does not support the proposed location. Council would prefer the option of extending the light rail alignment to Maroubra Junction, or as a minimum create an additional stop (comprising the interchange) further south near Botany Street.

2.3 Wansey Road Alignment

Overview

The EIS includes an analysis of four alignment options for Wansey Road. One option includes the majority of the light rail alignment within Randwick Racecourse property, with the other three located within the existing Wansey Road reserve. All options involve a two-way traffic operation, and retention/replacement of the existing shared pedestrian/cycleway along the Racecourse boundary. The EIS preferred option locates the light rail tracks on the western (Racecourse) edge of the existing road reserve, adjacent and to the east of the shared pedestrian/cycle path, and relocates two traffic lanes to the east, with the removal of both kerbside parking lanes.

Issues

Council notes and supports the inclusion of alternative designs for the Wansey Road alignment. The preferred option in the EIS however will involve the removal of several significant trees (refer to detailed comments in Section 3.9), and the loss of all on-street parking. This is not supported, and Council resolved at the Council meeting on 25 June 2013 (Moore/Shurey) that the light rail alignment should be within the Racecourse boundary along the Wansey Road segment of the route in order to minimise any impacts on Wansey Road residents.

Council also notes a recent additional alternative proposal from a local resident group, which introduces one-way traffic circulation on Wansey Road between Alison Road and Arthur Street, retaining on-street parking on the residents' side, and limiting the adverse impacts on significant trees. This may also coordinate well with the draft proposals for this location in the Randwick Urban Activation Precinct investigations.

It is noted that there are also current discussions to relocate the Wansey Road/Alison Road stop fully onto Alison Road. This option may provide a safer, more visually prominent location, and Council welcomes further investigations and discussions in this area.

Recommendation

Council recommends the light rail alignment is relocated within Randwick Racecourse. It is also recommended the alternative option of a one-way traffic system is further explored in consultation with stakeholders and the Council, including traffic modelling, retention of one-way kerbside parking, and maximising potential for significant tree retention. Council also supports further investigation and discussion on the re-location of the Wansey Road stop onto Alison Road.

2.4 Light Rail Vehicle (LRV) stabling facility

Overview

The EIS preferred location for a LRV stabling and light maintenance area is on the north western corner of Randwick Racecourse (occupying privately owned land at 66A Doncaster Avenue). An alternative location at the south-eastern corner of Randwick Racecourse (near the intersection of Wansey Road and High Street) is discussed, but not preferred due to the need to relocate existing horse stables.

Issues

Council does not support the proposed location of the LRV stabling facility. Specific issues with the proposal are discussed in the detailed comments (refer section 4) and include:

- Identified significant adverse noise impacts to surrounding residential areas, and the need for significant building coverage to reduce noise impacts
- Limited information on visual impact and built form, and concerns about the potential for adverse heritage, visual, landscape, amenity and character impacts for nearby residents, at this gateway to Randwick City and close to the main entrance to the Racecourse
- Lack of investigation into flooding impacts, and risk of introducing adverse flood impacts to surrounding areas and/or downstream receiving waters.
- Potential for adverse impacts on water quality for both surface stormwater and groundwater.

Recommendation

It is recommended that the LRV stabling area is located at the south eastern corner of the Racecourse.

If the project proceeds with the LRV Stabling facility as proposed at 66A Doncaster Avenue, Council recommends:

- a review of spatial needs, including consideration of potential alternative stabling locations and capacity needs if the light rail network is extended in the future;
- that the facility be completely housed within a building to minimise noise impacts;
- further investigation and liaison into the design of any buildings or structures, including flooding, visual and amenity impacts;
- That the overland flow path within the site be maintained, and the design should not cause an increase in flood levels
- Review and coordination of the layout with a safe and well-designed cycle path connecting through the Racecourse to UNSW.

2.5 Anzac Parade: reduction of footpath widths

It is understood that footpath widths may be reduced in locations along Anzac Parade in order to accommodate the light rail alignment and station platforms. See also the comments on the pedestrian network in Section 3.5.

Issues

Council is concerned the footpaths may not provide sufficient safety or capacity for the expected pedestrian volume, and does not support any loss of circulation space. The reduction of footpath widths will also have impacts on existing awnings, outdoor dining, the viability of commercial centres at Kensington and Kingsford, the safety and access for the large volume of students who use this area, and the general functioning of the space as a pedestrian friendly environment. It also impacts the future growth anticipated in this area.

This is an area of strong concern because, as a result of the proposed removal of all parking along most parts of Anzac Parade, heavy traffic flows will be occurring immediately next to the footpath. The resultant outcome of a poor pedestrian environment plus the likely reduction in pedestrian safety along the edge of the footpath is unsatisfactory.

Council is also concerned about the ability of these busy footpaths to accommodate light rail infrastructure, urban elements, landscaping, street lighting in a coherent and attractive manner.

Recommendation

Council objects to any loss of effective footpath capacity as a result of the light rail alignment, and recommends further investigation and modelling of the pedestrian network around the light rail route, to ensure the pedestrian network is safe and contains adequate capacity for expected movement.

The minimum (standard) footpath width of 3.6m should be maintained. Investigation should involve liaison with the Council, and include an assessment of the cumulative impacts on increased population and/or pedestrian activity in and around the commercial centres.

2.6 Construction compounds

Overview

The EIS identifies proposed construction compounds in Randwick LGA that are expected to be in place for the duration of the construction period. These are at Tay Reserve, Abbotford Street, Wansey Road, High Cross Park, UNSW campus and at the corner of Anzac Parade & Rainbow Street (STA & RCC land).

Issues

The proposed construction compounds are in prominent locations, several on existing public space, and some at key gateways to Randwick City. These sites are likely to have a strong visual impact. Council's concerns are that:

- The compounds could be unattractive and create a visual barrier for pedestrians and traffic, and;
- Use as a construction site will result in the loss of existing public space and removal of existing trees and landscape character

Recommendations

Council recommends review of the proposed construction sites to minimise impacts on Randwick's key city entry points and parks, including Tay Reserve, UNSW and High Cross Park. The review should include investigation of alternative locations, and measures to ensure the compound are visually and operationally safe, and any enclosures are attractive and of a high quality design that complements the character of the area.

Council recommends the design of construction compounds, includes use of graphic design or other visual interest, enclosure materials and details, opportunities for

public art, community information, and maintenance of pedestrian and vehicular safety.

If the Randwick terminus/interchange is relocated from its current proposed location at High Cross Park, Council requests investigation of an alternative construction site, and if retained in High Cross Park, will strongly object to any loss of trees for the purposes of establishing a construction compound.

2.7 Substations

Overview

Twelve substations are proposed along the route, with five within Randwick City. In Randwick City, substations are located at the Randwick and Kingsford interchanges, one at the proposed light rail stabling facility and two others within Randwick Racecourse (one on Anzac Parade and one on Alison Road).

Each substation in Randwick LGA is proposed to be located above the ground, and housed in a building within a fenced site, and have a footprint of 80sqm, with 250sqm overall required for access clearances, parking and security fences. Some indications suggest that these installations will be structures 10 metres long and 8 metres wide with a height of 3.5 metres.

Issues

Council is concerned about the visual impact and extent of public space the substations will occupy, particularly at High Cross Park and the Kingsford Interchange.

Recommendation

Council objects to an above ground substation at High Cross Park. Further design investigations into substation location and design in Randwick City should be undertaken in consultation with the Council and stakeholders to integrate the design of buildings and other structures with the surrounding context and minimise visual impact and occupation of public open space. Council requests that the proposed substation at High Cross Park is relocated or placed underground.

3. TRAFFIC, TRANSPORT AND ACCESS ISSUES

3.1 Light rail operations

Overview

The CSELR proposes a high capacity public transport service with improved reliability, accessibility and comfort compared to current bus-only operations.

It will have the capacity to move up to 9,000 people per hour in each direction, with up to 300 passengers per vehicle. Each vehicle will be 45 metres long with a single deck, low floor, multi-door operation, and designed to be DDA compliant.

There are 20 stations proposed overall, with 10 in Randwick City including two terminus/interchanges at Kingsford and Randwick. Stops are proposed for Randwick Racecourse and the University of NSW, with stations located within the respective properties. Other stops are proposed in Kensington and Kingsford along Anzac Parade, and near each end of Wansey Road (at the intersections with Alison road and High Street).

Operating hours are proposed to be between 5.00am and 1.00am, seven days a week. The light rail service will integrate with the public transport network, and have the ability to be adjusted to suit special events.

It will provide a turn up and go service, every two to three minutes during peak periods in the CBD (and every 5-6 minutes from Randwick and Kingsford) with 97% reliability. Indicative run times between the Randwick and Kingsford termini and Circular Quay range from 30 to 34 minutes, and 15 to 18 minutes to Central station.

A total of 26 vehicles will be in operation at commencement of the light rail service. The vehicles are proposed to be maintained at an expanded Rozelle light rail maintenance facility, with a light rail vehicle (LRV) stabling facility located in Randwick, on currently privately owned land at 66A Doncaster Avenue at the north-west corner of Randwick Racecourse. TfNSW has indicated this land would be acquired.

This stabling facility will have the capacity for overnight storage of up to 40 light rail vehicles, with facilities to support inspection, cleaning and light maintenance functions, staff parking, amenities and an operations control centre.

Issues

Council supports the proposed high capacity, efficiency, convenience and reliability of the CSELR, which will provide for improved overall travel times. The strong commitment to an accessible, safe and comfortable service is also supported.

The EIS notes that on commencement the service will operate in the CBD at 3 minute intervals in the peak (and 6 minute intervals on each branch within Randwick City), and that this is expected to cater for current demand. While the proposal notes the capacity to expand the service to 2 minute intervals in the CBD in the peak, Council would need confirmation from DP&I and TfNSW of the ability of the light rail system to accommodate future growth in Randwick City, or increased demand for travel to major destinations on the route.

While not detailed in the EIS, Council notes the intention for the CSELR system to use the “Opal” ticketing system, and be integrated with the wider public transport network. Council supports integration of the ticketing system. However, Council has raised the issue of pricing in previous feedback, and is concerned that the ticket pricing for the light rail service may not be equitable or comparable to existing bus services, or other components of the public transport network.

Recommendation

As noted previously Council does not support the proposed location of the Randwick light rail stabling facility, and recommends the stabling facility to be located at the south-eastern corner of Randwick Racecourse (near Wansey Road and High Street). See separate comments at Section 2.4.

Council requests confirmation that the capacity of the light rail system will accommodate future demands for the service.

Council seeks assurance that the pricing of light rail ticketing is equitable and consistent with existing bus services and other components of the public transport system. It is important that pricing aspects of the service do not act as a disincentive to the success of the light rail system, and achieving the broader goal of increased public transport use.

3.2 Transport / Traffic operations

Overview

The project’s overall objective for the road network is to maximise transport system performance and usage, and successfully integrate light rail with the road network. The CSELR proposal will integrate with the existing surface street alignment and is proposed to operate within an exclusive right-of-way for the

majority of the route (separated running). At signalised intersections and some other locations, the light rail will share the right of way with other vehicles.

The proposal anticipates that some existing traffic on the light rail corridor will be displaced, resulting in either a change in mode of travel, time of travel or re-routing of traffic to other corridors. The project's traffic modelling notes this will not have a significant adverse impact on the functionality of the wider transport network, however identifies a number of critical intersections and future traffic patterns that are the subject of further investigation.

In Randwick City this includes expected capacity restrictions along the light rail corridor (affecting vehicular traffic) and forecast traffic diversions to the local street network. It is noted that traffic disruptions will be most significant during construction. Road space will be compromised by construction activities; with existing bus services and numbers to be retained until the light rail service is operational.

The EIS notes that investigations into these impacts is ongoing and will be addressed in a Network Management Plan (NMP) to be developed at detailed design stage. Continued liaison with RMS and councils will be included as part of this process to mitigate potential network and local traffic impacts. Components of the NMP will be a Demand Management Strategy, a Network Optimisation Strategy and an Incident Management Strategy.

The EIS proposal involves a number of significant changes to the way the existing road network operates. Key road network changes proposed within Randwick City are:

Randwick Precinct:

On Alison Road the CSELR will operate on the existing busway alignment on the north/east side of Alison Road, then cross at Doncaster Avenue to run along Alison Road adjacent to Royal Randwick Racecourse, on the outside of the relocated shared pedestrian/cycle path. The CSELR runs along the western boundary of Wansey Road on the eastern side of the shared pedestrian/cycle path, turning into High Street where it will run in a central position.

Key changes proposed to current traffic conditions are:

- Restriction of city-bound traffic to two through-lanes along Alison Road between Wansey Road and Doncaster Avenue.
- Removal of all on-street parking in this location.
- Light rail will share the existing busway from Anzac Parade to Doncaster Avenue
- New signalised intersection at Alison Road and Wansey Road
- Two way traffic retained on Wansey Road, with loss of on-street parking lanes.

- Modifications to the operation of High Street, including new signalised crossings at the intersections with Wansey Road, Hospital Road and Clara Street
- Right turn vehicles can share the right-of-way in High Street and Botany Street
- Restricted access to Eurimbla Avenue to left-in, left-out only.
- Loss of all on-street parking on High Street, from Wansey Road to Avoca Street.

Kensington and Kingsford Precinct:

The CSELR will generally operate in the centre of Anzac Parade, (with an exception at UNSW where the proposed alignment moves eastwards to provide for a station within University property), with two general traffic lanes either side.

Key changes proposed to current traffic conditions are:

- A reduction in the number of intersections where southbound Anzac Parade traffic can turn right, from six to four. Right turns southbound will be permitted only at Dacey Avenue, Todman Avenue, Barker Street, and Gardeners Road. Right turns will NOT be allowed at Day Avenue, Strachan Street and Borrodale Road.
- A reduction in the number of intersections where northbound traffic can turn right, from nine to three. Right turns northbound will be permitted at Barker Street, High Street and Todman Avenue.. Right turns will NOT be permitted at Rainbow Street, Meeks Street, Middle Street, Doncaster Avenue, Ascot Street, Carlton Street and Abbotford Street.
- Reconfiguration of the nine-ways roundabout to a signalised intersection
- Reduced peak time performance at intersections of Anzac Parade with Alison Road, High Street and Middle Street
- Loss of most on-street parking spaces along Anzac Parade

Issues

Traffic flows

In the project needs analysis and justification, the EIS predicts a benefit of a light rail service in future overall travel times between Randwick City and Sydney CBD in 2031, compared to a "do-nothing" scenario, where bus services alone would continue to provide the sole public transport option. Indicative run times between the Randwick and Kingsford termini and Circular Quay range from 30 to 34 minutes, and 15 to 18 minutes to Central station.

Despite its overall support for the project, Council is concerned about the impact of the proposal on traffic flows both within the proposed alignment and on

surrounding streets. Limited information is provided in the EIS, but it is expected the proposal will result in:

- transport congestion for non-light rail transport (especially during construction) along the alignments and in parallel streets
- the concentration and funnelling of local access traffic and through traffic 'rat-runs' onto roads ill equipped to cope with such traffic loadings (specifically Barker Street, both east and west of Anzac Parade).

Recommendation

Council requests TfNSW provides the option models for traffic flows not only along the rail alignment but also the neighbouring local area. Modelling should address:

- traffic flow changes along the rail alignment & impact on the whole local area, including local streets surrounding the light rail route
- extent of traffic redirection and mitigation measures proposed
- impacts/reductions on travel time for private vehicles
- impacts on the operation of intersections, including traffic impacts of changed Anzac Parade right turn provisions and signalisation of the Kingsford roundabout (including impacts on local streets).

It is necessary to quantify the likely increased traffic volumes, which will be concentrated upon Barker Street and to assess how the Kensington internal local streets will manage these significant traffic increases. This information and measures for mitigation, management and/or design changes should be further discussed with the Council.

Restriction of right hand turns (Anzac Parade)

The Anzac Parade / Day Avenue right turn bay is proposed to be removed, with all right turning traffic now focused on Barker Street. Barker Street, west of Day Lane, cannot accommodate the traffic flows likely to occur. This is particularly an issue as Barker Street (west of Day Lane) runs alongside a popular junior sports field, and a park with a recently upgraded and very popular playground.

Recommendation

Council recommends retention of the right turn for southbound Anzac Parade traffic at Day Avenue. This may have benefits for UNSW in that the pedestrian crossing would be shifted to the Day Avenue intersection and the light rail stop could be shifted closer to the main pedestrian spine in UNSW. Also, the signalising of Day Avenue may improve efficiencies in light rail / pedestrian operations which may be able to operate concurrently. This needs further detailed investigation.

Council requests review of the proposed dedicated left turn taper lane for southbound Anzac Parade motorists, at Meeks. This introduces a tight radius curve for the no.2 and no.3 lanes in this direction, and Council is concerned about safety implications.

Separated running of light rail and traffic lanes

The EIS is based on separated running of light rail and general traffic lanes. While Council understands the potential efficiency benefits for light rail, this has the adverse effect on Anzac Parade of removing all kerbside parking. (See separate discussion on this matter in Section 3.3)

Recommendation

On Anzac Parade Council recommends investigation into shared running outside of peak periods. There are no technical impediments to such arrangements. Pavement lights, vehicle detectors, camera infringements, dynamic signage and 'swing gates' are all elements which are in common use on Sydney roads managed by RMS. Allowing vehicles onto the tracks may retain great numbers of parking spaces along the corridor, with only minimal impact upon the non-peak passenger flows. This will retain viable centres, have more pleasant public spaces and will appease, in a great way, the concerns of business operators along the Anzac Parade alignment.

Kensington LATM (current Randwick City Council project)

This current project will be impacted by the CSELR proposal. The EIS has not included the recommendations of the Kensington LATM study into its assessment.

Recommendation

It is recommended that TfNSW holds further discussions with Council on coordination of the Kensington LATM and light rail projects.

3.3 Parking

Overview

The Light rail proposal has a significant impact on kerbside parking supply, as noted under each precinct below. The EIS notes TfNSW proposes to work with Randwick City Council to identify any parking management measures that would be required to manage kerbside activity. Council welcomes ongoing discussion on this matter, but notes there is limited ability for parking demand management measures alone to mitigate the substantial loss of kerbside parking.

Randwick Precinct:

There are 304 existing on-street parking spaces directly in and surrounding the CSELR corridor in the Randwick Precinct (including loading zones, taxi zones, car share, disabled spaces, permit, short term and unrestricted parking) that will be removed as a result of the proposal. All existing on-street parking on the light rail

route on Alison Road, Wansey Road and High Street will be removed. This includes existing taxi and loading zones on High Street, and resident parking permit spaces.

The EIS notes some capacity for off-peak parking may be provided on part of Belmore Road (opposite High Cross Park), and for loading areas elsewhere outside of light rail operating hours.

The EIS uses a broad parking survey area (of 700m surrounding the CSELR route) to identify alternate parking capacity to offset spaces lost as a result of the CSELR, and concludes that alternative supply is available, but parking demand may outstrip supply if there is no change in mode share (eg: from people currently driving to work at UNSW or the Hospitals campus to using light rail).

Kensington-Kingsford precinct:

There are 173 and 297 existing on-street parking spaces directly on the light rail route in Kensington and Kingsford respectively.

The CSELR project will involve the removal of a total of 400 spaces from the broader Kensington-Kingsford precinct. In Kensington, 139 spaces will be removed, with 14 on-street parking spaces on Anzac Parade proposed to be provided in off-peak periods in the bus-only lanes. In Kingsford, 261 spaces will be removed.

The EIS uses a broad parking survey area (of 700m surrounding the CSELR route) to identify alternate parking capacity to offset spaces lost as a result of the CSELR, and concludes that adequate alternative supply is available to absorb displaced demand, while noting that in Kingsford the parking utilisation will be close to effective capacity.

The EIS further notes that provision of adequate on-street parking supply is subject to implementing appropriate parking management measures to balance supply and demand, which TfNSW will discuss further with Randwick City Council during detailed design stage. Recommendations include introducing controls to allocate parking to key users and remove unrestricted parking.

Issues

General

The rationale for the removal of parking from great lengths of the alignment is the overriding objective of Transport for NSW for the light rail line to be fully separated from other traffic. This results in the road space currently utilised for parking being reallocated solely to the use of the light rail line.

In essence this arrangement imposes a parking supply dis-benefit, a reduction in footpath amenity / ambience, reduced access to commercial centres and, possibly,

a negative pedestrian road safety impact upon the very localised community, in order to benefit the passengers on the light rail vehicles. The benefit for light rail is a greater travel time reliability - the light rail vehicles are not delayed by the manoeuvrings of private vehicles. The two areas where this is of most concern are High Street, from Avoca Street to Wansey Road, and, Anzac Parade, through Kensington and Kingsford.

Collecting evidence about how commercial/retail centres are currently accessed and used is critical to ensuring there is a robust basis from which to consider project impacts. Data needs to be gathered that can inform about aspects of the CSELR corridor and project. Taking a structured approach to the task is vital to ensure that all stakeholders are well informed and capable of playing a positive role in assisting this project to proceed through to implementation.

Council objects to the substantial loss of on-street parking along the CSELR alignment. These parking spaces provide an important support for local businesses and retail operations, and a buffer between the traffic lanes and footpaths/driveways. This buffer provides both physical and psychological safety from the general flow of traffic. Parking removal directly conflicts with a primary objective of the proposal in that it WILL NOT *"Improve the overall amenity of public spaces in the CBD and suburbs to the south-east"*.

A 700m radius catchment for review of alternative parking capacity is considered unrealistic, and does not reflect the distances pedestrians and customers would be prepared to walk to access local shops and services.

Recommendation

It is recommended that given the proposed loss of parking (many hundreds of spaces along the alignment) TfNSW should work closely with the Council to regain parking spaces within a block of each alignment. This would require an examination of each and every street block along each alignment to ascertain whether angle parking and or one-way systems could be introduced in order to recover, in close proximity, all of the parking spaces removed from the alignment.

This study should be undertaken before the EIS assessment process is concluded, and the requirements should be included in conditions of consent. The proposed outcomes from the study would need to be implemented as an early component of the project because parking will be immediately impacted with early works.

High Street

Along High Street visitations to local facilities, such as the hospital, medical rooms, cafes, UNSW and many residential properties will be affected. However, along High Street there are many places where time limited parking has not been required, nor imposed; indicating that (over the years) there has not been a strong demand for parking turnover.

The impact upon High Street pedestrians would be moderate to major. The passing cars, trucks and other vehicles are proposed to be travelling along the 'cleared out' kerbside lane. This is because the centre lanes would be solely allocated to the light rail tracks. It is considered that there are locations where there are high volumes of pedestrians (nearer to Avoca Street and near to UNSW) whilst other areas have low pedestrian volumes.

Recommendation

It is recommended that further investigations are undertaken in consultation with Council and stakeholders to review pedestrian safety impacts and possible mitigation measures in all locations where kerbside travel lanes are introduced.

Anzac Parade

The areas where the overriding objective of Transport for NSW (for the light rail line to be fully separated from other traffic) will have the most deleterious effect would be along Anzac Parade, Kensington / Kingsford. Many local business managers will likely have a view that the supply of kerbside parking is essential for the survival of their businesses.

The potential locations for off-peak parking on Anzac Parade on northbound bus-only lanes seem to provide some limited parking capacity – however this is not supported if there is any adverse impact on footpath widths in this location, and the Council seeks an outcome which provides for a higher number of parking spaces in/adjacent to commercial centres.

Notwithstanding the particular views of the local business community, a different, and perhaps more important, issue is the resultant loss of footpath amenity created by having through traffic, including trucks, buses and all others vehicles travelling close to all pedestrians; alongside the kerb in these areas. This could be referred to as the “Parramatta Road-isation” of our shopping communities. Many in Sydney quote Parramatta Road as one of the worst places to be as a pedestrian. The road seems a hostile place to be. It always seems to alienate pedestrians due to the uncomfortable feeling of having fast moving heavy vehicles travelling within a metre or two of the footpath.

The alienation of these public spaces by forcing heavy, fast moving traffic into the kerbside lane adjacent to the very busy footpaths of Kensington and Kingsford appears to be in direct conflict with a primary objective of the CSELR as detailed on pages E-3 and 3-15 of the Environmental Impact Statement:

“Improve the overall amenity of public spaces in the CBD and suburbs to the south-east”.

It is considered that there is no technological impediment to maintaining parking supply in these activity centres outside of peak periods / directions. This would require that Transport for NSW accepts a modification of its overriding objective regarding light rail separation from other traffic – in order to meet the primary objective they have adopted. In many jurisdictions throughout the world motor vehicles share the road with light rail vehicles. This is the common operational

arrangement within Melbourne – the largest light rail system in the world.

It is considered that a separated arrangement in the peak direction for the peak period (a principle similar to current Bus Lanes) should be maintained. After peak periods, however, with the use of in-pavement lane lights, the traffic lanes could be slewed away from the kerbside; with the right side lane crossing onto the alignment. The kerbside lane could then be allocated back to parking. Conflict between light rail vehicles and motor vehicles would be managed by having the transition occur beyond signals and by having the light rail vehicle commence first (with a T signal) and with motor vehicles travelling along after the light rail vehicle moves off.

This arrangement can be achieved through the use of dynamic pavement lighting, vehicle detectors, camera infringement detection, dynamic signage and 'swing gates' which are all elements in common use on Sydney roads managed by RMS. Also, in-vehicle collision detection, common on many mid-value cars, should be a component of the light rail vehicles.

The impact of this suggested concurrent running of vehicles would be a slight increase in running time and, perhaps, a slight reduction in reliability. However, these impacts could be viewed as the price which Randwick community members (the light rail passengers) are prepared to "pay" in order to maintain the viability of local shopping centres for our community.

Removal of parking in George Street, Sydney, will not reduce the viability of George Street. There is enough activity in the CBD to survive such a change. The concern is that the neighbourhood strip shopping centres (Kensington and Kingsford) do not have "major attractors" and may not be able to survive the proposed loss of parking, nor the loss of public space amenity created by heavy kerbside traffic flows. It is considered that technologically the co-running of light rail vehicles with other vehicles could be achieved.

The proposed operations for the CSELR have, in the peak period, a five to six minute headway between light rail vehicles in each direction. The negative impacts from the removal of all parking, at all times, in these shopping centres, to accommodate only 10 light rail vehicles per hour, per direction seem to be greater than our community should accept.

Recommendations

It is recommended that TfNSW introduce dynamic lane control to permit parking within the Kensington and Kingsford activity centres by having co-running of light rail vehicles with other vehicles outside of peak periods, thus permitting kerbside parking at these times.

3.4 Bus operations

Overview

The existing bus system operating in Randwick City is the most heavily patronised bus region in the Sydney metropolitan area. A key objective of the CSELR proposal is to reduce bus congestion in Central Sydney, while meeting demand for public transport. The CSELR project is projected to reduce the number of buses entering the CBD in the peak period by 220.

Existing bus services in the south-east fit within three broad segments: CBD all-stop services, CBD express services and cross regional services. In addition to these regular services are express buses to and from UNSW, school buses and special event buses.

The intention is that the south-east bus system will be re-designed to substantially become a feeder system to the light rail once operational, with several existing CBD all-stop services from the south eastern suburbs re-routed to terminate at either the Randwick or Kingsford interchange to connect to the light rail system. Cross regional routes and express bus services to the CBD and other routes that will not be served by the light rail will generally remain.

The re-design of the south-east bus system, while responding to the light rail project, is not part of the scope of the EIS, and details are not finalised at this time. The Transport Operations Report does identify likely bus changes, but they are subject to refinement and the separate bus operations report has not yet been released. The EIS nevertheless identifies impacts of the CSELR project on existing bus services, described below.

Randwick Precinct:

Alison Road:

- An existing bus stop on the southern side of Alison Road adjacent to Darley Road will be displaced by the CSELR. Passengers will need to use the adjacent stop.

High Street:

- New indented bus bays on the southern side of High Street will be provided in front of Prince of Wales Hospital and UNSW (between Botany Street and Wansey Road).
- The existing eastbound bus stop near the Children's Hospital will be removed, and a new stop located nearby on Clara Street (accessed via a new signalised crossing).
- The existing eastbound bus stop at the corner of Botany Street will be removed, with passengers using the stop west of Wansey Road instead. This arrangement will increase the distance between eastbound bus stops for the 370 and 372 routes from 300m to 800m.

Kensington/Kingsford Precinct:

In order to maintain bus priority, an option for shared running of bus and light rail in the centre of Anzac Parade is proposed between UNSW and Rainbow Street.

This will apply to:

- retained express buses which will transfer to/from the main traffic lanes north of UNSW using the light rail signals.
- non-express services, which would exit the shared centre alignment at the Meeks Street intersection

The CSELR also includes a proposal to provide a dedicated city-bound bus only lane on Anzac Parade where space permits. In non-peak period this lane may be available for on-street parking. See separate discussion in 3.3.

Issues

Council is concerned that the south-eastern bus network re-design is not confirmed, and while it is acknowledged that these changes are 5-6 years away, it is difficult to assess whether the designs of the bus/light rail interchanges at Randwick and Kingsford are adequate to accommodate the changed future bus operations.

It is also uncertain whether the new bus system will have additional effects such as further loss of on street parking to provide for bus layover spaces.

Recommendations

It is recommended that the layout of bus/light rail interchanges at Randwick and Kingsford are designed with sufficient capacity and flexibility to accommodate changing bus services and passenger capacity needs over time, and that details of the future bus routes and schedules servicing the interchanges that have been used to inform the proposed design are provided to the Council, including pedestrian modelling.

It is recommended that consideration to be given to an in-lane bus stop in High Street, just east of Clara Street (eastbound), and also for a half closure of Blenheim Street, at Clara Street, in order to gain the required length for a bus stop just north of High Street.

Ongoing community information and consultation must be provided to advise the community of future bus services in the south-east. See also construction-related comments under 3.6.

3.5 Pedestrian and cycle network

Overview

This section focuses on movement systems. Refer also to comments on pedestrian amenity impacts in the urban design/public domain section of this submission.

In general the CSELR proposal preserves existing pedestrian connections, and where necessary, proposes to realign footpaths that are directly impacted by the light rail route. New signalised crossings are included at key intersections.

The CSELR approach towards the cycle network is to retain existing cycle routes, with re-positioning where required for cycle paths directly impacted by the light rail alignment. The EIS does not confirm whether new and existing signalised intersections on cycle routes will contain cycle-specific crossing signals. No additional cycle connections are proposed to integrate with light rail stations.

The EIS does not include any mode share for cyclists accessing light rail stations. Cycle racks are proposed to be provided at light rail stops, with additional secure storage at Randwick and Kingsford interchanges. End of trip change or shower facilities are not proposed in the EIS.

Specific impacts within each precinct noted in the EIS are identified below:

Randwick precinct:

The EIS notes that overall no significant impacts on pedestrians or cyclists are expected. Existing shared pedestrian-cycle paths on Alison Road and Wansey Road within the light rail alignment will be re-aligned to the inside (ie: Racecourse side) of the light rail tracks in order to reduce the light rail impact on existing trees. The planned cycle route on the eastern end of High Street (between Botany Street and High Street) is proposed to be relocated to Arthur Street, which will connect to the Wansey Road cycle path and Randwick Junction.

Kensington-Kingsford precinct:

Pedestrian activity is expected to increase in the vicinity of the proposed light rail stops, and crossing facilities would be provided at these locations. The EIS does not identify any potential reductions in footpath widths due to the additional spatial needs of the light rail alignment and stations.

No specific impacts on cyclists are identified in the EIS in this precinct. It is silent on the impact of the CSELR on existing cycle paths either side of Anzac Parade on Doncaster Avenue and Houston Road (for example though increased traffic or buses diverted off Anzac Parade, and construction impacts).

Issues

Pedestrian network

There appears to be little in the way of footpath capacity analysis, impacts of possible need for raised tracks (eg: to address flooding) on pedestrian accessibility when crossing roads. There is the potential for adverse pedestrian amenity and capacity impacts with aspects of the design.

Currently a shared pedestrian / bike path runs between the bus way and the Centennial Park embankment. The bus way is lined with two fences – separating the shared path from the passive surveillance afforded by Alison Road activities. Also, due to the embankment adjacent to the shared path, the opportunities for criminal behaviour is increased. CPTED strategies rely upon the ability to influence offender decisions that precede criminal acts. Changing areas in order to deter criminals from committing acts in our communities is the main goal of CPTED. With urban design and the planning that goes into the creation of new and reformation of existing urban places community members can feel safer at all hours.

Recommendations

Council requests that there is no reduction in effective footpath capacity on the route and recommends that further investigation, coordination and design development is needed in consultation with the Council to resolve any areas of conflict between light rail and pedestrian networks – including cumulative impact of future development/increased population on the route, particularly arising from UAP.

Council recommends that the location and detailed design of modified or new pedestrian and cycle paths must ensure adequate levels of safety for the community (adopting the principles of CPTED), be well lit, highly accessible and promote public use.

Council recommends the existing shared bus way / proposed light rail way along the boundary of Centennial Park should shift laterally north to the foot of the Centennial Park embankment, and realign the pedestrian / cyclist path/s to the south of the bus / light rail alignment, in order to meet the objectives of crime prevention through environmental design (CPTED).

Council also recommends consultation with Centennial Park and Moore Park Trust , specifically to strengthen and improve pedestrian access into the park in the vicinity of Doncaster Avenue, consistent with the draft Centennial Parklands master plan.

Pedestrian safety

The proposal raises a number of concerns for Council in relation to pedestrian safety:

- Footpath edges – especially (but not limited to) Anzac Parade – where traffic flow will exist in the kerbside lane at all times. Unfortunately, the likely outcome of pedestrian versus kerbside moving vehicles may lead to the installation of pedestrian fencing. Council would object to traffic safety issues being addressed at the expense of quality urban outcomes.
- Pedestrian safety and likely overcrowding of light rail stops – especially at the Anzac Parade / UNSW stop during peak uni loading times and also at Royal Randwick Racecourse after major horse races and other events. There is limited information regarding the level of service for pedestrians at these locations or anywhere along the alignments within Randwick LGA.
- Pedestrian (and cycle) paths located on the inside of the light rail tracks (eg: along Alison Road and Wansey Road) – a clear understanding of safe crossing points is needed

The erosion of the urban enjoyment of Anzac Parade resulting from the removal of the buffer between pedestrians (shoppers / clients / residents / students etc..) and traffic afforded by parked cars (out of peak periods).

The draft EIS states:

“General alignment — The key criteria for the general alignment of the CSELR proposal track were to provide dual light rail tracks that are segregated from the impacts of traffic congestion, to minimise overall environmental and property and streetscape impacts, and to satisfy engineering design criteria. These parameters are defined by the rolling stock capabilities, speed, travel times, power consumption, passenger comfort and operational requirements.

The current proposal to remove the buffer between moving vehicles and pedestrians causes negative impacts on environmental, property and streetscape impacts within the corridor.

Recommendation

Council requests that further investigations are undertaken in consultation with Council and stakeholders to review pedestrian (and cycle) safety impacts and possible mitigation measures in all locations where kerbside travel lanes are introduced.

Footpath narrowing

It is not clear from the EIS if there will be any narrowing of footpaths in Kingsford associated with right turn bays and with proposed light rail stops. These areas have a large volume of pedestrians including large numbers of students, and highly patronised cafes and restaurants.

Recommendation

See discussion and recommendation under Section 2.5

Kingsford interchange

There is concern about potential difficulty and pedestrian safety in crossing Anzac Parade from east to west and difficulties in accessing the light rail / bus interchange, especially where it involves crossing busways and light rail tracks. It is unclear whether the existing pedestrian signals across Anzac Parade, from Souths Juniors, will be retained.

Recommendation

See discussion and recommendations under Section 2.2

Cycle network

Council considers there is an opportunity for the CSELR project to support active transport measures by better integrating the cycling network with the light rail system. The EIS takes a more limited approach, by only addressing the direct impacts of the light rail route on existing cycle paths.

Recommendation

Council recommends a more holistic approach to integration of the light rail with the cycle network, including:

- provisions to transport bicycles in the light rail vehicle
- cycle crossing signals at all signalised intersections where the light rail route crosses cycle paths
- further consultation with the Council to ensure cycle routes in the vicinity of the light rail route are maintained.

Council also recommends consideration must be given to a bike / pedestrian facility to cross from the Wansey Road shared path to Arthur Street, Randwick.

3.6 Construction-related traffic, transport and access impacts

Overview

- Road network:

Road network performance during construction is modelled on a worst-case scenario in the EIS, assuming the full light rail corridor will be an active worksite. Staging options may provide the opportunity to reduce the identified impacts. The EIS identifies challenges in maintaining acceptable road network operations on Anzac Parade and Alison Road.

In the morning peak travel times on Anzac Parade are expected to increase in both directions. Westbound travel on Alison Road is also expected to increase. In the afternoon peak travel time is expected to increase along the whole south-east light rail corridor with the exception of Alison Road eastbound.

- Bus operations:

Existing bus services in the south east are intended to be maintained during construction, but will involve a mixture of local route diversions, bus stop relocations and construction staging to ensure continuity of access along the whole light rail corridor.

For example, during construction the busway between Anzac Parade and Doncaster Avenue will not be operational. Bus priority measures will be explored during detailed design stage at the intersection of Anzac Parade and Alison Road.

The UNSW express services 890, 891 and 892 will continue to service the University via Central station and Circular Quay.

- Pedestrians:

For the majority of the alignment the existing pedestrian footpaths would be maintained. Pedestrian impacts during construction will occur during installation of overhead wiring and service relocations. Footpaths will be either:

- temporarily narrowed at worksites, or;
- pedestrians will be diverted to adjacent footways, or;
- temporary structures will be installed to facilitate pedestrian movement

- Cycle routes:

Existing cycle paths located within the construction corridor will generally be maintained during construction. Cycle routes anticipated to be affected during construction include existing paths on Wansey Road and Alison Road. An alternative route is proposed along Botany Street, Church Street and King Street.

The EIS notes that alternative cycle routes will be reviewed by the relevant roads authority, user groups and local communities prior to implementation.

- **Emergency Access:**

Emergency vehicle access would be maintained at all construction sites and emergency services will be advised of all planned changes to traffic arrangements prior to implementation.

- **Parking:**

The impact of construction on on-street parking would generally be consistent with that proposed during the operational phase. The EIS proposes tightening of parking controls and restrictions in order to reduce parking demand to meet the practical capacity available.

- **Mitigation measures:**

During the detailed design stage a Construction Network Management Plan will be developed to address the impacts of the construction phase and identify key management measures to minimise journey times and congestion levels.

For the construction phase, a Construction Environmental Management Plan will be prepared as a centralised mechanism through which all potential environmental impacts would be managed. Site specific traffic management plans will be prepared to provide details of individual traffic control plans and road occupancy licenses.

Issues

The traffic, transport and access issues associated with the light rail operation noted in Sections 3.1 to 3.5 are also relevant to the construction stage. Additionally the construction stage will introduce a range of dynamic impacts to people, businesses, and movement systems on and around the proposed route, such as:

- bus and traffic re-routing/oad network changes
- road capacity reduction/travel delays
- localised pedestrian, cycle and property access changes

While the EIS notes the key issues and general mitigation measures for the construction phase, much of the detail will not be confirmed until a contractor is appointed and staging is confirmed, with further impacts emerging during the construction period itself.

Recommendations

Council supports the general principles behind the mitigation measures proposed for the construction period to:

- retain a safe and accessible pedestrian and cycle network
- maintain property and emergency access
- provide thorough information and advice through several channels to advise in real time and in advance of construction impacts

Council requests further discussions with DP&I and TfNSW and stakeholders on mitigation measures during construction on:

- parking supply
- bus priority measures and possible diversions
- public transport access to the University of NSW
- access to Randwick Racecourse for events
- details of the communication/consultation/information program to ensure timely and widely accessible information is provided to residents, businesses and people travelling to and from Randwick City

Council requests more information and discussion on construction staging implications and options, both prior to the early works contractor appointment, and on an ongoing basis, to address key issues such as:

- scope of the early works program including new signalised intersections
- staging options to minimise negative impacts on the local road network
- staging options to retain a proportion of kerbside parking

4. DESIGN AND OPERATIONAL ISSUES

4.1 Urban design and public domain

Overview

An objective of the overall CSELR proposal is to “improve the overall amenity of public spaces in the CBD and suburbs to the south east.” Specific urban design principles and objectives for the project in the EIS are:

- making stops legible;
- improving access
- connectivity with other transport; and
- creating an improved public domain.

Specific design principles in the EIS include:

- that stops will be integrated into the streetscape and/or landscape
- that stops will be easy to find and easily identified from close range and far
- Where possible, stops to be integrated with adjacent developments or be within easy walking distance
- That stops will be located within a reasonable distance from each other
- Allowance for existing and planned pedestrian and cycle ways access
- Allowance for improved pedestrian connectivity (eg. Integrating pedestrian crossings with stops)
- Integrating with existing paving and surfaces to create a seamless transition to light rail stops
- Developing high quality and sustainable street lighting
- Implementing Crime Prevention through Environmental Design to ensure stops are safe and user friendly
- Working with adjacent stakeholders to ensure the stops and materials fit into the public domain
- Developing a strong street tree and landscape design standard

Proposed Station typologies are based on a broad contextual analysis – in Randwick City stations fall into either a Park or Boulevard typology. The EIS does not specifically address the urban design or public domain aspects of the proposal at the local level (apart from visual/landscape impacts discussed at Section 4.2), or coordinate the station typology designs with the broader public space environment beyond light rail stops.

The EIS provides limited information or investigation into the CSELR impact on the surrounding public domain, such as contextual fit, design integration, pedestrian capacity and amenity impacts. The EIS also does not note the potential for incorporating station design into specific locations (such as the Racecourse and UNSW, and interchanges).

Issues

General

Council supports the overall project objective and supporting public domain principles noted above, and recommends these inform the further detailed design of the public domain and the design of any buildings and structures related to the light rail.

Recommendation

In reference to the design of any building, structures and public domain palette in general, Council recommends some flexibility be considered for the customisation/adaptation to suit specific locations to reflect current use, history, cultural significance or other. (UNSW stops, Racecourse stop, stops and alignment along the Randwick Education and Health Specialised Centre on High St, etc.)

Public Domain Strategy and Plan

The EIS provides general layout principles for public domain elements and light rail infrastructure, however is limited in scope and detail. A materials, furniture and vegetation palette is not provided in the EIS documents.

Recommendation

Further investigation, coordination and design development in consultation with Council should be undertaken not prepare a public domain plan for each precinct. The plan should include:

- a planting species palette consistent with Council's requirements
- materials and furniture palette consistent with Council's design and quality standards
- Provision of specific quantities for urban elements (seats, signage, bubblers/water bottles filling stations, bins, cycle hubs / lockers, etc.) for each stop and surrounding area.
- integrated design, planning and layout of urban elements, landscape, way-finding and infrastructure to minimise clutter and create a high quality, safe and accessible public domain
- consideration of the use of multi-function poles for the support of catenary (as indicated by TfNSW within the draft definition design report comments register). This will also allow for opportunities to improve the urban

environment by undergrounding power lines and by retaining the ability to have banners along appropriate lengths of the alignment;

- provision of suitable footpath capacity around and between light rail stops to accommodate expected customer flows and future development along the route
- the treatment and type of any proposed physical separation between light rail and general traffic or pedestrian and general traffic on medians or road verge is to be discussed with Council and be in accordance with Council's design standards.
- provision of footpath verge planting treatments to provide pedestrian safety & buffer from adjacent traffic lane, to enhance visual amenity and reinforce the Boulevard Precinct typology for the Anzac Parade. All planting species to be in accordance with Council'
- Provision of additional information in regards to ownership, maintenance requirements and responsibilities associated to urban elements and utilities eg. multi function poles.

Advertising

Potential for advertising on light rail structures such as stops and substations is not covered in the EIS documents. However, TfNSW has verbally advised that advertising is not allowed at stations in line with the principle of minimising visual clutter. In several locations the light rail structures are proposed within heritage items or conservation areas, and generally all are in highly prominent locations. Advertising will have a significant negative visual impact on the public domain and character of the area.

Recommendation

Council requests confirmation that no advertising will be permitted on light rail structures, urban elements or stops.

Wayfinding

Council supports the proposal for the CSELR design to have a high degree of natural way-finding, and minimal need for sign-based information that does not add to the customer experience. Signage is proposed for every stop and interchange, which is supported.

Recommendation

Council recommends that an access map be included showing local destinations & key sites in the vicinity in addition to connecting transport routes (includes bicycle routes). Council also recommends information to include distances in metrics and time. Council also recommends that there is a provision included for each stop to cater for temporary information for events at the Racecourse, UNSW, local festivals, etc.

Public Art

The EIS documents identify that a Public Art Strategy for the stops will be developed in conjunction with Council. Council has an adopted Public Art strategy, and welcomes the opportunity for public art to be integrated with the CSELR design.

Recommendation

Council recommends that a requirement to provide public art, both permanently and during construction of the light rail, be included in a condition of consent and that the strategy be consistent with Randwick Council Public Art Strategy 2010.

Lighting & Poles

Lighting levels at stations are proposed to be determined during detailed design phase. It is not anticipated that there will be lighting along the light rail corridor except at the platforms.

To minimise visual impact in relation to poles for the catenary system, the EIS recommends the use of a central pole. No information is provided for option of these poles to be a multi function pole to reduce street poles and clutter specially when central arrangement might not be possible. It is noted that the existing Council banner poles may be impacted by the light rail infrastructure, requiring their removal.

Recommendation

Platform lighting should not be obtrusive to the surrounding environment, and should be coordinated with street lighting in the immediate surroundings (flooding rather than directional lighting).

Council recommends for all poles to be multi-function poles catering for not only holding the catenary, but also the incorporation of street lights, banner, signage, traffic signals, options for hanging planter baskets, etc.

Council requests for the existing Council banner poles located at the central median of Anzac Parade to be returned to Randwick City Council if their removal is required.

Built form

Limited information is included in the EIS about the built form of proposed substations throughout the route (and on High Cross Park in particular), amenities building at interchanges and buildings in the Randwick stabling area, however concerns are raised about the potential for the buildings to have poor visual impact, and be incompatible with the surrounding built form, landscape and character.

Recommendation

Council objects to the proposed above-ground substation in High Cross Park, and is concerned about the visual and noise impacts and large spatial footprint in all locations within Randwick City. Council requests further information on the substations, and seeks discussion on alternative locations and/or designs. Refer also to discussion under 2: Major Issues

It is recommended that further details of all proposed buildings are provided, addressing the following matters, and that the Council has a further opportunity to provide feedback on the impacts of the design:

- building envelopes including details of location, proposed footprints and heights
- materials, colours and details
- access arrangements
- specific function & layout of internal space – for amenities buildings at interchanges (eg. provision of parents rooms /accessible toilet, provision of lockers / showers for cyclists, etc)
- flooding implications where relevant
- amenity impacts including overshadowing

Construction compounds

Construction compounds are proposed in highly visible locations, and will affect the character and amenity of the surrounds.

Recommendation

It is recommended that hoardings, fences or other barriers around construction compounds are of a high quality and incorporate the following:

- public art
- project information
- suitable lines of sight for safe pedestrian and vehicular circulation

The EIS also states that design development was undertaken on the preferred route to take into account, and address where possible, “streetscapes including loss of existing trees, green spaces and public spaces”, amongst other matters. Strong concerns are held that the EIS is not addressing public space concerns especially along Anzac Parade.

Extent of scope of works for footpaths

It is not clear in the EIS document the extent of works and exact impact on existing footpaths at all location. It is noted that there may be reductions on footpath widths and changes in kerb alignments that will have an impact on existing footpaths.

Recommendation

It is recommended that any works requiring the lifting or breaking of any footpath pavement be re-established from kerb to boundary of property to avoid visual inconsistencies in finish/surface colour, etc. All paving re-establishment is to be in accordance with Councils design guidelines.

Further clarification and discussions with Council in regards to exact boundary for the extent of works.

4.2 Visual impact and Landscape

Overview

The EIS has been accompanied by a Landscape and Visual Assessment (LVA) prepared by Hassell Arup. The LVA addresses landscape impact both during construction and in operation, as well as day time and night time visual impacts. The Assessment determines degree of adverse impact by identifying levels of sensitivity for particular sites and degree of modification proposed.

The Executive Summary included in the LVA identifies specific impacts in both the Randwick precinct and the Kensington/Kingsford precinct. In Randwick precinct, the most noteworthy landscape impacts would occur at Royal Randwick Racecourse as a result of the removal of a number of significant mature Fig trees; and in High Cross Park with high adverse landscape and visual impacts resulting from the loss of a substantial portion of the park to a transport interchange.

In Kensington/Kingsford precinct, the project would create a moderate adverse landscape and visual impact through the loss of street trees on Anzac Parade and mature Fig trees at the entrance to the University. On site and off site mitigation measures have been identified to avoid, reduce and manage potential adverse impacts during construction and operation. An urban design strategy creates three different light rail typologies (Civic, Park and Boulevard) to respond to landscape diversity along the route.

The Urban Design Strategy covers poles and overhead wires; lighting; cabinets and furniture; stops and interchange platforms and canopies; footpaths, ramps and fencing; signage and landscape treatments. The Strategy notes a number of mitigation measures incorporated in the design including utilising the central

median of Anzac Parade for equity of access from both sides of the street and to minimise impacts on properties fronting the street; and a landscape strategy to mitigate the loss of existing trees.

Issues- Kingsford/Kensington precinct

Tree Loss:

The EIS identified approximately 160 planted trees for removal along Kensington/Kingsford corridor of the Boulevard Precinct to make room for the light rail alignment and stops. The trees in the study area have been individually assessed and given a landscape amenity value which indicates the following:

- how highly the tree is regarded as part of the local landscape
- how the tree provides and enhances the visual quality of the site
- the importance of the tree's historical and cultural significance
- the provision of habitat and vegetation linkages within development site, streetscape, recreation areas or open space.

Some of the trees along this section of the corridor have been ranked low due to their average condition, die back, decline in vigour, dead wood, stressed, poor structure, invasive species, etc. However Council considers that the rating of trees does not adequately address the importance of the trees' value in high pedestrian and mixed use residential areas in commercial centres in providing a visual buffer, improving the microclimate and pedestrian amenity.

While Council agrees with the individual assessment of each tree for the landscape amenity value, though Council notes that this assessment does not cater for the overall landscape amenity value as a whole in particular for the area around the town centres. The existing trees along this section of Anzac Parade, including those ranked low in the tree assessment provide value in the area of shade, provision of soft green landscape, scale against the wide road, and are a contribution to the micro climate for pedestrians in the town centre areas.

Currently the EIS does not address the concept of 'greening' and provision of a good microclimate with the provision of good size street trees normally associated with avenues of this width.

Recommendation

Council requests a re-evaluation of tree rankings along Anzac Parade to include their contribution to pedestrian and residential amenity, by providing a buffer from busy streets and improving the microclimate. It is considered that trees in the mixed use commercial centres of Kensington and Kingsford should be valued highly in this regard.

Council also recommends the usage of landscape design options in addition to street trees, such as verge planting to improve the visual soft landscape amenity of the light rail corridor.

Tay Reserve:

Tay Reserve has heritage significance which is also associated with its landscape and tree planting. It is a gateway to the city of Randwick. The proposed light rail route will remove a number of mature trees and the size of the park would be reduced. This is not addressed or mentioned in the Landscape Visual Assessment prepared for the EIS. The Assessment considers the Reserve to be of local sensitivity and adverse landscape impact to be minor only. Randwick Council has significant concerns about the impact of the physical erosion of the space and the removal of significant trees, on the heritage significance and visual character of Tay Reserve. Randwick Council also has major concerns on the visual impact with the removal of the two mature significant Fig species in the corner of Anzac Pde and Alison Rd (north east) These two species are considered to be in good health and are of great visual value in particular due to their overall canopy shape and qualities in symmetry.

See separate comments re: significant trees.

Recommendation

Council recommends that alternative options are explored in relation to the light rail track alignment in order to minimise the impact on Tay Reserve and impact on significant trees corner Alison Road and Anzac Parade.

If the route alignment is to go through this location and both trees are to be removed, Council recommends for both species to be relocated to a new location agreed by relevant stakeholders, or for them to be replaced with semi mature trees.

Any additional planting on Tay Reserve needs to reflect its historical significance though plant selection, hardscape and urban elements.

Wilson Place:

The proposed light rail route appears to eliminate Wilson Place, located between Anzac Parade and Bunnerong Road. The Assessment notes the leafy backdrop to views in the vicinity of the Nine Ways roundabout to which the landscaping within Wilson Place contributes. The Assessment considers the adverse landscape impact of the proposal on Wilson Place to be minor only.

The existing landscape character of Wilson Place provides a sympathetic setting for the pair of sandstone horse trough supports with bronze plaques which have been identified by in the Sculptures, Monuments and Outdoor Cultural Material (SMOCM)

Survey carried out by the Art Gallery of NSW in 1995. The naming of Wilson Place and the placement of the horse trough give it importance as an urban space. It appears that, and the impact of the proposal on this monument and its setting has not been addressed in the Assessment.

Recommendation

Council recommends that any new design for Wilson Place is sympathetic to the historical qualities of the site and integrates the pair of sandstone horse trough supports with the bronze plaques. The detail design for Wilson Place needs to be undertaken in close consultation with Council.

Issues - Randwick precinct

Randwick Racecourse – light rail route:

In terms of sensitivity, the EIS considers the landscape and built heritage features of Randwick Racecourse to be of regional sensitivity. Therefore the proposed loss of trees of high and exceptional significance, within the north-west corner of the Racecourse and along Alison Road will result in a high adverse landscape impact. The EIS considers the impact of the proposed stabling facility on the rear gardens of Doncaster Avenue properties would result in a minor adverse visual impact.

The light rail alignment will cross from the northern side to the southern side of Alison Road in the vicinity of the intersection with Doncaster Avenue, continuing on the southern side of Alison Road to the Wansey Road corner; then on the western side of Wansey Road to the High Street corner. A shared path is to be provided between the light rail corridor and Alison Road. A stop to serve Randwick Racecourse and the TAFE is proposed to be located in proximity to the racecourse main entrance on Alison Road.

The alignment to the west of the Racecourse stop will require the removal of a number of street trees and two historic gateways at the entrance to the Racecourse. The alignment to the east of the Racecourse stop will require retaining walls along Alison Road and the removal of numerous existing trees including mature fig trees located beside the track in the vicinity of King to Cowper Streets. The alignment will along Wansey Road will require retaining walls and removal of a number of mature trees.

Randwick City Council has significant concerns about the impact of the demolition of remaining sections the Alison Road boundary wall and entry gates, and the removal of significant trees, on the heritage significance and aesthetic values of Randwick Racecourse. It is noted that the function of the Racecourse limits opportunities for tree planting within the track side and spectator areas, with tree planting concentrated around its perimeter, particularly along Alison Road and Wansey Road. The large scale removal of perimeter plantings from the site will impact on the landscape significance and visual character of Alison Road Randwick

Racecourse and have major implications for views towards the Racecourse and Alison Road which are enjoyed from a wide visual catchment. See separate comments in Section 4.3 on significant trees.

Recommendation

The detailed design stage should further investigate design options for this section of the track to retain significant trees, and those that positively contribute to the visual and landscape character in and around the Racecourse. Where tree removal is unavoidable the existing tree alignment is to be replaced with mature tree species equivalent to those currently on site. See also separate comments in Section 4.3 on significant trees.

Randwick Racecourse stop:

The Randwick Racecourse stop would accommodate a 45 long island platform and side platform, including a larger and a smaller canopy. The track and stop would be set flush with the existing shared path to allow pedestrians to cross and access kerbside bus and taxi services, with pedestrian crossings at the ends of the platforms.

A large volume of heritage fabric has already been removed from the Alison Road boundary of the Racecourse site, as part of the Alison Road entry plaza and busway works carried out in 2008. It is unclear why both island and side platforms (with associated canopies) are required, necessitating further removal of built and landscape heritage.

Randwick City Council has significant concerns about the impact of the demolition of the Swab Building and other demolition required for the construction of the Randwick Racecourse stop, on the heritage significance and visual character of Randwick Racecourse, given the loss of fabric in this area which has occurred to date.

Recommendation

Council prefers retention of the remaining significant heritage fabric on the racecourse, but if removed, supports relocation and reconstruction of the Swab building. Council can provide further detail in relevant suggested conditions of consent for heritage and archaeological impacts of the proposal when appropriate to assist in the assessment process.

Randwick LRV Stabling facility:

The EIS identified two options for the Randwick LRV Stabling facility. The first one, (being the preferred location) is located near the corner of Alison Road and Doncaster Avenue at the north western corner of the Randwick Racecourse (on privately owned land known as 66A Doncaster Avenue). The second option is

mentioned in the EIS but no diagrams are shown, and is located at the corner of Wansey Road and High Street at the south eastern corner of the Racecourse.

The proposed stabling facility is to accommodate a light rail maintenance shed, unloading and storage buildings, staff facilities, operations centre, substation and car park.

The EIS preferred option includes a proposed access Road from Doncaster Avenue. Works within the proposed Randwick Racecourse stabling yard have not yet been defined, but would appear to include removal of retaining walls and a brick pedestrian ramp of Moderate significance, and would be adjacent to the Tramway Turnstiles Building which is identified as being of Exceptional significance.

Recommendation

Council objects to the proposed EIS preferred location for the stabling facility corner Alison Rd and Doncaster Ave for the following reasons:

- it would have a significant negative visual impact to the area.
- it is in closed proximity to residential properties along the western boundary. A substantial level of screening for privacy and environmental amenity would be required between the stabling location and back boundary of private properties along Doncaster Ave.
- issues in relation to noise and vibration, especially as the facility is not proposed to be enclosed.

Not enough information has been submitted with the EIS in relation to flood analysis for this location and surrounding area. Refer to Section 4.12 for more discussion on issues/recommendations in relation to flood impacts.

Wansey Road alignment:

The proposed route along the western side of Wansey Road will require significant tree removal and regrading of the high dune at the south east corner of Randwick Racecourse for the construction of the Wansey Road stop near the Alison Road junction. Council has significant concerns about the removal of significant trees, and the remnant landscape at the south east corner of the site on the heritage significance and aesthetic values of Randwick Racecourse. See separate comments re: significant trees.

Recommendation

See comments on Wansey Road under Section 2.3 and also Section 4.3 on significant trees and landscape.

Light rail stations at Wansey Road (coners of Alison Rd and High Street)

The Wansey Rd stop near the corner of Alison Rd is proposed to have an island platform, while the stop near the corner of High Street is proposed to have two side platforms. It appears that this inconsistency in light rail stop design is a response to capacity issues. It is considered that the side platforms, having two out of alignment canopies, will have the greatest visual impact.

Recommendation

Council notes and supports recent and ongoing discussions on an alternative location for the light rail stop near the corner of Alison Road – to be fully located on Alison Road, adjacent to the Racecourse, and requests further investigation and discussion with the Council and stakeholders on the design and visual impact of this location. This location would provide better passive surveillance for pedestrians from passing traffic and would be away from overshadowing effects of the dense tree canopy located at Dan Reserve.

Council requests further review of the design of the proposed light rail stop at the corner of Wansey Road and High Street in coordination with the public domain and open space improvements to be recommended in the Randwick Urban Activation Precinct proposal. See also Council's recommendations regarding review of passenger capacity needs and station design in Section 3.5.

High Cross Park

The light rail alignment will run along the centre of High Street, crossing Avoca Street and terminating at an interchange within High Cross Park. The terminus on the north eastern side of the Park provides two 45m side platforms with a cross platform interchange with buses on the eastern side and interchange bus stops in the surrounding streets. The Park is proposed with new tree planting, a public plaza and landscape works to offset the removal of 55 trees. The terms used in the Urban Design Report "*revitalised*" High Cross Park and the opportunity to "*readdress*" the existing war memorial are not appropriate.

The EIS notes that views towards the heritage precinct of the Hospitals Campus, the statue of Captain Cook and High Cross Park are prominent landscape features marking the cross roads of High Street and Belmore Road. The Assessment notes that within High Cross Park, the forms of the historic Cook Pines are visually prominent and visible along a number of vistas. A number of historic buildings address the park including the Royal Hotel, and "Corana" and "Hygeia" at nos.111 – 215 Avoca Street. The Assessment considers that High Cross Park is of regional sensitivity, and therefore the proposed changes would result in a high adverse landscape impact.

Council has significant concerns about the impact the removal of significant trees, on the heritage significance and visual character of High Cross Reserve and the setting of the war memorial, effectively reducing it to the scale of a traffic island. RCC questions the scale of the light rail stop canopy, the visual bulk and scale of the substation, the safety aspects of a transport interchange separated from connecting bus stops by three busy roads, and the appropriateness of siting these

major pieces of infrastructure at the spatial focus for the historic development of Randwick. See separate comments in Section 4.3 on significant trees.

Council notes and supports the recent and ongoing discussions with TfNSW and stakeholders regarding an alternative terminus and interchange location on High Street, opposite the entrance to the Prince of Wales hospital.

Recommendation

Council does not support the location of the Randwick terminus and interchange in High Cross Park. See further discussion and recommendations for High Cross Park under Section 2.1

Landscape design

A large percentage of species proposed in the Landscape Strategy are natives. There is a need to balance the planting palette to include non natives in locations such as town centre stops and High Cross Park. Any new feature planting should also consider and respond to the locality's heritage values and European influence in the area.

The species listed in the EIS document cover the stop areas and street trees. The document does not include other plant species such as shrubs, grasses, etc for street verge treatments, and are unclear whether grass will be planted all along the alignment in median.

Issues with asset ownership and maintenance of landscaped areas and urban elements are not clear in the EIS documents.

Council notes that the existing tree assessment does not cater for the overall landscape amenity value as a whole in particular for the area around the town centres. The existing trees along this section of Anzac Parade, including those ranked low in the tree assessment provide value in the area of shade, provision of soft green landscape, scale against the wide road, and are a contribution to the micro climate for pedestrians in the town centre areas.

Currently the EIS does not address the concept of 'greening' and provision of a good microclimate with the provision of good size street trees normally associated with avenues of this width. Apart from street tree planting Council recommends the usage of other design options such as verge planting to improve the visual soft landscape amenity of this section of the light rail corridor.

Recommendation

Landscape options and species selections should be reviewed and refined in consultation with the Council, to clarify the extent of planting, address species consistency with urban and landscape character, habitat potential, the suitability of

growing conditions and maintenance needs, and include options such as verge treatments to assist with visual buffer/noise protection to protect the visual and pedestrian amenity of Kensington and Kingsford town centres in particular.

In order to complement the broad objectives of Council's Street Tree Masterplan it is generally a requirement that stakeholders plant trees and shrubs contained within that Masterplan document. Nominated trees are a mix of native, exotic and indigenous species. These tree/shrub species are described in detail in Council's Street Tree Identification Manual and this directly correlates with those species listed in its Street Tree Masterplan. In designated commercial areas and urban activation zones it may be more preferable to plant broad domed exotic species to create a distinctive character and add dramatic impact to those hubs and to recognise the historical significance of certain areas.

Council also recommends further consideration of the landscape design and tree planting proposed for Anzac Parade to ensure the important boulevard nature of this corridor is enhanced, and that the value of existing trees in the Kensington-Kingsford precinct in terms of their amenity and visual contribution to these high pedestrian areas is more strongly recognised in the detailed design.

Tree planting

The EIS notes that removal of some healthy retainable trees from the Racecourse, University and NSW and within the public domain will be necessary in order to meet construction objectives. However, the loss of tree canopy cover will reduce public amenity and environmental benefits and should be compensated for whenever possible.

Recommendation

Council recommends review and adjustment of the light rail design to minimise loss of existing mature, healthy trees. Review should include the potential for wire-free running to avoid impacts on tree canopies, and localised alignment adjustments. Council also recommends investigation into the potential to transplant existing trees that would otherwise require removal.

Any tree confirmed for removal should be replaced with an appropriate number of suitable replacement trees. The number, size, species and locations of replacement trees should be resolved in discussion with the Council, and recognise the high amenity value of trees in high pedestrian and mixed-use areas along the corridor.

Any replacement planting should also be nurtured and maintained in a healthy and vigorous state for a period of at least two years, especially when the removal of the original tree or trees impacts adversely on the streetscape or adjacent property owners.

4.3 Significant Trees

Overview

Randwick City Council has adopted a Significant Trees Register which identifies and recognises the importance of significant trees in the Randwick landscape, guides their management and ensures their protection for future generations. The trees listed in the register have been evaluated in relation to historic and/or natural value (ie indigenous/cultivated origin); botanic/scientific value; social, cultural and commemorative value; and visual and aesthetic value.

The CSELR proposal identifies an approximate total of 280 trees in the Randwick Precinct and 160 trees in the Kensington / Kingsford Precinct to be removed as a direct result of the light rail alignment. A significant number of these trees are identified in Randwick City Council's Significant Tree Register. A significant number of trees are also expected to require heavy pruning to accommodate increased clearances required by the light rail vehicles and infrastructure.

Compensatory tree planting measures are proposed in the EIS to provide replacement trees in accordance with the TfNSW '*Vegetation Offset Guide*' (2013d), which includes a principle of replacing 'the amenity/visual landscape value of vegetation removed' even if the vegetation may not have a significant ecological value. Trees are proposed to be replaced at a ratio of between 2:1 and 8:1, depending on the size and significance of the tree to be removed. The selection of tree species, size and planting locations are proposed to be undertaken in close consultation with Council.

Issues

The affected trees range in significance from four mature and rare *Araucaria columnaris* (Cook pines) growing in High Cross Reserve to a number of mature *Ficus macrophylla* (Moreton Bay figs) and *Ficus rubiginosa* (Port Jackson figs) growing within the University of New South Wales and Royal Randwick Racecourse.

In addition, large numbers of established street trees and trees in open spaces and reserves will also require removal or significant pruning if they are to be retained.

A substantial amount of significant trees are proposed for removal inside the Racecourse along Alison Road between Darley Road and Prince Street which will have a significant impact on the visual amenity of the area.

The EIS does not identify the impacts likely on existing trees adjacent to the kerb in locations where kerbside parking is proposed to be replaced by a traffic lane. In these situations increased clearances under trees will be required to facilitate movement of trucks and other larger vehicles adjacent to the footpath. This may affect the viability of some trees, and lead to additional tree removal.

Recommendations

The retention of as many trees as possible along the proposed light rail route will be essential to minimise the loss of visual amenity the project will have on the urban environment within Randwick City.

Further investigation and consultation with the Council is recommended to explore options for retaining and protecting a proportion of significant trees. Specific priority locations for Council are:

- High Cross Park
- Alison Road/Randwick Racecourse
- Anzac Parade/Alison Road
- Wansey Road/Randwick Racecourse

Additionally, detailed conditions are recommended to require appropriate processes to be followed relating to tree protection, removal, replacement, pruning or crown lifting activities.

Council supports the compensatory tree planting measures proposed in the EIS to provide replacement trees in the ratio between 2:1 and 8:1 depending on the size of the tree to be removed in accordance with the TfNSW '*Vegetation Offset Guide*' (2013d), which includes a principle of replacing the amenity/visual landscape value of vegetation removed. Council recommends re-evaluation of the tree ranking in the EIS to include a higher value placed on the amenity contribution of trees in high pedestrian and mixed use areas on the light rail corridor.

Council also supports the EIS recommendation for the selection of tree species, size and planting locations which are proposed to be undertaken in close consultation with Council.

Council recommends that where significant trees listed in Randwick City Council's Significant Trees Register are removed, the detail design provides the opportunity for the replacement of semi mature species.

4.4 Biodiversity

Overview

An ecology impact assessment was prepared to address the environmental impacts of the CSELR proposal during construction and operation. The EIS notes that the study area consists entirely of landscape plantings and therefore, no detailed floristic surveys or condition assessments were conducted while any possible

presence of planted threatened species was assessed through desktop assessment and visual inspection.

Issues

Section 5A of the EP&A Act requires the assessment of likely impacts upon threatened species, populations or ecological communities under the TSC Act. It is noted that Eastern Suburbs Banksia Scrub (ESBS) occurs as fragments at the south end of Centennial Parklands, with the nearest patches located less than 100m from the proposed alignment on Alison Rd.

The ESBS is listed as an endangered ecological community under the TSC Act. The presence of ESBS at the adjacent parkland, however, is not identified in the "Flora and Fauna Table" in Appendix H and there has been no discussion or assessment of the potential impact on these vegetation.

The EIS notes that the "main habitat along the alignment comprises street trees and gardens". It is important to note that habitat does not only comprise the vegetation which occurs above ground, but also includes features such as soils, rocks, light and moisture.

As identified in Section 10.3.1 of the EIS, original soils exist within the study area. A large portion of these soils would have supported the now endangered ESBS. This information is consistent with the NSW ESBS Recovery Plan (OEH, 2004).

Recommendation:

In relation to threatened species Council recommends recognition of ESBS in Centennial Parklands in the Flora and Fauna Table as an endangered ecological community. Assessment should be undertaken of any potential adverse impact on the ESBS during construction and operation, including (but not limited to) erosion of soils, siltation of streams and waterways, overland flows and stormwater runoff, planting of inappropriate/ invasive species and overshadowing from the new plantings, to ensure the protection of the environmental processes and genetic integrity of the endangered community.

The assessment of existing habitat should also take into account the soils, which may contain seeds and/or propagules of the native vegetation (ESBS). It is important that this be considered, especially when the need for translocation of original soils arises in the construction phase.

Mitigation measures should be included to protect ESBS, both during construction and operation of the CSELR.

4.5 Heritage and Archaeology

Overview

The Environmental Impact Statement has been accompanied by a Heritage Impact Assessment (HIA) and Heritage Interpretation Strategy (HIS) prepared by Godden Mackay Logan Heritage Consultants. The HIS addresses Aboriginal Archaeology, Historical Archaeology, and Built and Landscape Heritage.

The Executive Summary included in the HIA provides key findings and mitigation measures in relation to heritage impact. Key findings and proposed mitigation measures in the EIS which relate to Randwick City heritage are as follows:

- *Aboriginal Archaeology*

Aboriginal archaeological deposits from the nineteenth century may have survived in Tay Reserve, as the area was used by Aboriginal people during the historical period. Intact soil profiles that may have the potential for Aboriginal archaeological evidence to be present below modern disturbance. Evidence may include stone objects and/or hearths as well as the possibility for organic remains such as middens or burials. Proposed mitigation measures in the EIS include reference to best practice standards, seeking of expert advice and consultation with local Aboriginal stakeholders.

- *Historical Archaeology*

There is potential for archaeological remains of local significance to be present along the route, except where they have been removed by previous ground disturbance. Proposed mitigation measures in the EIS include test excavations, and additional research in Zone 1 areas, and monitoring and salvage excavation in Zone 1 and Zone 2.

- *Built and Landscape Heritage*

The HIA finds that the proposal would have a major adverse heritage impact on Tay Reserve, Kensington, the Racecourse precinct heritage conservation area, and High Cross Reserve, Randwick. Proposed mitigation measures in the EIS include careful detailed design of works and light rail stops to minimise or avoid adverse impact and to ensure they are compatible with their heritage context; protection of physical fabric of heritage items during construction; archival recording of built and landscape heritage items subject to adverse impact; interpretation development to further the concepts identified in the Heritage Interpretation Strategy and to interpret the history of roads, neighbourhoods and heritage items along the route.

Proposed general mitigation measures in the EIS include involving heritage specialists in the detailed design and documentation and construction phases, rationalisation of services to minimise excavation, heritage induction for contractors, and development of detailed archaeological management procedures in conjunction with the progress of the project.

The tramlines which served Randwick City until their removal in the 1960s facilitated suburban development and provided a framework for the growth of the City's network of town centres. The construction of these tramlines resulted in considerable physical change including provision of gentle curves for street corners, and construction of cuttings and lower gradient routes. A large turn-back at Coogee Beach was located between Arden Street and Beach Street. Some separated tram lines existed, including sections along Anzac Parade adjacent to Centennial Park and along Anzac Parade from Kingsford to Maroubra. The majority of tramlines however were accommodated within the road reserve which was shared with other vehicles.

Key issues – General

The proposed CSELR will have significant impacts on the heritage fabric and archaeological significance of parts of Randwick City.

Recommendation

Council recommends that heritage specialists (for built and landscape heritage and aboriginal and historical archaeology) are involved in the detailed design and documentation phases of the project, to assist in identifying opportunities to reveal and where possible, interpret, the significance of heritage items and archaeological sites. Detailed suggested conditions of consent can be provided to assist the assessment process, and address specific design and implementation aspects related to heritage and archaeology.

Key Issues - Randwick precinct

High Cross Reserve:

High Cross Reserve marks the junction of early walking tracks used by the indigenous population and the first European visitors, and is Randwick's primary urban space. It was fenced in 1869 at the instruction of Mayor Simeon Pearce. The Heritage Study Inventory Sheet for the Reserve notes that Norfolk Island Pines and poplars are the most significant vegetation species, and that the arrangement of such sympathetically scaled and detailed building around an urban park is rare in Sydney.

The cenotaph in High Cross Park was unveiled in 1925. The SMOCM Survey, completed in 1995 noted that at that time the Clovelly RSL had been conducting an ANZAC Sunday ceremony in the Reserve for the past 40 years, with an ANZAC Day dawn service held by the combined Clovelly and Coogee- Randwick RSL Clubs. It is unclear whether the physical dimensions and eroded spiritual significance of the space will allow these ceremonies to continue.

High Cross Reserve is proposed to be used as a tram stop and bus interchange, including a substation, shelter canopy for the substation, shelter canopy for the tram stop, and a shelter structure for the proposed outdoor dining area. The

proposal will result in the loss of approximately half of the Reserve and 16 trees, with the character of the remaining portion irrevocably transformed, which the HIA identifies as a major adverse heritage impact on High Cross Reserve and a moderate adverse heritage impact on the High Cross heritage conservation area. Council has significant concerns about the impact of the physical erosion of the space and the removal of most significant trees, on the heritage significance of High Cross Reserve and the setting of the war memorial, effectively reducing it to the scale of a traffic island. Council questions the scale of the tram stop canopy, the safety aspects of a transport interchange bounded by three busy roads, and the appropriateness of siting these major pieces of infrastructure at the spatial focus for the historic development of Randwick. See also the separate comments re: significant trees.

Recommendation

The Council does not support the use of High Cross Park for a light rail terminus/interchange, and notes the current discussions on an alternative location. See separate comments under Section 2.1.

Randwick Racecourse:

Heritage impacts on the Randwick precinct heritage conservation area would result from the demolition of the Swab Building (High Significance) Gate 1 (Exceptional Significance) and Gate 2 (High Significance), part of the brick boundary wall along Alison Road (Exceptional Significance), removal of a number of trees (many of Exceptional and High significance), which the HIA identifies as a major adverse heritage impact.

Whereas the original tram route ran along the northern side of Alison Road, at the edge of Centennial Park, the current route proposes to run along the southern side of Alison Road, requiring significant demolition and tree removal within the Randwick Racecourse heritage conservation area. Council has significant concerns about the impact of the demolition of remaining sections the Alison Road boundary wall and entry gates, and the removal of significant trees, on the heritage significance and aesthetic values of Randwick Racecourse. See separate comments re: significant trees.

Recommendation

It is recommended that the detailed design process investigates potential to retain or minimise impact on significant built elements and landscaping, and that this is further discussed with the Council and stakeholders. Council can provide further detail in relevant suggested conditions of consent for heritage and archaeological impacts of the proposal when appropriate to assist in the assessment process.

Randwick Racecourse stop:

A large volume of heritage fabric has already been removed from the Alison Road boundary of the Racecourse site including demolition of a number of gates, walls

fences and other structures, removal of trees, demolition of the 2000m Entrance Turnstile Building and demolition of Race Day Stalls, as part of the Alison Road entry plaza and busway works carried out in 2008. These works resulted in substantial heritage impact to a number of built and landscape elements of Exceptional and High significance. The EIS does not specify why further removal of built and landscape heritage is required.

While the Urban Design Report suggests that the Swab building has some low level heritage significance, it has been identified in the Conservation Management Plan for the site as having High significance. The Swab Building and gates are proposed to be reconstructed. Given that these structures are primarily of brick construction, the feasibility of reconstruction of original building fabric, consistent with Burra Charter definitions is uncertain. Council has significant concerns about the impact of the demolition of the Swab Building and other demolition required for the construction of the Randwick Racecourse stop, on the heritage significance of Randwick Racecourse, given the loss of fabric in this area which has occurred to date.

Recommendation

Council prefers retention of the remaining significant heritage fabric on the racecourse, but if removed, supports relocation and reconstruction of the Swab building. Council can provide further detail in relevant suggested conditions of consent for heritage and archaeological impacts of the proposal when appropriate to assist in the assessment process.

Wansey Road/Alison Road stop:

The proposed route along the western side of Wansey Road will require significant tree removal and regrading of the high dune at the south east corner of Randwick Racecourse for the construction of the Wansey Road stop near the Alison Road junction. Council has significant concerns about the removal of significant trees, and the remnant landscape at the south east corner of the site on the heritage significance and aesthetic values of Randwick Racecourse. See separate comments re: significant trees.

Recommendation

See comments on Wansey Road under Section 2.3 and also Section 4.3 on significant trees and landscape.

High Street/Wansey Road stop

The proposed route along the western side of Wansey Road, will require significant tree removal at the south east corner of Randwick Racecourse for the construction of the UNSW Wansey Road stop near the intersection with High Street. Council has significant concerns about the removal of significant trees on the heritage significance and aesthetic values of Randwick Racecourse.

Recommendation

See separate comments re: significant trees under Section 4.3.

Randwick LRV stabling facility:

The proposed LRV stabling facility is to occupy the low lying area of land at the north west corner of the Randwick Racecourse site (at 66A Doncaster Avenue) which formerly housed special tramlines and sidings, and which brought huge numbers of people to Randwick Racecourse. The HIA identifies the stabling facility as a moderate adverse heritage impact on the Racecourse precinct heritage conservation area. Works within the proposed Randwick Racecourse stabling yard have not yet been defined, but would appear to include removal of retaining walls and a brick pedestrian ramp of Moderate significance. The stabling facility is adjacent to the Tramway Turnstiles Building which is identified as being of Exceptional significance, the heritage impact on this structure should be clarified.

Recommendation

The Council does not support this location for light rail stabling. See separate recommendations under Sections 2.4 and 3.1.

Should the stabling facility remain in this location, Council requests further investigation and information on the design and layout of the facility, and the heritage impact on identified significant structures in the location, and also on the broader heritage conservation area. Council would prefer the heritage significance of this area to be retained, and can provide detailed heritage and archaeological recommendations in the form of suggested conditions of consent, to assist in the assessment process.

Key issues: Kingsford/Kensington precinct

Tay Reserve:

The Reserve is significant as the site of the original toll bar and the toll house which was built on the site in 1849 and demolished in 1909. The proposal will remove a significant portion of the north eastern edge of Tay Reserve (Alison Road side) along with a number of established trees and landscape items, which the HIA identifies as a major adverse heritage impact. Council has significant concerns about the impact of the physical erosion of the space and the removal of significant trees, on the heritage significance of Tay Reserve. See separate comments re: significant trees.

Recommendation

It is recommended the light rail alignment is reviewed to avoid not only impact on significant trees, but also the impact on the heritage/archaeological significance of the site, and minimise negative impacts. Additional detail can be provided in relevant suggested conditions of consent for heritage and archaeological impacts of the proposal when appropriate to assist in the assessment process.

Wilson Place:

At Kingsford the proposed tram route cuts across Wilson Place, at the intersection of Bunnerong Road and Anzac Parade, substantially altering this small landscaped park. Wilson Place is the site of a pair of sandstone horse trough supports with bronze plaques (the horse trough itself is missing), which has been identified by in the Sculptures, Monuments and Outdoor Cultural Material (SMOCM) Survey carried out by the Art Gallery of NSW in 1995. The impact of the proposal on this monument and its setting has not been addressed in the EIS.

Recommendation

Council would prefer the horse troughs to remain in site, and requests this be considered in the reconfiguration and detailed design of the nineways roundabout. However, if this is not possible, it is recommended TfNSW seek Council's advice on suitable preservation, interpretation and re-location of the horse trough supports. Additional detail can be provided in relevant suggested conditions of consent for heritage and archaeological impacts of the proposal when appropriate to assist in the assessment process.

4.6 Environmental sustainability

Overview

The CSELR sustainability strategy has six overarching objectives which utilise the range of existing plans, benchmarks and tools including: '*Transport for NSW sustainability Targets*'; '*Transport for NSW Sustainability Design Guidelines for Rail*'; '*Infrastructure Sustainability rating Scheme*'; renewable energy offsetting; and collaboration with key stakeholders to achieve the agreed sustainability targets.

The strategy states its objectives are to be delivered as part of an Environmental Management System (EMS) and risk mitigation approach based on NSW Transport's ISO accreditation (ISO 14001). The EMS covers all phases of the project from design, construction and operation.

A compliance monitoring program is to be developed together with key performance indicators to track the progress of the EMS but unfortunately no further details are mentioned.

Issues

In relation to sustainability the EIS is an impressive document which takes a holistic and integrated approach to regional and local (or precinct-based) assessment of potential environmental impacts with a strong and positive consideration of Ecological Sustainable Development (ESD) principles.

It is a comprehensive approach that takes into account a wide range of issues which influence or directly relate to sound sustainability outcomes, ranging from procurement, climate change adaptation, energy use, greenhouse gas emissions, water use and waste generation to community health, well-being and safety.

Recommendation

Council supports the strong and ambitious commitments in the proposal, which if properly implemented and accounted for will add to the reputation and success of the light rail project and its various government agencies, partners and supporters.

It is recommended that the EIS be conditioned to ensure that the projects' key sustainability objectives as outlined are implemented and accounted as proposed in the EIS, and that further details over the proposed compliance, auditing and surveillance of the various Environmental Management Plans are clarified and provided to the Council.

4.7 Social Impact

Overview

The positives of the light rail project as a public transport facility outweighs the negative impacts. The EIS document has stated upfront that the social benefits are many, and will "unlock additional capacity and provide a better experience to customers who rely solely on the system everyday".

For construction-related social and amenity impacts, refer to sections on traffic, transport and access at Section 3.6, and noise and vibration at Section 4.9.

Issues

The EIS notes the high level of accessibility of the proposal, with the design of CSELR stops intended to comply with the requirements of the Disability Discrimination Act.

The EIS however, does not appear to have considered likely impacts the proposed location of the light rail station or stop may have on its customers. For example, the proposed interchange at High Cross Park in Randwick is the nearest stop to the Hospitals Campus, which is at least 150 metres from its main pedestrian entrance. In many cases, there is also additional distance to access the appropriate units within the hospital building. As such, the distance between the interchange station and the hospitals complex is too far to expect hospital patients, such as the unwell, frail aged or the less mobile to walk the distance.

The Randwick Hospitals Campus is 24 hour, 7 day per week operation, and the isolated nature of High Cross Park could also introduce safety concerns for staff starting or finishing shifts after dark.

In addition it is also noted that the distance between the station at the corner of Wansey Road/High Street, and the proposed Randwick terminus/interchange is substantial, at over 650 metres and does not provide an optimum solution for a walkable and accessible service.

Council notes the current discussions about an alternative light rail stop on High Street, near the front of the Prince of Wales Hospital/Sydney Children's Hospital. Patients and visitors to the hospital will not be required to make their way across Avoca Street from the High Cross Park interchange in order to access the main hospital entrance on High Street.

Given that this light rail stop will be serving 4 major hospitals, this alternative is supported. The UNSW will be well served by two light rail stops, which makes good sense because of the topography and the distance between the two ends of the campus.

Recommendation

See detailed comments regarding the High Street/High Cross Park stop at Section 2.1.

Council supports the high level of accessibility of the light rail service, and recommends the detailed design continues to ensure that all the rail stop shelter and related facilities/infrastructure provided meet accessibility standards.

4.8 Economic impact

Overview

Economic impacts may directly affect the economic well-being of an area's residents, the viability of businesses, workforce availability, the scope of business demand and the ease of doing business. The broad macro-economic impacts of the CSELR are considered by the EIS to have an overall positive long term impact to Sydney and New South Wales, particularly in terms of job generation and construction multipliers, and economic activity generation once operational.

At the local level businesses were consulted by TfNSW as part of the project development. Impacts of the light rail on businesses varied across different geographic areas, but in general showed significant negative impacts during construction, outweighing positive impacts. These included:

- reduced property access; service/delivery access and parking
- reduced passing trade and customer access
- construction noise, vibration, dust, loss of amenity
- traffic congestion and travel times
- challenges to business continuity and staff retention

Once operational, impacts of the light rail on business indicated both positive and negative aspects. These include:

- improved visual amenity
- enhanced customer access
- increased capacity and development opportunities
- increased commercial rents
- loss of on-street parking
- property access, delivery and servicing constraints
- changed behaviour during construction

The EIS identified preparation of and commitment to three key plans to address potential economic and business impacts:

1. a Construction Environmental Management Plan
2. an Access Management Plan
3. a Business Landowner and Engagement Plan

The EIS notes impacts would need to be carefully and proactively managed with mitigation measures monitored for their effectiveness and outcomes, while acknowledging that slight negative impacts will still occur with the mitigation measures proposed.

Issues

Specific details of the three plans are not provided at EIS stage. Council is concerned about the potential for adverse impacts exceeding those identified, and the lack of ability to mitigate. It is important to ensure that the relevant management plans have broad stakeholder support, include a thorough monitoring regime and are able to adapt and introduce new mitigation measures where needed.

Council notes and supports appointment of a dedicated Place Manager as a point of contact for businesses and the community in Randwick City.

Recommendations

It is recommended that the three plans noted in the EIS are developed with further discussion with the Council and affected stakeholders and businesses, including input to the critical components of the plans at detailed design stage, as well as ongoing input and feedback during construction and implementation. The plans should specifically address economic impacts and business continuity strategies for the commercial centres on the corridor, and particularly in Kingsford.

Council also notes the specific and varied needs of different businesses and institutions on and around the light rail route, including major operators and revenue generators for the State economy such as UNSW and Randwick Racecourse. It is recommended that detailed economic impact mitigation and management measures are tailored to these key institutions, based on a detailed understanding of respective needs and potential impacts.

4.9 Noise and Vibration

Overview

The EIS includes a Noise and Vibration Impact Assessment of the project during both construction and operational phases. Predicted noise and vibration impacts were compared with existing base data to determine areas of increased impact, and/or sensitivity, and performance against relevant standards and guidelines. Issues and comments in this section have been informed by specialist consultant input.

Key impacts include:

- Minor airborne operational noise impacts at a number of UNSW facilities, the Masonic temple and NIDA

- Increased ground borne noise and vibration at sensitive locations including the UNSW Lowy Cancer Centre and the Prince of Wales Hospital on High Street, as well as the broader health and research precinct in the High Street vicinity, and research and medical facilities along Anzac Parade (including UNSW Tyree Building)
- Increased noise generated by the operations of the Randwick stabling facility, and significant adverse impact on surrounding residences
- Possible subjective noise impacts from operation of public address systems at stations
- Noise from substations is expected to comply with applicable noise goals, with the exception of the Randwick Racecourse substation
- Construction noise is expected to exceed goal noise levels, especially in the vicinity of excavation works
- In relation to other noise and vibration, impacts are expected to fall within relevant guidelines

Mitigation measures suggested in the EIS include:

- High resilience or very high attenuation track forms in sensitive locations affected by vibration, to be verified during detailed design stage
- Partial or full acoustic enclosure of the Randwick light rail stabling facility
- Investigation of noise mitigation and/or management practices for station and stabling area PA systems
- Shielding or enclosure of substations
- Preparation of a Construction Noise and Vibration Management plan

Issues

For this stage of the project the report is quite thorough, although some aspects are open ended; where potential impacts are identified that the EIS notes will be resolved at the detailed design phase.

Light Rail Vehicles (LRV)

Based on the proposed LRV type, numbers, speeds and distances, the EIS predicts some exceedances of train operational noise, but often in areas with higher road traffic noise. However, the light rail is proposed to operate adjacent to mixed use commercial and residential areas, so the impact, especially out of peak periods when road traffic noise is reduced, appears to be potentially worse.

Recommendation

The specification for the Light Rail Vehicle should be as stringent as possible and Council supports the suggestion in the Technical Paper of the EIS that speed restrictions should apply at the more sensitive night time period where it has no influence on headway or operations.

Vibration sensitive locations and light rail track form

The report suggests the issue of vibration affecting sensitive equipment will be addressed when there is more information about what might be affected; ie, inviting submissions from potentially affected receivers. The length of High Street between UNSW and Avoca Street contains a current cluster of health, medical and research facilities using sensitive equipment, as does the UNSW frontage to Anzac Parade.

Further growth in these uses is expected to expand in this area in the future, and Council is concerned about the ability to retro-fit vibration attenuation to the light rail system .

Recommendation

Council recommends that the rail should be isolated for vibration as a minimum, wherever adjacent to educational, research or health properties, and especially along the length of High Street and Anzac Parade at UNSW, so that any future redevelopment close to the light rail that may house sensitive equipment is accounted for in the construction of the CSELR. In such locations the light rail should adopt the high resilience or very high attenuation tracks as part of the detailed design stage.

The light rail should also be designed to reduce noise and vibration impacts on residents along the route, particularly given the mix-use character of the area, and significant numbers of dwellings along both the Randwick and Kensington/Kingsford branches of the corridor.

The selection of the track system should be specified as a condition of consent to address noise and vibration impacts, and should not be a matter for discretion of the PPP operator.

Randwick light rail stabling facility

The EIS identifies noise from the stabling facility as a significant concern and raises the issue of barriers / partial roofs or a complete shed, without including any plans or elevations showing the extent of these building areas. However this measure raises visual, flood management and amenity/overshadowing issues which are not assessed.

The stabling facility is proposed as a 24-hour operation with significant activities at night time. There is no commentary in the EIS regarding the reasoning behind the proposed layout to determine that it has been optimised in respect of noise.

Whilst the draft report talks about increased risk of rail noise on tight curves of track, the proposal includes a very tight radius curve very close to residences that will be used regularly at night time.

Recommendations

Council does not support the proposed LRV stabling location, as noted in Section 2. Council requests a study showing noise and vibration comparisons between this location and the alternative at the south-eastern corner of Randwick Racecourse.

Given the noise assessment for the proposed stabling area at Doncaster Avenue indicates significant non compliances, Council requests a review of the facility's layout and design should the LRV stabling remain in this location, including:

- review location of buildings and noise-generating activities relative to existing residences
- modelling of noise from cleaning and plant/equipment operation
- investigation of impacts of complete enclosure of the facility
- further information on the modelling provided to Council

Council further recommends that benchmarks for noise level amenity should adopt the "recommended" rather than "maximum" noise levels (as used in the noise report), and that any noise attenuation measures should be designed to meet the recommended amenity standard.

Council also requests the PA should be certified as being set up to minimise noise prior to occupation. Once operational any testing of the PA system or other noise producing equipment should occur at daytime only.

4.10 Air quality

Overview

The EIS includes an assessment of potential air quality impacts during the construction and operational phases of the CBD and South East Light Rail proposal.

Potential negative impacts on air quality would be primarily associated with the generation of dust and emissions from the operation of on-site machinery, excavation works, materials handling, material storage and vehicle movements within the construction footprint.

The emissions of particulate matter (PM₁₀, PM_{2.5}, Total Suspended Particulates and deposited dust) and pollutants associated with the combustion engines from heavy

vehicles entering and exiting the sites and plant machinery represent the greatest potential for air quality impacts during the construction phase.

Background air quality was referenced from the NSW OEH's air quality monitoring stations at Randwick and Rozelle. Data recorded from 2011 – 2012 has been used to establish background air quality (Table 5.1 and Table 5.2 of the technical report). The report states the air quality within the proposal area is generally good and below criteria levels. It also states the pollutants reported monitored with the highest concentration compared with criteria levels were PM₁₀ and O₃.

The NSW ambient air quality criteria are provided in the Department of Environment and Conservation (EPA) document Approved Methods for Modelling and Assessment of Air Pollutants in NSW 2005. The adopted air quality standards/goals for this air quality assessment are presented in Table 3.1 of the technical report.

The report states the operation of the proposal is predicted to remove up to 200 buses per hour from Sydney CBD during peak periods which will result in a benefit to air quality by removing bus combustion engine emissions.

The air quality assessment has taken the approach of a qualitative assessment of potential air quality impacts with specific focus on the construction phase.

The report proposes a Dust Management Plan (DMP) which forms part of the Construction Environmental Management Plan (CEMP) to identify triggers and procedures for dealing with the above conditions. The implementations of effective management practices and mitigations measures are outlined in (Section 8) to minimise the potential for impact on sensitive receptors.

Issues

The construction works are expected to take place between 2014 and early 2019, the route air emissions from these works have the highest potential to generate air pollutants to impact on nearby sensitive receivers (i.e residential areas, educational/hospital precincts and the general public) if not appropriately managed.

Concerns are raised in relation to the sensitive receptors along the corridor proposal where the small separation distance will result in close interaction, in particular residential areas along Wansey Road Randwick, UNSW precinct along High Street Randwick, and the Prince of Wales Hospital precinct. The proposed Randwick light rail stabling facility has the potential to affect the residential area along Doncaster Avenue, Randwick.

Recommendation

It is considered that further detail is necessary to define appropriate air quality management, and Council requests confirmation that the following measures will be addressed:

- Ambient air quality monitoring during construction: air monitoring should be set at sensitive receptors where set objectives are met in regards to the emissions of particulate matter (PM₁₀, PM_{2.5}, Total Suspended Particulates and deposited dust).
- Equipment selection shall consider low emissions to air, high energy and fuel efficiency.
- The CSELR will not involve any emissions or discharges which will give rise to a public nuisance or result in an offence under the Protection of the Environment Operations Act 1997 and Regulation.

Council also recommends that the proposed Dust Management Plan (DMP) is prepared in consultation with the NSW EPA (as the appropriate regulatory authority) and include an air quality monitoring program within sensitive receptors that;

- uses a combination of real-time and supplementary monitors to evaluate the performance of the construction phase
- adequately supports the proactive and reactive air quality management system
- includes PM_{2.5} monitoring
- evaluates and reports on the effectiveness of the air quality management system (including results example online)
- Includes a protocol for determining any exceedances of the relevant objectives in regards to the emissions of particulate matter (PM₁₀, PM_{2.5}, Total Suspended Particulates and deposited dust).
- Include a protocol that has been prepared in consultation with nearby sensitive receivers (residential areas along Wansey Road Randwick, Doncaster Avenue, Randwick, UNSW precinct along High Street Randwick, Prince of Wales Hospital precinct, which includes a complaint management system.
- Implement adequate and robust strategies to manage dust/air pollutants
- Meteorological station nearby sensitive receivers to ensure compliance with the requirements of the Department of Environment and Conservation (EPA) document Approved Methods for Modelling and Assessment of Air Pollutants in NSW 2005
- The complaints management system must include (but not limited to) a protocol for managing and reporting any incidents, complaints, non-compliances with statutory requirements, exceedances of the impact assessment criteria and/or performance criteria. It should also include processes to keep the local community and relevant agencies informed about any exceedances; receive, handle, respond to, and record complaints, resolve any disputes that may arise, respond to any non-compliance, and respond to emergencies.

4.11 Utilities and infrastructure

Overview

The EIS notes that augmentation and/or relocation of utility services, including Council's drainage assets will be required as a result of the light rail. It is also anticipated that some existing power poles, street lighting and other above ground infrastructure will require relocation or replacement. Further investigations and consultation with service providers is proposed to be undertaken during detailed design stage to establish specific impacts and management strategies, including funding arrangements, maintenance and access requirements.

The CSELR network will use poles and overhead wiring within Randwick City. Electrical supply will be via 12 substations throughout the route, providing 750 volt DC power. In Randwick City precincts substations are proposed at the Randwick and Kingsford interchanges, and three within Randwick Racecourse

Other services and infrastructure required for the light rail include communications cabling and signalling equipment. The CSELR will provide a combined services route for all utilities. The EIS notes that conduits for third party services may also be installed along and across the CSELR alignment during construction, with the design, location and provision of these services to be determined during the detailed design stage.

During construction the EIS notes there will be a process to identify and address any potential conflicts between the CSELR and existing services and utilities, in consultation with the service provider and construction contractor.

Issues

The following issues are of concern to the Council, to ensure Council retains the ability to provide, manage, upgrade and maintain its in-ground assets:

- risk of reducing or eliminating Council's ability to access assets for future maintenance or replacement
- risk of sub-optimal relocation of assets – eg: within the public domain that reduces pedestrian capacity/accessibility/amenity and/or restricts opportunities for landscaping or public domain improvements
- risk of increased maintenance responsibilities or costs to Council, eg; through design & construction that is inconsistent with Council standards.
- temporary relocation of or damage to assets during construction.
- Serviceability and maintenance impacts during operation of the light rail.
- Drainage regime for the light rail infrastructure will be integrated with the Council's drainage network. Existing levels of stormwater pipes can not be altered without significant impacts on the drainage network.

The rail infrastructure will introduce additional loading on the drainage network and may also render parts of the network inaccessible once the rail is constructed.

Rail foundations are quite deep and are likely to conflict with stormwater infrastructure.

Council considers it will be critical that ownership of all assets along the rail alignment is clarified and documented into an asset custodian register. There will be assets constructed as part of the light rail work which may be handed over to Council (for example the new urban square). Maintenance requirements for these assets will need to be outlined and agreed, and information (such as operational manuals, warranties) provided.

More broadly it is important to understand and agree the relative ongoing maintenance responsibilities for the rail infrastructure and adjacent assets. For example how and when rail sweeping will occur. How litter will be controlled on the platforms.

Recommendations

Further investigations in consultation with the Council are needed to ensure the light rail project can be delivered with minimal impact on existing infrastructure and services, the lowest possible ongoing maintenance cost and maintenance of overall service delivery to the community. Council requests these discussions are undertaken before appointment of an early works contract, to ensure the scope of works reflects resolution of the issues noted below.

Specific recommendations include:

- Clear definition of ownership and responsibility for assets at the infrastructure interfaces.
- Identification of and agreement to any new assets intended to be handed over to Council to maintain
- Identification of any shallow stormwater infrastructure which may be impacted by the works
- Identification of any stormwater infrastructure that may become inaccessible as a result of the light rail system, and agreement on a maintenance/replacement regime
- Identification of all services proposed to be relocated or where service access changed, and their impact on the public domain generally, and pedestrian accessibility.
- Consultation with and approval from Council on the location of Council's services along the alignment, and inclusion of conduits dedicated for Council services where relevant.

The arrangements and locations proposed for service relocation/ replacement must be discussed with Council and reviewed for acceptability in terms of maintenance access and consistency with Council specifications. All services must be

permanently relocated (preferably in the footway) prior to commencement of the rail construction.

Further consideration and coordination of the design and layout of light rail infrastructure and urban elements is needed. A detailed design should be prepared in consultation with the Council to provide:

- a high level of safety, capacity, accessibility and amenity for the public
- minimisation of urban clutter, including investigating the potential for undergrounding of power and use of multi-function poles to combine power, lighting, street banners, signage etc
- integration with street tree planting
- consistency with council's design standards
- accessibility and responsibility for maintenance

Refer to further discussion on this issue under Section 4.1

4.12 Hydrology, drainage and flooding

Flooding

The EIS refers to existing flood studies and notes that flooding occurs in several locations within the south eastern sections of the CSELR alignment, including the proposed Randwick stabling area. Where the CSELR intersects existing overland flow paths there is potential for stormwater to pond along the alignment and affect operations. Typical maximum depth of water for light rail operation at full speed is 15mm, with reduced speed operations possible at depths of 50 to 100mm.

Limited detail is included in the EIS about the impact of the CSELR on flooding in Randwick City. For flood affected locations it notes the CSELR will be designed in accordance with the NSW Floodplain Development Manual, and will consider a range of mitigation measures to ensure there is no increase in flood levels as a result of the CSELR.

Water quality

Potential water quality impacts of the proposal are identified in the stabling area proposed for Randwick Racecourse, with possible stormwater contamination by oils, lubricants, degreasers and wash-down water. Bunding and spill management at storage locations is proposed to manage contaminants.

Within the light rail alignment the CSELR operation may generate small amounts of metals, oils, sand and particulates. The EIS notes it will follow good practice guidelines to ensure the light rail does not worsen stormwater quality in downstream receiving environments, during both construction and operational phases.

Overall the EIS anticipates light rail will contribute to a reduction in contaminant sources from current road operations through a reduction in light motor vehicle traffic.

Issues

Limited detail is provided on possible flood impacts, and more information and investigation is required. Council is concerned about the possibility of substantial potential for design changes to result from these investigations. It is important for Council to be continually consulted during this process.

Council is concerned about the high potential for flooding on the proposed LRV stabling area, and does not agree to the implication that the levels of the proposed Randwick stabling area can be raised to reduce flood impacts. This area is currently primarily permeable surface, and the stabling area is intended to be hardstand, with potentially a large area of roof. Council's concerns are that flood impacts in the stabling area and light rail alignment have not been adequately investigated, and may cause adverse flood impacts elsewhere, as well as contribute to poor urban design outcomes if (for example) sections of track, and/or buildings/infrastructure within the stabling area are raised above existing levels. Also add noise wall/building impacts – heights of buildings need to be raised above the 1:100 ARI causing increased bulk, possible diversion of floodwaters.

Recommendation

Council requests that consideration of stormwater issues and proposals for their mitigation should be outlined in a light rail catchment plan, to be prepared in consultation with the Council. Specific investigations and performance standards to inform the plan shall be consistent with the NSW Floodplain Development Manual, and relevant Council studies and standards, including:

- maintenance of all overland flows
- maintenance of flood storage volumes
- no increase in the 1:100 ARI flood levels

Council can provide further detail of relevant performance standards and technical criteria through suggested conditions of consent.

Groundwater

Overview

The Botany Sands aquifer underlies most of the proposed light rail route within Randwick City. Groundwater depths fluctuate over time, and in some cases may be quite close to the surface. The EIS includes a desktop analysis of groundwater conditions, and possible impacts during operation and construction of the light rail.

The EIS identifies potential for contamination of groundwater during operation of the Randwick LRV stabling facility and during construction. Impacts are proposed to be mitigated through adequate water quality and hazardous material procedures.

During construction the EIS notes the likely need for dewatering of groundwater where excavation occurs, such as the Moore Park tunnel. Detailed investigation is proposed to be undertaken during detailed design stage. The EIS also notes the potential for settlement and reduction of aquifer base-flow, which is proposed to be mitigated through measures defined in a Construction Groundwater Management Plan and monitoring program, developed in consultation with the NSW Office of Water.

Issues

Council notes the potential for excavation to interact with groundwater table, although apart from the Moore Park tunnel the locations of impact are likely to be limited. There may be some localised impacts at stations, retaining walls and other locations where deeper excavation or piling is required, and Council notes this requires further investigation.

Further investigation is also indicated to assess the potential for settlement, contamination and base-flow reduction due to construction activities, and ensure there are no adverse impacts on surrounding properties or water quality.

Recommendation

Council supports a groundwater testing and monitoring program to establish details of groundwater conditions, to be prepared in consultation with appropriate authorities including the NSW Office of Water, and advised to the Council.

This program should inform appropriate construction and operational activities to be defined in the Construction Groundwater Management Plan, and ensure surrounding areas and the water quality of the Botany Sands aquifer are adequately protected.

4.13 Randwick Urban Activation Precinct (UAP)

Overview

The current Department of Planning and Infrastructure's Randwick UAP project investigates potential for increased housing and employment around the light rail route, and identifies related improvements to infrastructure, public spaces, parks, cycle-ways and street upgrades to support future growth. TfNSW has noted that the CSELR proposal is not reliant on population or activity that may be generated by the UAP process.

Issues

Although the recommendations for the Randwick UAP have not yet been exhibited, there appear to be inconsistencies between the draft UAP proposals and the CSELR alignment, particularly concerning overall capacity and amenity of the public domain, open space locations/opportunities and footpath/streetscape upgrades.

Council in its newly prepared Comprehensive LEP and DCP has taken on board appropriate growth, consistent with our City Plan.

Recommendation

Council recommends that the CSELR design is reviewed and coordinated with the UAP recommendations (when available) for infrastructure, public space and footpaths/ streetscapes, as well as ensuring the CSELR design is robust to accommodate the demands of future increased population/activity generated by the UAP process.

5. CONSULTATION

5.1 Consultation/communications

Overview

The EIS contains detailed information on the consultation activities during exhibition of the EIS, as well as the process of consultation and community and stakeholder feedback undertaken prior to the EIS. Objectives for consultation are consistent with Transport for NSW Community Engagement Policy to:

- consult early and often
- encourage community and stakeholder participation
- listen to feedback, investigate suggestions and report back
- be transparent
- keep community and stakeholders informed of progress
- engage in a manner that is collaborative, innovative, adaptive and sustainable

Key issues of importance to the community, government agencies and other stakeholders obtained from feedback in earlier stages of the project are identified in the EIS. The EIS notes that the community and stakeholders will continue to be consulted through the detailed design and construction phases through a range of channels.

The EIS notes that a Community and Stakeholder Involvement Plan will be developed to form part of the Construction Environmental Management Plan, to be developed for the construction phase of the project.

Issues

The Council supports Transport for NSW consultation objectives and the commitment to ongoing consultation and engagement. There is limited detail in the EIS about future consultation, communication and engagement beyond the EIS exhibition stage and the Council recommends early discussions with the Council and stakeholders on development of a Community and Stakeholder Involvement Plan to cover future project stages.

Recommendation

Randwick City Council encourages Transport for NSW to develop detailed communication and engagement programs of a scale commensurate with the proposed \$1.6 billion project. Randwick City Council acknowledges the significant benefit that light rail to Randwick will bring, but suggests a detailed engagement process with affected stakeholders.

These plans should aim to:

- be open and transparent
- provide full and accurate information
- provide timely updates and advanced notice
- listen and respond to the concerns of affected stakeholders
- partner with affected stakeholders to find solutions
- minimise construction impact as much as possible
- respect the community's right to have a say
- use new and innovate communication media
- actively and regularly communicate with all stakeholders

Randwick City Council recommends the following four key strategies and plans to engage with the community.

1. Continue the Sydney Light Rail Round Table Group with senior executives representing key stakeholders for regular updates, and provide local expertise and feedback at key milestones.
2. Develop clear, recognisable and consistent branding for use across all communication channels.
3. Develop business continuity and support plans in conjunction with local businesses and chambers of commerce. These plans should set out how local businesses along the construction route and surrounding affected streets will be supported and promoted during the construction period. These plans should go further than just "maintaining public access" but develop strategies to assist businesses in remaining economically viable during the construction phase of the project.
4. Develop clear, detailed and flexible stakeholder engagement and communication plans.

The plans should contain details of actions, communication channels, timeframes and measurable targets. They should consider and respond to the impact on such affected groups as residents, ratepayers, visitors, businesses, workers, students and commuters.

The draft engagement plans should be available for community comment and feedback. They should be publicly available, reported on regularly and updated in response to circumstances as they arise.

One of the key principles in providing information should be the timeliness of information. Residents and businesses not only will need information about impending construction activities, but also need information on indicative timeframes for construction activities so they can make plans well in advance of construction impacts. Therefore actions in the communication and engagement plans should be linked to the proposed construction time timeframe and milestones.

Randwick Council recommends that the engagement and communication plans include the following elements:

- dedicated community liaison staff with clearly defined responsibilities linked to the implementation of the engagement and communication plans
- onsite information centres in locations easily accessible to the community
- information project boards and signage along construction routes which may be part of hoarding that minimises the visual impact of construction
- regular media updates on the project
- regular paid advertising in the local print media
- door knocking of all affected properties linked to the construction timetable
- regular letterbox drops to affected properties and letter mail outs to residents and property owners
- dedicated regular e-newsletters for local residents and businesses
- dedicated social media channels providing the opportunities for project information updates, questions by residents and responses to questions raised
- a dedicated project website that includes up to date information, with all current documents, and on-line forums where the project team and those affected by the project can exchange information, participate in discussions and access current information
- a dedicated project telephone information line
- a dedicated email address to facilitate information on the project partner and support local organisations and institutions - such as chambers of commerce, schools, TAFE, local precincts groups, councils, UNSW, local hospitals and other major employers - to share information through their existing networks.