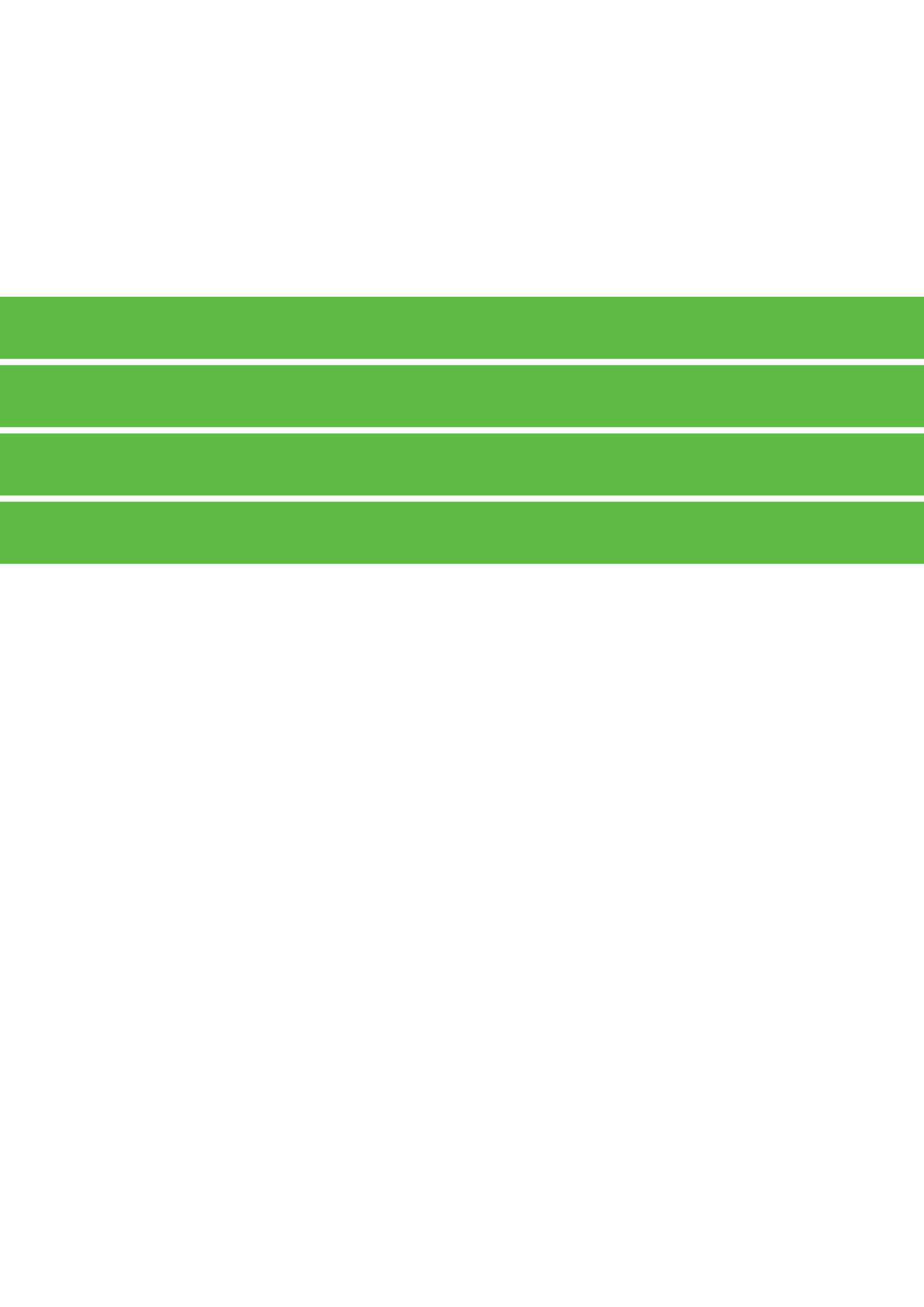


5





RESPONSES TO COMMUNITY SUBMISSIONS

Responses to issues raised by the community are included in this section of the report. Issues raised by submission authors can be identified by their stakeholder identification number in the relevant issues category (the stakeholder identification number will only be listed if that submission author raised that issue).

5.1 Planning

5.1.1 Future growth

Stakeholder identification number(s) including:
5, 48, 58, 148

◆ Issue description

In summary, respondents raised the following issues:

- a. The project does not provide any solution for the transportation of freight and it will be a continual drain on the government's resources to maintain it.
- b. The connection between the NWRL and landuse planning is completely unstated and unplanned. Until this is addressed, the NWRL should not be approved to commence on the grounds that it will adversely affect the future planning and development of the whole metropolitan area.

- c. Call for the NWRL planners to acknowledge and plan for the federally funded Northern Sydney Freight Corridor. This project will eventually require the quadruplication of rail lines between Epping and the Hawkesbury River. Planners should also cater for the development of the 24-hour airport for the North West along with a high speed rail network from Newcastle to the Hunter region.
- d. Concerns NWRL will not be a self-contained project that is likely to be completed in a few years. It is by necessity a complicated sequence of projects. To solve the capacity constraints affecting it, will take decades.
- e. The proposed project is short sighted and does not provide any benefits to the community. The established suburbs of the North West should not be sacrificed because the government of the day won't commit to better public transport or infrastructure when creating new suburbs.

◆ Response

- a. The NWRL is not designed as a solution to freight transportation in Sydney. It would, however, have a positive impact on freight movement by freeing up space on the major road network by attracting passengers who would otherwise be driving their cars.

The cost of maintaining the NWRL has been estimated and would be provided for. In this respect, the NWRL is no different from any other infrastructure required to support the development and progress of the State.
- b. The NWRL has been an integral part of metropolitan planning for many years. The North West Growth Centre, in particular, has been planned on the basis that a high capacity public transport service would be provided. The local councils along the route have consistently factored the NWRL into their land use plans.
- c. The NWRL is being planned to take account of all known and committed projects. The development of Sydney's Rail Future as part of the NSW Long Term Transport Master Plan is the approach being used by the State to prepare for major developments and coordinate the diverse transport requirements and projects.
- d. The NWRL is being planned as a single project to develop a new link from Cudgegong Road to Chatswood. The Government is committed to providing the new service in a timely manner, which is why it has established a dedicated team. Potential future extensions of the NWRL to the west or north are being considered through a separate process, but the main link is being progressed as an integrated whole. Any capacity constraint issues on the wider network are being addressed through the NSW Long Term Transport Master Plan. The North West Rail Link is an integral component of Sydney's Rail Future - the strategy that outlines the long term vision for Sydney's rail system.
- e. In announcing Sydney's Rail Future, the NSW Government confirmed that the North West Rail Link will be purpose built to carry the first of Sydney's new single deck trains. The project would provide major benefits to the North West community by reducing journey times to key destinations both within the region and more widely across the metropolitan area. It would provide effective transport options and would provide more reliable travel times when compared with current peak hour road based travel options. With the extensive length of tunnel to be provided, the impact on established suburbs is greatly reduced. The new suburbs in the North West have been planned on the basis that a high capacity public transport service would be provided.

5.1.2 Patronage forecast

Stakeholder identification number(s) including:
59, 61, 142

◆ Issue description

In summary, respondents raised the following issues:

- a. Request for more accurate patronage figures for Cherrybrook Station (by car, bus or foot) to better estimate the traffic density visiting the station. The patronage figures appear to be fairly low and request for improved patronage figures to be made available to reassess station location and parking spaces.

◆ Response

- a. As the NWRL is progressively developed, patronage estimates would be refined.

5.1.3 Approval process

Stakeholder identification number(s) including:
48, 255

◆ Issue description

In summary, respondents raised the following issues:

- a. There is very little co-ordination between State and Federal planning and infrastructure bodies for this project.
- b. There is a need for State planning decision makers to be wholly on board at the conceptual start of the NWRL journey, and not be stranded at the station.
- c. Concerns regarding the process of environmental review with this project as the operational aspects of NWRL integration with other transport modes and community impact should be conducted prior to the assessment of construction impacts. Conducting the review process in the current sequence compromises possible acceptance of significant engineering modifications which may be necessary to maximise benefits of the project.

◆ Response

- a. The overarching statutory framework for the NWRL is provided by the *Environmental Planning & Assessment Act 1979* (EP&A Act), which is implemented at a State level by the NSW Department of Planning and Infrastructure.

Ongoing consultation with Federal bodies has been undertaken regarding Federal matters. In addition, Federal legislation, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), has been taken into account and a referral has been prepared and submitted under the EPBC Act.

- b. Interagency Reference Group meetings have been held during the development of the EIS, ensuring that State planning decision makers have been involved throughout the entire assessment and review process. Attendants at these meetings have included:

- ❖ Department of Planning and Infrastructure (DP&I).
- ❖ TfNSW NWRL Project Team.
- ❖ TfNSW Planning & Programs Division.
- ❖ NSW Office of Environment and Heritage.
- ❖ NSW Environment Protection Authority.

These meetings involve project updates, specialist presentations and discussions of emerging environmental and statutory issues.

- c. The two EIS approach to planning for the NWRL allows the project team to deliver the project more quickly and efficiently, and to plan a better train service for the people of Sydney's North West.

The focus of the first EIS (EIS 1) was the major tunnel work as well as construction of the elevated Skytrain structure. Building tunnels takes a long time – it can take over a year just for tunnel boring machines to be delivered and assembled. By assessing tunnel construction in EIS 1, preparation for tunnelling can begin quickly, following determination of the EIS by the Minister of Planning and Infrastructure, in the second half of 2012. This would allow tunnel construction to begin in 2014.

By including topics such as station design, precinct planning and operational aspects in the second EIS (EIS 2), the project team can spend more time focusing on what's important to customers and the community, including transport interchanges and commuter car parking – without holding up the major tunnel construction process.

It should be noted that Concept Approval was granted for the entire NWRL project in May 2008.

5.2 Project

5.2.1 Funding / cost

Stakeholder identification number(s) including:
5, 17, 23, 35, 36, 48, 59, 60, 108, 117, 123, 318

◆ Issue description

In summary, respondents raised the following issues:

- a. Spending \$30,000 per resident for 300,000 residents for a 23km rail network is not cost effective or energy efficient.
- b. The financial benefits of constructing a Skytrain instead of a tunnel do not justify the negative social impact costs to nearby residents, particularly in Rouse Hill.
- c. The cost of the proposed project does not justify the negative social impacts on NSW. Belief that the allocated money could be better spent on health and education.
- d. Concerns that ongoing maintenance and operational costs of the NWRL will increase once adequate emergency/protective facilities for the tunnels are in place, eg lighting, hoisting plant, trained passenger recovery teams.

- e. The project should be funded using both State and Federal funding already on the table however the cheapest and less efficient option should not be adopted. Comments that the cheapest option for the project has been chosen.
- f. Construction and operation costs are not the only costs entailed in building the NWRL. There are a whole range of opportunity costs as well as economic multipliers and social benefits that must be considered in an analysis of these costs.
- g. Concerns that lack of funding will slow down the construction process. Questioned if the project will commence before full funding is obtained.
- h. Questioned private sector funding options and which investors will fund the proposed NWRL.
- i. Concerns regarding the impact on taxpayers as a result of the high cost of property acquisitions involved in the project.
- j. Calls for the NWRL to remain above ground due to cost savings.

◆ Response

- a. The benefits of the NWRL would accrue over very many years and would not be limited to the residents (or businesses) of the North West. An economic appraisal carried out for the project shows that it would yield high levels of benefit through reducing travel time and therefore costs, not only for users of the link but for other travellers also. For example, motorists and freight operators would experience benefits as a result of less congestion on the roads, and passengers on buses serving other corridors, such as the Northern Beaches, would benefit from less competition for limited capacity across the Sydney Harbour Bridge.

It is more energy efficient to transport high numbers of passengers on trains compared with cars as they most often only consist of one person.

- b. The NSW Government is committed to funding a project that would provide the best outcome for the local community and for the state as a whole. In doing so, projects of this nature must balance costs for the State against benefits or impacts that may be relatively local. The Government has looked at many options, some of which are more expensive but have lower local impacts and others which are cheaper but may have greater impacts. The present proposal is seen as having the right balance between these factors.

The provision of a viaduct to the north of Bella Vista Station would provide better environmental and land use outcomes as well as value for money as detailed in Section 6.3.6 of EIS 1 including limiting impacts to the floodplain, reducing the direct impact of land take and severance of land holding, and reducing the length of the alignment.

Appropriate mitigation measures associated with the Skytrain / viaduct section of the project will be described in EIS 2.

- c. The NWRL project has been declared as Critical State Significant Infrastructure, recognising the project as essential to the State for economic, environmental or social reasons. Additionally, the NWRL has been an integral part of metropolitan planning for many years. The North West Growth Centre, in particular, has been planned on the basis that a high capacity public transport service would be provided.

The NSW Government is committed to funding a project that would provide the best outcome for the local community and for the State as a whole. In doing so, projects of this nature must balance costs for the State against benefits or impacts that may be relatively local. The Government has looked at many options, some of which are more expensive but have lower local impacts and others which are cheaper but may have greater impacts. The present proposal is seen as having the right balance between these factors.

- d.** The cost of the project includes full provision for best practice emergency services.
- e.** The NSW Government has looked at many options some of which are more expensive but which have lower local impacts and others which are cheaper but may have greater impacts. The present proposal is seen as having the right balance between these factors.

At present there is no Federal funding “on the table” for the NWRL however the NSW Government recently pledged \$3.3 billion over four years to construct the North West Rail Link.

- f.** All relative project costs, whether monetary or otherwise, have been assessed in developing the methodology for the construction and operation of the NWRL. In assessing the costs (and benefits) of the project, a wide range of factors have been taken into account, including the economic and social benefits and costs. Opportunity costs have also been considered. The methodology used is widely accepted in Australia and other countries.
- g.** The NSW Government has committed to the project as demonstrated in the recent 2012-13 Budget where \$360 million has been allocated to fund the preparation of major construction sites, property acquisition and EIS 2. The Budget also allocated \$3.3 billion over the next four years for construction of the NWRL. Funding was also provided for the project team to prepare for the awarding of the major construction contracts, with major tunnelling scheduled to start in 2014.
- h.** The NSW Government has engaged with the private sector to help determine, amongst other things, the best way to fund different elements of the NWRL to the optimal advantage of the State. A significant level of interest was evidenced through the recent Industry Engagement Process providing confidence that, subject to value for money, private sector funding could be available if the NSW Government determined that it would be beneficial.
- i.** Property acquisitions are one of the inevitable costs for a major infrastructure project such as the NWRL. The NSW Government is following standard processes that are fair both to taxpayers more broadly and to the individuals whose properties are acquired.
- j.** The NSW Government is committed to funding a project that would provide the best outcome for the local community and for the State as a whole. In doing so it has to balance costs for the whole State against benefits that may be relatively local – for example there are calls from some members of the community for more tunnelling, rather than less owing to the perceived impact. The NSW Government has looked at many options some of which are more expensive but which have lower local impacts and others which are cheaper but may have greater impacts. The present proposal is seen as having the right balance between these factors.

The option of constructing the entire project above ground is not feasible due to the developed nature of the eastern portion of the alignment. There would be significant costs associated with property acquisition and other non-monetary costs associated with the direct impact and relocation of residents along this section.

5.2.2 Need for project

Stakeholder identification number(s) including:
33, 48, 230

◆ Issue description

In summary, respondents raised the following issues:

- a. Request for the project to commence as soon as possible. Analysing the project in detail is slowing down the process.
- b. Project aims such as maximising the economic multiplier benefits of the NWRL by promoting increased employment, business activity, higher density residential development and coping with the endemic problems of traffic congestion should all have been more clearly defined as key influencers when formulating this project.
- c. Calls for the NWRL to serve the very heart of population concentrations, not skirt around the peripheries.
- d. Concerns the proposed NWRL does not benefit the community.

◆ Response

- a. TfNSW is required, under the *Environment Planning and Assessment Act 1979*, to undertake a statutory and comprehensive approvals process in order to appropriately identify and mitigate any potential impacts of the project. The NWRL is one of the largest transport infrastructure projects in Australia's history and before major work can commence on the project, a detailed environmental impact assessment must be undertaken and approved by the Minister for Planning and Infrastructure for each stage or component of the project.
- b. The need for the NWRL, as detailed in Chapter 22 of EIS 1, was defined by the following factors:
 - ❖ Population and employment growth predictions.
 - ❖ Existing transport network constraints.
 - ❖ Growth in travel demand.
 - ❖ High levels of car dependency.
 - ❖ Travel times.

Details regarding each of these factors are included in Chapter 22 of EIS 1.

In addition, Chapter 13 of EIS 1 provided an assessment of impacts on local businesses and concluded that the project would become a major employer and user of goods and services during the construction phase. It is estimated that the project would support more than 16,200 jobs during construction and inject \$25 billion (directly and indirectly) into the NSW economy. Professions and trades would include, among others, engineers, draftsmen, environmental scientists, designers, electricians, plumbers, carpenters, bricklayers, drivers, storepersons, crane operators, dogmen, riggers, security guards and labourers.

The positive long term economic benefits associated with the project once the rail link is in operation will be presented and assessed as part of EIS 2, which will provide details regarding the station precincts, future land uses and end states.

- c. Following the initial announcement of the NWRL project in 1998, extensive assessments on the most appropriate alignment and station locations have been carried out. Many alignment and station alternatives have been considered and assessed (with regard to environmental, economic and social considerations) using strategic multi criteria assessment processes. The alignment and station locations have been carefully selected to provide the most appropriate public transport solution.
- d. As detailed in Chapter 22 of EIS 1, the NWRL has been identified as a key priority railway transport infrastructure project which would provide a significant expansion to Sydney's rail network in an area of future population and jobs growth. The project would provide access to reliable non-road based public transport and be integrated with existing rail and bus networks.

As well as its transport function, the NWRL would be a catalyst for increased urban development activity, particularly in proximity to the stations.

Overall, the NWRL would provide the following benefits:

- ❖ Rail access for approximately 300,000 residents in the North West to Epping, Macquarie Park, Chatswood, St Leonards, North Sydney and the CBD.
- ❖ Delivering new rail services to existing suburbs in the Hills District as well as future areas of growth planned for the North West.
- ❖ Improving travel time reliability compared with bus and private car.
- ❖ Resulting in significant travel time savings for travel from many areas of the North West to the Sydney CBD and Macquarie Park.
- ❖ Reducing bus congestion in the Sydney CBD in the long term.
- ❖ Increasing public transport services to the Macquarie University and Macquarie Park area.
- ❖ A more sustainable public transport system and decreased greenhouse gas emissions.

5.2.3 Timing

Stakeholder identification number(s) including:
40, 48, 56, 57, 61, 108

◆ Issue description

In summary, respondents raised the following issues:

- a. The NWRL should be implemented over a number of years as there is the danger of the project being unsuccessful from the haste to rush through delivery in order to demonstrate to the electorate that a rail line can actually be delivered.
- b. Call for the project to proceed as soon as possible.
- c. The NWRL is an important project for the entire region, however, the delay for decades in planning and building means the project impacts on very established and quiet residential areas.

◆ Response

- a. The approvals process will be undertaken in accordance with the *Environment Planning and Assessment Act 1979*, in order to appropriately identify and mitigate any potential impacts of the project.

Due to the size of the project, investigations for the NWRL have spanned many years, with a rail link first officially identified in 1998. Since then, many alignment and station alternatives have been considered and assessed (with regard to environmental, economic and social considerations) using strategic multi criteria assessment processes. The alignment and station locations have been carefully selected over many years in consultation with residents and stakeholders to provide the most appropriate public transport solution.

The two EIS approach to planning allows the project team to deliver the project more quickly and efficiently, and plan a better train service for the people of Sydney's North West.

- b. The project must be assessed and approved under the *Environmental Planning and Assessment Act 1979* before major work can commence however, due to the scale of the project, this process takes times. The two EIS approach to planning allows the project team to deliver the project more quickly and efficiently, and plan a better train service for the people of Sydney's North West.
- c. Construction work (enabling and / or early works) starts later this year. The major tender process has started. Expressions of interest have been called for the multi-billion dollar construction contract to build 15.5km of tunnels between Bella Vista and Epping. The first tunnel boring machines are on schedule to begin work in 2014. Following the initial announcement of the NWRL project in 1998, extensive assessments on the most appropriate alignment and station locations have been carried out. Many alignment and station alternatives have been considered and assessed (with regard to environmental, economic and social considerations) using strategic multi criteria assessment processes. The alignment and station locations have been carefully selected in consultation with residents and stakeholders to provide the most appropriate public transport solution. It is understood that there has been a degree of uncertainty for the community regarding the project for a number of years however it is critical that thorough planning and assessments inform and develop the right solution for the North West.

5.3 Economic

5.3.1 Economic development

Stakeholder identification number(s) including:
43

◆ Issue description

In summary, respondents raised the following issues:

- a. Support regarding the potential job growth for NSW as a result of the proposed NWRL. Suggestion that strategic planning could be further encouraged if authority of major infrastructure projects is given to a planning body that is not affected by the change of government.

◆ Response

- a. The support for the expected economic impact is noted.

5.4 Environment – Construction impacts

5.4.1 Flora and fauna

Stakeholder identification number(s) including:

10-14, 19, 20, 24, 25, 35, 37, 38, 41, 50-52, 64, 65, 72-75, 79, 81, 83, 84, 86, 88-90, 96, 99, 100, 104, 106, 108, 110, 112, 113, 115, 119-121, 125-129, 132-134, 137, 140, 141, 144, 145, 147-150, 152, 153, 156-158, 161, 162, 164, 171, 172, 184-227, 231-254, 256-310, 312-314, 316, 317, 330-332, 336, 338-341, 349, 354

◆ Issue description

In summary, respondents raised the following issues:

- a. Concerns regarding the impact on the environment surrounding the proposed Cherrybrook Station, in particular the Blue Gum High Forest and local wildlife. Concerns the Additional Construction Zone at Cherrybrook may lead to the demise of this local wildlife via loss of habitat. Suggestion to maintain the NWRL concept of a “Station in the Forest” by protecting the Sydney Blue Gum trees. Propose that the boundaries near surrounding residences, particularly Robert Road, Oliver Way, Castle Hill Road, Kayla Way and Cherry Haven Way, be set in such a way that preserves the existing large trees, and that by adding to the existing trees prior to construction, potential construction impacts could be mitigated. Objection to the bush reserve of the Segmented Stage Area and TBM Crane Pad at Cherrybrook Station being transformed into a car park or access/egress area. Suggestion to make an access route along the Pyes Creek area, if additional entry/exit areas are required. Requested assurance that the designated parking as detailed in the NWRL footprint plan on Robert Road will be maintained for surface parking only as this area contains the Sydney Blue Gum trees.
- b. Concerns regarding impact of Cheltenham Intermediate Services Facility on native animals and surrounding bushland (Beecroft Bushland Reserve / Castle Howard Conservation Reserve / Blackbutt Gully Forest) as the vegetation is in good condition, has been cared for by volunteers, is frequented by locals and is important to the local community. Request for more information about potential impact on native animals and habitats. Strong support for the facility access to be from the M2 Motorway instead of the proposed Kirkham Street access to reduce the impact. Suggestion to relocate the facility to an alternative location to minimise clearing of trees, particularly along Murray Road.
- c. Objection to the widening of Castle Howard Road due to the impact this will have on vegetation.
- d. Concerns regarding impacts on the environment during both Preliminary Work and Construction Work in and around the Balmoral Road and Memorial Avenue Construction Zones. Much of the rural landscape contains animals (particularly birds and reptiles).
- e. Question raised over whether the trees along Norwest Boulevard will be replaced with mature trees following construction completion.
- f. General concerns regarding impacts on flora and fauna along the proposed NWRL route, particularly in areas not classified as “Certified Lands”. Further concerns that these areas were set aside for conservation as offsets for past developments. Questioned what measures are being taken to avoid breaches on earlier conservation commitments and requested further community engagement to be carried out on this issue.

- g.** Concerns regarding the removal of trees during construction of the proposed Hills Centre station and request for the replacement of these trees after construction. Suggestion that trees removed be compensated for by plantings elsewhere at the Showground at Hills Centre.
- h.** Question regarding rehabilitation of Arthur Whitling Park at Castle Hill after construction phase.
- i.** Objection to removal of trees at Mungerie House near the proposed Rouse Hill Station.
- j.** Request for a flora and fauna survey to be completed prior to construction to avoid potential delays to the project.

◆ Response

- a.** A detailed ecological assessment was undertaken of the Cherrybrook Station construction site (Site 4) as part of EIS 1. The assessment found that:

“At the Cherrybrook Station site native shrubs and groundcover species were poorly represented in areas of high weed infestation and mechanical disturbance. The Blue Gum High Forest within the site is in poor condition with severe weed infestation. The Blue Gum High Forest located outside of the site (to the north east) is classified as in good condition and contains regenerating native species”.

The design and construction planning has been modified to ensure that the area of good condition Blue Gum High Forest to the north of the site would not be directly impacted during construction. Additionally, mitigation measures would be implemented to ensure the construction activities do not adversely impact local wildlife via loss of habitat. These measures are detailed in Chapter 15 of EIS 1. In particular, the area of vegetation cleared would be offset in accordance with the Biodiversity Offset Strategy (refer to Chapter 15 of EIS 1).

The design of Cherrybrook Station is currently progressing. A detailed description of the proposed operational Cherrybrook Station would be presented and assessed as part of EIS 2, including information on the location and type of parking.

- b.** The Cheltenham Intermediate Services Facility (Site 3) site location and boundaries have been decided after extensive deliberation and assessment of different options. The footprint of the proposed construction site includes a portion of the Beecroft Reserve and some vegetation within the reserve would be cleared. It is acknowledged that Beecroft Reserve is an important bushland reserve for surrounding residents and that it is an active bush regeneration site where the community participates in activities to restore the local bushland. In response to this, the following mitigation measure has been proposed:

“Consultation with stakeholders of Beecroft Reserve would be undertaken as part of identifying appropriate adjustments to walking trails both during construction (temporary adjustments) and operational phases (permanent adjustments). Enhancements or modifications to the trail network would also be considered as part of this process” (Land Use and Community Facilities Chapter 14 of EIS 1, Table 14.3, No. LC5).

The amount of bushland proposed to be used for the services facility has been kept to a minimum, utilising only what is needed for access and to undertake the construction works. Heavy vehicle access arrangements to the site are still being investigated in consultation with Roads and Maritime Services, the motorway operator (Hills M2) and Hornsby Shire Council. This investigation would consider all potential impacts and benefits associated with both

options. In the event the Kirkham Street access option is preferred, the access route would be chosen to ensure minimal disruption to the bushland and walking facilities.

Detailed flora and fauna surveys were carried out on the site to identify potential impacts of the project and develop mitigation measures. Refer to Chapter 15 of EIS 1 for information on the potential ecological impacts.

Upon completion of construction, the area cleared within the reserve would be revegetated as soon as practical. The Ecology Chapter (Chapter 15 of EIS 1) includes the following mitigation measure:

“Construction sites would be revegetated using endemic native plant species where appropriate”
(No. E10).

- c. Castle Howard Road would only be used for light vehicle access and would not be widened as part of the NWRL project. Refer to Project Description Chapter 7 and Construction Traffic Chapter 9 of EIS 1 for more information. Additionally, the light vehicle access point off Castle Howard Road has been relocated, resulting in a reduction in vegetation clearing in this area (refer to Chapter 6 of this report).
- d. The Balmoral Road (Site 9) and Memorial Avenue (Site 10) construction sites and boundaries have been decided after extensive deliberation and assessment of different options. During the design planning stage, as a result of strategic planning and taking into consideration ecological impacts, the boundaries of the construction sites were moved closer to Old Windsor Road. This modification reduced the area of land cleared and hence reduces impacts on flora and fauna.

It is acknowledged that the clearing of these construction sites would result in impacts to flora and fauna. Detailed flora and fauna surveys were carried out to identify impacts of the project on flora and fauna and identify mitigation measures. The Construction Environmental Management Framework (refer to Appendix C) and the mitigation measures included in the Ecology Chapter (Chapter 15 of EIS 1) would be implemented to avoid, manage and mitigate impacts to flora and fauna. In particular, native vegetation removed would be offset in accordance with the Biodiversity Offset Strategy presented in EIS 1. The NWRL Principal Construction Contractors would also be required to develop and implement a Flora and Fauna Management Plan and Vegetation Management Plan(s) for sites where vegetation is proposed to be retained. In addition, pre-clearing surveys would be carried out prior to the commencement of works.

- e. The revegetation / landscaping undertaken along Norwest Boulevard upon completion of construction would be developed in consultation with Roads and Maritime Services. This would be presented and assessed as part of the station precinct plans within EIS 2.
- f. Detailed flora and fauna surveys were carried out to identify impacts of the project on flora and fauna (including areas of “non-certified” lands) and identify mitigation measures. The Construction Environmental Management Framework (refer to Appendix C) and the mitigation measures included in the Ecology Chapter 15 of EIS 1 would be implemented to avoid, manage and mitigate impacts to flora and fauna. In particular native vegetation removed (including areas of “non-certified lands”) would be offset in accordance with the Biodiversity Offset Strategy presented in EIS 1 (Chapter 15). The NWRL Principal Construction Contractors would also be required to develop and implement a Flora and Fauna Management

Plan and Vegetation Management Plan(s) for sites where vegetation is proposed to be retained. In addition, pre-clearing surveys would be carried out prior to the commencement of works.

TfNSW has been and would continue to consult with relevant regulatory bodies, Councils, landowners and community groups to identify the status of vegetated areas which may be impacted by the project. It should be noted that there is no database available which identifies land which has been nominated to be conserved to offset past developments (ie land set aside to be conserved in order to mitigate the impacts of a previous development). If it is identified (through the ongoing consultation process) that the project would impact an area which has been set aside to mitigate the impacts of a past development, TfNSW would enter into discussions with the party responsible for the offsetting to determine the most appropriate outcome for the area.

There would be ongoing community consultation during the construction planning stage and throughout construction.

- g.** Native trees removed during construction of the proposed Hills Centre Station would be offset in accordance with the Biodiversity Offsets Strategy presented in Section 15.6.1 of EIS 1. The Ecology Chapter 15 of EIS 1 included the following mitigation measure: *“Biodiversity offsets would be carried out consistent with the Offset Strategy and any conditions of approval”* (No. E16).

The existing vegetation within the construction footprint of the Hills Centre site is classified as:

- ❖ Poor condition Shale Sandstone Transition Forest (classified as an endangered ecological community under the NSW *Threatened Species Conservation Act 1995*).
- ❖ Poor condition Sydney Turpentine Ironbark Forest (classified as an endangered ecological community under the NSW *Threatened Species Conservation Act 1995*).
- ❖ Planted exotic.

As detailed in the biodiversity offset strategy, the proposed offset ratios for poor condition Endangered Ecological Communities would be 3:1.

All project construction sites would be revegetated using endemic native plant species where appropriate.

At this stage the location of the biodiversity offsets are not confirmed. TfNSW are committed to procuring / securing land required for offsetting. TfNSW would take all reasonable measures to identify and secure vegetation offset sites prior to the clearing of vegetation and has made a clear commitment to meet vegetation offset requirements. TfNSW would take all reasonable measures to identify vegetation offset sites located near the area of vegetation removed. TfNSW does not own or have operational control over the Showground nor areas outside the construction footprint.

TfNSW intends that the Vegetation Management Plans include measures to ensure ongoing maintenance of vegetation within the construction footprint.

- h.** Arthur Whitling Park would be reinstated once construction is complete, and the park would be remodelled. The proposed Castle Hill Station would be an underground station, located adjacent to the town centre, integrated within Arthur Whitling Park. Further details, including detailed description of the station precinct, will be provided in EIS 2.

The station entry plaza would be located in the prominent western end of the remodelled Arthur Whitling Park, at the intersection of Old Northern Road and Old Castle Hill Road.

- i. The proposed alignment location and construction boundary has been decided after extensive deliberation and assessment of different options. The trees removed from the Mungerie House area during the construction stage would be reinstated on completion of works. The European Heritage Chapter (Chapter 11 of EIS 1) included the following mitigation measure: *“A buffer of trees between Mungerie and the rail corridor would be maintained. Any trees removed to facilitate construction would be reinstated on completion of works”* (No. EH11).
- j. As detailed in Chapter 15 of EIS 1, flora and fauna surveys have been completed. Pre-clearing flora and fauna surveys would be undertaken prior to commencement of construction at each site. The timing of these surveys would be planned to avoid potential delays to the project.

5.4.2 Heritage

Stakeholder identification number(s) including:
104, 108, 330, 333

◆ Issue description

In summary, respondents raised the following issues:

- a. Concerns EIS 1 has not appropriately addressed Indigenous and European Heritage at Glenhope and Inala historical houses including possible convict wells (such as in Inala). Belief that the project will involve significant visual impacts on these heritage properties. Suggestion to protect heritage conservation and historical buildings along the proposed route and incorporate this in EIS 2.
- b. Concerns relating to preservation of significant artefacts such as railway artefacts and war memorials, some of which may not be listed on heritage registers. Request for appropriate storage of artefacts and assurance of attention and recording detail.
- c. Concerns regarding potential impacts on heritage items in the Rouse Hill area, specifically the old lane / avenue currently used as a bus lane along the Eastern boundary of Old Windsor Road and the Vinegar Hill Cemetery.
- d. Objection to impacts on Mungerie House near Rouse Hill Station.

◆ Response

- a. The potential impacts on Glenhope and Inala are assessed in Chapter 11 of EIS 1. The potential impacts on Glenhope were outlined as follows:

“The construction works would have some temporary adverse impacts upon the setting of (and the outlook from) the heritage-listed Glenhope, which is directly opposite the access road to Cherrybrook Station Construction Site. Existing vegetation on the northern side of the road (within the construction site) forms part of the visual setting for Glenhope house. Much of this vegetation would be removed from the proposed civil construction works. The proposed construction works would have a moderate adverse impact on the visual setting of Glenhope”.

The potential impacts on Inala were outlined as follows:

“There may be some minor impact upon the setting of this property resulting from the station construction works if trees are to be removed from near Franklin Road. It is considered that the proposed construction works would have a minor adverse impact on Inala”.

Measures to minimise any impact, including visual impact, on these heritage items (refer to Chapter 7) include:

Glenhope: *“Where feasible and reasonable, retain or reinstate an adequate buffer of vegetation along the northern side of Castle Hill Road opposite the Glenhope property to preserve the character of its setting and to screen the visual impacts of the station construction site in the northern outlook from the Glenhope property”* (No. EH3).

Inala: *“Where feasible and reasonable, retain or reinstate a buffer of vegetation along the western side of Franklin Road opposite Inala School”* (No. EH4). Consultation is also ongoing between the project team and Inala management.

An assessment of potential impacts of the operation of the NWRL on European and Indigenous Heritage will also be included in EIS 2.

- b.** Arthur Whitling Park would be reinstated once construction is complete with consideration to the significant aspects of the park, including non-listed heritage items. The proposed Castle Hill Station would be an underground station, located adjacent to the town centre, integrated within Arthur Whitling Park. Further details, including detailed description of the station precinct, will be provided in EIS 2.
- c.** The potential impacts on heritage in the Rouse Hill area were assessed in Chapter 11 of EIS 1. The impact on the Windsor Road and Old Windsor Road Heritage Precincts, and the Battle of Vinegar Hill memorial within the Castlebrook Cemetery were considered and the potential impacts were determined to be minor adverse, and relatively minor and temporary respectively.

Management measures including the re-establishment of planted vegetation along the eastern side of the North-West T-Way following completion of the construction works were recommended. In addition, the Construction Environmental Management Framework (refer to Appendix C) details the heritage management objectives to be included in the Heritage Management Plan, including procedures for unexpected heritage finds and stop work orders.

- d.** The proposed alignment location and construction boundary has been decided after extensive deliberation and assessment of different options. The potential impact to the curtilage of Mungerie House is assessed in Chapter 11 of EIS 1. Table 11.25 of EIS 1 describes the impact as follows:

“It is considered that there would be a major adverse impact upon the setting and curtilage of Mungerie. The proposed rail corridor cuts across the original entrance driveway into the Mungerie property and the viaduct structure would substantially reduce the remnant curtilage of the house, dominate views to the west and interrupt important traditional links between the main road and this 1890s house.

The proposed work would therefore result in further erosion of the traditional setting of the house and would constitute a major adverse impact”.

Management measures that would be adopted to minimise this potential impact, as detailed in Chapter 7, would include:

- ❖ Re-establish planted vegetation along the eastern side of the North-west T-Way following completion of the construction works (No. EH9)
- ❖ The viaduct would be designed and constructed to be as visually light and streamlined as possible. At Mungerie, the viaduct piers would be spaced widely and, where feasible and reasonable, symmetrically on either side of the carriage loop from Old Windsor Road (No. EH10).
- ❖ A buffer of trees between Mungerie and the rail corridor would be maintained. Any trees removed to facilitate construction would be reinstated on completion of works (No. EH11).
- ❖ The area of the Mungerie carriage drive that would be removed during construction works would be reinstated (No. EH12).

5.4.3 Sustainability

Stakeholder identification number(s) including:
104

◆ Issue description

In summary, respondents raised the following issues:

- a. Suggestion to adopt renewable resource technology, such as solar panels and wind turbines, on proposed rail stations along the Skytrain route for the benefit of future generations. Further suggestion to reuse construction materials.
- b. Concerns regarding climate change emissions emitted during construction and operation. Suggestion for accountability for climate change emissions to be held under legislative requirements.

◆ Response

- a. The Sustainability Chapter (Chapter 4) of EIS 1 includes the operational greenhouse gas mitigation project initiative:

“Offset a proportion of operational demand using onsite renewable or low carbon sources at stabling yard, stations or carparks”.

The design and operation of NWRL stations will be presented and assessed as part of EIS 2.

One of the project’s sustainability objectives is to “reduce materials use and minimise waste through the project life cycle”. To achieve this objective a project initiative to “maximise recycling of construction waste” was developed. This objective and initiative are included in the Sustainability Chapter of EIS 1.

TfNSW is committed to the objectives of responsible management of waste and would ensure that the project complies with the waste management hierarchy of:

- ❖ Avoidance of unnecessary resource consumption.
- ❖ Resource Recovery (including reuse, reprocessing, recycling and energy recovery)
- ❖ Disposal.

This commitment is included in the mitigation measures relating to waste management (Chapter 19 of EIS 1).

- b.** The NWRL Environment and Sustainability Policy includes the following sustainability objectives relating to greenhouse gas emissions (refer to Chapter 17 of EIS 1):

- ❖ Improve the shift towards lower carbon transport.
- ❖ Reduce operational, construction and embodied carbon emissions.
- ❖ Identify low carbon energy generation and procurement options.

Minimising carbon emissions has been a key aim of the project. A greenhouse gas assessment has been undertaken of the major civil works construction stage to identify the carbon intensive elements and develop mitigation measures which would be implemented to reduce emissions (refer to Chapter 17 of EIS 1 for further details).

TfNSW has committed to implementing greenhouse gas mitigation measures (detailed in Chapter 17 of EIS 1) during the project's construction. The NWRL project has been declared to be State Significant Infrastructure and will be assessed and determined by the Minister for Planning and Infrastructure under Part 5.1 of the *Environmental Planning and Assessment Act 1979*. TfNSW and its contractors working on projects approved by the Minister for Planning and Infrastructure have a legal obligation to ensure the project is carried out in strict compliance with the Minister's Conditions of Approval. The Department of Planning and Infrastructure would monitor and enforce compliance in accordance with the Planning Minister's approval of the NWRL project.

The project would contribute to environmental sustainability by providing a viable alternative mode of non-road based transport. The significant transport mode shift from road to rail would directly reduce carbon emissions associated with transport in the North West and indirectly reduce carbon emissions associated with congestion. The project's operational greenhouse gas emissions will be presented and assessed in EIS 2.

5.4.4 Waterways

Stakeholder identification number(s) including:
18

◆ Issue description

In summary, respondents raised the following issues:

- a.** Concerns there will be environmental impacts in the catchment area that feeds into Caddies Creek.

◆ Response

- a.** The catchment of Caddies Creek has been modelled as part of the Surface Water and Hydrology Technical Assessment (refer to Appendix A and B of Technical Paper 6 of EIS 1) with the potential impacts to surface water and hydrology and proposed mitigation measures summarised in Chapter 18 of EIS 1.

The NWRL corridor crosses a number of named and unnamed tributaries of Caddies Creek, once in the tunnelled section (Strangers Creek) and eight times between Bella Vista and Rouse Hill (above ground section).

There are also a total of four major construction sites proposed within the Caddies Creek catchment, being Site 12 – Windsor Road / Old Windsor Road, Site 13 – Old Windsor Road / Whitehart Drive, Site 14 – Rouse Hill Station and Site 15 – Windsor Road Viaduct (refer to Table 18-2 of EIS 1).

A detailed flood assessment has been carried out, including 2 dimensional modelling of the Caddies Creek confluence (refer to Section 3.1 and Appendices A and B of the Surface Water and Hydrology Technical Paper of EIS 1). Potential flood level and flow velocity impacts for the Caddies Creek tributaries and its floodplain are discussed for sites 12, 13, 14 and 15 in Section 5 of the Technical Paper.

Impacts on the Caddies Creek floodplain are expected from the viaduct construction, temporary haul road construction and temporary waterway crossings. Flood extent mapping resulting from NWRL construction is shown on Figure 9 of Technical Paper 6 of EIS 1.

Additionally, as works are proposed within the floodplain and across waterways, there are potential erosion and sedimentation impacts (discussed in Section 5.2.2 of Technical Paper 6). It should be noted that Section 4.2.7 of Technical Paper 6 summarises the existing water quality of Caddies Creek as indicating E. Coli, nutrients, Total Nitrogen and Total Phosphorous being above the ANZECC guidelines in over half the referenced samples, with dissolved oxygen readings below recommended guidelines.

Mitigation measures detailed in Chapter 18.5 of EIS 1 address surface water and hydrology impacts. More specifically to Caddies Creek:

- ❖ SW9/SW10: *“For the Caddies Creek and Elizabeth Macarthur Creek floodplain (Sites 10 to 13), and similarly Second Ponds Creek floodplain, the height of any embankments required for construction access tracks and work platforms would be limited to 0.5m maximum for appropriate lengths of floodplain and allow controlled overtopping...”*
- ❖ SW11: *“Temporary embankments, haul road and working pads would be removed as soon as feasible after serving their purpose”*.

The need for construction of cut and cover tunnel components across creek lines has been engineered out of the design. The need for a cut and cover tunnel crossing at Caddies Creek Tributary 3 has been removed by the viaduct design, which elevates the rail line above the creek at this location.

Erosion and sedimentation mitigation measures are to be addressed with a Soil and Water Management Plan during construction as described in Section 15.2 of the Construction Environmental Management Framework (refer to Appendix C).

For catchments within the North West Growth Centre (covering Strangers Creek, Caddies Creek and tributaries, Elizabeth Macarthur Creek, First Ponds Creek and Second Ponds Creek) a considerable degree of development is underway and ongoing. To manage changes in flow behaviour as a result of urbanisation, water management strategies have been incorporated into the planning of these growth areas that include the provision of detention basins to offset potential increases in runoff.

5.4.5 Visual impact

Stakeholder identification number(s) including:

17, 23, 24, 46, 49, 51, 53, 55, 59, 78, 79, 89, 96, 106-108, 115, 125, 129, 144, 152, 160, 171, 173, 303, 317, 330, 336, 338, 340, 341

◆ Issue description

In summary, respondents raised the following issues:

- a. The Skytrain will impact the visual amenity of the area, particularly the concrete structures.
- b. Concerns raised over the visual impact of the 6 metre noise barrier surrounding the Cherrybrook construction site, which is on the high side of the street and will tower over houses. Request for the barrier to be improved e.g. by painted murals to minimise sun glare or surrounded with vegetation. Suggestion to consider that barriers could potentially impact residents' sunlight and ventilation. Questioned when the noise barrier will be removed.
- c. Concerns raised regarding the proposed Tallawong Road Stabling Facility and its visual amenity impact on residents living directly opposite the site.
- d. Concerns regarding the visual impact of the proposed Bella Vista Station on nearby residences.
- e. Concerns for the visual amenity around the residential precinct once the proposed 960 car park facility is built at Cherrybrook Station.
- f. Concerns regarding visual impact of the proposed Cheltenham Intermediate Services Facility construction site, including the shaft excavation and acoustic shed. Concerns that the area will be vastly impacted by the loss of bushland which makes the suburb a beautiful place to live.
- g. Concerns that residents nearby the Balmoral Road and Memorial Avenue Construction Zones will be exposed to visual impacts during both Preliminary Work and Construction Work. Concerns that the sites will result in loss of amenity and quality of life. Suggestion to reduce the visual impact by installing high acoustic fencing.
- h. Concerns regarding visual impacts during construction, particularly residents surrounding the proposed Cherrybrook Station being significantly impacted by light spill, including the construction flood lights and the Additional Segment Storage area in close proximity to Robert Road which will be used 24 hours, seven days a week. Suggestion for a proposed noise barrier to be built as high as possible to mitigate this. Propose that the boundaries for Robert Road and Oliver Way be set in such a way that preserves the existing large trees and shield these impacts. Preference for trees be planted to a depth of at least 30 metres off Robert Road (from the existing property lines), so as to shield the Robert Road residents from visual impacts post construction.
- i. Question raised over the level of landscaping as part of the project scope of works.
- j. Request for shielding of any construction related lighting from residents to reduce potential construction impacts on the Inala and Dulkara facilities.
- k. Concerns that dust and dirt from construction at Cherrybrook Station will impact the appearance of residences on Robert Road.

- l.** Concerns EIS 1 did not address visual impacts involved with the removal of vegetation from the ridge top along Castle Hill Road.
- m.** Concerns regarding loss of visual amenity and view of Arthur Whitling Park for Castle Hill residents.
- n.** Objection to visual impact of the Skytrain at Mungerie House near the proposed Rouse Hill Station.
- o.** Concerns regarding visual impact of the proposed Cherrybrook 'open cut' Station on residents.

◆ Response

- a.** Potential visual impacts associated with the Skytrain were assessed at a conceptual level in Section 6.12 of EIS 1. Operational visual impacts associated with the Skytrain will be presented and assessed in detail as part of EIS 2.
- b.** The potential visual impacts of the acoustic barrier / hoarding at Cherrybrook were assessed in Section 16.6.4 of EIS 1. There a number of opportunities to mitigate this impact including the use of the barrier / hoarding for artwork.
- c.** Potential visual impacts associated with the construction of the Tallawong Stabling Facility were assessed in Section 16.6.14 of EIS 1. Visual impacts associated with the operation of the facility will be presented and assessed in detail as part of EIS 2.
- d.** Potential visual impacts associated with the construction of Bella Vista Station were assessed in Section 16.6.8 of EIS 1. Visual impacts associated with the operation of the station will be presented and assessed in detail as part of EIS 2.
- e.** The visual impacts associated with car parking at Cherrybrook Station will be presented and assessed as part of EIS 2.
- f.** Potential visual impacts associated with the construction of Cheltenham Services Facility were assessed in Section 16.6.3 of EIS 1. Visual impacts associated with the operation of the facility will be presented and assessed in detail as part of EIS 2.
- g.** Potential visual impacts associated with the Balmoral Road and Memorial Avenue sites were assessed in Section 16.6.9 of EIS 1:

"Generally, views in this area are considered to be of neighbourhood visual sensitivity as the site is surrounded by predominantly rural and residential areas. Old Windsor Road and the pathway running along Old Windsor Road, the North-West T-Way and T-Way Station, however, are considered to be of local visual sensitivity as they are likely to attract more viewers".

Section 16.6.9 of the EIS also outlined that the site would have hoarding structures, up to 3m high, enclosing the site.

- h.** Potential light spill impacts associated with the Cherrybrook Station construction site were assessed in Section 16.6.4 of EIS 1. The EIS identified some measures that would be employed to minimise light spill including hoarding structures, at a height of 6m, enclosing the site. More specific measures would be developed as part of detailed construction planning and could potentially include taking advantage of existing vegetation and the establishment of screening.

- i.** EIS 2 will describe the station design, railway operating systems and project operations, as well as provide a detailed description of construction works associated with access roads and landscaping. Station precinct urban design at each station would be developed further, presented and assessed as part of EIS 2.
- j.** Specific measures to minimise the impact of light spill on sensitive receptors, including the Inala and Dulkara facilities would be identified during detailed construction planning.
- k.** Dust and exhaust emissions generated during the construction works would largely be controlled through operational and physical mitigation measures, which are routinely adopted during similar construction projects. Dust mobilisation would be minimised during construction through measures such as those presented in Section 19.1.6 of EIS 1.
- l.** Section 16.6.4 of EIS 1 outlines that vegetation removal would occur adjacent to Castle Hill and Franklin Roads. It also states:

“Residential properties on Castle Hill Road are likely to experience views to the worksite and acoustic shed with some screening and filtering of the lower levels by the existing street and garden trees. The removal of housing on Castle Hill Road, between Robert and Franklin Roads and the acoustic shed, in particular, would be visually prominent in these views, and contrast with the relatively fine grain and leafy character of the surrounding residential areas. Overall, there is likely to be a minor adverse visual impact, due to a considerable change to the amenity of views from a location of neighbourhood visual sensitivity”.

- m.** Section 16.6.5 of EIS 1 outlined that vegetation removal would occur at Arthur Whitling Park. Arthur Whitling Park has some aesthetic significance for its elegant arrangement of mature trees and planted beds. The following mitigation measures were presented in EIS 1:
 - ❖ Reinstall key elements of Arthur Whitling Park in consultation with the Castle Hill sub-branch of the RSL, where feasible and reasonable (EH6).
 - ❖ Reinstall the landscaped public parkland (Arthur Whitling Park) following completion of construction (EH7).
- n.** Potential visual impacts associated with the construction of the Skytrain on Mungerie House were assessed in Section 16.6.11 of EIS 1.

Visual impacts associated with the operation of the Skytrain will be presented and assessed in detail as part of EIS 2. Minimising this potential visual impact would be a particular focus of detailed engineering and landscape design in this area.

- o.** Potential visual impacts associated with the operation of Cherrybrook Station will be presented and assessed in detail as part of EIS 2.

5.5 Construction

5.5.1 Air quality

Stakeholder identification number(s) including:

6, 27, 35, 46, 53, 59, 68, 69, 87, 89, 91, 96, 102, 104, 106, 108, 115, 125, 140, 141, 144, 159, 160, 172, 303, 317, 324, 330, 336, 338, 340-344

◆ Issue description

In summary, respondents raised the following issues:

- a. Concerns regarding air quality impacts on residents during construction in the areas of Cherrybrook, Cheltenham, Tallawong Road Stabling Facility and Old Windsor Road, particularly from dust (eg demolition of houses and movement of spoil). Request for compensation for increased electricity costs due to requirement for air conditioning as windows will be closed to avoid dust affecting residential air quality. Request for external house washing every three months during construction due to dust.
- b. Concerns regarding pollution, dust and subsequent impacts on human and animal health (dogs etc...) during construction, particularly at the proposed Hills Centre Station (near the access road).
- c. Concerns regarding dust and other air quality impacts on residents during both preliminary and construction works near the proposed Hills Centre Station, Balmoral Road and Memorial Avenue construction sites. Request to relocate the sand/spoil aggregate facilities closer to Balmoral and Old Windsor Roads to reduce the impact on surrounding residences.
- d. Concerns that traffic increases during construction in the Cheltenham and Cherrybrook areas, and operational traffic increases near the proposed Robert Road feeder route will result in a significant increase in vehicle emissions and exhaust fumes, both petrol and diesel, and will have an adverse effect on air quality. Belief that this will further damage the health of many of the elderly residents along Robert Road. Request for health checks and monitoring of all residences to ensure no adverse health impacts and for air quality monitoring before and during construction as well as notifications to residents if the air quality levels become unsafe. Question regarding what mitigation measures will manage the impact of pollution on residents in these areas. Preference for the six metre noise barrier to be as high as possible in order to mitigate impacts.
- e. Concerns regarding air pollution which will result from dust created during tunnelling and other construction activities, specifically tunnelling from the Epping Decline to Cherrybrook. Question around how this will be monitored and what abatement measures will be put in place to ensure an acceptable level is maintained. Concerns that dust will not be effectively mitigated and will be released into the air. Question around whether affected buildings will be cleaned both during construction and following completion of construction. Concerns this will generate significant long term health problems for residents.
- f. Question raised over air quality being described as a non-key environmental impact as sources are considered 'temporary' in nature and would be confined to the construction period (42 months for Cherrybrook Station).

- g.** Concern raised over health of children attending Kindalin Early Childhood Learning Centre who may be affected by air quality impacts resulting from construction activities, especially those children suffering from asthma and eczema. Concern some health conditions may be exacerbated if children are forced to spend extended periods indoors in air conditioning during construction.
- h.** Concern over the nature of air quality mitigation measures that will be employed to minimise the direct impacts on children, residents and staff at the Kindalin Early Childhood Learning Centre, Inala, and Dulkara. Specifically, the nature and type of wind breaks, hoardings, stockpile locations, debris screens etc.
- i.** Request for NWRL to provide details of operational measures to be implemented to monitor and clean the outdoor play areas of the Kindalin Early Childhood Learning Centre in the event that dust and material from construction activities cannot be contained.
- j.** Concern raised over air quality impacts on the Inala site from establishment of work site, building demolition, earthworks, removal, storage and/or transport of spoil from the station cavern excavation and tunnelling works and exhaust emissions from operation of construction vehicles and plant. Concern raised that potential noise and dust from construction activities will limit the time Inala residents can spend in the outside areas of the grounds.
- k.** Concerns that dust from construction and dust generated by trucks will impact residents in the area near the proposed Castle Hill Station.
- l.** Concerns about dust contamination at a medical facility near the proposed Norwest Station, particularly because patients visiting the business are already unwell.
- m.** Concerns regarding the loss of bushland if the proposed Kirkham St access road is built as this bushland absorbs exhaust pollution and carbon dioxide generated from the M2.
- n.** Concerns regarding dust and debris blowing onto windows and storm water guttering of nearby business/commercial buildings.

◆ Response

- a.** The potential impacts of dust generation on residents, including those from demolition activities and spoil movement, are assessed in Section 19.1 of EIS 1. It is noted that dust generated during the construction works can largely be controlled through mitigation measures, which are routinely adopted during similar construction projects. These mitigation measures are outlined in Section 19.1 of EIS 1 with a revised set provided in Chapter 7 of this report.

It is anticipated that upon adoption of these mitigation measures, the dust impacts on surrounding residents would be minimal.

- b.** The potential air quality impacts from the NWRL are assessed in Section 19.1 of EIS 1. The NSW ambient air quality criteria applicable to the assessment are specified in Approved Methods for Modelling and Assessment of Air Pollutants in NSW (DEC, 2005). These assessment criteria are designed to maintain ambient air quality that provides for the adequate protection of human health.

The emission sources from the proposed works are considered temporary in nature and would be confined to the construction period, with no significant long term impacts anticipated. Any

potential impacts during construction would be mitigated as detailed in Section 19.1.6 of EIS 1, therefore any changes to the ambient air quality would be minor and temporary.

In addition to the proposed mitigation measures, an air quality and dust monitoring program would be undertaken to monitor and further mitigate these impacts as required during the construction works (refer to Chapter 7).

- c. The potential impacts of dust generation and other air quality impacts on residents are assessed in Section 19.1 of EIS 1.

The site layout details shown in Chapter 7 of EIS 1 are indicative only. Final layouts would be determined by the Principal Construction Contractor(s), including the location of sand / spoil aggregate facilities.

Section 19.1.6 of EIS 1 states that stockpiles would be located away from sensitive receivers, where feasible and reasonable, and protected from the elements through barriers, covering or establishing a cover crop. In addition, a range of mitigation measures would be adopted to minimise the impact of any spoil generation and storage on site (refer to Chapter 7).

- d. The potential air quality impacts from the NWRL are assessed in Section 19.1 of EIS 1, including those from exhaust emissions from construction vehicles and plant.

The NSW ambient air quality criteria applicable to the assessment are specified in Approved Methods for Modelling and Assessment of Air Pollutants in NSW (DEC, 2005). These assessment criteria are designed to maintain ambient air quality that provides for the adequate protection of human health.

The emission sources from the proposed works, including construction vehicle emissions, are considered temporary in nature and would be confined to the construction period, with no significant long term impacts anticipated. Any potential impacts during construction would be mitigated (refer to Chapter 7), therefore any changes to the ambient air quality would be minor and temporary.

In addition to the proposed mitigation measures, an air quality and dust monitoring program would be undertaken to monitor and further mitigate these impacts as required during the construction works.

The Construction Environmental Management Framework (refer to Appendix C) outlines the requirements of the Air Quality Management Plan, which would be developed and implemented by the NWRL Principal Construction Contractor. The Air Quality Management Plan would include air quality and dust monitoring requirements and compliance record generation and management procedures.

- e. The potential impacts of dust generation on residents, including those from tunnelling and other construction activities, are assessed in Section 19.1 of EIS 1. It is noted that dust generated during the construction works can largely be controlled through mitigation measures, which are routinely adopted during similar construction projects. Mitigation measures are presented Chapter 7.

It is anticipated that upon adoption of these mitigation measures, the dust impacts on surrounding residents and buildings would be minimal.

In addition to the proposed mitigation measures, an air quality and dust monitoring program would be undertaken to monitor and further mitigate these impacts as required during the construction works.

The Construction Environmental Management Framework (refer to Appendix C) outlines the requirements of the Air Quality Management Plan, which would be developed and implemented by the NWRL Principal Construction Contractor. This Management Plan would include air quality and dust monitoring requirements and compliance record generation and management procedures.

Section 19.1 of EIS 1 states that:

“As the majority of the rail tunnel from Epping to Bella Vista would be constructed below ground, dust impacts would largely be confined to the areas where the proposed alignment is above ground between Bella Vista and the Tallawong Stabling Facility, and in areas where station cavern excavation, spoil movement and service facilities are proposed. As the TBMs and roadheaders would require water for dust suppression while cutting rock, as well as installation of an air filtration system, dust generation from the tunnelling activities are expected to be minimal”.

- f.** The determination of key and non-key issues is by the Director General’s Requirements and approval conditions. Table 3.3 of EIS 1, condition 3.1, states that:

“Pursuant to section 75P(1)(a) of the Environmental Planning and Assessment Act 1979, the following environmental assessment requirements apply with respect to any projects related to this concept plan approval:....

g. assessment of the key issues identified in conditions 3.2 to 3.16 of this approval, including of relevant ancillary infrastructure; and

h. assessment at an appropriate level of detail of the impacts and mitigation measures associated with any additional key issues of relevance to the project, identified during further design development, that are not specifically identified in this concept plan approval”.

As air quality impacts are not included in Conditions 3.2 to 3.16, they are included in the non-key impacts section of EIS 1. Despite being identified as a non-key issue, a thorough assessment of the potential impacts has been undertaken and appropriate mitigation measures identified.

- g.** The potential air quality impacts from the NWRL including those at Cherrybrook Station (where Kindalin Early Childhood Learning Centre is identified as a sensitive receiver) are assessed in Section 19.1 of EIS 1. The NSW ambient air quality criteria applicable to the assessment are specified in Approved Methods for Modelling and Assessment of Air Pollutants in NSW (DEC, 2005). These assessment criteria are designed to maintain ambient air quality that provides for the adequate protection of human health.

Air quality impacts from the proposed works are considered temporary in nature and would be confined to the construction period, with no significant long term impacts anticipated. Any potential impacts during construction would be mitigated (refer to Chapter 7), therefore any changes to the ambient air quality would be minor and temporary.

In addition to the proposed mitigation measures, an air quality and dust monitoring program would be undertaken to monitor and further mitigate these impacts as required during the construction works, as detailed in the Construction Environmental Management Framework (refer to Appendix C).

- h.** The potential air quality impacts from the NWRL including those at Cherrybrook Station (where Kindalin Early Childhood Learning Centre, Inala and Dulkara are identified as sensitive receivers) are assessed in Section 19.1 of EIS 1.

Air quality impacts from the proposed works are considered temporary in nature and would be confined to the construction period, with no significant long term impacts anticipated. Any potential impacts during construction would be mitigated (refer to Chapter 7), therefore any changes to the ambient air quality would be minor and temporary.

In addition to the proposed mitigation measures, an air quality and dust monitoring program would be undertaken to monitor and further mitigate these impacts as required during the construction works, as detailed in the Construction Environmental Management Framework (refer to Appendix C).

The site layout details, including stockpile locations, hoardings, wind breaks and screens, shown in Chapter 7 of EIS 1 are indicative only. Final layouts and types would be determined by the construction contractor(s).

With regard to stockpile locations, Section 19.1.6 of EIS 1 states that stockpiles would be located away from sensitive receivers, where feasible and reasonable, and protected from the elements through barriers, covering or establishing a cover crop

- i.** The potential air quality impacts from the NWRL including those at Cherrybrook Station (where Kindalin Early Childhood Learning Centre is identified as a sensitive receiver) are assessed in Section 19.1 of EIS 1. It is noted that dust generated during the construction works can largely be controlled through mitigation measures, which are routinely adopted during similar construction projects. These mitigation measures are presented in Chapter 7. It is anticipated that upon adoption of these mitigation measures, the dust impacts on surrounding areas would be minimal.

In addition, the Construction Environmental Management Framework (refer to Appendix C) outlines the requirements of the Air Quality Management Plan, which would be developed and implemented by the NWRL Principal Construction Contractor. This Management Plan would include air quality and dust monitoring requirements and compliance record generation and management procedures.

- j.** The potential air quality impacts from the NWRL including those at Cherrybrook Station (where Inala is identified as a sensitive receiver) are assessed in Section 19.1 of EIS 1.

Air quality impacts from the proposed works are considered temporary in nature and would be confined to the construction period, with no significant long term impacts anticipated. Any potential impacts during construction would be mitigated (refer to Chapter 7), therefore any changes to the ambient air quality and noise levels would be minor and temporary and unlikely to significantly inhibit time spent outdoors.

In addition to the proposed mitigation measures, an air quality and dust monitoring program and a noise monitoring program would be undertaken to monitor and further mitigate these impacts as required during the construction works, as detailed in the Construction Environmental Management Framework (refer to Appendix C).

- k.** The potential impacts of dust generation on residents, including those from construction activities and truck movements on the Castle Hill Station area, are assessed in Section 19.1 of EIS 1. It is noted that dust generated during the construction works can largely be controlled through mitigation measures, which are routinely adopted during similar construction projects. These mitigation measures are detailed in Section 19.2.6 of the EIS, with a revised set provided in Chapter 7 of this report.

It is anticipated that upon adoption of these mitigation measures, the dust impacts on surrounding residents would be minimal.

In addition to the proposed mitigation measures, an air quality and dust monitoring program would be undertaken to monitor and further mitigate these impacts as described in the Construction Environmental Management Framework (refer to Appendix C).

- l.** The potential impacts of dust generation near Norwest Station are assessed in Section 19.1 of EIS 1. It is noted that dust generated during the construction works can largely be controlled through mitigation measures, which are routinely adopted during similar construction projects. These mitigation measures are detailed in Section 19.1.6 of the EIS, with a revised set provided in Chapter 7 of this report.

It is anticipated that upon adoption of these mitigation measures, the dust impacts on surrounding residents, including the medical facility, would be minimal.

In addition to the proposed mitigation measures, an air quality and dust monitoring program would be undertaken to monitor and further mitigate these impacts as described in the Construction Environmental Management Framework (refer to Appendix C).

The potential air quality impacts from the NWRL, including from dust and pollution, are assessed in Section 19.1 of EIS 1.

The emission sources from the proposed works are considered temporary in nature and would be confined to the construction period, with no significant long term impacts anticipated. Any potential impacts during construction would be mitigated as detailed in Chapter 7, therefore any changes to the ambient air quality would be minor and temporary.

In addition to the proposed mitigation measures, an air quality and dust monitoring program would be undertaken to monitor and further mitigate these impacts as required during the construction works.

- m.** An assessment of the proposed removal of bushland is provided in Chapter 15 (Ecology) of EIS 1. Vegetation removal would be minimised as much as practicable and construction sites would be revegetated using endemic native plant species where appropriate. A revegetation program would also occur at the Cheltenham Services Facility site, with the aim of re-establishing Coastal Shale-Sandstone Forest in areas not required for sporting facilities or NWRL operational purposes. In addition to these measures an offset strategy has been prepared to offset the loss of native vegetation (including endangered ecological communities) and threatened species habitat which cannot be avoided or mitigated, refer to Appendix N of the Ecological Assessment (Technical Paper 5a of EIS 1). Following the implementation of these management measures, any reduction in the potential for bushland to absorb carbon dioxide generated from the M2 would be minimal.

- n. The potential air quality impacts from the NWRL, including from dust and debris, are assessed in Section 19.1 of EIS 1.

The emission sources from the proposed works are considered temporary in nature and would be confined to the construction period, with no significant long term impacts anticipated. Any potential impacts during construction would be mitigated as detailed in Chapter 7.

In addition to the proposed mitigation measures, an air quality and dust monitoring program would be undertaken to monitor and further mitigate these impacts as described in the Construction Environmental Management Framework (refer to Appendix C).

5.5.2 Business impacts

Stakeholder identification number(s) including:
71, 72, 89, 115, 151, 159, 160, 322

◆ Issue description

In summary, respondents raised the following issues:

- a. Local sporting clubs future viability is threatened as a result of the project unless suitable permanent replacement buildings are constructed within a timeframe to allow clubs to provide services in a seamless way. Clubs have a number of specific requirements for a suitable replacement venue. It is a priority that clubs are able to provide assurances to athletes as well as their parents, that their plans, the clubs plans and training activities will not be adversely impacted by project disruptions.
- b. Question raised over whether NWRL will reimburse strata schemes for costs associated with coordinating and facilitating meetings with owners to discuss the project impacts.
- c. Concern raised that buildings within the Norwest Business Park were not designed to accommodate a railway underneath and the potential redevelopment of these sites may be restricted due to tunnelling. Questioned if consideration has been given to the 'opportunity cost' to owners of these properties.
- d. Question raised about what compensation will be available for strata managers/businesses dealing with issues arising from construction e.g. cleaning, landscaping, car parking and those issues raised in section 13.4.1 of EIS 1.
- e. Request for clarification on whether low rise commercial buildings have or have not been included in the EIS 1 survey to identify and provide an assessment of the potential impacts on local business in the immediate vicinity of the project during the major civil construction works (refer to Table 13.1).
- f. EIS 1 provides conflicting views on the potential diminution of property values and potential lost income due to property/business vacancies. Question raised about compensation for business owners who suffer losses.
- g. Concerns raised over potential construction impacts on local child care centres, residential housing and disabled care facilities. Noted that successful management of these facilities relies on the consistency of routines, therefore disturbance and variations can interfere with the

successful operation of the facility and its ability to provide a quality service. Concern the construction timeframe has the ability to inflict significant long-term impacts on the operational capacity of the facilities and that this will potentially lead to negative employee productivity, interaction with customers and workplace ambience.

- h.** Construction work proposed during the night will have a negative impact on the residential housing and disabled care facilities' staff members who 'sleep over'. Concerns that staff members' lack of sleep will increase risks for the ongoing care and support of residents and result in higher staff costs (to obtain replacement staff).
- i.** Concern raised that construction activities could cause disturbance or variation to everyday timetables at the residential housing and disabled care facilities in Cherrybrook, which will severely interfere with the successful operation of both facilities and has the ability to impact on the provision of quality care to both permanent long-term and short-term clients. Concern over potential psychological affects upon the residents of these facilities due to changes in daily routines.
- j.** Objection to the project due to economic impacts on local business following demolition of the Totally Home Bella Vista Centre.
- k.** Concerns that the project will result in lower member attendance for local clubs / groups due to construction impacts.
- l.** Concerns that EIS 1 did not adequately address impacts on small businesses in the area of the proposed Castle Hill Station. Business impacts would include lost income due to rental vacancies, reduced ability to retain staff, increased maintenance costs and inability to maintain tenancy.
- m.** Concerns regarding limited access impacts during construction on businesses with direct frontage on Old Northern Road which are reliant on direct access and exposure. Request for compensation for lost business to be paid to owners and tenants of these properties.

◆ Response

- a.** The sporting facilities that would be impacted at Cheltenham Oval include netball and tennis courts and cricket nets which would be removed for the development of the Cheltenham Services Facility. Any relocation of these facilities would be undertaken following the outcomes of consultation with the relevant stakeholders including the sporting clubs and Hornsby Shire Council. This would occur during the development of the NWRL design.

Construction of the project requires a significant construction site at the Hills Centre station site, which would result in the demolition of up to five showground buildings/structures, although the potential to avoid demolition would be investigated as part of more detailed construction planning. To mitigate the loss of up to five buildings and/or structures within the construction site, the activities undertaken within the demolished buildings/structures would be accommodated within existing Showground buildings. Where this is not possible, new facilities would be constructed in a location within the Showground Precinct in consultation with users and The Hills Shire Council (where reasonable and feasible). As a last resort, alternative facilities offsite would be investigated in consultation with users and The Hills Shire Council. The detailed design, placement and transition to new facilities would be undertaken prior to construction.

- b.** The decision to hold a strata meeting is at the discretion of owners within Strata schemes and their costs are considered a normal part of operating a strata scheme.
- c.** The NWRL project is designed to not impact on the current or approved design and location of buildings. Any decision to redevelop existing buildings in the future would be the responsibility of the owners and subject to relevant planning controls.
- d.** The NWRL would implement the mitigation measures detailed within EIS 1 and Chapter 7 to manage and minimise the potential impacts associated with the major civil construction works.
- e.** Low rise commercial buildings have not been included in the business surveys. The local business survey undertaken and presented in Chapter 13 of EIS 1 represents a sample of businesses at a specific locality. Despite this, the potential impacts described in Chapter 13 are based on business types and, as such, are relevant to all surrounding businesses.
- f.** A business impact risk register would be developed to identify, rate and help manage the specific impacts associated with construction related works for individual businesses. This would allow identification of impacts specific to each business and development of appropriate site and business specific management measures.
- g.** Construction activities would be strictly managed to ensure potential impacts are kept to a minimum. Impacts would be recorded to monitor any adverse effects and measures taken to rectify issues would be sought where deemed necessary or appropriate.
- h.** Activities during night time would be confined to certain activities and would be undertaken in accordance with the mitigation measures detailed in the EIS and Chapter 7 to ensure noise disturbance to surrounding areas is minimal. Additional acoustic treatments are still being investigated at the worst affected areas such as Bella Vista.
- i.** Construction of the NWRL would not cause physical disturbances to businesses in the surrounding areas therefore allowing every day timetables to continue unimpeded. Disturbance would be kept to a minimum with an ongoing register to monitor impacts and allow actions to be taken should they be needed.
- j.** Business owners of the Totally Home Centre in Bella Vista would be appropriately compensated as part of the acquisition of this site in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.
- k.** Full accessibility to venues within the area would be maintained. A lesser patronage of local clubs / groups would not be caused directly from the NWRL. People may be discouraged from attending however, due to construction activity. The NWRL would be constructed in accordance with best practice and industry standard mitigation and management measures that would reduce these impacts and aim to have minimal impacts on the surrounding areas.
- l.** Chapter 13 of EIS 1 provides a comprehensive assessment of the potential impacts and benefits to local business as a result of the major civil construction works, including the businesses around the Castle Hill Station construction site. Additionally, the EIS identifies a number of mitigation measures to be implemented to manage and reduce these potential impacts. Revised mitigation measures are provided in Chapter 7 of this report.

- m. Access to all properties would be maintained or a new access provided in consultation with the owners / tenants. The access would be compliant with Australian standards. Exposure of the properties on Old Northern Road would be maintained.

5.5.3 Construction hours

Stakeholder identification number(s) including:
91, 93, 106, 123, 125, 145, 160, 165, 229, 332, 336

Issue description

- a. Objection to any work being carried out by heavy trucks, plant and equipment for the removal of spoil near the Additional Construction Zone outside of the proposed “Above Ground Construction Hours”. Request for confirmation that this will not occur, and that construction movements be restricted to the hours of 7am – 7pm. Request for no construction works to occur in the Cherrybrook area over weekends as this should be a time for residents to have peace and quiet.
- b. Concern that a 7am start for construction is too early. Experience from the Tangara School development was that trucks started making deliveries prior to the 7am start time.
- c. Concerns raised over the potentially negative impact of 24 hour construction activities on the health of Cherrybrook residents, and particularly on the sleep of Inala residents. Sleep is an important component in the maintenance of mental health, behaviour support and general well-being of the residents. Request for operating hours for construction related activities to be restricted and not occur between 9pm – 6am Monday to Friday or weekends in order to protect residents’ quality of life and peaceful enjoyment of their home.
- d. Preference for no construction activity to be carried out on Sundays (as this is considered a day of worship) and public holidays near the Bella Vista Station, and request for the community to be notified of hours of operation at construction sites.
- e. Objection to construction hours before 7am or on the weekend near the proposed Cheltenham Intermediate Services Facility.
- f. General objection to 24 hour construction. Concerns regarding impacts of 24 hour construction works on residents. Request for residents to be informed of impacts from extended work hours.

◆ Response

- a. At some sites, truck movements to remove spoil from the construction sites would need to occur 24 hours per day, seven days per week. Truck movements within the site would largely occur within an acoustic shed. Any residual noise impacts would be managed through the Construction Noise and Vibration Strategy.
- b. The 7am start time is consistent with the standard daytime construction hours from the *Interim Construction Noise Guidelines* and is considered appropriate for the NWRL project. Delivery trucks would not arrive on site prior to 7am.

- c. Truck movements to remove spoil from the construction sites would need to occur 24 hours per day, seven days per week. Whilst the noise assessment concludes that there is a moderate risk of sleep disturbance at the Cherrybrook site, further mitigation would be considered in accordance with the Construction Noise and Vibration Strategy.
- d. In general, above ground construction activities would not be carried out on Sundays or Public Holidays, however some activities, including tunnelling and above-ground activities to support tunnelling, would be required to occur 24 hours per day, seven days per week. The Bella Vista would be a tunnel support construction site.

The community would be kept regularly informed of upcoming construction works, including working hours, during the construction phase of the project.

- e. In general, construction activities would occur during the standard daytime construction hours of 7am to 6pm Monday to Friday and 8am to 1pm Saturday. However some activities, including tunnelling and above-ground activities to support tunnelling, would be required to occur 24 hours per day, seven days per week. The construction site at Cheltenham would generally operate during standard construction hours.
- f. As described in EIS 1 some construction activities, including tunnelling and above-ground activities to support tunnelling, would be required to occur 24 hours per day, seven days per week. The community would be kept regularly informed of upcoming construction works, including working hours, during the construction phase of the project.

5.5.4 Sites / compounds

Stakeholder identification number(s) including:
72, 79, 106, 108, 154, 160, 336, 338

◆ Issue description

In summary, respondents raised the following issues:

- a. Concerns regarding the scale and layout of the Cherrybrook Station construction site and the impacts on the visual amenity and quality of life for Robert Road residences, the local residential housing and disabled care facilities in the area. Concerns school children will have difficulty around the Cherrybrook Station construction site due to footpath restrictions in the area. Request for further clarity around these construction impacts.
- b. Concerns that the construction site location at the Showground will impact current use of the area. Request for clarity regarding whether the relocation of facilities at the Showground will be temporary or permanent, and whether facilities within the construction area will be returned after completion of the project.
- c. Objection to the most recent plans for Cherrybrook Station to expand to include the Additional Construction Zone and now be an 'Open Cut' design rather than underground. Changes to the footprint of the construction site at the proposed Cherrybrook Station has caused distress to residents and resulted in health impacts.
- d. Concerns regarding the close proximity of a 24 hour workshed to residences in Kayla Way, Robert Road and Franklin Road.

- e. M2 widening work requires the reservation of a vacant parking and access facility for trucks and heavy equipment, in the event of an emergency or maintenance requirements, which necessitates access to the underside of the elevated section of the M2 above Devlins Creek. Suggestion that the area located under the M2 could be used as an alternative site for the Cheltenham Intermediate Services Facility.
- f. Concerns regarding the location of the proposed Cheltenham Intermediate Service Facility and why this location has been chosen. Request for the location of the proposed Cheltenham Intermediate Services Facility be moved to the Beecroft Scout hall on the other side of Kirkham Street because this would provide better emergency access, have less impact on residents and avoid the impacts on local recreational facilities. Request for the installation of a vehicle counter on Castle Howard Road with results made public, an onsite inspection by NWRL executives and community members, and an investigation about why the Scout hall location cannot be utilised for the project. Suggestion for the emergency shaft which is proposed to be built on the existing netball courts near Cheltenham Oval to be built instead next to the M2.

◆ Response

- a. Cherrybrook Station construction site would be required to support tunnelling activities. As described in the Construction Environmental Management Framework (refer to Appendix C), the design of temporary works (including acoustic sheds and site hoarding) would need to consider urban design and visual amenity. As outlined in EIS 1, impacts to existing footpaths or pedestrian facilities around Cherrybrook Station are not expected to occur. Additionally, measures would be implemented to ensure the safe passage of pedestrians around the construction sites.
- b. Construction of the project requires a significant construction site at the Hills Centre station site, which would result in the demolition of up to five showground buildings/structures, although the potential to avoid demolition would be investigated as part of more detailed construction planning. To mitigate the loss of up to five buildings and/or structures within the construction site, the activities undertaken within the demolished buildings/structures would be accommodated within existing Showground buildings. Where this is not possible, new facilities would be constructed in a location within the Showground Precinct in consultation with users and The Hills Shire Council (where reasonable and feasible). As a last resort, alternative facilities offsite would be investigated in consultation with users and The Hills Shire Council. The detailed design, placement and transition to new facilities would be undertaken prior to construction.
- c. The Additional Construction Zone area is required to avoid the potential impacts and safety risks of undertaking construction works in close proximity to the high voltage power lines along the eastern end of the construction site.

The open cut station design would result in a number of operational benefits which will be further discussed within EIS 2.
- d. The acoustic shed is proposed to be located approximately in the middle of the Cherrybrook site. This location is as far to the east as possible in order to avoid the high voltage power lines. This location is as far away as feasible from the majority of residential receivers.

- e. The location of the Cheltenham Services Facility has been carefully assessed and chosen as the most viable option out of 17 locations. Considerations for this decision included distance from the running tunnels, property acquisition requirements, operational management for the purpose of emergency access/egress, draught relief and maintenance, vegetation, residential properties and community facilities, access and cost of construction and functioning. It is acknowledged that the Services Facility site would replace some existing community facilities and this has been taken into account during the initial location evaluations. These facilities include a children's playground, netball courts, tennis courts, cricket practice nets and already limited parking. Despite this, this location is considered to have the least impact to the community while still being viable from an operational perspective. The design of the Cheltenham Services Facility has been modified to minimise biophysical and amenity impacts based on consultation with Hornsby Shire Council. The options assessment undertaken with regards to Cheltenham Services Facility Site is presented in Section 7.9.3 of EIS 1.

Mitigation measures are currently being considered to alleviate the impact to the community facilities with ongoing consultation with Cheltenham Oval user groups. The purpose of the consultation is to identify appropriate post-construction configuration and facilities for sporting activities. Additionally, consultation with stakeholders of Beecroft Reserve is being undertaken to identify appropriate adjustments to walking trails during both the construction and operational phases. Enhancements or modifications to the trail network would also be considered as part of this process. As part of this consultation a range of different options would be considered including the relocation of facilities. The outcomes of this consultation will be presented in EIS 2.

- f. Refer to response (e) above.

5.5.5 Heavy vehicle movements

Stakeholder identification number(s) including:

46, 53, 63, 72, 74, 75, 79, 81, 82, 84, 98, 108, 110, 113, 115, 120, 121, 125, 127-129, 136, 137, 140, 152, 156, 172, 173, 227, 303, 317, 324, 330, 332, 343, 344

◆ Issue description

In summary, respondents raised the following issues:

- a. Concerns regarding the high frequency of heavy vehicle and earthmoving vehicle movements and potentially severe impacts on residents during construction of the Tallawong Road Stabling Facility, Hills Centre Station, Castle Hill Station, Balmoral Road Construction Zone, Memorial Avenue Construction Zone and Cherrybrook Station (particularly on Celebration Drive, Franklin Road and Robert Road). Suggestion to mitigate this burden by using additional construction sites and relocating the Bella Vista station closer to Memorial Avenue.
- b. Concerns regarding heavy vehicle movements and shuttle bus services for workers on residential roads (specifically Robert Road, Castle Howard Road, Franklin Road, Kirkham Street, Beecroft Road, and other roads surrounding Cheltenham Oval). Suggestion that these roads are not suitable and that some residential roads are too narrow or unsafe for such vehicles. Impacts on residents will include noise, pollution, damage to roads, health issues, congestion, traffic safety risks, danger to children, and will contribute to lack of parking in the street.

Request for any impacts on roads from heavy vehicles be repaired at the expense of the contractors. Suggestion that access to the proposed Cheltenham Intermediate Services Facility would be more suitable from M2 Motorway ramps for these reasons. The proposed mitigation measure at the Kirkham Street and Beecroft Road intersection to restrict truck movements to left in / left out does not consider that heavy vehicles would need to turn using both lanes of Beecroft Road. This would require longer gaps than light vehicles and would further increase delays.

- c. Request for further indication concerning routes to be used by heavy vehicles beyond the immediate area near construction sites.
- d. Concerns regarding dust from heavy vehicles travelling along the proposed access road to the Hills Centre station and in the Cheltenham area. Request for trucks moving through residential areas to be covered at all times and hosed down with recycled water before leaving construction sites in order to reduce dust impacts on local residences.
- e. Concerns regarding heavy vehicle movements impacting on canine activities in the Showground area.

◆ Response

- a. The volumes of spoil required to be transported from the NWRL construction sites are such that there would be impacts upon the road network. Mitigation measures that would be implemented to mitigate these impacts include the routing of heavy vehicles via the higher order arterial road network, limiting heavy vehicle arrivals and departures at sensitive locations during peak periods and maximising loads in an effort to minimise overall truck trip generations (refer to Chapter 7). The linear approach to construction sites north of Bella Vista assists in spreading the impacts of heavy vehicles across the wider arterial road network. Relocating Bella Vista to Memorial Avenue would merely serve to concentrate traffic impacts at that location.
- b. Robert Road would accommodate light vehicle movements only, consistent with its current function in the road network. A short section of Franklin Road between the intersection with Castle Hill Road and the site access driveway would accommodate heavy vehicle movements which would have an impact on access out of Franklin Road and may increase delays at that location during busy construction periods. Similarly, at the Cheltenham Services Facility construction site, heavy vehicles would be restricted to Kirkham Street or the M2 Motorway access while some light vehicles would access via Castle Howard Road. Kirkham Street is able to accommodate the anticipated heavy vehicle movements to and from the site without adverse impacts on traffic flow efficiency. The movement of heavy vehicles at the Kirkham Street / Beecroft Road intersection would have minor impacts on traffic delay having regard to the estimated daily heavy vehicle volumes.
- c. The Framework Construction Traffic Management Plan as detailed within the Construction Environmental Management Framework (refer to Appendix C) would provide more detail on the routes once the preferred disposal sites have been identified by the construction contractor(s).
- d. Trucks removing spoil from the sites would be required to be covered when utilising the public road network and would be cleaned (by water spray, rumble grid, etc...) before leaving the site.
- e. The design of the haulage road would be such that access and egress to and from the canine facilities near Cattai Creek would not be precluded.

5.5.6 Noise and vibration

Stakeholder identification number(s) including:

6, 10, 24, 27, 35, 46, 53, 55, 59, 60, 68-70, 72, 79, 81-85, 87, 91, 96, 102, 104, 106-108, 115, 123, 125, 129, 140, 144, 145, 152, 159, 160, 165, 171, 172, 230, 251, 303, 317, 321, 332, 336, 338-344, 371

◆ Issue description

In summary, respondents raised the following issues:

- a. Concerns regarding impacts of construction noise and vibration on residents and future residents, particularly from heavy vehicle movements and construction traffic, demolition of houses, spoil removal, tunnelling, excavation works and diesel generators. Concerns that EIS 1 has not provided adequate noise and vibration mitigation procedures. Specific areas of concern are around Cherrybrook Station, the Tallawong Road Stabling Facility, Cheltenham and the access road to the proposed Cheltenham Intermediate Services Facility, Norwest, Hills Centre and the access road to the Hills Centre construction site, Old Windsor Road, Castle Hill, Bella Vista Station and Kellyville.

Request for an alternative action plan more conducive to resident welfare when there is a breach of noise levels by construction activities at the proposed Bella Vista Station. Preference for a six metre noise barrier to be erected around the Bella Vista construction site, as per the recommended barrier at the Cherrybrook site, to manage night time spoil truck movements and other on-going construction activities.

Concerns that the ingress/egress points at the Bella Vista Station construction site will direct construction traffic towards the local residential area, causing an increase in noise and vibration.

Concerns that tunnelling activities will lead to impacts on building foundations, cause damage to properties, and possibly cause interference with local internet connections.

Request for consideration of further noise mitigation and ground-borne vibration reduction measures before and after construction. Suggestion to manage air-borne noise dependent on the weather.

- b. Query around maintenance of the noise barrier surrounding Cherrybrook construction site.
- c. Concerns construction noise will vastly impact lifestyle in quiet and peaceful suburbs, and will have negative impacts on the health of residents including but not limited to increased agitation and tension, sleep deprivation / fatigue and high blood pressure. Concerns specifically relating to construction noise impacts on the moods, behaviour and concentration of children.
- d. Concerns regarding noise impacts on animals and humans during construction of the proposed Hills Centre Station, particularly near the access road.
- e. Concerns regarding noise impacts on residents (including impacts on residents working from home) in the Robert Road area from construction and construction traffic (including worker shuttle buses) at the proposed Cherrybrook Station. Constant accelerating and braking due to the traffic conditions, parked vehicles and pedestrian traffic will substantially increase the

construction traffic noise. Question how construction traffic noise will be mitigated in the Cherrybrook area.

Comment that contradictory information about noise levels in the Robert Road area have been provided - as noise levels presented on page 10-26 (Chapter 10) of the EIS note that Robert Road will have expected noise levels of >20 dB exceedance or LAeq (15min) > 70 dBA - this noise level is greater than what was described at a meeting with Robert Road residents. Concerns that the EIS does not specify processes to rectify a breach in noise limits in the Cherrybrook area. Concerns that noise levels will exceed noise criteria specified in the Australian Standard, and request for assurance that these noise levels will not be exceeded.

Question regarding the exact location of the proposed six metre noise barrier and the proposed acoustic shed to house the 15 metre crane at the Cherrybrook Station construction site. Request for a high acoustic noise wall, including aesthetic measures, to be situated on the inside boundary of tall trees along Robert Road to reduce the impact of noise and vibration at the Additional Construction Zone at Cherrybrook on residents of Robert Road. Preference for the noise barrier to be as high as possible to mitigate noise, and concerns that the proposed six metre noise barrier will not be sufficient. Suggestion that the depth of the trees along with an acoustic wall should also deter anyone wishing to illegally access the station via Robert Road. Request for consideration of a fence between residences and the proposed six metre noise barrier as a further buffer zone, in addition to rows of trees between the buffer zone fence and noise barrier.

Request for:

- ❖ noise modelling figures from the suggested daytime use of Franklin Road for construction traffic as indicated in Section 9.4.4 of EIS 1.
 - ❖ confirmation that noise levels at Robert Road will not impact quality of life for residents.
 - ❖ double-glazed windows to be provided to all residences in Kayla Way, in addition to acoustic roof insulation if required.
 - ❖ constant monitoring of noise levels and availability of an on-site contact for residents.
- f.** Concerns regarding noise and vibration impacts during both Preliminary Work and Construction Work on residents near the Balmoral Road and Memorial Avenue Construction Zones. As stated in the EIS, there are concerns the residential area East of Memorial Avenue will be most affected. Concerns that these construction zones will be operational 24 hours a day for a period of two years or more with no respite. The noise and vibration from these sites will vastly impact the quiet rural character of the area and no means of mitigation will eliminate the negative impacts on residents. Requests to consider:
- ❖ introducing high acoustic fencing around the sites
 - ❖ locating the acoustic shed further north and closer/adjacent to Balmoral Road, with a higher degree of noise insulation
 - ❖ locating the acoustic shed further North and closer / adjacent to Memorial Avenue or west towards Old Windsor Road, with a higher degree of noise insulation
 - ❖ increase the size of the acoustic sheds
 - ❖ relocating the offices, the bar bending/storage areas closer to Balmoral Road and Old Windsor Road, away from residences
 - ❖ relocating residents who will be exposed to excessive periods of discomfort as a result of construction impacts.

- g.** Concerns regarding noise impacts of 24/7 construction works and night time spoil removal in addition to heavy vehicle movements, specifically in the Cherrybrook area in close proximity to Robert Road. Question regarding mitigation measures that will be undertaken to address these impacts. Request for onsite noise generating activities to be undertaken between the hours of 7am and 7pm only.
- h.** Concern raised over the noise impacts on child care facilities due to construction works at Cherrybrook Station. Frequency and noise of truck movements associated with daytime operations (7am to 6pm) will impact on both indoor and outdoor activities, and will involve sleep disturbance for children during daytime rest period (1pm to 3pm).

Question raised as to what noise mitigation measures will be established to manage noise in the vicinity of these child care facilities during daytime operating hours. Request for Department of Planning & Infrastructure to consider specific noise mitigation measures such as a heightened perimeter wall along the Castle Hill Road and Glenhope Road frontage of the site to be introduced to reduce the impacts of construction noise on the centres during daytime hours. Request to assess any reduction in noise levels associated with the installation of acoustic mitigation measures.

- i.** Concern raised over potential noise impacts resulting from construction activities on permanent residents of the Inala disabled care facility who are particularly sensitive to noise, light, activity level and vibration, in addition to staff at these facilities.

Request for the EIS (Chapter 10 Noise and Vibration - Construction) and associated tables to be updated to include the impact of construction noise on the Inala site over a 24 hour period, as the site is occupied 24 hours a day 7 days per week.

Request for Department of Planning & Infrastructure to consider specific noise mitigation measures to reduce the impacts of noise on the Inala site during a 24 hour period. Request to assess any reduction in noise levels associated with installation of acoustic mitigation measures.

- j.** Noise and vibration concerns for a commercial building nearby the proposed Norwest Station construction site during office hours. Query regarding whether three metre noise barrier is sufficient to provide a comfortable and productive environment for those who work adjacent to the construction site.
- k.** Concerns that estimates for construction noise impacts on surrounding properties of the proposed Cherrybrook Station was based on the previous tunnel location. Concerns that proposed location of the Cherrybrook Station, which has moved further west than the original footprint, will increase noise impacts on Robert Road residents. Questioned if noise impacts on surrounding properties will be greater than reported in the EIS as the current tunnel and station location is much closer to Castle Hill Road.
- l.** Concerns that potential noise and vibration impacts cannot be properly assessed as the exact location of the tunnels in depth and distance from residences has not been provided despite meetings with NWRL representatives.
- m.** Concerns regarding noise and vibration levels generated from the Castle Hill construction site, particularly in early mornings and late at night. During construction of the Crossover Cavern, request that night time construction noise experienced in the Northpoint Apartment complex is limited to 30dbA. Suggestion for night time work to occur in locations further removed from

the eastern end of the site. Request for short term alternative accommodation to be provided for residents, particularly those in the Northpoint Apartment complex, if operating noise levels of the TBM reach 40-45dB(A).

- n. Concerns relating to the height of fencing around construction sites and whether this will reduce noise.
- o. Concerns regarding noise generated by construction works. Concerns regarding availability of detail about noise mitigation measures. Request for active noise monitoring, and for noise to be limited to 80dB during proposed working hours (7-6pm). Request for noise to be limited to 60dB outside proposed working hours.

◆ Response

a. General Comments

As part of EIS 1, a Noise and Vibration Technical Paper was prepared (Technical Paper 2 – Volume 2 of EIS 1). The purpose of the technical paper was to assess the potential noise and vibration impacts of the project in accordance with the applicable government guidelines, and identify mitigation and management measures necessary to minimise construction impacts at sensitive receivers.

In determining feasible and reasonable mitigation measures at each construction site, consideration was given to the guidelines and requirements in the *Interim Construction Noise Guideline* (ICNG – DECC 2009). Furthermore, a *Construction Noise and Vibration Strategy* (CNVS) was developed by the NWRL project team to provide additional guidance to construction contractor(s) on how potential noise and vibration impacts would be managed during the detailed design and construction stages. The CNVS was prepared in accordance with the ICNG and outlines the best practice measures for the project for minimising construction noise and vibration impacts. The CNVS is included as Appendix E of the Noise and Vibration Technical Paper.

Heavy Vehicle Movements and Construction Traffic

An overview of the potential noise impacts associated with truck movements is provided in Section 6.4 of the *Noise and Vibration Technical Paper* and within Chapter 10 of EIS 1.

For truck movements to and from the proposed construction sites (on public roads), noise levels have been assessed in accordance with the *NSW Road Noise Policy* (RNP - DECCW 2011). The assessment evaluates the change in road traffic noise levels associated with the additional truck movements on public roads. Where the change in noise levels is greater than 2 dB as a result of the additional construction traffic, consideration of mitigation measures is required. The study also includes an assessment of the maximum noise levels at typical receivers on the public roads and the number of truck movements during the night-time period in order to assess the potential for sleep disturbance.

For truck movements within the boundaries of the construction sites, potential noise impacts are assessed together with other construction noise activities (this is a requirement of the ICNG assessment process). In other words, truck movements within the construction site form part of the overall noise levels from the site. The study also includes an assessment of the maximum noise levels at the nearest sensitive receivers surrounding the construction site and the number of truck movements during the night-time period in order to assess the potential for sleep disturbance.

Within the Noise and Vibration Technical Paper, the potential impact associated with heavy vehicle movements and construction traffic is assessed separately for each construction site. Where possible, heavy vehicle access routes to the proposed construction sites have been optimised to use major roads and site access and egress points have been located to minimise noise impacts on nearby receivers.

Other Construction Noise Impacts

The Noise and Vibration Technical Paper and Chapter 10 of EIS 1 include a detailed assessment of the likely construction activities at each construction site and major work phase. For each construction scenario, noise modelling has been undertaken at the nearest sensitive receivers and construction noise levels have been compared with the noise management levels. For each work site, feasible and reasonable mitigation measures have been identified to reduce the potential noise impacts. A summary of the site specific measures at each site is provided in Table 10.33 of EIS 1, with a revised set of mitigation measures provided in Chapter 7 of this report. The CNVS outlines the additional mitigation and management measures which would be adopted at each construction site where the residual noise levels are predicted to exceed the noise management levels.

During construction, noise and vibration impacts would be managed in accordance with the CNVS. In addition to the proposed site specific measures, the CNVS outlines a number of mitigation measures which would be implemented across all NWRL construction sites, plus a number of additional mitigation measures to be implemented where exceedances of the noise and vibration management levels remain. The form of additional mitigation measures is dependent on the residual exceedance after all other feasible and reasonable mitigation measures have been exhausted. The additional mitigation measures include additional consultation, attended monitoring, respite offers and, in situations with appreciable impacts during night-time periods, offers of alternative accommodation.

During the detailed construction planning stage, contractors would be required to develop a Construction Noise and Vibration Impact Statement (CNVIS) for each construction site and major work phase. As part of this assessment, consideration would be given to identifying other feasible and reasonable mitigation measures (if required) to minimise the potential impacts.

As part of the noise and vibration assessment undertaken for EIS 1, noise barriers 3m high were proposed around the perimeter of most of the construction sites. Special consideration was given to some sensitive receivers at the Cherrybrook Station construction site (6m high barrier) on the basis that the nearest residences are located closer to the proposed on site access road for night-time spoil removal operations compared with all other sites.

At Bella Vista Station construction site, consideration would be given (during the detailed construction planning phase) to locating the access route within the boundary of the construction site so that the perimeter noise barrier would reduce noise levels at the nearest residences.

An assessment of the potential vibration impacts associated with the proposed tunnelling activities is provided in Section 7.15 of the Noise and Vibration Technical Paper and within Chapter 10 of EIS 1. Vibration levels are predicted to be well below the 7.5 mm/s screening level (relating to the threshold where minor cosmetic damage may occur), and as such damage to any structures is considered unlikely.

During construction, there would be limited opportunities to reduce vibration levels. Where vibration levels have been predicted to exceed the cosmetic damage screening levels, alternative construction methods would be considered. Where tactile vibration levels are predicted to exceed the management levels, further mitigation measures would be considered in accordance with the CNVS to minimise the potential human comfort impacts. For the operation stage, a detailed assessment of the potential impacts and mitigation measures will be presented and assessed as part of EIS 2.

The airborne noise modelling for the construction stage has been undertaken based on neutral weather conditions. While weather does affect noise propagation, in a situation such as this where the worst-affected receivers are located close to construction sites, the effect of weather is insignificant.

- b.** Noise barriers would be constructed as early as possible during the construction stage. The construction contractor(s) would be required to maintain all noise barriers, including management of their acoustic performance.
- c.** The following quotation is taken from the introduction of the Interim Construction Noise Guideline (ICNG): *“...this Guideline has been developed to focus on applying a range of work practices most suited to minimise construction noise impacts, rather than focusing only on achieving numeric noise levels. While some noise from construction sites is inevitable, the aim of the Guideline is to protect the majority of residences and other sensitive land uses from noise pollution most of the time.”*

The ICNG has been adopted for the NWRL project to assess the potential impacts of the proposed construction activities and identify feasible and reasonable mitigation measures. In some cases, where sensitive receivers are located close to the proposed construction sites, EIS 1 identifies that exceedances of the Noise Management Levels are likely to occur for some activities, even after all feasible and reasonable mitigation measures have been implemented. The potential noise impacts would mostly occur during standard daytime construction hours. For sites where construction activities are proposed to be undertaken on a 24 hour per day basis, more stringent requirements and mitigation efforts would be required to limit the potential impacts. Hence, at most of the 24 hour per day construction sites, noise-generating activities at night are proposed to be undertaken within acoustic sheds to minimise potential impacts at nearby receivers and reduce the potential for sleep disturbance.

In relation to potential health impacts, it is noted that the noise management levels in the ICNG have been established in consultation with several government agencies including NSW Health. The Standards Australia committee was also consulted to address any potential inconsistencies between the Guideline and relevant standards.

The EPA's most recent guidance in relation to the potential health impacts associated with excessive environmental noise is contained in Section 5 of the NSW Road Noise Policy. The guideline acknowledges that “the short-term health effects of sleep disturbance due to excessive noise exposure can affect the quality of life during the subsequent waking hours” and that *“despite intensive research, the triggers for and effects of sleep disturbance have not yet been conclusively determined”*.

On the basis of the available research data, it is concluded that potential health impacts associated with excessive environmental noise are most likely to occur as a result of excessive

noise levels during the night-time period, causing potential sleep disturbance. Hence, within EIS 1, more stringent criteria, mitigation and management measures are applied for night-time periods.

Within the Noise and Vibration Technical Paper and Chapter 10 of EIS 1, an assessment of potential sleep disturbance has been undertaken for each construction site where night-time works are planned, with assessment criteria based on guidance levels established by Office of Environment and Heritage.

In summary, some noise from construction sites is inevitable. It is not possible to establish absolute criteria for sleep disturbance or health impacts. The focus is to carry out the majority of work during the daytime rather than during evening or night-time, and to reduce construction noise levels where it is feasible and reasonable to do so. The CNVS has been developed to identify additional mitigation and management measures – including respite offers and alternative accommodation when impacts are unacceptable.

For class rooms, a noise management level of 45 dBA (internal) is applicable. The ICNG notes that this level is appropriate based on the principle that activities within classrooms would not be unduly disturbed at this level.

- d. Refer to Section 7.7 of the Noise and Vibration Technical Paper and Chapter 10 of EIS 1 for potential impacts on human sensitive receivers. Noise impacts on animals have not been predicted and would vary between species and depending on how the animal is housed.
- e. Construction traffic noise impacts in the Cherrybrook area are described in Section 7.5 of the Noise and Vibration Technical Paper and Chapter 10 of EIS 1. Access and egress to and from the site would be via Castle Hill Road and Franklin Road. In relation to minimising disturbance to nearby residences from product deliveries, the CNVS includes the following requirements:
 - ❖ Loading and unloading of materials/deliveries is to occur as far as possible from sensitive receivers.
 - ❖ Select site access points and roads as far as possible away from sensitive receivers.
 - ❖ Dedicated loading/unloading areas to be shielded if close to sensitive receivers.
 - ❖ Delivery vehicles to be fitted with straps rather than chains for unloading, wherever possible.

Sufficient space is provided within the Cherrybrook Station construction site for parking of construction workers vehicles.

Actual construction noise impacts would vary considerably over time depending on the location of works and the equipment in use at any one time. EIS 1 states that *“for most construction activities, it is expected that the construction noise levels would be lower than predicted at the most-exposed receiver – as the noise levels presented in this report are based on a realistic worst-case assessment”*.

There are no Australian Standards which provide noise limits for construction works. Processes to manage and mitigate exceedances of the noise management levels are described in the CNVS.

The exact location and arrangement of noise barriers and sheds would be determined by the construction contractor(s).

Further detailed predictions of noise impacts and mitigation would be provided when the site-specific noise impact assessments (CNVIS) are prepared by the construction contractor(s) during the detailed construction planning phase. The CNVIS notes that where residents are subjected to lengthy periods of noise or vibration, they may be eligible for a project specific respite offer. Such mitigation measures may include temporary offers of alternative accommodation for night-time works, movie tickets, noise cancelling headsets or installing double-glazed / insulated windows to reduce noise reception for sensitive receivers. These would be determined during detailed construction planning, taking into consideration factors such as the predicted noise levels, the time at which the impacts would occur, the overall duration of the works and community views.

- f.** An assessment of the potential noise and vibration impacts at the Bella Vista Station and the Pre-cast sites is provided in Section 7.9 of the Noise and Vibration Technical Paper and Chapter 10 of EIS 1. For the proposed night-time works associated with spoil removal from the tunnels, noise levels are predicted to exceed the noise management levels by up to 3 dB at the nearest residences to the east of Memorial Avenue. The potential noise impacts are therefore not anticipated to be significant during the night-time period.

During the detailed construction planning stage, construction contractor(s) would be required to develop a CNVIS for each construction site and major work phase. As part of this assessment, consideration would be given to identifying other feasible and reasonable mitigation measures (if required) to minimise the potential impacts.

- g.** Construction noise impacts in the Cherrybrook area are described in Section 7.5 of the Noise and Vibration Technical Paper and Chapter 10 of EIS 1. Further detail on noise impacts and mitigation measures would be available in the detailed construction planning stage after preparation of the CNVIS. Construction activities for 24 hour per day are required at the Cherrybrook site to support the continuous operation of the Tunnel Boring Machines and for fire and life safety purposes to ventilate the tunnels where people are working.
- h.** Further detailed predictions of noise impacts and mitigation would be provided when the site-specific noise impact assessment (CNVIS) is prepared by the construction contractor(s) during the detailed construction planning phase. The CNVIS notes that where sensitive receivers are subjected to lengthy periods of noise or vibration, they may be eligible for a project specific respite offer. Such offers for child care facilities may include respite periods corresponding with rest times, or upgrading the noise mitigation performance of the external building façade to reduce indoor and outdoor noise levels. These would be determined during the detailed construction planning stage, taking into consideration factors such as the predicted noise levels, the time at which the impacts would occur, the overall duration of the works and community views.
- i.** During the detailed construction planning stage, construction contractor(s) would be required to develop a CNVIS for each construction site and major work phase. As part of this assessment, consideration would be given to 24 hour occupation of the Inala site.

In EIS 1, the night-time noise mitigation requirements at Cherrybrook are controlled by the residential receivers immediately adjacent to the site. Impacts on the Inala site (at a greater distance) are expected to be less than on the nearer residential receivers.

- j. The Noise and Vibration Technical Report and Chapter 10 of EIS 1 provide anticipated noise levels during construction works for receivers around Norwest Station construction site. Commercial buildings often provide a reasonable amount of attenuation of external noise by their nature, for example windows that cannot be opened.
- k. Noise impacts described in EIS 1 are predicted based on the location of works and stations described in the Project Description chapter (Chapter 7) of EIS 1.
- l. Noise and vibration impacts from tunnelling have been assessed on the basis of the current tunnel depth as described in the Noise and Vibration Technical Paper.
- m. Night-time noise management levels for residential receivers are described in EIS 1 and have been determined in accordance with NSW Government guidelines. Processes to manage and mitigate exceedances of the noise management levels are described in the CNVS which may include respite offers and alternative accommodation where reasonable.
- n. The proposed barrier heights have been determined on a site-specific basis with consideration of their effectiveness in reducing noise impacts. Higher barriers have been proposed where necessary, for example at Cherrybrook.
- o. Further detail on noise impacts and mitigation measures would be available in the detailed construction planning stage after preparation of the CNVIS for each construction site and major work phase. As part of this assessment, consideration would be given to identifying other feasible and reasonable mitigation measures (if required) to minimise the potential impacts.

5.5.7 Spoil and waste management

Stakeholder identification number(s) includes:
12, 82, 89, 154

◆ Issue description

- a. It is noted that there is asbestos contamination in the landfill above the netball courts near Cheltenham Oval.
- b. The current sewerage system at the Showground is inadequate for current use and the impact of the greater number of construction personnel using the existing system will have a substantial impact.
- c. Query regarding how run-off from the road resulting from the removal of spoil during excavation / tunnelling will be prevented from entering the Norwest Lake.
- d. Suggestion to consider other options to recover and transport excavated rocks to lessen impacts (e.g. heavy vehicle movements, noise and other pollution) on Robert Road residents.

◆ Response

- a. During the preparation of EIS 1, a search of the EPA contaminated land register and a review of previous reports were undertaken for the project site (refer to Section 8.3.8 of EIS 1). This background research did not identify any areas of concern at or nearby to the proposed Cheltenham Services Facility.

However a revised Geotechnical Interpretative Report (GIR) has been prepared since the exhibition of EIS 1, which notes that there is visual evidence of filling in the southern and western parts of Cheltenham Oval and is considered likely that cut to fill was undertaken on the site. The netball courts were also observed to be elevated on a fill platform that may have been constructed after the Oval. If the courts were constructed after the Oval, it is considered likely that the fill used to elevate the courts was imported. Anecdotal evidence provided to TfNSW indicates that there may be asbestos in the fill beneath the netball courts. It is considered that further assessment and / or waste classification may be required if excavation and offsite disposal of soil is to take place in this area, during the construction of the Cheltenham Services Facility.

In the event that previously unidentified contamination is discovered during construction works, an unexpected contamination find procedure would be implemented (to be developed by the construction contractor(s)) in accordance with mitigation measure SG14 (refer to Appendix C).

- b.** Any connections to existing sewerage services would require the approval from the relevant authority / asset owner.
- c.** Erosion and sediment control measures would be implemented for all disturbed areas and spoil stockpiles to prevent pollution of surrounding waterways.
- d.** Options were considered in relation to the transport of excavated material from tunnelling support sites. However, due to the location and lack of alternative transport modes, removal by heavy vehicle was considered the only viable option. Mitigation measures to reduce noise and other pollution are provided in the respective sections of EIS 1, with a revised set of mitigation measures provided in Chapter 7 of this report.

5.5.8 Traffic

Stakeholder identification number(s) including:

6, 10, 11, 27, 35, 42, 51, 55, 59-61, 64, 65, 67-69, 78, 82, 85, 87, 89, 91, 96, 98, 102, 104, 106-108, 110-112, 115, 123, 134, 135, 138, 141, 144, 145, 148, 156, 159, 160, 165, 171, 173, 184-226, 228, 232-254, 256-310, 312-314, 316, 324, 332, 339, 352

◆ Issue description

In summary, respondents raised the following issues:

- a.** Concerns that construction traffic generated by the project will have traffic impacts on residents in the Cherrybrook Station area (due to the location of the access / exit points), Norwest Station area, Castle Hill Station area, Bella Vista Station area (specifically Celebration Drive, Brighton Drive, and the roundabout at Celebration Drive and Lexington Drive), along Old Windsor Road and near the Balmoral Road and Memorial Avenue Construction Zones. Construction traffic will increase the volume of traffic and create delays and difficulties near access roads. Objection to construction traffic impacts on residents and local roads.

Concern the distance between the roundabout and the traffic signals at Old Windsor Road is such that it can only accommodate two trucks with trailers at any one time. Any vehicle trying to enter

the roundabout through Lexington Drive will be trapped due to additional traffic waiting to exit the roundabout from the proposed ingress / egress location for the construction site.

Concern Celebration Drive is not wide enough to accommodate construction vehicles simultaneously with parked vehicles servicing the local business district. Concern vehicles will overflow into adjoining residential street, further burdening local residents.

Request for a construction traffic monitoring scheme to be implemented and added as a requirement of the EIS.

Suggestion to consider traffic lights to be erected at the intersection of Brisbane Road and Old Northern Road to mitigate traffic constraints.

- b.** Construction traffic movements at the Epping Decline will cause major congestion on Beecroft Road. Concerns that construction traffic will increase the current demand on traffic signals which will further increase lengthy queues and congestion at Beecroft Road and Carlingford Road intersection.

Concerns regarding increased construction traffic associated with tunnelling activities from the Cherrybrook to Epping Decline. Request that tunnelling activities be restricted to Saturdays in order to reduce associated traffic impacts.

- c.** Concerns that the predicted construction traffic route to and from Cherrybrook Station via Castle Hill Road will be subject to change and any use of Robert Road for this purpose is not supported by locals.
- d.** Concerns that more traffic will be forced onto roads by removing the local netball courts in the Cheltenham area, as parents will be made to drive their children beyond the area to take part in sporting activities.
- e.** Calls for clarity/confirmation that Robert Road will be unaffected during the period of construction by traffic and staff parking generated by workers to and from the Cherrybrook Station site. Request that mitigation measures be undertaken to ensure traffic conditions on Robert Road are not worsened. Concerns regarding the hazards already experienced on Robert Road in its current form as well as the detrimental impact expected as a result of utilising Robert Road for any additional purpose such as access for light vehicles and provisioning for staff street parking. Concerns that Robert Road will be damaged as a result of construction traffic, which it was not designed to withstand. Concerns that way of life for residents will be impacted in this area and objection to these impacts on residents. Request for appropriate measures to be put in place to prevent foreseeable accidents and congestion.

Request that the use of Robert Road for construction traffic and parking be prohibited.

Concerns that construction traffic issues for the Cherrybrook area have not been adequately addressed and will affect traffic in the West Pennant Hills Valley area.

- f.** Query regarding how traffic will be controlled along Norwest Boulevard and Lexington Drive. Concerns because both roads are extremely busy and a reduction to one lane will result in major traffic issues within the Norwest Business Park. Concerns regarding traffic being redirected from Norwest Boulevard along Brookhollow Avenue during construction.

- g.** Concern raised over construction traffic impacts in the Cherrybrook area affecting the local child care centres, residential housing and disabled care facilities. Construction traffic will impact on the functioning of local child care centres car parking arrangements during peak traffic times (for drop off and pick up) during the hours 7.30am to 10.00am and between 4.00pm and 6.00pm. Concerns specifically relating to these facilities include safety, increased congestion and access impacts for both clients and staff.

Request for the following recommendations to be adopted to reduce potential construction impacts on these facilities:

- ❖ Franklin Road to be one-way south of Kayla Way.
 - ❖ Review the width of Franklin Road at its intersection with Castle Hill Road and immediate section with a view to upgrading and / or widening this section.
 - ❖ No parking on Franklin at Castle Hill Road end (already very narrow and increases risks).
- h.** Concerns that increased traffic will impact on local roads during construction of the Cheltenham Service Facility. Boronia Avenue, Oakland Avenue and Castle Howard Road are narrow roads that were not designed for large volumes of traffic. Concerns that the proposed access road will impact traffic flow on Kirkham Street and Franklin Road, causing congestion. Concerns that construction access from Castle Howard Road may increase traffic on Murray Road and Kirkham Road, where there are no traffic lights for exit.

Request for bus services for construction workers from Castle Towers and Pennant Hills station to reduce traffic impacts in this area.

- i.** Request that the set of traffic lights to be erected on Glenhope Road be removed once construction is finished. Concerns that the two proposed sets of traffic lights on Castle Hill Road will worsen traffic conditions. Suggestion to provide a pedestrian underpass into Cherrybrook Station to allow pedestrians to cross Castle Hill Road without delay to traffic.
- j.** Concerns regarding traffic issues for customers and stall holders at the Castle Hill Showground during construction.
- k.** Query regarding the definition of “light vehicles” and what levels of these vehicles are to be expected to use the proposed access via Boronia Avenue, Oaklands Avenue and Murray Farm Road. Question regarding the monitoring and policing of “light vehicle” restrictions.
- l.** Concerns regarding the increase of traffic through the West Pennant Hills Valley area once construction commences. Belief that traffic impacts were understated in EIS 1. Concerns that due to increased traffic on Castle Hill Road, motorists will take an alternative route through the West Pennant Hills Valley. Suggestion that traffic increases would occur not just at peak hour but also throughout the day.
- m.** Question regarding the location of the offsite storage of spoil for the proposed Cherrybrook Station, as this will affect construction traffic impacts. Should the spoil site be located to the east of the Franklin Road construction site, request for an extensive right turn bay; widening of Castle Hill Road; and, if required, a similar configuration at the Franklin Road lights.
- n.** Concerns regarding lack of information in EIS 1 about traffic management. Issues relating to traffic include local roads being narrow and already congested. Concerns about lack of consideration given to traffic management and mitigation, future demand for these roads, and

contemplation of road widening. Request for major roads such as Castle Hill Road, Windsor Road, Old Windsor Road, Old Northern Road and Pennant Hills Road to be off limits to construction vehicles.

- o. Concerns that residential roads in the Cheltenham area (Kirkham Street, Castle Howard Road, Murray Farm Road and the bridge over the M2 Motorway) are too narrow, winding and already congested for construction and emergency vehicle traffic and parking. Preference for construction traffic to access the proposed Cheltenham Intermediate Services Facility via M2 Motorway ramps.

◆ Response

- a. The construction activities would result in traffic impacts to residents in and around the NWRL construction sites. These impacts would be mitigated in accordance with the measures presented in EIS 1 and Chapter 7 of this report and the traffic management plans prepared throughout the construction phase.

The layout of the construction site would ensure that there is sufficient internal storage space for trucks and other vehicles to avoid queuing back into the roundabout or into Celebration Drive.

On-street car parking would be displaced along some sections of Celebration Drive however this is anticipated to be minor.

A series of Construction Traffic Management Plans would be prepared by the Principal Construction Contractors to facilitate the monitoring of traffic activity.

The provision of traffic lights at the intersection of Brisbane Road and Old Northern Road is not required in order to manage NWRL truck movements.

- b. The Epping Decline site is no longer proposed to be utilised by the NWRL project (refer to Chapter 6). Limiting tunnelling activities to Saturdays only would not be possible as it would extend the life of the project by many years.
- c. It is not proposed to use Robert Road for heavy vehicle access to and from the Cherrybrook Station construction site during the major civil construction works.
- d. Whilst some residents may choose to visit other netball facilities in the region during construction at the Cheltenham site, the potential change to the traffic environment from this is expected to be minor.
- e. It is not proposed to use Robert Road for heavy vehicle access to and from the Cherrybrook construction site during the major civil construction works. There would be some light vehicle traffic generated to and from the construction site via the section of Robert Road between the intersection with Castle Hill Road and the driveway access to the site. Traffic, pedestrian and other activities along this section of Robert Road would be managed via the appropriate Construction Traffic Management Plans.
- f. The Norwest Station box excavation has been realigned outside of Norwest Boulevard footprint. Therefore there would be no direct construction impacts to the roadway and the existing traffic capacity along Norwest Boulevard would be maintained throughout construction. However, there may be short periods outside of peak traffic periods when capacity is reduced. Traffic using Norwest Boulevard would not be re-routed via Brookhollow

Avenue, however some construction traffic would access the site via Brookhollow Avenue. This, and traffic along Celebration Drive at Bella Vista, would be managed in accordance with approved Construction Traffic Management Plans to be developed by the Principal Construction Contractors.

- g.** Construction traffic and pedestrian access along the section of Franklin Road between the intersection of Castle Hill Road and the site access driveway would be managed with regard to the sensitive land uses located along this local road. At this stage it is proposed that traffic on this section of Franklin Road continue to be two-way. This section of the Franklin Road carriageway would be widened to accommodate safe and efficient heavy vehicle access and pedestrian access. There is sufficient car parking space provided within the Cherrybrook Station construction site for construction workers. Vehicular and pedestrian access to and from the Inala facility in Franklin Road would not be impacted during construction.
- h.** Traffic access to and from the Cheltenham Services Facility construction site via local roads would be limited to light vehicles only. Kirkham Street is likely to accommodate heavy vehicle access. The forecast volume of light vehicles would be low and consistent with the function of these roads in the road hierarchy.

The use of shuttle buses to transport construction workers from Castle Towers and Pennant Hills Station (among other destinations) to the Cheltenham Services Facility construction site is an option that would be considered and addressed in the Construction Traffic Management Plans.

- i.** The provision of traffic signals post construction at the Glenhope Road / Castle Hill Road intersection would be subject to agreement with the roads authority as part of EIS 2. A pedestrian underpass of Castle Hill Road is not proposed as part of the NWRL project.
- j.** Access for customers and stall holders at the Castle Hill Showground during construction would be managed in accordance with approved Construction Traffic Management Plans to ensure conflicts are minimised.
- k.** Light vehicles are generally passenger cars, station wagons, utes and vans with a length not exceeding 5.4 metres. Monitoring arrangements would be implemented across the project in accordance with approved Construction Traffic Management Plans.
- l.** Heavy vehicles accessing the M2 / M7 would use Pennant Hills Road, Old Northern Road and Windsor Road. The use of local roads would be minimised as far as feasible. This would prevent increased construction traffic travelling through the West Pennant Hills Valley. Construction traffic would be generated during both the peak and off peaks periods, however, heavy vehicle arrivals and departures at sensitive locations would be limited during peak periods, where required.
- m.** Offsite spoil storage locations would be finalised by the construction contractor(s) during the detailed construction planning phase. All NWRL site access points and intersection modifications would be developed in consultation with Roads and Maritime Services to applicable road safety and design guidelines.
- n.** The broad approach to the management of heavy vehicles is to direct them via the higher order arterial road network and to minimise the use of local roads, except in those circumstances where small sections of non-arterial roads need to be used to gain access to and from the construction sites. For major roads such as Castle Hill Road, Windsor Road, Old Windsor

Road, Old Northern Road and Pennant Hills Road to be off limits to construction vehicles would be counter to this approach and would result in significant impacts on local roads and the surrounding receivers.

- o. Kirkham Street is able to accommodate heavy vehicle access to and from the Cheltenham Services Facility construction site without adverse impacts. There is the possibility that access could be provided via the M2 Motorway. Consultation with Roads and Maritime Services, the motorway operator (Hills M2) and Hornsby Shire Council are continuing regarding the M2 Motorway access.

5.5.9 Access

Stakeholder identification number(s) including:

79, 106, 108, 111, 118, 122, 131, 134, 140, 143, 149, 154, 160-165, 177, 230, 255, 303, 317, 323, 330, 336, 342, 352

◆ Issue description

In summary, respondents raised the following issues:

- a. Objection to the use of residential roads (including Robert Road and roads in the Cheltenham area) for construction access and the removal of spoil as these roads are not designed for this purpose. Belief that other access points proposed for the Cherrybrook Station construction site are sufficient without the additional use of Robert Road.

Concerns emergency vehicles would not be able to access the proposed Cheltenham Intermediate Services Facility due to limitations of Castle Howard Road.

Request that construction vehicle access to the proposed Cheltenham Intermediate Services Facility site is via the on and off ramps from the M2 Motorway onto Beecroft Road which is adjacent to the site, rather than an access road off Kirkham Street or Castle Howard Road. Suggestion that taking this option would be well timed as the M2 Motorway is currently a construction site.

- b. Access to the Showground off Showground Road is considered problematic as it is a very congested arterial road with no access to any other development between Carrington Road and Victoria Avenue. Castle Hill and Hills District Agricultural Society do not support this proposal and request that a separate access road should be provided off Carrington Road between the construction site and The Hills Centre.

Question regarding access alternatives to the Castle Hill Showground. Suggestion that access would be easier via the Carrington Road and Middleton Road roundabouts or off Carrington Road. Suggestion that directional signage could be useful to assist access to the Showground.

Question raised if an alternative to the haulage road through the Showground had been considered using a conveyor system across Cattai Creek, between factories, to trucks in Anella Avenue / Salisbury Road.

Understanding that Doran Drive will be closed, therefore an alternative access will be required. As the proposed haul road traffic lights on Showground Road at the bottom of the hill will only cater for spoil trucks, query regarding what provision will be made to allow traffic in and

out of the showground at that entrance. Access via the council car park will not allow large horse floats to enter the horse area parking.

- c. There is strong support for the continuance of safe and efficient cycling access throughout the construction period and request early consultation with NWRL team members to avoid any threats to existing cycling routes as a result of the construction.
- d. Consideration should be given to relocating the Balmoral Road Construction Zone southern access to further west towards Old Windsor Road and relocating the northern access to further west towards Old Windsor Road away from residents. Concern that there is already a high demand on the road network within the vicinity of Celebration Drive and Balmoral Road near the proposed access point to the construction site. Request for consideration to relocate the Memorial Road Construction Zone access and egress points to the west of the proposed location away from residents. Relocating these access points would assist in reducing impacts on surrounding properties.

Suggestion that alternative arrangements regarding ingress/egress of construction vehicle including trucks for the removal of spoil should be made via the existing Transitway parallel to Old Windsor Road and/or the existing access through Cumberlege Lane.

- e. Regarding access to the proposed Cherrybrook Station from the west along Castle Hill Road – suggestion that the proposal incorporates a new ingress lane built alongside Castle Hill Road within the Additional Construction Zone, to allow traffic heading east in the direction of Thompsons Corner to easily exit Castle Hill Road and flow freely into Cherrybrook Station without the need for traffic signals. This ingress lane would commence just after Robert Road. Given that during the morning peak hour traffic it is normal for traffic heading east on Castle Hill Road to be free flowing up until Edward Bennett Drive, an ingress lane would allow traffic to continue flowing freely along Castle Hill Road and into the Cherrybrook Station, without causing an added hold up that any traffic signals would otherwise create. Exiting traffic can easily and smoothly flow out of the station at the east end turning right onto Franklin Rd. Traffic lights at this point can allow traffic to turn either left or right onto Castle Hill Rd. Regarding access to Cherrybrook Station from the east along Castle Hill Road - propose an additional “Right Hand Turn Only” lane on Castle Hill Road at the Glenhope Road traffic signals (as shown in EIS 1) could easily manage the traffic needing to enter the station. Alternatively, by taking advantage of the natural contour of the land around Cherrybrook Station, it may also be possible to create an egress lane off Castle Hill Road heading west which descends under Castle Hill Road and into Cherrybrook Station, again avoiding the need for further traffic signals.

It is important to note that these proposals utilise the traffic signals proposed by NWRL in EIS 1. To achieve this no further access is required from Robert Road.

- f. Concern raised over access to the Inala Residential and Administration site during construction as Gate 1, the only access point to the main car park, is directly opposite the proposed work site. Although there are two access points (Gate 1 and Gate 2) to the site, there is no internal access between the gates. Gates 1 and 2 of the Inala facilities provide access for emergency vehicles and access is required at all times during construction.

Gate 1 of the Inala facilities provides all access for service contractors, administration, staff, deliveries, Group Home clients and staff. This access needs to remain available as it is not

possible to relocate services from this area. Consideration needs to be given to this when the placement of the gate for access to the work site is decided. Concern raised over the impact on staff members' ability to access and exit the Inala Residential and Administration site (access through Gate 2).

Request that the following recommendations be adopted to reduce potential construction impacts on the Inala and Dulkara facilities. No truck entry or exit on Franklin Road. All truck movements should be via the entry from Castle Hill Road (Glenhope Road). Arrangements should be made to allow the continuation of the use of Gate 1 for garbage and delivery trucks.

- g.** Concerns that existing levels of access to properties should be maintained on Castle Hill Road and Robert Road, specifically if construction traffic is using these roads for access to construction sites. Concern that the design of existing properties along Robert Road with garages typically constructed at a six metre setback from the road, many on a steep grade, will limit the opportunity to extend Robert Road along its present western alignment as any reduction in driveway length will result in the inability of homeowners to access their garages.
- h.** Concerns regarding difficulty in accessing existing medical practices by foot if the McMullen Avenue and Old Northern Road footpaths are damaged from heavy machinery and truck movements.
- i.** Support for access and egress to the proposed Cherrybrook Station from Franklin Road with traffic signals.
- j.** Request that consideration be given to alternative access to the construction site so entry would be directly from Castle Hill Road rather than Franklin Road.
- k.** Concerns regarding the access/egress road from the proposed Hills Centre Station. Belief the access/egress road would be more suitable intersecting with Gilbert and Showground Roads as opposed to intersecting at MacDonald Bridge on Showground Road. Request that the amended access road be made permanent during operation.
- l.** Objection to proposed access road (area not specified).
- m.** Request for road access to dog rings and access to storage areas underneath building at the Showground.
- n.** Concerns regarding limited access to Cheltenham Oval during construction.
- o.** Suggestion from resident to acquire his property and change access point for the Cheltenham Intermediate Services Facility to run through this property.
- p.** Concerns regarding impacts on access and egress to the Showground from Carrington Road. Belief that there is no existing access from Showground Road, contrary to statements in EIS 1. Request for clarity about whether the access point to the Showground is for the life of construction or permanent.

◆ Response

- a.** Robert Road, as well as local roads in the Cheltenham area, would accommodate light vehicle movements only, consistent with their current function in the road network.

Emergency vehicle access to and from the Cheltenham Intermediate Services Facility would be presented and assessed as part of EIS 2.

Access arrangements to and from Cheltenham Services Facility construction site are still being investigated in consultation with Roads and Maritime Services, the motorway operator (Hills M2) and Hornsby Shire Council. It is anticipated that construction works for the M2 Motorway Upgrade works would be completed prior to NWRL construction commencing.

- b.** Access direct to Showground Road would best meet the access and construction needs of the NWRL project by providing all movements direct access onto an arterial road. Carrington Road is not designed to accommodate all the construction traffic generated by the Hills Centre Station construction site.

Anella Avenue and Salisbury Road are non-arterial roads serving an existing industrial area. Routing construction traffic through this industrial area would not be feasible based on traffic flow efficiency and safety grounds.

Doran Drive would accommodate access and egress to and from the NWRL construction site only. Alternative Showground access would be provided via the council car park which would be designed to accommodate larger and longer vehicles.

- c.** The needs of pedestrians and cyclists at all construction sites would be addressed in more detail in the approved Construction Traffic Management Plans which would be developed by the Principal Construction Contractor(s).
- d.** The exact location of access and egress points to and from the Balmoral Road construction site would be subject to consultation with Roads and Maritime Services and would be defined and documented in more detail in the approved Construction Traffic Management Plans.

Use of sections of the T-Way for construction traffic may not be appropriate nor would the use of local roads.

- e.** Building a new ingress lane alongside Castle Hill Road to accommodate eastbound heavy vehicle access is unlikely to be feasible considering the constrained size of the Cherrybrook Station construction site and the available space between Castle Hill Road and the proposed location of the Cherrybrook station box. A free flowing ingress lane would present significant road safety and truck management issues on the Castle Hill frontage to the site. Similarly, the cost of an egress lane off Castle Hill Road for westbound traffic which descends under Castle Hill Road would be prohibitive. Additionally, such a grade separated lane could only be achieved at the expense of valuable construction site area and is likely to conflict with the proposed station box location.

- f.** Construction traffic and pedestrian access along the section of Franklin Road between the intersection of Castle Hill Road and the site access driveway would be managed with regard to the sensitive land uses located along this local road. At this stage it is proposed that traffic in this section of Franklin Road continue to be two-way. This section of the Franklin Road carriageway would be widened to accommodate safe and efficient heavy vehicle access and

pedestrian access. Sufficient car parking would be provided within the Cherrybrook station construction site for construction workers. Vehicular and pedestrian access to and from the Inala facility in Franklin Road would not be impacted during construction.

- g.** As only light vehicle access would be accommodated to and from the Cherrybrook site via Robert Road, no widening of the existing carriageway is envisaged for the purposes of construction. Any required changes to arrangements in Robert Road for the operational stage would be presented and assessed as part of EIS 2.
- h.** The footpaths around the Castle Hill Station construction site would be maintained to facilitate safe pedestrian access at all times consistent with the approved Construction Traffic Management Plans which would be developed by the Principal Construction Contractor(s).
- i.** Noted.
- j.** Franklin Road would be required to be used to accommodate construction traffic access to and from the Cherrybrook Station construction site. Whilst the majority of heavy vehicles would be off Castle Hill Road, accommodating all access directly via Castle Hill Road would have unacceptable impacts on traffic flow along Castle Hill Road.
- k.** Providing construction traffic access and egress to and from the Hills Centre Station construction site via the existing intersection of Gilbert Road and Showground Road would result in significant impacts to the Showground precinct, including the demolition / relocation of one or more Showground buildings. Such an arrangement would also increase the likelihood of mixed construction traffic and Showground traffic.
- l.** The proposed access roads for the construction sites have been developed taking into consideration the impacts to surrounding receivers, impacts to the surrounding traffic environment, safety for construction workers and general road users, and constructability requirements.
- m.** Access for customers and stall holders at the Castle Hill Showground during construction would be managed in accordance with approved Construction Traffic Management Plans to ensure conflicts are minimised.
- n.** Vehicular and pedestrian access and egress to and from Cheltenham Oval would be maintained during construction.
- o.** Noted.
- p.** The proposed access from the Hills Centre Station construction site to Showground Road largely follows an existing road (requiring upgrading) which has an informal access directly off Showground Road. Vehicular access and egress to and from the Hills Centre Station post construction would be presented and assessed as part of EIS 2.

5.5.10 Public Safety

Stakeholder identification number(s) including:

35, 42, 45, 46, 51, 63-65, 69, 72, 81, 82, 84, 87, 96, 98, 99, 106, 108, 125, 134, 138, 140, 141, 143, 146, 154, 156, 160, 165, 173, 184-228, 230, 232-250, 252-254, 256-302, 304-310, 312-314, 316, 330, 332, 336-339, 352

◆ Issue description

In summary, respondents raised the following issues:

- a. Concerns regarding security of the proposed Cherrybrook Station construction site. Request for a buffer zone/fencing to protect residents from trespass from the construction zone and car parking area, in addition to protecting from the impacts of dust, noise and visual amenity. Request that this buffer zone be at least 20 metres from the existing rear boundary fences of Oliver Way.
- b. The proposed Tallawong Road Stabling Facility will raise serious road safety issues within the surrounding area. Concerns for the public safety of commuters and community/members due to the location of the entry / exit points at Cherrybrook Station on Franklin Road. A large amount of pedestrians on Franklin Road, some of which are very young children or children physical disabilities frequent the area. The Inala School for People with Special Needs and the Tangara School are both located on Franklin Road and the students are considered at risk from increased traffic generated by the project both during construction and operation.
- c. Request for the EIS to be revised to include fire safety provisions (as published in AS 4825 Tunnel Fire Safety Specification) for the project, including provision of internal safe places, operational control, emergency services access and ventilation openings, particularly in regards to the tunnels in Epping and Cherrybrook. Tunnel fire safety requirements may impose extensive additional civil works.
- d. Concerns regarding the risk of traffic accidents due to increased construction vehicles and the loss of parking at Cheltenham Oval. In particular, the intersection of Beecroft Road and Kirkham Street (no traffic lights) is unsuitable for trucks and emergency vehicles and will become dangerous for pedestrians and other traffic. This intersection already experiences pedestrian safety issues and an increase in heavy traffic will exacerbate this situation. Further concerns regarding trucks and emergency vehicles using local, winding roads and preference to use the M2 on and off access option as a safer alternative to keep heavy vehicles off local streets. In the event of an emergency, emergency vehicles will not have quick access to the site from areas outside Beecroft and Cheltenham which is concerning as this area is serviced by only one fire engine. Concerns that pedestrian safety will be compromised by altered traffic conditions in the area. The Cheltenham Oval area is used by many sporting groups and children, therefore, the area is considered to be totally unsuited to heavy vehicles as the safety of the community would be at risk. Specifically, concerns for public safety if traffic increases along Castle Howard Road as pedestrians walk along the road to access Cheltenham Oval and pedestrians exercising with headphones along Kirkham Street who may not hear the approaching construction traffic.

- e. Concerns regarding parking issues in streets surrounding the proposed Cherrybrook Station. The construction site would have safety impacts on motorists and users of the local child care facilities.
- f. The bottom gate from the showground that opens onto Showground Road just north of MacDonald's Bridge is of great concern to those people who manage parking and entry/exit during events at Castle Hill showground. The approach to the gate is on a blind bend at the bottom of a hill which means that vehicles exiting this gate have poor vision of approaching traffic and almost immediately have to cross a bridge with no breakdown lane and then climb a hill and potentially change lanes to turn right at traffic lights. As vehicles turning left at the gate are necessarily moving slowly they become both a traffic hazard and also the likely cause of a rear end collision from traffic coming down the hill in the left hand lane at a fast pace. If traffic lights are installed they would have to be installed in such a way that the show traffic would not conflict with the haul traffic during the construction period.
- g. There is a significant problem with theft and vandalism after show hours at the Showground. Consideration should be given to additional policing required for construction site security during the Show.
- h. Concern raised over the impact on residents of the Inala Residential site from increased traffic volumes in Franklin Road – noise, dust, fumes, vibration and truck movements and pedestrian safety.
- i. The following issues need to be addressed for dealing with resident safety at Inala Residential site in Cherrybrook during the construction period. Regarding general safety, none of the Inala residents are able to identify and manage community risks. With regard to road safety, Inala residents do not have any road safety skills nor are they able to be educated in these. Inala residents have a particular interest in what is going on in their environment and would be attracted to truck movements, noise and the general activity of a construction site. Suggestion that significant hoarding would be required, designed in a way that Inala residents are not aware of ongoing works.
- j. Concern raised over potential pedestrian and vehicle conflicts resulting from increased construction traffic on deliveries, staff and client parents or carers of the Inala and Dulkara facilities. Additional concern over pedestrian safety of clients walking between the Inala and Dulkara facilities. Concern raised that the location and scale of the Cherrybrook construction facilities will result in a heightened level of curiosity in some Inala and Dulkara residents causing safety concerns and that in their attempt to satisfy their curiosity some residents may unlawfully enter the construction site, posing a serious risk to both themselves and construction personnel. Request for the following recommendations to be adopted to reduce potential construction impacts on the Inala and Dulkara facilities: Fenced pedestrian pathway down the left hand side of Franklin Road; Colourbond fencing on Inala boundaries on Franklin and Castle Hill Roads; and education of site workers to provide awareness, understanding and respect for the special needs of Inala's clients.
- k. Concerns that increased traffic and parking along Robert Road during construction will become dangerous for local drivers, pedestrians and children. Travelling in and out of Robert Road would have the potential to be dangerous and difficult. Questioned what measures would be taken to ensure resident safety. Suggestion to use County Drive and John Road instead.

- l.** Concerns that any increase in heavy vehicles at the intersection of Pennant Hills Road and Castle Hill Road will further exacerbate the existing pedestrian safety problems.
- m.** Concerns regarding the lack of safety procedures mentioned in EIS 1 that address the safety of residents, businesses and fauna during the construction of the Bella Vista Station. Request for a management plan to be made available for viewing on the safety procedures to be implemented.
- n.** Concerns that noise barriers erected at the proposed Cherrybrook Station during construction will be targets for vandalism and graffiti.
- o.** Concerns regarding safety features of tunnels. Question regarding how emergencies will be handled during construction.
- p.** Concerns relating to safety risks at Showground Road as heavy vehicles and equipment entering at the proposed location would be in an unsafe position.
- q.** Concerns construction staff parking on Franklin Road, as indicated in the EIS, will increase potential safety implications of students attending Tangara Girls School.
- r.** Concerns that the security, health and comfort of patients of the Shirley Road Chiropractic clinic is at risk due to construction activities and construction traffic. Particularly because many patients are families with babies, elderly or have restricted mobility and increased heavy traffic along Brookhollow Avenue may present a dangerous situation.
- s.** Concerns that the safety and wellbeing of club members and animals of the Agility Dog Club will be at risk.
- t.** Concerns regarding traffic safety on Castle Hill Road and the dangerous intersection at Franklin Road. Request for improved road alignments and sightlines to improve traffic safety during construction of the proposed Cherrybrook Station. Request that Castle Hill Road be straightened. Concerns regarding safety risks due to pedestrians and cyclists crossing Castle Hill Road through moving traffic if an overpass is not provided, in order to avoid a significant wait.
- u.** Concerns regarding safety of children walking to school near the Cherrybrook construction site.
- v.** Concerns regarding safety of students and dogs during construction. Request to enclose proposed haulage road at the proposed Hills Centre construction site to ensure safety of dogs, children and general pedestrians.

◆ Response

- a.** All construction sites would be secured by fencing or hoarding designed to prevent any trespass into construction zones. Additionally, Cherrybrook Station construction site would initially be used 24 hours per day, seven days per week, thereby having construction staff present at all times which would minimise safety and security issues.
- b.** Road safety requirements during the major civil works have been assessed as part of the traffic and transport assessment within EIS 1. This assessment does not anticipate any significant impacts. Consultation has also occurred with Roads and Maritime Services throughout this process, with no specific road safety issues identified around the Tallawong Road Stabling

Facility. Road safety and traffic impacts associated with the operation of the Tallawong Road Stabling Facility will be presented and assessed as part of EIS 2.

The safety of pedestrians is paramount at every construction site. As part of the ongoing consultation with Roads and Maritime Services and local councils, traffic management plans, including schemes to ensure pedestrian safety, are being discussed. This includes any necessary adjustments to the locations of access and egress points to and from the construction sites as well as adjustments to the surrounding road network where there are safety concerns. All works would comply with road safety design and management criteria.

- c.** The requirements relating to fire safety provisions, internal safe places, operations control, emergency services access, and vent opening have been included in the concept design. Details of these have been provided to the Fire and Rescue NSW for review.
- d.** The NWRL project preference is to use arterial roads for heavy vehicles where feasible and reasonable. Access and egress to and from the M2 Motorway is currently being discussed with key stakeholders, including Roads and Maritime Services, the motorway operator (Hills M2) and Hornsby Shire Council. The construction access to Kirkham Street would result in no heavy vehicles using Castle Howard Road or other adjoining local roads although these roads would be used by light vehicles for construction staff. There would be an increase in heavy vehicle movements along Kirkham Street onto Beecroft Road which has been assessed as part of EIS 1 as manageable with the implementation of the mitigation measures (refer to Chapter 7).

The safety of pedestrians is paramount at every construction site. As part of the ongoing work with Roads and Maritime Services and local councils, traffic management plans, including schemes to manage pedestrian safety, are being discussed. This includes any necessary adjustments to the locations of access and egress points to and from the construction sites as well as adjustments to the surrounding road network where there are safety concerns.

The Kirkham Street / Beecroft Road intersection was included in the EIS 1 Construction Traffic Assessment which determined that heavy vehicles would only be able to turn left onto Beecroft Road.

- e.** The safety of pedestrians is paramount at every construction site. As part of the ongoing work with Roads and Maritime Services and local councils, traffic management plans, including schemes to manage pedestrian safety, are being discussed. This includes any necessary adjustments to the locations of access and egress points to and from the construction sites as well as adjustments to the surrounding road network where there are safety concerns. Sufficient parking for the construction workers would be provided within the construction site.
- f.** During construction the signalised traffic lights and the access near Cattai Creek would be for construction heavy vehicles only. This new intersection would be designed to comply with road safety requirements. Alternative arrangements for the Showground users would be developed in consultation with The Hills Shire Council. Special events would be catered for during construction with the new access arrangements.
- g.** All construction sites would be secured by fencing or hoarding designed to prevent any trespass into construction zones.
- h.** The potential impacts associated with noise, dust, fumes, vibration have been assessed as part of EIS 1. Construction contractors would be required to implement the mitigation measures

detailed within EIS 1, with a revised set provided in Chapter 7 of this report in order to minimise and manage these impacts.

The safety of pedestrians is paramount at every construction site. As part of the ongoing work with Roads and Maritime Services and local councils, traffic management plans, including schemes to manage pedestrian safety, are being discussed. This includes any necessary adjustments to the locations of access and egress points to and from the construction sites as well as adjustments to the surrounding road network where there are safety concerns.

- i.** TfNSW is currently engaged in ongoing discussions regarding the safety of Inala residents. All construction sites would be secured by fencing or hoarding designed to prevent any trespass into construction zones.

The safety of pedestrians is paramount at every construction site. As part of the ongoing work with Roads and Maritime Services and local councils, traffic management plans, including schemes to manage pedestrian safety, are being discussed. This includes any necessary adjustments to the locations of access and egress points to and from the construction sites as well as adjustments to the surrounding road network where there are safety concerns.

- j.** TfNSW is currently engaged in ongoing discussions regarding the safety of Inala residents. All construction sites would be secured by fencing or hoarding designed to prevent any trespass into construction zones.

The safety of pedestrians is paramount at every construction site. As part of the ongoing work with Roads and Maritime Services and local councils, traffic management plans, including schemes to manage pedestrian safety, are being discussed. This includes any necessary adjustments to the locations of access and egress points to and from the construction sites as well as adjustments to the surrounding road network where there are safety concerns.

- k.** Construction access and egress to and from the Cherrybrook construction site is proposed from Castle Hill Road opposite Glenhope Road via a new signalised intersection, as well as from Franklin Road via a new signalised intersection. Sufficient parking for the construction workers would be provided within the Cherrybrook construction site.
- l.** This intersection is currently signalised and managed to meet pedestrian safety requirements. Whilst some heavy vehicles associated with the project would utilise this intersection, no changes to the intersection are proposed.
- m.** NWRL contractors would be bound by statutory requirements to manage the safety of workers on site as well as the public. The Principal Construction Contractor(s) would be responsible for preparing detailed safety management documentation and construction traffic management plans for all construction activities being undertaken.
- n.** As detailed in the Construction Environmental Management Framework (refer to Appendix C), the Principal Construction Contractor would be required to manage vandalism and graffiti of hoarding and noise walls.
- o.** Emergency procedures during construction have been allowed for in the determination of construction site locations and the design of underground infrastructure. These have been discussed with relevant emergency services. The details of these would be developed and confirmed by the Principal Construction Contractor and agreed to by emergency services. All procedures would be required to comply with relevant legislation and codes of practice.

- p.** The construction access onto Showground Road from the Hills Centre Station construction site would be designed to comply with Roads and Maritime Services design and safety standards.
- q.** Sufficient parking for the construction workers would be provided within the Cherrybrook Station construction site.
- r.** The safety of pedestrians is paramount at every construction site. As part of the ongoing work with Roads and Maritime Services and local councils, traffic management plans, including schemes to manage pedestrian safety, are being discussed. This includes any necessary adjustments to the locations of access and egress points to and from the construction sites as well as adjustments to the surrounding road network where there are safety concerns.
- s.** The safety of the pedestrians and surrounding land users is paramount at every construction site. Arrangements for Showground users and stakeholders during construction would be developed in consultation with the affected parties.
- t.** The construction access from Castle Hill Road and Franklin Road from the Cherrybrook Station construction site would be designed to comply with Roads and Maritime Services design and safety standards. Realigning of Castle Hill Road is not proposed as part of this project.

The safety of pedestrians is paramount at every construction site. As part of the ongoing work with Roads and Maritime Services and local councils, traffic management plans, including schemes to manage pedestrian safety, are being discussed. This includes any necessary adjustments to the locations of access and egress points to and from the construction sites as well as adjustments to the surrounding road network where there are safety concerns.

- u.** The safety of pedestrians is paramount at every construction site. As part of the ongoing work with Roads and Maritime Services and local councils, traffic management plans, including schemes to manage pedestrian safety, are being discussed. This includes any necessary adjustments to the locations of access and egress points to and from the construction sites as well as adjustments to the surrounding road network where there are safety concerns. Footpaths and walking routes would remain open, with traffic movement across them controlled by traffic control.
- v.** The safety of pedestrians is paramount at every construction site. As part of the ongoing work with Roads and Maritime Services and local councils, traffic management plans, including schemes to manage pedestrian safety, are being discussed. This includes any necessary adjustments to the locations of access and egress points to and from the construction sites as well as adjustments to the surrounding road network where there are safety concerns. Arrangements for Showground users and stakeholders during construction would be developed in consultation with the affected parties. The proposed access road would be fenced along its entire length.

5.5.11 Tunnelling

Stakeholder identification number(s) including:
39, 89, 317

◆ Issue description

In summary, respondents raised the following issues:

- a. Request for further investigations to be undertaken on the groundwater flows within the surrounding area of Cherrybrook Station. Calls for assurance that potential impacts will be managed to ensure tunnel construction and operation will not affect groundwater flows/subsurface conditions of properties in the area.
- b. Request for NWRL to confirm the depth of tunnels below the natural surface for each affected strata scheme.
- c. Suggestion to use more than one TBM to fast track the project and reduce the impact on residents.

◆ Response

- a. The ground conditions at the proposed Cherrybrook Station fall from a local high point at the Castle Hill-Franklin Road intersection, at approximately 185m AHD, to the northern extent of the station site at 160m AHD. An ephemeral creek is located along the western boundary. There is generally poor drainage of the site.

Concentrations of Contaminants of Potential Concern (CoPC) in groundwater samples taken from the proposed Cherrybrook Station were generally typical of background concentrations with the exception of trace levels of Total Petroleum Hydrocarbon (TPH) in borehole NWR-BH015A. This anomalous detection is considered likely to be naturally occurring.

Large vertical gradients in hydraulic head are apparent in the elevated area around the Cherrybrook Station, indicating downward groundwater movement. This part of the alignment occurs along a catchment divide in a recharge area. In this area the Wianamatta Group has a shallow water table that is most likely sustained by rainfall recharge. Moving away from Cherrybrook Station in either direction, vertical gradients decrease and groundwater flow becomes more horizontal.

The excavation depth for the station is approximately 7m to 14m. Based on the shallow groundwater table in the shale at the site (6m) the design of the station should account for this with retaining structures and subsurface drainage.

A significant effect on groundwater flow direction is not expected at this site as Cherrybrook Station is on a ridgeline in a groundwater recharge area with variable groundwater levels and downward groundwater movement.

Full details on groundwater conditions as investigated to date are included within the clarification section of this report (refer to Chapter 2).

- b. The project comprises twin rail tunnels within a 60 metre corridor. The precise horizontal alignment and vertical alignment (depth) are subject to further detailed technical studies. The

EIS presents a nominal horizontal alignment. The approximate depth below ground surface of the proposed track level tunnel and the existing surface level (in mAHD), is displayed for numerous points along the alignment on the Geological Long Section provided as Appendix A. The long section can be used to give an indicative depth below ground surface for the track level for all points along the alignment. Further details will be provided in EIS 2.

- c. It is anticipated that two separate TBM excavation sequences (two TBMs for each sequence, ie four TBMs in total) would occur concurrently, as described in more detail in Section 7.7.2 of EIS 1, both travelling from west to east.

Two TBMs, one for each tunnel, would travel from the portal near Bella Vista Station to Cherrybrook Station via the Hills Centre Station. The initial drive would be approximately 4km from the Bella Vista portal to the Hills Centre Station where the TBMs would undergo a maintenance program within the confines of the proposed Hills Centre Station box (the excavation for the future Hills Centre Station). The two TBMs would then be driven another 5km from the Hills Centre Station to Cherrybrook Station. The two TBMs would be dismantled and retrieved through the Cherrybrook Station excavation.

Concurrently with the above operation, two TBMs would also be driven from Cherrybrook Station to the Epping Services Facility. The two TBMs would then be dismantled, with the cutter head components retrieved through the excavation at the Epping Decline site. The remainder of the TBM components would be pulled back to Cherrybrook Station for retrieval.

5.5.12 Land use and community facilities

Stakeholder identification number(s) including:

10, 11, 13, 14, 19, 25, 35, 38, 43, 50-52, 64, 65, 74, 75, 80, 81, 83, 84, 90, 92-95, 99, 110, 114, 124, 128, 129, 132, 134, 141, 143, 145, 147, 148, 150-152, 156, 158, 171, 184-226, 230, 232-254, 256-310, 312-314, 316, 323, 346

◆ Issue description

In summary, respondents raised the following issues:

- a. Objection to the loss of the children's playground, netball courts, tennis courts, cricket practice facility and already limited parking during the construction of the proposed Cheltenham Intermediate Services Facility. Calls to protect sporting facilities in the area. Cheltenham Oval is the main sporting/recreational facility in Beecroft, Cheltenham and Epping. The loss of this facility for three years during construction would heavily impact the surrounding residents, including children.

Concerns regarding the lack of clarity in EIS 1 regarding impacts on these community facilities during construction and how these impacts have been assessed and justified. Query around what alternative sites were considered and why they were not chosen.

Requests for an alternative location to be considered (e.g. relocate the site 500m to the west, previous old Scout hall site or next to Kirkham Street, north of the road bridge) and/or nearby courts/facilities in the Beecroft/Cheltenham area be offered to counteract these impacts. Suggested alternative locations include:

- ❖ Extension of Cheltenham Oval to allow construction to occur on site but still allow the existing facilities to be utilised.
- ❖ Use the other side of the oval which was initially cleared for a car park but is not in use.
- ❖ The Cheltenham Recreation Club.
- ❖ The Cheltenham Girls School.
- ❖ Lyne Road Reserve.

Request that temporary buildings erected during construction do not encroach on the oval as it would render the oval useless for anything other than junior cricket. Request for replacement of existing facilities in the areas that are utilised for sporting purposes which will be affected or removed by construction at the proposed Cheltenham Intermediate Services Facility, including cricket nets, toilet facilities, change room facilities, storage facilities and spectator/player shelter.

- b.** Concerns that once the proposed Cheltenham Intermediate Services Facility is complete, there will be little room left to rebuild the netball courts due to the structures, Water Treatment Plant and access roads. Request for a guarantee that these facilities will be replaced.
- c.** Support for the proposed location of the Balmoral Road Construction Zone. This area has been zoned for new housing and the proposed construction zone makes good use of the land. The location of the construction zone makes use of the natural slope of the land and sound barrier created by the hill to the east of the construction site.
- d.** Concerns that the impact of the proposed Hills Centre Station will be felt by locals as the Showground holds a very special place in the hearts of residents and calls for its heritage to be protected and preserved. Preference for the site to be moved back to the southern option in order to reduce the impact.
- e.** EIS 1 makes no provision for the replacement of the Horticulture Pavilion at the Showground and makes no provision for the timely relocation of facilities. A number of individuals / groups / clubs utilise the facility including Judo Club, Sheep Pavilion, Cattle and Donkey rings, Cattle Pavilion, Horticulture Workshop, Animal Nursery and Trotting stables and these operations will be impacted. Concerns there are no suitable alternative venues available (outside the construction zone) within the showground.
- f.** Concerns that residents nearby the Balmoral Road and Memorial Avenue Construction Zones will experience loss of amenities during both preliminary work and construction work which will impact quality of life. Residents who watch birdlife and their daily activities/lifecycles will no longer be able to do so.
- g.** The bushland under threat by the proposed Cheltenham Intermediate Services Facility and haul road is used and loved by both locals and wider community. In particular, children of the area need a safe, open space and 'natural' bushland to appreciate what is worth saving. Calls to protect what little open space is left in the area. The bushland is also currently used for recreational purposes (eg bushwalking, dog walking, local bushland regeneration) in Cheltenham and is a vital connection to Beecroft. Preference to use the M2 on and off ramp option to mitigate community facility impacts. Also concerns regarding the clearing of trees along the Murray Road easement to provide an access road for light vehicles off Castle Howard Road. This easement is part of the Beecroft/Cheltenham walking track and is a popular alternative to access the oval as Castle Howard Road has no pedestrian foot paths.

◆ Response

- a.** The location of the Cheltenham Services Facility has been carefully assessed and chosen as the most viable option out of 17 locations. Considerations for this decision included distance from the running tunnels, property acquisition requirements, operational management for the purpose of emergency access/egress, draught relief and maintenance, vegetation, residential properties and community facilities, access and cost of construction and functioning. It is acknowledged that the Services Facility site would replace some existing community facilities and this has been taken into account during the initial location evaluations. These facilities include a children's playground, netball courts, tennis courts, cricket practice nets and already limited parking. Despite this, this location is considered to have the least impact to the community while still being viable from an operational perspective. The design of the Cheltenham Services Facility has been modified to minimise biophysical and amenity impacts based on consultation with Hornsby Shire Council. The options assessment undertaken with regards to Cheltenham Services Facility Site is presented in Section 7.9.3 of EIS 1.

Mitigation measures are currently being considered to alleviate the impact to the community facilities with ongoing consultation with Cheltenham Oval user groups. The purpose of the consultation is to identify appropriate post-construction configuration and facilities for sporting activities. Additionally, consultation with stakeholders of Beecroft Reserve is being undertaken to identify appropriate adjustments to walking trails during both the construction and operational phases. Enhancements or modifications to the trail network would also be considered as part of this process. As part of this consultation a range of different options would be considered including the relocation of facilities. The outcomes of this consultation will be presented in EIS 2.

- b.** TfNSW would undertake ongoing consultation with relevant stakeholders to determine the final outcome for the replacement community facilities at Cheltenham.
- c.** Kellyville station, located within close proximity to the Balmoral Road Construction Zone, has been designed to ensure minimal disruption to the existing land uses, and successful integration with the new growth proposed within the area.
- d.** The Hills Centre Station location has been decided after extensive deliberation and assessment of different options. The current location has been selected as it is deemed to have the minimum impact on the Showground and would allow the area to maintain its full functionality. The original (northern) Hills Centre Station location would severely impact on Cattai Creek, as well as having potential impacts on the functionality of the Showground. No heritage items would be demolished at this location.
- e.** Construction of the project requires a significant construction site at the Hills Centre station site, which would result in the demolition of up to five showground buildings/structures, although the potential to avoid demolition would be investigated as part of more detailed construction planning. To mitigate the loss of up to five buildings and/or structures within the construction site, the activities undertaken within the demolished buildings/structures would be accommodated within existing Showground buildings. Where this is not possible, new facilities would be constructed in a location within the Showground Precinct in consultation with users and The Hills Shire Council (where reasonable and feasible). As a last resort, alternative facilities offsite would be investigated in consultation with users and The Hills Shire Council. The detailed design, placement and transition to new facilities would be undertaken prior to construction.

- f.** Construction within the Balmoral Road and Memorial Avenue Construction Zones would have adverse impacts on the residential area to the west, however these would be mitigated using best practice construction methodologies and would be maintained to an acceptable level. Birds within this construction area would be disturbed and move on, however the area of disturbance to birds is very narrow. A vast area, encompassing the Balmoral Road Release Area would be disturbed due to unrelated residential development.
- g.** The amount of bushland proposed to be cleared for the service facility has been kept to the minimum amount required to access the site and undertake the construction works.

The final access arrangements to the site would be made after consultation with all relevant stakeholders including Roads and Maritime Services and the M2 Motorway operator (Hills M2), taking into account the range of benefits and impacts associated with each option.

The proposed light vehicle access to the Cheltenham Site via the Murray Road reservation has been deleted from the project (refer to Chapter 6).

5.5.13 Surface water and flooding

Stakeholder identification number(s) including:
48, 255

Stakeholder identification number(s) including:
16, 25, 96, 154, 321, 338

◆ Issue description

In summary, respondents raised the following issues:

- a.** The possible contamination of Devlins Creek during construction is a concern. The proposed water treatment plant within the Cheltenham Intermediate Services Facility is located where an existing stormwater drain pipe under the M2 leads into Devlins Creek. Sullage pits located along the M2 are used to clean up water from the pavement prior to it entering any of the local creeks.
- b.** It should be acknowledged there is a registered drainage easement near Schofields Road which the project team should be aware of during construction.
- c.** The area surrounding the bottom gate from the showground that opens onto Showground Road just north of MacDonald's Bridge is poorly drained and the volume of traffic during events creates a soft muddy surface which often bogs vehicles and also carries considerable amounts of mud onto Showground Road creating a traffic hazard.
- d.** Concerns regarding drainage from the Cherrybrook Station construction site. Requested assurance that the necessary drainage will not impact surrounding properties and that the current retention pit located in Cherrybrook Way is maintained. Suggestion to construct new retention pits where necessary.
- e.** Concerns regarding wastewater management and control.
- f.** Request for assurance that necessary drainage from the construction area will not impact residences in Oliver Way. Drainage pits in Oliver Way and Cherry Haven Way are only designed to take street and household stormwater and are already experiencing issues in recent times due to an increase of stormwater.

◆ Response

- a. A Surface Water Management Plan would be prepared and implemented as part of the construction stage of the project. This plan would include details of measures to be implemented to manage the quality of runoff from the project, surface water monitoring, impact trigger, definition and response actions for all watercourses potentially impacted by the project including Devlins Creek.
- b. Any existing drainage easements or watercourses of potential consequence to the construction works would be properly addressed within construction documentation (specifically the Soil and Water Management Plan).
- c. An access point to the construction site for the proposed Hills Centre Station is proposed in the location of an existing informal internal dirt road which opens onto Showground Road in the vicinity of MacDonalds Bridge. The use of this access point to Showground Road would require the internal road to be upgraded, with probable grading and widening, introduction of a hard wearing surface and use of a rumble grid. Mitigation required specifically for haul roads in construction are described in mitigation measures A12-A16 in Chapter 7.
- d. It is known that there is generally poor drainage of the Cherrybrook Station construction site. Ground conditions at the proposed Cherrybrook Station fall from a local high point at the Castle Hill-Franklin Road intersection, at approximately 185m AHD, to the northern extent of the station site at 160m AHD. An ephemeral creek is located along the western boundary.

New sediment basins would be required, and preliminary sediment basin sizings for the Cherrybrook Station construction site have been provided in Table D1 of Technical Paper 6 of EIS 1, based conservatively on disturbance of entire construction sites. The volume required could be offset by the use of alternative measures such as bunded swales, staging of works and stabilisation of areas. On this basis, the estimated volumes provide an indication of the upper bound size of total basin volume required at each location.

Calculations were carried out in accordance with Section 6.3 of the Landcom Managing Urban Stormwater - Soils and Construction Volumes 1 and 2 (often referred to as the Blue Book, 2004 and 2006). A modified Table D1 is presented below, incorporating an updated basin volume for the Cherrybrook Station site.

Preliminary Sediment Basin Sizing

Construction Site	Site Area (hectares)	Preliminary Sediment Basin Volume (m3)
4. Cherrybrook Station	7.5	2810

Also on each construction site, as required by mitigation measure SW14 (refer to Chapter 7), water quality mitigation measures would be implemented in accordance with relevant requirements of:

- ❖ Landcom Managing Urban Stormwater - Soils and Construction Volumes 1 and 2 (often referred to as the Blue Book, 2004 and 2006).
- ❖ NOW Guidelines for Controlled Activities.
- ❖ ANZECC Guidelines for Fresh and Marine Water Quality.
- ❖ ANZECC Guidelines for Water Quality Monitoring and Reporting.

- ❖ *Water Management Act 2000.*
 - ❖ Applicable Environment Protection Licences.
- e.** The NWRL has the potential to cause adverse impacts to water quality and soil and erosion. These potential impacts are discussed within EIS 1 and would be addressed at the construction stage through the implementation of a Soil and Water Management Plan which would be developed by the Principal Construction Contractor.
- f.** The proposed mitigation measures regarding waste water from construction and control of potential soil and water impacts are detailed in Chapters 8.5 and 18.5 in EIS 1, with revised mitigation measures presented in Chapter 7 of this report.

Storm water and surface water flow from construction sites would not generally create an additional stormwater load on surrounding areas, however captured stormwater on construction sites would require treatment (such as in sediment basins) and discharge off site.

Also as required by mitigation measure SW14 (refer to Chapter 7), water quality mitigation measures would be implemented in accordance with relevant requirements of:

- ❖ Landcom Managing Urban Stormwater - Soils and Construction Volumes 1 and 2 (often referred to as the Blue Book, 2004 and 2006).
- ❖ NOW Guidelines for Controlled Activities.
- ❖ ANZECC Guidelines for Fresh and Marine Water Quality.
- ❖ ANZECC Guidelines for Water Quality Monitoring and Reporting.
- ❖ *Water Management Act 2000.*
- ❖ Applicable Environment Protection Licences.

5.5.14 Cumulative impacts

Stakeholder identification number(s) including:

10, 11, 14, 19, 25, 37, 38, 41, 46, 50, 51, 64, 65, 74, 83, 84, 90, 99, 104, 110, 119, 126, 128, 129, 133, 137, 145, 152, 177, 184-226, 230, 232-250, 252-254, 256-302, 304-310, 312-314, 316

◆ Issue description

In summary, respondents raised the following issues:

- a.** Concerns that the combined impact of NWRL, the M2 upgrade and the Epping to Thornleigh Freight Track is condensed to one area.
- b.** Concerns regarding properties within the vicinity of Cheltenham Intermediate Services Facility that are continuing to decline in value due to proposals such as NWRL and Castle Howard Conservation Reserve (which contains the Blackbutt Gully Forest) being repeatedly impacted by projects of this nature - M2 Motorway in 1995, M2 Upgrade 2011, the Epping to Thornleigh Freight track and again for this project. Impacts from the construction of the Kirkham Street access and haul road for the facility and removal of further bushland is unacceptable, both on the environment (including vegetation removal and impacts on local creeks/waterways) and the community (including local sporting facility impacts, property value impacts and noise impacts).

- c. Concerns that residents living directly opposite the Tallawong Road Stabling Facility will be severely impacted due to the overlap of construction with the Roads and Maritime Services Schofields Road Upgrade (2012 to at least 2016). This overlap period will generate excessive impacts condensed to the one area.

◆ Response

- a. Chapter 20 of EIS 1 details the cumulative impact assessment undertaken for the project. This assessment took into account other known projects based on currently available information. This assessment considered the potential cumulative impacts associated with the Northern Sydney Freight Corridor (Epping to Thornleigh Freight Track). Construction of the M2 Upgrade is due for completion well before substantial works would commence on the NWRL. The cumulative impact assessment provides the following mitigation relating to managing cumulative impacts during construction:

“As part of the CEMP TfNSW would identify all other significant developments occurring in the vicinity of the construction sites and identify environmental impacts to be monitored during construction which have the potential for cumulative effects to occur. TfNSW would review environmental impacts every six months during the construction phase. Any new impacts identified during construction would be addressed appropriately to reduce the cumulative effects and reported”.

Additionally, Section 8.2(b) of the Construction Environmental Management Framework (refer to Appendix C) proposes the formation of a Central Project Coordination Committee which would coordinate NWRL works with other major developments.

- b. Chapter 20 of EIS 1 details the cumulative impact assessment undertaken for the project. This assessment took into account other known projects based on currently available information. This assessment considered the potential cumulative impacts associated with the Northern Sydney Freight Corridor (Epping to Thornleigh Freight Track). Construction of the M2 Upgrade is due for completion well before substantial works would commence on the NWRL.

Various chapters of EIS 1 provide mitigation measures to manage the potential impacts around the Cheltenham Services Facility, including a commitment to rehabilitate the surrounding bushland.

- c. Chapter 20 of EIS 1 details the cumulative impact assessment undertaken for the project. This assessment took into account other known projects based on currently available information. This assessment considered the potential cumulative impacts associated with the Schofields Road Upgrade. The cumulative impact assessment provides the following mitigation relating to managing cumulative impacts during construction:

“As part of the CEMP TfNSW would identify all other significant developments occurring in the vicinity of the construction sites and identify environmental impacts to be monitored during construction which have the potential for cumulative effects to occur. TfNSW would review environmental impacts every six months during the construction phase. Any new impacts identified during construction would be addressed appropriately to reduce the cumulative effects and reported”.

Additionally, Section 8.2(b) of the Construction Environmental Management Framework (refer to Appendix C) proposes the formation of a Central Project Coordination Committee which would coordinate NWRL works with other major developments.

5.6 Property

5.6.1 Property acquisition

Stakeholder identification number(s) including:
6, 85, 108, 139, 142, 151, 154, 332, 338

◆ Issue description

In summary, respondents raised the following issues:

- a. Concerns regarding the number of properties to be resumed and impacts on property owners. Suggestion that fair and reasonable compensation, including a premium for inconvenience in addition to fair market value for properties be paid to existing owners and clarity is sought on which properties will be acquired as a result of the project.
- b. The Budokan Judo Club propose a list of specific requirements to relocate their current operations and would benefit from direct consultation within the next 1 – 2 months to allow sufficient time to provide its members assurance of next steps while mitigating the risk of loss of membership. Budokan's ongoing viability is at risk now and assurances for its athletes (and their parents) are required now in order to ease uncertainty for members.
- c. Detailed property adjustment plans are expected to be provided to Castle Hill and Hills District Agricultural Society to allow formal agreement to be reached on alterations to Showground. It should be noted that alternative accommodation should be provided prior to the dismantling of any of the existing facilities. One of the major impacts to the Showground is to the Horticulture and Cattle buildings and it would not seem appropriate to relocate these facilities twice. Whilst the construction is being undertaken at existing Showground facilities, alternatives will need to be provided elsewhere on the Showground to enable the show to proceed each year (also applies to other uses of these facilities which occur throughout the year, eg Judo, Dog Shows).
- d. Concerns that property would need to be acquired because Robert Road will need to be widened to accommodate traffic to the proposed Cherrybrook Station. Further concerns that easements of local properties will be reduced because Robert Road will need to be widened to accommodate traffic to the proposed Cherrybrook Station.
- e. Concerns relating to compulsory property acquisitions of residences in Cherry Haven Way.

◆ Response

- a. Those parties with an interest in land, ie property owners and tenants, have compensation entitlements. Those entitlements are assessed with regards to legal obligations of the acquiring authority as set out in the *Land Acquisition (Just Terms Compensation) Act 1991*.
- b. Construction of the project requires a significant construction site at the Hills Centre station site, which would result in the demolition of up to five showground buildings/structures, although the potential to avoid demolition would be investigated as part of more detailed construction planning. To mitigate the loss of up to five buildings and/or structures within the construction site, the activities undertaken within the demolished buildings/structures would be accommodated within existing Showground buildings. Where this is not possible, new

facilities would be constructed in a location within the Showground Precinct in consultation with users and The Hills Shire Council (where reasonable and feasible). As a last resort, alternative facilities offsite would be investigated in consultation with users and The Hills Shire Council. The detailed design, placement and transition to new facilities would be undertaken prior to construction.

- c. Property adjustment plans would be provided to Castle Hill and Hills District Agricultural Society during the detailed phase of the project. Consultation would continue with the Castle Hill and Hills District Agricultural Society in relation to operation of the Showground during construction and in the long-term.
- d. Traffic management associated with the station precinct designs will be presented and assessed as part of EIS 2.
- e. Those parties with an interest in land i.e. property owners and tenants have compensation entitlements. Those entitlements are assessed with regards to legal obligations of the acquiring authority as set out in the *Land Acquisition (Just Terms Compensation) Act 1991*.

5.6.2 Property value

Stakeholder identification number(s) including:

6, 10, 27, 51, 55, 61, 62, 66, 82, 87, 96, 101, 102, 106, 115, 123, 125, 130, 138, 139, 142, 143, 145, 163, 171, 177, 303, 319, 329, 336, 338-341, 343, 344

◆ Issue description

In summary, respondents raised the following issues:

- a. Concerns regarding loss of property value due to increased footprint, traffic, noise, visual and air quality impacts due to construction and the proposed Cherrybrook Station. Objection to any devaluation of properties and request for compensation should this occur.
- b. Concerns that the proposed NWRL viaduct method and associated noise will impact property values.
- c. Objection to the decline in property values due to the project.
- d. Opposition to the proposed station at Bella Vista and the impacts its position will have on surrounding property values. Residents would not have purchased properties in the area if they had known of the station site. In particular, objection to the proposed location of Bella Vista Station as the community adjacent to the station is Bella Vista Waters estate. Residents of this estate paid high prices to live in such an area without impact from a proposed railway.
- e. Properties in the vicinity of the Balmoral Road and Memorial Avenue Construction Zones are already experiencing hardship and cannot be sold as a result of the project. Developments have also been unable to occur due to the project (including connections to local utilities which cannot occur until the project has made appropriate arrangements in the area with Sydney Water). Calls for NWRL to fast track development of water and sewerage connections on these sites so properties in the area can be sold comparable to the market value. Residents should be entitled to compensation or restoration for the impact on property values in the area and for excessive periods of exposure to construction impacts.

- f.** Concerns that the use of Robert Road in any capacity other than its current form, including impacts from increased traffic, noise, dust and the station location being closer to the road, will lead to a diminution in the value of properties on Robert Road and surrounding roads such as Oliver Way. Concerns properties will not be able to sell due to the unknown, decreased amenity and ongoing construction issues. Resumption of property is unacceptable. Decreasing or removing the footpaths is expensive, dangerous to pedestrians and is likely to destroy the local values. Concern that any proposal to widen Robert Road as a major road access to the Cherrybrook Station will severely impact on property owners' ability to access their properties, decrease privacy and will subsequently result in a very significant devaluation of properties. Request for compensation to be provided if residents sell their properties during or after construction, to account for loss of property value due to the NWRL.
- g.** Concerns that the proposed Cheltenham Intermediate Services Facility will decrease property values of surrounding residences due to the loss of amenities, particularly along Castle Howard Road, during construction and operation. Suggestion to acquire affected properties due to decreased value from impacts of NWRL.
- h.** Concerns that property value will decrease due to a tunnel existing underneath the property. Questioned if compensation will be offered for the decrease in property value.
- i.** Concerns that property and rental value will be reduced in the Castle Hill area and no compensation will be offered.

◆ Response

- a.** Any impacts during construction are temporary in nature. Over the long-term the proximity to a rail station would be anticipated to have a positive impact on property prices.
- b.** Any impacts during construction are temporary in nature. Operational impacts associated with the viaduct will be presented and assessed as part of EIS 2.
- c.** Over the long-term the proximity to a rail station would be anticipated to have a positive impact on property prices.
- d.** Over the long-term the proximity to a rail station would be anticipated to have a positive impact on property prices.
- e.** Properties continue to be sold for sub-division / development in this locality and developments are underway on nearby land.
- f.** Those parties with an interest in land, i.e. property owners and tenants have compensation entitlements. Those entitlements are assessed with regards to legal obligations of the acquiring authority as set out in the *Land Acquisition (Just Terms Compensation) Act 1991*.
- g.** Any impacts during construction are temporary in nature. Operational impacts will be presented and assessed as part of EIS 2.
- h.** A decline in property values above the tunnels has not been evident along the Epping to Chatswood Rail Line.
- i.** Over the long-term the proximity to a rail station would be anticipated to have a positive impact on property prices.

5.6.3 Property condition surveys

Stakeholder identification number(s) including:
78, 89, 115, 123, 165, 321

Issue description

In summary, respondents raised the following issues:

- a. Request for property condition surveys prior to construction in order to properly compensate residents whose properties may be damaged, including all houses in Kayla Way, Cherrybrook. Query regarding whether there will be compensation for the cost of independent assessment of properties. Request that dilapidation reports are conducted by suitably qualified engineers on properties within a 200 metre radius of the construction site. Recommendation that a monitoring service be implemented to carry out regular inspections throughout construction.

◆ Response

- a. Mitigation measures for ground movement are described in SG1 – SG7 in Chapter 8.5 of EIS 1 with revised mitigation measures provided in Chapter 7 of this report. These mitigation measures include the requirement to establish settlement criteria in consultation with relevant government authorities, and to undertake detailed geotechnical modelling, condition surveys of buildings and structures in the vicinity of the tunnel and station excavations and monitoring of ground settlement. Rectification works would be required where monitoring indicates exceedance of settlement criteria.

Buildings that are potentially at risk of threshold or cosmetic damage from vibration would be identified by the construction contractor(s) prior to the commencement of construction works. At these locations, impacts would be managed in accordance with the procedures outlined in the Construction Noise and Vibration Strategy (CNVS) which may require building condition surveys to be conducted before the commencement of construction activities and after construction is completed.

5.6.4 Property damage

Stakeholder identification number(s) including:
10, 89, 106, 115, 125, 144, 317, 321, 342

◆ Issue description

In summary, respondents raised the following issues:

- a. Residents of Robert Road call for NWRL to fund the following:
 - ❖ The cost of an independent expert to assess and report on the foundation of properties prior to construction.
 - ❖ The cost of an independent expert to assess and report on the foundation of properties during construction if the owner reasonably believes that the foundations of properties have been affected as a result of the works carried out.

- ❖ The cost of an independent expert to assess and report on the foundation of properties post construction.
- ❖ The cost of repairing properties to their original state if affected by the works carried out.
- b.** Question raised over how long NWRL will accept liability for potential cracking / damage to buildings and will NWRL accept the cost to rectify building damage caused by construction and operation activities.
- c.** Questioned if NWRL indemnify property owners for the cost of repairs and damage to property resulting from rail operation.
- d.** Concerns regarding damage of properties in close proximity of the Castle Hill Station construction site. This includes the Northpoint Apartment complex as the south-eastern corner of the proposed Crossover Cavern is located 20 metres below the north-west corner of the complex. Seeking a guarantee that there will be no structural or other damage to the building as a result of tunnel boring and other construction activities, and that regular monitoring will be conducted.
- e.** Concerns regarding property damage as a result of construction activities of the proposed Cherrybrook Station. Request for compensation for affected property owners.
- f.** Question regarding whether residents will receive compensation for property damaged during construction

◆ Response

- a.** Potential for impacts to existing structures have been identified in EIS 1. These include impacts from ground movement associated with tunnelling and excavation and from construction vibration.

Mitigation measures for ground movement are described in SG1-SG7 in Chapter 8.5 of EIS 1 with revised mitigation measures provided in Chapter 7 of this report. These mitigation measures include the requirement for condition surveys of buildings and structures in the vicinity of the tunnel and station excavations and monitoring of ground settlement.

Additionally, buildings that are potentially at risk of threshold or cosmetic damage from construction vibration would be identified by the construction contractor(s) prior to the commencement of construction works. These locations may require building condition surveys to be conducted before the commencement of construction activities and after construction is completed (to be defined by the CNVS). Consultation with property owners would be undertaken where there is potential for impact or where undertaking building condition surveys is needed.
- b.** Building condition surveys would be undertaken for structures deemed to be at risk from ground movement and / or construction vibration. These surveys would be important in defining any potential damage which may occur at a later date.
- c.** Potential for impacts to existing structures have been identified in EIS 1. These include impacts from ground movement associated with tunnelling and excavation and from construction vibration.

Additional studies to confirm potential impacts for ground movement and construction vibration would be undertaken as part of detailed construction planning and, where impacts are predicted to be significant, appropriate mitigation measures would be developed and implemented. In terms of construction impacts, rectification works would be required where ground movement monitoring indicates exceedance of settlement criteria and damage is caused as a direct result of NWRL construction activities.

Potential impacts from rail operation will be presented and assessed as part of EIS 2.

- d. While no guarantee can be provided at this stage as to potential impacts to property overlying the proposed tunnelling and excavation, preliminary ground movement contours indicate potential impacts of between 5mm to 20mm of settlement in immediate areas surrounding station locations and above some sections of shallow tunnels or tunnels through poorer ground conditions. No built structures are estimated to incur ground settlement of greater than 20mm (with >20mm indicating a potentially high level of impact), with maximum rates of settlement predicted to occur immediately adjacent to station box excavations.

Estimates of potential ground movement would be further developed during detailed construction planning and all structures above the tunnelling work areas would be identified and assessed in detail so that ground support required could be identified and implemented as required.

Monitoring of settlement would be undertaken and is a requirement of EIS 1 as detailed in mitigation measures SG5 and SG6 (refer to Chapter 7):

“SG5: Monitoring of ground settlement would include installation and monitoring of instrumentation that could include inclinometers, extensometers and surface settlement points at construction sites and along the alignment during construction and for a period of not less than six months after settlement has stabilised with particular reference to risk areas.”

“SG6: Where monitoring during construction indicates exceedance of settlement criteria (or variations to these criteria as agreed through agency consultation), all work affecting settlement would cease immediately and would not resume until fully rectified or a revised method of work has been established to ensure protection of affected structures.”

Rectification works would be required where monitoring indicates exceedance of settlement criteria and damage is caused as a direct result of NWRL construction activities.

- e. Section 8.4.1 and Table 8.3 in EIS 1 discusses the potential impacts in relation to ground movement. In Table 8.3 the potential impacts in regards to the proposed Cherrybrook Station are described as ground movement caused by temporary or permanent wall movements.

Preliminary ground movement contours indicate potential impacts of between 5mm to 20mm of settlement in immediate areas surrounding station locations and above some sections of shallow tunnels or tunnels through poorer ground conditions. No built structures are estimated to incur ground settlement of greater than 20mm (with >20mm indicating a potentially high level of impact), with maximum rates of settlement predicted to occur immediately adjacent to station box excavations.

Estimates of potential ground movement would be further developed during detailed construction planning and all structures above the tunnelling work areas would be identified

and assessed in detail so that ground support required could be identified and implemented as required.

While ground settlement would be small and unlikely to cause major distress to existing nearby surface and underground structures along the route, appropriate design requirements and mitigation measures would be required to avoid unacceptable impacts.

Mitigation measures provided in EIS 1 for ground movement are described in SG1-SG7 in Chapter 8.5 of EIS 1 with revised mitigation measures provided in Chapter 7 of this report. These mitigation measures include the requirement to establish settlement criteria in consultation with relevant government authorities, and to undertake detailed geotechnical modelling, condition surveys of buildings and structures in the vicinity of the tunnel and station excavations and monitoring of ground settlement.

Additionally, buildings that are potentially at risk of threshold or cosmetic damage from construction vibration would be identified by the construction contractor(s) prior to the commencement of construction works. At these locations, impacts would be managed in accordance with the procedures outlined in the CNVS which may require building condition surveys to be conducted before the commencement of construction activities and after construction is completed.

Rectification works would be required where monitoring indicates exceedance of settlement criteria and damage is caused as a direct result of NWRL construction activities.

- f.** Potential for impacts to existing structures have been identified in EIS 1. These include impacts from ground movement associated with tunnelling and excavation and from construction vibration.

Additional studies to confirm potential impacts for ground movement and construction vibration would be undertaken as part of detailed construction planning, and where impacts are predicted to be significant appropriate mitigation measures would need to be developed and implemented.

Mitigation measures for ground movement are described in SG1-SG7 in Section 8.5 of EIS 1 with revised mitigation measures provided in Chapter 7 of this report. These mitigation measures include the requirement for condition surveys of buildings and structures in the vicinity of the tunnel and station excavations and monitoring of ground settlement.

Buildings that are potentially at risk of threshold or cosmetic damage from vibration would be identified by the contractor prior to the commencement of construction works. At these locations, impacts would be managed in accordance with the procedures outlined in the CNVS which may require building condition surveys to be conducted before the commencement of construction activities and after construction is completed.

Rectification works would be required where monitoring indicates exceedance of settlement criteria and damage is caused as a direct result of NWRL construction activities.

5.7 Transport

5.7.1 Network capacity

Stakeholder identification number(s) including:
41

◆ Issue description

In summary, respondents raised the following issues:

- a. Argument that the 20 trains per hour capacity limitation over the Harbour Bridge to accommodate trains from the North West is incorrect and at least 26 trains per hour can be accommodated without major new infrastructure. Proposed that this is only possible by quadrupling the section from Chatswood to St Leonards (all formation and structures for this already exist except for Artarmon Station), fully utilising the existing four platforms at North Sydney as through platforms (the centre platforms are only used for terminating a limited number of trains for stabling and speeds are restricted), opening the existing unused platforms (numbers one and two) at Wynyard and linking them to the existing bridge approach.

◆ Response

- a. The future rail network strategy was announced by the NSW Government in June 2012 as “Sydney’s Rail Future”. The Sydney’s Rail Future document explains how network capacity issues will be addressed in the short term and in the more distant future, including the line section from Chatswood to the CBD, which is currently limited to 20 trains per hour by signalling technology and double deck train loading / unloading times. NWRL would initially be built as a rapid transit service offering high frequency train services between Cudgegong Road and Chatswood. Under Sydney’s Rail Future, the NWRL would be extended in the future via a new harbour crossing to provide a significant increase in north-south rail capacity across the harbour and through the CBD. This new line would potentially provide capacity for more than 20 trains per hour in addition to the existing Harbour Bridge capacity, and provides a long term solution for the network. A TfNSW team is being established to examine the options for the harbour crossing route and its connections to the existing network.

5.7.2 Parking availability

Stakeholder identification number(s) including:
15, 69, 89, 108, 134, 139, 140, 143, 145, 147, 154, 165, 228, 330, 336

◆ Issue description

In summary, respondents raised the following issues:

- a. Parking will be constrained during construction due to lack of parking options for existing residents and additional traffic generated by construction, particularly in Bella Vista (including Brighton Drive). Suggestion for residential permit parking to be applied and all construction vehicles restricted from parking within designated onsite parking areas to reduce potential parking issues on local roads.

- b.** Concerns regarding insufficient parking availability with the proposed haulage road at the Hills Centre Station construction site. Further concerns that the loss of parking areas will force the Castle Hill and Hills District Agricultural Society to possibly restrict parking to officials and exhibitors only during the Show. This would force Show patrons to park elsewhere on the local streets. The Society requests compensation for the loss of parking during the construction stage. This could take the form of a bus shuttle from alternative parking areas within the vicinity.

There will be approximately 400 car spaces removed in the areas adjacent to the Hills Centre parking, the area below the Stables and the area below the Cattle Ring and adjacent to the cattle loading ramp. This does not include car spaces that will be lost with the building of the haul road. The area available for parking of horse floats will be approximately halved. Consideration will need to be given to finding additional parking space for horse floats over and above what will remain available on the showground. Request for replacement of parking lost during construction of the proposed access road to the Hills Centre station with sufficient lighting for night parking.

- c.** As there will be no room for visitor parking on the showground during the annual Show period, request for the area opposite the pedestrian gate on Showground Road and adjacent to the Tennis Courts on Gilbert Road, be set aside for visitor parking. Parking is required for approximately 800 - 1000 car at any one time. It may be necessary to park cars in other locations of the Fred Caterson Reserve and this would necessitate the operation of a shuttle bus and cancelling of activities at these venues during show time to allow sufficient car parking space. The cost of the shuttle bus to be paid by the NWRL.
- d.** Question raised asking how contractor parking will be managed during construction, in particular in the Norwest Business Park area.
- e.** Concerns regarding parking availability during construction of proposed Cherrybrook Station for residents of local streets including Robert Road. Suggestion that parking be restricted for non-residents or restricted residential-only access to Robert Road be enforced during construction to discourage contractors and workers from using on-street parking.
- f.** Concerns regarding the loss of parking facilities during construction of the proposed Cheltenham Intermediate Services Facility.
- g.** Concerns EIS 1 did not address parking issues associated with construction vehicles.
- h.** Concerns that construction workers and trucks parking on Brookhollow Avenue will prevent customers from being able to park near Shirley Road Chiropractic Clinic in Norwest.
- i.** Concerns regarding parking on Castle Howard Road due to construction impacts. Suggestion parking could be made available in Murray and Cheltenham Roads, with access for pedestrians via these roads as well.
- j.** Calls for The Hills Shire Council to be consulted regarding parking restrictions being implemented within 200 metres of the construction works through local roads and introducing resident parking only.

◆ Response

- a. The Bella Vista Station construction site (Figure 7.19 within EIS 1) provides for significant parking for the construction workforce. It is not anticipated that any construction workers would be required to park on the local roads surrounding the Bella Vista Station construction site.
- b. It is acknowledged that existing car parking would be lost during the construction period at the Hills Centre Station site. EIS 1 (Section 9.4.6) states that alternative parking could be provided within the Showground during the construction phase however, this would require liaison with The Hills Shire Council, lessee of the Hills Centre and the Castle Hill and Hills District Agricultural Society regarding location and usage patterns.
- c. It is acknowledged that existing car parking would be lost during the construction period at the Hills Centre Station site. EIS 1 (Section 9.4.6) states that alternative parking could be provided within the Showground during the construction phase however, this would require liaison with The Hills Shire Council, lessee of the Hills Centre and Castle Hill Show Society regarding location and usage patterns.
- d. Construction worker parking would be provided within each of the construction sites, however it is acknowledged that some sites are constrained and would not have capacity for parking for all construction workers. Mitigation measure T9 (refer to Chapter 7) states that the need for, and provision of, alternative remote parking locations and shuttle bus transfers for daytime and night time construction staff would be considered for all construction sites during detailed construction planning.
- e. The Cherrybrook Station construction site (Figure 7.15 within EIS 1) provides for parking for the construction workforce. It is not anticipated that any construction workers would be required to park on the local roads surrounding the Cherrybrook Station construction site.
- f. Whilst there would be some loss of parking at the Cheltenham Services Facility construction site, this loss is considered negligible due to the limited amount of formal spaces lost.
- g. Chapter 9 of EIS 1 considers construction vehicle parking for each of the 17 construction sites, whilst Chapter 7 provides indicative site layouts showing locations within the sites for vehicle parking. Additionally, Chapter 9 of EIS 1 (Table 9.15) provides a number of mitigation measures regarding construction vehicle parking, with an updated set of mitigation measures provided in Chapter 7 of this report.
- h. Construction worker parking would be provided within the Norwest Station construction site, however it is acknowledged that some sites are constrained and would not have capacity for parking for all construction workers. Mitigation measure T9 (Table 9.15 of EIS 1 and Chapter 7 of this report) states that the need for, and provision of, alternative remote parking locations and shuttle bus transfers for daytime and night time construction staff would be considered for all construction sites during detailed construction planning. With the implementation of these measures, it is not anticipated that construction workers would be required to park on Brookhollow Avenue.

Sufficient space would be provided on the site for trucks, and planning of construction activities would prevent the need for trucks to queue on surrounding streets, including Brookhollow Avenue.

- i. Construction worker parking would be provided within the Cheltenham Services Facility site, however it is acknowledged that some sites are constrained and would not have capacity for parking for all construction workers. Mitigation measure T9 (Table 9.15 of EIS 1 and Chapter 7 of this report) states that the need for, and provision of, alternative remote parking locations and shuttle bus transfers for daytime and night time construction staff would be considered for all construction sites during detailed construction planning. With the implementation of these measures, it is not anticipated that construction workers would be required to park on Castle Howard Road or other local roads surrounding the site.
- j. Consultation is ongoing with The Hills Shire Council regarding the NWRL project, including parking considerations.

5.7.3 Pedestrian and bicycle access

Stakeholder identification number(s) including:
255

◆ Issue description

In summary, respondents raised the following issues:

- a. The Epping Decline works site is on the western side of the railway line and appears to be located at the original bus tunnel exit from the M2. This bus tunnel currently forms part of the M2 bicycle detour route created when cyclists were barred from the M2 bike shoulder lane due to widening construction works. This bus tunnel is an essential part of the route and needs to continue to be accessible especially until the M2 bicycle lane / route is re-established. It is also normal practice for Roads and Maritime Services to subsequently return detour bicycle routes as a result of road works to the local bicycle network, and consequently bicycle groups expect this bus tunnel to continue to provide bicycle access in the future, most likely as a M2 bicycle exit.
- b. M2 on and off ramps are proposed as an option for access to the Cheltenham Intermediate Services Facility. The M2 has always been an important part of the bicycle network, and local bicycle groups and cyclists who live and work in the North West are eagerly waiting for its return. Additional on and off ramps, especially those which will involve many truck movements during construction and continue to be in permanent use for maintenance and emergency access will be detrimental for safe cycling. Request the alternative option be chosen for access.
- c. Access to the Hills Centre work site appears to impact on the local bike path that follows the creek. Construction should ensure that the Carrington Road cycle path and shoulder is maintained for cyclist use. Flood damage has currently destroyed the cycle path linking the showground to Fred Caterson Reserve on the north side of Showground Road. The proposed haul road is adjacent to the affected path. For the duration of the construction it is requested that bicycle crossing provision be incorporated into traffic signals protecting the haul road access. Bicycle routes through the showground from the haul road intersection to Carrington Road must be defined and sign-posted appropriately.

- d.** The western edge of the proposed truck layover area in Bella Vista appears to infringe on the Old Windsor Road cycle path. If this cannot be avoided possible mitigation may involve improved bicycle crossing provision of Old Windsor Road and the T-Way enabling cyclists to reach the Cycle path on the western side of Old Windsor Road. Current traffic islands, light positioning and phasing are not adequate for cyclists travel needs.
- e.** T-Way cycle path access will be totally cut by construction work in the Balmoral Road area. Traffic signals at intersection of Old Windsor Road and Balmoral Road should be modified for improved cyclist crossing provision from Balmoral road to the cycle path on the Western side of Old Windsor Road. Embankment construction should include provision for cycleway access following construction.
- f.** It is considered likely the T-Way cycle path in the Memorial Avenue area will be totally cut through this area during construction. Adequate provision must be made for cyclists crossing to the T-Way station from Sunnyholt Road and Old Windsor Road cycle paths. Construction in this area should make provision for T-Way cycle path restoration as part of the project.
- g.** A cycle path currently operates on the southern side of Samantha Riley Drive. The construction site should not infringe on this facility. In addition to this, preference for the Windsor Road cycle path at the intersection with Old Windsor road to be maintained during construction.
- h.** Old Windsor Road to White Hart Drive have no cycling specific infrastructure. Calls for Traffic Management Plans to consider the needs of cyclists during construction.
- i.** Rouse Hill Town Centre does not appear to have any cycle paths directly affected by construction however calls for Traffic Management Plans to consider the needs of cyclists during construction.
- j.** No cycling specific infrastructure exists in/around the Tallawong Stabling Facility. Calls for Traffic Management Plans to consider the needs of cyclists during construction.
- k.** There appears to be no cycling specific infrastructure in/around the Castle Hill Station, therefore, calls for Traffic Management Plans to consider the needs of cyclists during construction. The recently renovated Castle Hill Road currently provides the best cycling route through the Castle Hill shopping district. It appears this area will be blocked during construction. Acceptable alternate travel provision must be established.
- l.** No cycling specific infrastructure exists in/around Cherrybrook. Calls for Traffic Management Plans to consider the needs of cyclists during construction.

◆ Response

- a. The Epping Decline site no longer forms part of the NWRL project (refer to Chapter 6) and as such, the NWRL project would not impact on this existing cycle route.
- b. The final arrangements for access to the Cheltenham Services Facility would be decided in consultation with Roads and Maritime Services and the M2 Motorway operator, based on consideration of the range of benefits and impacts associated with both options. Cyclist considerations would be taken into account during this process.
- c. It is acknowledged that there is a council-recognised cycle path that runs along the perimeter of the Showground boundary and crosses into Fred Caterson Reserve. This path is very likely to be impacted by construction. Should this be the case, a detour route would be established to form the continued link in the cycleway. This detour route would be safe and well signposted. This route would either be incorporated into the original crossing provided under Showground Road or to the Gilbert Road Intersection where crossing can be achieved by current signals.
- d. The proposed truck layover at Bella Vista is not anticipated to infringe on the Old Windsor Road cycle path. If however, it is deemed necessary to consume some of this space, cyclists are able to cross the road at the signalised intersections and use the cycle way on the other side of Old Windsor Road. Signals would not be changed for this as they are currently set in a way which services the intersection in the most efficient manner.
- e. The T-Ways would maintain full functionality for the duration of construction and would be unaltered. Likewise, the cycle ways running adjacent to the T-Ways would be unaffected by construction works.
- f. The T-Ways would maintain full functionality for the duration of construction and would be unaltered. Likewise, the cycle ways running adjacent to the T-Ways would be unaffected by construction works.
- g. Cycle paths located along the southern side of Samantha Riley Drive and at the Windsor Road / Old Windsor Road Intersection would not be affected during construction.
- h. Traffic Management Plans would be developed for all construction sites and would consider cyclist movements.
- i. Traffic Management Plans would be developed for all construction sites and would consider cyclist movements.
- j. Traffic Management Plans would be developed for all construction sites and would consider cyclist movements.
- k. Traffic Management Plans would be developed for all construction sites and would consider cyclist movements. It is noted that Old Castle Hill Road bordering Castle Towers is the preferred route of cyclists currently and that appropriate alternatives would need to be provided if this area is closed during construction.
- l. Traffic Management Plans would be developed for all construction sites and would consider cyclist movements.

5.8 Communication

5.8.1 Consultation

Stakeholder identification number(s) including:

1, 4, 10, 12, 18, 24, 25, 30, 48, 55, 67, 79, 85, 89, 96, 101, 106, 123, 135, 151, 159, 160, 165, 176, 228, 255, 303, 324, 330, 332, 336, 340-342

◆ Issue description

In summary, respondents raised the following issues:

- a. There is a lack of detailed maps showing the alignment (tunnel and viaduct) and stations. Request for a more detailed aerial view showing streets/properties along or within the proximity of the alignment.
- b. Suggestion for community information to be clearer due to the following concerns:
 - ❖ The Cheltenham Intermediate Services Facility diagram as the “satellite view” is blurred.
 - ❖ It is not possible to make a clear assessment of how construction will affect property from the proposed layout material published which has changed several times.
 - ❖ Incomplete and inconsistent information has been provided by NWRL representatives, documents and information sessions, particularly in regards to the changes of underground depths, open cut arrangements, entry/exit points and location of facilities (parking etc...) at the proposed Cherrybrook Station. Residents are not informed on the construction impact on residences as a result. Suggestion to provide a better indication as to where and how the proposed project will proceed.
 - ❖ Concerns regarding the timing of the delivery of revised information regarding the Cherrybrook Station (information could have been provided to residents by relevant Community Liaison Officers prior to the EIS 1 exhibition process).
 - ❖ Concerns representatives at recent consultation events could not answer basic questions about the anticipated use of the station and gave misleading information about the impact of construction traffic and noise on Robert Road.
- c. The consultation process has been effective and has benefited the community, specifically in understanding the technical information made available in EIS 1. Opinion that the high quality written communication that has been made freely available on the proposed NWRL and the quality of staff at the Castle Hill Information Office and Information Sessions were polite and cooperative.
- d. There is confusion around whether notices posted near Cheltenham Oval are those of Transport for NSW or a concerned resident.
- e. Concerns residents may have missed the opportunity to consider and comment on EIS 1 due to timing of the public exhibition over the school holidays. Request for an extended exhibition period for EIS 2 that will be longer than 4 weeks.
- f. Further information should be available through the consultation process regarding the types of trains and noise studies.

- g.** Resident commended the thorough and highly professional EIS. The document is pitched at an accessible level for residents of affected suburbs and the timely use of email to remind interested parties to submit their submissions was very efficient. Suggestion to promote the environmental benefits of the NWRL more. For example, decrease in cars and pollution, reduced mental health issues caused by road travel stress.
- h.** Concern that there has been a complete absence of consultation with the residents who live adjacent to the Bella Vista Station. Question raised if residents and local businesses were surveyed or consulted prior to the proposal of the Bella Vista Station. Suggestion that NWRL undertakes extensive community consultation regarding the location of the new railway station at Bella Vista with affected residents and that NWRL undertakes a separate EIS for the location of both the route and the Bella Vista Station with community consultation prior to the determination of the current EIS. Request for evidence to show such support as the stated 184 submissions received from the July-Sept 2011 proposal does not seem sufficient for the introduction of a new station.
- i.** The complexity and the inherent problems of the project should be intelligently explained to the electorate and the media.
- j.** Preference for a dedicated person with appropriate influence to be the main point of contact for community and manage and respond to issues raised during construction.
- k.** The Budokan Judo Club has been required to field numerous enquiries and concerns about potential adverse impacts the project may have on its operations.
- l.** Requests to form a working group between the NWRL and the bicycle stakeholders from Bicycle New South Wales, Bike North and CamWest to address issues related to access through construction as well as ensure best practice end of trip facilities, bicycle access from a catchment area of at least five kilometres and take-up of other cycling opportunities that are available.
- m.** Concerns that without underlying expertise, the community cannot readily understand the EIS 1 Overview or the EIS 1 Report (including its technical papers) and it does not:
 - ❖ Sufficiently address community concerns, detail arrangements to replace Showground facilities, or explain measures to ensure the Annual Show at the Showground will continue to run.
 - ❖ Accurately represent issues raised in consultation meetings.
- n.** Concerns that persistent attempts to extract answers from NWRL and their representatives to clarify the genuine plans in relation to the Additional Construction Zone and the open cut design proposed for Cherrybrook Station have failed. Concerns that plans released to the public in 2007, are the most recent plans residents have been made aware of.
- o.** Question raised regarding what consultation will be undertaken with affected property owners prior to commencement of construction as well as during and post construction.
- p.** Request for ongoing consultation with Kindalin Early Childhood Learning Centre during the construction phase to monitor the effectiveness of acoustic barriers and implementation of alternative measures as deemed necessary.

- q.** Request for consultation and detailed discussion with representatives from Inala and Dulkara in relation to minimising the risk on construction and possible impacts on their clients.
- r.** Concern that the current NWRL methodology of undertaking an EIS for major construction works prior to the finalisation of the route layout and station location is contrary to NSW State Government requirements.
- s.** Concerns regarding lack of community consultation for the concrete building plant proposed for Memorial Avenue and lack of detail about this plant in EIS 1. Request for further information in addition to community consultation to occur immediately.
- t.** Concerns regarding submissions made by a group of residents who object to the proposed station do not represent the wider community and should not be given preference over other submissions.
- u.** Concerns that there has been a lack of community consultation regarding property value impacts. Request for additional consultation regarding property acquisition and property values.
- v.** Concerns regarding community consultation around the Skytrain and inability for interest groups to organise meetings with the project team (due to the split EIS process). Meeting requests were declined and advice to attend open interest group meetings were unacceptable as these meetings were considered inadequate.
- w.** Concerns regarding the process of having two EISs as it is not considered an appropriate way to assess the project.

◆ Response

- a.** Detailed maps of the alignment were on display at the Castle Hill Community Information Centre during the exhibition, and are still available to view at the centre. Detailed maps were also exhibited at the community information sessions held during the exhibition period, and members of the project team were available to answer questions for people attending. Displaying these maps on the website is difficult, due to the large file sizes and the difficulty of showing such a long route at any level of detail. A high level map of the proposed NWRL alignment is available on the project website www.northwestrail.com.au.

Chapter 2 of this report – Clarifications to the Exhibited EIS 1 – introduces a 20 sheet map containing more detailed cadastral information for the NWRL alignment (with the maps included as Appendix B). More detailed maps and images of the alignment and stations will also be provided in EIS 2.

If people require further information on the proposed alignment, the project team is available on 1800 019 989 and at the Castle Hill Community Information Centre to answer questions about the project. Alternatively visit the project website - www.northwestrail.com.au.

- b.** The North West Rail Link is the biggest transport infrastructure project since work on the Sydney Harbour Bridge started 90 years ago. Extensive consultation has occurred over the last 10 years, commencing with the publication of *Action for Transport 2010* (NSW Government, November 1998), continuing through to the 2007 public exhibition of the *North West Rail Link Preferred Project Report* (TIDC, 2007) and July 2011 when a newsletter was distributed to 45,000 residents and businesses along the corridor introducing the North West Rail Link

Project Overview. This described the project in some detail and canvassed the idea of two additional stations and an alternative location for the stabling yard at Tallawong Road. The newsletter marked the beginning of a public exhibition process in which stakeholders received further information about the NWRL from a number of sources.

Throughout the EIS exhibition period, TfNSW project team members have endeavoured to provide clear, concise information to members of the community through a variety of forums, including community information and feedback sessions, the Castle Hill Community Information Centre, an information/feedback line, an interactive website, written materials, one to one meetings with affected property owners, and Place Managers acting as a direct point of contact for the community.

Due to the scale of the NWRL project, a number and variety of consultation activities have been undertaken at any one time. TfNSW has committed significant resources to continuing a broad based community and stakeholder consultation process during the public exhibition of EIS 1. TfNSW is continuing that commitment between now and the exhibition of EIS 2, and during the exhibition of EIS 2.

Chapter 3 of this report outlines the ongoing consultation activities specific to each of the station and construction sites.

- c. The NWRL is a NSW Government priority public transport infrastructure project, providing major benefits for the people of Sydney's North West. TfNSW has taken a proactive approach to consulting the community since the NSW Government announced its intention to proceed with the NWRL. The consultation process for EIS 1 supports one of six project objectives to "deliver a transport service that has been informed by engagement with communities and stakeholders and represents value for money" and is critical for successful project delivery.

TfNSW has committed significant resources to continuing a broad based community and stakeholder consultation process during the public exhibition of EIS 1. TfNSW is committed to meeting and exceeding the obligations described in the Director-General's Requirements, the Conditions of the Concept Plan Approval and the Statement of Commitments; and to providing quality information about the plans for the NWRL and likely impacts during early works and construction activities. Consultation is ongoing and will inform the design and environmental assessment of the stations, rail infrastructure and systems, including station precincts and rail operations (EIS 2).

- d. TfNSW is aware that unauthorised TfNSW notices were posted at Cheltenham by an unidentified party. All written material provided to the community by TfNSW for this project has been clearly printed on the TfNSW and / or NWRL project template or letterhead.
- e. Under section 5.1 of the NSW *Environmental Planning and Assessment Act 1979*, the statutory requirements state that an EIS must be publicly exhibited for a minimum of 30 days (including weekends). However, TfNSW acknowledged and pre-empted that the period to comment on the exhibition of EIS 1 coinciding with school holidays and as a result, extended the period to a total of 48 days. This allowed residents an additional 28 days after the school holidays had ended on 23 April to make a submission in response to the EIS.
- f. Information about types of trains and operational noise will be included in EIS 2 and the community will be consulted when details become available. For instance, following the public exhibition process, on 20 June 2012 the NSW Premier and the Minister for Transport launched

“Sydney’s Rail Future” which stated that the NWRL trains were planned to be high-frequency, rapid transit, single deck systems.

- g. TfNSW has committed to providing quality information about the plans for the NWRL and likely impacts during early works and construction activities during the Environmental Impact Assessment process, as well as recording and taking account of all issues and suggestions made during exhibition.

One of the key objectives of the project is to improve the transport network efficiency by facilitating a transport mode shift from road to rail. The project would provide an important transport alternative for the benefit of current and future generations. Minimising greenhouse gas emissions to limit and avoid irreversible climate change is a critical sustainability issue. The project would provide an alternative transport mode for the existing and future residents in the area.

Sustainability is one of the key objectives of the *Environmental Planning and Assessment Act 1979*, which provides a policy framework within which the justification of the project can be considered. To meet this objective, an environment and sustainability policy has been developed for the NWRL project. The policy includes a commitment to provide accessible, safe, pleasurable and convenient access and transport services for all customers.

- h. The Concept Plan for the NWRL was approved in 2008 and the modifications to this concept plan (including the addition of Bella Vista Station) are assessed within Chapter 6 of EIS 1. This assessment has been undertaken at a level consistent in detail as the original concept plan approval.

A Staged Infrastructure Approval Modification, which included this addition, was lodged with the Department of Planning and Infrastructure in December 2011, and was incorporated into EIS 1.

The addition of Bella Vista Station at the northern end of Norwest Business Park would increase the attractiveness of NWRL for commuters, integrate with existing and potential future land uses as well as with other transport services, and respond to community and stakeholder issues by:

- ❖ Providing a rail station within walking distance of an additional 13,600 jobs supporting continued growth of the Norwest Business Park which is a specialised employment centre with a jobs target of 30,000 by 2036.
- ❖ Increasing the catchment of residents with good access to the NWRL (within the walking catchment) by approximately 16,000 people.
- ❖ Delivering additional park and ride facilities to serve Bella Vista, Kellyville, Beaumont Hills and Stanhope Gardens.
- ❖ Providing a catalyst for a high quality development surrounding the new station, comprising a mix of residential and commercial development supporting the Balmoral Road release area.
- ❖ Allowing a northern extension of the central road spine of the Norwest Business Park, into the Balmoral Road precinct, providing improved local road access.

- ❖ Allowing enhanced bus services to operate between Blacktown and Castle Hill via the central spine of both precincts of Norwest Business Park (interchanging with Norwest and Bella Vista stations).
- ❖ Addressing stakeholder submissions requesting an additional station located in the Norwest Business Park.

EIS 1 provides an assessment of the potential impacts associated with the major civil construction phase of the project, including all potential impacts around the Bella Vista Station area.

EIS 2 will provide an assessment of the potential impacts associated with the rail systems and station construction, and the operational phase of the project, including all potential impacts around the Bella Vista Station area.

These two EISs will detail all potential impacts associated with the project in the Bella Vista location.

The Department of Planning and Infrastructure has required the Staged Infrastructure Approval Modification to 'document consultation undertaken with relevant government agencies and the community in its preparation, with a focus on proposed changes, and how matters raised during consultation have been considered'.

Since December 2011, further consultation has been undertaken with local councils and other key stakeholders, addressing the proposed changes to the project as identified in the application to modify the Staged Infrastructure Approval. Local councils and councillors have been specifically consulted on potential impacts associated with the modifications.

TfNSW has committed significant resources to continuing a broad based community and stakeholder consultation process during the public exhibition of the EIS. The need for the community to have accessible points of contact throughout the planning process was recognised with the appointment of four Place Managers, including one for Bella Vista and Norwest. Before exhibition of the EIS began, the Place Managers made contact with a number of stakeholders, including residents groups, to offer briefings about the plan and their potential impacts.

- i. Since June 2011, 16 media releases about the project have been issued.
- j. TfNSW acknowledges the importance of having a dedicated contact for the community during the project, and in October 2011 appointed four Place Managers. The Place Managers have been the direct point of contact for the community during the consultation process and will continue to be the contact points during construction. Following the distribution of newsletters along the proposed alignment, the Place Managers have made contact with directly affected residents and businesses through door-knocking as well as visiting resident groups, schools, sporting clubs, and many others to offer briefings about the plans and their potential impacts.

The project team, and their contractors, will continue to work in partnership with communities during construction. Contact details for the Place Managers will be available at all construction sites as well as via the project website www.northwestrail.com.au.

- k. Any stakeholders or interest groups receiving enquiries about the project are welcome to direct these to the project team. For specific enquiries about the project and how it affects a particular area, individuals are encouraged to contact one of the Place Managers, who have each been

assigned a specific area of the project. Contact details for the Place Managers will be available at all construction sites as well as via the project website www.northwestrail.com.au.

For more general queries about the project:

- ❖ visit the project website www.northwestrail.com.au
- ❖ call 1800 019 989
- ❖ visit the Castle Hill Community Information Centre at 299 Old Northern Road – corner of Crane Road, opposite Castle Towers and Arthur Whitling Park
- ❖ email info@northwestrail.com.au.

- l.** TfNSW has established a number of working groups in order to facilitate cross agency consultation about project impacts and how they should be managed. These working groups are detailed in Section 5.4.1 of EIS 1. For interest groups such as cyclists who would like to provide feedback or have specific enquiries, you can contact one of the Place Managers, who have each been assigned a specific area of the project.

Four Place Managers have been appointed to act as the key point of contact between the project and the community. These Place Managers have already made contact with interest groups to offer briefings about the plans and their potential impacts. Contact details for the Place Managers will be available at all construction sites as well as via the project website www.northwestrail.com.au.

- m.** Prior to and during the EIS 1 exhibition period, TfNSW project team members have endeavoured to provide clear, concise information to members of the community through a variety of forums, including community information and feedback sessions, the Community Information Centre, an information / feedback line, an interactive website, written materials, and one to one meetings with affected property owners. In addition, Place Managers with detailed local knowledge on the project have been available as a direct point of contact for the community.

TfNSW has committed significant resources to continuing a broad based community and stakeholder consultation process during the public exhibition of EIS 1. TfNSW is continuing that commitment between now and the exhibition of EIS 2, and during the exhibition of EIS 2. The project team welcomes community contact and will provide information available at the time.

An EIS summary report of 74 pages was made available to provide an overview of EIS 1. The document presented an overview of the project and planning approvals process, summarised key issues and mitigation measures presented in the full copy of EIS 1 (including maps of each proposed construction site), encouraged readers to make a submission and provided details of how to view the full copy of the EIS. The EIS summary report was posted on the project website and made available at the community information sessions and upon request.

Chapter 14 of Volume 1B of EIS 1 presents direct impacts on existing land use and community facilities at the proposed Hills Centre Station (Site 6). In addition, page 46 of the EIS summary report outlines that consultation has been undertaken with Hills Agricultural Society, the Castle Hill Show Group and other key stakeholders and that the project team will make every effort to minimise the impact on the Showground precinct and associated facilities. It also notes that the actual Show ring itself will not be affected by construction work, and will remain open and available for use at all times (via Showground Road) and that the project team will continue to work with users of impacted facilities to determine their needs.

The Hills Centre Place Manager would continue to be the direct point of contact for the community on behalf of the project in this area and would have ongoing discussions with the community as the project progresses.

- n. Prior to and throughout the public exhibition process, the NWRL project team have been available to respond to community enquiries through the Community Information Centre, project information line, project email address and at the five community information sessions held during public exhibition. The project team welcome community contact and provide information available at the time.

As the project progresses, information regarding the Cherrybrook Station will be provided to the community primarily through the Place Manager. Further information regarding the design of Cherrybrook Station will be presented in EIS 2 and during the statutory public exhibition process.

- o. Throughout project planning and construction, TfNSW and the Principal Construction Contractor(s) would work closely with affected property owners to ensure they are well informed regarding construction works.

Stakeholders and the community would be informed of significant events or changes that affect or may affect individual properties, residences and business. These will include:

- ❖ Significant milestones
- ❖ Design changes
- ❖ Changes to traffic conditions and access arrangements for road uses and the affected public
- ❖ Construction operations which will have a direct impact on stakeholders and the community including noisy works, interruptions to utility services or construction work outside of normal work hours.

Further information is available in the 'Information for property owners and tenants' Fact Sheet which is available on the project website (www.northwestrail.com.au), by calling 1800 019 989, emailing info@northwestrail.com.au or visiting the Community Information Centre.

- p. TfNSW is committed to working closely with key stakeholders and local communities through every step of the design and delivery of the project.

The Kindalin Early Childhood School has been identified as a community facility that requires close consultation to develop specific mitigation measures.

TfNSW is committed to working closely with key stakeholders and local communities through every step of the design and delivery of the project.

- q. The Inala Dulkara Adult Day Service has been identified as a community facility that requires close consultation to develop specific mitigation measures.
- r. The project is subject to an environmental assessment and approval process under the *Environmental Planning and Assessment Act 1979* (EP&A Act). With recent amendments to the EP&A Act, the Concept Plan Approval for the project granted by the then Minister for Planning on 6 May 2008 is taken to be a Staged Infrastructure Approval under Part 5.1 of the EP&A Act. A proposed modification to the approval has been made to align the Concept Plan Approval with the current description of the NWRL project. However, TfNSW will seek final approvals which are independent of the Concept Plan Approval / Staged Infrastructure

Approval. The EIS has been prepared in support of a final project approval for Stage 1: Major Civil Construction Works.

Before work can commence on the project, a detailed environmental assessment must be undertaken and approved by the Minister for each stage or component of the project. EIS 1 represents the detailed environmental impact assessment for Stage 1: Major Civil Construction Works required for the project, including alignment, station locations, stabling facility and ancillary infrastructure. A second and separate EIS is currently being prepared for Stage 2, including project description and construction strategy of stations, rail infrastructure and systems.

- s. The TfNSW project team is committed to working closely with local communities through every step of the design and delivery of the project, and to this end has committed significant resources to community and stakeholder consultation in the lead up to, during and post the exhibition of the EIS. TfNSW has commenced consultation with residents in relation to the concrete plant proposed for Memorial Avenue, and would continue to work closely with stakeholders, affected residents and other community members.
- t. The project team is required to consider all comments raised in submissions in response to the EIS during the exhibition period, whether made by a group or an individual.
- u. All properties likely to be acquired for the project have been identified through planning investigations and environmental assessments. As design and planning proceed, the project team would make direct contact with any owner whose property is affected by the proposal. A formal letter would be sent confirming that a property is required and providing details on the proposed acquisition process. All property acquisition would be undertaken in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.

Over the long-term, the project would be anticipated to have a positive impact of property prices resulting from the proximity to public transport infrastructure.

- v. Further strategic planning and project development has been undertaken, leading to a number of proposed modifications to the 2008 Staged Infrastructure Approval (formerly Concept Approval). One of the proposed modifications includes the incorporation of the Skytrain viaduct between Bella Vista and Rouse Hill. An application to modify the existing Staged Infrastructure Approval for NWRL was submitted to the Department of Planning and Infrastructure on 14 December 2011. Since that time, further consultation has been undertaken with local councils and other key stakeholders, specifically addressing the proposed changes to the project as identified in the application to modify the Staged Infrastructure Approval. Importantly, local councils and Councillors have been specifically consulted on potential impacts associated with the modifications and the proposed staged assessment approach.

Ongoing community consultation continued from December 2011 following the announcement of the modified project. A Community Information Centre was opened to provide information, receive suggestions and feedback and provide an opportunity for the public to speak with the project team. The NWRL Community Information Centre is located at 299 Old Northern Road, Castle Hill, at the corner of Crane Road (opposite Castle Towers and Arthur Whitling Park). Staffed five and a half days per week, this centre has the most up-to-date NWRL information and presentations.

The need for key stakeholders and the community to have accessible points of contact throughout the planning process was recognised with the appointment of four Place Managers.

Each Place Manager has an allocated area of the project and is proactive in making contact with potentially affected individuals, businesses and community groups. Following the distribution of newsletters along the proposed alignment, the Place Managers have made contact with directly affected residents and businesses through door-knocking as well as visiting residents' groups, schools, sporting clubs, and many others to offer briefings about the plans and their potential impacts.

The Skytrain will be assessed further in EIS 2 and information will be presented to the community during the subsequent public exhibition process.

- w.** A two EIS approach to planning allows the project team to deliver the project more quickly, efficiently and plan a better train service for the people of Sydney's North West.

The focus of EIS 1 was the major tunnel work as well as the Skytrain structure. Building tunnels is a long process – it can take over a year for tunnel boring machines to be assembled and delivered. By considering tunnel construction in EIS 1, preparation for tunnelling can begin quickly following determination by the Department of Planning and Infrastructure in the second half of 2012. This would allow tunnel construction to begin in 2014.

By including topics such as station design and precinct planning in EIS 2, the project team can spend more time focusing on what's important to customers and the community, like transport interchanges and commuter car parking – without holding up the major tunnel construction process.

5.9 Outside of EIS 1 scope

A number of issues raised by respondents in submissions are outside of the scope of EIS 1, and are therefore not relevant to this Submissions Report which has been prepared in response to issues raised that are within the scope of EIS 1.

A summary of these out of scope issues and the stakeholder identification numbers of respondents is included below for transparency however these issues cannot be addressed in this report.

Further information regarding the design and operation of the NWRL will be provided in EIS 2, due for release in the second half of 2012. EIS 2 will seek approval for station design, railway operating systems and remaining construction work including:

- ❖ Transport interchanges, park-and-ride car parking facilities, kiss and drop, bus stops, taxi ranks and cycle storage
- ❖ Rail infrastructure like railway tracks, signalling systems, ventilation systems, overhead power supplies and sub stations
- ❖ Access roads and landscaping.

EIS 2 will also consider and seek to address the issues raised of relevance to EIS 2 which are out of scope of EIS 1.

Some respondents also provided suggestions for alternative station locations and sites. While these suggestions have not been responded to in this report, they have been noted below.

5.9.1 Issues out of scope

Design

Public safety

Place making principles would be established for the project as part of EIS 2, including a strong focus on public safety.

Stakeholder identification number(s) including:

11, 15, 17, 18, 24, 32, 34, 36, 48, 49, 61, 62, 74, 75, 82, 94, 97, 106, 107, 115, 117, 139, 142, 163, 319, 329, 332, 336, 337, 339, 343, 344, 353

- ❖ Suggestion that the proposed Bella Vista multi-level car park will be underutilised due to safety concerns, specifically car theft, therefore this will impact on parking in residential streets.
- ❖ Safety concerns for users of Robert Park (open child's playground and park) due to increased traffic along Robert Road to access Castle Hill Road post construction. Suggestion to restrict heavy vehicle traffic from using Robert Road and cul-de-sac the intersection of Robert Road and Castle Hill Road.
- ❖ Public safety for passengers travelling to and from Hills Centre Station. Suggest a tunnelled access to the station to eliminate pedestrians crossing Showground Road and walking through the surrounding area at night.
- ❖ Public safety concerns raised as many children play in the streets or nearby parks of Castle Hill. The proposed NWRL will bring more commuters into the area who will park their cars in the residential streets, particularly Dawes Avenue.
- ❖ Safety of passengers in the tunnel is of concern and call for potential incidences to be planned for such as train or driver failure, equipment fires, axle breakage, passenger panic and foreign objects fouling the track. Question regarding how emergencies will be handled during operation and suggestion for less tunnels in the project due to safety concerns.
- ❖ Concerns that the pillars of the Skytrain will attract graffiti defaming the visual amenity of the area.
- ❖ The elevation of the Skytrain will enable passengers to see inside local residences and therefore impede people's privacy.
- ❖ Call for protective barriers to prevent personal injuries resulting from items from the train or tracks into residential properties and public walkways.
- ❖ Concerns that emergency access to the Cheltenham Intermediate Services Facility is through local roads and placing the exit for the facility next to the Cheltenham Oval, where over 100 cars often park on Castle Howard Road and Oaklands Avenue is unreasonable and not practicable (to ensure health and safety of workers and others). These streets are restricted to one lane and on occasions people park so that other vehicles cannot pass. Concerns emergency services would not be able to access Castle Howard Road. Belief that the M2 ramp will be a better alternative to the Kirkham Street option at the proposed Cheltenham Intermediate Services Facility due to increased safety and speed of the M2 ramp for access by emergency vehicles.

If NWRLs proposal is successful to increase traffic flow and bring buses along Robert Road, then it will become extremely dangerous for pedestrians and children that play in Robert Park. Robert Park is the only park in the vicinity for well over 350 residential dwellings in the area and is constantly used 7 days a week from morning to night by both individual to groups of children of all young ages (walking, bike riding, ball games etc...).

It will take only one child to run, chase a ball, not look on their bike or some other scenario and the consequences will be fatal. There is also no “off street” parking for parents when they come to the park, therefore parking occurs on Robert Road or its side street. With the increase in traffic volume and heavy vehicles there will be a major potential for traffic to collide with a stationary vehicle which will have dire consequences. Crossing Robert Road to enter or leave the park will also become much more dangerous and at present there is only one street light for the entire area surrounding the park, which means in low light it may be extremely dangerous to see small children playing. Currently there is no pedestrian crossing along Robert Road to access the park. The proposal to use Robert Road by the NWRL proposal must be declined on this simple safety factor alone.

The width of Robert Road, poor visibility along most sections of the street (due to parked vehicles) and number parked vehicles have already resulted in the road being unsafe and hazardous for the community and any further traffic along Robert Road as a result of the project will increase the likelihood of head on collisions. The introduction of buses along any part of this Road will not only be impractical and more than likely not possible to achieve, it will almost certainly result in head on collisions or damage to parked cars. Robert Road has also been previously identified as a high accident area where it intersects with Castle Hill Road therefore for:

1. The safety of local residents;
2. The avoidance of a build-up of traffic in an unsuitable local street; and
3. The purpose of avoiding the accidents that will undoubtedly occur as a result, proposal that Robert Rd be converted into a cul-de-sac. Robert Road. Calls to consider an alternative feeder road. Suggestions include closing the connection to Castle Hill Rd, or using John Road, County Drive, Franklin Road, Neale Ave, Edward Bennett Drive or Castle Hill Road as an alternative route.

❖ Concerns regarding litter from commuters.

Station design

Station design, layouts, urban features and landscaping would be key elements of EIS 2.

Stakeholder identification number(s) including:
24, 67, 106, 108, 117, 123, 125, 135, 336

- ❖ Seeking further clarification on the proposed “open cut” ground level design of Cherrybrook Station and its relocation further west towards Robert Road. Objection to the “open cut” station at Cherrybrook as the proposed platform will be in close proximity (50 metres) to residences. Suggestion to keep the Cherrybrook Station at the original depth of 17 metres to mitigate noise and vibration impacts. Questioned why the depth has changed to a proposed 5 metres.

- ❖ Concerns that EIS 1 did not address station layout or identify specific station precincts, particularly Cherrybrook Station.
- ❖ Request that stations be built as close to the surface as possible. Suggestions for station design aspects such as natural vegetation, artwork and ambient light.
- ❖ Query regarding landscaping of the area surrounding the proposed Cherrybrook Station. Request for this to occur.
- ❖ Request for bus bays/bus stops and kiss & ride facilities to be located on the south side of Castle Hill Road with access to the proposed Cherrybrook Station via an overhead walkway, with these transport facilities not located in traffic lanes.
- ❖ Opposed to Bella Vista Station being above ground and suggestion to build the station underground to mitigate noise pollution.

Station location

Section 1.2 of EIS 1 describes the project development history, including investigations of alternative station locations. Section 2.5 of EIS 1 describes project alternatives considered more recently.

Stakeholder identification number(s) including:

1, 10, 48, 59, 79, 101, 106, 118, 134, 136, 142, 145, 151, 162, 165, 171, 173, 230, 317, 323, 339-341, 350

- ❖ Clarity is sought around why a station has not been included to service Beecroft. Belief that there are areas within Beecroft that offer the same tunnel depths as the other station locations therefore a station should be provided.
- ❖ Objections that the station locations do not cater for local residents of Cheltenham and Beecroft.
- ❖ The Cherrybrook Station site is sub-optimal, being poorly connected to the wider suburb and is difficult to reach with problematic vehicle access and a small 'walking distance' catchment. It does not service the Cherrybrook Technology High School or the shopping centres as it is located on the outer rim of the suburb. The proposed location has been determined on the basis of linking Castle Hill to Epping rather than servicing transport needs of the residents of Cherrybrook.
- ❖ Serious consideration should be given to not locating a station at the Hills Centre as relocation of the Showground in particular will be mired with local controversy. It is also isolated from the adjacent industrial area and bus services along Showground Road. Suggestion to relocate the Hills Centre Station to within the industrial area.
- ❖ Support offered for the development of a train station at the Hills Centre which will facilitate greater community access to clubs in the area and generate increased benefits of the site.
- ❖ Concern that there are several possible options to relocate the Bella Vista Station which have not been seriously considered. Suggestions include having the station closer to Norwest Private Hospital and Circa Commercial area where there are numerous vacant parcels of land or towards Balmoral Road or Memorial Avenue which are larger areas that have capacity for wider traffic flows.

- ❖ Concerns that increased traffic and public transport will increase congestion within the Castle Hill area. Preference for a Park & Ride facility at Rogans Hill to mitigate traffic impacts.
- ❖ Request to consider relocating the Bella Vista Station as there is an existing station at Norwest in Bella Vista. Suggestion to include moving the station closer to Rouse Hill, closer to Memorial Avenue or the vacant commercial land near the Hospital or consider placing the station underground.
- ❖ Request for an underground station at Cheltenham to remove the impact of the proposed services facility on surrounding residents.
- ❖ The Cherrybrook Station should be reviewed – Cherrybrook is a large suburb offering a very small ‘walking distance’ catchment. Concerns raised that the location of the Cherrybrook Station will not answer the transport needs of local residents as it is far from the centre of the suburb. Suggestion to consider better connections between populations centres to serve the North West area better than continued reliance on transport to and from the centre of Sydney. Even calling the station Cherrybrook is incorrect given the site is on the station would be situated on the periphery of the suburb. Calls for a station at Thompsons Corner (intersection of Pennant Hills Road and Castle Hill Road) as it is a major transport intersection.
- ❖ An alternative location for the Hills Centre station should be considered next to the intersection of Showground Road and Windsor Road. This site offers connectivity with local bus services, it is adjacent to the TAFE and industrial area and would be within walking distance to the northern section of the Norwest Business Park.
- ❖ Suggestion to consider the inclusion of a NWRL station at Rogan Hill as an alternative to Cherrybrook Station to satisfy future development needs in Rogan Hill and insufficient parking availability in Castle Hill.
- ❖ Request for an additional station near the Hills Centre Station to be built which would link the NWRL to Norwest Private Hospital site.

Station precincts

Station precincts would be key elements of EIS 2.

**Stakeholder identification number(s) including:
106, 228, 255**

- ❖ Concern the creation of car parks with excessive spaces will only encourage inappropriate usage of the car for short journeys, creating more pollution and local congestion.
- ❖ Suggestion offered the residents occupying the section bordered by John Road, Franklin Road, New Line Road and County Drive will not require public transport to the Cherrybrook Station due to the proximity therefore proposal for a kiss and ride zone situated at Franklin Road to service these areas.
- ❖ Question regarding whether traffic lights at the Glenhope Road / Castle Hill Road intersection will be maintained post construction. Request for road widening, footpaths, marked lanes and parking, bus bays and stops, kiss and ride facilities, and access for child care facilities around the Cherrybrook Station to be completed prior to the opening of the station.

Bicycle facilities

The provision of bicycle facilities would be a key element of EIS 2.

Stakeholder identification number(s) including:
255

- ❖ Support offered for the secure bike parking and other end of trip facilities in close proximity to station entrances / exits. Further support for the development and upgrading of cycling routes within at least a five kilometre radius of all railways stations to enable safe and efficient cycling access for local residences, commerce and businesses.

Accessibility

Access to stations and precincts would be key elements of EIS 2.

Stakeholder identification number(s) including:
106, 154, 163, 352

- ❖ During the Show and for other major events at the Showground, access is off Carrington Road and egress left only onto Showground Road. This arrangement is still required at Showtime (unless the bridge into Anella Avenue / Salisbury Road is considered). Regarding alternative access to the showground, has the project team considered option of a bridge access from the showground to Anella Avenue / Salisbury Road over Cattai Creek? The Castle Hill and Hills District Agricultural Society would be prepared to attend further discussions following the release of the second EIS when details are provided.
- ❖ Following completion of the project, access around the horse area will need to be redesigned to take the horse and float parking that will be lost from the Hills Centre car park (which the Castle Hill and Hills District Agricultural Society still has some claim of ownership) that is currently used. Calls for a dedicated laneway to the stables & arena area to keep the public separate from the horses during shows. Suggestions include:
 - To gain access to limited parking for horse floats, construct a new entry adjacent to the Hills Centre to link up with the existing road that runs past the stables which are to be removed (building 32).
 - To provide access to the horse area, construct a crossing through the garden area adjacent to the horse area amenities block (building 15) to allow vehicles to drive in via the roundabout through council car park.
- ❖ The proposed Robert Road feeder road into Cherrybrook Station is distressing for residents of the area as it will result in a deterioration of the quality of life for years to come. Concerns that these decisions were made with a complete lack of regard as to the collateral damage that would result for all residents of Robert Road. The implementation of any such proposal to use Robert Road in any capacity other than its current form would be nothing less than catastrophic and create access issues for residents. Suggestion that County Drive, coupled with a newly constructed bus lane on Castle Hill Road is the best option to provide an acceptable and safe main road connection to the proposed Cherrybrook Station.

- ❖ Suggestion that housing and residents occupying the section anywhere east of Franklin Road will have to access Cherrybrook Station through Franklin Road or Castle Hill Road. Where access is gained from Castle Hill Road, proposal that transport would enter the Cherrybrook Station (at the Additional Construction Zone end) using a new access (slip) lane built alongside Castle Hill Road.

The Skytrain / Viaduct

Potential impacts associated with the Skytrain were assessed at a conceptual level in Section 6.12 of EIS 1. Further description and potential operational impacts associated with the Skytrain will be presented and assessed in detail as part of EIS 2.

Stakeholder identification number(s) including:
18, 27, 255, 330, 332

- ❖ Concerns over the viaduct having lifestyle implications on residents during construction and post construction. Flooding/small creeks are not considered adequate reasons for using the viaduct method therefore calls for tunnelling the full length of the project.
- ❖ Objection to the Skytrain passing by Belcast Road, Rouse Hill including impacts relating to environmental, noise, and safety. Concern that the Skytrain is not what was initially proposed to the community.
- ❖ Concerns that the overview summary appears to exclude the Skytrain viaduct. No reasons are given for the declaration excluding cycleway provision attached to the Skyway viaduct. Explanation should be provided for this policy. The potential for alternate cycleway facilities in the alignment area below the viaduct should be examined and detailed at the earliest opportunity.
- ❖ Regarding cyclist access in the vicinity of the viaduct:
 - Windsor Road Viaduct (Site 15) - care should be taken to ensure the Windsor Road cycle path and bicycle shoulder lanes are maintained throughout construction.
 - Windsor Road Viaduct to Cudgegong Road - no cycling specific infrastructure exists in this location. Traffic management plans should consider the needs of cyclists during construction.

Environment - Operational impacts

Flora and fauna

Stakeholder identification number(s) including:
24

- ❖ Suggestion to re-vegetate bush reserve of the Segmented Stage Area and TBM Crane Pad after construction at Cherrybrook Station.

Operation

Noise and vibration

Potential operational noise and vibration impacts associated with the Stations, Rail Infrastructure and Systems were assessed at a conceptual level in Section 6.8 of EIS 1 and additional details are presented in Section 2.2 of this report. Further description and potential operational impacts associated with the project will be presented and assessed in detail as part of EIS 2.

Stakeholder identification number(s) including:

8, 10, 15, 17, 18, 23, 24, 25, 27, 49, 54, 55, 61, 62, 66, 67, 70, 78, 82, 89, 101, 123, 136, 171, 229, 230, 319, 336, 339, 340, 341, 342, 343, 344

- ❖ Concerns that residents within the vicinity of the proposed above ground Bella Vista Station will be impacted by operational noise, particularly at night. Suggestion that this could be mitigated by installing noise acoustic sheds / panels along the track in this area and building a roof or dome over the station. Request for noise level contours for the proposed Bella Vista Station in operation to be made available. Concerns that the existing high road noise levels experienced at residences nearby Old Windsor Road will be increased by the accompanying rail noise.
- ❖ Residents are dissatisfied that they will be impacted by noise generated by the Skytrain and with particular concern raised in the areas of Bella Vista and Rouse Hill. Concerns operational noise will vastly impact the lifestyle and health of locals including increased agitation and tension, sleep deprivation/fatigue and high blood pressure. Preference to tunnel the proposed Skytrain due to operational noise impacts or noise attenuation panels to reduce both noise and visual impacts.
- ❖ Concerns regarding operational noise and vibration impacts on residents surrounding the proposed Cheltenham Intermediate Services Facility particularly residents on Castle Howard Road. Concerns that noise from the ventilation fans will impact local residents. Suggestion to provide noise attenuation to mitigate this impact.
- ❖ General objection to operation noise and vibration impacts.
- ❖ Concerns regarding increased traffic noise along Robert Road and surrounding areas if it is used as a proposed feeder road to the proposed Cherrybrook Station. Excessive noise from heavy vehicles such as buses and other increases in traffic flow on Robert Road will destroy the predominately quiet suburban street. Constant accelerating and braking due to the traffic conditions, parked vehicles and pedestrian traffic will increase the noise factor substantially.
- ❖ As the railway line approaches the Norwest station, the line is depressed by 10 to 12 metres. Concerns properties located near the station experience higher noise and vibration as a result of the reduced depth of the line.
- ❖ Concerns regarding noise and vibration generated by the proposed Cherrybrook Station and insufficient information on how this will impact residents. Concerns that the open-cut station will negatively impact residents due to an increase of noise, including noise from trains and platform announcements that will be heard from nearby residences. Suggestion to mitigate noise from the station including the proposed parking facility at Cherrybrook, by planting trees as a buffer zone between car park and residences.

- ❖ Question regarding what type of noise barriers will be installed and maintenance of the noise barriers surrounding the proposed Cherrybrook Station.
- ❖ Concerns regarding noise generated from the Castle Hill Station Crossover Cavern during operation. Suggestion that a high standard of sound attenuation may be necessary to achieve an acceptable noise level in the Northpoint Apartments. Request for specific information on sound transmission through the depth of Ashfield Shale which lies between the railway tunnels and the basement structure of the Northpoint Apartment buildings.
- ❖ Concerns that future residents in residential development area near Tallawong Stabling Facility will be impacted during the operation of the facility due to the noise created by day to day work activities, air conditioning units, brake testing and horn testing. Request for noise mitigation measures in this area.

Sites / compounds

Station precincts would be key elements of EIS 2.

Stakeholder identification number(s) including:
106

- ❖ In relation to the proposed Cherrybrook Additional Construction Zone post construction, suggestion to build a structure which utilises the Additional Construction Zone to shield the Robert Road residents from visual, acoustic and congestion impacts resulting from the Cherrybrook Station.

Timetables and trip duration

A description of rail operations would be a key element EIS 2. It is noted that the project is proposed to operate as a rapid transit system.

Stakeholder identification number(s) including:
48, 117

- ❖ Suggestion that rail travel times can be effectively lowered as population and rail patronage increases by scheduling limited stop express trains during peak periods as is done on the Fremantle line in Perth, train services alternate as express / all stops for one half of the route.
- ❖ Preference for the railway to be high speed, including the use of fast trains.

Traffic impacts

Potential operational traffic impacts associated with the Stations, Rail Infrastructure and Systems were assessed at a conceptual level in Section 6.7 of EIS 1. Further description and potential operational impacts associated with the project will be presented and assessed in detail as part of EIS 2.

Stakeholder identification number(s) including:

34, 47, 49, 50, 53-55, 61, 62, 66, 78, 79, 96, 97, 101, 106, 111, 115, 116, 135, 138, 139, 142, 144, 163, 166, 173, 288, 319, 329, 336, 338, 339, 343, 344, 347, 350, 352, 353

- ❖ Increased traffic and commuter parking within the residential streets of the areas surrounding the NWRL will impact residents' lifestyle. Suggestion to close Middleton Road near the location of the roundabout as it will become congested with increased traffic once the NWRL is in operation.
- ❖ Concerns regarding traffic congestion on local roads surrounding the proposed Cherrybrook Station, such as Franklin Road and Castle Hill Road. Suggestion to close connection from Franklin Road to Castle Hill Road with restricted access for pedestrians. Concerns that the proposed 950 parking facility at Cherrybrook will attract more cars and a high number of park and ride passengers to the area therefore placing further stress on the local road network. The benefits of the rail system will be lost due to the already congested and poor road network. The area is too small of a suburb to be impacted by such a large project. Preference for bus bays/bus stops, kiss and ride facilities and pedestrian/bicycle access points to be planned to avoid impacting traffic flows on Castle Hill Road. Request for commuter friendly access points in order to reduce the number of cars crossing Castle Hill Road.
- ❖ Question raised if consideration has been given to traffic impacts on already heavily congested roads surrounding the project, such as Celebration Drive, Lexington Drive, Samantha Riley Drive, Newbury Avenue and Old Windsor Road once the NWRL is operational.
- ❖ Concerns regarding additional traffic congestion during operation of the proposed Bella Vista Station. The proposed parking station at Bella Vista Station will attract more cars to the area and put further constraints on Old Windsor Road, Celebration Drive and Lexington Drive intersections. Suggestion to consider traffic arrangements which will mitigate impacts on local traffic and request for traffic modelling presentation around the Bella Vista Station.
- ❖ Concerns for the use of Castle Howard Road as an access point for light vehicles and possible emergencies. Castle Howard Road is narrow and therefore not suitable for increased traffic.
- ❖ Objection to Robert Road being used as a feeder road to service Cherrybrook Station. Concerns that increased traffic from buses (and other commuters) will cause heavy traffic congestion along the narrow road. If the width of a bus at 2.5 metres is put into the three metre space then it leaves no more than 250mm each side of clearance. If bigger vehicles or more vehicles are parked on Robert Road, then it may well become impassable to any traffic. Ultimately if this proposal were to proceed then a constant amount of damage will be encountered to all vehicles and the cost to the owners will be in devalued cars, lost time and increased premiums. The placement of "No Stopping" signs on one or both sides of Robert Road to increase traffic flow in this narrow street will do nothing but increase parking problems for the current residents of the area. Current intersections along Robert Road (eg John Road and Castle Hill Road) are already problematic with many near misses and collisions

occurring daily. Robert Road without major modification / property resuming / removal of footpaths / the addition of unnecessary and drastic parking changes, has an inadequate road width of seven metres and is totally unsuited for buses or increased traffic flow.

- ❖ Advice that the roads that the current bus routes take around the area are better able to support the proposed massive increase in traffic over the Robert Road proposal. This in line with the proposed car park at the Cherrybrook Station will mean the road will not handle the volume or type of traffic expected in NWRLs proposal.
- ❖ Calls for no vehicular access out of the Western end of Cherrybrook Station and onto Robert Road. Suggestion to look at alternative bus routes that service the area currently, such as routes along New Line Road, David Road, Woodgrove Road, County Drive, John Road, Franklin Road, Neale Road, Edward Bennett Road and Castle Hill Road. Preference for measures to discourage thoroughfare of commuter traffic using Robert Road, such as restrictions of right hand turns onto Robert Road from John Road, the construction of chicanes or cul-de-sac Robert Road to ensure no access to Cherrybrook Station.
- ❖ Objection to the decision to have the majority of County Drive as a one lane main road for (traffic calming) in each direction. County Drive is already a main thoroughfare that was designed as a four lane road. Suggestions include:
 - Instead of turning off County Drive into John Road, the buses should continue along County Drive to Castle Hill Road and then turn into the Cherrybrook Station at the proposed traffic lights at Franklin Road.
 - Re-align the footpath and fix the roadway, post school construction in Franklin Road and have the buses and increased traffic flow use the NWRL's proposed traffic lights at Castle Hill and Franklin Roads.
 - Adopt one or both of the above paragraphs, and re-open the closed Northern end of Franklin Road where it meets New line Road by installing traffic lights to assist with traffic flow. Franklin Road at this northern end is already a 10 metre wide road and no other work is required to have it able to take on the extra volume of traffic.
- ❖ Suggestion that non-local residents occupying areas north of New Line Road and areas west of County Drive have no option but to pass through County Drive in order to access Cherrybrook Station, whether travelling by public transport or otherwise. Therefore, with the exception of buses travelling along John Road to Franklin Road, there should be no requirement to put any further strain on the small local roads east of County Drive. Concerns that if that were to occur, it would increase traffic flow and result in strain on Robert Road which would be detrimental. Proposal for all transport to continue to flow through County Drive and left onto Castle Hill Road and access the station (at the Additional Construction Zone end) through a new access (slip lane) built alongside Castle Hill Road. Residents confirm that during the morning peak hour traffic, the traffic heading south on County Drive towards Castle Hill Road is minimal and free flowing therefore County Drive, in this direction, is currently under-utilised and is able to take significantly more traffic than it currently does.
- ❖ Concern raised that that the estate on the eastern side of Robert Road has not been designed with adequate onsite visitor or trade parking. These vehicles currently park on Robert Road causing congestion resulting from the frequent single flow of traffic along Robert Road.

- ❖ Concerns about operational traffic levels in the West Pennant Hills area from patrons of the proposed Cherrybrook Station. Request for the upgrade of Glenhope Road.
- ❖ Concerns regarding increased traffic issues in the Castle Hill Showground area as a result of the proposed Hills Centre Station.
- ❖ Concerns regarding existing traffic hazards at the already congested County / Shepherds Drive / New Line Road roundabout. Suggestion to replace the roundabout with traffic lights to mitigate future problems.

Transport

Bus integration

Accessibility to station precincts via bus would be a key element of EIS 2.

Stakeholder identification number(s) including:
48, 59, 97, 106, 117, 123, 135, 142, 166, 228, 311, 336, 342

- ❖ A reduction in bus journeys and subsequent congestion will not eventuate as a result of the NWRL as the proposal ignores transport links with Parramatta.
- ❖ The NWRL should give bus services rail traffic generating nodes at two or more points along their routes. This will serve to balance the bus patronage and ease directional capacity constraints, particularly at peak times.
- ❖ Concerns that re-designing Robert Road to bring buses to the Cherrybrook Station will add to the constraints of the surrounding area and will not answer transport needs.
- ❖ When the NWRL is operating the number of buses going to the city will obviously be reduced, but the bus terminal will continue to be important. Request for a first class bus terminal to be integrated with the railway station and have an associated range of shops to serve the travelling public. At present buses exit the terminal by going through the centre of Castle Hill. In the future if arrangements are changed so that buses can depart in one of two directions, lights will be needed at the Terminus Street intersection with Old Northern Road to enable some buses to turn right into Terminus Street.
- ❖ Suggestion that in order encourage as many commuters as possible to access the station via public transport, a right hand turn off Franklin Road into the proposed Cherrybrook Station should be constructed for buses only. By restricting entry to the station off Franklin Road to buses only, this will prevent excessive traffic building up, thereby keeping Franklin Road safer for both school students at Tangara School and also those residents at Inala with special needs. For local Cherrybrook residents who wish to drop off passengers and not park, a kiss and drop zone could be constructed on Franklin Road. With the use of a roundabout, these residents could then return up Franklin Road to their homes.

Buses that have entered the station from Franklin Road (which presumably will be a minimal amount) can re-enter Castle Hill Road, turning either left or right via a buses only lane. Again this would utilise the traffic signals proposed at Glenhope Road in EIS 1.

It is important to note that all of the above proposals utilise the traffic signals proposed by NWRL in EIS 1. To achieve this:

1. No further access is required from Robert Road.
 2. Incoming traffic on Franklin Road and John Road is kept to a minimum by catering for local traffic (via the kiss and drop zone) and buses only.
- ❖ Concerns regarding the use of Robert Road as a bus feeder route to the proposed Cherrybrook Station and that current traffic constraints and safety issues will increase as a result of this. Further concerns that the paving will deteriorate as a result of intensive bus traffic. Suggestion to use an alternative route on road designed to carry buses such as continuing along County Drive and turning left on to Castle Hill Road.
 - ❖ Concerns regarding the relocation of the current Bus Interchange at Old Northern Road. Suggestion that the new location needs to be in close proximity and accessible by flat, well maintained footpaths.
 - ❖ Suggestion for bus service integration to cater for residents in the surrounding areas of the proposed NWRL stations, such as Dural, Round Corner, Glenorie, Glenhaven, Kenthurst and Annangrove.
 - ❖ Request for underground/above ground bus access roads to ensure bus passengers transferring to the rail line are able to transfer quickly and easily.
 - ❖ Suggestion for shuttle buses throughout areas surrounding the station, such as Cherrybrook, to encourage commuters to leave their cars at home.

Rail integration

The project is consistent with Sydney's Rail Future (June 2012), which is an integral part of the NSW Long Term Transport Master Plan. Sydney's Rail Future identifies a plan to transform and modernise Sydney's rail network so that it can grow with our population and meet the needs of customers into the future. Sydney's North West is a major beneficiary of Sydney's Rail Future – a new rail plan for Sydney with the customer at its focus.

Stakeholder identification number(s) including:

48, 59, 117, 167, 351, 352

- ❖ Objection to the poor linkage of the proposed NWRL with other rail lines at Epping Station. There is no detailed planning disclosed of how this line will be functionally connected to the rest of the CityRail network. If this is not resolved at the planning stage then this project will only swap chronic peak road congestion for chronic peak rail congestion and capacity constraints.
- ❖ Comments that the proposed project is focused on moving people to and from the city centre which will put more constraints on the already congested rail lines closer to the city. Suggestion that more focus should be on connecting large centres such as Parramatta, Castle Hill, Rouse Hill, Kellyville and Blacktown.
- ❖ Support for future plans of the NWRL to join the Richmond Line and beyond.
- ❖ Support for the integration of existing lines, such as the Northern Line and the North Shore Line, with the proposed NWRL.

Parking availability

Parking and potential operational traffic impacts would be assessed in EIS 2.

Stakeholder identification number(s) including:

15, 34, 44, 72, 79, 96, 101, 106, 115, 123, 139, 142, 144, 166, 311, 317, 322, 330, 332, 338, 342, 347, 352, 353

- ❖ Concerns that once that the NWRL in is operation, more commuters will be attracted to the area and park their cars in the residential streets, particularly in Dawes Avenue, Castle Hill and in Brighton Drive, Bella Vista. Suggestion to enforce no parking in streets, except for residents, and build carparks (free and untimed) to deter commuters from parking in the streets.
- ❖ Concerns that the NWRL won't be fully utilised unless adequate parking is provided for commuters at all stations. Belief that the 4000 cark parks specified in EIS 1 is inadequate to make the NWRL attractive to use compared to driving to and from work. Suggestion to provide safe, multi-levelled, free parking which would cater to a large demand and allow for expansion to cater for future population growth of the North West area.
- ❖ Request for additional parking and for further detail of the proposed multi-level carpark at the Hills Centre station.
- ❖ Crane Road is very long and carries a large volume of traffic. Access to Crane Road from Mercer Street is becoming increasingly difficult at peak periods. A significant volume of school traffic also makes use of Brisbane Road and Mercer Street. Calls to consider the likely impact of commuter parking in these areas where hundreds of apartments are located. If the aim is to encourage commuters to use the planned parking stations at Cherrybrook and the Hills Centre, it might be advisable to establish some limited parking zones in the sections of Mercer Street and Brisbane Road closest to the station. This arrangement exists at Pennant Hills where a neighbouring parking station is at Thornleigh.
- ❖ The Cherrybrook Station will have major implications for the amount of land available for parking once the NWRL is in operation. Concerns regarding commuters parking in residential streets surrounding the proposed Cherrybrook Station, including Robert Road. Advice that retaining street parking throughout Robert Road is imperative given the sheer quantity of houses that are either battleaxe blocks or community estates, both having limited off street parking. It is imperative that this street does not become a parking facility for commuters using Cherrybrook Railway Station. To ensure this does not occur, proposal for restricted parking (permit parking or timed parking up to two-four hours) on Robert Road and surrounding roads, with the exception of residents and parking within the Cherrybrook Station be free to encourage commuters to utilise the designated parking area. Concerns regarding loss of parking in Robert Road due to road widening to allow for bus access to the proposed Cherrybrook Station. Request for assurance that designated parking at the proposed Cherrybrook Station will remain as surface parking only and not impact the protected Sydney Blue Gum trees opposite Robert Road. Suggestion for an underground rather than aboveground car park as proposed at Cherrybrook Station. Suggestion the area that would have been cleared for the aboveground car park could be utilised for other amenities.
- ❖ Concerns the proposed location of Bella Vista Station and parking area will bring more traffic into the area, with over flow parking occurring in the local streets, particularly Bella Vista Waters estate. Suggestion to consider making local streets no standing with resident passes available.

- ❖ Concerns that areas of Castle Hill Road will be used for construction parking as there is limited space available on site. In particular, concerns regarding workers' vehicles parking in Garthowen Crescent impacting residents and their visitors' ability to park in the area. Request for compensation for building owners to erect and maintain car park barriers, such as a boom gate, to prevent construction vehicles parking in private car parks.
- ❖ Concerns that there are insufficient Park and Ride facilities at Castle Hill. Suggestion to consider additional Park and Ride facilities at Castle Mall, the Hills Centre and Rogans Hill with shuttle services to Castle Hill and Cherrybrook Stations.
- ❖ Request for direct commuter access between site (properties 299-309 on Old Northern Road) and the proposed Castle Hill Station, both above and below ground.

Pedestrian and bicycle access

Accessibility to station precincts for pedestrians and cyclists would be a key element of EIS 2.

Stakeholder identification number(s) including:
32, 54, 115, 117, 142, 228, 311, 326

- ❖ A pedestrian tunnel is needed at Hills Centre Station, from the corner of Showground Road and Green Road, to provide better and safer access to TAFE students and the general public. This will also help eliminate the need of driving to the station and occupying a car park.
- ❖ Suggestion for impacted residents (by the aesthetics and noise of the proposed Bella Vista Station) to be compensated with user friendly initiatives, such as the exploration of pedestrian access to the station from the suburb of Glenwood. Residents that are backing the station would have to drive or walk 30 minutes to exit the suburb. Suggestion to explore laneways allowing pedestrian access or subsidisation of locked fences to make the railway an asset for the surrounding areas.
- ❖ Pedestrians are likely to take the most direct route to get to an entry point to the station, even if this means jaywalking. Given the way pedestrian crossings at lights are arranged at present, many people are tempted to jaywalk across Terminus Street, Castle Hill, rather than walk to the lights. If they happen to be at a particular part of the corner of Crane Road and Terminus Street, they need to cross in three different directions to get to the current bus terminal. Request for a set of pedestrian lights in Terminus Street to overcome the problem. If synchronized with other lights, they should not impede the flow of traffic.
- ❖ Concerns around the impact of increased pedestrian traffic during operation.
- ❖ Request that pedestrian access from street to train platform be direct and quick.
- ❖ Concerns regarding pedestrian and bicycle access across Castle Hill Road to the proposed Cherrybrook Station. Request for an overpass or underpass as an alternative to pedestrians and cyclists crossing during phased signalling at the traffic lights.
- ❖ Concerns regarding pedestrian and animal access to the walkway that goes under the Showground Road to Fred Caterson Park.
- ❖ Request for foot bridge access for commuters from the proposed Hills Centre station to the PRP Diagnostic Imaging Clinic.

5.9.2 Project alternatives and other project suggestions

In addition to the previously itemised issues that are considered outside the scope of EIS 1, several project alternatives and other project suggestions were also raised in submissions. These project alternatives and other project suggestions are included below for transparency however as they too are considered outside of scope, these comments cannot be addressed in this report. The NSW Government has investigated many options for a public transport solution for Sydney's North West, some of which are more expensive but have lower local impacts and others which are cheaper but may have greater impacts. The present proposal is seen as having the right balance between these factors.

The NSW Government has addressed broader issues in relation to modernising Sydney's rail system in the Sydney's Rail Future Strategy which is part of the Long Term Transport Master Plan.

Project

Alternatives and other suggestions

Stakeholder identification number(s) including:

2, 3, 5, 7-11, 15, 17, 23, 25-29, 31, 36, 47-49, 51, 52, 55, 59, 60, 72, 76, 77, 104, 117, 137, 170, 177, 230, 232, 318, 326, 333, 335, 347

- ❖ Suggestion for better linkages of the NWRL to the Carlingford Line and Richmond Line (or other Northern Lines) to cater for areas including Richmond, Blacktown and Penrith. Preference to extend to the NWRL to Schofields Station.
- ❖ Preference for the Parramatta to Epping rail link should have been constructed before NWRL. Suggestion to sub-divide the land in Carlingford since the rail link from Parramatta to Epping is not going to be built.
- ❖ Consideration should be given to extending the line to connect with the Epping to Chatswood Line to further benefit Sydney commuters.
- ❖ Suggested project alternative to offer magnetically levitated transport capsules inside evacuated tubes of 1.5 metre diameter which are full automated, demand driven, run 24/7 and does not run on a timetable. Comments that this option would present as a more feasible alternative and it is estimated approximately 720 kilometre of capsule network to cater for three million passenger trips per workday could be constructed with \$9 billion in project funding.
- ❖ Request for the full length of the project to be tunnelled. Suggestion to include a non-stop direct tunnel from Epping to Castle Hill.
- ❖ Suggestion to use an alternative design of a light weight, magnetic train.
- ❖ The original proposal for the NWRL, which called for the line to diverge from the double track Main North Line between Cheltenham and Beecroft, was more suitable to allow for turnouts and the commencement of underground tunnels. The changed proposal incorporates negative aspects such as increasing tunnelling length by two kilometres, stub tunnels causing NWRL traffic to be routed to and from Chatswood, rapid descent to pass beneath Devlins Creek, and the elimination of the Carlingford Line level crossing of Parramatta Road.

- ❖ Suggestion for the rail line to run from Parramatta, to link both Pennant Hills and Parramatta, rather than Epping. The current proposal doubles up along the existing Epping to Hornsby line and involves more bridge use.
- ❖ Suggestion to reconsider the proposed route to go underneath Pennant Hills Road.
- ❖ Suggestion for an underground rail link to the North West of Sydney following the same route as the M2 motorway.
- ❖ Advice to consider upgrading the local road network around Cherrybrook to ensure the efficiency of the NWRL.
- ❖ The NWRL plan has not adequately considered alternative routes and fails to serve the major transport nose of Baulkham Hills. This would functionally connect the major urban centres in the North West and would entail much greater economic multiplier benefits in promoting regional economic development. The project also blocks any future development of the Epping to Parramatta Rail Link.
- ❖ Request for the project to be extended to close the gap between Carlingford and Epping by combining the construction of these lines which will both head west from Epping Station. This would provide integrated regional links and to do otherwise would result in one of those projects crowding out the other, by making it either physically impossible or prohibitively expensive.
- ❖ A more effective transport strategy for the Cherrybrook area would be to develop and modify the M60 Metrobus service to connect with rail to the city at Castle Hill and Pennant Hills. Private motorists of the area and Dural could be equally served by a parking station at Pennant Hills Station.
- ❖ If the NWRL planners and the Government are determined that the Cherrybrook Station remains unchanged, serious consideration should be given to a route that follows the ridge under Pennant Hills Road to Thompsons Corner (the Clyde-Carlingford line was originally planned to follow the route).
- ❖ The North West and Parramatta rail links should share a common route too approximately under the intersection of Ray and Midson Roads in West Epping where there should be a junction or triangular junction to allow a future loop line running with maximum flexibility and multi-directional capacity.
- ❖ If any station were to be removed, it should be Samantha Riley Drive as it is hemmed by special use spaces and is already well served by a T-Way station, commuter parking and local bus services.
- ❖ The proximity of the Rouse Hill Station to the Richmond Line raises the crucial question of a logical connection to that line. This would promise a Western region network maximising connectivity beyond Rouse Hill.
- ❖ Suggestion to relocate the stabling yard by acquiring a three kilometre right of way approximately paralleling Schofields Road to join the NWRL with a duplicated Richmond line south of Schofields station. This could be above ground and an industrial zone would buffer the noise from impacting residential areas. There would be no need for a Cudgegong Road Station and consideration could be given to locating another station some 1200 metres west of Cudgegong Road.

- ❖ Suggestion that transport to the North West could be established in a more timely and cost efficient way by using a light rail network, which connects to existing bus routes. This network could make use of the M2 and M7 corridors and under-utilised transit lanes already constructed in the North West, with provisions for car parking facilities with available land. The proposed \$9 billion for NWRL would provide an equivalent 450 kilometres of light rail and service a greater area of Sydney.
- ❖ Suggestion that the proposed NWRL is not necessary to extend beyond the Norwest Station with the Richmond to Blacktown Line.
- ❖ Suggestion to use the Beecroft Scout Hall as an alternative location for the Cheltenham Intermediate Services Facility. The Beecroft Scout Hall is located further from residential homes and would only impact approximately five properties in comparison to the immediate impact of 37 properties along Castle Howard Road. The Beecroft Scout Hall is situated closer to the half-way point between Epping and Cherrybrook, which offers greater safety for emergency evacuations. The existing dirt road that can be accessed from Kirkham Street seems more desirable as less clearing of vegetation would be needed.
- ❖ Suggestion that the section of the Third Track (Freight Corridor) from Epping be safeguarded and linked at Pennant Hills Road via a tunnel link near the intersection of the proposed twin tunnel with Pennant Hills Road terminating at Thornleigh.
- ❖ Suggestion to build rail line on toll-way corridors and freeways where current traffic already exists and tunnels are not needed.
- ❖ Request for a second more Western route to the North for all transport modes.
- ❖ Request for the line to continue to Schofields where it would turn south towards Blacktown along the Richmond Line.
- ❖ Request for tunnel under Castle Howard Road to be moved closer to the M2.
- ❖ Request for an amendment to the existing alignment which would link a hospital site to the proposed Hills Centre Station.