

3. Consideration of submissions

3.1 Overview of submissions to Environmental Assessment

3.1.1 Number of submissions received

The Department of Planning received a total of 89 submissions during the exhibition period. These comprised 79 submissions from community members and 10 submissions from government departments, agencies and stakeholders. TIDC's response to the key issues raised in these submissions forms the basis of this chapter.

3.1.2 Analysis process

All non-government submissions (including submissions from the community) have been categorised according to the key and specific issues they raised (refer Table 3-1). The specific issues raised in non-government submissions, and TIDC's response to these issues, are provided in Appendix C. A summary of the most frequently raised issues in non-government submissions, and TIDC's response to these issues, is provided in Section 3.2.

Government agency submissions have been dealt with separately to non-government submissions due to the large number of specific, technical issues that were raised. The specific issues raised in government agency submissions, and TIDC's response to these issues, are provided in Appendix D. A summary of frequently raised issues by government agencies, and TIDC's response to these issues, is provided in Section 3.3.

3.1.3 Summary of issues raised in submissions

Non-government submissions

A breakdown of the key issues raised in non-government submissions is provided in Table 3-1. Since most submissions raised more than one issue, the number of issues identified in Table 3-1 is greater than the total number of submissions received. The key issues identified in Table 3-1 have been categorised into topics that correspond with the information presented in the Environmental Assessment. Submissions that raised multiple issues from the same category (i.e. traffic and transport related issues) were only counted once.

As shown in Table 3-1, 'project design', 'traffic and transport' and 'socio-economic' related issues were those most frequently raised in non-government submissions. A further breakdown of these key issues into sub-issues is provided in the following sections.

Table 3-1 Summary of the key issues raised in the non-government submissions

Type of issue raised	Number of submissions raising the issue ¹	Percentage of submissions raising the issue ²
Project design ³	56	70.9%
Traffic and transport ³	48	60.8%
Socio-economic ³	33	41.8%
Consultation	13	16.5%
Noise and vibration	8	10.1%
Project justification	7	8.9%
Public safety	6	7.6%
Non-Indigenous heritage	4	5.1%
Construction	3	3.8%
Environmental Assessment	3	3.8%
Approvals process	2	2.5%
Water quality and hydrology	2	2.5%
Objection to the Project (generally)	2	2.5%
Planning and statutory context	1	1.3%
Cumulative impacts	1	1.3%
Other issues	16	20.3%

Notes 1: Submissions that raised multiple issues from the same category (e.g. traffic and transport) were only counted once.

2: Seventy-nine non-government submissions were received during the exhibition period. The percentage stated is the number of submissions raising each key issue, relative to the 79 submissions received.

3: Refer to Figure 3-1 for a detailed breakdown of this issue into sub-issue categories.

Key-issue 1 – Project design

Project design related issues were raised in approximately 71% of non-government submissions. Of these issues, the 'relocation of Schofields Station' and 'consideration of additional stations' were the most frequently raised sub-issues in non-government submissions (39% and 18%, respectively). A complete breakdown of project design related issues into sub-issue categories is provided in Figure 3-1.

Discussion on frequently raised issues associated with the relocation of Schofields Station, and TIDC's response to these issues, is provided in Section 3.2.1. Discussion on the justification for the selection of relocating Schofields Station as the preferred Project option is provided in Section 3.2.2.

Key-issue 2 – Traffic and transport

Traffic and transport related issues were raised in approximately 61% of non-government submissions. Of these issues, 'accessibility', 'construction traffic impacts' and 'operational traffic impacts' were the most frequently raised sub-issues in non-government submissions (48%, 23% and 20%, respectively). These issues were primarily related to the accessibility of the relocated Schofields Station and construction/operational traffic related impacts on Bridge Street residents. A complete breakdown of traffic and transport related issues into sub-issue categories are provided in Figure 3-1.

Discussion on frequently raised issues associated with the relocation of Schofields Station, and TIDC's response to these issues, is provided in Section 3.2.1, while discussion on traffic and transport impacts to Bridge Street is provided in Section 3.2.3.

Key-issue 3 – Socio-economic

Socio-economic related issues were raised in approximately 42% of non-government submissions. Of these issues, the 'relocation of Schofields Station' and associated impacts to 'business viability', 'property values' and 'equality' were the most frequently raised sub-issues in non-government submissions (25%, 23%, 18% and 17%, respectively). A complete breakdown of socio-economic related issues into sub-issue categories is provided in Figure 3-1.

Discussion on frequently raised issues associated with the relocation of Schofields Station, and TIDC's response to these issues, is provided in Section 3.2.1.

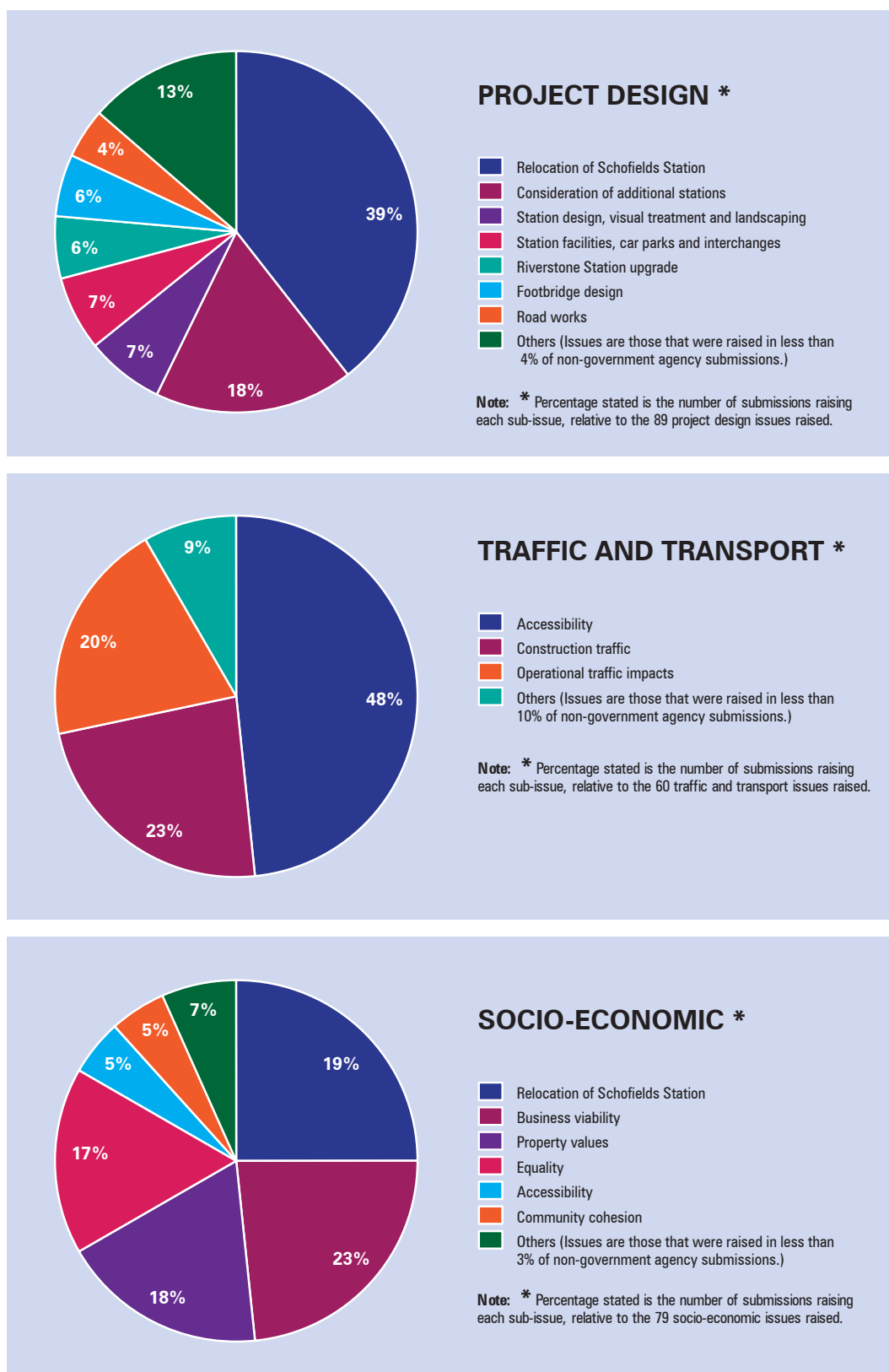


Figure 3-1 Analysis of the specific traffic and transport, project design and socio-economic issues raised in non-government submissions

Government agency submissions

A summary of the key issues raised by each government agency is provided in Table 3-2. Discussion of frequently raised issues by multiple government agencies, and TIDC's response to these issues, is provided in Section 3.3. The complete set of issues raised in government agency submissions, and TIDC's response to these issues, are provided in Appendix D.

Table 3-2 Summary of issues raised in government agency submissions

Agency	Key issues raised
Blacktown City Council	<ul style="list-style-type: none"> project justification (relocation of Schofields Station) approvals process (minimum exhibition period) Stage 2 deferral consultation aims of the Growth Centres SEPP and Strategies and Land Release Branch involvement project design (inadequate car parking at Schofields and Riverstone; kiss-and-ride facilities inadequate) socio-economic impacts (relocation of Schofields Station) traffic and transport (Meatworks level crossing and Garfield Road interaction) operational traffic impacts noise and vibration (operation and impact on future sensitive receivers) non-Indigenous heritage water quality and hydrology (culvert design and flooding) SoCs.
Strategies and Land Release branch of the Department of Planning	<ul style="list-style-type: none"> Project Design (future design features required to accommodate NWGC development).
Hawkesbury City Council	<ul style="list-style-type: none"> traffic and transport (improved western side access routes for outer suburbs) traffic and transport (bus connection from the Western Line to the Richmond Line and Rouse Hill) project design (commuter car parking at Vineyard Railway Station).
RTA	<ul style="list-style-type: none"> project design (must not preclude RTA plans for future road upgrades or Strategies and Land Release Branch plans for proposed cycle paths) traffic assessment — assessment of future environment management of traffic and transport impacts during construction additional commuter car parking provisions.

Agency	Key issues raised
Department of Water and Energy	<ul style="list-style-type: none"> ▪ culvert crossings (replacement of Category 2 crossings with bridge crossings) ▪ culvert design (must not increase stream flows and velocities and must be designed to minimise the requirements for scour protection) ▪ rehabilitation of vegetation and watercourses ▪ management of impacts to waterways, groundwater and salinity issues ▪ requirement for a water licence.
Landcom	<ul style="list-style-type: none"> ▪ socio-economic impacts (relocation of Schofields) ▪ noise and vibration (operational impact on future sensitive receivers) ▪ further assessment of noise impacts for future sensitive receivers and consideration of additional noise mitigation measures ▪ revision of SoCs to provide further commitment for additional noise assessment and mitigation measures.
DECC	<ul style="list-style-type: none"> ▪ assessment and management of noise and vibration impacts during construction and operation ▪ applicability of the Growth Centres SEPP to the Project ▪ biodiversity offsets required for the Project ▪ consideration/classification of Endangered ecological communities ▪ fauna surveys undertaken for the Project ▪ indirect biodiversity impacts resulting from the Project ▪ methodology/approach used for the flood assessment for the Project ▪ revision of draft SoCs.
Department of Defence	<ul style="list-style-type: none"> ▪ rail noise impacts on future land use ▪ further assessment of noise impacts on future sensitive receivers and consideration of additional noise mitigation measures.
MoT	<ul style="list-style-type: none"> ▪ supports the Project, which includes the relocation of Schofields Station in Stage 1 of the Project ▪ further consultation during the detailed design and construction of the Project ▪ design of station interchanges ▪ additional commuter car parking provisions ▪ consideration of future bus capacity and access requirements.
RailCorp	<ul style="list-style-type: none"> ▪ supports the Project.

3.2 Response to frequently raised issues – non-government submissions

This section details the five most frequently raised issues in non-government submissions received on the Project (as identified in Table 3-1) and TIDC's response to these issues. Responses to every specific issue raised in non-government submissions are provided in Appendix C. Individuals/organisations seeking a specific response to their submission are referred to Appendix C.

3.2.1 Relocation of Schofields Station

The relocation of Schofields Station (including the associated impacts on the existing Schofields community) was the most frequently raised sub-issue in non-government submissions received. Approximately 52% of submissions raised this sub-issue at least once (i.e. combination of 'project design' and 'traffic and transport' issues, as discussed in Section 3.1.3). The impact to the existing Schofields community has been further classified into sub-issue categories related to accessibility, public safety and socio-economic factors to assist with responding to the specific issues raised in submissions received.

Sub-issue 1 – Accessibility

Concern that Schofields Station will be less accessible to the community due to the longer walking distance required to access the new station

As described in Section 8.2.2 of the Environmental Assessment, the relocation of Schofields Station would increase the travel distance for residents who live to the north of the existing station and currently access the station by walking and cycling. For residents located to the south of the existing station, travel times to the new station are likely to be the same or improved. However for residents located within the centre of Schofields and north of the existing station, the relocation would add approximately 800 metres to existing trips. It is expected that, where the distance to Schofields Station has increased, some people who currently walk to the station may choose other modes to access the station or change their travel patterns.

To maximise connectivity, a shared user path would be provided along Railway Terrace to connect the existing Schofields Station with the new Schofields Station. Pedestrian access to the new Schofields Station from the western side of the rail corridor would also be provided via the extension of Bridge Street.

The Project would provide improved commuter facilities for all modes of transport. As described in Chapter 6 of the Environmental Assessment, the Project would deliver approximately 230 commuter car parking spaces and 40 bike racks (space has also been allocated for bike lockers to be provided) at the new Schofields Station, as well as kiss-and-ride facilities, a taxi-stand and a bus interchange. It is expected that these facilities, including lift access, would provide ease of access to the train station for many existing Schofields residents.

Prior to opening the new Schofields Station, a Schofields Station Transition Plan ('Transition Plan') would be developed in coordination with the MoT, Strategies and Land Release Branch (Department of Planning) and RailCorp in consultation with the community and Blacktown City Council to ensure that there will be minimal disruption for commuters. The transition plan will be available for comment by the community and will include information relating to the MoT's planned bus service reviews.

Will there be a bus service that operates between the existing and new Schofields Station?

A Transition Plan will be developed in coordination with the MoT, Strategies and Land Release Branch (Department of Planning) and RailCorp, to manage issues pertaining to the reconfiguration of one or both of the existing bus routes to the new station. The Transition Plan will be developed prior to the commissioning of the new Schofields Station and will involve consultation with the local community, including Blacktown City Council.

In addition to the development of the Transition Plan, the MoT is also currently undertaking an extensive review of metropolitan bus services in accordance with the recommendations of the 'Unsworth Review' (a ministerial review of bus services in NSW).

The longer term development of bus services is envisaged to provide transport services for new release areas in the vicinity of the Richmond Branch Line, especially in the Alex Avenue, Schofields and Riverstone East precincts. These longer term bus services are envisaged to provide connections from Schofields village and surrounding new development to the proposed Schofields Station. The implementation of these bus services would maintain the accessibility of the train station for existing Schofields residents.

The bus services would be provided by private operators, and as such it is anticipated that the bus service would not be free. The cost of using the bus service would be determined by the MoT and would depend on the distance of travel, as per existing pricing arrangements for bus fares.

There is currently no bus interchange provided in the design for the western side of the new Schofields Station, given that there are currently no bus routes serving this location; however, the current design does not preclude the later provision of a bus interchange to accommodate future development. The car park design provided on the western side of the new station can be modified to integrate with the Strategies and Land Release Branch's plans for the Schofields precinct when the planning for this area has been further progressed. As such, the car park/interchange on the western side of the new Schofields Station could be modified to accommodate future bus services, should MoT decide to service the western side of the station in the future. The new station has a design that can accommodate growth of the surrounding Schofields, Alex Avenue and other precincts as part of the development of the NWGC without precluding the future planning of these areas.

Relocating the station will promote the use of cars

As described above, the relocation of Schofields Station may result in some residents changing their travel behavior in the short-term; however, in the long-term, the closure of the existing Schofields Station is not expected to increase the mode share of private vehicle use. The Alex Avenue precinct has been planned to concentrate high density development in the vicinity of the new Schofields Station in the form of a distinct town centre (GCC 2008b).

The relocation of the station close to this town centre would maximise the opportunity for a large number of residents to be located within walking distance of the station. It is considered that the relocation of Schofields Station would improve access by providing more frequent rail services and allowing for the greater integration of other modes of public transport, through the creation of additional commuter car parking and bus interchange facilities at the new Schofields and Vineyard stations, encouraging commuters to use the rail infrastructure as a main form of public transport. The Riverstone Precinct Planning Report (GCC 2008c) notes that the planned high density housing will be concentrated along public transport corridors, with most homes to be located within 400 metres of public transport.

The provision of an attractive, integrated and accessible public transport link for existing and future residents in this area would help to reduce the already high reliance on private cars as the main mode of transport for journeys to and from the area and would assist in achieving Priority S6 of the NSW Metropolitan Strategy (i.e. to increase the share of peak hour journeys on public transport).

Will a footpath be provided between the existing and new Schofields Stations?

As described in Section 6.2.6 of the Environmental Assessment, a shared user path (pedestrian/cyclist) would be provided along Railway Terrace to connect the existing Schofields Station site with the new Schofields Station. This shared user path would be delivered as part of Stage 1 of the Project. An indicative illustration of the shared user path is shown in Figure 4-3 (refer Section 4.2.3).

Lighting is proposed to be provided along the entire length of the shared user path and would be designed in accordance with AS1158-2005 *Lighting for roads and public spaces* and AS4282 – 1997 *The Control of the Obtrusive Effects of Outdoor Lighting*. The detailed design of the shared user path would be developed in consultation with Blacktown City Council and the Strategies and Land Release Branch.

Sub-issue 2 – Public safety

Relocating Schofields Station will result in an increased safety risk to commuters as they will have to walk further to access the station. Relocating the station away from the Schofields village centre will result in an increased risk of car theft and break-ins

A shared user path would be provided along Railway Terrace, during Stage 1 of the Project, to connect the existing Schofields village centre with the new Schofields Station. The design of the shared user path would include appropriate lighting along the entire length of the path and landscaping treatments to promote passive surveillance. An indicative illustration of the shared user path is shown in Figure 4-3 (refer Section 4.2.3).

Pedestrian access to the new Schofields Station from the existing village centre would also be provided from the western side of the rail corridor.

The relocated Schofields Station will be designed in accordance with the principles of CPTED. This includes appropriate lighting, fencing of the rail corridor, installation of surveillance cameras and help points. The car parks at the new Schofields Station will include CCTV as an integrated component of the Project design.

Security issues are expected to be further reduced as a result of the development of the NWGC. The development of the Alex Avenue, Riverstone and Schofields precincts would result in increased activity within the vicinity of the new Schofields Station, which is likely to act as a deterrent to the perceived risk of crime. Public safety would be considered as part of the Transition Plan that would be developed prior to the commissioning of the new Schofields Station (refer to *Sub-issue 1 – Accessibility* for discussion on the Transition Plan).

Sub-issue 3 – Socio-economic impacts

Moving Schofields Station would impact local business

As described in Section 8.3.4 of the Environmental Assessment, existing businesses may be affected by decreased exposure to rail patrons and the perceived change in town centre focal point provided by the station. However, as discussed in Section 3.3.5 of the Environmental Assessment, survey data collected by RailCorp indicated that, on the days surveyed, 13% of people surveyed used the Schofields village shops on their way to and/or from Schofields Station. Although the data did not indicate the specific shop(s) visited by commuters, some shops would currently experience more passing trade from commuters than others. Table 8-9 of the Environmental Assessment identifies those shops potentially most impacted by the station relocation.

The current design does not include retail facilities within the new Schofields Station complex; however, the design does not preclude retail development as part of the Alex Avenue Precinct development.

Medium to long-term effects on existing businesses at Schofields are difficult to assess as the broader Schofields area is expected to be substantially revitalised as part of the NWGC. Plans for the revitalisation of the Schofields village centre would be further developed as part of the NWGC precinct plans. Plans for the village centre would likely focus on the following outcomes (GCC 2008c):

- encouraging further commercial development within the village centre to complement and support the existing small businesses
- encouraging the revitalisation of Schofields as a village centre to differentiate it from the new town centre planned within the Alex Avenue Precinct (adjacent to the new station location)
- retaining the existing community feel within Schofields village by promoting development that is consistent with a village community.

It is expected that the implementation of the Strategies and Land Release Branch's revitalisation plan would reinforce the Schofield village centre's role as a neighbourhood centre within the Riverstone precinct supporting the local residents.

A revitalised village centre would likely lead to sustained or increased patronage for existing businesses.

Moving the station will impact property values

It is difficult to assess the impacts of the Project on the value of properties around Schofields Station due to a number of external factors, such as fluctuations in the Sydney property market and the development of the NWGC. While the relocation of Schofields Station would increase the distance to the station for some residents, the Project would result in increased frequency of trains and improved access to public transport facilities providing commuters with more choice regarding time of and mode of travel and would likely increase property value.

Moving the Station would impact on the identity of the Schofields village and the cohesion of the Schofields community

As discussed in the previous response related to business impacts, the Strategies and Land Release Branch are planning a revitalisation plan for the Schofields village. The *Riverstone Precinct Plan* (GCC 2008c) and NSW Government's draft *North West Subregional Strategy* identify Schofields as a 'Neighbourhood Centre'. This Neighbourhood Centre is defined as a small cluster of shops and services containing between 150 and 900 dwellings. Hence, the relocation of Schofields Station would not impact the identity of Schofields village and is expected to maintain its existing characteristics as a Neighbourhood Centre as described above.

In addition, the new Schofields Station would retain the name of the existing station (i.e. Schofields Station), as this station would still be located within the boundaries of the Schofields suburb. It is expected that the retention of existing station name would assist in addressing community concern regarding the impact of the relocation of Schofields Station on the cohesion of the existing Schofields community by preventing the perceived creation of 'old' and 'new' Schofields communities. As discussed in Section 8.3.4 of the Environmental Assessment, the Schofields community has shown considerable interest in the changes proposed as part of this Project and plans for the NWGC. This interest is expected to reinforce the cohesive nature of the Schofields community.

The provision of the pedestrian footbridge at Schofields is expected to maintain the east-west community linkage within the Schofields village centre by providing easy access across the railway corridor. This facility is likely to support the Strategies and Land Release Branch's revitalisation plan for the Schofields village.

3.2.2 Justification for relocating Schofields Station

Sub-issue 1 – Development of the preferred project option

Why has the government changed its mind regarding the delivery of a Nirimba Station as documented in the NSW Government Metropolitan Strategy

The construction of a new station at Nirimba was first identified in the Sydney Metropolitan Strategy (NSW Government 2005b). The Strategy identified improvements to transport interchanges, stations, bus stops, and train and bus services. The construction of a new station at Nirimba was also identified in the NSW Government's (2005a) *Preliminary Infrastructure Report for the North West and South West Growth Centres*. The new Nirimba Station was proposed to be located at the corner of Railway Terrace and Burdekin Road,

approximately 2 kilometres north of Quakers Hill Station and 1.5 kilometres south of Schofields Station.

In 2006, the Department of Planning released the NWGC Structure Plan. The Structure Plan identified transport hubs and a major town centre to the south of the existing Schofields Station, including an additional station near Nirimba. Schofields Station was to be upgraded as part of the duplication of the Richmond Branch Line identified in the Structure Plan.

Since this time, the Strategies and Land Release Branch had commenced detailed studies and planning for the initial release of precincts of the NWGC, including Alex Avenue, Riverstone, Riverstone West and North Kellyville. Draft precinct plans for Riverstone (GCC 2008c) and Alex Avenue (GCC 2008b) were placed on public exhibition between November 2008 and February 2009, while plans for Riverstone West (GCC 2009b) were placed on public display between March and April 2009.

Following on from these investigations for the Alex Avenue and Riverstone precincts, a whole-of-government view was formed that the relocation of Schofields Station, in preference to the redevelopment of the existing station and construction of a new station at Nirimba, would better support the planned development of the area.

As documented in the NSW Metropolitan Strategy, the strategy 'is a broad framework to facilitate and manage growth and development over the next 25 years. It sets the scene for more detailed planning in the subregions of Metropolitan Sydney and in the regional areas of New South Wales. It also identifies how local government will work with State Government to translate the aims and actions into local plans'. This demonstrates that further planning of subregions and local areas will need to occur in consultation with various government and non-government stakeholders.

Therefore, planning reports and documents, or certain sections of documents such as the Metropolitan Strategy, may be superseded as a result of refined plans and the review of decisions in light of these refined plans and further investigations at the local level.

The progression of the Strategies and Land Release Branch plans, and the need to align the Quakers Hill to Vineyard Duplication Project outcomes with these plans, has resulted in the refinement of planning for the Schofields area. The 'whole-of-government' approach taken to determine the preferred option (Option C as described in Section 5.4.1 of the Environmental Assessment) best supports the development needs of the Schofields area and the NWGC generally.

The Government decided in early 2008 to progress the full Richmond Line Duplication Project, including the relocation of Schofields Station, to the Environmental Assessment stage based on advice from a number of planning and transport agencies involved in planning for the future of North West Sydney. This co-ordinated approach to planning and infrastructure in the North West identified the relocation of Schofields Station as a preferred solution to provide both the existing Schofields community, future residents of the planned Alex Avenue precinct and the wider rail catchment with improved, integrated rail facilities and services.

Sub-issue 2 – Justification of the preferred project option

Disagrees with the justification provided for the relocation of Schofields Station

Section 5.5.1 of the Environmental Assessment provided a number of reasons why the relocation of Schofields Station was determined to be the preferred option for the Project. As part of the Strategies and Land Release Branch's planning for the Alex Avenue and Riverstone precincts, a whole-of-government view was formed that the relocation of Schofields Station, in preference to the redevelopment of the existing station and construction of a new station at Nirimba, would better support the planned development of the area. The reasons justifying this view included:

- Relocating Schofields Station would allow regional and local bus services to be focused on one major station, as opposed to creating two smaller transport centres.
- The relocation of Schofields Station would provide for an even spacing of stations along the Richmond Branch Line, assisting in the establishment of a uniform town centre hierarchy, and functional roles between the Riverstone town centre and the new Alex Avenue town centre. The operation of two stations (i.e. Quakers Hill/Nirimba or Schofields/new Schofields) in close proximity to each other would increase travel times for commuters using the rail line and would require additional resources to operate.
- The relocation of Schofields Station would potentially enable a much larger population to live within walking distance of the station following development of the NWGC.
- The new Schofields Station would be better placed to facilitate the development of greater commercial and retail employment opportunities in close proximity to the new station, enhancing opportunities for people to live and work within the NWGC.
- The new Schofields Station would provide opportunities to integrate a commuter car park and bus/rail interchange with the station.
- The relocation of Schofields Station to the top of an adjacent rise would have the benefit of improving train operations by minimising the occurrence of platform overshooting (trains not coming to a stop prior to the end of the platform) as is sporadically experienced at the existing Schofields Station.
- The fragmented ownership and flooding impacts around the existing Schofields Station would limit the ability to provide higher densities closer to the station and thus limit the efficiency of transit-oriented development.
- The area around the proposed new Schofields Station is not affected by the 1 in 100-year flood level, allowing for a higher density of transit-oriented development to occur around the proposed station on a greenfield site.
- A Nirimba Station would not be located at the area proposed to have the highest densities of development as currently being planned for the NWGC.
- There is limited space and opportunity to improve the existing Schofields Station with associated bus interchange and car parking facilities within the land currently used for car parking.
- The opportunity to revitalise the Schofields village centre would be limited if Schofields Station was upgraded due to the large area required to upgrade the station with bus interchange and commuter parking facilities.

- The new Schofields Station could be constructed away from the existing 'live rail' tracks allowing rail services to continue uninterrupted until the final connection of the track to the existing line.

The decision to relocate Schofields Station as the preferred option balances a number of issues and takes into consideration the wider benefits to the community within the environmental constraints presented. Together, each justification forms the basis for selecting the preferred option and no one reason should be considered in isolation.

Why isn't the Government listening to the residents regarding relocating Schofields and who was consulted on this decision?

The Project forms part of Rail Clearways Program, which is an initiative of the NSW Government to improve capacity and reliability on CityRail's Sydney suburban network through removing bottlenecks and junctions, reducing congestion and delays, and allowing for more reliable and frequent services. The Project satisfies the aims of the Clearways Program and has included the proposal to relocate Schofields and Vineyard stations.

The relocation of Schofields Station has been proposed for a number of reasons including current land use and environmental constraints, availability of land, constructability factors and anticipated NWGC development, which has been detailed via the Strategies and Land Release Branch. These reasons have been generated from options studies that determine environmental, social and economic considerations. As such, the relocation of Schofields Station overcomes many environmental, design and economic factors that would be harder to resolve if the station was to remain in its current location. As discussed above in this section, the reasons for relocating Schofields Station were taken on a holistic basis, with no one justification provided in isolation.

The EP&A Act provides the framework for approving projects that have an impact on the environment. As shown in Figure 1-2, Section 75F of the EP&A Act requires the Director-General to prepare environmental assessment requirements (DGRs), having consulted with other agencies on the matters to be addressed. The DGRs must be addressed by the proponent. Consultation requirements were included as part of the DGRs for this Project. The EP&A process for Part 3A projects includes the requirement to consider community views, necessitating 'adequate and appropriate' consultation with the local community and stakeholders to ensure the needs and concerns of the community are understood and considered.

There are NSW Government guidelines that exist for Major Project Community Consultation (October 2007). These guidelines note that community and stakeholder consultation forms an important component of the NSW Government's environmental assessment process for projects under Part 3A of EP&A Act. The guideline states that community consultation provides an 'opportunity for the decisions of Government to be informed by the views and knowledge of the community...with the goal to strengthen decision making by ensuring all relevant issues are considered'.

Consultation has, therefore, occurred throughout this Project and community needs and feedback have been incorporated into concept design where possible. Chapter 2 of this report provides a history of the public and government agency consultation undertaken to date. An example of how consultation has resulted in adoption of community requests includes the provision of access on the western side of the rail corridor at the new Schofields Station.

Additionally, all comments made on the Project, and particularly through the public exhibition and recent community information sessions, are being addressed in this Submission Report. This report will aid the Minister of Planning to consider all submissions prior to making a determination on the Project.

Sub-issue 3 – Decommissioning of Schofields Station

Why can't Schofields Station remain operational until the commencement of Stage 2 of the Project?

It will be necessary to decommission the existing Schofields Station during Stage 1 of the Project for the following reasons:

- The Quakers Hill to Vineyard Duplication Project includes the proposal (as part of Stage 1) to relocate Schofields Station to better integrate with the planned urban release area of the NWGC. It is not proposed to construct and operate an additional station in close proximity to the new station.
- The patronage numbers do not justify operating two stations in these locations. The cost of maintaining and operating an additional station, even if unmanned is not justified because of operational costs associated with maintenance, lighting, CCTV and station equipment (ticket vending).
- Operation of the existing Schofields Station on a single track immediately north of the merging double track is an operational constraint that adds to travel time.
- Retaining the station until the commencement of Stage 2 would require the station to be decommissioned at the commencement of the Stage 2 to enable civil works to commence. Decommissioning the station is likely to take up to six months, which would increase the delivery time and cost of Stage 2.

3.2.3 Bridge Street

Sub-issue 1 – Construction related impacts

Use Vernon Road to access the new Schofields Station construction site in preference to Bridge Street

The preferred option for construction access to the proposed new Schofield Station area is via Vernon Road wherever possible; however, there will be times when access would be required via Bridge Street. The construction traffic strategy for the track and new station works is summarised in Table 3-3.

In summary, the majority of heavy construction vehicles would use Vernon Road to access the new Schofields Station and construction worksites along the western side of the rail corridor. Predominately light vehicles would use Bridge Street during construction. The proposed construction access route to the construction compound at the new Schofields Station is shown in Figure 4-1, while construction access routes for the wider Project area are shown in Figure 4-2.

Table 3-3 Construction traffic strategy for the track and new Schofields Station works

Phase	Description of construction traffic strategy
Site compound establishment (approximately 3-4 months)	During the initial stages of construction (approximate 3-4 months), all construction vehicles would need to access the new Schofields Station and western track work zone via Bridge Street and Nirimba Drive. This would be required to enable the establishment of the construction compound and access haul roads (linking the site to Vernon Road and the site through-road to Nirimba Drive).
Main construction phase (approximately 18 months)	Following the completion of the haulage roads, the preferred plan is to direct the majority of vehicles (light and heavy) in/out of the construction areas via Vernon Road and Nirimba Drive. Access via Bridge Street would be maintained mainly for light vehicles (as required) or as a backup route when access via Vernon/Nirimba is unavailable to ensure access is maintained to the Project site.
Post construction (approximately final 2-3 months prior to handover in 2011)	During the demobilisation phase of the Project (approximately final 2-3 months prior to handover in 2011) the access through Vernon Road will be removed and traffic directed through Nirimba Drive and Bridge Street.

Bridge Street is too narrow to accommodate construction traffic

The traffic and transport study undertaken for the Project deemed the alignment of Bridge Street to be adequate for a construction access road. The approximate width of Bridge Street is 9 metres, and this is considered sufficient space for two construction vehicles to pass unobstructed. Notwithstanding this, once the construction haulage road is established, the majority of heavy construction vehicles would use Vernon Road to access the new Schofields Station and construction worksites along the western side of the rail corridor in this area (refer to Table 3-3 and Figures 4-1 and 4-2).

The use of Bridge Street as a construction access route would have adverse amenity impacts to residents, particularly noise and dust

As stated in Chapter 10 of the Environmental Assessment, the preferred construction route would be used to accommodate heavy construction vehicles along Vernon Road (where possible) and through to a new construction access road extending west on private property, running perpendicular to Bridge Street (refer to Figure 4-2). The use of this alternative access route would significantly reduce the construction traffic impacts to Bridge Street residents, and therefore, reduce amenity impacts during construction.

Amenity impacts (including noise and dust) would be managed throughout construction through the implementation of mitigation measures, which will be detailed in the Construction Environmental Management Plan (CEMP). These measures would include the following provisions:

- All construction activities would be undertaken between the hours of 7 am and 6 pm Monday to Friday, 8 am and 1 pm Saturday and no work on Sundays or public holidays, except as otherwise approved in the Environmental Protection Licence for the Project, TIDC's *Construction Noise Strategy (Rail Projects)*, or as agreed with relevant authorities.
- Bridge Street residents would be informed of the construction schedule and the potential amenity related impacts expected to occur throughout the construction schedule. This would include advanced notification of 'noisy' works or works outside of nominated construction hours.
- A Project information line (1800 684 490) and construction response line (1800 775 465) would be maintained throughout construction, on which complaints can be made regarding construction related impacts. TIDC would be responsible for complaint handling throughout construction.
- A Traffic Management Plan would be developed for the Project and approved by the relevant road authorities.
- Adoption of standard mitigation measures, as described in Section 8.4.9 of the Environmental Assessment.

Construction traffic on Bridge Street will disrupt access to private property

Access to private properties on Bridge Street would be maintained throughout the construction of the Project. In the event that access is required to be temporarily disrupted, residents would be notified via door knocks or other forms of notification. However, it is not expected that access would be disrupted. Traffic, transport and access impacts would be managed through measures documented in the CEMP and Traffic Management Plan. Parking for all construction vehicles (including machinery and staff vehicles) working at the construction compound at the site of the new Schofields Station would be provided within the construction compound.

Staff would be inducted upon commencement of work on site. These inductions would include instructions on construction compound access arrangements, including the need to park in the allocated space within the construction compound.

Construction vehicles could damage Bridge Street residents' vehicles

During construction, Bridge Street would predominantly be used by light construction vehicles. The risk to cars along Bridge Street would, therefore, not increase significantly from the general risks to resident's cars that exist currently. Heavy and large construction vehicles would primarily use the alternative route along Vernon Road and the new construction access track. Any damage caused to residents' vehicles as a direct result of the Project would be investigated and repaired at the expense of the party responsible for the damage.

Construction traffic could damage the road pavement along Bridge Street

A road condition survey would be undertaken prior to the commencement of construction to document the existing condition of the road surface on local streets including Bridge Street. Should damage occur to the road surface during construction, the construction contractor would be required to 'make good' any damage sustained.

Sub-issue 2 – Operational related impacts

Why does access need to be provided to the western side of new Schofields Station?

Access to the new Schofields Station from the western side of the rail line was considered during the preparation of the Environmental Assessment in response to issues raised during community consultation in May 2008. A number of community members requested that access be provided to the station from the western side of the rail corridor. The design of the Project was modified in response to this community feedback to include pedestrian and road access to the western side of new Schofields Station. This modification to the project design was considered to have benefits to residents living on the western side of the rail corridor as some residents would have a shorter travel distance to the new Schofields Station relative to the existing station location, particularly residents from the southern end of Bridge Street

If direct access were not provided, the alternative access for residents on the western side of Schofields would be via the Westminster Street overbridge for cars and via the proposed footbridge for pedestrians, then along Railway Terrace to the new eastern side car park and station entrance.

The new access road to the new Schofields Station would be constructed at the end of Bridge Street and would provide for vehicle and pedestrian access to the commuter car park located on the western side of the rail corridor. This commuter car park would have capacity for approximately 120 vehicles. The design of new Schofields Station, associated car park and western access road does not preclude the construction of additional car parking spaces to meet future demand as part of the development of the NWGC (as required).

Why does Bridge Street need to be used as the proposed access road? Why can't pedestrian only access be provided to the new Schofields Station via Bridge Street?

It is expected that the impact of the proposed relocation of Schofields Station on Bridge Street and commuters would be increased if vehicle access was not provided to the station.

If only pedestrian/cyclist access was provided rather than vehicle access, then it would be expected that commuters would park along and at the end of Bridge Street, and then walk between Bridge Street and the station. This would result in Bridge Street being parked out during business days, which would reduce the local amenity and accessibility of surrounding residential properties. Instead, road access and car parking for approximately 120 cars is being proposed with the ability to provide more car parking in the future (if necessary) in consultation with the Strategies and Land Release Branch, RailCorp and the MoT.

If vehicle and pedestrian access was not provided to the Station via Bridge Street, then travel distance would be increased, which would have an overall effect of reducing the accessibility of the station to residents located on the western side of the rail corridor.

Creating an access road to the new Schofields Station via Bridge Street will have an adverse effect on Bridge Street residents

A detailed traffic and transport study was undertaken for the Project during the preparation of the Environmental Assessment. This study assessed the impact of providing pedestrian and vehicle access to the western side of the new Schofields Station via Bridge Street. The study concluded that in the short-term (through 2011), it is expected that up to 150 vehicles would access the western side of the station (i.e. via Bridge Street) in the AM peak (approximately 2 hours). Whilst this would result in an increase in traffic on Bridge Street compared to existing traffic flows, by local road standards this increase would be a low level of traffic. It is expected that as roads are constructed to the western side of Schofields Station in the future due to NWGC precinct development, traffic conditions and access to the station would also change.

Traffic noise impacts to Bridge Street residents were assessed in the Noise and Vibration Assessment that was undertaken for the Project (refer Technical Paper 2 in Volume 2 of the Environmental Assessment). These impacts were further investigated in an addendum to the *Quakers Hill to Vineyard Duplication Noise and Vibration Assessment Construction and Operations* (refer Section 4.1.2 and Appendix F).

In summary, the noise levels are predicted to marginally exceed the relevant *Environmental Criteria for Road Traffic Noise* (ECRTN) daytime criterion of 55 dBA by 0.6 dBA at the closest residential receiver at Bridge Street, based on an assumption that the car park will reach capacity over 2 hours, that is 60 vehicle movements in the busiest 1-hour (considered to occur within the morning peak 1 hour period). It should be noted, however, that a 1 dBA to 2 dBA change in sound level is difficult (if not impossible) for people to detect; whilst a 3 dBA to 5 dBA change corresponds to a small, but noticeable, change in loudness. On this basis, the predicted 0.6 dBA exceedance of the ECRTN criteria is considered acceptable.

SoC no. 27 (refer Table 6-1) provides a commitment to post-construction monitoring. This SoC states 'Following completion of construction, operational noise monitoring shall be undertaken to confirm compliance with the predicted noise levels identified in the Environmental Assessment. Should the results of monitoring show that the Project specific noise levels are exceeded then any additional feasible and reasonable mitigation measures would be implemented in consultation with the affected property owners.'

Bridge Street is not suitable to be used as an access road to the new Schofields Station

The traffic and transport study determined the width and alignment of Bridge Street as being adequate for use as an access road. The approximate width of Bridge Street is 9 metres, which is considered sufficient space for two vehicles to pass unobstructed.

The Richmond Line Alliance is developing the Project design elements and has conducted an initial operational traffic and safety assessment of Bridge Street. This assessment has concluded that the installation of Local Area Traffic Management devices (speed abatement devices) would be unnecessary as the access road to the western car park does not connect to any other part of the road network, and therefore is not a 'through' road. In addition, Bridge Street operates under an existing low speed residential zoning arrangement. The Richmond Line Alliance would consult with Blacktown City Council during the detailed design to review this initial finding. If Local Area Traffic Management devices are determined

to be warranted, these road treatments would be provided in consultation with Blacktown City Council.

3.2.4 Quakers Hill Station upgrade

Why isn't Quakers Hill Station being upgraded?

The Project's primary purpose is the duplication of track north of Quakers Hill, and there are no works proposed to be undertaken at Quakers Hill Station as part of this Project. However, RailCorp and TIDC are currently progressing plans for an Easy Access Upgrade to Quakers Hill Station and the construction of additional commuter car parking, respectively. These Projects will be delivered through a separate planning and assessment process to that being progressed for the Quakers Hill to Vineyard Duplication. An overview of the works proposed to be undertaken at Quakers Hill Station is provided in the following sections.

Sub-issue 1 – RailCorp Easy Access Station Upgrade Program

RailCorp is currently progressing plans for an Easy Access Upgrade of Quakers Hill Station. The upgrade will consist of a new station concourse, three new lifts and a new platform building containing booking office, staff facilities and a family accessible toilet.

The Easy Access Upgrade would see the proposed pedestrian access across the rail line incorporated into the proposed Easy Access Upgrade at Quakers Hill Station.

Concept plans are currently being finalised by RailCorp. Construction is scheduled to commence in 2010, with completion expected towards the end of 2011.

In the event that the Quakers Hill Station Easy Access Upgrade was not completed before commissioning of the project, access across the rail line would be maintained.

Sub-issue 2 – Commuter Car Parking Program

On the 19 January 2009, the NSW Minister for Transport David Campbell announced a new commuter car park will be built at Quakers Hill as part of the NSW Government's Commuter Car Park program, delivering an estimated 200 car spaces. Detailed investigation of potential sites is currently underway. Construction is expected to begin in late 2009 and is expected that the car park will be completed in 2010.

3.2.5 Riverstone Station

Sub-issue 1 – Cultural heritage considerations

Ensuring the fabric of the station is kept during the station upgrade

As described in Section 8.5.2 of the Environmental Assessment, the Project would not have a direct physical impact on the Station Master's Residence or other heritage listed station buildings; however the Project would have a direct impact on Platforms 1 and 2 at Riverstone Station. Platform 1 would be modified with the addition of 'tactiles' (raised bumps/markers on the platform surface) to aid vision impaired rail patrons, general resurfacing and re-profiling to a grade not exceeding 1:20. These works would all have a physical impact on the fabric of Platform 1, which is an original component of the station complex. The impact of these works would involve minor modification of the Platform 1 structure and would not significantly alter its component fabric or function. The Platform 1

modifications are viewed as sympathetic, ongoing maintenance as they are required to keep the station complex functioning.

Platform 2 would be widened and upgraded to provide level access. These works would have no impact on Riverstone Station's significant heritage fabric as this item (Platform 2) is a modern addition to the station complex.

Direct physical effects on heritage listed buildings in Riverstone Railway Station and Yard Group have been avoided through the design of the proposed pedestrian footbridge. The pedestrian footbridge was designed to be physically separated from the heritage items in the Riverstone Station precinct. The design of the pedestrian footbridge would be further developed as part of Stage 2 of the Project, in consultation with the Heritage Branch of the Department of Planning, the Strategies and Land Release Branch, the RTA, Blacktown City Council, RailCorp and the MoT.

The heritage assessment that was undertaken for the Project concluded that the proposed upgrade works at Riverstone Station would not substantially compromise the integrity of the existing heritage listed buildings in the station precinct.

The proposed upgrade works at Riverstone Station would retain this heritage item as a functioning component of the rail network.

No other cultural heritage items would be impacted by the Project. Further information on cultural heritage impacts of the Project is provided in Section 8.5 of the Environmental Assessment.

Sub-issue 2 – Riverstone Station upgrade

Additional parking, taxi and kiss-and-ride facilities should be provided at Riverstone Station

No additional commuter car parking spaces, taxi facilities or kiss-and-ride facilities are proposed to be delivered as part of this Project. As the track is duplicated at Riverstone Station, works are focused on upgrading passenger amenities such as Easy Access lifts. The Strategies and Land Release Branch's plans for the existing Riverstone Town Centre was not included in the Riverstone precinct plan (GCC 2008c). TIDC has been informed that the planning of this area would be undertaken at a later date following the RTA completing detailed planning for the proposed replacement of the Garfield Road level crossing. The RTA has investigated and assessed a number of route options for the Riverstone Railway Overpass, including the construction of a Garfield Road overpass (replacing the Garfield Road level-crossing). The RTA proposes to consult the community on options for the Riverstone Railway Overpass later in 2009.

Additional commuter car parking would be provided at the new Schofields and Vineyard stations as part of this Project, and at Quakers Hill Station as part of the Government's Commuter Car Park program (refer Section 3.2.4). It is expected that the upgraded facilities at these stations would assist to accommodate any future additional demand at Riverstone Station through an increase in the number of commuter car parking spaces available at other stations on the Richmond Branch Line. When viewed from a whole-of-line context (as opposed to considering each individual stations), an additional 580 parking spaces (approximately) would be created to those already provided at the existing Schofields, Riverstone and Vineyard stations by the Project and Quakers Hill Commuter Car park program.

Linkages with Market Town

The current location of the proposed pedestrian footbridge at Riverstone Station allows for the current and likely future pedestrian station access routes (based on an absence of detailed planning of the Riverstone town centre). Consideration of changing the location of the pedestrian footbridge with a possible link to neighbouring development that caters for future pedestrian desire lines to the Riverstone West precinct would be considered during the detailed design of Stage 2. The detailed design would be developed in consultation with the RTA, the Strategies and Land Release Branch and the Heritage Branch of the Department of Planning, Blacktown City Council and the MoT as plans are finalised for the surrounding areas.

3.3 Key agency feedback

This section provides a summary of frequently raised issues by government agencies and TIDC's overall response to these issues. Responses to every specific issue raised by each government agency are provided in Appendix D.

3.3.1 Operational noise impacts on future populations

Blacktown City Council, Landcom and the Department of Defence raised the issue of operational noise impacts on future residents and land use along the rail corridor boundary. It was requested that TIDC undertake additional operational noise assessment for future land use and provide a commitment to deliver noise mitigation measures for future sensitive receivers.

As described in Section 8.4.5 of the Environmental Assessment, the future environment surrounding the rail corridor would be extensively modified by the development associated with the NWGC; however, as the 16 precincts of the NWGC are at various planning stages, it is difficult to determine the exact nature and distribution of future land uses. As the exact location of future residential areas and other sensitive receivers are as yet unknown, the impact of the Project was assessed based on the existing environment and proposed rail traffic on the new tracks, in accordance with the DECC's (2007) IGANRIP. It is also noted that the rail corridor is an existing noise source, and therefore, the assessment is based on predicted increases as a result of the Project and more frequent train movements.

The noise and vibration assessment identified locations where operational rail noise levels are predicted to exceed the IGANRIP trigger levels. In summary, these locations included:

- Quakers Hill Preschool (located on the corner of Pearce and Lalor roads) — exceedance of the overall $L_{Aeq(1\text{hour-internal})}$ trigger level of 45 dBA during 2023.
- Manorhouse Boulevard, Quakers Hill — exceedance of the overall $L_{Aeq(15\text{ hour})}$ trigger of 65 dBA at eight residential receivers with a corresponding increase of more than 2 dBA during 2023. Exceedance of the L_{Amax} trigger of 85 dBA at all residential receivers that face directly onto the rail corridor during 2023. However, the L_{Amax} noise levels are not predicted to increase by 3 dBA or more as a result of the Project.
- Bridge Street and Tain Place, Schofields — Exceedance of the L_{Amax} trigger of 85 dBA at six residential receivers with a corresponding increase of more than 3 dBA during 2013 and 2023.

As described in Section 8.4.9 of the Environmental Assessment, noise mitigation may be required at Quakers Hill Preschool, Manorhouse Boulevard, Bridge Street and Tain Place.

The next phase of the operational noise assessment would be completed to reassess the operational noise levels and determine the 'reasonable and feasible' mitigation measures to be implemented. This would be undertaken as part of the detailed design process. The effectiveness of any particular mitigation measure would be determined within the reasonable/feasible process prior to being proposed for implementation.

Post construction operational noise monitoring would be undertaken following the commencement of the Project to verify the effectiveness of the operational noise and vibration model and mitigation measures proposed. If further assessment is required, any additional mitigation would also follow the reasonable and feasible assessment consistent with the requirements of IGANRIP.

As described in Section 8.4.9 of the Environmental Assessment, noise mitigation has been considered as part of this Project only where impacts to existing sensitive receivers have been identified.

Future residential development would be guided by the Department of Planning's (2008) *Development near rail corridors and busy roads – interim guideline* gazetted under Clause 87(3) of the State Environmental Planning Policy (Infrastructure) 2007, which states that for development for the purposes of a building for residential use, the consent authority must not grant consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following L_{Aeq} levels are not exceeded:

- (a) in any bedroom in the building — 35 dB(A) at any time between 10 pm and 7 am
- (b) anywhere else in the building (other than a garage, kitchen, bathroom or hallway) — 40 dB(A) at any time.

Potential noise and vibration impacts (and/or appropriate design impacts) on the future environment could be reduced by appropriate land use zoning of surrounding areas. For example, commercial development, such as that of a town centre, would have a lower sensitivity to rail noise than residential development. Appropriate land use zoning and development controls within the vicinity of the rail corridor would be the responsibility of the Strategies and Land Release Branch and Blacktown City Council. In developing the precinct plans for the NWGC, the Strategies and Land Release Branch has considered the future noise environment, in particular road and rail noise, to ensure that appropriate land use zoning and guidelines for setbacks from noisy road and rail corridors are adopted in the precinct plans. TIDC would continue to consult with the Strategies and Land Release Branch with regard to land use planning of areas adjacent to the proposed track works and interchanges.

3.3.2 Relocation of Schofields Station

Blacktown City Council and Landcom raised concerns about the proposed relocation of Schofields Station and the alignment of development with the growth of development within the NWGC. In addition, Landcom was also concerned that the future town centre to the east of the new Schofields Station could be at least 10 to 15 years from commencement and, as such, requested that convenient access routes for rail commuters be more comprehensively addressed.

As discussed in Section 3.2, the relocation of Schofields Station approximately 800 metres south of its existing location was selected as the preferred project option based on a whole-of-government decision, taking into consideration the wider benefits to the community within the environmental constraints presented. Discussion of the likely impacts associated with relocating Schofields Station, and TIDC's commitment to managing these impacts, is provided in Section 3.2.1, while justification for relocating this station is provided in Section 3.2.2.

The new Schofields Station would be located between the Schofields precinct and the Alex Avenue precinct. While planning for the Schofields precinct has not yet commenced, planning for the Alex Avenue precinct is underway with plans exhibited between November 2008 and February 2009 (GCC 2008b). This plan indicates the development of approximately 6,100 homes over the next 25–30 years. This town centre would be connected to the rest of the precinct via a network of roads and open space that would aim to provide a direct link to the town centre for pedestrians, cyclists, cars and buses.

Construction of the first lots within the Alex Avenue precinct could commence in 2010, following the gazettal of the precinct plans and rezoning, with infrastructure works expected to be the first development to take place (GCC 2008a). The timing and progress of the development of the precincts is likely to depend on a number of factors including market interest in the land.

As discussed in Section 3.2.1, a shared user path will be provided between the existing Schofields Station and new station location. In addition, a Transition Plan will be developed in coordination with the MoT, Strategies and Land Release Branch and RailCorp in consultation with the community and Blacktown City Council to ensure that there will be minimal disruption for commuters. The transition plan will be available for comment by the community and will include information relating to the MoT's planned bus service reviews.

3.3.3 Traffic and transport assessment

The RTA and Strategies and Land Release Branch raised a number of issues regarding modelling of future road intersection performance and the Project's impact on the performance of the future road network.

Detailed analysis of future intersection performance was not possible in the absence of detailed road network plans. The traffic and transport assessment did provide an assessment of future intersection performance in circumstances where existing intersections were expected to remain unchanged.

The design of the stations and interchanges would allow for adequate intersection performance on opening of the Project, and would not preclude future intersection treatments as additional roads and intersections are constructed as the growth centre develops.

Once the Strategies and Land Release Branch and RTA have finalised their plans for the future road network, TIDC would consult with these agencies to ensure that additional modelling of future intersection performance takes into account potential impacts from traffic around the stations.

3.3.4 Floodplain development

Blacktown City Council and the DECC raised a number of issues regarding the hydrological assessment undertaken for the Project, including the methodology used for the assessment, whether all culverts had been included in this assessment, and the impacts of the Project on other flood plain developments.

The information documented in the Environmental Assessment provided a summary of the key culverts within the Project area, based on the detailed hydraulic assessment (Maunsell 2007). As such, the Environmental Assessment did not include a comprehensive list of all of the culverts that intersect the rail line over the Project area. Notwithstanding this, all culverts were assessed in the detailed hydraulic assessment (Maunsell 2007). Table 3-4 provides information for all culverts that would intersect the rail line over the Stage 1 project area.

As part of the detailed design process for Stage 1, the Richmond Line Alliance has reviewed this assessment and further modelled each impacted culvert between Quakers Hill and Schofields to confirm the findings documented in the Environmental Assessment, in line with SoC No. 35, which requires further flood assessment to be undertaken during the detailed design.

The flood modelling approach adopted for the Environmental Assessment, and further developed for the detailed design process for Stage 1, involved the use of rational method computation of flow rates for culvert designs and consideration of imperviousness factors. Blacktown City Council has previously developed a 'RAFTS' model for the wider area (developed in April 2007), which has been referenced in the assessments undertaken for the Project.

Modelling specifically undertaken by the Richmond Line Alliance for the detailed design process of Stage 1, which has concurrently been compared with the Blacktown City Council RAFTS model results, indicates that the upgrades to the culverts would generally result in a matching of existing culverts and this would have no significant impact on the stormwater flow characteristics or flood potential on neighbouring properties compared to existing conditions.

In undertaking investigations for the Stage 1 detailed design, the Richmond Line Alliance has adopted more conservative flow rates than those adopted by Blacktown City Council, and consequently, the predicted impact will be more conservative. Nevertheless, the results, as shown in the Stage 1 hydraulic assessment (refer Table 3-4), indicate that the impact on flood level (or height) under the 1 in 50 average recurrence interval (ARI) and the 1 in 100 year ARI will either remain as per current levels or be slightly reduced in risk or impact.

Table 3-4 Comparison of culvert assessments between the Environmental Assessment and Stage 1 hydraulic assessment

Stage 1 culverts	Culvert location (chainage)	1 in 50 year ARI change in headwater (m)		1 in 100 year ARI change in headwater (m)	
		Environmental Assessment ¹	Stage 1 Hydraulic Assessment ³	Environmental Assessment ¹	Stage 1 Hydraulic Assessment ³
2	40,720 km	– 1.01	– 0.30	– 1.31	– 0.31
3,4,5	40,910 km	– 1.77	– 0.32	– 2.12	– 0.34
6	41,480 km	– 0.79	– 0.85	– 1.18	– 0.48
7	42,070 km	n/a ²	0.00	n/a ²	0.00
8	42,410 km	n/a ²	0.00	n/a ²	0.00
9	42,670 km	n/a ²	– 0.86	n/a ²	– 0.47

Notes 1: Refer to Table 8-40 in the Environmental Assessment
2: No existing headwater level is available for comparison
3: Overall, reduction or no change concluded for Stage 1 Assessment.

Precinct planning undertaken by the Strategies and Land Release Branch and Blacktown City Council for development in the area also incorporates on-site detention, which would further reduce the peak flow rates from the proposed development.

3.3.5 Commuter car parking provisions

Blacktown City Council, the RTA and the MoT raised concern regarding the proposed parking provisions at each of the stations. In particular, these agencies requested that the commuter car parking spaces be increased to cater for the long-term parking demand and that such provision should be delivered upon opening of the Project.

The car parking provisions at the new Schofields Station have been designed to meet the anticipated demand in the short- to medium-term. Notwithstanding this, the design of the new Schofields Station, associated car parks and western access road does not preclude the construction of additional car parking spaces to meet future demand as part of the development of the NWGC (as required).

The provision of additional commuter car parking spaces at Quakers Hill and Riverstone stations is outside the scope of this Project. An estimated additional 200 car parking spaces will be delivered at Quakers Hill Station as part of the NSW Government's Commuter Car Park Program (refer Section 3.2.4 for further discussion on this program).

No additional commuter car parking is proposed at Riverstone as part of this Project. As stated in Section 5.1.3 of the Traffic and Transport Technical Paper (refer Volume 2 of the Environmental Assessment), existing and future parking demand exceeds the number of designated formal commuter parking places at Riverstone Station; however, there is available space for commuters on the nearby road and informal parking areas (refer to Technical Paper 1 in Volume 2 of the Environmental Assessment). Future parking demands will continue to exceed the capacity of the existing provision of commuter parking.

Additional commuter car parking would be provided at new Schofields and Vineyard stations as part of this Project, and at Quakers Hill Station as part of the Government's Commuter

Car Park Program (refer Section 3.2.4). It is expected that the upgraded facilities at these stations would assist to accommodate any future additional demand at Riverstone Station through increasing the number of commuter car parking spaces available at other stations on the Richmond Branch Line. When viewed in a whole-of-line context (as opposed to considering each individual station), the Project would create an additional 580 parking spaces (approximate) to those already provided at the existing Schofields, Riverstone and Vineyard stations.

TIDC would continue to consult with the MoT, RailCorp, Strategies and Land Release Branch, Blacktown City Council and the RTA about future plans at Riverstone Station once the Strategies and Land Release Branch releases its plans for the Riverstone Town Centre.

