Appendix D

Government agency submissions

Table D TIDC's response to government agency submissions received during the exhibition period

Agency	Ref number	Issues raised	TIDC response
Blacktown City Council	1	Objects to the proposed relocation of Schofields Station.	Noted.
Blacktown City Council	2	Objects to the deferral of the duplication of the track between Schofields and Vineyard as part of the Stage 2 works.	Noted. The NSW Government has deferred Stage 2 to align with growth in the North West Growth Centre.
Blacktown City Council	3	30 days is an inadequate time frame for stakeholders to review the EA and to provide for meaningful community consultation and engagement.	The Department of Planning is responsible for determining whether an extension in the time period of the exhibition of the EA is warranted. The EA was exhibited from 29 April to 1 June, which satisfies the *Environmental Planning and Assessment Act 1979* requirements to exhibit for a minimum of 30 days. The Department of Planning did not extend the exhibition period past 1 June 2009, however late submissions up to the end of June were received and considered as part of this report.
Blacktown City Council	4	The movement of Schofields Station from its current location will significantly impact on the economic viability of local shops which are currently clustered around the station. The loss of commuter patronage could cause significant loss of income for these shops.	It is likely that the relocation of Schofields Station will result in both positive and negative economic impacts to local businesses in the area. Section 3.2.1 of the report (refer to *Sub-issue 3 – socio-economic impacts*) provides a response regarding the impact to businesses. The Strategies and Land Release Branch (formerly GCC) is currently preparing plans for the revitalisation of the Schofields village centre as part of the development of the NWGC. It is expected that the revitalisation of Schofields village centre will reinforce its role as a neighbourhood centre within the Riverstone precinct. A revitalised village centre would likely lead to sustained or increased patronage for existing businesses.

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Blacktown City Council	5	It is expected that the new Schofields Station would include at least some retail facilities, which would further limit the ability of the existing shops to compete and remain economically viable.	The Quakers Hill to Vineyard Duplication Project includes the relocation of Schofields Station; however the scope of works does not propose retail facilities within the Schofields Station development. The Strategies and Land Release Branch's Alex Avenue Precinct Plan details the planned residential and commercial land use for this precinct. The Alex Avenue commercial centre is likely to have some commercial/retail premises. The revitalisation plan for Schofields is expected to reinforce Schofields village centre's role as a neighbourhood centre within the Riverstone Precinct.
Blacktown City Council	6	Schofields Station is in the centre of an existing residential community. The movement of the Station 800 metres from its current location will leave the existing residential community disadvantaged with a loss of access and inconvenience.	Refer to Section 3.2.1 for discussion on this issue.
Blacktown City Council	7	Many existing Schofields residents will no longer be able to walk to the Station, therefore potentially increasing reliance on private vehicles.	Refer to Section 3.2.1 for discussion on this issue.
Blacktown City Council	8	Council supported the proposed Nirimba Station, as the existing Schofields Station would remain in-situ under this previous proposal.	Section 3.2.2 of the report details the justification for relocating Schofields Station as the preferred project option. This section also details the development of the preferred project option (refer to sub-issue 1) which looks at some of the planning documents and plans as released by the NSW Government and the Strategies and Land Release Branch since 2005 and the refinement of proposed plans and strategies. For further discussion on the proposed decommissioning of existing Schofields Station refer to Table C, Appendix D for TIDC's response to submission no. 23 (ref. no. 104), no. 10 (ref. no. 34) and no. 28 (ref. no. 124).
Blacktown City Council	9	The removal of Schofields Station from the existing community, in lieu of the provision of the previously planned Nirimba Station in addition to the existing Schofields Station (i.e. one station instead of two stations) is an unacceptable outcome for both the existing and future residents.	Refer to Section 3.2.1 and TIDC's response to ref. no. 8.
Blacktown City Council	10	TIDC has indicated that the Schofields Station relocation would proceed, and that such a statement is contrary to advice given publicly by the GCC that no final Government decision has been made.	No final government decision has been made regarding any aspect of the Quakers Hill to Vineyard Duplication project. TIDC has prepared an Environmental Assessment for the Quakers Hill to Vineyard Duplication to seek Project Approval from the Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act); and for that purpose, to demonstrate that the Director-General's requirements had been satisfied.

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			Project approval has not yet been granted for this Project. The Minister for planning will determine whether to grant approval under Part 3A of the EP&A Act based on the information provided in the assessment and submissions reports and any advice provided by public authorities.
Blacktown City Council	11	The GCC has stated publically that the reason for the relocation of Schofields Station was because of rail operational requirements. This conflicts with TIDC's justification that the reason was because of broader strategic planning considerations of Government related to the North West Growth Centre. Council wishes to receive clarification regarding these conflicting statements.	Section 5.5.1 of the Environmental Assessment (EA) detailed the reasons why the relocation of Schofields Station was determined to be the preferred option for the Project. Refer to Section 3.2.2 of this report for an overview of the operational and strategic justification for the relocation of Schofields Station. The decision to relocate Schofields Station was made based on a combination of the issues listed in Section 3.2.2, rather than focussing one specific issue.
Blacktown City Council	12	An appropriate 'trigger mechanism' should be used for the future commencement of Stage 2 of the Project (such as population growth). This trigger should be included in the State Government's infrastructure schedule to ensure that the public transport keeps pace with the rate of development.	The Environmental Assessment seeks approval for the full duplication. Refer also to ref. no. 2.
Blacktown City Council	13	Uncertainty surrounding the commencement of Stage 2 could deter interest from the development industry which impacts on the rate of development.	Noted. Refer to TIDC's response to ref. no. 12.
Blacktown City Council	14	The aims of the Growth Centres SEPP may have been inadequately fulfilled in light of the proposed movement of Schofields Station and the deferment of Stage 2.	Chapter 2 of the EA details the aims of the Growth Centre SEPP. These aims (in conjunction with amendments to the regulations under the *Environmental Planning and Assessment Regulation 2000* relating to precinct planning) are as follows: (a) to co-ordinate the release of land for residential, employment and other urban development in the North West and South West growth centres of the Sydney Region (b) to enable the Minister from time to time to designate land in those growth centres as ready for release for development (c) to provide for comprehensive planning for those growth centres (d) to enable the establishment of vibrant, sustainable and liveable neighbourhoods that provide for community well-being and high quality local amenity (e) to provide controls for the sustainability of land in those growth centres that has conservation value (f) to provide for the orderly and economic provision of infrastructure in and to those growth centres

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			(g) to provide development controls in order to protect the health of the waterways in those growth centres (h) to protect and enhance land with natural and cultural heritage value (i) to provide land use and development controls that will contribute to the conservation of biodiversity. The Project is an essential component of the development of the NWGC in providing efficient and reliable public transport for the expected population increase associated with the planned development. The Project is a significant feature of the North West Structure Plan, which aims to develop transit-oriented development on either side of the existing Richmond Branch Line. The Richmond Branch Line is strategically located in the centre of the NWGC and would provide an opportunity to support sustainable land release through the provision of additional rail services to the region. The upgrade of the stations, while not identified in the structure of the plan, are considered consistent with the planning principles for the growth centre. It is considered that the Project is consistent with, and will help facilitate achieving the aims of, the Growth Centres SEPP.
Blacktown City Council	15	The Environmental Assessment does not address the *draft Subregional Planning Strategy* for the North West Subregion, in line with the strategic context of the Project, or the broad aims and directions in the strategy.	The Project satisfies the following aims of the NSW Government's (2005, 2007) Metropolitan Strategy and Subregional Planning Strategy (which is still in draft): (i) Improving the existing transport system in the North West through improving reliability and increase of rail services. (ii) Influencing travel choices to encourage more sustainable travel though improving local and regional walking and cycling networks.
Blacktown City Council	16	Retention and upgrade to the existing Station would be a positive outcome towards revitalisation of the Schofields village centre in line with the aims of the Subregional Strategy and in meeting the demands of population growth in the community and the region.	It is considered the Project does meet the Key Directions for Transport in the North West as referred to in Chapter 5 of the draft Subregional Planning Strategy and fulfils a main aim of integrating transport and land-use opportunities. The Project also fulfils the objectives of the Growth Centres SEPP and Strategies and Land Release Branch Precinct Plans (with particular relevance for Alex Ave, Riverstone and Riverstone West Plans which were available for public exhibition and comment from November 2008 to March 2009). Refer to TIDC's response to ref. no. 4, 5, 6 and 8 for further discussion of issues related to the proposed relocation of Schofields Station and associated impacts to the Schofields village centre.

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Blacktown City Council	17	Council does not object to the proposed relocation of the Sydney Water easement within Oppy Reserve, on the basis that the current flow capacity of existing stormwater infrastructure is maintained.	Noted. TIDC will continue to consult with Sydney Water and Blacktown City Council during detailed design to ensure that the current flow capacity of existing stormwater infrastructure is maintained.
Blacktown City Council	18	TIDC should consult with Council with regards to adequately addressing the implications for Council Land and properties as well as its impact on the wider community.	Noted. TIDC will continue to consult with Blacktown City Council and the community during the development the detailed design. Upon finalisation of the detailed design, TIDC will advise Council of land acquisition requirements for the Project. TIDC will also brief Council Officers on the anticipated impacts of the Project on the wider community prior to the commencement of construction. As described in Section 2.4 of this report, TIDC will continue to consult will the community throughout the pre-construction and construction phases of the Project. TIDC's commitment to ongoing stakeholder consultation is reflected in the Statement of Commitments (refer Chapter 6).
Blacktown City Council	19	The relocation of Schofields Station will not fulfil the broad aims and directions to meet the anticipated population growth and revitalisation of the region outlined in the Metropolitan Strategy and the Subregional Strategy.	Refer to TIDC's response to ref. no. 16.
Blacktown City Council	20	The business survey undertaken at Schofields as part of the socio-economic assessment for the Environmental Assessment was limited. A large survey sample could have been undertaken and additional surveys conducted to give a better indication.	Section 3.2.1 (*refer to sub-issue 3*) addresses the economic impacts for local businesses, and references the survey results which provided some background data for the socio-economic impact assessment. Section 3.3.3 of the Environmental Assessment discusses the rail commuter survey undertaken at Schofields Station on Tuesday 14 August 2007, Wednesday 2 July 2008 and Thursday 3 July 2008 to determine typical commuter patterns at this station. The 2008 survey included interviews with a sample of rail commuters to determine the nature of commuter activity, including frequency of use of the station by rail commuters. Commuters were also interviewed regarding their place of origin of travel. The survey had a response rate of 140 commuters. The results of the survey, as documented in Section 3.2 and 8.3 of the EA, provided the following key findings: ▪ 40% of those people surveyed accessed Schofields Station on foot. In the 2007 survey, approximately 20% of these patrons walked from Advance Street or Bridge Street, which are both located close to the existing station; this figure increased to 40% for the 2008 survey.

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			▪ On the day surveyed only 13% of people who used the Schofields village shops did so on their way to and/or from Schofields Station. The survey undertaken by RailCorp represented days which reflected 'usual patronage conditions' to highlight the statistical norm (i.e. outside public holiday, school holiday and peak commuter events such as APEC). It is not expected that conducting additional surveys would yield results that are significantly different to those reported in Sections 3.3 and 8.3 of the Environmental Assessment. As such, these surveys were considered adequate to inform the socio-economic impact study for the EA.
Blacktown City Council	21	The community should have been adequately engaged and included in the planning and decision-making process, and written information should have been provided to residents.	TIDC has encouraged ongoing community involvement in the Project. Community consultation activities that were undertaken by TIDC throughout the development of the Project are described in Chapter 4 of the Environmental Assessment. In summary, a consultation strategy (refer Section 4.2 of the Environmental Assessment) was prepared as part of the Project development to encourage stakeholder and community involvement, and to foster interaction between stakeholders, the community and the Project team. The proposal to relocate Schofields Station was announced by Minister for Transport and the Minister for Planning on 26 February 2008. The Schofields community were notified the next day about the proposed relocation of Schofields Station via a newsletter sent to Schofields residents (refer Section 4.4 of the Environmental Assessment). The newsletter notified the community of the opportunities to become involved in the Project, including the TIDC freecall 1800 number, and email and website details. A community newsletter was distributed in May 2008 to approximately 11,000 residents and business owners along the rail corridor, including the suburbs of Vineyard, Riverstone, Schofields, Marsden Park, Rouse Hill and Quakers Hill. The newsletter was also distributed to approximately 2,000 community members, based on contact details obtained during previous consultation undertaken by the Strategies and Land Release Branch. Two Project information sessions were held at the Riverstone Senior Citizens Hall on 29 and 31 May 2008. Approximately 150 community members attended the information sessions over the 2 days. Community members were invited to make written submissions on the Project, which were used to identify community and stakeholder issues for consideration during the preparation of the Environmental

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			Assessment. Further community consultation was undertaken during the public exhibition of the Environmental Assessment (refer Chapter 2). Should the Project be approved, TIDC would continue to consult with Project stakeholders, including the community, throughout the pre-construction and construction phases of the Project (refer Chapter 2). In addition, the Department of Planning would also consult with stakeholders with respect to the development of the NWGC. This would form a separate consultation process to this Project and would be managed by the Department of Planning.
Blacktown City Council	22	Council generally supports the precinct planning for Riverstone as it would contribute towards a positive future economic environment for the area.	Noted. TIDC will continue to consult with the Strategies and Land Release Branch to ensure that the Quakers Hill to Vineyard Duplication Project supports the precinct plan for Riverstone.
Blacktown City Council	23	The Quakers Hill to Vineyard Duplication project and the plans for the Garfield Road and Meatworks level crossings should be undertaken concurrently to ensure Council and the community are included in the decision-making process.	The vehicle level crossings at Riverstone Station and at Riverstone (the 'Meatworks' level crossing) are proposed to be removed by the NSW Roads and Traffic Authority (RTA), and RailCorp respectively — the removal of these level crossings does not form part of this Project. The RTA has investigated and assessed a number of route options for the Riverstone Railway Overpass. A grade separated crossing of the rail line would be needed to achieve the optimal benefit from Stage 2 of the Quakers Hill to Vineyard Project. The construction of Stage 2 of the proposed Quakers Hill to Vineyard Duplication would be coordinated with RailCorp, RTA, TIDC and the Strategies and Land Release Branch to ensure that this Project does not preclude RTA or RailCorp plans for Riverstone Railway Overpass and Meatworks level crossing, respectively.
Blacktown City Council	24	Inadequate parking will be provided at new Schofields Station, which will result in a negative impact on nearby local streets.	The concept plan for new Schofields Station includes a combined total of 230 spaces, provided collectively on both eastern and western sides of the rail line. The provision of additional parking is not precluded by the project. However, the provision of further parking will be determined in line with the growth of the Schofields Precinct and demand along the Richmond Branch Line in consultation with MoT, the Strategies and Land Release Branch and RailCorp.

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Blacktown City Council	25	Unclear what pedestrian facilities have been allowed for to assist commuters to cross Railway Terrace or other major roads when parked in local streets.	A pedestrian level crossing will be provided between the new Vineyard Station and associated Phase 1 carpark to assist pedestrians cross Riverstone Parade. Pedestrian crossings will also be provided within the eastern carpark at Schofields Station to assist commuters access the station from the carpark and bus interchange facilities. In addition, the speed limit around each station is proposed to be 50 km/h. The design of the proposed new car park at Schofields Station and Railway Terrace does not make any provision for pedestrians crossing Railway Terrace. The preliminary project design layout included bus bays and kiss-and-ride bays on both sides of Railway Terrace with a pedestrian crossing to access the station. This was designed in line with Blacktown Council's view that the interchange should be off-line from Railway Terrace, moving pedestrian activity/movements away from the roadway. The design does not attempt to predict or preclude the precinct plans of the Strategies and Land Release Branch, which will include property and road development as well as the overall pedestrian and cycle strategy.
Blacktown City Council	26	Unclear how much commuter car parking will be provided at Riverstone Station, or the potential location of this parking. Adequate parking should be provided at Riverstone Station.	Refer Section 3.3.5 of the report for discussion on commuter car parking provisions to be delivered as part of the Project.
Blacktown City Council	27	The Environmental Assessment does not provide information about the operational impact of kiss-and-ride supply and demand at Riverstone Station during the opening of the Project and in the future.	Noted. Refer to TIDC's response to ref. no. 28. Chapter 4 of the Traffic and Transport Technical Paper provides an assessment of the operational impacts of the Project. This section of the Technical Paper estimated the space and infrastructure required to support access to each station, with an assumption of how future passengers would travel to the stations. This mode share was applied to the passenger forecasts to calculate the infrastructure required to support the growth targets.
Blacktown City Council	28	Kiss-and-ride provisions at Riverstone Station will be insufficient to meet the demand at the opening of the Project.	Noted. Section 4.4 of the Traffic and Transport Technical Paper notes that the peak space forecasts for kiss-and-ride have been developed as follows: ▪ The demands (6 am–9.30 am) indicated in Table 4-4 were multiplied by 0.5 to yield a peak hour demand. The 0.5 value is the expansion factor used for outer metropolitan stations extracted from A Compendium of CityRail Travel Statistics (2006). ▪ The same demand was assumed for the afternoon peak. The afternoon peak presents the greatest demand for kiss–and–ride space, as pickup dwell time is often greater than drop off as drivers tend to arrive earlier and wait for train arrival.

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			▪ An average afternoon peak wait time of 1 minute is assumed and averaged across the hour. In reality, demand may be greater at times as vehicle arrivals could cluster around timetabled arrivals, therefore, the figures in Table 4-5 should be considered a minimum demand. It should be noted that kiss-and-ride activity can also take place in unspecified car park spaces located around the station. Table 4-5 estimates a minimum of 11 kiss-and-ride spaces estimated to meet demand for Riverstone Station. ▪ Queue probability analysis was used to calculate the number of spaces required.
Blacktown City Council	29	The operational traffic impact to Bridge Street was not investigated in the Environmental Assessment. Further investigation is required to mitigate impacts on the residents of Bridge Street.	Section 8.2 and 8.4 of the EA, as detailed from the Technical Papers (Traffic and Transport and Noise) has addressed operational traffic and noise impacts from the Project. This did include assessment of traffic access the station on the western side upon completion at 2011 and road noise along Bridge Street. Further assessment of traffic noise impacts to Bridge Street has been undertaken since the exhibition of the Environmental Assessment. The addendum to the Noise and Vibration Technical Paper is provided in Appendix F, and summarised in Section 4.1.2.
Blacktown City Council	30	A Traffic Management Plan must be prepared for the Project and this should address noise issues along construction vehicle routes.	Noted. As stated in SoC no. 16, construction traffic impacts are to be managed in accordance with a three-level hierarchy of plans: 1. High level Traffic Management Reports prepared for local government areas that address cumulative traffic impacts across a number of construction work sites. 2. Site-specific Traffic Management Plans that focus on individual construction work sites. 3. Traffic Control Plans for each location where works are proposed in the road or that would affect trafficable areas.
Blacktown City Council	31	Alternative pedestrian and vehicle access must be provided wherever a local road needs to be temporarily closed.	Noted. Closure of local roads will be minimised and appropriate alternative routes and traffic controls will be implemented. A Traffic Management Plan will be drafted to include provisions for road closures where necessary as part of the Stage 1 Project works.
Blacktown City Council	32	Proposed construction vehicle routes are generally considered appropriate. However, every attempt should be made to avoid the use of local roads if a suitable alternative route is available.	Noted. As described in Section 8.2.1 of the Environmental Assessment, the following principles would be used to determine construction vehicle routes: ▪ travel the most direct route ▪ use currently identified B-double routes

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			▪ avoid routes that may affect schools, childcare centres or shopping precincts ▪ avoid the use of local roads ▪ avoid the use of roads with road weight restrictions and/or bridge height clearance limit ▪ use roads in accordance with the road hierarchy: state roads (RTA-controlled), regional roads (council-controlled) then local roads (council-controlled). The proposed vehicle construction routes for the Project are shown in Figures 4-1 and 4-2.
Blacktown City Council	33	Routes for oversized vehicles to follow approved routes and avoid local streets where possible.	Noted. Refer to TIDC's response to ref. no. 32.
Blacktown City Council	34	The Environmental Assessment does not directly consider the likely future development alongside the rail corridor. This is inadequate because noise impacts upon any future development must be considered as part of the planning process.	Refer to Section 3.3.1 for discussion on this issue.
Blacktown City Council	35	Adjacent heritage items that may be affected by the Project have not been addressed by the Heritage Impact Statement, including: ▪ 7 and 17 Richards Avenue ▪ 4 Garfield Road West ▪ 22 West Parade ▪ The War Memorial (minimal). The likely impact to these items should be addressed.	A detailed heritage assessment was completed as part of the Environmental Assessment (refer Technical Paper 3 in Volume 2). This assessment identified heritage items that would be either directly or indirectly impacted by the Project. Additional heritage items adjacent to the Project (as identified by Council) were not included in the heritage assessment as they were outside of the impact area of the Project. As such no further assessment is warranted for these heritage items.
Blacktown City Council	36	The recommendations provided in the Environmental Assessment to protect heritage items are supported.	Noted.
Blacktown City Council	37	Works around Riverstone Railway Station are to be monitored for potential archaeological remains.	Noted. As stated in SoC no. 29, TIDC will prepare, as part of the CEMP, a procedure to follow if previously unidentified heritage items are uncovered.
Blacktown City Council	38	Requests a copy of the archival records are placed in the Blacktown Library.	Noted. TIDC will provide a copy of the archival records to Blacktown Library.

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Blacktown City Council	39	Council must be included in the decision-making process or the design and location of the interpretative signage at Riverstone Railway Station.	Noted. As described in SoC no. 31, heritage interpretation would be incorporated into the Project to provide information on the history of the Riverstone Station Complex as well as the significance of the Richmond Line. Heritage interpretation will be developed in consultation with the Heritage Branch, Blacktown City Council, RailCorp, the Historical Society and other interested community groups.
Blacktown City Council	40	The Environmental Assessment does not appear to provide a comprehensive list of culverts or enough details to assess the conclusions of the flooding report.	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. SoC no. 35 states that TIDC will prepare a Flood Impact Assessment in consultation with relevant agencies and councils during detailed design. As part of the detailed design process for Stage 1, RLA has reviewed this assessment and further modelled each impacted culvert between Quakers Hill and Schofields to confirm the findings in the EA. As part of this process RLA/TIDC will consult with BCC and DECC regarding the modelling and the design of each culvert. For the Stage 2 design, the same process will be applied.
Blacktown City Council	41	Further investigation required to address groundwater and salinity issues.	As described in Section 3.7.2 of the Environmental Assessment, further geotechnical investigation would be undertaken during detailed design to obtain information on the site hydrogeology. In addition, SoC no. 34 states that detailed design would be undertaken to minimise any impacts in association with the project on identified saline groundwater.
Blacktown City Council	42	All works shall comply with Council's policies on water quality and quantity.	Noted. As described in Section 8.7.3, measures would be implemented to control water quality and hydrologic impacts during the construction of the Project. These measures would be detailed in the soil and water quality management plan within the CEMP. These measures would be identified in consultation with relevant government agencies and councils, and would be consistent with the principles and practices detailed in Landcom's (2004) *Managing Urban Stormwater: Soils and Construction*. SoC no. 35 states that TIDC will prepare a Flood Impact Assessment in consultation with relevant agencies and councils during detailed design.

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Blacktown City Council	43	Modelling needs to be undertaken to support the conclusion of the Environmental Assessment that the Project will not have an adverse impact on the flooding regime as a result of the proposed works.	As stated in SoC no. 35, the Proponent will prepare a Flood Impact Assessment in consultation with relevant agencies and councils during detailed design. The assessment shall include modelling of potential flood impacts as a result of the Project, including consideration of embankment widening (filling) activities within the floodplain, and culvert extension/replacement works. The assessment shall inform the detailed design process to ensure that the Project works do not exacerbate existing flood impacts at properties adjoining the corridor for storms up to the 1:100 year ARI event. The Flooding and Drainage Plan will be finalised in consultation with key stakeholders (e.g. BCC) and submitted to DoP. This will illustrate that the project will not have an adverse impact on the flooding regime as a result of the proposed works.
Blacktown City Council	44	Council recommends that the draft Statement of Commitments be finalised and included as conditions of consent to ensure such works are undertaken by the proponent.	The draft Statement of Commitments (SoCs) presented in Chapter 12 of the Environmental Assessment have been amended and finalised, based on the outcomes of additional investigations detailed in Chapter 4 and the consideration of the submissions received on the Project (refer Chapter 3). The final SoCs for the Project are provided in Chapter 6 (refer Table 6-1) and describe the measures that TIDC will commit to during the pre-construction, construction and operational phases of the Project to manage the impacts identified in the Environmental Assessment and subsequent issues identified during the preparation of the Submissions Report. The final SoCs will be considered by the Department of Planning in assessing the Project. Should approval be granted by the Minister for Planning, approval conditions would take into consideration the final SoCs proposed for the Project. Following Project approval, the finalised commitments would guide subsequent phases of the proposed development. Any consortium or contractor selected to undertake further planning, design, construction and/or operation phases of the proposed upgrade would be required to undertake all works in accordance with the final SoCs and Conditions of Approval.

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Strategies and Land Release Branch of the Department of Planning	45	Location of pedestrian access on the eastern side of new Schofields Station should include south-facing stairs linking the station to the intersection of the Main Street (current intersection of Pelican Road and Railway Terrace).	Moving the stairs to face south would result in an increase in the walking distance between the existing and new Schofields stations. In addition, the positioning of the entrance stair would not align with the proposed carpark pedestrian crossing. To alter the pedestrian crossing would give rise to the following issues: ▪ the potential for traffic disruption caused by buses queuing around the roundabout from Railway Terrace, thereby blocking the principal entrance to the station from the east ▪ the loss of one bus parking bay, ultimately resulting in the buses parking in front of the pedestrian crossing which is not desirable ▪ the proposed carpark arrangement maximises the available land and consequently any alteration to cater for the above would have considerable impact on the provision of car parking and the transport interchange ▪ result in the lift in a position closer to the rail which would not be desirable because it would have to be designed for full collision loading from a train (the structural supports are presently positioned so that they do not have to be designed for full collision loading). Refer also to TIDC's response to submission no. 40 (ref. no. 197) in the non-government agency issue table (refer Appendix C).
Strategies and Land Release branch of the Department of Planning	46	The new road that provides access to the commuter car park on the western side of new Schofields Station should be designed to be easily upgraded as a future street that can cater for bus stops, kiss-and-ride and taxis.	The proposed road carriageway is designed as a private road capable of catering for buses. There is provision for kiss-and-ride facility on the western side of the new Schofields Station. The road alignment (radii) is not suitable for a 60km/hr road; and additional land would need to be acquired to allow for increased turning radii. The car park is designed as an off-street car park along a 40km/hr road that would be further controlled with speed humps designed for 25km/hr. A 60km/hr road would effectively require an additional carriageway width of approximately 1 metre per lane to allow for cars to safely access/egress the parking bays. The design of the road and carpark on the western side of new Schofields Station do not preclude the ability to upgrade this road in the future, if required.

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Strategies and Land Release branch of the Department of Planning	47	The alignment of the new access road from Bridge Street should be designed to meet 60 km/h design standards.	Refer to TIDC's response to ref. no. 46.
Strategies and Land Release branch of the Department of Planning	48	A more suitable location for the pedestrian footbridge at Riverstone Station would be north of the existing station. This arrangement would also improve the landscaped area in front of the station and allow for more area for the bus interchange.	Noted. This would be considered during the detailed design in consultation with the RTA, the Strategies and Land Release Branch, the Heritage Branch of the Department of Planning, RailCorp and MoT. Refer also to ref. no. 60.
Strategies and Land Release branch of the Department of Planning	49	The current design does not indicate any access to the western side of Vineyard station where a significant proportion of employment within the Riverstone West precinct will be generated. The concept design for Vineyard Station must therefore ensure that the station can be easily upgraded to allow access to the precinct.	TIDC will continue to consult with the Strategies and Land Release Branch. This will include discussions regarding the design of western access at Vineyard Station, which would be considered during the detailed design of Stage 2 as the Riverstone and Riverstone West precinct plans are finalised. The Project will not preclude the addition of access from the western side of the rail line in the future.
Strategies and Land Release branch of the Department of Planning	50	Phase 2 of the Vineyard Station commuter carpark should be relocated north of the Phase 1 car park. The Phase 2 car park is currently located outside the Sydney Water Sewerage Treatment Plant Odour Zone and is using developable land which the draft Riverstone Precinct Plan indicates as the location of the new Vineyard town centre.	Noted. As described in Section 6.2.1 of the Environmental Assessment, the exact location of the Phase 2 car park would be determined following more detailed site investigations and consideration of alternative locations (such as on the western side of the station). TIDC would continue to consult with the Strategies and Land Release Branch to ensure that its plans for the Riverstone Precinct are not precluded by the construction of the Phase 2 car park. Further discussion on the location of the Phase 2 car park is provided in TIDC's response to ref. no. 155, and submission nos 21, 59 and 66 in Appendix C (non-government agency submissions).
Strategies and Land Release branch of the Department of Planning	51	The road alignment of the intersection of Ashford Road and Riverstone Parade should also be considered in the design and location of car parking at Vineyard Station. Bus routes are anticipated to be using this intersection, and it is necessary to provide safe sight lines for turning vehicles. Possible solutions which should be considered include realignment of Ashford Road or provision for a left turn slip lane addition to the current proposed intersection. The location of car parking should not impede alterations to the intersection in the future.	Noted. The road alignment of the intersection of Ashford Road and Riverstone Parade will be considered further in conjunction with the Strategies and Land Release Branch, BCC and RTA during the detailed design stage of the Project. This intersection would also be considered in conjunction with the development of the Phase 2 car park at Vineyard Station (refer to ref. no. 50) for discussion on the Phase 2 car park).

Agency	Ref number	Issues raised	TIDC response
Strategies and Land Release branch of the Department of Planning	52	The location of the Schofields Substation may impact on the design, location and cost of the Burdekin Road overpass and land availability for trunk infrastructure south of Burdekin Road. Maintenance access to the substation is also required to be resolved both in the short-term and once the Precinct is developed. The Strategies and Land Release branch requests ongoing consultation with TIDC to resolve this issue.	Noted. The preliminary investigation indicates that the potential conflict between the Schofields Substation and Burdekin Road are minor and can be resolved during the detailed design. The conflict may require the location of substation to move slightly east of the location proposed in the Environmental Assessment (likely to be in the order of 3 metres). The exact location of the substation would be determined during the detailed design and in consultation with the Strategies and Land Release Branch, RailCorp and RTA. Should the location of the substation be required to be substantially modified, TIDC would undertake a revised assessment for the new substation location as a modification to the Project. TIDC would also consult with the landowner to advise of any modified land acquisition requirements for the Project.
Strategies and Land Release branch of the Department of Planning	53	The relocation of the existing Schofields Substation is required before the Schofields Road overpass is constructed. As such the timing of the relocation of the substation should be during Stage 1 of the Project. TIDC should continue to consult with Blacktown Council, the RTA and the Strategies and Land Release branch to resolve this issue.	Noted. It is proposed that the relocation of Schofields Substation will occur prior to the construction of Schofields Road overpass. Whether this will be undertaken during Stage 1 or 2 is dependent on the outcomes of the Power Study for the Project and the operational timetable. TIDC will continue to consult with Blacktown Council, the RTA and the Strategies and Land Release branch to resolve this issue.
Strategies and Land Release branch of the Department of Planning	54	The Department is currently investigating the viability of the Westminster Road overpass in the planning for the Riverstone Precinct. The Strategies and Land Release branch will keep TIDC informed about decisions regarding this overpass, which forms part of Stage 2 of the Project.	Noted. TIDC proposes to reconstruct Westminster Bridge as part of Stage 2 of the Quakers Hill to Vineyard Duplication. TIDC will continue to consult with the Strategies and Land Release Branch about proposed road crossings of the rail line and the road network.
Hawkesbury City Council	55	The Project should incorporate improved road access to the west for suburbs such as Shanes Park, Llandilo, Berkshire Park, Windsor Downs, etc.	This is outside the proposed scope of works for the Quakers Hill to Vineyard Duplication project. The provision of additional road infrastructure is being coordinated by the Strategies and Land Release Branch and RTA as part of the NWGC. TIDC will continue to consult with the key agencies about proposed road infrastructure.
Hawkesbury City Council	56	The Project should facilitate the provision of a bus connection from the Western Line to the Richmond Line and Rouse Hill.	As described in TIDC's response to the non-government submission no. 1 (reference number 1), the MoT is currently undertaking an extensive review of metropolitan bus services in accordance with the recommendations of the Unsworth Review. With the provision of bus interchange facilities at the new Schofields and Vineyard stations, the project would support a potential bus connection from the Western Line to the Richmond Line and Rouse Hill. However, this would be determined by MoT.

Agency	Ref number	Issues raised	TIDC response
Hawkesbury City Council	57	The Project should provide improved commuter car parking at Vineyard Railway Station.	The Environmental Assessment proposes to provide a commuter car park at Vineyard Station for up to 220 vehicles. Initially Phase 1 of the car park would cater for 70 vehicles. Phase 2 would be constructed at a later date and would be developed in consultation with the Strategies and Land Release Branch, RailCorp, MoT and BCC.
Roads and Traffic Authority	58	TIDC is to collaborate with the RTA to ensure that the detailed design and construction of the Project facilitates a cost-effective future rail crossing at Schofields Road and Garfield Road.	Noted. TIDC will continue to consult with the RTA during the development of the detailed design to ensure that components of the Quakers Hill to Vineyard Duplication do not preclude any future RTA proposals.
Roads and Traffic Authority	59	The detailed design is to be prepared in a manner that incorporates adequate inter-modal connections linking east and west of the proposed Schofields Station and linking either side of the proposed station to Schofields Road, and its associated shared pedestrian cycleways.	Noted. The Strategies and Land Release Branch and RTA have not yet released plans for the Schofields Road upgrade. Such inter-modal linkages would be considered during the development of the detailed design. TIDC would continue to consult with the Strategies and Land Release Branch and RTA with the view to not preclude any future linkages.
Roads and Traffic Authority	60	The proposed new pedestrian bridge at Riverstone Station is to be designed in collaboration with the RTA to ensure appropriate pedestrian connectivity across the rail line upon closure of the existing Garfield Road level crossing.	Noted. The detailed design of the pedestrian footbridge at Riverstone Station would be developed in consultation with the RTA, the Strategies and Land Release Branch, the Heritage Branch of the Department of Planning, RailCorp and MoT. Refer also to ref. no. 48.
Roads and Traffic Authority	61	RTA would not object to the proposed development on property grounds providing no new buildings or structures are erected on the land required for road widening along Garfield Road.	Noted. The Quakers Hill to Vineyard Duplication will not require structures to be erected within land required for the widening of Garfield Road. TIDC would continue to consult with the RTA during the detailed design of the Project to ensure that the Quakers Hill to Vineyard Duplication does not prelude future RTA proposals.
Roads and Traffic Authority	62	The traffic and transport assessment fails to examine intersection performance in the future (and accessibility to Railway Stations) as a result of growth within the NWGC. The report should consider these future impacts to the network to ensure that it incorporates traffic forecasts and projections by the Growth Centres.	TIDC is continuing to consult with the Strategies and Land Release Branch, MoT, RailCorp and RTA about plans for the future road network for the NWGC. 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. 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. TIDC would continue to consult with these agencies about the modelling of future intersection performance.

Agency	Ref number	Issues raised	TIDC response
Roads and Traffic Authority	63	The traffic and transport assessment does not consider accessibility needs in relation to the road network and the impacts generated by the layouts proposed at each Railway Station.	Refer to TIDC's response to ref. no. 62.
Roads and Traffic Authority	64	Consideration should be given for three interchanges to identify intersections in the vicinity of these interchanges that may carry 6 buses per hour (or more), to ensure sufficient land is made available to provide bus priority when needed in the future.	As described in Section 5.1.2 of the Traffic and Transport Technical Paper (refer Volume 2 of the EA), the new Schofields Station would deliver a three bus bay interchange on the eastern side of the Station, which could serve up to 45 buses per hour, which was determined as being adequate to meet demand up to 2031. As described in Section 5.1.4 of the Traffic and Transport Technical Paper (refer Volume 2 of the EA), the new Vineyard Station would deliver a 69 metre long bus zone which would have sufficient space for five buses and could accommodate up to 75 buses per hour, which was determined to be adequate to meet demand up to 2031. TIDC will continue to consult with MoT, the Strategies and Land Release Branch and RTA about potential future bus numbers and routes as well as future intersections.
Roads and Traffic Authority	65	Concerned that parking demand currently exceeds formal commuter supply at Quakers Hill and Riverstone Rail Stations and will also exceed formal commuter supply in the short/medium term at Schofields Rail Station. With the development of the NWGC, the demand for commuter parking will increase.	Refer Section 3.5.5 for discussion on commuter car parking provisions at these stations.
Roads and Traffic Authority	66	RTA strongly urges the implementation of additional commuter car parking spaces at Quakers Hill, Schofields and Riverstone Stations (i.e. to meet current and short-term future demand). This should include the possible provision of co-sharing commuter parking arrangements with retail centre car parks located in close proximity to the Rail stations (i.e. areas cordoned off during weekdays).	Refer Section 3.3.5 of the report for discussion on commuter car parking at these stations.
Roads and Traffic Authority	67	The Project should depict and incorporate the allocation of land for the future expansion of Railway commuter parking facilities. This land can potentially be residue land adjacent to the Railway corridor.	Refer to TIDC's response to ref. no. 65 and 66. TIDC will continue to consult with MoT, RailCorp, Strategies and Land Release Branch and RTA about the provision of future commuter parking facilities in conjunction with the planning and development of the NWGC.

Agency	Ref number	Issues raised	TIDC response
Roads and Traffic Authority	68	Forecast station access mode share assumptions in 2031 for cars are too low.	The 2031 access to station mode shares were developed through a rigorous analysis as described in Section 4.1 of the Transport Technical Paper. The car mode share of 55% for Vineyard and 48% for Riverstone and Schofields considers the following: ▪ It was assumed that significantly improved bus services would be provided as the surrounding residential areas are developed (currently being reviewed by MoT). These services would support the proposed development of improved bus interchange facilities at each of the stations. Bus mode share was assumed to increase to 22% (1999 average of outer Sydney suburban stations, Transport and Population Data Centre 1999). ▪ The mode share assumptions already exist at Sydney stations that are considered equivalent in population and density to the proposed 2031 situation surrounding the Richmond rail line. ▪ The 1999 average car mode share for outer Sydney suburban stations (Transport and Population Data Centre 1999) is 41%.
Roads and Traffic Authority	69	To minimise the increased use of motor vehicles it is recommended that consideration be given to increasing the number of bus services to the stations. Should these services not be provided, then the RTA believes that the station access demand for cars is low and not reflective of the future needs for planning of support facilities.	Refer Section 3.2.1 for discussion on the MoT's review of metropolitan bus services in accordance with the recommendations of the Unsworth Review and the Station Transition Plan. Refer to TIDC's response to ref. no. 68 for discussion on the station access mode share assumptions in 2031.
Roads and Traffic Authority	70	The traffic and transport assessment suggests the segregation of the railway station function in terms of 'Park-and-Ride' and also 'Public Transport Interchange' stations. However the report does not apply or provide any details of this principle to the stations under current review. Further clarification is required on this matter as it affects bus planning (e.g. increased storage area for buses and also affects commuter parking sizing).	Noted. This principle will be considered during the detailed design of the station interchanges in consultation with the RTA, Strategies and Land Release Branch, MoT and RailCorp.
Roads and Traffic Authority	71	The entry and exit points to the stations and lifts within the stations should be bicycle friendly.	Noted. The design of the stations will allow for pedestrian and cyclist access across the rail line. This will be further developed during the detailed design in consultation with the RTA, Strategies and Land Release Branch, MoT and RailCorp.

Agency	Ref number	Issues raised	TIDC response
Roads and Traffic Authority	72	Any proposed new bridges, underpasses and drainage culvert extensions associated with the Project must be designed and constructed to enable the construction of the proposed GCC bicycle and pedestrian paths. This also includes the provision of a shared path for the proposed bridge on Westminster Street.	Noted. TIDC will continue to consult with the Strategies and Land Release Branch and RTA with regard to proposed bicycle and pedestrian paths to ensure that the Quakers Hill to Vineyard Duplication does not preclude such developments. Refer also to ref. no. 54.
Roads and Traffic Authority	73	Any designs and landscaping must not impact upon the sight distance for cyclists.	Noted. This will be considered during the development of the detailed design.
Roads and Traffic Authority	74	There must be enough space to provide a 3 metre wide shared bicycle/ pedestrian path with 500mm clearance on either side. Additional land may be required to place signs and other utilities.	Noted. These requirements will be considered, where possible to be adopted, during the development of the detailed design of the proposed shared user pathway between the existing and new Schofields stations in consultation with BCC.
Roads and Traffic Authority	75	There are to be no obstructions on the bicycle/ pedestrian path, including poles, signs, or any other obstructions.	Noted. This will be considered during detailed design in consultation with BCC.
Roads and Traffic Authority	76	All off-road cycleways are to be constructed from concrete or similar material acceptable for a regional commuter cycleway.	Noted. This will be considered during detailed design in consultation with BCC.
Roads and Traffic Authority	77	Roundabouts are not suitable intersection treatments for cyclists and pedestrians.	Noted. Roundabouts are not proposed to be constructed at pedestrian or cyclist crossings. Pedestrian and cyclist desire lines will be considered further during detailed design. As discussed in TIDC's response to ref. no. 25, there are no provisions for specific pedestrian or cyclist crossings at Schofields Station. The basis of this was to ensure the design does not attempt to predict or preclude the area development plans of the Strategies and Land Release Branch which will include property and road development as well as overall pedestrian and cycle strategy. The design of the shared user pathway and station interchanges would be further developed during the detailed design in consultation with the RTA. The design of these components of the project would support the Strategies and Land Release's pedestrian and cycle strategy.

Agency	Ref number	Issues raised	TIDC response
Roads and Traffic Authority	78	A suitable crossing for cyclists and pedestrians over the Bandon Road Railway underpass is required. This should be incorporated as part of the proposed new rail bridge crossing over Bandon Road.	The proposed scope of works for the Quakers Hill to Vineyard Duplication project finishes south of the Bandon Road level crossing. The provision of additional road infrastructure north of the Project is being coordinated by the Strategies and Land Release Branch and RTA in consultation with other agencies. Notwithstanding this, the Project does not preclude the construction of a cyclist/pedestrian crossing over Bandon Road in the future.
Roads and Traffic Authority	79	It is recommended that two additional bicycle/pedestrian crossings are provided approximately 1 km apart between Riverstone and Vineyard Stations, either as an overpass or underpass.	This is outside of the proposed scope of works for the Quakers Hill to Vineyard Duplication project. The development of additional cycleway infrastructure alongside the rail corridor is being planned by the Strategies and Land Release Branch through the development of the NWGC. An indicative plan of cycle paths proposed to be developed by the Strategies and Land Release Branch is shown in Figure 4-4.
Roads and Traffic Authority	80	A comprehensive Construction Management Plan is to be prepared and submitted to Council, RTA and the Department of Planning for approval prior to the commencement of woks. This plan should address issues related to noise/access during construction, construction vehicle management, parking for construction workers, public transport access, emergency vehicle access, and pedestrian accessibility to the affected rail stations.	Noted. Refer to SoC no. 5 and nos 16 to 23.
Roads and Traffic Authority	81	TIDC must prepare and submit a Traffic Management Plan (to Council/RTA) for approval to address any temporary road closures.	Noted. As stated in SoC no. 16, construction traffic impacts are to be managed in accordance with a three-level hierarchy of plans: 1. High level Traffic Management Reports prepared for local government areas that address cumulative traffic impacts across a number of construction work sites. 2. Site-specific Traffic Management Plans that focus on individual construction work sites. 3. Traffic Control Plans for each location where works are proposed in the road or that would affect trafficable areas. These plans would be prepared prior to construction and would be submitted to both the RTA and Blacktown City Council for review.

Agency	Ref number	Issues raised	TIDC response
Roads and Traffic Authority	82	Ensure that the existing parking provision is not noticeably reduced during construction.	Noted. A CEMP would be prepared for this Project. This CEMP would address traffic and transport management throughout construction. Appropriate provisions will be included in the CEMP to manage this issue. Where existing commuter parking is impacted during construction, the Project would seek to have this parking replaced at a ratio of at least 1:1.
Roads and Traffic Authority	83	The layout of the proposed car parking areas associated with the subject development.	The proposed car parking layout for the new Schofields and Vineyard stations is shown Figures 6-2 and 6-6 in the Environmental Assessment, respectively. The layout of these carparks will be further refined during detailed design.
Roads and Traffic Authority	84	All works and regulatory signposting associated with the proposed development are to be at no cost to the RTA.	Noted.
Department of Water and Energy	85	Any disturbance of watercourses and riparian corridors associated with the proposal must be rehabilitated to emulate a naturalised system for aquatic and terrestrial environments.	Noted. In areas where the rail line crosses watercourses, culvert treatments would be applied in accordance with DWE *Guidelines for Controlled Activities Watercourse Crossings* (February 2008) and *Why do Fish Need to Cross the Road? Fish passage requirements for waterway crossings* (Fairfull and Witheridge 2003). However, outside these areas, and as stated in SoC no. 32, TIDC will prepare a flora and fauna management measures as part of the CEMP, which would include a procedure for progressively revegetating and reinstating disturbed areas using locally endemic native plants for revegetation. Such rehabilitation work would be undertaken in accordance with DWE *Guidelines for Controlled Activities: In-stream Works* (February 2008).
Department of Water and Energy	86	Any disturbance of riparian corridors should be rehabilitated with fully structured local native riparian vegetation (trees, shrubs and groundcover species) in accordance with the stream categorisation and at a density that would occur naturally.	Noted. As discussed in TIDC's response to ref. no. 85, appropriate measures to address this issue will be included in the CEMP. Such measures will be developed in consultation with the land owner. TIDC will also continue to consult with the Strategies and Land Release Branch to ensure that the project works consider the broader context of riparian/terrestrial connectivity within the precinct plans for the NWGC.
Department of Water and Energy	87	Two culvert crossings have been mapped by DWE as Category 2 watercourses (culvert no. 10 and 12). Category 2 watercourses require a minimum 30 metre wide riparian corridor (measured horizontally landward from the top of bank) either side of the creek.	Noted. Refer to TIDC's response to ref. no. 85.

Agency	Ref number	Issues raised	TIDC response
Department of Water and Energy	88	Two culvert crossings have been mapped by DWE as Category 3 watercourses (culvert no. 2 and 11). Category 3 watercourses require a minimum 10 metre wide riparian corridor (measured horizontally landward from the top of bank) either side of the creek.	Noted. Refer to TIDC's response to ref. no. 85.
Department of Water and Energy	89	For Category 2 watercourse crossings, DWE encourages the replacement of culverts with bridge crossings. If the culverts are to be retained, the culvert bases should be naturalised to enhance aquatic/riparian connectivity.	No Category 2 watercourses would be crossed during Stage 1 of the Project. The watercourses encountered in Stage 1 are Category 3 watercourses and the proposal is to extend the existing pipe culverts. Consequently there is no significant opportunity to naturalise the culvert base, although the riparian vegetation will be rehabilitated in consultation with DECC and Strategies and Land Release Branch plans. Category 2 watercourses would be crossed during Stage 2 of the Project. The opportunity to naturalise culvert bases for these crossings would be considered during detailed design for Stage 2. Where possible, the watercourse crossings would be revegetated in accordance with DWE *Guidelines for Controlled Activities: In-stream Works* (February 2008). TIDC would consult with landowners and the Strategies and Land Release Branch to ensure that the project works consider the broader context of riparian/terrestrial connectivity within the precinct plans for the NWGC. Refer also to TIDC's response to ref. no. 85 and no. 91.
Department of Water and Energy	90	Concerned that the Environmental Assessment indicates that the reconstruction of a number of drainage culverts may increase the velocity of stream flows. The crossings should not be designed to increase stream flow as this is likely to have impacts on the stability of the bed and banks of the watercourses. The capacity of culverts should be designed to reflect natural stream flow conditions.	Flow velocities would not be significantly increased as a result of the project and the stability of the bed and banks will be managed through the downstream treatments (including scour protection). Consequently the capacity of culverts will be designed to reflect natural stream flow conditions. The detailed designs will be prepared in consultation with relevant stakeholders (e.g. DWE).
Department of Water and Energy	91	Crossing design should consider the riparian/terrestrial connectivity in addition to the requirement of fish and the in-stream environment.	Noted. TIDC will consult with land owners and the Strategies and Land Release Branch to ensure that the project works consider the broader context of riparian/terrestrial connectivity within the precinct plans for the NWGC.
Department of Water and Energy	92	Reference should be made to the DWE *Guidelines for Controlled Activities Watercourse Crossings*.	Noted. This guideline will be adopted during the detailed design and construction phases of the Project.

Agency	Ref number	Issues raised	TIDC response
Department of Water and Energy	93	DWE preference is for crossings to be made wider to minimise the requirements for scour protection.	As described in TIDC's response to ref. no. 90, the Project will extend existing pipe culverts and therefore there is no significant opportunity to make crossings wider and therefore downstream treatments will likely include scour protection. The detailed designs will be prepared in consultation with relevant stakeholders (e.g. DWE).
Department of Water and Energy	94	If the proposal is likely to intercept groundwater, a licence may be required from DWE under Part 5 of the *Water Act 1912*. The Department will assess the need for a water licence once more detailed Project information is available and provided to the Department.	Noted. TIDC will consult with DWE upon finalisation of the detailed design to confirm whether a water licence is required for the Project.
Department of Water and Energy	95	The need for a water licence should be discussed with DWE.	Noted. TIDC will consult with DWE during the development of the detailed design and preparation of Environmental Management Plans for the Project.
Department of Water and Energy	96	All works and disturbance areas associated with the proposal (with exception of the crossing upgrades) must be located outside the riparian zones and must not compromise the riparian zones in any way.	Noted. All construction compounds are proposed to be located outside of the riparian zones.
Department of Water and Energy	97	All watercourse affected by the proposal must be rehabilitated to emulate a natural stream system that behaves as, and has the appearance of a stable natural stream system of the area.	Noted. Refer to TIDC's response to ref. no. 85.
Department of Water and Energy	98	The rehabilitation of watercourses must be consistent with the DWE *Guidelines for Controlled Activities: In-stream Works*.	Noted. Refer to TIDC's response to ref. no. 85.
Department of Water and Energy	99	All riparian zones must be rehabilitated and maintained where they are affected by the proposal. The riparian zones are to consist of local native plant species. The plantings should emulate the ecotone of vegetation naturally or previously occurring along the riparian vegetation.	Noted. Appropriate measures to address this issue will be included in the CEMP, which will include the use of locally endemic plant species.
Department of Water and Energy	100	Erosion and sediment control measures are to be implemented prior to any works commencing at the site and must be maintained for al long as necessary after the completion of works to prevent sediment and dirty water entering the watercourse. These control measures are to follow relevant management practices as outlined in Landcom's (2004) *Managing Urban Stormwater: Soils and Construction*.	Noted. As stated in SoC no. 37, the proponent will include soil and water management measures as part of the CEMP for the control water quality and hydrology impacts during construction of the Project. The measures will be consistent with the principles and practices outlined in Landcom's (2004) *Managing Urban Stormwater: Soils and Construction*. These measures will be developed prior to the commencement of construction.

Agency	Ref number	Issues raised	TIDC response
Department of Water and Energy	101	Adequate measures must be in place to ensure the development does not impact on saline groundwater.	Refer to TIDC's response to ref. no. 41.
Department of Water and Energy	102	The development must demonstrate the following: ▪ The proposed development will have no or minimal impact on local and regional salinity processes. ▪ Salinity will have no or minimal impact on the proposed development. ▪ The development will have no or minimal impact on recharge to groundwater systems. ▪ The clearing of vegetation associated with the development is minimised.	As described in Section 3.7.2 of the Environmental Assessment, further geotechnical investigation would be undertaken during detailed design to obtain information on the site hydrogeology. In addition, SoC no. 34 states that detailed design would be undertaken to minimise any impacts in association with the project on identified saline groundwater. As described in Section 5.1.2, vegetation clearing has been reduced during the refinement of the project design as described in Chapter 6 of the Environmental Assessment. Modifications to the utility corridor have avoided the clearing of 0.08 hectares of Alluvial Woodland and 0.19 hectares of Shale Plains Woodland. Furthers Measures to minimise vegetation clearance requirements for the Project would be documented as part of the CEMP. This would include the identification of sensitive areas during the construction process as 'no-go' areas. Where possible, revegetation of areas disturbed by construction of the Project would be undertaken, thereby increasing the habitat value and visual amenity of the areas.
Landcom	103	Concerned about the impact the relocation of Schofields Station will have to the suburb, existing community, shops, commercial premises and services at the current station site.	Noted. Refer to TIDC's response to ref. no. 4 and no. 6.
Landcom	104	The Environmental Assessment does not make any effort to support the existing Schofields town centre or provide any ongoing connection between the centre and the new station location.	Chapter 5 of the EA provide the option addressed and the justification for the preferred option of relocating Schofields Station. Refer to TIDC's response to ref. no. 6.
Landcom	105	The future town centre to the east of the new Schofields Station could be at least 10 to 15 years from commencement, the convenient access routes for rail commuters should be more comprehensively addressed.	Refer Section 3.3.2 of the report.
Landcom	106	The Environmental Assessment fails to adequately consider the noise and vibration impacts to planned future communities in the locality. Adequate details for proper consideration of the likely impacts were not provided. This particularly a concern for both precincts for which exhibition closed in February 2009, and rezoning is expected in late 2009.	Refer Section 3.3.1 of the report for discussion on impacts to future land use.

Agency	Ref number	Issues raised	TIDC response
Landcom	107	The key management commitment to undertake ongoing consultation with the GCC and Blacktown City Council to reduce potential noise and vibration impacts on the future environment by appropriate land use zoning of surrounding areas during precinct planning is not appropriate for Alex Avenue and Riverstone Precincts. The approach undertaken does not represent good planning, and discriminates against the interests of landholders in the vicinity of the rail corridor.	Refer to TIDC's response to ref. no. 34.
Landcom	108	Landcom believes the assessment and proposed management of the operational noise impacts of the project is contrary to the DGRs as a suitable mitigation measure.	Refer to TIDC's response to ref. no. 34.
Landcom	109	It is reasonable for TIDC to accept responsibility for the potential impacts of the new infrastructure on the future land uses, particularly in the Alex Avenue and Riverstone precincts where rezoning is imminent.	Refer to TIDC's response to ref. no. 34.
Landcom	110	Any necessary noise attenuation measures should be constructed by TIDC within the rail corridor in consultation with the adjoining land owners. It should not be the responsibility of the landowner to adjust possible future zones to provide a noise buffer along the rail corridor – such an outcome would represent an extremely inefficient use of future urban land.	Refer to TIDC's response to ref. no. 34.
Landcom	111	TIDC is requested to provide a revised noise and vibration assessment for the Alex Avenue and Riverstone precincts. The process should involve consultation with the GCC, Blacktown City Council and key landowners to determine appropriate assumptions about future land uses. This is consistent with the statements made in the Project application report in relation to the detailed assessment of this issue.	Refer to TIDC's response to ref. no. 34.
Landcom	112	TIDC should provide a revised Statement of Commitments in relation to the provision of noise attenuation measures.	Noted. Refer to SoC no. 26 and 27.

Agency	Ref number	Issues raised	TIDC response
Landcom	113	Concerned about the details of the proposed retaining wall in the vicinity of Schofields Road. In this location, the new tracks are proposed on the eastern side of the railway corridor, immediately adjoining Landcom's Alex Avenue landholding. The report fails to provide any details about the configuration of the retaining wall or its relationship to the adjoining lands. Landcom requests that TIDC provide an indicative cross section so that it can consider the likely effect of the retaining wall.	The plans provided in the Environmental Assessment are based on concept plans which are preliminary to detailed plans, which are currently being developed. An indicative cross section of the retaining wall in the vicinity of Schofields Road is provided in Figure 4-3.
Landcom	114	Requests the inclusion of the following revised SoCs: ▪ SoC no. 27a – the proponent will undertake a revised assessment of the potential noise and vibration impacts for the Alex Avenue and Riverstone precincts, and will consult with the Department of Planning (Growth Centres), Blacktown City Council and key landholders to determine appropriate assumptions for future land uses adjoining the rail corridor. ▪ SoC no. 27b – the proponent would design and construct noise attenuation walls as required to ensure noise and vibration levels do not exceed the criteria set out in the Interim Guidelines for the Assessment of Noise from Rail Infrastructure Projects (DECC 2007) on future land uses in Alex Avenue and Riverstone Precincts. The design and implementation of the mitigation measures shall be undertaken in consultation with the affected property owners.	TIDC does not propose to revise these SoCs. Refer to TIDC's response to ref. no. 34.
DECC	115	**Noise and vibration** *Construction noise* The mitigation measures described in Section 9.9 of the noise and vibration assessment are generalised in nature and no specific mitigation measures have been committed to. The Department notes that the EA references TIDC's Construction Noise Strategy and agrees that a noise management plan should be developed and implemented to minimise noise impacts from construction activities.	Noted. Refer to SoC no. 24. A Noise and Vibration Plan will be developed as part of the CEMP which will provide details of the specific mitigation measures that would be adopted for the Project, including out-of-hours protocols, complaint management, temporary shielding, and the selection of construction equipment.

Agency	Ref number	Issues raised	TIDC response
DECC	116	*Construction compounds* Construction compounds should be located away from noise sensitive receivers to avoid impacts on these receivers. Where this is unavoidable, compounds should be designed to provide acoustic shielding to noise sensitive receivers.	Noted. Where possible, the compounds have been chosen to be located away from residents and will be configured such that the building structures provide acoustic shielding.
DECC	117	*Operational noise impacts and mitigation* The Department notes that a recent study found that the use of rail noise dampers in NSW did not provide the 3 dBA attenuation assumed in the noise and vibration assessment. Any proposed noise mitigation measures should be demonstrated to be effective prior to their use on the project.	The detailed design process involves undertaking further detailed operational noise assessments in accordance with Department of Climate Change's (2007) *Interim Guideline for the Assessment of Rail Noise Infrastructure Projects* (IGANRIP). Where operational rail noise levels are confirmed to exceed the IGANRIP trigger levels, an investigation into reasonable and feasible mitigation measures will be undertaken for these locations to ensure compliance with IGANRIP. These measures would be developed during detailed design in consultation with DECC and affected land owners. The effectiveness of any particular mitigation measure will be determined within the reasonable/feasible process prior to being proposed for implementation.
DECC	118	The assessment of ground-borne noise that is proposed to be undertaken during the detailed design also needs to consider noise mitigation measures.	Noted. To be included in the next stage of mitigation measures particularly if noise walls are being proposed.
DECC	119	The noise and vibration assessment appears to indicate that the vibration criteria will be exceeded for some train passbys, however no mitigation is proposed. The department expects that appropriate mitigation measures are implemented for any exceedances of criteria.	The assessment of vibration against the criteria indicates that there is no exceedance of the vibration trigger levels as expressed in the IGANRIP (or criteria as referred to in the DECC guideline). However, even though vibration levels do not exceed the trigger levels, some people may perceive vibration levels below these trigger levels.
DECC	120	*Operational noise impacts from bus interchanges* The noise and vibration assessment relied on the awakening levels provided in Appendix C of the ECRTN. The Department does not consider this awakening level to be appropriate for the assessment of potential sleep disturbance from maximum noise levels. The appropriate criteria for maximum noise levels are based on the background + 15 dBA.	As discussed in 8.4 of the Noise and Vibration Assessment (refer Technical Paper 2 in Volume 2 of the EA), the potential for sleep disturbance was only an estimate of the likely impact as the exact locations of future potential receivers are currently unknown (as the new Schofields and Vineyard Stations are planned to form the centre of the Schofields and Vineyard Growth Centre Precincts). Therefore external L_{Amax} noise levels were calculated for a variety of offset distances. The calculations were based on a bus L_{Amax} sound pressure level of 87 dBA at 7 m. Assuming an offset distance of 30 m (typical nearest residential receiver location), the calculated external L_{Amax} noise level is 70 dBA. This would correspond to an internal noise level of 60 dBA, assuming windows open, and less than 50 dBA assuming windows closed.

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			Whilst this level exceeds the 55 dBA criterion, this represents no change to the "existing" exposure levels of these receivers, given their locations are subject to other heavy vehicle usage such as large trucks. As stated in SoC no. 27 (refer Table 6-1), '*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 shall be implemented in consultation with the affected property owners.'*
DECC	121	The Department concurs with the statement in the noise impact assessment that it would be advantageous if this assessment is revisited once the design development and GCC planning processes are further progressed.	Noted.
DECC	122	**Biodiversity** *Application of the Growth Centres SEPP* Biodiversity certification does not apply to projects for which approval is sought under Part 3A of the *Environmental Planning and Assessment Act 1979*. As such, biodiversity certification does not apply to the Quakers Hill to Vineyard Duplication. The Department considers it should be assessed and offset in accordance with the Part 3A Guidelines.	Refer Sections 5.1.1 and 5.1.2 (*Flora and fauna: management of impacts*).
DECC	123	*Offsets* No Offsets are proposed for the 4.6 ha of endangered ecological communities or threatened flora species that are to be cleared for this Project, as TIDC considers that biodiversity certification under the Growth Centres SEPP applies to the Project and therefore these offsets have already been accounted for. The department does not consider that the Growth Centres SEPP applies to the Project and therefore any biodiversity impact will need to be adequately offset. Offsets should be developed in consultation with the Department and in accordance with the Principles for the use of biodiversity offsets in NSW. The identification of suitable projects and funding arrangements would need to be decided on prior to the commencement of construction works. The provision of biodiversity offsets needs to be included in the Statement of Commitments.	Refer Sections 5.1.1 and 5.1.2 (*Flora and fauna: management of impacts)*.

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DECC	124	*Endangered Ecological Communities* The Environmental Assessment states that areas of ecologically endangered communities (EECs) were re-assessed but were not considered to be EECs because they were small and consisted largely of scattered trees. However, the side of the area is not relevant when determining whether vegetation meets the definition of an EEC, and vegetation should be regarded as the EEC (albeit in a degraded form), unless the understorey is entirely exotic and there is no native seedbank.	While the Environmental Assessment described areas of EEC as small fragmented patches, the assessment did not use this as a basis for determining whether vegetation meets the definition of an EEC. During field surveys undertaken for the Project, it was determined that some vegetation did not meet the definition of an EEC as: ▪ it is considered not to contain enough indigenous species to re-establish the characteristic native understorey ▪ regrowth was unlikely to achieve a near natural structure.
DECC	125	Figure 4-1 of the Biodiversity Technical Paper still does not include EECs mapped as polygon class TXU in the *Native Vegetation of the Cumberland Plain, Western Sydney* (NPWS 2002). This figure should include this category for consistency.	Noted. Refer Figure 4-5 and Section 4.2.8 of the report.
DECC	126	*Additional fauna surveys* No details are included in the environmental assessment on the methods or effort applied in the fauna survey (except for the Cumberland Land Snail). The Department assumes that a number of species that are listed as likely to occur (e.g. bats and owls) were not surveyed. If it is not possible to do additional surveys, then the assessment must assume that all the likely species are present and be carried out on this basis. It appears the assessments were done on this basis, however the assessment does not clearly state this.	Surveys of the rail corridor were undertaken on 19 September 2007. Surveys on private properties were undertaken on the following dates: ▪ 6 February 2008 ▪ 8 April 2008 ▪ 7 May 2008 ▪ 2-3 September 2008 ▪ 11 March 2009. The surveys assessed the extent and condition of vegetation communities and flora and fauna habitat. Survey effort and design was based on the Department of Environment and Climate Change *Impact Assessment Guidelines* (Department of Environment and Climate Change 2007c) and species specific guidelines (e.g. National Parks and Wildlife Service 2000). With the exception of the Cumberland Land Snail, additional targeted surveys were not completed for other fauna. As stated in 3.6.1 of the Environmental Assessment, '*where the survey was undertaken outside the optimal time for detecting some species, a precautionary approach was taken that involved the assumption that species were present if suitable habitat was identified.*' Additionally, the tests for significance completed for Threatened ecological communities, populations and species that were either: ▪ recorded in the study area, or

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			▪ recorded in the locality, with potential to occur in the study area; assumed that the species was present, hence clarifying DECC's assumptions.
DECC	127	*Indirect impacts* Discussion of indirect impacts from the operational phase of the proposal is limited. The operation of the proposed car park and bus interchange at Vineyard Station is likely to greatly increase the level of weed invasion, rubbish dumping and edge effects on this remnant. The Environmental Assessment should discuss whether indirect impacts from the proposal will reduce the size of any remnant to a critical level, where their long term viability will be questionable.	Indirect impacts were discussed in Section 8.6.2 of the Environmental Assessment, and Chapter 6 of the Biodiversity Technical Paper (refer Volume 2 of the EA). TIDC will continue to consult with the Strategies and Land Release Branch throughout the development of the NWGC, particularly with regard to the Vineyard township proposed adjacent to the Vineyard Station commuter car park, to ensure indirect impacts from the operational phase of the proposal are managed appropriately.
DECC	128	*Carpark* The Department supports the conclusion of Technical Paper 5 – Biodiversity Assessment that the final location of the new Vineyard Station car park, including Phase 2, and bus interchange be configured to minimise impacts to threatened biodiversity as much as possible by considering other locations for the Phase 2 carpark, such as the west of the rail corridor where the vegetation has been previously cleared and grazed.	Noted. Refer to TIDC's response to ref. no. 49 and no. 50.
DECC	129	*Assessments of significance* The assessment of significance provided in Appendix E of Technical Paper 5 – Biodiversity Assessment should be repeated as it appears in the EP&A Act, as changing the wording can change the meaning of each section.	The assessment of significance provided in Appendix E of Technical Paper 5 is repeated as it appears in the draft *Guidelines for Threatened Species Assessment*. The wording presented in Appendix E is as per this guideline. Projects assessed under Part 3A of the EP&A Act are not assessed in accordance with the Section 5A of the Act (the Seven Part Test), but rather following the draft Part 3A guidelines.

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DECC	130	There is an error in Appendix C of Technical Paper 5 – Biodiversity Assessment, as the footnote for the column *likelihood of occurrence* states that if the likelihood is high, then a species was recorded during the current survey. It is noted that a number of species are recorded as having a high likelihood of occurrence; however no threatened species were recorded on site.	The footnote is correct. The assessment however did not include an additional note for the Cumberland Plain Land Snail which would have clarified this inconsistency. This additional note would have suggested that despite the likelihood of occurrence as being assumed high, actual targeted searches for the species conducted found no live specimens or shells of the Cumberland Plain Land Snail were identified within the study area. Given that additional surveys were not carried out, then the assessment assumes that the species is present given that potentially suitable habitat for this species exists in remnant Cumberland Plain Woodland and Shale Gravel Transition Forest. Refer to Ref 126 on assessment methodology.
DECC	131	*Construction compounds* Where construction compounds are proposed to be located in areas that have vegetation, the vegetation should be protected wherever possible. Fencing should be used around trees to prevent parking or equipment storage within the drip line of the trees. An ecologist should be consulted regarding the design of the site compounds.	A Flora and Fauna sub plan will be developed for the Project as part of the CEMP, which will provide details of the specific mitigation measures including protection of retained vegetation.
DECC	132	**Floodplain risk management** *Risk categories* The low flood risk category mapping presented in the Environmental Assessment is directly based on the probability of occurrence. However, risk also depends on the consequences of flooding, such as property and infrastructure damage, threat to safety and people, loss of business profitability and downtime and recovery. Basing the low risk from flooding on probability alone, particularly in the Hawkesbury River flooded areas, may not be appropriate because of the significant depths of flooding and greater potential for severe flood damages above the 100 year flood level. Accordingly, some of the low risk areas shown in Figures 8-12a to 8-12e may in reality be medium or high risk.	The hazard categories are based on the probability of occurrence of flood, not on the consequence, which is consistent with the Blacktown City Council (BCC) flood extent map. The maps were produced by BCC, in consultation with the Strategies and Land Release Branch.

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DECC	133	The Environmental Assessment refers to the Probable Maximum Flood as having a 1 in 10,000,000 change of occurring. This number suggests the PMF is much rarer than that suggested in previous studies. For example, the *Warragamba Flood Mitigation Dam EIS – Flood Study – Part D Flood Estimation*, October 1994, suggests a figure of 1 in 100,000 for the subject area resulting from Hawkesbury River flooding.	The Environmental Assessment considers the PMF as a 1 in 10,000,000 chance of occurring is consistent with that used by the Strategies and Land Release Branch in the development of the precinct plans (GHD 2008).
DECC	134	*Culvert capacity* Have all relevant culverts been included in the assessment?	Refer to TIDC's response to ref. no. 40.
DECC	135	Basis for headwater calculations (including whether adequate allowance has been made of downstream tailwater levels/Submergence affects).	For the Stage 1 detail design, RLA has calculated headwater using culvert analysis program CDMD (Sinclair Knight Merz software) which utilises HECRAS equations. Culvert inlet geometry and tail water levels have been considered in this analysis. It is considered that adequate allowance has been made of downstream.
DECC	136	Assumptions on potential culvert blockage due to vegetation debris, litter etc.	As part of the detailed design process for Stage 1, the RLA has reviewed the culverts along the alignment. This has included a number of inspections of the culverts. It was concluded during this process that the proposed culvert openings are large and are not likely to block to the extent that it requires specific consideration. Therefore this has not been considered in the analysis, which is viewed as adhering to standard industry approach. The greater risk of blockage would be due to maintenance issues of the drainage lines. Therefore during operation, it is important for Council and RailCorp to maintain inlet and outlet drainage lines to ensure there is no blockage.
DECC	137	Details of the assessment/acceptability of potential upstream and downstream impacts on existing properties (beyond the rail corridor) from the proposed culverts (with blockage) over a range of local flood events.	As part of the detailed design process for Stage 1, RLA has confirmed that there would be no adverse impact on the existing properties both upstream and downstream of the culverts for storms ranging from 1 in 1 year to 100 year ARI. Refer to TIDC's response to ref. no. 136.
DECC	138	Is it correct that the local flood impacts have been appropriately assessed, even in areas where the Hawkesbury River backwater controls peak flood levels?	This is correct. Refer to TIDC's response to ref. no. 137.

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DECC	139	*Design Standard* The adopted standard needs to ensure acceptable safety and serviceability of the rail system, given the number of culverts spread along the line with varying potentials for blockage due to local flooding.	The 1 in 50 year ARI event has been considered for the design of culverts as per the RailCorp Standard. The proposed track vertical alignment is the same as the existing track and therefore the duplication will not impact the safety and serviceability of the rail system compared with the existing situation.
DECC	140	The Environmental Assessment suggests that the flood impacts resulting from the proposed works (including filling) will be based on flooding up to the 1 in 100 year ARI event. This may not be totally acceptable from a risk management perspective. Consideration of the impacts from rarer floods may be required in some instances. For example, the assessment may need to include the known 1867 flood of record type event, which is approximately a 200 year event, in areas affected by Hawkesbury River backwater.	A qualitative assessment of this issue indicates that during a 1 in 200 year event, a significant length of the rail line will overtop and the culvert size and performance is no longer a factor than the track level. To calculate the actual 1 in 200 year impact would require significant additional modelling in above and beyond what RailCorp/ BCC require.
DECC	141	*Detail design phase* Confusion over how much detailed assessment has been undertaken as part of the EA process. Page 386 of the report suggests that the local flood impacts have been considered in detail (but details of how this was carried out are not provided in the report), page 389 states that a detailed flood assessment would be prepared during detailed design of the project. The detailed assessment should be undertaken early in the planning phase of the project and must account for the impacts of climate change.	The detailed design process for Stage 1 is being undertaken in parallel with the EA. Work undertaken for the detailed design has contributed to the proposal in the EA, and is being further refined as the detail design is finalised for consultation with stakeholders prior to construction of the project. There is no specific standard for climate change to incorporate changes in rainfall intensity patterns. However, a freeboard allowance ('safety factor') is included in the design which provides a significant buffer and allows for uncertainties such as increase in peak flows due to climate change. The freeboard allowance on 500 mm has been incorporated into the culvert design and flood analysis. This approach has been adopted by other agencies including Melbourne Water.
DECC	142	*Modelling* The report does not indicate what sort of modelling approach has been used to assess the flood impacts and determine the culvert sizes. Accordingly, comments on the acceptability of the approach used cannot be made at this time.	The modelling undertaken by Maunsell (2007) for the Environmental Assessment used the program – Culvert Master. The modelling undertaken by RLA for the Stage 1 works used the CDMD software program. Both modelling software programs are accepted industry standard systems as is HECRAS.

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DECC	143	*Other floodplain development* It will be necessary to consider any future plans Blacktown City Council has for areas adjacent to the railway corridor, which may be impacted by the rail duplication proposal.	Modelling specifically undertaken by the RLA for the detailed design process of Stage 1, which has concurrently been compared with the BCC RAFTS model results, indicates that the upgrades to the culverts will generally result in a matching of existing culverts and this will have no significant impact on the stormwater flow characteristics or flood potential on neighbouring properties compared to the existing conditions. In undertaking investigations for Stage 1 detailed design, the RLA has adopted more conservative flow rates than those adopted by BCC, and consequently, the predicted impact will be more conservative. Nevertheless, the results indicate that the impact on the flood level (or height) will either remain as per current or be slightly reduced risk/impact (refer Table 3-3).
DECC	144	*Flood evacuation* The report suggests that the project will not exacerbate existing flooding behaviour of key evacuation routes or critical buildings. However, will the proposed rail duplication have any flood evacuation function? If it does, the design, including rail levels and culverts, may need to be modified to accommodate this function. The State Emergency Service may need to be consulted on this issue.	The rail line is not part of any flood evacuation route as it may not be possible to guarantee electricity supply for trains during floods to allow the trains to be able to operate.
DECC	145	*Railway stations* There appears to be no specific details relating to the management of flooding around railway stations and car parking areas. It is understood from page 379 of the report that these details will be covered in the detailed design phase.	Confirmed. This will be considered further. However during times of flood it is unlikely that trains would be operational. As such, the use of the railway stations and car parking areas would be limited during such events.
DECC	146	**Aboriginal cultural heritage** All recommendations contained in Section 8 Management Recommendations of the Indigenous heritage assessment report should be adopted (incorporating the following comments in relation to Recommendations 5 and 7).	Noted.
DECC	147	*Recommendation 5: Care and Control Permit for sites QV3, QV4 and QV5* An application for a Care Agreement for Aboriginal objects is required from the Department if the objects are collected/relocated and maintained by an Aboriginal community group.	Noted. This will be discussed with the Aboriginal Community and DECC.

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DECC	148	*Recommendation 7: Monitoring of areas not marked for further archaeological management* The department does not support monitoring during earth moving works. The Department would like to be consulted regarding the research design for the archaeological subsurface testing and any resulting salvage work that is to be undertaken prior to development.	Noted. While this recommendation was included in the Indigenous Heritage Technical Paper, it was not included in the draft Statement of Commitments for the Project (refer to Chapter 12 of the Environmental Assessment).
DECC	149	**Sediment and erosion control** The proponent must develop an Erosion and Sediment Control Plan (ESCP) for each section of the project site to manage risks of erosion and subsequent sediment deposition. The ESCP should address issues such as the construction of culverts to ensure that their construction is managed to prevent erosion and the pollution of waters. The Department recommends that vegetation is left in place for as long as possible and is only removed immediately prior to the commencement of construction as vegetation cover will protect the soil from erosion by rain and wind. Appropriate erosion and sediment controls must be put in place before the vegetation is removed.	Noted. This will be included as part of the CEMP.
DECC	150	**Land contamination** Phase 2 assessments must be undertaken in accordance with the Department's guidelines for contaminated sites and be completed prior to the commencement of construction.	Noted. The Phase 2 assessments will be undertaken in accordance with these guidelines and will be completed prior to the commencement of construction in any particular area.
DECC	151	To prevent any future contamination of land or water, all hazardous materials and dangerous goods should be stored in a bunded, roofed area this is not at risk of being flooding during extreme weather events.	Noted. This will be included as part of the CEMP.

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DECC	152	**Air quality and greenhouse gases** Bike storage facilities should be provided at the new stations to encourage local residents to ride their bikes to the station rather than taking their cars to reduce the emission of greenhouse gases during the operation of the project. Bike facilities should be provided at Riverstone Station to cater for future demand.	Noted. The provision of bike racks and space for bike lockers at the Schofields, Riverstone and Vineyard stations would be determined during detailed design in consultation with the Ministry of Transport (MoT) and RailCorp. The current design for Schofields Station indicates that approximately 40 bike racks will be provided at the new Schofields Station, as well as concrete padmounts to allow RailCorp or MoT to provide bike lockers. The cyclist facilities that will be provided by the Quakers Hill to Vineyard Duplication will allow for integration with the Strategies and Land Release Branch's plans for cycle paths as proposed in precinct planning documents for the NWGC, where this information is available. An indicative plan of cycle paths proposed to be developed by the Strategies and Land Release Branch is shown in Figure 4-4.
DECC	153	**Environment Protection Licence** An Environment Protection Licence (EPL) under the *Protection of the Environment Operations Act 1997* will be require for railway system activities during construction and operation and for extractive activities during construction. An EPL is required for the extraction, processing or storage of more than 30,000 tonnes of extractive materials per year. Approximately 76,900 cubic metres of material is anticipated to be extracted during the project, with approximately 40,999 cubic metres to be excavated during Stage 1.	Noted.
DECC	154	**Draft Statement of Commitments** *Environmental Management Systems* SoC no. 5 should include more detail on the issues and level of detail that should be included in the CEMP. For example, the CEMP should include details on sediment and erosion control measures, contaminated soil management, vegetation management, noise and vibration etc.	Noted. SoC no. 5 has been amended to provide further detail on the issues and level of detail that should be included in the CEMP. It is also noted that the CEMP will require approval prior to the commencement of construction.

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DECC	155	*Traffic and transport* The Department suggests that further investigations and consideration of alternative sites for both Phase 1 and 2 of the Vineyard carpark should be conducted, as the development of the carpark in the proposed location is expected to result in the removal of 0.97 ha of existing vegetation including good condition EEC.	Noted. Refer also to TIDC's response to ref. no. 49 and no. 50.
DECC	156	The Department recommends that there is a SoC to provide bike facilities at the stations to meet future demand (say 2031), not just for the demand upon opening.	It is not proposed to include all facilities to meet the 2031 demand at the opening of the Project. Additional facilities can be provided as demand warrants. There are also opportunities to incorporate facilities into the Strategies and Land Release Branch precinct plans as they develop.
DECC	157	*Noise and vibration* The project will require an environmental protection licence (EPL) which will include requirements regarding working hours, communication protocols and noise and vibration. TIDC will be required to comply with the requirements of the EPL and this will override any requirements set out in TIDC's Construction Noise Strategy.	Noted.
DECC	158	SoC no. 25 should be amended to state the following: *Construction activities will be undertaken between the hours of 0700 and 1800 Monday to Friday, 0800 to 1300 Saturdays and no work on Sundays or public holidays, except as otherwise provided for in the Environmental Protection Licence for the Project*.	Noted. SoC no. 25 has been amended to include reference to the Environmental Protection Licence; however reference to other relevant authorities has also been included in this SoC as they also have a role in determining construction working hours.
DECC	159	*Water quality and hydrology* SoC no. 33 commits the proponent to developing a Flood Impact Assessment. This assessment should include consideration of the impacts of climate change particularly in relation to culverts that cross the rail corridor and stormwater drainage systems.	Noted. Refer to TIDC's response to ref. no. 43 and no. 141.
DECC	160	SoC no. 35 commits to soil and water management measures being included as part of the CEMP. The proponent should also develop individual Erosion and Sediment Control Plans for each section of the project site.	Noted. This would be developed as part of the CEMP which would be prepared prior to the commencement of construction.

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DECC	161	The Draft SoCs should also include a commitment to harvest rainwater during both construction and operation for earthworks, dust suppression and landscaping.	Noted. Commitments to rainwater harvesting were detailed in Table 11-1 of the Environmental Assessment. SoC no. 52 states that TIDC would address all sustainability measures as identified in Table 11-1 of the Environmental Assessment. Refer also to TIDC's response to ref. no. 163.
DECC	162	*Contaminated land* The SoCs should include a statement of commitment that the Phase 2 Contamination Assessment will be completed prior to the commencement of construction.	Noted. No significant contamination has currently been identified. A Phase 2 contamination assessment would be completed prior to the commencement of construction. The SoCs have been modified to include a commitment for this (refer SoC no. 42).
DECC	163	*Waste, energy and demand on resources* Incorporating passive design and energy efficiency measures into station design, as mentioned on page 479 of the Environmental Assessment, should be included as a SoC.	Noted. Provision for these measures was detailed in Table 11-1 of the Environmental Assessment. SoC no. 52 states that TIDC would address all sustainability measures as identified in Table 11-1 of the Environmental Assessment. Refer also to TIDC's response to ref. no. 163.
DECC	164	*Sustainability in project design and delivery* SoC no. 49 states that the proponent would address all sustainability measures identified in Table 11-1. The Department recommends these commitments be individually detailed in the Draft SoCs, making these commitments more transparent and the proponent more accountable to the implementation of these commitments.	Noted. SoC no. 52 adequately covers all the measures referred to in Table 11-1. Including all of the measures in Table 11-1 as a SoC would result in the SoC table becoming too long and non-user friendly. A report will be prepared during the detailed design to address each of the items in Table 11-1.
Department of Defence	165	Defence owns land that is adjacent to the rail line and part of which (approximately 2.1 ha) will be acquired for the proposal.	Noted. As described in Section 5.1.2, the land acquisition requirement for the Project has been reduced due to the modified utility corridor that is proposed to be constructed on the western side of the rail corridor. In summary, the acquisition requirement of Department of Defence land has been reduced by approximately 25% (0.98 hectares). The total area of land that would be acquired from Department of Defence would be 2.9 hectares.
Department of Defence	166	Concerned about the potential adverse noise impacts on Commonwealth land that holds recognised residential development potential.	Refer to TIDC's response to ref. no. 34 and no. 106.

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Department of Defence	167	The proposed action and Environmental Assessment ignores the future use of the Defence land as an important component of the NWGC. Without adequate noise mitigation measures, increased operational train noise will impact on the quality of life of the new residents and reduce the development potential and value of the Defence site.	The Environmental Assessment considers the proposed development of the NWGC in Sections 2.5.5, 3.1.1 and 8.1. At the time of writing the Environmental Assessment, little information was available on the Strategies and Land Release's plans for the Schofields precinct, of which the Defence land is located. Preliminary information released by the Strategies and Land Release Branch indicates that the Schofields precinct will be developed to contain high density development within town and neighbourhood centres (Department of Planning 2009). The precinct is expected to provide for approximately 5,000 dwellings and accommodate a population of 14,000 people (Department of Planning 2009). It is expected that the construction of a new station within the vicinity of the Schofields precinct will support the Strategies and Land Release Branch's plans for this precinct by accommodating the expected future patronage from the NWGC.
Department of Defence	168	The impact assessment demonstrated that operational noise impact on residences on the eastern side of the rail corridor would exceed levels and require noise mitigation measures to be adopted at the source; however, the impact assessment did not address the noise impact to the Defence land on the western side of the rail corridor.	Refer to TIDC's response to ref. no. 34 and no. 106.
Department of Defence	169	Defence requests that potential impacts from operational noise arising from the project on the Defence land be considered prior to any decision on the project and that appropriate measures to mitigate noise impact on the Defence site be a condition of approval. Appropriate measures could include the adoption of source control measures (such as rail dampers, low profile noise barriers and acoustic shielding). Alternatively TIDC could consider purchasing the affected land as part of the rail corridor and Defence would support the Priority Sale of the land (approximately 5 ha).	Refer to TIDC's response to ref. no. 34 and no. 106.
Department of Defence	170	Defence considers that the mitigation measures should not be deferred and addressed at the rezoning stage, nor incorporated into land use planning measures for land that has been formally identified as future residential development under the *Environmental Planning and Assessment Act 1979*. This course of action does not address the source of the problem and transfers the cost of rail management to private landholders rather than to the generator of the noise. It may	Refer to TIDC's response to ref. no. 34 and no. 106.

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		also reduce the incentive on RailCorp to mitigate noise from rolling stock. Defence does not consider it appropriate for TIDC to pass the responsibility of providing adequate noise mitigation to the GCC (Department of Planning), Blacktown City Council, the Commonwealth and private land holders.	
Department of Defence	171	Whilst Defence will cooperate with TIDC in its acquisition of part of the rail corridor, Defence does not wish to be in a position where such a sale results in adverse impacts and a lower value for the adjacent Defence lands.	Refer to TIDC's response to ref. no. 34 and no. 106.
Ministry of Transport	172	The Ministry supports the proposal, which includes the planned relocation of Schofields Station in Stage 1 of the project. The Ministry acknowledges the consultation that was completed for the project. The Project justification appears sound and community concerns regarding key issues, such as the new Schofields Station, have been considered. The relocation of Schofields Station represents a 'whole-of-Government' position as noted in the Environmental Assessment.	Noted.
Ministry of Transport	173	The draft Statement of Commitments also includes a *Community and Stakeholder Involvement Plan* to address key stakeholder concerns noted during previous consultation.	Noted. This commitment has been included in the final Statement of Commitments for the Project (refer SoC no. 7).
Ministry of Transport	174	**Construction impacts** The Ministry notes plans to modify station access, commuter car parking, bus stops and bus routes during the construction of the project. It is imperative that the Ministry is consulted throughout the project to ensure bus services remain operational during construction of the project.	Noted. TIDC would continue to consult with the MoT throughout the pre-construction and construction phases of the Project.
Ministry of Transport	175	**Bicycle access and parking** The Ministry should be consulted during the detailed design phase of the Station interchanges to ensure safe bicycle access and adequate bicycle parking. These new bicycle parking facilities should also complement broader cycling initiatives to encourage the use of active transport across the region. Bicycle parking and access should be considered in the context of the new NSW Bike Plan.	Noted. TIDC will consult with the MoT with regards to the detailed design of the Station interchanges.

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Ministry of Transport	176	**Interchange design** The Ministry continues to support the relocation of Schofields Station as it presents an opportunity to focus bus services on one key interchange, better integration of transport infrastructure with the proposed town centre, and improve access to the rail network for residents within the broader North West region. The Ministry also recognises the need to improve interchange facilities at Riverstone and to relocate Vineyard Station.	Noted.
Ministry of Transport	177	The Ministry suggests any proposed interchanges should reflect the *Guidelines For the Development of Public Transport Interchange Facilities* (September 2008).	Noted. TIDC would consider this guideline during the development of the detailed design of interchanges.
Ministry of Transport	178	The Ministry should be consulted during the detailed design phase for each of the proposed new and upgraded interchanges to ensure the development of a transport interchange facility that will meet the Government's transport objective.	Noted. TIDC would continue to consult with the MoT throughout the preconstruction and construction phases of the Project.
Ministry of Transport	179	The Ministry recommends the interchange design of the stations to provide appropriate levels of modal separation where possible. This includes: ▪ designated entrances and exits to the station and road network for cars and buses/taxis to reduce potential conflicts ▪ designated areas for each mode of access, including dedicated taxi stands clearly identified by appropriate parking controls, and dedicated and clearly indicated kiss-and-ride area for safe passenger set down and pick up. At Schofields, the provision of a signalised intersection should be considered at the intersection of Railway Parade and Pelican Road in order to provide a safer and more efficient interchange environment for all modes of access rather than a roundabout.	Noted. TIDC would consider these provisions during the detailed design phase of the Project, in consultation with the MoT. The provision of a signalised intersection has been considered at the junction between Pelican Road and Railway Terrace. The traffic numbers do not warrant a signalised intersection and a roundabout is the most appropriate junction arrangement. A signalised intersection would result in an increase in the average expected delay at the junction. Also the cost of signalise intersection would be considerably more than that of the roundabout option. It is recognised that traffic numbers may increase as a result of future development in the area and that the intersection may need to be upgraded accordingly. It is not known if or when this development will take place. Similarly the type, arrangement, capacity and even the location of any future junction is not known and will be dictated by future development requirements. It is expected therefore that intersection upgrades will be provided by others to match any future development.

Agency	Ref number	Issues raised	TIDC response
Ministry of Transport	180	**Commuter car parking** Commuter car parking at the new Schofields Station should be designed to accommodate forecast park and ride growth in the medium term, possibly up to approximately 10 years beyond completion. Provision for longer term commuter car parking should also be considered and included in the design, possibly through the identification of sites for additional commuter car parking within the station precinct.	Refer to TIDC's response to ref. no. 65.
Ministry of Transport	181	The Ministry has responsibility for the NSW Government's Commuter Car Park Program and commuter parking generally, and as such, any plans for additional commuter car parking should be directed to the Ministry for consideration.	Noted. Any revision of additional commuter car parking would be coordinated by TIDC, MoT and RailCorp.
Ministry of Transport	182	**Bus infrastructure and access** Future bus capacity and access requirements should be considered, including provision for expanded bus interchanges and potential layover facilities to serve each station as the region develops. The Ministry also recommends opportunities for bus priority to ensure reliable and direct bus access be investigated.	Refer to TIDC's response to ref. no. 64 for discussion on bus capacity accommodated at the new Schofields and Vineyard stations. The current Project design does not preclude the later provision of such bus infrastructure to accommodate future development if/when required.
Ministry of Transport	183	Other considerations in relation to bus infrastructure include: ▪ the future need to introduce new bus routes to the west of Schofields Station should be safeguarded through the design process ▪ the provision of a single major interchange facility on the eastern side of Riverstone Station to provide a hub for local and regional bus services, with future provision for bus stops on the western side to service new bus routes that will link Riverstone Station with Riverstone West ▪ The need to include bus stops for services operating in both directions at Vineyard Station, rather than a single interchange facility alongside the station entrance.	Noted. This is outside the scope of the Quakers Hill to Vineyard Duplication Project. Notwithstanding this, the current Project design does not preclude the later provision of such bus infrastructure to accommodate future development.
RailCorp	184	RailCorp is supportive of the proposal. It is acknowledged that a number of issues and suggestions highlighted in previous RailCorp correspondence for the Environmental Assessment Adequacy Review have now been addressed.	Noted.