Summary of and Responses to Agency Submissions

Agency	Comment	Response
Department of Planning and Infrastructure	Effect of floods on the project (including access); and project effects on flood characteristics (including on surrounding land, infrastructure, housing and businesses for a range of flood events up to and including the PMF). This assessment must take into account the potential for credible flood characteristic changes resulting from climate change and sea level rise. Appendix G indicates that there will be increased flood levels impacting on Brancourts and some local housing. The EA states that measures are being investigated re Brancourts. These measures and their efficacy will be required to be detailed in the response to submissions.	The vertical alignment of the track formation has been modified so that the on-site tracks will be below those on the adjoining main line in order to prevent significant changes to the existing flooding regime. An updated Flood Impact Assessment Report prepared by BMT WBM is provided in **Appendix D**.
	The investigations identified in section 9.2 of the technical paper shall be reported in the submissions report to identify the significance of the potential impacts.	The Test Excavation Report prepared by Australian Museum Business Services (AMBS) is also provided in **Appendix K**. An Addendum to the Aboriginal Heritage Assessment Report has been prepared by McCardle and is provided in **Appendix J**. The Addendum takes into account the outcomes of the AMBS Test Excavation Report and provides revised mitigation and management measures.
	The cumulative noise assessment from the concurrent operation of the TSF and Hexham Relief Roads, shall be provided in the response to submissions.	An updated Noise Impact Assessment Report has been prepared by SLR and is provided in **Appendix L**. The updated Noise Impact Assessment Report includes a cumulative noise assessment.
	A risk assessment of asbestos contamination associated with the demolition of existing structures or the excavation or disturbance of filled areas shall be provided in the response to submissions.	An updated Remedial Action Plan (RAP) has been prepared by GHD and is provided in **Appendix H**. The updated RAP includes details for the remediation of soils impacted by asbestos containing materials. In summary, all areas of identified asbestos contamination will be remediated by a contractor licensed for Class A asbestos removal work. Surface asbestos containing materials (fragments) shall be removed prior to any ground disturbance, and the surface visually inspected by a consultant or occupational hygienist experienced in the identification of asbestos. Once it has been confirmed that visually evident asbestos materials have been removed from the surface, the contractor will then conduct shallow excavations and/or

Agency	Comment	Response
Department of Planning and Infrastructure		turning of the surface soils to assess whether ACM are present within the soils. All asbestos impacted soils will be either removed for off-site disposal or contained on-site. The demolition and removal of buildings and structures which contain asbestos is regulated by WorkCover in accordance with the *Work Health and Safety Regulation 2011*. All asbestos containing materials associated with buildings and structures will be removed in accordance with the regulation. A risk assessment would only be appropriate in the event that asbestos containing materials were being left in situ and needed to be managed to prevent risks of impacts to employees, contractors and visitors.
NSW Environment Protection Authority	The EPA is not the appropriate regulatory authority for the project under the *Protection of the Environment Operations Act 1997*.	Noted. No action required.
Department of Primary Industries (Fisheries)	There is the potential for some impacts on adjoining saltmarsh areas due to discharge of stormwater to the southern end of the site. The potential impact of increasing freshwater inputs into the saltmarsh community is likely to have long-term effects. The increases in freshwater gradually leach the salt from the soils, allowing the introduction of less salt tolerant species over a long period of time. Any changes to the flushing of this area with saline (tidal) water will result in a degradation of the site that is above and beyond the impacts mentioned by the proponent. Consequently, the proponent should include a commitment to manage appropriately the downstream waterway that drains this location to ensure the continued tidal flushing of the site.	Approximately 34,600m3 of freshwater (developed) is expected to flow to coastal saltmarsh to south of site during a 10yr event which has increased from approx. 24200m3 (existing) Approximately 11,400m3 (developed) of runoff is expected to reach the coastal saltmarsh during a 1yr event, which is increased from approx. 3,200m3 (existing) No expected changes to tidal flushing regime. During such events, the receiving environment is likely to be dominated by freshwater run-off from the broader Hexham Swamp area. Such events in themselves are unlikely to have an impact on the EEC provided discharges velocities are managed by the detention basins and appropriate outlet structures. Of more relevance to species composition is the low-flow run-off from minor rainfall events. Over time, increases in freshwater from such events may lead to minor changes in species composition within the existing drainage channel that stormwater discharges to, but is not expected to change the composition of the broader saltmarsh area as it receives tidal flushing and freshwater run-off from the broader Hexham Swamp area. The ecological assessment has assumed an impact to 0.35 ha of saltmarsh which is more than adequately offset by the protection

Agency	Comment	Response
Department of Primary Industries (Fisheries)		and management of 7.48 ha.
	If the new southern crossover requires the construction of culverts or a bridge over the creek, Fisheries NSW should be involved in discussions in relation to blockage of fish passage and flow management to avoid detrimental impacts on the upstream aquatic habitats and fauna.	Design of crossovers will be to Fisheries NSW design standards and guidelines.
Department of Primary Industries (Office of Water)	Works within riparian zones should be designed and constructed so as to minimise potential impacts on the hydrologic, geomorphic and ecological integrity of watercourses.	Design and construction of works in riparian corridor will be to NSW Office of Water requirements.
	While State Significant Infrastructure projects are excluded from the requirement to obtain and hold approvals for controlled activities, such activities, for example excavations and watercourse crossings, should be conducted in accordance with the Office of Water's *Guidelines for Controlled Activities.*	Design and construction of works in riparian corridor will be carried out in accordance with the NSW Office of Water's *Guidelines for Controlled Activities*.
	Groundwater within the project area is governed under the *Water Act 1912* (Water Act). A licence under Part 5 of the Water Act is required for all activities with the potential to intercept groundwater, including excavations, dewatering works and the installation and operation of monitoring bores, prior to the activity commencing. In addition, all existing groundwater works are required to be licensed.	It is understood that the project area is covered by the *Hunter Unregulated and Alluvial Groundwater Source Water Sharing Plan 2009* (WSP). Within this WSP, the project area forms part of the Groundwater Management Area (GMA 17), and specifically it is within the Coastal Alluvial Floodplain (GMA 17, Type 1). As such, the *Water Management Act 2000* would apply (in particular Section 91). This would mean that a licence under Part 5 of the *Water Act 1912* is not required. In accordance with Part 3A of the EP&A Act an approval under Section 91 of the *Water Management Act 2000* is not required for projects which are subject of an approval under Part 3A.
	The Office of Water supports the proposal to line or raise the stormwater treatment ponds so as to prevent connection with the groundwater table. Given the low surface relief and high (and fluctuating) groundwater levels, lining of the ponds is considered the preferred option.	Water quality ponds will be lined.

Agency	Comment	Response
Department of Primary Industries (Office of Water)	The proposed Site Water Management Plans should be developed in consultation with the Office of Water and should incorporate monitoring programmes, impact triggers and response actions for all surface water and groundwater sources potentially impacted by the project.	A SWMP will be prepared in consultation with NSW Office of Water.
	Recommended conditions of approval are included in the DPI submission.	If deemed necessary by the Department of Planning and Infrastructure these mitigation measures could be enforced through conditions of approval. Aurizon would have no objection to the inclusion of appropriately worded conditions which reflects these measures.
Catchment Management Authority (Hunter-Central Rivers)	The total loss of native vegetation and EEC must be offset to meet the 'improve or maintain principle' of the Catchment Action Plan (CAP).	Clearing of EEC is 7.74 ha. Under the OEH 'Interim Policy on assessing and offsetting biodiversity impacts of Part 3A developments' an 'improve or maintain' outcome is not possible if impacting on red flagged communities such as EECs. The project does however meet the Tier 3 outcome under this policy. The offsets will generate 60 surplus credits compared to the number of credits required by the impacts Consultation with OEH about the terms of a conservation agreement has commenced and is ongoing.
	The CMA notes the lack of detail on how the proponent will offset the loss of 5.69 ha of SEPP 14 wetland and seeks clarification on this issue.	4.5 ha of SEPP 14 will be impacted. The wetland is poor condition Swamp Oak Forest with a lack of trees. The Offset Strategy provides for the protection and management of a much larger patch of Swamp Oak Forest under a Conservation Agreement.
	Concerned about the potential for impacts on groundwater at the site, including 'drawdown' that may result in creating Acid Sulphate Soils (ASS) must be adequately addressed;	Groundwater impacts have been assessed – check whether drawdown potentially resulting in creating ASS has been considered in groundwater assessment. Douglas Partners to confirm groundwater assessment and update ASSMP

Agency	Comment	Response
Catchment Management Authority (Hunter-Central Rivers)	Concerned about changes to the existing hydrology and flood levels that may result in changes in flow direction and volume causing negative impacts on water quality. The CMA expects the proponent to implement world's best management practice in dealing with potential impacts of the proposal on Hexham Swamp and Hunter Wetlands National Park. The nature of the facility indicates that the risk from contamination or pollution would be increased. The water quality in the receiving waters should not be compromised.	Changes to hydrology and potential impacts on water quality have been assessed in the revised Stormwater Management Plan (provided in **Appendix E**) prepared by Worley Parsons.
	Concerned about the importation of fill to the site and the potential for increased contamination.	Fill will be of engineering standard quality and will not be contaminated.
	The CMA requires advice on how contamination from the coal preparation plant will be remediated and managed into the longer term including a risk assessment of the likelihood of it impacting on the surrounding Hunter Wetlands National Park.	An updated RAP has been prepared by GHD and is provided in **Appendix H**.
	The CMA suggests that moving the Southern construction compound to the west would reduce the impact on native vegetation and this should be considered.	The proposed Southern Construction Compound will be located to the west of the EEC.
	The CMA is concerned however that a significant proportion of the offset in the southern portion of the proposal is identified as a 'Future Investigation Area' and seeks clarification as to the implications of this on future offset areas.	With reference to Figures 7 and 21 of the EAR, the Future Investigation Area and the Southern Offset Area are not overlapping. Aurizon is balancing site project needs with conservation offsets. Once offset areas are secured they will not be used for any project works.
	Plans to deal with groundwater, ASS, Storm Water etc. are to be implemented to a high standard and the effectiveness of these plans is monitored for the life of the project.	Noted and agreed.

Agency	Comment	Response
	The CMA notes that the project forecasts changes in the flood pattern and increases in flood heights of between 5 and 10cm in the area. In the context of the relief of the land in this area the CMA is of the view that this may be quite significant, particularly when cumulative impacts are taken into account. However, the CMA defers detailed comment on the impacts of the project on the Lower Hunter Flood Mitigation Scheme to the OEH as they have more expertise in flood analysis.	An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. It demonstrates that the re-designed vertical alignment of the TSF will result in negligible changes to the current flooding regime on adjoining properties.
Heritage Council of New South Wales	The Heritage Council suggests four additional Statements of Commitment to supplement those already included in order to ensure that the impacts of the project are acceptable: ▪ Prepare an Interpretation Plan as an addendum of the Non-Indigenous Cultural Heritage Management Plan to ensure that the proposed plaque and salvaged building materials are used to their fullest extent and placed in appropriate locations to ensure that the sites users are able understand and appreciate the sites history and heritage. This interpretation plan will be prepared by an appropriately qualified interpretation specialist and will be submitted to the Heritage Council for endorsement prior to the installation of these interpretive features. ▪ The Applicant will forward details of the proposed Excavation Director to the Heritage Council for endorsement prior to project works commencing. ▪ Should archaeological salvage excavation be required as part of the proposed works, the Excavation Director must forward an archaeological research design and methodology to the Heritage Council for endorsement prior to any archaeological excavation commencing. ▪ At the end of archaeological works, the Applicant and Excavation Director will ensure that a final archaeological report is written which details all archaeological works and finds undertaken on site. This final archaeological report will conform to Heritage Council archaeological conditions regarding the style and content of final archaeological reports. A copy of the final archaeological report is required to be submitted to the Heritage Council Library.	If deemed necessary by the Department of Planning and Infrastructure these measures could be enforced through conditions of approval. Aurizon would have no objection to the inclusion of appropriately worded conditions which reflects these measures.

Agency	Comment	Response
Heritage Council of New South Wales		
Newcastle City Council **20 December 2012)**	**Planning Instruments**	
	The EA should discuss the project's permissibility and consistency with zone objectives with regards to the E2 Environmental Conservation, IN3 Heavy Industrial and SP2 Infrastructure zones which apply to the site under the *Newcastle Local Environmental Plan 2012*.	The project is permissible with consent in the IN3 and E2 Zones and is consistent with the objectives of these zones. The project is not permissible with consent in the E2 Zone, and is generally not consistent with the objectives of the zone. The project has been designed to minimise the impacts on the E2 zoned land. Further, the project includes significant offset proposals which will enhance and improve much of the ecologically significant vegetation within the E2 Zone.
	Ecology	
	The proposed conservation offsets are currently zoned E2 Environmental Conservation under the *Newcastle Local Environmental Plan 2012*, which raises the issue of whether the proposed offsets are already sufficiently protected and are suitable offsets for the proposal. It is also noted that the northern offset is located immediately adjacent to the proposed F3 Extension and may be required for infrastructure development.	Zoning doesn't by itself ensure management and maintenance of ecologically significant areas. Inclusion of these areas as offsets will result in improvements in the quality and ecological qualities of these areas. Consultation with RMS has taken place to ensure no land within the F3 extension footprint is being proposed for offset.
	Minimal information is required regarding the use of the proposed Watagan to Stockton green corridor lands for the proposed development and the proposed deviation from the *Lower Hunter Regional Strategy*.	The Stockton-Watagan Corridor in the LHRS is a broad conceptual corridor linking these major conservation areas. The subject site sits within the corridor in a location where there is already significant infrastructure in place (highway, rail lines) that cause a break in the corridor for ground and tree dwelling mammals. The project has a negligible effect on the existing connectivity for other species such as birds and bats as these species can still move through the landscape using the existing vegetation as stepping stones. The project will improve the quality of the link via improvement to 53 hectares of vegetation in the corridor.

Agency	Comment	Response
Newcastle City Council **(20 December 2012)**	It is noted that some species have been deemed unlikely to occur although suitable habitat appears to be present. Therefore, it is requested the inclusion of Comb-crested Jacana (*Irediparra gallinacea*) and Black Bittern (*Ixobrychus flavicollis*) within the test of significance in ELA Report.	Tests of significance for these species have been carried out with the conclusion being that the project will not have a significant impact on either species.
	The test of significance for the Green and Golden Bell Frog (*Litoria aurea*) notes the proposed development area is likely to be utilised by this amphibian, but the proposed development will not significantly impact upon this species. The proposed development represents a contraction of the available habitat for the local Hexham population of the Green and Golden Bell Frog and places the population at a potential higher risk of extinction. The loss of habitat for the Green and Golden Bell Frog within this area does not meet the objectives of the *Management Plan for the Green and Golden Bell Frog Key Populations in the Lower Hunter*.	The subject site provides potential habitat for this species, however several years of survey have not identified the species in this location. A test of significance was undertaken for GGBF and concluded that the project will not have a significant impact on the species. The impacts to GGBF habitat will be offset via the improvement of freshwater wetlands on the site as part of the Offset Strategy.
	The Hollow Bearing Tree Survey (Appendix E of Ecological Investigations report) appears to be confined to the stand of Swamp Oak (*Casuarina glauca*) proposed as part of the northern off-set area and does not include the entirety of the study area. A hollow-bearing tree survey should be conducted for the study area to allow analysis of the loss of hollow bearing trees as a key threatening process. It is noted an analysis of key threatening processes has also not been undertaken as part of the ecological investigation.	The ecological study of the proposal utilised the biometric data collection method which includes data on hollow-bearing trees within each plot. This information is then used to assess loss of habitat for threatened species. This information, combined with the previous hollow bearing tree survey undertaken by a previous consultant was sufficient to understand the habitat for threatened species and the impacts of the proposal.
	Impacts on local fauna from noise and lighting at the proposed development have not been included within the ecological impact assessment. It is requested that impacts on fauna from noise and lighting associated with the proposed development be addressed as part of the assessment.	The development will increase noise and light disturbance that already exists from the highway, rail lines and development in the area. As assessment of these matters has been included in the ecology report which concluded that the noise and light disturbance may alter behaviour in the immediate vicinity of the facility but that these will not have a significant impact on fauna in the Hexham area.
	Noise	
	The proposed development will assist in increasing train movements along the existing railway. The increased movements have the potential to generate adverse noise impacts for land uses located along the railway. Therefore, the assessment of noise associated with the	The TSF does not contribute to demand for rail services along the railway, and so is not a contributor to any subsequent increase in the number of trains on the railway line. The TSF will provide for increased efficiency for managing, maintaining and servicing trains

Agency	Comment	Response
Newcastle City Council **(20 December 2012)**	proposed development should include the resultant increase in train movements as part of the operations of QR National and/or other trains/clients using the proposed servicing facility.	that would be using the railway in any case.
	Contamination	
	No additional detail is provided regarding how the proposed remediation methods are intended utilised or in which areas the various methods will be undertaken. Clarification of the remediation techniques and where the methods are applied should be undertaken.	GHD has prepared an updated RAP which is provided in **Appendix H**.
	If remediation action is intended to be limited to the development footprint of the TSF only it raises the issue of how on-going contamination, both soil and groundwater, associated with the remainder of the site is proposed to be managed. Therefore, it is requested that clarification of the extent of remediation proposed and how remaining contamination at the site is proposed to be managed.	Long term management plans can be prepared which will ensure the surrounding site is not exposed to increased levels of contamination as a result of the project. If the site is causing contamination in its current state then the EPA will register it under the CLM Act and Aurizon will be required to carry out further remediation works.
	The bioremediation of total recoverable hydrocarbons will include the release of emissions and odour. The RAP prepared by GHD Australia does not address these potential emissions and potential emissions have not been included within the air quality assessment. It is requested that any emissions from remediation activities be appropriately assessed and management measures incorporated into construction documents.	The volume of soils potentially requiring bioremediation is unlikely to be significant, being generally limited to the former UST area. Due to the general absence of volatile contaminants (C6-C9, BTEX) vapour risk is not considered to be a significant issue.
	Sewage	
	The proposed sewage management system has considerable constraints such as proximity to sensitive receivers such as wetlands, a high groundwater table and existing issues such as the presence of nutrients and faecal coliforms in both groundwater and surface water, and the site is less than ideal for on-site effluent disposal.	The proposed effluent disposal system, however, has been designed with reference to the current Environment and Health Protection Guidelines: "On-site Sewage Management for Single Household" (Ref 2) and AS/NZS 1547:2012 "On-site domestic-wastewater management" taking into consideration the proposed effluent treatment system design parameters provided by Worley Parsons and relevant site constraints. The effluent report (Appendix N of the EAR) has recommended appropriate management controls and monitoring procedures in order to minimise potential adverse environmental and human health impacts from the proposed effluent

Agency	Comment	Response
Newcastle City Council **(20 December 2012)**		disposal system.
	The extrapolation of domestic effluent disposal guidelines for the TSF introduces uncertainty into the conclusions and reduce confidence that on-site disposal will be free of adverse environmental impacts.	The assessment was conducted with reference to domestic effluent guidelines in the absence of other suitable guidelines. The principals of the guidelines, however, address water and nutrient balances, soil and landform constraints etc., which are applicable to both domestic and larger scale disposal systems. It is noted that the majority (95% average dry weather flow to 99.4% peak wet weather flow) of wastewater from the proposed development is domestic treated wastewater from personal activities (i.e. water closets, urinals, kitchens, bathrooms and laundries), with only a small component originating from wagon wash water. It is also noted that AS 1547 does provide typical domestic wastewater design flow allowances for commercial operations such as hotels/motels, community halls, schools, rural factories/shopping centres and camping grounds.
	Connection to reticulated sewer would provide a long-term, low risk solution to the environmental issues associated with on-site effluent disposal. The proponent should investigate all possible means to make connection to sewer and demonstrate that the feasibility of this has been thoroughly assessed.	Sewer connection would provide a lower risk solution for the management of wastewater. However, connection of the sewer is not currently feasible for the small wastewater loads that are generated at the TSF.
	The opportunity for Council to make independent assessment and determination of an application for a wastewater treatment (including the possible option of refusal) would be less than ideal if approval for the Project had already been granted by the Minister for Planning and Infrastructure.	The issues raised by Council have been considered and addressed in this Preferred Project Report.
	Clarification of the nature of principal 'domestic' wastewater flows is required.	Worley Parsons have designed the commercial scale waste water treatment facility and provided estimated flow rates and effluent quality details. The majority (95% average dry weather flow to 99.4% peak wet weather flow) of wastewater from the proposed development is domestic treated wastewater from personal activities (i.e. water closets, urinals, kitchens, bathrooms and laundries), with only a small component originating from wagon wash water.

Agency	Comment	Response
Newcastle City Council **(20 December 2012)**		
	Flood Management	
	The information in the EA shows that the proposed development will significantly alter the fundamental flow patterns and not retaining the floodway in a condition that is capable for the conveyance of essential flood flow. The Project will increase depths and velocities in a number of areas, contrary to the requirements of Part 4.01.01 of the *Newcastle Development Control Plan 2012*.	An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. It demonstrates that the re-designed vertical alignment of the TSF will result in negligible changes to the current flooding regime on adjoining properties.
	It is recommended the proponent is required to address the principles of the NSW Government Floodplain Development Manual (2005) and a flood study is to be prepared to this extent. This Study needs to address a broad range of issues to the same depth as the existing management plan and associated studies. Cumulative impact must be addressed at the global rather than the development specific level.	An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. It demonstrates that the re-designed vertical alignment of the TSF will result in negligible changes to the current flooding regime. The updated Flood Impact Assessment Report has been prepare in partnership with ARTC and takes into account the cumulative flooding impacts from the TSF and the HRR projects.
	The proposed development has potential to adversely impact on the flood plain, as well as downstream and adjoining properties within the Hunter River catchment. The development is located in a key location in which flood levels can be greatly affected by any changes in how the flood regime will function in that location. The additional details supplied show that there are significant and unacceptable impacts on the adjoining properties.	An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. It demonstrates that the re-designed vertical alignment of the TSF will result in negligible changes to the current flooding regime on adjoining properties.
	The 'Newcastle City-wide Floodplain Risk Management Study and Plan' outlines the basis of the scenario testing to achieve a maximum variation within a 40mm target. Generally any impacts of increase in depth greater then 0.04m have been considered unacceptable. The modelling of the Project shows increases of up to 0.50m on the Pacific Highway and adjoining properties with similar unacceptable velocity changes above 1m/s. These are unacceptable impacts on the surrounding road network and the adjoining properties.	An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. It demonstrates that the re-designed vertical alignment of the TSF will result in negligible changes to the current flooding regime on adjoining properties. Consultation with the RMS indicates that predicated flooding impacts on the Pacific Highway are acceptable.

Agency	Comment	Response
Newcastle City Council **(20 December 2012)**	Inadequate information has been provided of the affects upstream and downstream. Modelling of filling on that part of Hexham revealed impacts on the flows up stream in the Hunter River, Hexham, Hexham swamp, as well as on Kooragang Island.	An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. It demonstrates that the re-designed vertical alignment of the TSF will result in negligible changes to the current flooding regime on adjoining properties.
	The EA consideration of the maximum amount of changes to the flood system and what event this occurs is inadequate. No modelling has been provided for events between the 1% AEP and the 2% AEP to determine the maximum impact.	An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. It demonstrates that the re-designed vertical alignment of the TSF will result in negligible changes to the current flooding regime for all flood events.
	Design changes are required to the Project to ensure that there is no increased impacts (or minimum increases within acceptable limits) within the Hunter River flood plain for all flood events.	The vertical alignment of the TSF has been re-designed in order to ensure that there is no increased impacts (or minimum increases within acceptable limits) within the Hunter River flood plain for all flood events.
	Traffic and Access	
	The proposed access road linking with the Tarro Interchange is to be constructed generally in accordance with the design criteria detailed for a Local Industrial Road under Section 7.04 -Movement Networks of the Newcastle DCP, 2012, such being completed prior to any operation of the facility.	The access road will be designed and constructed in accordance with the requirements set out in Council's DCP.
	A dilapidation survey will be required for Woodlands Close pre and post development to ensure Council roads are not adversely impacted upon during the construction phase of this project and any road pavement deterioration during this period is repaired at the developer's expense.	A dilapidation survey will be carried out.
	A construction traffic management plan will be required to be submitted to RMS and Council for approval prior to the commencement of site works. This plan is to detail installation of advance warning signs for motorists in the public road reserve of construction traffic / truck movements. These signs are to be installed in accordance with *AS 1742.3 – Traffic Control Devices for Works on Roads*.	A construction traffic management plan will be prepared in consultation with the RMS and Council.

Agency	Comment	Response
Newcastle City Council **(20 December 2012)**	Any consent granted to this application should include a condition requiring a 'right of public access' to accommodate the construction of the proposed cycleway that traverses the site.	Aurizon has been in ongoing consultation with Newcastle City Council in relation to the provision of right of public access for the proposed cycleway. Aurizon does not object in principle to the provision of such access. Aurizon expect that details relating to the proposed cycleway will be included in any future agreement associated with a scope of works and contributions for Newcastle Council for the project.
	Section 94A Development Contributions	
	The *Newcastle Section 94A Contributions Plan 2009* applies to the project, which requires the contribution to Council of an amount equivalent to 1% of the cost of works for the project.	Aurizon has been in ongoing consultation with Newcastle City Council. Formal correspondence as a result of discussions has been sent to Council, and negotiations in relation to contributions (or works in kind) have commenced.
	Design Details	
	Lack of design details submitted in support of the application with only a single 'typical site cross section' included in the EA for a project that extends over some 2.8km.	A package of project drawings, designs and sections are provided in **Appendix C**.
Newcastle City Council **(15 May 2013)**	**Contamination**	
	Response not supported. The revised Remediation Action Plan (RAP), dated 28 March,2013 prepared by GHD Pty Ltd includes additional investigations and notes that any additional remediation as a result of investigations will be undertaken in the future. This suggests the preferred remediation strategy has not been finalised. It is requested that the remediation strategy be finalised prior to determination of the application. The RAP indicates that the proposed remediation is developed for the proposed train servicing facility only. If remediation action is intended for the development footprint only it raises the issue of how on-going contamination, both soil and groundwater, associated with the remainder of the site is proposed to be managed. The RtS notes that the remainder of the site can be managed by an environmental	While further investigations are recommended prior to excavations to facilitate management of material during construction works, the investigations that have been undertaken are considered sufficient to determine the preferred remediation strategy. The remediation strategy has been finalised and is described in the RAP as listed below. If subsequent on-site testing provides results not envisaged then the RAP will be amended at that time to ensure appropriate remediation takes place. • Hazardous Building Materials (i.e. asbestos) and miscellaneous stockpiles of waste in the LTTSF area will be characterised and disposed off-site or re-used on site, depending on the waste classification of the material and final design for construction work. Once the final design for construction work is received an appropriate method for

Agency	Comment	Response
Newcastle City Council **(15 May 2013)**	management plan in the future without remediation being conducted as part of the project. This approach is not supported and it is requested the whole site be appropriately remediated to prevent future contamination of the surrounding environment.	asbestos management during works will be selected. • Remediation of in-ground contamination only for the areas of disturbance, in particular being the former UST area, Hot Spot TP532, and TPH impacted fill materials (including along Woodlands Close where the soil will be disturbed as part of the project). • As noted below, further investigation of particular areas in the LTTSF footprint will be conducted. It is not expected that any other forms of contamination would be detected and management of any additional hotspots would be conducted in accordance with the RAP, i.e. the method of remediation will not change. See section 7.2 of the RAP. • Areas of the site that will not be disturbed by the LTTSF are not considered to pose an unacceptable environmental or health risk (see below). Any long term management of contamination left at the site can be appropriately managed under a long term environmental management plan. It is proposed that remediation will only be undertaken in the area of disturbance in order to remove those areas of contamination that present an unacceptable risk to human health or the environment for the proposed land use. Based on the review of investigations to date, the contaminants of concern at the site are limited to total petroleum hydrocarbons (TPH) C10-C36, asbestos and polycyclic aromatic hydrocarbons (PAH) (the latter associated with Woodlands Close fill only). As stated in the RAP total recoverable hydrocarbons (TRH) appear to be relatively widespread with concentrations at most locations present at similar magnitude to the trigger concentrations. Further assessment using silica gel clean-up to obtain TPH concentrations, has indicated that the results may be on average up to 60% less than the TRH concentrations, indicating that only some hot spots may remain above trigger concentration levels. Analysis of speciated aliphatics (in accordance with the NEPM guidelines in place at the time of the RAP preparation) may further indicate that concentrations

Agency	Comment	Response
Newcastle City Council **(15 May 2013)**		of TPH detected on site do not present an unacceptable health risk. Despite the widespread filling of the site with coal tailings, the lack of TPH/PAH concentrations detected in groundwater beneath the site (with the exception of a location near the former re-fuelling facility, which has been identified as a hot spot to be removed during remediation works) indicates the presence of TRH in coal tailings across the site is not a matter of concern for the surrounding environment, with the exception of the hot spots identified in the RAP for remediation. Furthermore, given the size of the site and lack of proposed disturbance except for the LTTSF footprint, remediation of the entire site was not considered to be practical or warranted. All material disturbed during LTTSF development, however, would be assessed and managed in accordance with the RAP with regard to worker health or environmental impacts during soil disturbance works and subsequent use of the site. The remedial activities will make the site condition significantly better than it currently is or than it would be if the LTTSF was not developed.
	Sewerage	
	Response not supported. Specifically the Proponent's assertion that the effluent disposal system will not result in adverse nutrient impacts for the adjoining wetland environment. It is recommended that the Proponent be required to investigate alternative means for wastewater disposal including the potential connection to a reticulated sewer.	Aurizon are continuing to investigate with Hunter Water Corporation alternative means for wastewater disposal, including the feasibility of connection to the sewer. Preliminary Service Advice has been submitted to Hunter Water.
	Flood Management and Stormwater management/ water quality	
	Flood Management It is important to ensure that the levels of the railway tracks are not higher than Proposed and that the access road is provided generally at natural ground level (or at level which has been incorporated into the flood model and no impacts were found).	The development will be constructed in accordance with the levels specified in the flood report.
Newcastle City	Stormwater management and water quality	The stormwater design provides detention for the site for all standard ARI duration events within Basins 1 and 3.

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<tr><th>Agency</th><th>Comment</th><th>Response</th></tr>
<tr><td>Council

(15 May 2013)</td><td>The Newcastle Development Control Plan, 2012 requires that the post development flows for development is to be designed so that peak runoff from the site for all events from 99% AEP (1 year ARI) to 1% AEP (100 year ARI) is not greater than for the 'natural' drainage conditions.

According to the Stormwater Management Plan, dated April, 2013 prepared by Worley Parsons, the development will show significant increases in runoff in the 1 year and 10 year ARI events.

Should consent be granted to the application, it is recommended that all post - development flows are required to be less than pre-development flows and an amended design be submitted to the stormwater authority for approval prior to the issue of a CC.</td><td>The original stormwater design provided similar levels of peak flow attenuation for Basin 2. However, due to the lowering of the track the capacity of Basin 2 to detain flows back to natural in events that exceed the 5% AEP (20yr ARI) would require increasing the basin size significantly and further compromising the Swamp Oak Swamp Forest within the SEPP 14 area. A detailed breakdown of the estimated flow rates discharging Basin 2 for standard AEP events are summarised below.

<table><tr><th>AEP</th><th>Existing Conditions</th><th>Proposed Conditions</th></tr><tr><td>99%</td><td>0.38</td><td>0.29</td></tr><tr><td>50%</td><td>0.71</td><td>0.72</td></tr><tr><td>20%</td><td>0.72</td><td>0.73</td></tr><tr><td>10%</td><td>0.85</td><td>0.86</td></tr><tr><td>5%</td><td>0.93</td><td>1.04</td></tr><tr><td>2%</td><td>1.21</td><td>1.59</td></tr><tr><td>1%</td><td>1.36</td><td>2.00</td></tr></table>
During these low probability and long duration events Hexham Swamp will be in flood and hence peak flows from the basin will be a very small fraction of the total flows.</td></tr>
<tr><td>Newcastle City Council

(15 May 2013)</td><td>The Proponent is to ensure that all water quality measures continue to meet the pollution reduction targets and water quality outcomes with any proposed changes. The MUSIC water quality modelling used Bureau Of Meteorology data from the University of Newcastle data that included a large period of drought modelling, the modelling should also be run with different location and duration data to ensure that the water quality data.</td><td>The modelling was rerun with Williamtown Climate data (1/1/03 – 28/2/11) that represents the long term average of the site so eliminates potential drought influences to the modelling. Target reductions were still achieved.</td></tr>
</table>

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	It is noted that in the DP report April 2013 on groundwater that: 'Detailed design will be required to confirm that long flows are minimised to reduce possible/e drainage from the northern end of the formation. Potential impacts to groundwater levels are likely to be limited to the immediate vicinity of the proposed LTTS development, or short term and recoverable'' Should consent be granted to the application it is recommended that an appropriate condition be imposed that addresses this issue.	The design has two main components. • The first is storm water (or rainfall) • The second is ground water (moisture contained in the soil) The design as a holistic package is intended to mimic the existing water flows and passages of the area. The storm water is primarily taken via the drainage and out into the channels. The storm event will drain to the main culverts. There may remain a small amount of rain water at the end of the rain in the pipe and drainage trench itself. It may be possible for this water to slowly filter a small way through the lower portion of the rail formation. This will not be a "flow" from the event, but a slow seepage. The groundwater of the area is in clay. As a clay silt water does not flow in the natural soil. Natural slow seepage does occur. The southern area is an existing built up area. The northern area is the lowest of site. The SEPP 14 area is lower than the existing built up area and ground water seepage occurs currently in a northerly direction from the built up area to the SEPP 14 area during wet events. The design is mimicking this occurrence. In particular, the lower base of the rail formation will also not flow, but have the ability for minor passage of water (i.e. seepage). The lowest area of the rail formation is at the SEPP 14 area, which is also the existing natural lowest point where natural seepage occurs currently.
Newcastle City Council **(15 May 2013)**	**Traffic Generation and Access**	
	Access Road and Uniformed Road The RtS does not include, as requested in Council's previous submission, concept design plans for the proposed road from the Tarro interchange to the unformed public road off Woodlands Close.	These roads are proposed to be private roads. As such, it is not considered necessary for Council to agree to or approve the specific design details. Notwithstanding this, designs can be provided at the appropriate time.
	Furthermore, it is unclear whether this section of proposed road is intended to be a private road or dedicated as public road All roads	The TSF access road will in its entirety be a private road. It is not

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	proposed to be constructed for access to the facility are to be privately owned including the proposed third party access road and access road from the Tarro interchanges. Council will not consider handover of these roads as public roads.	proposed to seek handover to Council as public roads.
	Recent investigations has revealed that the existing unformed road off Woodlands Close, identified as a proposed road in the Christie Estate private Subdivision DP 32585, has not been dedicated to Council and consequently it is not a public road for the purposes of the Roads Act,I993. The land appears to be unsurveyed crown land.	Noted. Aurizon are continuing with investigations as to the legal status and owner of this land. Construction of the road won't commence until the status of the land is resolved.
	Cycleway It is understood that Aurizon accepts the cycleway proposal inclusive of the establishment of appropriate 'Rights of Public Access', subject to the finalisation of Council's contributions.	Aurizon accepts the principles of the cycleway. Details to be subject of future agreement regarding designs and details.
	Dilapidation Survey A Dilapidation Survey will be required for Woodlands Close for both pre and post development to ensure Council roads are not adversely impacted on during the construction phase of the Project and any road pavement deterioration during this period is repaired at the Proponent's expense, Construction Period	Aurizon has no objection to the preparation of dilapidation survey for Woodlands Close.
Newcastle City Council **(15 May 2013)**	A Construction Traffic Management Plan will be required to be submitted to RMS and Council for approval prior to the commencement of site works. This Plan is to detail installation of advance warning signs for motorists in the public road reserve of construction Traffic Truck movements. These signs are to be installed in accordance with AS 1742.3 - Traffic Control Devices for Works on Roads.	A CTMP will be prepared in consultation with Council and RMS. The CTMP should be subject of approval by DG of DP&I after consultation with RMS and Council.
	Section 94A Contribution	
	Council's Section 94A development contributions Plan 2009 was updated on 22 April, 2013. The contribution to Council, in this case, remains at 1% of the proposed cost of the development (as revised). An appropriate condition regarding the section 94A contribution has been included in schedule 1.	The Minister is not bound to levy amount as specified under Council's S94A Development Contributions Plan. In this case, the capital expenditure for the project is substantially larger than the associated demand on local infrastructure and services. As such, Aurizon intend to continue to discuss with Council a reasonable quantum of contributions to be detailed in a Voluntary Planning

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		Agreement.
	Design Details	
	The proposed landscape works include the use of hydromulch mixes, Hydromulch mixes have generally been unsuccessful in the Newcastle Local Government Area and it is recommended that tube stock be provided instead.	Aurizon intend to take the advice of a suitably qualified landscape architect and gardener in relation to the most appropriate methods for ensuring the successful and efficient planting and maintenance of landscaping. It is envisaged that the ultimate solution will be a mix of tube stock and hydromulch depending on site characteristics.
	Also, it is recommended that further shade planting be provided adjacent to the buildings and in the carpark, and street tree species be planted along both sides of the entry road to enhance the external appearance of the Project and add to the landscape quality of the locality.	Noted. Further shade planting will be provided.
	It is also recommended that the Proponent be required to prepare a Vegetation Management Plan which provides details of the Project and how the existing vegetation within the riparian areas of the development site, especially the adjacent salt marsh rehabilitation areas will be managed.	The VMP will relate to the riparian land on the site and land within the Conservation Areas. Aurizon will generally not be actively managing vegetation outside of these areas. Monitoring of the Coastal Saltmarsh to the south of the site, will however be included in the VMP.
Office of Environment and Heritage **(21 December 2012)**	**Flooding and Impacts on Coastal Floodplains**	
	Recommendation 1 – Verification of the extent of the design / number of railway lines assumed in the flood study and stormwater management plan is required. Associated reports, and particularly the Flood Study and Stormwater Management Plan, should be updated if required.	The Flood Study and the Stormwater Management Plan have been updated to suit revised design (see **Appendices D and E** respectively).
	Section 4.2.1 of the report states that the impacts in the 2% and 5% AEP design flood events result in increased flood levels to the east of the site, where overland floodwaters become "trapped" behind the new rail embankments. However, no cross drainage structures were included in the assessment, despite the inclusion in the report of the statement *"the provision of sufficient cross drainage structures in the affected locations would assist in mitigating the flood level increases"*. The location of these flood level increases coincides with the location of existing industrial and residential development. Modelling that was completed	The TSF (and Hexham Relief Roads Project) has been re-designed with lower vertical alignment because cross-drainage structures were not feasible or practical. An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. It demonstrates that the re-designed vertical alignment of the TSF will result in negligible changes to the current flooding regime on adjoining properties.

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	for the Hexham Relief Roads, immediately to the east of this site, indicated that there would be a residual flooding impact to some of these properties after the cross drainage structures were included in the hydraulic model.	
	Increasing the flood affectation on the existing developments adjacent to this site is considered unacceptable. The proposed design should be amended so that there are no resultant increases in flood affectation to adjoining properties as a result of the development to the west of the existing railway. If this is not feasible then the proponent must obtain the agreement of the affected landholders and occupiers to any increases in the frequency and extent of flooding.	The TSF (and Hexham Relief Roads Project) has been re-designed with lower vertical alignment. An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. It demonstrates that the re-designed vertical alignment of the TSF will result in negligible changes to the current flooding regime on adjoining properties.
	Hydraulic modelling needs to be updated to include all proposed cross drainage structures through the rail embankments so that the real impact on the existing developments to the east of the site can be reported. The design needs to take into account the outlets for these cross drainage structures and where they will discharge in to, and include appropriate mitigation measures for water quality and quantity as required.	The TSF (and Hexham Relief Roads Project) has been re-designed with lower vertical alignment. An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. It demonstrates that the re-designed vertical alignment of the TSF will result in negligible changes to the current flooding regime on adjoining properties.
Office of Environment and Heritage **(21 December 2012)**	There is no evidence throughout any of the documents submitted as part of the EIS indicating what consultation has been adjoining land owners regarding these impacts.	The TSF (and Hexham Relief Roads Project) has been re-designed with lower vertical alignment which will result in negligible changes to the current flooding regime on adjoining properties. No consultation is required.
	Recommendation 2 - Update flood impact assessment to include all proposed drainage structures in model. The assessment also needs to include the updated flooding impacts on adjoining properties.	An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. It demonstrates that the re-designed vertical alignment of the TSF will result in negligible changes to the current flooding regime on adjoining properties.
	It is imperative that the design of the access road and flood relief culverts does not result in a loss in waterway area of Purgatory Creek, or in the capacity of the adjacent floodplain. The importance of maintaining this floodplain connectivity is further emphasised with the information presented in Figure 7-1 of the Flood Impact Assessment. *Recommendation 3* - The design of the crossing of Purgatory Creek for the access road is not to reduce the existing waterway area or conveyance capacity of the floodplain in all design flood events.	The site access road includes a bridge of Middle Creek. The bridge will be designed to ensure it does not impinge on floodwaters during the 1%AEP for local catchment and the 2%AEP for all stormwater events. The site access road has been lowered in two sections to ensure regional flood plain connectivity is maintained and flooding impacts on adjoining properties are minimised.

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		In accordance with the updated Flood Impact Assessment Report (**Appendix D**) the design of culvert and bridge structures on the access road over and adjacent to Purgatory Creek will include a cross sectional flow area of 150 m2.
	Section 6 of the report Flood Impact Assessment assesses climate change impacts as a result of sea level rise and increases in rainfall intensity. The cumulative impacts of the Hexham Relief Roads project and upgrade of the Pacific Highway have been included in this assessment. It appears that none of these impacts have been taken into account for the concept design of the Train Support Facility. It is assumed that these developments will stay on this site in perpetuity, and so it needs to be ensured that the design life of the structures and infrastructure takes these constraints in to consideration.	An updated Flood Impact Assessment Report has been prepared by BMT WBM and is provided in **Appendix D**. The design mitigation solutions are such that they effectively maintain the same flow distributions as existing conditions across the full range of design events. The broad flood behaviour locally in the Hexham area will be similar under climate change scenarios, though the frequency of particular magnitude events may change. Nevertheless, in effectively maintaining existing flow distributions, the performance of the mitigated design solution holds across the full range of design events, including future events incorporating potential climate change impacts.
Office of Environment and Heritage **(21 December 2012)**	The proposed development will have floor levels of the buildings at the 2% AEP flood level, with flood compatible materials used below the flood planning level. If the 1% AEP flood level is used to determine the flood planning level, then this would be approximately 1. 7 metres above the floor level of the buildings. The application needs to indicate where this "stock and equipment" could be relocated to on site so that it is not impacted by the floodwaters, particularly as there will be significant amounts of fuels and chemicals stored on the site, for floods greater than the 2% AEP design flood.	On-site storage of minor quantities of provisioning cleansers and fuel will be stored in locations above the 1% AEP. Bulk storage (including diesel) will be designed to prevent release of contents if inundated, and containers will be securely affixed to the ground so as to ensure they are not dislodged during a flood event.
	As there is almost no land flood free above the 2% AEP flood level on the site, the potential location for "rolling stock" that will be relocated to higher ground should also be indicated at this stage. This rolling stock would have to be moved prior to the onset of flooding on the site as the floodwater of the Hunter River will cross the railway lines in the north of the site before flooding of the site itself occurs.	Rolling Stock located at the TSF will be relocated by the owners of the rolling stock. The operator of the TSF will not be responsible for relocation of rolling stock. The relocation of rolling stock elsewhere along the train line will need to be managed as part of a coordinated relocation plan – managed by ARTC. The operator of the TSF will comply with the requirements of ARTC and the owners/managers of the rolling stock. A Flood Emergency Response Plan will be prepared in consultation with ARTC to ensure appropriate protocols are in place for the

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		relocation of rolling stock prior to inundation by a major flood event (2% AEP or greater).
	Recommendation 4 - Prepare a formal project risk management assessment in accordance with AS/NZS ISO 3100:2009 to include the consideration of the full range of flood events up to and including the PMF and climate change considerations.	Flood risks have been considered as part of the Safety in Design Risk Assessment process for the project. The Safety in Design Risk Assessment is provided in **Appendix N**.
	Recommendation 5 - Ensure all buildings or structures located below the flood planning level are constructed of flood compatible materials. This includes the provision of residual current device (safety switch) on all electrical outlets and fixtures	Detailed design will include consideration of flood compatible materials for all buildings or structures located below the flood planning level. - High voltage transformers, and where possible, electrical outlets and fittings will be located above the 1:100 year event flood level. - Water sensitive elements of the sand storage and transfer system, and compressors, will be located above the 1 in 50 year event flood level, plus 150 mm free board.
Office of Environment and Heritage **(21 December 2012)**	Section 7 Flood Impact Assessment details a Flood Emergency Response Management Strategy. The applicant will be responsible for the implementation and update of this plan as neither Council, the SES, nor OEH have any jurisdiction on private emergency management plans. Therefore, it is up to the applicant to inform the occupiers of the site of this Flood Emergency Response Management Strategy.	A Flood Emergency Response Plan will be prepared and implemented.
	Cross drainage box culvert structures under the railway fill platform discharge via a headwall into the cess drain that runs along the western edge of the fill platform. The invert level of these box culverts appear at the same invert level of the cess drain. It is unclear how these cross drainage structures would maintain a conveyance capacity as they would be full of water when the cess drain is flowing. *Recommendation 6* - Verification of the design and capacity of the cross drainage structures under the railway fill platforms in relation to the design of the cess drain.	The drain is level longitudinally (~0.1%) and will operate via hydraulic gradient. All of the outlets have been designed to drain above the surface and so water should be able to drain reasonably freely from the channels and into the basins. The drainage system has been designed to convey the 5% AEP flood event. Events greater than this will result in Hexham Swamp being in flood and the drainage system will be drowned out. Modelling of the drainage system indicates that the 1% AEP local storm event flows would not flood the roads and work areas. Detailed designs of the drainage system can be provided to OEH at the appropriate time to validate the capacity of the drainage

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		structures.
Office of Environment and Heritage **(21 December 2012)**	There is a culvert proposed immediately adjacent to the fuel storage area along the cess drain. The intent or concept design of this culvert is unclear. *Recommendation 7* - Verification of the design of the culvert adjacent to the fuel storage area required.	The proposed site layout has been updated and culvert configuration has changed as a result.
	Section 5.2.3 states that due to the expected groundwater levels in the locations of the proposed basins, the basins ponds will either need to be lined or raised to be located above groundwater levels. Due to the very flat nature of the site, raising the level of the ponds is not considered as a feasible design alternative and the only option available will be to line the basins with an appropriate liner. The design will have to ensure the liner and associated infrastructure is not forced upwards out of the ground during drier periods when the cess drain and basins are empty, and the groundwater is close to the surface. If the basins are lined, then they would have limited, if any, capacity to act as water quality control ponds. The proposed water quality control strategy may need to be reviewed as a consequence of lining the ponds - this is listed below under 'Water Quality'. *Recommendation 8* - Verification of the design and capacity of the cess drain and basins in relation to groundwater levels through the site.	A HDPE liner has been nominated to line the proposed water quality control ponds. A confining layer of soil will be placed on top of the liner to resist groundwater uplift pressure. The required depth of this layer will be confirmed during the detailed design phase. For water quality treatment, floating wetlands have been nominated within the ponds, which will sit on the water surface and not require contact with the pond base or batters.
	Any vegetation growth in the cess drain will adversely impact the conveyance capacity of the cess drain and the associated cross drainage structures as well as the hydraulic gradient of the water it is trying to drain. If the drain is to contain standing water, the design capacity of flood/stormwater flows is unclear. The ability of the cess drain to convey these flows without overflow requires clarification. Considering the existing nature of culverts on site (primarily blocked / choked with vegetation and/or sediment) then the capacity of the open swale to remain with its design capacity is questioned. *Recommendation 9*- Verification of the design and capacity of the cess drain required.	GHD have confirmed conveyance capacity of cess drains including standing water levels. The drain is level longitudinally (~0.1%) and will operate via hydraulic gradient. Modelling of the drainage system indicates that the 1% AEP local storm event flows would not flood the roads and work areas. Detailed designs of the drainage system can be provided to OEH at the appropriate time to validate the capacity of the drainage structures. Excessive vegetation growth within cess drains will be managed via an infrastructure maintenance plan.

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Office of Environment and Heritage **(21 December 2012)**	The final comment of Section 5.2.4 states *"maintenance of stormwater treatment devices are critical to ensure performance in accordance with the requirements of the SWMP. QR National would implement maintenance plans prior to initiating operations on the site".* It is anticipated that there could be substantial sediment load arriving at these stormwater treatment devices each year, and due to the very flat nature of the site, the treatment efficiencies of these devices will decrease rapidly with sediment deposition and vegetation growth in them. Therefore, the approximate frequency expected for maintenance requirements with regard to cleaning out the sediment and vegetation growth in the devices is required at this stage of the approval process. *Recommendation 10* - Details of proposed stormwater maintenance management for the proposed development need to be provided.	A section describing maintenance requirements for all elements of the stormwater system has been included in Chapter 8 of the updated Stormwater Management Plan prepared by Worley Parsons (**Appendix E**). These maintenance requirements will form part of Aurizon's ongoing site maintenance plan. It is expected that the sediment basins will require de-silting approximately every 5 years.
	Section 4 - page 14 states that Basin 3, located in the SW corner of the site, is in the location of an existing tailings dam. This basin would discharge to the wetlands to the south. This is formalising the existing hydraulic regime on this part of the site. However, it is unclear if Basin 3 will be excavated and reformed or the existing tailings dam will be used for this purpose. If the latter is proposed, then further detail is required as to the dam's characteristics to verify its suitability for such a purpose. This includes consideration of the embankment material quality and its permeability. *Recommendation 11* -clarification off the intent to use the existing tailings dam in the south of the site as Basin 3, and any works required to upgrade it to an appropriate condition.	Existing tailings dam will not be used in its current form. Earthworks including removal of unsuitable material, compaction and material replacement will be specified as part of the detailed design phase.

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Office of Environment and Heritage **(21 December 2012)**	Section 5.1.5 indicates that there will be an increase in flows to the south and SW of the site in a 10% AEP design flood event. This equates to an increase in runoff volume of approximately 25% above the existing runoff volumes. This is the smallest design rainfall event assessed, so the potential increase in more frequent storm events is unknown. Both of these sites discharge in to an EEC, so comment should be sought from appropriately qualified person as to the potential impacts increases of freshwater flows may have to these communities. *Recommendation 12* - comment sought from suitably qualified persons on the impacts of increased stormwater runoff volumes on the flora and fauna to the south of the site.	Approximately 11,400m3 (developed) of runoff is expected to reach the coastal saltmarsh during a 1yr event, which is increased from approx. 3,200m3 (existing) During such events, the receiving environment is likely to be dominated by freshwater run-off from the broader Hexham Swamp area. Such events in themselves are unlikely to have an impact on the EEC provided discharges velocities are managed by the detention basins and appropriate outlet structures. Of more relevance to species composition is the low-flow run-off from minor rainfall events. Over time, increases in freshwater from such events may lead to minor changes in species composition within the existing drainage channel that stormwater discharges to, but is not expected to change the composition of the broader saltmarsh area as it receives tidal flushing and freshwater run-off from the broader Hexham Swamp area. The ecological assessment has assumed an impact to 0.35 ha of saltmarsh which is more than adequately offset by the protection and management of 7.48 ha.
	If the stormwater management basins are lined, then they would have limited, if any, capacity to act as water quality control ponds. There has been no consideration of lining the cess drain. This may be required if it is constantly full of groundwater. The proposed water quality control strategy may need to be reviewed as a consequence. *Recommendation 13* - Clarification of the design water quality treatment capacity of the 3 basins if liners are to be used to mitigate groundwater levels. Review and update of the water quality control strategy accordingly.	A HDPE liner has been nominated to line the proposed water quality ponds. A confining layer of soil will be placed on top of the liner to resist groundwater uplift pressure. For water quality treatment, floating wetlands have been nominated within the ponds, which will not require contact with the pond base or batters. Aurizon's designers, GHD, have confirmed the conveyance capacity of the system including consideration of standing water levels, which may be influenced from groundwater ingress.
	Section 5.2.2 of the report states that the rainfall data from the University of Newcastle were used for the water quality simulations in MUSIC. The length of record is not indicated. Generally, an extended period that covers wet, dry and average rainfall years is required for water quality modelling. *Recommendation 14* - clarification off the rainfall data used for water quality modelling.	MUSIC rainfall data is 6min pluviograph data from BoM station at University of Newcastle (station no. 61093). Data extends from 1/07/98 to 31/05/10. Data has good representation of low (10%ile), average and high (90%ile) rainfall events for the proposed site.

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Office of Environment and Heritage **(21 December 2012)**	Section 5.2.3 of the report states that access roads are to be provided with roadside swales that will provide treatment through flow attenuation and sedimentation of suspended sediments. This is not reflected on any of the Development Plans included in Appendix V of the EA. *Recommendation 15* - Clarification of the water quality control measures proposed for the access roads.	Access roads are to be provided with road side swales that will provide treatment through flow attenuation and sedimentation of suspended sediments. Drainage plans provided in **Appendix C** indicate the presence of swales adjacent to the site access road for its entire length.
	The works proposed as part of this development include filling on a declared floodplain of the Hunter Valley Flood Mitigation Scheme. This work falls within the definition of a *floodwork* under the *Water Management Act 2000* and as such, approval under Section 256 is required. *Recommendation 16* - An application is made to obtain Section 256 approval under the *Water Management Act 2000.*	In accordance with Section 75U(2) of the EP&A Act this approval is not required.
	<u>Threatened Species Assessment</u>	
	OEH acknowledges that the EA states (as per Sections 3.2.3 -Targeted Threatened Flora Surveys) that specific targeted flora searches have been undertaken, in particular those species which OEH requested further details (OEH letter dated 3 July 2012): Trailing Woodruff *(Asperula asthenes),* Noah's False Chickweed *(Lindernia alsinoides)* and Small Water-ribbons *(Maundia triglochinoides).* However, specific details on these surveys are still lacking in Section 3.2.3, particularly in relation to timing (i.e. dates that each species was surveyed) and location of habitats that were searched with respect to individual species. As such OEH is unable to determine whether or not targeted searches undertaken are appropriate for each potential species, and whether or not all likely habitats have been searched. OEH notes Appendix D of the Ecological Investigations report provides some details of the targeted flora surveys, in the form timing (though some dates are broad), vegetation types and methodologies utilised, but does not specifically link the threatened flora targeted to these. OEH acknowledges that the EA has, in part, has relied on surveys undertaken by Parsons Brinkerhoff (in 2012) for an adjacent similar project (ARTC Hexham Relief Roads Project) which surveyed the QR National project site as well. However, in OEH's written response to	Further detail on field survey is included in the updated ecology report (**Appendix G**), including searches undertaken over part of the site by Parsons Brinkerhoff (for the ARTC project) and an additional days survey by ELA. The random meander survey techniques were undertaken by experienced botanists to target all threatened species rather than undertaking a meander for one species in particular and therefore maps of random meander surveys have not been broken into surveys for individual species. Threatened species survey on the subject site has been comprehensive – having been carried out over several years and seasons – and across all habitat types on the site. The extent of survey is clearly shown in the ecology report tables, maps and appendices. The ecological report provides information on the comprehensive nature of field survey for this site including four separate studies by Ecobiological, EcoHub, Eco Logical Australia and Parsons Brinkerhoff over several seasons and years. The ecology report concludes that

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Office of Environment and Heritage **(21 December 2012)**	DP&I on this project, similar concerns were raised in relation to the targeted flora surveys. OEH noted that the Parsons Brinkerhoff ecological report, in their description of the surveys undertaken, did not indicate which predicted flora species were targeted and at what specific time (i.e. the report just provided a series of dates and did not link species to these dates). OEH acknowledges that in all likeliness, given the range of dates provided in the Parsons Brinkerhoff report and the Eco Logical Australia report, that adequate targeted surveying may have been done, however, given that OEH previously questioned the Parsons Brinkerhoff report and that it has, in part, been cited and used in the EA, OEH is of the opinion that the this EA also needs to clearly match survey dates to the each different species targeted. Under this scenario, both the dates cited in the Eco Logical Australia and Parsons Brinkerhoff reports should be used to justify survey adequacy. OEH needs to be certain that each potential threatened flora was sampled at the appropriate time, particularly cryptic taxa that requiring flowers and/or fruits to positively identify them. Similarly, OEH requests that the proponents indicate for each targeted species which specific habitats were searched, as this will enable OEH to assess whether all likely habitats were targeted. To determine the adequacy of such targeted flora surveys, OEH requests the proponent provide details on location, survey methodology (e.g. observation technique, random meander, parallel belt transacts etc.), timing, seasonal / climatic conditions, duration / effort and habitats searched be provided (as per OEH guidelines- DEC 2004); similar to that provide for the general baseline flora and fauna surveys in Appendix D of the 'Ecological Investigations' report. OEH requests that this information be provided for each likely species individually and should include schematic representations of the survey effort and habitats searched (i.e. individually mapped). If in the unlikely case that surveys are inadequate, then OEH recommends appropriately timed targeted surveys in accordance with OEH guidelines (DEC 2004) must be undertaken for all potential taxa not adequately targeted. OEH acknowledges that in general the baseline flora surveys (including timed call-back techniques) are generally the accepted methodologies	the level of survey for the site is adequate to understand the habitat characteristics of the site, the impacts to these characteristics and to determine the presence or otherwise of threatened species.

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Office of Environment and Heritage **(21 December 2012)**	utilised for sampling and detecting threatened fauna, and as such the methodologies detailed in Appendix D of the Ecological Investigations report are adequate.	
	<u>BioBanking</u> OEH is generally satisfied that the developments impacts have been appropriately assessed under BBAM, though notes a number of operational issues described below that may require the re-running of the credit tool. BBAM operational issues that need to be addressed are: ▪ The percentage of native vegetation entered for both the 1000 and 100 hectares assessment circles appears low (e.g. <1 0% for 1000 hectare circle}, particularly in comparison to the adjacent project (ARTC Hexham Relief Roads Project), which has ranges of 21-30% and 41-50% for the two 1000 hectares assessment circles used, and 11-20% and 21-30% for the 100 hectares circles, OEH is of the opinion that the estimations of the remaining native vegetation remaining for the ARTC project are likely more realistic, given that to the south, south-east and west large expansions of wetland vegetation (albeit in varying condition) remains, particularly in the Hunter Wetlands National Park. Additionally, OEH notes for the QR National Biobank offsets sites the estimation of the remaining vegetation in 1000 hectares circles is 21 -30% (with an increase to 51-60% based on site improvements, such as revegetation / rehabilitation). The OEH requests the proponent to provide justification for the figures entered for 'percentage of native vegetation'. ▪ Explanation of how the connectivity value - before and after development was determined. Again this differs significantly from ARTC development that estimated at the low ranges. ▪ Explanation of why some of the BVT used in the credit calculator have not been assigned EEC status, such as: HU635 - Swamp Oak swamp forest fringing estuaries, Sydney Basin and South East Corner, HU673 - Phragmites austral is and Typha orientalis coastal freshwater wetlands of the Sydney Basin, Phragmites austral is and Typha orientalis coastal freshwater wetlands of the Sydney Basin,	The Biobanking Assessment Tool has been re-run on the final development footprint. The percentage of vegetation cover has been revised for the up-dated biobanknig assessment and described ni the ecology report. The 1000ha circle is now 21-30%. Two 100ha circles now have 11-20% and 21-30% cover. The offset strategy will increase the % cover for one of the 100 ha assessment circles from 21-30ha to 41-50ha. The connectivity values do not substantially change as a result of the development. Details of the data used is provided in the ecology report. Communities that are EEC have been identified as such in the Biobanking Assessment tool.

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Office of Environment and Heritage **(21 December 2012)**	and HU532 - Coastal floodplain sedgelands, rushlands, and forblands of the North Coast. OEH is of the opinion these would represent Swamp Oak Floodplain Forest and Freshwater Wetlands on coastal floodplains EEC. OEH would support an approval condition that requires the proponent to retire or ensures that the proposed offset sites contain the appropriate amount of biodiversity credits (both 'ecosystem' and 'species') providing the credit tool is rerun and/or appropriate justification as outlined above is given for any deviations, including suitable explanation for applying Tier 2 and Tier 3 outcomes under the policy, as described below.	
	<u>Offset Strategy</u>	
	OEH has completed a review of the offset strategy section (Section 6.3) of the EA (namely the Ecological Investigations report by EcoBiological), and generally supports the strategy that comprises of two on-site offset areas on the northern and southern parts of the study area, adjacent to or nearby the proposal and existing OEH conservation estate (i.e. Hunter Wetlands National Park). The 'Northern' and 'Southern' offsets cover approximately 53.63 hectares of native vegetation and habitat that is similar and commensurate with the development site (i.e. similar BVT and EECs). The offset strategy utilises both utilises both the BBAM (DECC 2008) and OEH's 'offsetting principles'. OEH supports this approach providing the application of BBAM credit calculator and offset policy is correct, and the appropriate quantum and type of offsets is conserved and managed in perpetuity.	The Biobanking tool has been re-run for the final development footprint. The result is a +60 credits for the entire impact and offsets arrangements. Discussions have commenced with OEH regarding the implementation of the offset strategy through a conservation agreement.
	If DP&I approves the proposal, OEH recommends that a condition is included that ensures the two proposed offset sites are secured and appropriately managed under a conservation agreement, preferably in place prior to any development commencing. If a conservation agreement cannot be achieved the proponent will need to provide an alternative measure that ensures long-term conservation.	Noted.

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Office of Environment and Heritage **(21 December 2012)**	Typically, OEH requires that an appropriate Management Plan (such as vegetation or habitat) be developed and implemented as a key amelioration measure, prior to any approvals. The management plan or outline thereof, should clearly document how the offset area(s), any retained vegetated areas or habitat features and proposed habitat management within the development footprint (e.g. buffer zones, habitat trees and nest boxes) will be managed and implemented with respect to long-term conservation and viability, including clear details on how they will be funded. OEH acknowledges that if the offset package utilises a conservation agreement under the NPW Act, then a management plan will be part of that process.	Noted.
	Aboriginal Cultural Heritage	
	It is noted that OEH's meeting with the proponent's representatives on 18 July 2012 concerning Aboriginal cultural heritage matters has not been included in the records of consultation undertaken with stakeholders. It is recommended that the EA is amended to capture the key matters addressed at this meeting.	McCardle Cultural Heritage has prepared an addendum to Aboriginal Heritage Impact Assessment Report provided in the EAR, which is provided in **Appendix J**. The Addendum includes an updated version of the consultation register to include the details of the meeting held on 18 July 2012.
	It is noted that a portion of the proposed access route to the Tarro Interchange is located on potential archaeological deposits (PADs) identified as Aboriginal sites: 'PCD' and 'HIS'. As part of the Aboriginal cultural heritage assessment process for both projects, sub-surface investigations were proposed to determine the nature, extent and significance of any Aboriginal objects present within the PADs. Further, if any objects were identified the proponents were to develop appropriate management strategies in consultation with the registered Aboriginal parties (RAPs) for the projects.	Australian Museum Business Services (AMBS) carried out further sub-surface investigations. The AMBS Archaeological Investigations Report is provided in **Appendix K**. McCardle Cultural Heritage's Aboriginal Heritage Impact Assessment addendum (**Appendix J)** sets out modified management strategies based on the outcomes of the AMBS Archaeological Investigations Report (**Appendix K)**.
	OEH understands that additional sub-surface archaeological investigations were undertaken of a portion of the PADs identified along the shared route, in October 2012 by Australian Museum Business Services. However, the results of the investigations have not yet been supplied by the proponent. OEH recommends that the results of these	The AMBS Archaeological Investigations Report is provided in **Appendix K**.

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Office of Environment and Heritage **(21 December 2012)**	additional investigations and evidence of the consultation process undertaken with the RAPs regarding these investigations are provided by the proponent to support the Aboriginal cultural heritage assessment undertaken for this project.	
	OEH also refers to the meeting between OEH, QR National and their consultant archaeologists on 18 July 2012. OEH understood that QR National were planning to undertake separate additional investigations of PADs along the proposed access route located wholly within the QR National project area and to inform the Aboriginal cultural heritage assessment process. OEH also refers to the mitigation measures prepared in Section 9.12.3 of the draft EA (dated 15 June 2012) and the measures numbers 4 and 5 to conduct further investigations if the identified PADs will be impacted. OEH also refers to Section 6.5.2 and Figure 12 of the EA. It is noted that proposed primary site compound is to be established within the 'PCD' site and the establishment of the compound involves ground disturbance potentially impacting Aboriginal objects located in this area. Additional archaeological investigations are also required in this location prior to any construction occurring to determine the nature, extent and significance of any Aboriginal objects present.	McCardle Cultural Heritage's Aboriginal Heritage Impact Assessment addendum (**Appendix J)** sets out modified management strategies based on the outcomes of the AMBS Archaeological Investigations Report (**Appendix K)**. Further archaeological investigations are not considered necessary since the areas impacted are no longer considered to be areas which contain potential for archaeological or cultural deposits.
	OEH's preference is for the assessment of the PADs to be included as a component of the development application process. The results of any additional sub-surface investigations undertaken for the access route and site compound have not been presented in the EA by the proponent in support of the project application. This concerns OEH and reflects the incomplete nature of the assessment. It is therefore recommended that the proposed investigation program is undertaken promptly in consultation with the RAPs to inform the Aboriginal cultural heritage assessment process and the results provided in support of the development application. The results should also include copies of Aboriginal Site Impact Recording Forms completed for each site to be submitted to OEH for registration in the Aboriginal Heritage Information Management System.	McCardle Cultural Heritage's Aboriginal Heritage Impact Assessment addendum (**Appendix J)** sets out modified management strategies based on the outcomes of the AMBS Archaeological Investigations Report (**Appendix K)**. A Site Impact Recording Form has been submitted to OEH for registration in the AHIMS.

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Office of Environment and Heritage **(21 December 2012)**	OEH acknowledges a summary of the consultation with the local Aboriginal community has been provided by the proponent in Section 2.0 of the AHIA and within the untitled table in Annex A of the AHIA. However, it is noted that no further evidence of consultation has been included regarding the progress of the project following the unattended (and short notice) site inspection on 2 April 2012. In particular, no evidence has been provided following the discussion concerning the proposed sub-surface test excavations noted in Section 2.6 of the AHIA and the Australian Museum Business Services PAD investigations which were conducted in October 2012. The lack of any additional evidence of consultation since 2 April 2012 indicates that the consultation process for the Aboriginal cultural heritage assessment is incomplete. OEH recommends that the proponent provide evidence of any further consultation undertaken with the RAPs regarding the Aboriginal cultural heritage assessment in order to form a complete submission. OEH would also expect the proponent to detail any contrary or differing positions to those of the RAPs if there is some disagreement with the outcomes of the assessment process.	AMBS carried all consultation regarding the test excavation works. The consultation record may be found in the AMBS Archaeological Investigations Report (**Appendix K)**.
	OEH also encourages the proponent to maintain continuous consultation processes with the community for the entire life of the project and for all Aboriginal cultural heritage matters associated with the project area. As a general rule, gaps in the consultation process of six months or more will not constitute a continuous consultation process. Where a proponent or developer envisages a gap of more than six months it is recommended that RAPs are regularly informed of any progress and records collected appropriately.	Regular project updates to be provided to the registered stakeholders by proponent
	National Park Reserve	
	A number of changes within the wider catchment in very recent years have impacted on both adjacent national park reserve and some adjoining freehold properties, especially with regard to water flows and nutrient/contamination. There is concern that the combined QR and ARTC developments will impact further on these reserves, neighbours and the wider catchment.	The TSF project includes a three stormwater control basins which will contain floating wetlands to provide nutrient and enhanced sediment removal from stormwater discharged from the site. The performance of floating wetlands as compared to a conventional wetland has been investigated with the results indicating improved nutrient removal as well as enhanced heavy metals uptake.

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Office of Environment and Heritage **(21 December 2012)**		Details of the stormwater management system are provided in the Stormwater Management Plan provided in **Appendix E**.
	It is recognised that Purgatory Creek, although currently non functional, originally drained the swamp north of the Richmond Vale Rail, which includes Blue Gum and Minmi Creeks to the west of the development. The development as it currently stands would preclude any future opportunity to reinstate flood flows along this creek to the Hunter River. Consideration should be given in the current development design to allow future restoration of flows along Purgatory Creek.	The site access road includes a bridge over Middle Creek. The bridge will be designed to ensure it does not impinge on floodwaters during the 1%AEP for local catchment and the 2%AEP for all stormwater events. In accordance with the updated Flood Impact Assessment Report (**Appendix D**) the design of culvert and bridge structures on the access road over and adjacent to Purgatory Creek will include a cross sectional flow area of 150 m2.
	The NSW Government is currently investigating the adaptive re-use of the Richmond Vale rail corridor and the Hunter Water pipeline corridor for the construction of a cycle / pedestrian shared pathway (Richmond Vale Rail Trail). It is noted that the EA recognises the proposed Richmond Vale Rail Trail and has indicated that it will not be impacted by the current development. DP&I should ensure that the proposed development does not impact on the viability of the Richmond Vale Rail Trail, including short and long term access. Consideration of general access to the pipeline maintenance track and Hexham Swamp generally would also assist with NPWS management and development in the area.	Aurizon does not object in principle to the provision of public access for the proposed cycleway.
Office of Environment and Heritage **(10 May 2013)**	**FLOODING IMPACTS ON COASTAL FLOODPLAINS**	
	Stormwater Management	
	Recommendation 1 - Detail of stormwater drainage swale to be provided, including the stormwater runoff capacity considering the permanent standing water proposed in the drains.	Groundwater flow into the channel leading to Basin 1 has been estimated at a rate of up to 0.7L/s or 55m3/day. Discharge from the wetland is via a pipe with an estimated capacity of 10L/s set at RL 1.0m. This pipe is designed to retain water in the wetland and channels for 72 hours after a storm event to provide sufficient time for sediments to settle out and the wetland to remove potential pollutants. The basin has an overflow outlet set at RL 1.20 m with an estimate capacity of over 500L/s. The Hexham Swamp 10% AEP flood level is RL 1.18m, so the basin and channels will be able to drain down to at least this level for the majority of the time and only during

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Office of Environment and Heritage **(10 May 2013)**		infrequent events will this not be the case. As such, it is not expected that the drains will have standing water in them most of the time.
	Recommendation 2 - Detail of MUSIC modelling parameters for "floating wetland" required.	Details of MUSIC modelling parameters are provided at **Appendix O**.
	Recommendation 3 - Conditions of consent should include requirements for monitoring of the surface water quality control devices in accordance with Section 7 of the Stormwater Management Plan.	Aurizon will comply with the Stormwater Management Plan.
	Recommendation 4 - Conditions of consent should include requirements for maintenance of the stormwater infrastructure in accordance with Section I of the Stormwater Management Plan.	Aurizon will comply with the Stormwater Management Plan.
	Flood Emergency response management	
	Recommendation 5 - Conditions of Consent to ensure that the proponent takes full responsibility for the implementation of the Flood Emergency Response Strategy.	Aurizon will prepare and implement a Flood Emergency Response Strategy for the facility.
	Risk Management for the full range of design flood events	
	Recommendation 6 - Verification of the design standards for the buildings and critical Infrastructure for mitigation against flooding impacts. The design should ensure appropriate Flood immunity or compatibility for the various components of the project.	For electrical equipment the design has the major components well above the 100 year flood level. The main switch boards such as the field cabinets are mounted on platforms that are a minimum of 340mm above the flood level for the floor of the platform, The switch cabinets are then mounted above this. The switchboards inside of the buildings are also mounted well above the 100 year flood event. The Fuel system is designed for the flood situation, as follows: • The tanks are above the flood level (the bottom of the tank is reached in the 100 year event) the tank outlet is in the top or the top of the front end (depending on the supplier) and is well above the 100 year flood level. • The fuelling system is a fully closed system, other than the breather points. • The breathers for the diesel tanks are above the tank level and are also significantly above the 100 year flood event (in the order of 2 metres above, depending on selected

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Office of Environment and Heritage **(10 May 2013)**		supplier). • The pumps are above the 50 year flood event. The pumps are sealed (are like a piece of pipe) and have no environmental risks if they get inundated. Locomotives will not be in the area during flood events.
	Recommendation 7 - Stockpiling of treated material on site is to be located so as not to Increase off-site flooding impacts.	WBM has carried out further flood modelling which identifies that off-site impacts are negligible. Results of modelling are attached. Of the soil treatment and storage locations modelled, the southern storage area would only be used should the quantity of material requiring treatment and storage not be able to be accommodated in the northern two stockpile areas.
	Recommendation 8 - A formal project risk management assessment in accordance with AS/NZS ISO 3100:2009 to include the consideration of the full range of flood events up to and including the PMF, to include but not limited to storage of up to 630,000 litres of diesel fuel and treatment and storage of ASS in the floodplain.	A formal project risk management assessment in accordance with AS/NZS ISO 3100:2009 has been prepared and is provided at **Appendix P**.
	Recommendation 9 - An application is made to obtain Section 256 approval under Water Management Act 2000.	Approval under Section 256 of the Water Management Act 2000 will be sought in relation to the construction of a flood work (i.e. the track embankment and cutting) on a flood plain.
	BIODIVERSITY	
	Ecological Survey	
	Recommendation 10 Clarification of location and targeting of selected species: Trailing Woodruff (Asperula asthenes), Noah's False Chickweed {Lindernia alstnoícles) and Small Water- ribbons (Maundia trigiochinoides).	Several surveys have been undertaken on this site and none have recorded these species. Further details of the relevant surveys are described in the Ecological Report provided at **Appendix G**.
	Assessment of Significance of the Impacts	
	Recommendation 11- that Aurizon Investigate the required logistical and legislative pathways to allow disposal of acid sulphate soils offsite in the registered waste facility	The original project design required the import of up to 380,000m3 of fill material to create the rail track embankment. The revised design with the lowered track level reduces substantially the requirements for the import of fill material. Approximately 150,000 of excess material will need to be excavated for the facility. Even if 100% of

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Office of Environment and Heritage **(10 May 2013)**		this material is determined to be ASS (which is unlikely) and required offsite disposal, then this would be significantly less than was originally expected to be imported. It is expected that even under this worst case scenario the maximum number of heavy vehicles movements per day (assessed in the EAR as 120 vehicles, or 240 movements per day) would not need to increase. As such, the off-site disposal of all material that could potentially be ASS (or acid generating material) is not problematic from a logistical perspective. If the ASS and potentially acid generating material was to be disposed of off-site, then there are a number of registered landfill facilities that could legally receive the material for disposal.
	Recommendation 12 - Aurizon undertake a statutory impact assessment on the indirect impacts upon all the threatened ecological communities adjacent to the site, including the Saltmarsh EEC, Freshwater Wetlands EECs and Swamp Oak EEC.	The ELA Ecological Investigations report considered the direct and indirect impacts of the proposed development on EECs. In particular, the assessments of significance undertaken for the three EECs included consideration of the indirect impacts. **Appendix G** provides further details in this regard.
	Recommendation 13 - That Aurizon upgrade its water quality monitoring programme to include outlet areas 3, 4 and 5 and include a wider range of testing parameters including petrochemicals and heavy metals.	Aurizon has no specific issues or objections to the inclusion of outlet areas 3, 4 and 5 in Aurizon's water quality monitoring programme. Storm flow from the development will reach these areas in larger storm events (10yr ARI). The water quality monitoring programme will include heavy metals and petrochemicals (hydrocarbons) at these locations.
	Provisions of offsets/ compensatory habitat	
	Recommendation 14 - That Aurizon further investigate the feasibility of other long-term conservation mechanisms beside Conservation Agreements for the site".	Should OEH decide that the northern offset area does not have the ecological attribute to justify the use of a Conservation Agreement under the National Parks and Wildlife Act 1974 then a Planning Agreement under *the Environmental Planning and Assessment Act 1979* can provide legal security to the obligation to manage the offset area for conservation purposes

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Office of Environment and Heritage **(10 May 2013)**	**ABORIGINAL CULTURAL HERITAGE**	
	Aboriginal cultural heritage assessment	
	It is expected that the proponent develop a culturally appropriate management strategy in consultation with the RAPs and in compliance with appropriate statutory provisions to mitigate the likely impact on site HS2.	As per the MCH Addendum (including reference to Nightingale's review and AMBS report) provided at **Appendix J**, HS2 is a disturbed deposit with no archaeological significance. The Addendum Report from MCH (**Appendix J**) is currently undergoing consultation with RAPs. No further archaeological investigations are proposed.
	The development proposal is likely to impact or harm Aboriginal site HS1 and it is expected that the proponent develop culturally appropriate management strategies in consultation with the RAPs and in compliance with the appropriate statutory provisions to mitigate the likely impact to this site.	Subject to further project design, Site HS1 may be impacted by the project. In accordance with the recommendations in the MCH Addendum (**Appendix J**), these impacts on HS1 can occur without any further archaeological investigations.
	Management Strategies should also consider that currently undetected cultural material may be present within the context of site 'HS1' in those areas where Aboriginal objects have not been previously identified. It is therefore expected that the proponent would develop appropriate management strategies to address this possibility	In accordance with NPW Act, if previously unidentified items are discovered during construction then works would cease and OEH consulted. The MCH Addendum (**Appendix J**) includes a 3rd part review by Kelleher Nightingale which has identified that such objects are unlikely to be discovered and if discovered are likely to have minimal archaeological or cultural significance.
	Management of likely impact on Aboriginal cultural heritage	
	The requirement to obtain a Care Agreement for any salvaged objects removed from the project area (Section 85) and reporting to OEH on the status of new or impacted Aboriginal sites (Section 894) remains valid (amongst others). It is therefore strongly recommended that the proponent develop alternative management strategies in consultation with the RAPs for the project and in compliance with appropriate legislative provisions.	The ongoing legislative management and reporting requirements will be captured in the Aboriginal Heritage Management Plan (AHMP).

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Office of Environment and Heritage **(10 May 2013)**	**Aboriginal Heritage Management Plan**	
	OEH acknowledges and supports the proponent's commitment to developing an Aboriginal Heritage Management Plan (AHMP) for the project. OEH encourages the proponent to maintain continuous consultation processes with the community for the entire AHMP and for the life of the project area. Evidence of consultation and views of the community for the AHMP should be included in its final iteration. It is also recommended that the AHMP includes procedures for ongoing Aboriginal consultation and involvement, management of all Aboriginal cultural heritage values associated with the project area, the responsibilities of all stakeholders, details of proposed mitigation and management strategies of all Aboriginal sites; including any additional investigation processes, salvage activities, monitoring etc; procedures for the identification and management of previously unrecorded sites (including human remains), details an appropriate long term arrangement for any Aboriginal objects salvaged through the development process, details of an Aboriginal cultural heritage induction program for all contractors and personnel associated with construction activities and compliance procedures in the unlikely event that non-compliance with the AHMP is identified. Any management strategies developed should also be incorporated into the proposed Aboriginal Heritage Management Plan (see Additional comments Below).	The AHMP will include for on-going consultation with RAPs, and will be prepared with consideration of the OEH recommendations specified.
	OEH recommends that the proponent provide evidence of any further consultation undertaken with the RAPs regarding the updated recommendations to manage the likely impacts from the proposed development on the Aboriginal cultural heritage values of the project area. OEH would also expect the proponent to detail any contrary or differing positions to those of the RAPs if there is some disagreement with the outcomes of the assessment process.	The MCH Addendum (**Appendix J**) has been distributed to RAP's and any feedback from RAP's will be logged in an updated consultation register. If additional mitigation measures are warranted these will be prepared and provided to DP&I and OEH.
	Recommendation 15- that the above issues be resolved prior to OEH being able to offer conditions of consent.	See above

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NSW Roads and Maritime Service	RMS is prepared to consider workforce and haulage access via the New England Highway (NEH) / Woodlands Close intersection over a short construction period of up to 12 weeks, provided a Construction Traffic Management Plan (CTMP) / Traffic Control Plan (TCP) is prepared by the proponent to the satisfaction of RMS and Council. Access via the NEH / Woodlands Close intersection would only be permitted for the construction of the new access road connecting the Tarro Interchange and Woodlands Close and would not be permitted for any works on the QR National Train Support Facility project site or the Hexham Relief Roads project site.	Noted.
	Conditions of approval are included in the RMS submission.	Aurizon does not object to the conditions of approval specified by RMS.