Hexham Train Support Facility

State Significant Infrastructure Modification Assessment

(SSI 6090 MOD 1)

October 2019

Cover photo

Hexham Train Support Facility (Aurizon Operations Limited)

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Glossary

Abbreviation	Definition
ACM	Asbestos Containing Material
AEP	Annual Exceedance Probability
AHIMS	Aboriginal Heritage Information Management System
Approval	Infrastructure Approval
ARTC	Australian Rail Track Corporation
ASS	Acid Sulfate Soils
ASSMP	Acid Sulfate Soils Management Plan
BDAR	Biodiversity Development Assessment Report
CEMP	Construction Environmental Management Plan
CIV	Capital Investment Value
Council	City of Newcastle
CSWMP	Construction Soil and Water Management Plan
Department	Department of Planning, Industry and Environment
DoI	Department of Industries
EEC	Endangered Ecological Community
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPI	Environmental Planning Instrument
EPL	Environment Protection Licence
ESD	Ecologically Sustainable Development
Hexham TSF	Hexham Train Support Facility (the project)
LEP	Local Environmental Plan
Minister	Minister for Planning and Public Spaces
NIA	Noise Impact Assessment
OEH	Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
PAF	Potentially Acid Forming
RAP	Remediation Action Plan
RMS	Roads and Maritime Services
RtS	Response to Submissions

SAR	Site Audit Report
SEARs	Secretary's Environmental Assessment Requirements
Secretary	Secretary of the Department of Planning, Industry and Environment
SEPP	State Environmental Planning Policy
SMP	Site Management Plan
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2011
SSI	State Significant Infrastructure
VR	Validation Report

Executive Summary

On 10 October 2013, the Executive Director, Development Assessment Systems and Approvals approved the Hexham Train Support Facility (TSF) proposal under Part 5.1 of the EP&A Act (State Significant Infrastructure).

The Proponent (Aurizon Operations Limited) has constructed and operates the Hexham TSF at Maitland Road, Hexham in the Newcastle local government area. The Hexham TSF was built to accommodate the provisioning, servicing and maintenance of freight trains.

Since the project was approved, there has been a significant increase in rail demand within the Hunter freight network. The increased demand has resulted in operational constraints for the Proponent's rail fleet. Therefore, the Proponent seeks approval to install and operate a new turning angle, and associated infrastructure to minimise disruptions associated with turning vehicles.

Assessment Process and Community Engagement

The Modification Report was publicly exhibited from 26 June to 10 July 2019 (14 days). A total of six (6) submissions were received from public authorities during the exhibition period. No submissions were received from members of the public.

As no submissions in the nature of objections were received from members of the public or the local council, and a political disclosure statement has not been made, the Minister's determination functions are delegated to the Director, Transport Assessments.

The Department undertook a site inspection of the proposed turning angle site on 1 August 2019 to better understand the key assessment issues.

Key Assessment Issues

Soil and Water

The Department's assessment has considered the soil and water impacts associated with the construction and operation of the turning angle. This includes exposure of Acid Sulfate Soils (ASS) and potential acid forming (PAF) soils, potential presence of contaminated soils including semi-volatile hydrocarbons and asbestos containing material (ACM), erosion of saline soils and soil loss because of exposed soils, and changes to quality of stormwater discharge resulting from changes to the stormwater catchment.

The Department recognises that the Proponent proposes to update the Construction Soil and Water Quality Management plan to include the proposed turning angle works. In addition, the existing Acid Sulfate Soils Management Plan and Site Management Plan (approved as part of the project's Site Audit Report) will be implemented to manage risks associated with exposure of ASS and contaminated soils. The Department is satisfied that the soil and water risks of the proposed works can be effectively managed by best practice mitigation measures, implementation of the management plans and through the existing conditions of approval.

Hydrology

The modification will result in changes to hydrology due to the construction of the turning angle, access roads and other infrastructure. These impacts include changes to the distribution of floodwater behaviour during major

flood events, the potential to impact on existing groundwater levels and impacts to the quality and quantity of stormwater discharge.

The Department's assessment concludes that the changes to floodwater behaviour would not cause a significant change to the existing, and approved, flood regimes in the locality and that residual impacts could be effectively managed through the existing conditions. Further, the Department does not consider that the potential groundwater impacts of the proposed modification are greater than those assessed under the original SSI. While increases in the impervious catchment area reporting to Basin 03 will increase peak flows, the Proponent has demonstrated that the basin is designed to accommodate such flows.

The Department is supportive of the Proponent's commitments to update existing construction and operational environmental management plans to accommodate the additional scope of works.

Conclusion and Recommendation

The Department has reviewed the Modification Report, public authority submissions, and the Response to Submissions and has assessed the key issues arising from the proposed changes to the approved project. These include soil and water, and hydrology impacts.

Overall, the potential environmental impacts associated with the modification would be acceptable with the implementation of mitigation measures. On balance, the proposed modification would provide a number of benefits to the wider rail freight network that outweigh the potential impacts. It is therefore recommended that the modification be approved subject to the recommended conditions.

Contents

1. Introduction

This report provides an assessment of a request to modify the State significant infrastructure (SSI) approval for Hexham Train Support Facility (Hexham TSF).

The modification request seeks approval for construction and operation of a new turning angle and associated infrastructure.

The request was lodged on 12 June 2019 by Aurizon Operations Limited (the Proponent) pursuant to section 5.25 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.1 Background

The Proponent operates the Hexham TSF at Maitland Road, Hexham in the Newcastle local government area (LGA). The Hexham TSF was built for the provisioning, servicing and maintenance of freight trains. It is connected to the Main Northern Railway at the northern and southern ends of the facility.

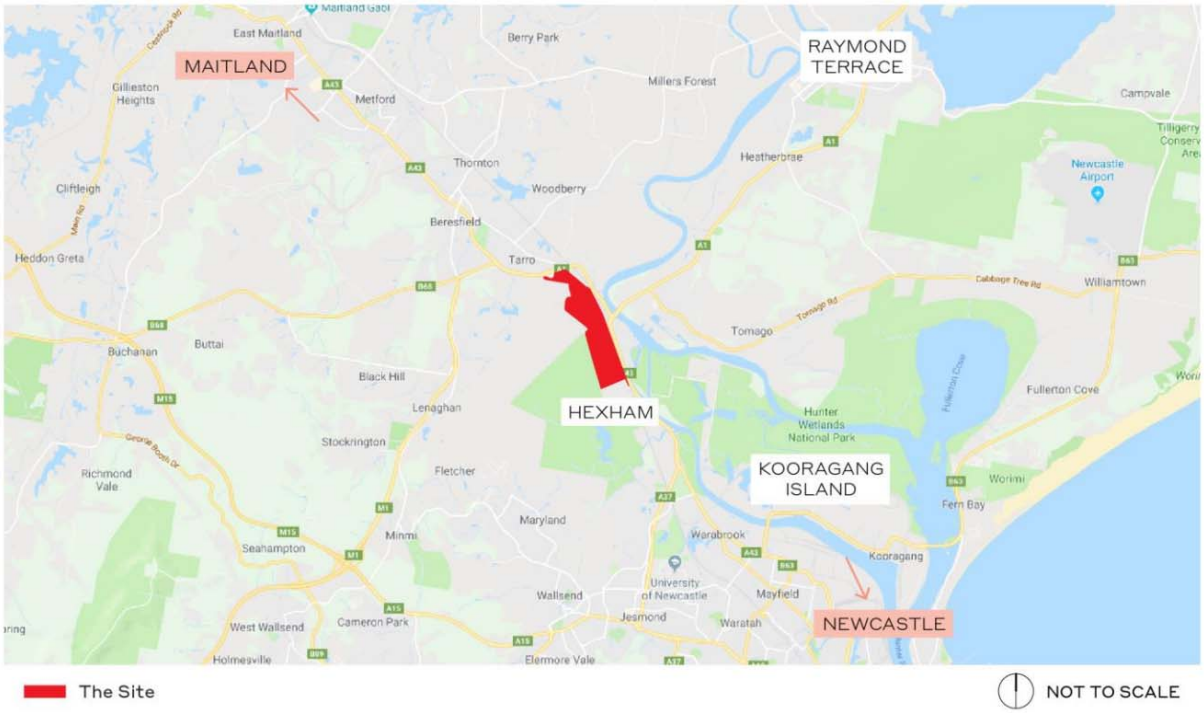

Figure 1 | Site Location (Source: Modification Report)

The site is located to the west of the Hunter River at Hexham and is bounded by Maitland Road/ New England Highway in the east and the New England Highway in the north. The portion of the site which is subject to the proposed modification was historically used for rail activities and coal storage, preparation, loading and unloading.

Since the project was approved and constructed, there has been an increase in demand within the Hunter Valley freight rail network. Therefore, the Aurizon rail fleet has increased resulting in operational constraints surrounding turning of vehicles at the site. The Proponent proposes to construct a turning angle to allow vehicles to turn at the site, without causing disruption to the wider network.

1.2 Approval History

In December 2007, QR National (now Aurizon) submitted a Major Project Application under Part 3A of the EP&A Act for the project. However, following the repeal of Part 3A on 1 October 2011, the then Minister for Planning and Infrastructure declared to the Hexham TSF proposal to be State Significant Infrastructure pursuant to Clause 5(2) of Schedule 6A of the EP&A Act.

On 10 October 2013, project approval was granted by the Executive Director, Development Assessment Systems and Approvals for the Hexham TSF under Part 5.1 of the EP&A Act (State Significant Infrastructure).

The project approval permits:

- new connections to the Great Northern Railway.
- seven new train tracks parallel to the exiting mainline and a shunt track at the northern part of the facility comprising 10.5 kilometres of new railway track.
- a provisional building, a combined maintenance and administrative centre and service vehicle garage.
- a bulk fuel storage area.
- vehicular intersection and new road from the Tarro Interchange and construction of sealed internal access roads.
- civil earthworks and importation of fill material.
- utility connections and the protection or diversion of existing utilities.
- a wastewater treatment plant with on-site effluent irrigation.

2. Proposed Modification

The Proponent seeks approval to:

- install and operate a new turning angle, including:
    - excavation works for track foundation and ballast
    - approximately 1.5km of single rail track and associated signal and turnout infrastructure
    - a turning angle with two arcs approximately 250 m in length and a straight of approximately 275 m
    - two 85 m straight single tracks at either end of the turning angle
    - four tangential turnouts
- construct vehicular access tracks and associated lighting
- install culverts within existing drainage channels, under the rail track and access tracks
- install associated civil and stormwater works.

The Proponent estimates that construction of the new turning angle and associated infrastructure would take approximately 12 weeks to complete and generate 30 construction jobs.

The Proponent estimates that up to 13,000m^3 of spoil would be excavated at a depth of up to 1.5 metres.

The proposed turning angle is shown in **Figure 2**.

2.1 Proposed change to conditions

The Proponent also seeks to modify Condition E33 to provide clarity on the Site Auditor process associated with the construction of the turning angle works. The proposed wording is shown below with deleted wording shown in bold strike through and inserted words shown in bold italics:

> E33. The Proponent shall engage a suitably qualified contaminated land consultant to prepare a Validation Report upon completion of the remediation of the areas identified in the Remediation Action Plan. The Validation Report shall verify that the site has been remediated in accordance with the Remediation Action Plan (if and as amended) and to a standard consistent with the intended land use. The Proponent shall engage an accredited NSW Site Auditor to prepare a Site Audit Report to determine the appropriateness of the Validation Report. The Validation Report and Site Audit Report shall be submitted to the Secretary ***upon completion of construction related activities and finalisation of the Site Audit Report and Site Audit Statement process*** ~~**prior to the laying of track in the remediated area(s).**~~ A copy of the reports shall also be submitted to the City of Newcastle for its information.

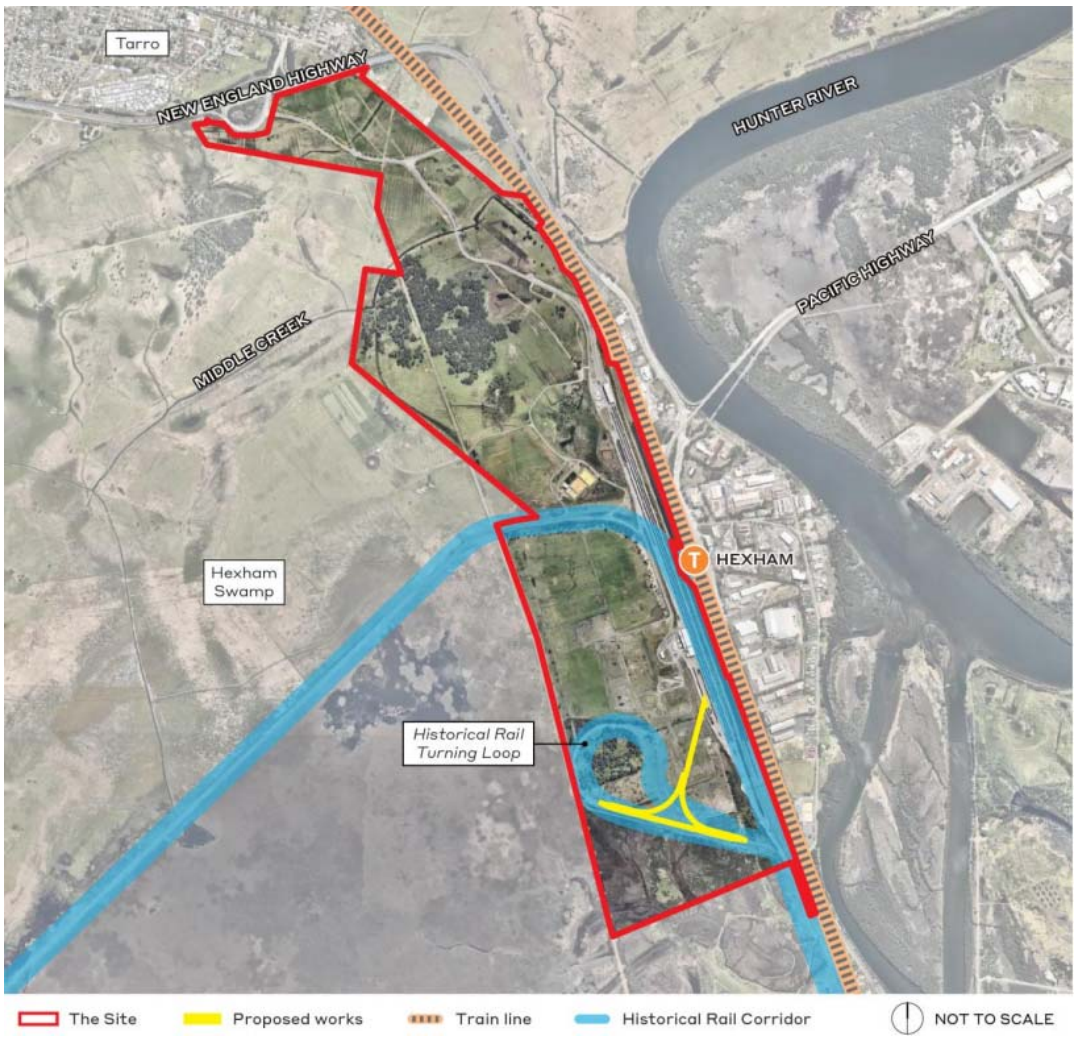

Figure 2 | Proposed turning angle (Source: Modification Report)

3. Strategic Context

The Proponent's train operations have grown beyond earlier expectations due to increased demand in the network. These capacity constraints within the existing facility require trains to travel on the Main Northern Line to a suitable turning loop in order to reverse direction. The proposal would allow trains to reverse direction within the site when the TSF is full.

The Department is satisfied that the proposed modification is consistent with the NSW strategic planning policy framework. The policies and plans which apply to the overall project also apply to the proposed modified works, as follows:

- The proposal is consistent with a key aim of the *Hunter Regional Action Plan* to unlock the region's productive potential by increasing the efficiency of freight train movements.
- The *NSW Freight and Ports Strategy* highlights the need for expansion of current port infrastructure such as the Kooragang Island coal loading berths to grow the NSW economy. The proposal would continue to tackle the inefficiencies and capacity constraints in the current freight network by removing inefficient train movements on the railway line serving the port.

4. Statutory Context

4.1 Scope of Modifications

In accordance with Section 5.25 of the EP&A Act, a proponent may request the Minister to modify the approval for State significant infrastructure. The Minister's approval for a modification is not required if the infrastructure as modified will be consistent with the existing approval. The construction and operation a new turning angle is not considered consistent with the existing approval. Consequently, modification of the Minister's approval under Section 5.25 of the EP&A Act is required.

4.2 Delegated Authority

The Minister will be the approval authority under s. 5.25 of the Act unless the Minister has delegated his determination functions to the Department.

Minister's delegate as determining authority

Under the Instrument of Delegation dated 11 October 2017, the functions and powers of the Minister for Planning under section 5.25 of the Act to determine a modification of the Minister's approval may be delegated to the Director, Transport Assessments, whereby:

- the relevant local council has not made an objection;
- a political disclosure statement has not been made; and
- there are no public submissions in the nature of objections.

The proposed modification meets the terms of this delegation.

5. Engagement

5.1 Department's Engagement

Under Section 5.28(1)(g) of the EP&A Act, the Planning Secretary is required to make requests for modification of approvals determined by the Minister publicly available. The Department determined to publicly exhibit the modification request. The public exhibition period commenced on Wednesday 26 June 2019 and concluded on Wednesday 10 July 2019.

The Modification Report was made publicly available on the Department's website and was electronically available at NSW Service Centres and Nature Conservation Council of NSW. The Modification Report was exhibited at the following locations:

- **Newcastle City Council:** 282 King Street, Newcastle
- **Beresfield Library:** 34 Lawson Avenue, Beresfield and
- **Mayfield Library:** 104 Hanbury Street, Mayfield.

The Department advertised the public exhibition in the Newcastle Herald on 26 June 2019.

The modification request was referred to the following government agencies for comment:

- Newcastle City Council
- Environment Protection Authority
- Environment, Energy and Science Group of the Department of Planning, Industry and Environment (former NSW Office of Environment and Heritage)
- Hunter Local Land Services
- Regions, Industry, Agriculture and Resources Group of the Department of Planning, Industry and Environment (former Department of Industry)
- Transport for NSW (Roads and Maritime Services) and
- Australian Rail Track Corporation.

The Department also notified the Members of Parliament for the Newcastle and Wallsend electorates and landowners within the vicinity of the site of the exhibition in writing.

The Department also undertook a site inspection of the proposed turning angle location at Hexham to better understand the key assessment issues.

5.2 Summary of Submissions

During the exhibition period, a total of six (6) submissions were received from public authorities. A summary of these submissions is provided below:

Roads and Maritime Services did not provide any objection to the proposed modification, however recommended that the Proponent undertake further consultation with RMS regarding the proposed M1 Pacific Motorway Extension to Raymond Terrace in relation to access at the Tarro Interchange, and address any safety concerns associated with site access at the Tarro Interchange.

Environment Protection Authority (EPA) raised no concerns in relation to the proposed modification. EPA also advised that licencing by EPA is not required and that the council is the appropriate regulatory authority for any environmental pollution relation matters.

Regions, Industry, Agriculture and Resources Group of the Department of Planning, Industry and Environment raised no issues in relation to the modification.

Environment, Energy and Science Group of the Department of Planning, Industry and Environment raised no objection in relation to the proposed modification. OEH agreed that the modification will not increase the impact on biodiversity values at the site and that a biodiversity assessment report is not required.

Australian Rail Track Corporation (ARTC) considers that the project will have minimal to no hydraulic or access impact to the freight network. However, ARTC have requested that the Proponent consult with ARTC prior to the commencement of construction.

The **City of Newcastle** did not raise any objection in relation to the proposed modification however requested further information in relation to modifying the existing irrigation system and impacts relating to the subject land being bush fire prone.

5.3 Response to Submissions

Following completion of the public exhibition period, the Department directed the Proponent to prepare a response to submissions report. The Proponent's Response to Submissions Report (RtS) was made publicly available on the Department's website on 19 August 2019.

The RtS was forwarded to the City of Newcastle who suggested that the modification be accompanied by a bushfire consultant's report.

The Department notes that there are no changes to the project resulting from the issues raised in submissions.

6. Assessment

The Department considers the key issues associated with the proposed modification to be Soil and Water, Hydrology and Biodiversity. These issues have been discussed in Sections 6.1. Other issues have been discussed in Section 6.3.

6.1 Soil and Water

Issue

The modification proposes excavation of approximately 13,000 m³ of soil. The site was formerly used as a coal handling facility and contains some Acid Sulfate Soils (ASS) and potential acid forming soils (PAF). Therefore, soil and water impacts are likely to be a key potential impact of the modification. The Proponent undertook a desktop soil assessment based on a review of previous soil assessments at the site. The key soil impacts associated with the proposed modification relate to the construction phase of the project primarily due to earthwork activities. The proposed modification is not likely to impact on soil when the turning angle is operational as the works relate to remarshalling and turning locomotives and will not involve soil disturbance.

The key soil and water quality impacts during the construction phase relate to:

- exposure of ASS and PAF soils
- potential presence of contaminated soils including semi-volatile hydrocarbons and asbestos containing material (ACM)
- erosion of saline soils and soil loss because of exposed soils
- changes to quality of stormwater discharge resulting from changes to the stormwater catchment.

Previous investigations have identified ASS and PAF soils at the site. PAF soils have been identified within existing fill material. It is likely that PAF, and the underlying ASS, may be exposed to oxygen during excavation. As part of the original SSI, an Acid Sulfate Soils Management Plan (ASSMP) was prepared to mitigate impacts associated with ASS soils. While soils were progressively neutralised with agricultural lime during construction of Hexham TSF, it is likely that further PAF or ASS will be exposed during construction of the proposed modification.

Previous investigations at the site have also identified semi-volatile hydrocarbons present in fill material. While ACM has previously been identified within the broader TSF site, the Proponent's assessment indicates that the potential for ACM is low as it has not been identified within the proposed modification area. The Proponent prepared a Remediation Action Plan (RAP) as part of the original SSI to remediate areas of historical contamination. The site of the proposed modification was included within the remediation area and the Proponent has obtained a Site Audit Statement in accordance with Condition E33 of the approval. The approved Site Audit Statement is conditional upon the Proponent's ongoing compliance with the Site Management Plan (SMP) prepared to manage retained contaminated material and unexpected finds from further ground disturbance on the site, such as that proposed for the current modification. The Proponent has indicated that the SMP will be implemented as part of the proposed modification, if further remediation is required.

The Proponent's assessment indicates that localised areas of saline soils may occur across the site. Exposure of saline sub-soils during construction will be managed through mitigation measures to minimise the mobilisation of saline soils, in accordance with the Construction Soil and Water Quality Management Plan (CSWQMP).

The Proponent modelled the expected changes to pollutant loads from the changes to stormwater catchment because of the modification. Basin 03 (refer to **Figure 3**) will receive an additional 0.41 m^3/s of peak stormwater flows during the 1% AEP event due to an increased impervious catchment. Therefore, the model has considered the effectiveness of existing stormwater treatment measures with these changes (refer to

Table 1). The assessment demonstrates that nutrient concentrations at the outlet of Basin 03, which discharges to Hexham Swamp, are expected to increase as a result of the proposed modification. However, the concentrations will remain within the site-specific discharge criteria.

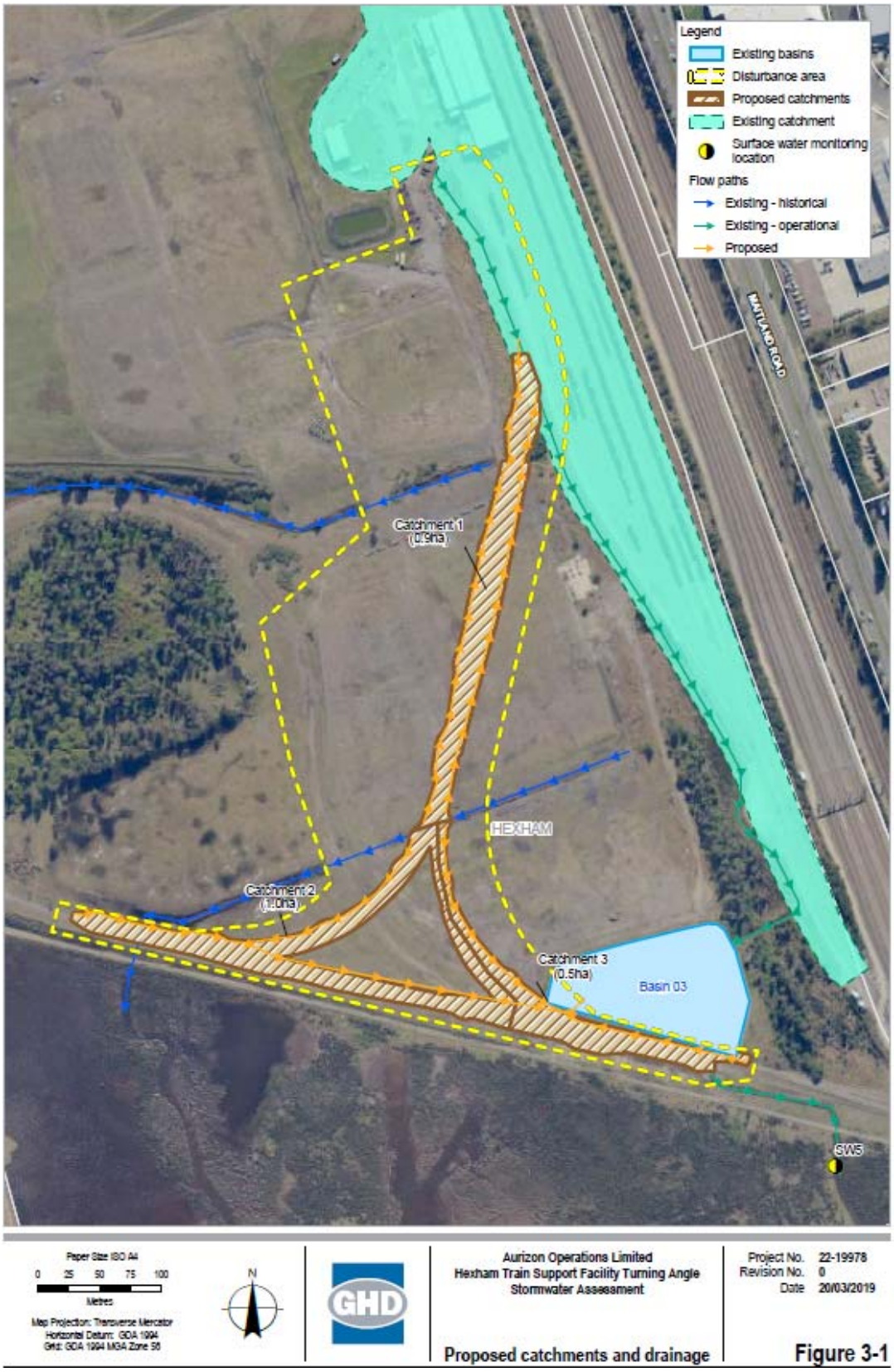

Figure 3| Proposed Stormwater Catchments (Source: GHD, 2019)

Table 1| Predicted nutrient concentrations at Basin 03 outlet

Parameter	Units	Category B Discharge Criteria	Existing	Proposed
Total Suspended Soils (TSS)	mg/L	40	1.21	1.48
Total Phosphorous (TP)	mg/L	1.9	0.028	0.031
Total Nitrogen (TN)	mg/L	4	0.108	0.170

Condition E33 of the infrastructure approval requires the Proponent to prepare a Validation Report and Site Audit Report to confirm that the site has been remediated in accordance with Remediation Action Plan. Condition E31 requires that any unexpected contaminated materials found during construction must be dealt with in accordance with the Remediation Action Plan and an updated Site Audit Report and Validation Report provided to the Department. The Proponent has requested that condition E31 be modified to change the reference to the Remediation Action Plan to the Site Management Plan, and for E33 be modified to clarify the timing and enable the reports to be submitted upon completion of construction rather than prior to laying of track in remediated areas. The effect of the existing condition is that areas required to be remediated by the modification would remain exposed while the Validation Report and Site Audit Report are prepared, for a period of up to several months.

Submissions

No submissions raised concerns or commented on the soil and water impacts of the proposed modification.

Consideration

It is likely that further PAF or ASS will be exposed during construction of the proposed modification. As part of the original SSI, the Proponent prepared and implemented an ASSMP and CSWQMP and has committed to implementing these during construction. The Proponent has also committed to updating the CSWQMP to incorporate the additional works. The Department considers that these management plans and the existing conditions of approval will effectively manage potential impacts associated with acid sulfate soils and soil erosion during construction, subject to being updated to include the proposed modification.

The Department notes that previous site investigations have identified contaminated material at the site and that the site has had a long history of contamination. The Department notes that the Proponent has previously submitted a Validation Report (VR) and Site Audit Report (SAR) to validate the site as appropriate for the intended use, in accordance with condition E33 of the infrastructure approval. The SAR confirmed that the site is considered appropriate for the commercial/industrial land use, subject to the implementation of the approved Site Management Plan. The Department acknowledges that the proposed modification will be constructed within the area included in the VR and SAR and remediated in accordance with the Site Management Plan.

If the Proponent identifies that further remediation works are required, the Proponent would need to engage a suitably qualified contaminated land consultant to prepare a Validation Report upon completion of remediation. Following this, the Proponent would need to engage an accredited NSW Site Auditor to prepare a Site Audit Report to determine the appropriateness of the Validation Report. Given this, the Department considers that the existing Site Management Plan approved by would adequately manage any unexpected contamination finds, in accordance with Conditions E31 and E33 of the approval as modified

Erosion of any saline soils during construction would be managed through appropriate erosion and sedimentation controls to minimise the mobilisation of these saline soils. The Department considers that there is a low risk of increasing soil salinity as the modification would not result in removal of deep-rooted vegetation or increase groundwater inputs.

The Department notes that the pollutant loads of stormwater discharge are likely to increase as a result of the modification. However, the Proponent has demonstrated that water quality will remain substantially below the site-specific discharge criteria developed as part of the Operational Environment Management Plan (OEMP). Therefore, the Department is satisfied that the existing stormwater treatment system including floating wetlands, and the OEMP sufficient to manage water quality during the operational phase, subject to being updated to include the proposed modification.

Changes to condition E33

The Proponent has indicated the proposed wording change to condition E33 is required to provide consistency with current construction practices. The Department notes that the change to timing for submission of the Validation Report and Site Audit Report would minimise the time that soils are exposed during construction. The Department raises no objection to changing the timing for submission of Validation Report and Site Audit Report. However, the Department recommends that the condition require the Proponent to submit the reports to the Secretary within six months of completion of construction, unless otherwise agreed by the Secretary.

Conclusion

The Department has considered the potential soil and water quality impacts relating to the proposed modification. The Department notes that the Proponent proposes to update the Construction Soil and Water Quality Management Plan to include the turning angle works. In addition, the existing Acid Sulfate Soils Management Plan and Site Management Plan will be implemented to manage risks associated with exposure of ASS and contaminated soils. The Department is satisfied that the soil and water risks of the proposed works can be effectively managed by best practice mitigation measures, implementation of the management plans and through the existing conditions of approval.

6.2 Hydrology

Issue

The site is located within the Hunter River catchment and is part of the broader Hexham Swamp floodplain. Surface water runoff flows to the Hunter River (to the east) and Hexham Swamp (to the south). The proposed modification has the potential to impact on hydrology due the construction of the turning angle, access roads and other infrastructure. The key hydrology impacts relating to the proposed modification include:

- changes to the distribution of floodwater behaviour during major flood events;
- the potential to impact on existing groundwater levels; and
- impacts to the quality and quantity of stormwater discharge.

Flooding

The proposed modification has the potential to impact on floodwater behaviour in the Hunter River Catchment, due to the construction of the turning angle, access roads and associated infrastructure, which will alter water flows. The Proponent has indicated that the turning angle would generally be constructed to the height of the

existing surface level, with some minor increases to the height along the southern boundary of the site. The track formation will be constructed between 1.4 m below and 1.0 m above the existing surface level.

The flooding impacts of the proposed modification were assessed through the flood model used to assess the cumulative impact of the Hexham Relief Roads and the Hexham TSF (BMT WBM, March 2013) projects. The assessment concluded that no additional flood modelling was required to assess the potential flood impacts of the proposed modification due to the negligible loss of flood storage resulting from the proposed modification.

The Proponent's assessment indicates that during a 2% Annual Exceedance Probability (AEP), flood storage overtops Hexham Swamp, resulting in the southern portion of the turning angle being inundated by backwater to a depth of up to 1m.

During a 1% AEP and rarer flood events, a minor flow path crosses the coal tailings area, within the modification footprint, towards the Hunter River to the east. The turning angle would obstruct this flow path downstream. Flood waters will generally be conveyed through the proposed culverts, beneath the rail tracks, as shown in **Figure 4**.

Groundwater

The site has a high water table with groundwater levels generally occurring at depths between 1.5 m and 3.5 m below ground level. Construction activities including excavation, filling and vegetation removal have the potential to impact on groundwater levels and quality. However, the Proponent has indicated that excavation would not exceed a depth of 1.5 m and that vegetation removal (with the exception of grass) is not required. Therefore, the proposed modification is not likely to impact groundwater levels.

Stormwater

The proposed modification has the potential to impact on the quantity of stormwater discharge, due to an increase in the impervious catchment draining to existing Basin 03. Surface water from the existing Hexham TSF drains to Basins 01, 02 and 03 via constructed drainage lines. However, the area of the proposed turning angle currently drains via two constructed drains to toward the west of the site.

The Proponent proposes to direct all stormwater from the turning angle site to Basin 03 rather than the western outlet as per the existing design. The Proponent's modelling indicates that the proposal will increase peak flows from the Basin 03 outlet towards Hexham Swamp. The Proponent proposes to mitigate this by implementing mitigation measures, including directing flows through the "triangle" of the turning angle as an additional attenuation basin.

Submissions

The **Australian Rail Track Corporation (ARTC)** considers that the proposal would have minimal to no hydraulic impact on the broader rail network.

The **City of Newcastle** noted that the impacts of the proposal on flooding are minor and are acceptable. Council also notes that water quantity and quality figures, resulting from an increase to the impervious area and associated peak flows, are within acceptable levels.

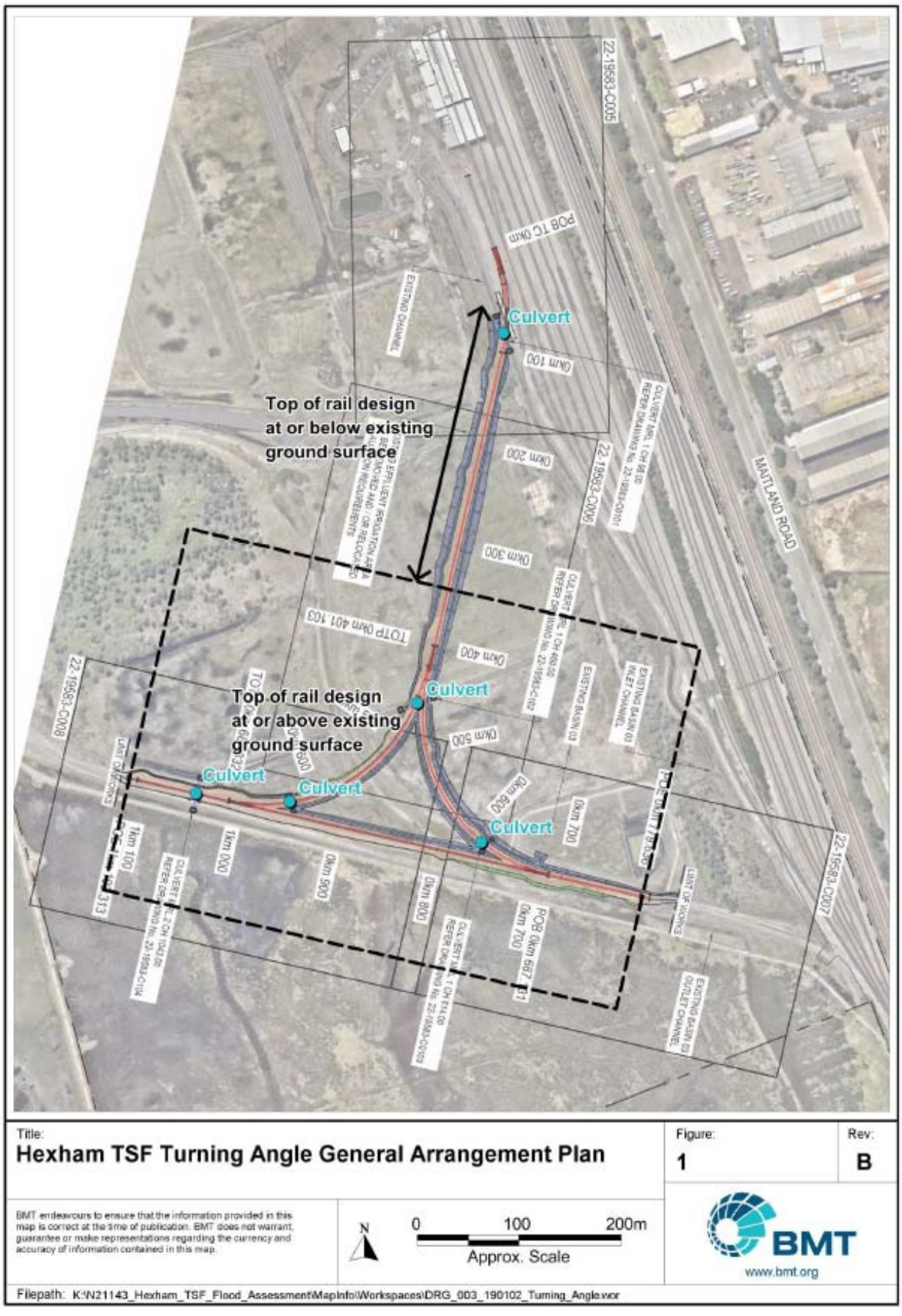

Figure 4 | Location of proposed culverts (Source: BMT, 2019)

Consideration

Flooding

The Department notes that flood water inundation during the 2% AEP would generally be below the height of the proposed turning angle and that the proposed works are not likely to redistribute flows during a 2% AEP event as the existing topography blocks flood flows.

However, during 1% AEP events, the proposed modification would alter flow paths. The flow of floodwater would be limited to the proposed box culverts, thereby reducing the downstream flooding to the east of the turning angle. This would result in a minor redistribution of flood flow to the Hexham Swamp flow path at the southern end of the site. The Department acknowledges that the distribution of flows would be localised and would represent an approximate increase of 1% of flows along the Hexham Swamp flow path. The Department accepts the Proponent's conclusion that this localised redistribution of flows would not have a significant impact on downstream velocity and scour potential.

The Department is satisfied that the changes to floodwater behaviour would not cause a significant change to the existing, and approved, flood regimes in the locality. This is supported by submissions received from ARTC and the City of Newcastle. The Department acknowledges that the existing infrastructure approval includes a number of conditions to minimise the flood risk of the approved project. These conditions include:

- limiting the flood impacts on adjacent lands to levels predicted in the flood assessment and provision for additional mitigation where predictions are exceeded;
- comparison of actual flood characteristics at the 1%, 2%, 5% and 10% AEP levels as they occur, against those predicted by the flood assessment model; and
- preparation of a Flood Emergency Management Plan including procedures for managing flood risks during construction and operation, including flood recovery measures.

The Department is satisfied that the above conditions would limit the potential for adverse flood impacts associated with the proposed modification. Therefore, no additional conditions of approval are recommended.

Groundwater

It is noted that the Department did not receive any submissions relating to groundwater during the exhibition period. The Department has reviewed the groundwater information provided with the original SSI application and notes that groundwater levels in the approximate area of the proposed turning angle were measured at between 1.1 m and 1.6 m below ground level. The Department considers the proposed excavation may encounter groundwater depending on the depth of excavation. However, the Department does not consider that potential groundwater impacts are greater than those assessed under the original SSI, and the existing conditions requiring the surface and groundwater monitoring and CSWMP can adequately manage groundwater risks, subject to these documents being updated to incorporate the proposed modification.

The Proponent has made commitments to continue surface and groundwater monitoring during the ongoing operation of the site. Therefore, the Department considers that the existing conditions of approval are sufficient to manage potential groundwater interaction.

Stormwater

While the modification would result in an increase to the impervious catchment area reporting to Basin 03, the Proponent's assessment demonstrates that peak flows will remain within the hydraulic capacity of Basin 03, particularly during larger storm events, with the implementation of mitigation measures. The Department is satisfied that Basin 03 would have sufficient hydraulic capacity to cope with a 1% AEP event, as required by the

existing conditions of approval. The Department supports the Proponent's commitment to update the Operational Stormwater Management Plan to reflect changes to stormwater catchments associated with the modification.

Conclusion

The Department accepts the Proponent's conclusion that the proposed modification is not likely to significantly affect hydrology. Minor impacts would be localised, effectively managed through the existing conditions of approval, and by updating the existing CEMP and subplans and the OEMP (and relevant sub-plans).

6.3 Other Issues

The Proponent has also assessed the potential impacts of the proposed modification in relation to Aboriginal and Non-Aboriginal heritage, noise & vibration and traffic & transport. The Department considers that the Proponent has undertaken an adequate assessment of the issues and that they can generally be managed through the Proponent's environmental management measures and the conditions of the Approved Project. **Table 2** provides a summary of these issues.

Table 2 | Summary of other issues raised

Issue	Consideration
Biodiversity	The Department is satisfied the modification is unlikely to result in a significant biodiversity impact. Vegetation within the site is dominated by Cynodon dactylon (Common Couch), a non-indigenous grass that is common across the site. The proposal has the potential to indirectly impact on surrounding areas through soil and water runoff during construction and operation. These areas include existing swale drains adjacent to turning angle that contain a range of freshwater wetland species that do not meet endangered ecological community (EEC) criteria and freshwater and saltmarsh EECs adjacent to the Aurizon site. The Department is satisfied that implementation of the existing approval's flora and fauna and soil and water management plans would sufficiently mitigate the risk of any direct or indirect ecological impacts and recommends that these plans are applied to the turning angle works. The Department also notes that a Biodiversity Development Assessment Report (BDAR) is not required for the modification as it is not expected to cause a significant biodiversity impact.
Aboriginal Heritage	The Department does not anticipate that the proposal will impact on any Aboriginal objects or places of significance. The nearest Aboriginal sites, objects or places contained in the Aboriginal Heritage Information Management System (AHIMS) are approximately 1.7 kilometers to the north. The site is highly disturbed due to its historic use as a coal production facility and washery. The Proponent conducted a site visit to confirm the site conditions as part of its Aboriginal Archaeological Due Diligence Assessment. The Department agrees with the Proponent's assessment that there is a low probability of any remnant Aboriginal objects or sites remaining in the project are due to this historic disturbance. The Department is satisfied that the proposal is unlikely to cause significant impacts to any Aboriginal objects or places and recommends relevant unexpected finds provisions of the existing approval's heritage management plan are applied to the proposal.
Non-Aboriginal Heritage	The Department does not anticipate that the proposal will impact on any listed local or State heritage items. There are no sites of local, State or National non-Aboriginal heritage significance impacted by the proposal or within the project area. The closest items are a disused part of Hexham Railway Station, located approximately 340 metres to the sites north, and the former Minmi to Hexham Railway which is located approximately 420 metres from the site. Both are local heritage items listed on the Newcastle LEP 2012. The Department is satisfied that the proposed modification would not impact on these items or their setting due to their distance from the proposed modification.

	The Proponent's archaeologist conducted a site visit in January 2019 and found no historical heritage items or potential archaeological relics. They found remnants of the raised embankment of the former 1973 balloon loop and an associated timber pile and miscellaneous metal nails, however concluded that these items do not have heritage significance due to their relatively recent age. The Department concurs with this view. The Department has considered the Proponent's assessment and anticipates that the impact on non-Aboriginal heritage will be low. The Department agrees with the Proponent's proposed mitigation measures that any unexpected non-Aboriginal heritage items found during excavation works must be managed in accordance with guidelines and standards prepared by OEH and has recommended relevant unexpected finds provisions of the existing approval's heritage management plan are applied to the proposal.
Noise and Vibration	Construction The Proponent's Noise Impact Assessment (NIA) has identified that the construction activities required for the proposal are considered similar to those assessed and approved as part of the original SSI approval. An assessment of the predicted construction noise levels at each receiver was undertaken as part of the NIA for the proposed construction works as part of the modification application. This assessment has indicated that the construction noise levels comply with the adopted Project Trigger Noise Levels (PTNL) at all identified noise sensitive receivers. Similarly, the original SSI approval found the construction noise achieved the maximum allowable noise criteria in all respects. Mitigation and management measures are consistent with the previous assessment and will be implemented within the site Noise Management Plan for the modification application. The Department is satisfied that the proposal will not have adverse effects from noise or vibration in relation to construction works for the proposal. Operation The NIA considered the operational noise of the project in addition to the cumulative operations of the existing Hexham TSF. The cumulative noise impacts will be within the operational noise limits set by Condition C2 of the current approval.
Transport and Traffic	Traffic movements to the site during construction and operation will be via the existing access to the TSF at the New England Highway's Tarro interchange. The Proponent predicts that the proposed modification would result in approximately 43 additional vehicles during construction, with no increase to operational traffic movements due to the required shunting movements being undertaken by existing site personnel. The Department notes that this equates to an approximate 0.16% northbound and 0.15% southbound increase on existing average daily traffic volumes during construction. The Department concurs with the Proponent's assessment that the proposal will have minimal traffic and transport impacts on the surrounding road network.
Onsite Wastewater System	The need to modify the existing effluent irrigation area at the site was raised in a submission from the City of Newcastle. Council noted that the assessment did not clearly outline how the effluent area will be modified as a result of the proposed turning angle. In its RtS, the Proponent noted that the proposed turning angle will be located adjacent to the existing irrigation area and will divide the currently utilised irrigation area from the remaining available irrigation area. The Department notes that the Proponent currently uses 11,000 m^2 of the available 40,000 m^2 irrigation area. The Department is satisfied that the proposed modification will not significantly impact on the available irrigation area and that there remains sufficient area to maintain irrigation capacity.
Bushfire	Council's submission noted that the Modification Report did not include an assessment of bushfire risk resulting from the proposed modification. The Response to Submissions notes that the proposed turning angle is located on land mapped as Vegetation Category 3 on the Newcastle Bush Fire Prone Land Map, with a medium bushfire risk. It also notes that the proposal does not include any habitable dwelling or Special Fire Protection Purpose building that would trigger a Bushfire Safety Authority under the *Rural Fires Act 1997*. The Department acknowledges Council's advice that the proposal does not include any habitable dwellings or Special Fire Protection Purpose buildings, and the proposed

	modification does not involve any buildings or structures that would be occupied. The Department is satisfied that the modification would not result in a changed bushfire hazard to the approved development.
Conditions of approval	The proposed modification raises complexities in applying conditions of approval to manage potential impacts as the construction for the original SSI has been completed and most management plans are closed out. The Department recommends that applicable environmental management plans and construction requirements are revised to include the new works proposed by the modification and are applied to the new works. The Department considers that the updates to the management plans would be minor and therefore within the scope of works that the Environmental Representative may approve. The Department also recommends a condition outlining conditions of the approval that do not apply to the new works. Appendix G provides a schedule of these conditions and reasons for their modification or non-application to the modification.

7. Evaluation

The Department has reviewed the Modification Report, public authority submissions, and Response to Submissions and has assessed the key issues arising from the proposed changes to the approved project. This has been undertaken with advice from government agencies and council.

The key issues associated with the proposed modification include soil and water and hydrology impacts related to construction of the turning angle. The Proponent has included a range of environmental management measures which it is committed to implementing to manage the impacts arising from construction and operation of the proposed turning angle. Based on its assessment, the Department has reviewed the existing conditions of approval that will apply to the modification and recommended that applicable environmental management plans are revised to include the new works.

The Department is satisfied that the issues raised in submissions have been appropriately considered and responded to by the Proponent. Overall, the merits of the modification have been evaluated and it is concluded that the benefits of the proposed modification outweigh the potential impacts. As such, the Department considers the proposed modification should be approved, subject to conditions.

8. Recommendation

It is recommended that the Director, Transport Assessments, as delegate of the Minister for Planning and Public Spaces:

- **considers** the findings and recommendations of this report; and
- **determines** that the request to modify the Hexham Train Support Facility (SSI 6090 MOD 1) falls within the scope of section 5.25 of the EP&A Act;
- **accepts and adopts** the findings and recommendations in this report as the reasons for making the decision to grant approval to the request;
- **agrees** with the key reasons for approval listed in the draft notice of decision;
- **modify** the approval SSI 6090; and
- **signs** the attached Notice of Modification (Appendix F).

Recommended by:

Lauren Rose
A/Senior Planning Officer
Transport Assessments

Recommended by:

Alexander Scott
Team Leader – Regional Projects
Transport Assessments

9. Determination

The recommendation is: **Adopted by:**

Glenn Snow
Director
Transport Assessments

Appendices

Appendix A – List of Documents

QR National 2012, *NSW Train Support Facility, Maitland Road, Hexham – Environmental Assessment*.

QR National 2013, *NSW Train Support Facility, Maitland Road, Hexham – Preferred Project Report and Response to Submissions.*

Aurizon Operations Limited 2019, *State Significant Infrastructure - Modification: Detailed Environmental Assessment Report.*

Aurizon Operations Limited 2019, State Significant Infrastructure MP07_0171 Modification: Response to Submissions

Appendix B – Modification Report

https://www.planningportal.nsw.gov.au/major-projects/project/14711

Appendix C – Submissions

https://www.planningportal.nsw.gov.au/major-projects/project/14711

Appendix D – Submissions Report

https://www.planningportal.nsw.gov.au/major-projects/project/14711

Appendix E – Consolidated Approval

https://www.planningportal.nsw.gov.au/major-projects/project/14711

Appendix F – Notice of Modification

https://www.planningportal.nsw.gov.au/major-projects/project/14711

Appendix G – New, modified and non-applicable conditions

Table 3 | New and modified conditions of approval

Condition	Description	Reason for insertion / modification
		INSERTED CONDITIONS
B4A	Terms of Approval	To clearly identify the conditions applying to and those not applying to the proposed modification.
B4B	Interpretation condition	To provide interpretation of former government agency names
B10A	Staging Report	To align the staging report conditions with the standard SSI conditions.
D5A	Compliance Tracking Program	To align the Compliance Tracking Program with the standard SSI conditions.
D5B	Compliance Tracking Program	To align the Compliance Tracking Program with the standard SSI conditions.
D5B	Compliance Tracking Program	To align the Compliance Tracking Program with the standard SSI conditions.
D5C	Compliance Tracking Program	To align the Compliance Tracking Program with the standard SSI conditions.
D5D	Compliance Tracking Program	To align the Compliance Tracking Program with the standard SSI conditions.
F4A	Noise and Vibration Compliance Assessment	To require the Proponent to undertake a noise and vibration compliance assessment within 12 months of the Turning Angle Works commencing operation.
		MODIFIED CONDITIONS
	Definitions	To reflect changes to position titles and agency names.
B1	Terms of Approval	To ensure that the modified SSI is carried out in accordance with the Modification Report and Response to Submissions.

B2	Terms of Approval	To reflect the inclusion of the Modification Report and Response to Submissions in Condition B1.
B8	Staging Report	To align the staging report conditions with the standard SSI conditions.
B9	Staging Report	To align the staging report conditions with the standard SSI conditions.
B10	Staging Report	To align the staging report conditions with the standard SSI conditions.
C4	Biodiversity Offset Package	To specify that Biodiversity Offset Package would need to be revised if the Nest Box Plan is updated.
C9	Stormwater Management	To update the existing plan to reflect the new works – no new measures required.
C15	Flood Emergency Management Plan	To update the existing plan to reflect the new works – no new measures required.
C19	Surface Water and Groundwater Monitoring Program	To update the existing plan to reflect the new works – no new measures required.
D1	Community Consultation Strategy	To update the existing plan to reflect the new works – no new measures required.
D4	Project website	To align the project website condition with the standard SSI conditions.
D5	Compliance Tracking Program	To align the Compliance Tracking Program with the standard SSI conditions and to update the existing plan to reflect the new works – no new measures required.
D6	Incident notification	To align the incident notification requirements with the standard SSI conditions.
E6	Pre-clearing Surveys	To specify that the required surveys are conducted prior to construction of the proposed turning angle.
E11	Flora and Fauna Mitigation Measures	To specify that the listed measures are to be implemented prior to construction of the proposed turning angle.

E12	Access to Hexham Swamp Nature Reserve	To delete the words "unless this is in conflict with Condition C33", which will not apply to the modification.
E31	Unexpected contaminated finds	To require that unexpected contaminated finds are managed in accordance with the Site Management Plan, rather than the Remediation Action Plan.
E33	Validation Report	To change the timing of the required Validation Report.
E41	Road Dilapidation	To specify that reports are required in relation to the new works and to reflect that access via Woodlands Close is not permitted.
E45	Access via Woodlands Drive	To delete the words "except in accordance with Condition E47", which will not apply to the modification. This will effectively prohibit construction traffic access via Woodlands Close, unless approved by RMS.
E47	Limited access via Woodlands Close	Delete condition. This condition allowed limited access via Woodlands Close prior to construction of the Tarro Interchange. The Tarro Interchange is now completed and operating and there is no need to use Woodlands Close to access the site.
E61	Environmental Representative	To require that an Environmental Representative is re-engaged for the new works.
E62	Construction Environmental Management Plan	To update the existing plan to reflect the new works – no new measures required.
E63(a)	Construction Traffic and Access Management Plan	To update the existing plan to reflect the new works – no new measures required.
E63(b)	Construction Flora and Fauna Management Plan	To update the existing plan to reflect the new works – no new measures required.
E63(c)	Construction Noise and Vibration Management Plan	To update the existing plan to reflect the new works – no new measures required.
E63(d)	Construction Soil and Water Management Plan	To update the existing plan to reflect the new works – no new measures required.
E63(e)	Construction Heritage Management Plan	To update the existing plan to reflect the new works and specify that only provisions relating to unexpected finds apply to the new works.

E63(f)	Construction Contamination Management Plan	To update the existing plan to reflect the new works – no new measures required.
F2	Operation Environmental Management Plan	To update the existing plan to reflect the new works – no new measures required.
F4	Noise and Vibration	To specify that the noise and vibration compliance assessment and associated report are redone after commencement of operation of the modified SSI.
F5	Flood Review Report	To specify that any Flood Review Reports triggered be applicable flood events include the new works.

Table 4 | Conditions of approval not applying to modification

Condition	Description	Reason for not applying
B5	Limits of Approval	The SSI works have physically commenced, and the approval cannot lapse.
C3	Ecological Monitoring	The Department's assessment does not anticipate significant biodiversity impacts subject to implementation of construction and environmental management plans. It is considered unreasonable to require ongoing ecological monitoring given the anticipated impacts.
C16	Consult with landowner regarding flood mitigation	The Department's assessment finds the modification would not impact flooding at the specified property.
C18	Purgatory and Middle Creek crossings	The modification does not propose new works at these locations.
C22	Aboriginal heritage	The modification does not propose new works at sites HS1 and HS2.
C23	Historic heritage	The modification does not propose new works that affect the Minmi to Hexham Railway.
C33	Private access track	The required private access track was completed as part of the main works and the proposed modification would not affect access via this track.
C34	Pedestrian access to Hexham Railway Station	The modification does not propose any new works in the vicinity of Hexham Railway Station.

C35	Maintain or improve access for other transport modes	The modification proposes works within the Proponent's site and does not affect publicly accessible areas.
C38	Landscaping – screens views from the public domain	The Department does not consider this condition reasonable to apply to the works proposed by the modification given the works' location at the rear of the site and its relatively unobtrusive form.
C39	Community contributions	The modification does not propose any increased occupancy of the facility that would require a variation to the Proponent's previous contributions.
E1	Biodiversity – clearing	The modification does not propose works that clear or fill the specified Coastal Management SEPP wetland.
E5	Relocate coarse woody debris	The modification does not propose works likely to remove coarse woody debris.
E13	Impacts to Aboriginal objects	The Department's assessment of the proposed modification does not identify any anticipated impacts to Aboriginal objects.
E14	Aboriginal stakeholders' review of shell material	This condition was triggered by the commencement of works for the main SSI project and has been completed
E15	Archaeologists and stakeholders to collect Aboriginal items	This condition was triggered by the commencement of works for the main SSI project and has been completed
E16	Protection zone around HS1 area	The modification does not propose any works in the vicinity of this area.
E17	Historic heritage – interpretation plan	The modification does not propose works with a heritage impact sufficient to justify an interpretation plan.
E24	Consult with sensitive receivers regarding construction noise	The Department's assessment does not identify construction noise impacts that would justify consultation beyond that required by the Construction Noise and Vibration Management Plan.
E25	Consult with proponents of other surrounding projects regarding construction noise	This condition intended to address cumulative noise impacts of the main SSI project and the adjoining Hexham Relief Roads, which were constructed concurrently. The Department considers cumulative noise from other construction projects to be a low risk given there are no other significant projects expected to be constructed concurrently with the proposed modification.
E26	Rail possessions	The modification proposes works within the Proponent's site that are not expected to require any possessions of the Main Northern Railway.

E30	Contamination – further investigations and Remediation Action Plan updates	The further investigations component of the condition was triggered by the commencement of works for the main SSI project and has been completed. The RAP has been updated following those further investigations.
E32	Test ballast, chitter and tailings for contamination	The condition applies to reuse of these materials within the existing rail corridor. The modification does not propose any works that would affect the rail corridor and the condition therefore cannot reasonably apply.
E36	Earthworks affecting connection between Hunter River and Hexham Swamp	The modification does not propose works in the vicinity of this connection.
E42	Construction of T-intersection at the Tarro Interchange	This intersection has already been constructed and operates to provide access to the site.
E43	Design standards for T-intersection	This condition supports Condition E42 and is therefore redundant.
E44	Seal construction access road	This road is already sealed.
E49	Tarro Interchange works at no cost to roads authority	The specified works have already been completed and the condition is redundant.
E59	Ancillary facilities	The modification proposes works within the bounds of the rail facility operated by the Proponent. The works would not need ancillary facilities as they would be served by the existing facility.
E60	Rehabilitation of ancillary facilities	Ancillary facilities will not be required, and the condition is redundant.
F3	Operational Performance	The Department's assessment of the proposed modification does not identify significant impacts or risks that would justify the requirement for operational performance auditing beyond that already undertaken for the main SSI project.