Hexham Long Term Train Support Facility (MP07_171)

Ancillary Depot and Wagon Storage (State Significant Infrastructure Modification)
Landscape and Visual Impact Assessment

Prepared for:

Aurizon Operations Limited

121 Woodstock Street, Mayfield, NSW 2304

SLR Ref: 620.30688.00000 Version No: - v0.3 April 2022

PROJECT NAME

Location	Lot 104 DP1189565 189C Maitland Road , Hexham NSW 2322
Project Number	620.30688.00000
Client	Aurizon Operations Pty Ltd

PREPARED BY

SLR Consulting (Pty Ltd)

ABN 29 001 584 612

Level 16/175 Eagle Street, Brisbane City QLD 4000

PO Box 26, Spring Hill QLD 4004 Australia

Phone +61 7 3858 4800

www.slrconsulting.com

BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd with all reasonable skill, care and diligence, and taking account of the time-scale and resources allocated to it by agreement with Aurizon Operations Limited (the Client).
Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the client. No warranties or guarantees are expressed or should be inferred by any third parties.
This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

This report has been designed to be reproduced at A3 size.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
631.30688-R01- v0.1	December 2021	Adam Parsons	Dean Butcher	Dean Butcher
631.30688-R01- v0.2	March 2022	Adam Parsons	Dean Butcher	Dean Butcher
631.30688-R01- v0.3	April 2022	Adam Parsons	Dean Butcher	Dean Butcher

DRAFT

CONTENTS

Contents

FIGURES

LIST OF PHOTOS

LIST OF TABLES

1. INTRODUCTION

This Landscape and Visual Assessment report has been prepared for the development of a depot, warehouse and wagon storage (the Modification Proposal) to support the ongoing operations of the Hexham Long Term Train Support Facility (Hexham LTTSF Project), Hexham (the Hexham LTTSF Site). The Modification Proposal is to be undertaken as a modification (under Part 5, Section 5.2 of the Environmental Planning and Assessment Act 1979 (EP&A Act)) to the Hexham LTTSF Approval (MP07_0171).

This report has been prepared in accordance with the following, identified within the DPIE letter (dated 17/09/2021):

- The Secretary's Environmental Assessment Requirements (SEARs) issued for SSI-6090 Mod 1 (previously MP 07_0117 MOD 1)
- The relevant industry specific SEARs applicable to warehouse development.

This report has been prepared by SLR Consulting Ptyy Ltd on behalf of Aurizon.

Terms	Description
Baseline	The environmental conditions against which any future changes can be measured or predicted and assessed.
Geographical Information System (GIS)	A system that captures, stores, analyses, manages and presents data linked to location. It links spatial information to a digital database.
Hexham LTTSF Project	The Hexham Long Term Train Stabling Facility (and associated development) approved under MP 07_0117, now SSI 6090 (inc. Mod 1).
Impact Significance	Is the evaluation of receptor sensitivity and magnitude of change where a rating is determined based off visual impacts objectively observed or predicted through a process of assessment of the proposed development.
Infrastructure	Public services that supports human activity such as transportation and/or logistics networks utilities networks, flood defenses, telecommunications, etc.
Light Detection and Ranging (LiDAR)	Is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variables distances) to the Earth. These light pulses, combined with other data recorded by the airborne system, generate precise, three dimensional information about the shape of the site and its characteristics.
Magnitude of Change	A term that combines judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term duration.
Mitigation Measures	Are means to prevent, reduce or control adverse environmental effects of a project, and include restitution for any damage to the environment caused by those effects through replacement, restoration, compensation or any other means.
Photomontage	A visualisation which superimposes an image of a proposed development upon a photograph or series of photographs.
Receptor Sensitivity	The extent to which the surrounding landscape when viewed from the receptor point can accept a change of a particular type and scale without unacceptable adverse impacts on its character.
The Hexham LTTSF Project Site	Area on which the Hexham LTTSF is located and the surrounds assessed under the MP 07_0117, now SSI 6090 (inc. Mod 1).
The Modification Proposal	The depot, warehouse, wagon storage and associated development for which approval is sought, as SSI-6090 – Mod 2.
The Site	The area where the Modification Proposal works are to be undertaken. This area signifies the area to be directly impacted/disturbed by the Modification Proposal.
Vegetation	Vegetation classification that is mapped, describing endemic planting communities or modified environments with plant species that are present on site.
Viewshed Map	A view shed map is the geographical area that is visible from the location. It includes all surrounding points that are in the line-of-sight with that location and excludes points that area beyond the horizon or obstructed by terrain and other features.
Visual Amenity	The overall pleasantness of the views people enjoy of their surroundings, which provide an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or traveling through an area.
Visual Catchment Area	Identifies the area within which the Project can potentially by seen
Visual Receptors	Individuals and / or defined groups of people who have the potential to be affected by a proposal.
Water bodies	A body of water forming a physiographical feature such a sea, lake, river, stream, estuarine or wetland.
Zone of Theoretical Visibility (ZTV)	A map, digitally produced, showing areas of land within which a development is theoretically visible

2. SITE DESCRIPTION

The LTTSF site is located at Maitland Road, Hexham within the Newcastle Local Government Area approximately 16km north-west of Newcastle CBD. The Hexham LTTSF site has a total area of 255ha with the LTTSF Project developed on a 38ha portion of the site parallel to (and to the west of) the Great Northern Railway (GNR). The LTTSF site is located within an industrial setting with only a small number of dwellings within the local vicinity of the site. The site's locational context is shown at **Figure 1.**

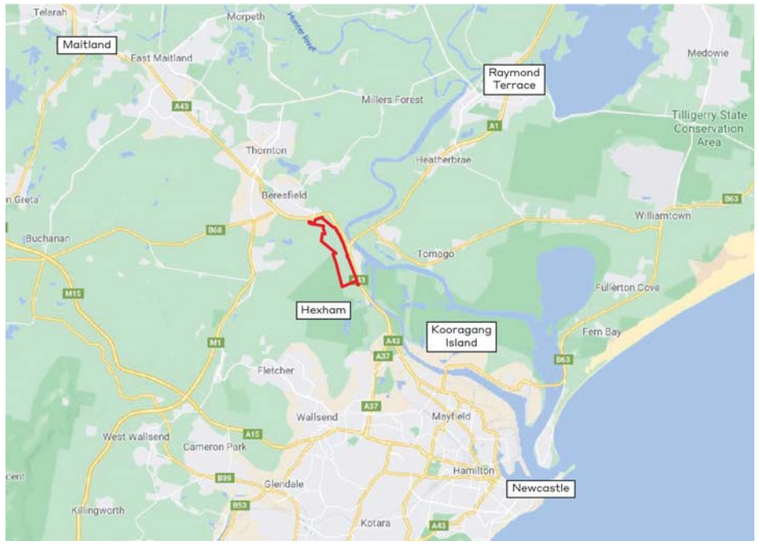


Figure 1. The Hexham LTTSF site

NOT TO SCALE

Figure 2. The Hexham LTTSF is located north-west of Newcastle

LEGEND

- The Hexham LTTSF site
- Newcastle Rail Network
- Proposed depot, warehouse and carpark
- Proposed wagon stowage

DRAFT
SLR

2.1 Project Description

The Modification Proposal are fully contained within Lot 104 DP1189565 which is owned by Aurizon. The Hexham LTTSF Project Site covers multiple lots which are not affected by the Modification Proposal. The location of the Site in the context of the Hexham LTTSF Project Site is provided within **Figures 2**, **3** and **4**.

Figure 3. Site Context (consideration of previous approvals)

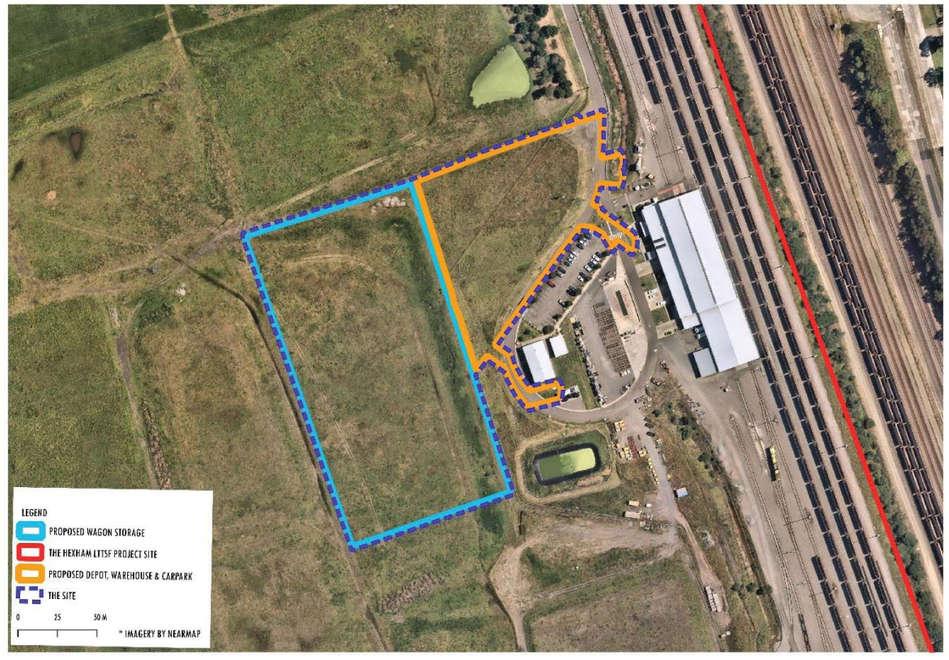


Figure 4. Site Location

NOT TO SCALE

3. Modification Proposal Description

The Modification Proposal is to be located within the Hexham LTTSF site (identified within the Hexham LTTSF Project) at a location previously cleared and disturbed by historical coal handling activities and the LTTSF Project construction.

The Modification Proposal includes the development of a depot, warehouse, wagon storage and associated development to support the ongoing operations of the Hexham LTTSF Project.

An overview of the Modification Proposal is as follows:

- Site preparation and earthworks
- Construction of the following elements:
  - A warehouse for the storage of rail maintenance equipment.
  - A depot for office staff and train crew.
  - Ancillary staff and visitor car park connected to the private roadway (existing main access road).
- Rail wagon storage area located on the western portion of the Site
- Ancillary infrastructure (hardstand, water management, landscaping, lighting etc)
- Connection to utilities.

The depot and warehouse would be operated 24 hours per day, 7 days a week.

3.1 Regulatory Context

The project was assessed and approved as State Significant Infrastructure (SSI) under Part 5.1 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The Site was approved by a delegate of the Minister for Planning and Infrastructure under MP07_0171 (the Approval), dated 10 October 2013. The Hexham TSF Turning Angle (the Turning Angle) Modification MP 07_0171 MOD 1 (SSI-6090) (the Approval) was approved on the 09 October 2019. Aurizon is proposing to modify MP07_0171 MOD 1 under Part 5.1 of the EP&A Act to permit the Project.

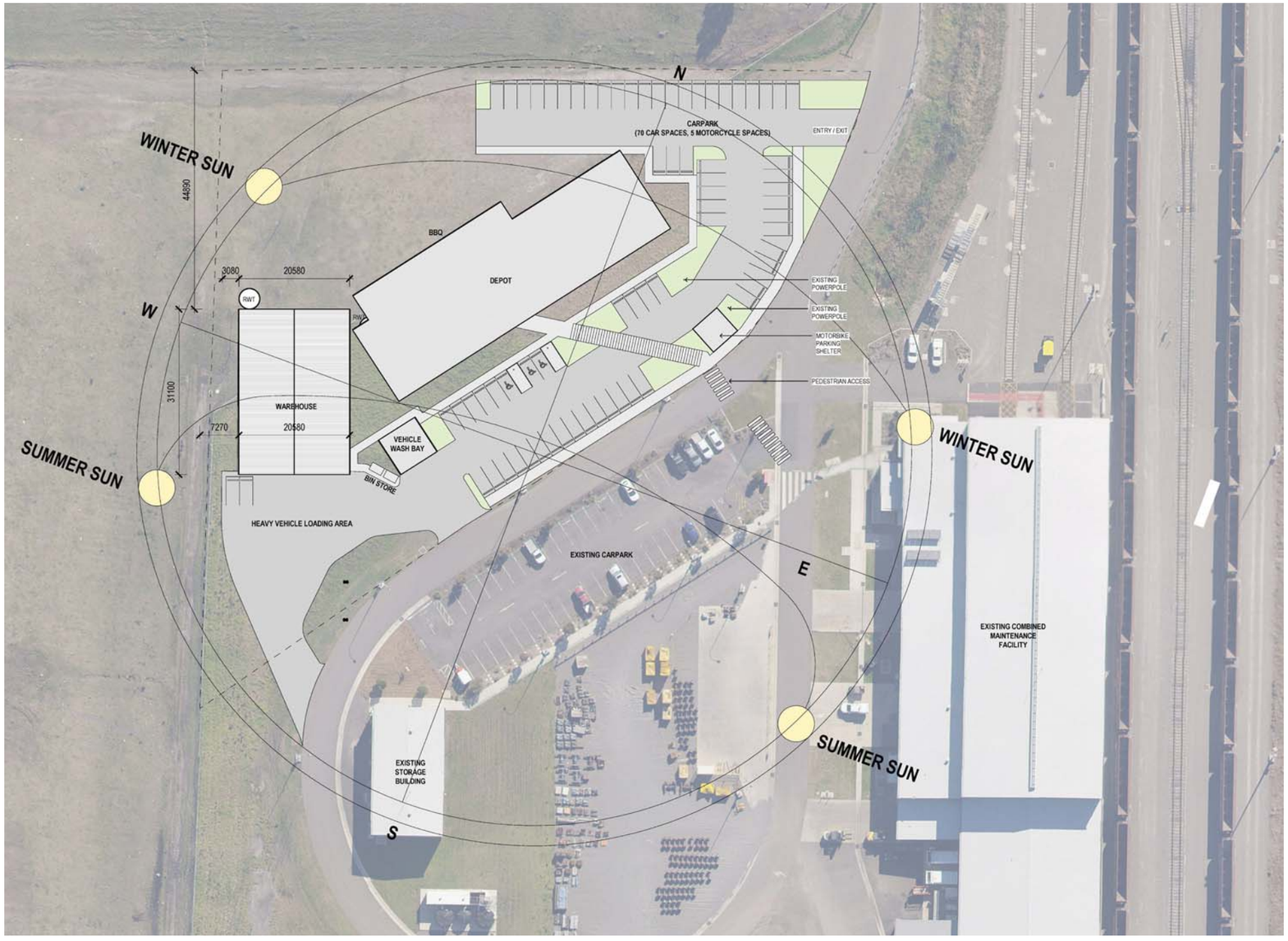


Figure 5. Proposed Depot, Warehouse and Carpark

NOT TO SCALE

4. LANDSCAPE CHARACTER ASSESSMENT

4.1 Subject Site and Surrounding Context

The baseline description outlines the current state of the site (being the location of The Modification Proposal) as it would likely function in the absence of change resulting from the introduction of the Project.

The site is cleared, open and highly modified with minimal vegetation present. It is located west of the Hunter River and is bound by Maitland Road and the Hunter railway line in the east, and the Hunter Wetlands National Park (Hexham Swamp Nature Reserve) in the west. When approaching the site from the main access road, fencing restricts vehicular and pedestrian movement. Site lines into the site are limited in some instances by stands of ***Casuarina Glauca*** (Swamp Oak) when viewed from Maitland Road.

The character of the site typically has an open, semi-rural appearance where no infrastructure exists, whilst it takes on a more industrial character around the existing structure and adjacent to the rail line. The broader landscape character, in which the site is located, can be described as a combination of open pastures that is interspersed with low-lying wetland areas. To the east of the site, where the rail corridors and Maitland Road is located, has limited visual access. This is due the vegetation buffer that flanks the edge of Maitland Road.

4.1.1 Roads and Access

Access to The Hexham LTTSF Project Site is via Maitland Road (New England Highway) A1 & A3 'on ramp' accessed from Anderson Drive in the north. When exiting from Maitland Road (New England Highway) there are 2 access points to the site when travelling in west bound lanes toward Maitland. The first is the informal access at Woodlands Close and the second is Anderson Drive. When travelling east bound toward Newcastle the site can be accessed via the Anderson Drive exit.

4.1.2 Vegetation

The Hexham LTTSF Project Site has been completely modified from its original state as a swamp wetland. All native vegetation has been cleared with a noticeable absence of trees, shrubs and groundcovers. Due to its use as an infrastructural site, the site has hardy annual grasses, mainly ***Cenchrus clandestinus*** (Kikuyu Grass) to stabilise spoil material that is located on site. The biodiversity development assessment states there is some native vegetation patches that has naturally established on site this includes ***Cynodon dactylon*** (Common Couch), ***Juncus usitatus*** (Common Rush) and ***Eleocharis acutus*** (Common Spike-Rush).

4.1.3 Structures

Existing structures located adjacent to The Hexham LTTSF Project Site are limited to the Newcastle Train Crew Depot and Maintenance Warehouse. This includes ancillary facilities, such as existing carpark, maintenance rails and offices.

4.1.4 Infrastructure

The Hexham LTTSF Project Site is in a highly industrialised zone. To the east of the site is Newcastle Rail Network – Hunter line and the Lower Hunter Freight Corridor. The site has multiple tracks associated with the Freight sidings and the disused Richmond Vale Railway. All underground public services in proximity to the site are located on Maitland Road with an exception of low voltage power lines on the western periphery of the site.

4.1.5 Water Bodies

The Hexham LTTSF Project Site is located approximately 1 km from the Hunter Wetlands National Park in the south-east. The site is 750 metres from the South Channel Hunter River and the Hunter River in the east. The Hunter Wetlands National Park (Hexham Swamp Nature Reserve) is located 350 metres west from the site. There are no rivers, streams and estuaries present in The Hexham LTTSF Project Site.

5. VISUAL IMPACT ASSESSMENT

5.1 Process

The Visual Impact Analysis generally applies the assessment techniques set out in the 'Guidelines for Landscape and Visual Impact Assessment, Third Edition' (2013) prepared by The Landscape Institute and the Institute for Environmental Management and Assessment (UK). The analysis includes the following:

- review of the proposal (scale, bulk, height, technical specifications, and landscape)
- analysis of the subject site (visual exposure, visual qualities, and landscape values)
- mapping of Theoretical Visual Catchment, visual qualities, and landscape values
- identification of potential impacts on key receptors including the rating of magnitude for each receptor group
- rating of impact significance for each receptor group with the impact significance being evaluated as a product of the sensitivity or value of the receptor, and the magnitude of change on the receptor
- recommending potential mitigation measures to meet the necessary planning requirements and any community expectations.

The assessment included a desktop analysis and a detailed site investigation commenced in December 2021. The desktop analysis and site investigation included the following:

- data review
- aerial photography review
- onsite georeferenced image capture at key public receptor points
- Geographic Information System (GIS) modelling of the topography and the proposed development.

For the purposed of this VIA, the following diagrams were produced to map the theoretical visibility of the proposed development.

- overall Visibility Map (ZTV) from the proposed development (**Figure 5**)
- overall Visibility Map (ZTV) from the key receptor points (**Figure 7**)
- view shed maps from 4 key viewpoints, including
  - existing site prior to development (existing baseline situation)
  - representation after 10 years of establishment of vegetation buffer to perimeter
- compared view shed map from all 4 key viewpoint / receptor locations.
- Visibility Map from 3 key private residences, including
  - existing site prior to development (existing baseline situation)
  - representation after 10 years of establishment of vegetation buffer to perimeter

5.2 Zone of Theoretical Visibility (ZTV)

The Digital Terrain Model (DTM), Digital Surface Model (DSM) was derived from point cloud data supplied by (LiDAR (Light Detection and Ranging)), NSW Department of Finance, Services and Innovation Spatial Services/DFSI-SS, 2014 (Airborne Digital Sensor (ADS). 2m LiDAR data captured in 2012, 2013 and 2014 was merged to provide a seamless dataset for the site and the surrounds.

The visibility tool was run using the 1m DSM as the elevation input. The DSM includes vegetation and heights as of the date of capture of the LiDAR which may have changed to the current date. The proposed infrastructure for the site (warehouse, depot, wash bay, wagon laydown area) and photo locations were used as the observer features input with heights as provided in the design files. For photo location an offset of 1.7m was applied (using the average height of a person) for the view shed analysis. The proposed infrastructure heights were extracted from CAD files provided by the client were relative to the elevations from the 2m DTM. (See below table)

Type	Height (m)
Warehouse	15.2m
Depot	7.25m
Wash Bay	4m
Wagon Laydown Area	4.3m

In order to identify the theoretical visual catchment of the proposed Project, a Zone of Theoretical Visibility (ZTV) was prepared as part of this Visual Assessment Report. This zone was defined by creating a 3D model of the proposed development, the existing surrounding buildings (where appropriate), vegetation (at date of LiDAR capture) and the topography.

5.3 Photographic Images

Photographic imagery was taken of the site to assist in the assessment of visual impacts. Photos were taken with a Canon EOS 6D Mark II digital single-lens reflex DSLR camera with a 50 mm lens.

Four panorama images were prepared to assist in the Visual Analysis process; all from public receptor points.

The four key public receptors points used in the panorama images were selected to investigate a range of views of the site from areas of perceived sensitivity. During the site investigation, local areas around the site were observed to determine the potential visibility of The Modification Proposal.

The approximate extent of The Modification Proposal has been identified to give a general impression of the location on site and the approximate height.

The panorama images are represented in **Section 6** as the baseline conditions with the location of the modification proposal indicated with an arrow.

5.4 Assessment of Visual Impacts for key Receptors

Visual receptors are people, or groups of people, that may be affected by the proposal. Described below are a list of potential visual receptors that are often identified based on a number of key parameters.

- proximity of the receptor – most effected visual receptors are anticipated to be located within a 3km radius of the The Modification Proposal (unless in an elevated position)
- drivers or passengers of vehicles travelling past, through or alongside the subject site
- workers on or near the subject site that travel past, through and along the subject site for work
- members of the general public accessing adjoining public areas (conservation areas) for recreational or visual purposes
- permanent residents living near the subject site.

Public receptors (views visible by the general public) are accepted as the most suitable for visual impact assessments, because they represent the highest number of visitations or views to the nominated site in question.

Four key public receptors are as follows and are identified in **Figures 5 and 6.**

- VP1 - Pacific Highway, Hexham
- VP2 - Pacific Highway, Hexham
- VP3 - Pacific Highway, Hexham
- VP4 - Railway Bridge, Taro

Private receptors (namely from private residences) can be selected if the views are unique, significant or the combined effects on a number of residents are considered high. In the case of the proposed development and for the purposes of this visual impact assessment, receptors include both public and private that are near by to The Modification Proposal.

These private receptors are as follows and are identified on **Figures 5 and 6.**

- R01 - 30 Woodlands Close, Hexham
- R02 - 1 Woodlands Close, Hexham
- R02 - 31 Forsythe Parade, Black Hill

The following view shed map (**Figure 5**) represents the extent of visible of The Modification Proposal in relation to the four key receptor points and private receptor points (visibility results indicated in yellow). 3km and 4km Buffer extents have been included to indicated receptor point locations and the distance they are from The Modification Proposal. Any visibility beyond the 3km Buffer extents would be considered low. This visibility results are indicated in faint yellow.

Areas that are not shaded represent areas that are not visible from the receptors due of the presence of obstructions (trees, landform, built form) within the line of sight.

All figures are collated in **Appendices A, B, C & D.**

Figure 6. Baseline Visibility from The Modification Proposal

5.5 Receptor Sensitivity

The receptor sensitivity is derived from a combination of factors including:

- receptors interest in the visual environment (high, medium or low interest in their everyday visual environment and the duration of the effect)
- receptors viewing opportunity (prolonged, regular viewing opportunities)
- number of viewers and their distance / angle of view from the source of the effect, extent of screening / filtering of view.

Whilst the assessment of visual values and effects is largely measured on a qualitative basis, assessment against scale enables a more objective evaluation and comparison of sensitivity of receptors and magnitude of effects. Whilst the 'Guidelines for Landscape and Visual Impact Assessment' does not designate a specific numerical rating for assessing receptor sensitivity based on the variability of the landscape character and receptor types in each location, this assessment has used a Receptor Sensitivity Rating described as being High, Medium, Low or Negligible as described in **Table 1**. Criteria around private receptors has also been specifically highlighted to assist with rating of each viewpoint.

Table 1. Receptor Sensitivity Rating

Receptor Sensitivity	Description
High	• Visitors to heritage sites, regionally important locations, scenic routes, lookouts within 2.5km with quality views, important views of the site and surrounding areas where landscape is the specific focus. • High numbers of visitors • Views to landscape that are rare and or unique and are possibly vulnerable to change • Views from residences within 1km of the site and are representative of high quality views
Medium	• Travellers / visitors along roads or rail routes that are not scenic routes but offer quality views within 2.5km of the site • Medium numbers of visitors / residents (rural communities or townships) • Views that are representative of local character or sense of place but are not rare or unique • Views from residences beyond immediate vicinity (1km-3km) of the site and are representative of moderate quality views • Recreational users / viewers beyond 2.5km from the site with moderate interest in their surrounds
Low	• Travellers / visitors along roads or rail routes that are not scenic routes but offer reasonable views within 4km of the site • People at place of work where setting or views not important to quality of working environment • Recreational users not dependent on views or scenic quality of landscape • View experience takes in broad context with which site is visible but not an important element. • Small numbers of visitors with passing interest in their surroundings (those travelling along mid-level roads) • Viewers whose interest is not specifically focused on landscape or scenic qualities (commuters, workers)
Negligible	• Very occasional or low level of users with passing interest in their surrounds (those travelling along minor roads or views from the air) • Travellers / visitors along unsealed roads offering views greater than 4km of the site

5.6 Magnitude of Landscape Change

The Magnitude of Change to the landscape character depends on the nature, scale, intensity, extent and duration of the impacts / change due to proposal. The magnitude of change also depends on the loss, change or addition of any feature to the existing landscape and is based on the character type that is most likely to be impacted by the project prior to the addition of any mitigation measures.

For similar reasons noted in **Section 5.5** regarding the rating of Receptor Sensitivity, the Magnitude of Change for each viewpoint is highly variable depending on the location and the proposed development and for the purposes of this VIA is described as being High, Medium, Low or Negligible as described in **Table 2**. Descriptions of Magnitude and Sensitivity are illustrative only and there is no defined boundary between levels of impacts.

Table 2. Magnitude of Change

Magnitude of Change	Description
High	Dominant Change • Major change in view at close distances, affecting substantial part of the view continuously visible for a long duration or obstructing a substantial part or important elements of the view • Overwhelming loss or additional features in the view such as the nature of view or character of landscape fundamentally changed • Views to key landscape features affected • Visual amenity of local residents or road users substantially diminished • Substantial change to the landscape due to loss of and or change to elements, features or characteristics of the landscape creating an overall worsening of landscape quality
Medium	Considerable Change • Clearly perceptible changes in views at intermediate distances resulting in either distinct new element in a significant part of the view or a more widely ranging, less concentrated change across a wider area • Significant loss or addition of features in the view, such that nature of view or character of landscape is altered • Noticeable contrast of any new features in the view such that the nature of the view or landscape character is changed • Noticeable contrast of any new features or changes compared to existing landscape • Views to key landscapes partially obstructed but views remain intact
Low	Noticeable Change • Minor memorable change to the landscape or views • Temporary or reversible impact • Landscape dominant element and built form / development well integrated within it • Little permanent change or no fundamental change to local landscape character
Negligible	Barely Perceptible Change • No memorable or rarely perceptible change to landscape character or key views

5.7 Impact of Significance on Landscape Character

The Impact Significance is evaluated according to two key criteria as noted in **Section 5.5** and **5.6** and combined in **Table 3** to determine the Effect Significance Rating. The rating is a means of comparing impacts on different receptors. Professional judgement and experience have been applied in order to identify the level of significance for each character type which has been assessed on its own merits. They include:

- The sensitivity of the receptor or existing landscape
- The magnitude of the change or impact that is likely to occur.

The process of assessment and the use of the ratings tables reflect typical outcomes for visual impacts including:

- Impacts on receptors that are particularly sensitive to change in views and visual amenity are more likely to be significant.
- Impacts that constitute a substantial change to the visual environment are likely to be more significant than the impacts that do not cause substantial change.

Table 3. Impact Significance Rating

Receptor Sensitivity	Magnitude of Change in Landscape				
	High (Dominant Change)	Medium (Considerable Change)	Low (Noticeable Change)	Negligible (Barely Perceptible Change)
High	High	Moderate-High	Moderate	Minor-Moderate
Medium	Moderate-High	High	Minor-Moderate	Minor
Low	Moderate	Minor-Moderate	Minor	Minor-Negligible
Negligible	Minor-Moderate	Minor	Minor-Negligible	Negligible

5.8 Visibility of The Modification Proposal

The overall visibility of the proposed development as shown in **Figure 5** demonstrates the locations around the proposed development where The Modification Proposal would be theoretically visible. The following assumptions can also be made based on the visibility shown in **Figure 5**.

During the site inspection of the site and local area, detailed photographic documentation was made of the landscape character and conditions in order to inform this report. There were a number of locations other than the listed viewpoints where photographs were taken to determine the degree of visibility of the site within the local area. These viewpoints although useful in determining the contextual character of the area did not provide clear and unencumbered views of the site and therefore were not used in the determination of potential visual impacts of the Modification Proposal on the surrounding environment.

Figure 7. Selected Visual Receptors and Direction of View

NOT TO SCALE

LEGEND

The Hexham LTTSF site

Key Public Receptor Points and direction of view

Proposed depot, warehouse and carpark

Proposed wagon stowage

5.9 Summary of Potential Impacts

The following sheets summarise the assessment of impacts on each of the identified visual receptor points. As outlined in **Section 5.4**, 4 key viewpoints were identified that represent where the site could be seen from public locations. Due to the distances from the site, presence of topographic and vegetated features, surrounding structures, the choice of viable views was limited. The following sheets describe and rate the sensitivity of each viewpoint, the nature and magnitude of impacts likely to occur and the resultant significance of impacts for each receptor.

Photos from each receptor are provided and photomontages prepared to show how The Modification Proposal will be perceived from that particular viewpoint. Mitigation measures have been included where appropriate.

The following assessments were undertaken for each public receptor point describing and rating the sensitivity of each receptor, the nature and magnitude of impacts likely to occur and the resultant significance of impacts for each receptor as outlined in **Sections 5.7**.

Photos from each receptor / viewpoint are provided to show the existing site conditions and direction of views paired with a ZTV map to demonstrate what the extent of visibility.

Similarly, the view shed maps for each receptor represent areas visible from each viewpoint evident as colour shading. Areas that are not shaded represent areas that are not visible due of the presence of obstructions (trees, landform, built form) within the line of sight.

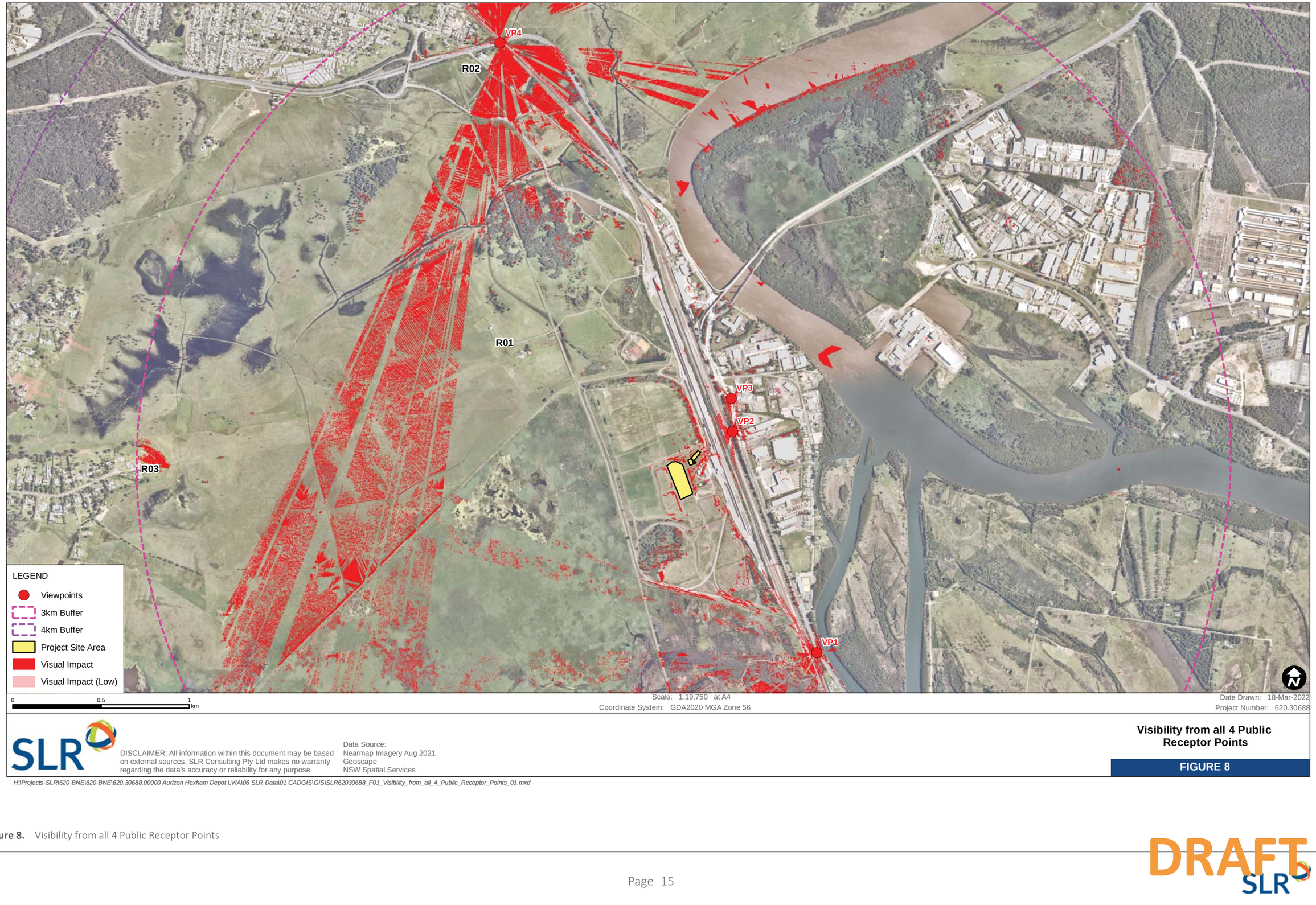


Figure 8. Visibility from all 4 Public Receptor Points

6 Summary of Assessment

6.1 Key Receptor VP1 – Summary of Visual Impact Assessment

Receptor - VP1	Location
Coordinate Location	Latitude 32° 50’ 31.296” S, Longitude 151° 41’ 24.012”E
View Description	View looking north-west adjacent to Pacific Highway
Distance from Site	Approx. 1,300m
Comments • To the west typical rural views of the area showing generally flat landscape visually contained by surrounding vegetation on the horizon line • To the east with tall vegetative screening adjacent to the Pacific Highway	

Receptor - VP1 Summary of Impact Assessment	
Receptor Sensitivity	Low
View Magnitude of Landscape Change	Low
Impact Significance	Minor
Mitigation Measures	• Retain any existing vegetative screening within the Hexham LTTSF Project Site.

Photo 1. Key receptor VP1 existing baseline conditions

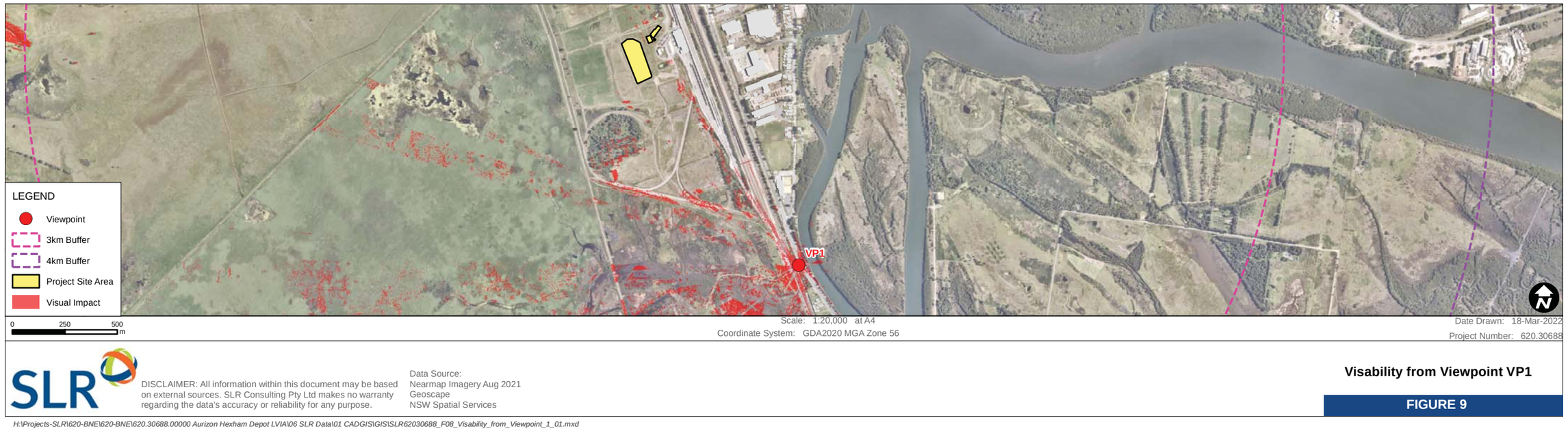


Figure 9. Visibility from Viewpoint VP1

6.2 Key Receptor VP2 – Summary of Visual Impact Assessment

Receptor - VP2	Location
Coordinate Location	Latitude 32° 49’ 50.496” S, Longitude 151° 46’ 6.306”E (Approx.)
View Description	View looking south-west into the railway corridors
Distance from Site	Approx. 220m
Comments • Typical views of infrastructure with vegetative screening adjacent to the Aurizon property boundary	

Receptor - VP2 Summary of Impact Assessment	
Receptor Sensitivity	Low
View Magnitude of Landscape Change	Negligible
Impact Significance	Minor - Negligible
Mitigation Measures	• Retain any existing vegetative screening within the Hexham LTTSF Project Site.

Photo 2. Key receptor VP2 existing baseline conditions

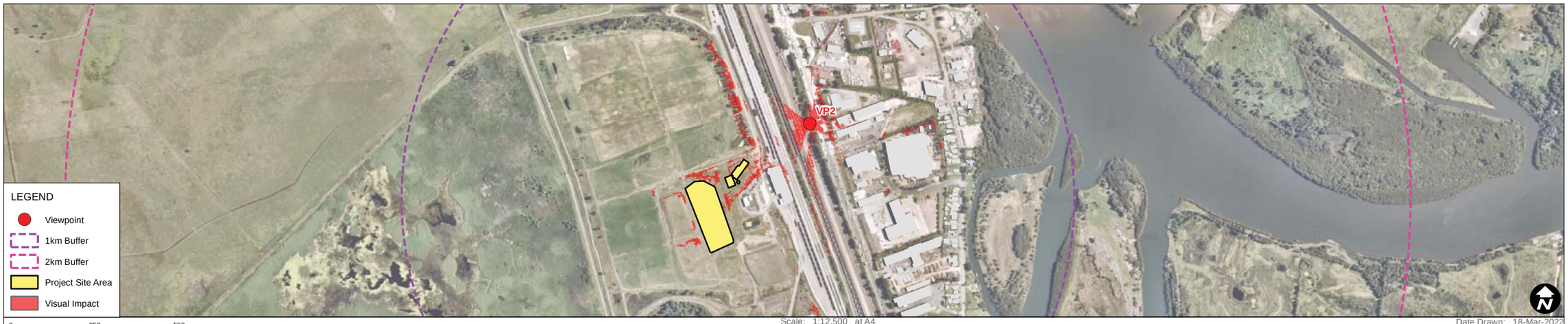


Figure 10. Visibility from Viewpoint VP2

6.3 Key Receptor VP3 – Summary of Visual Impact Assessment

Receptor - VP3	Location
Coordinate Location	Latitude 32° 49’ 43.494” S, Longitude 151° 41’ 5.994”E (Approx.)
View Description	View looking south - west adjacent to Pacific Highway
Distance from Site	Approx. 380m
Comments • Typical views of arterial road framed with vegetative screening adjacent to the railway corridor	

Receptor - VP3 Summary of Impact Assessment	
Receptor Sensitivity	Negligible
View Magnitude of Landscape Change	Negligible
Impact Significance	Negligible
Mitigation Measures	• Retain any existing vegetative screening within the Hexham LTTSF Project Site.

Photo 3. Key receptor VP3 existing baseline conditions

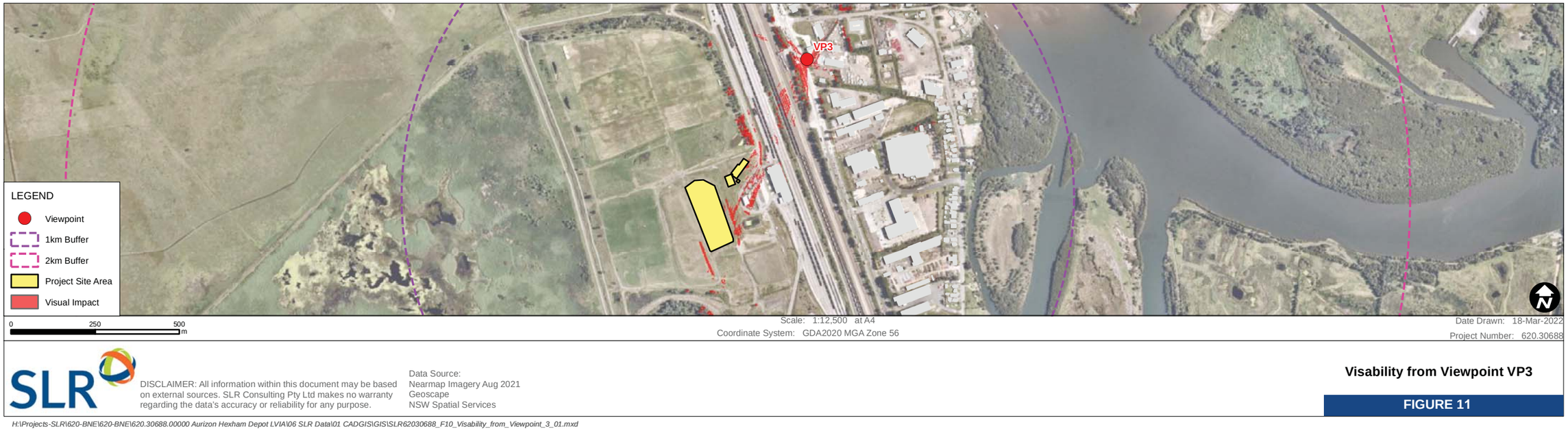


Figure 11. Visibility from Viewpoint VP3

6.4 Key Receptor VP4 – Summary of Visual Impact Assessment

Receptor - VP4	Location
Coordinate Location	Latitude 32° 48’ 38.706” S, Longitude 151° 40’ 16.446”E (Approx.)
View Description	Elevated view from Bridge at Taro on New England Highway looking east over Hexham LTTSF Project Site next the Great Northern Railway (GNR)
Distance from Site	Approx. 2,600m
Comments • Typical views over Hexham LTTSF Project Site and Hunter Wetlands National Park (Hexham Swamp Nature Reserve) in the west.	

Receptor - VP4 Summary of Impact Assessment	
Receptor Sensitivity	Low
View Magnitude of Landscape Change	Low
Impact Significance	Minor
Mitigation Measures	• Retain any existing vegetative screening within the Hexham LTTSF Project Site.

Photo 4. Key receptor VP4 existing baseline conditions

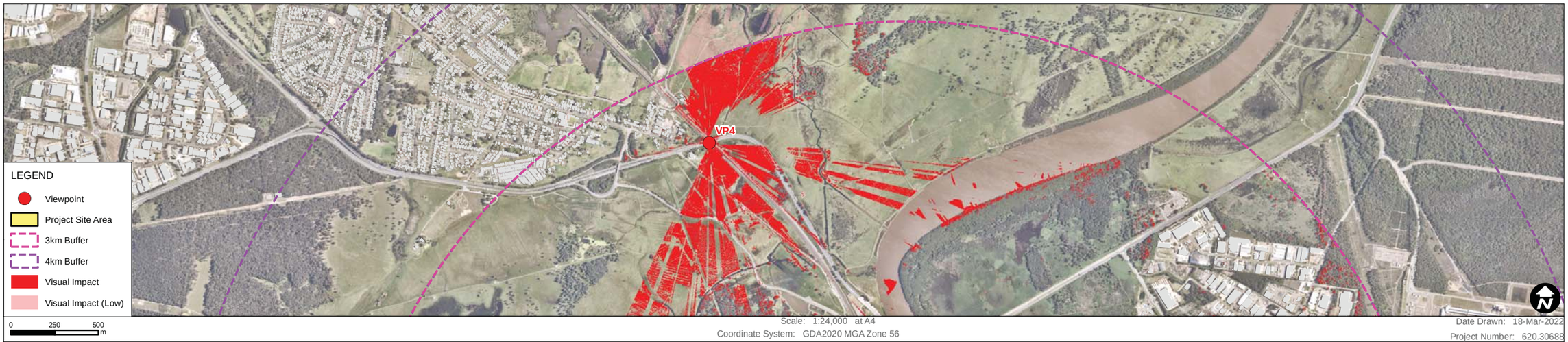


Figure 12. Visibility from Viewpoint VP4

7. SUMMARY OF ASSESSMENT

7.1 Summary of Assessment

The visual environment for the subject site and surrounding area is characterised by open, flat rural land with transport infrastructure and light industry to the east. Whilst the subject site has been cleared of vegetation, the local semi-rural character of the area is evident and reinforced by the surrounding land uses and vegetation to the north, south and west of it.

Although the site location is relatively close to the urban edge of Hexham, views of the site are typically not visible from major roads and the majority of surrounding urban and rural areas. This is due to vegetation and the Great Northern Railway Corridor that screens the site from major viewpoints.

Visibility from the local roads and streets close to the site is generally low due to the flat nature of the land and surrounding screening vegetation. However from viewpoints along the limited number of roads and residential dwellings adjoining the site, visibility is higher.

Views from major roads and from urban areas within Hexham are very limited due to the distance from these viewpoints and the several visual obstructions. Given this limited visibility of the site, the visual impacts of the Modification Proposal on the landscape and visual character is considered to be limited.

The Modification Proposal is considered to have an overall Effect Significance of **Minor.**

Table 4. Summary of Visual Impact Ratings for each Receptor

Receptor	Receptor Sensitivity	Magnitude of Change	Effect Significance
VP1	Low	Low	Minor
VP2	Low	Negligible	Minor - Negligible
VP3	Negligible	Negligible	Negligible
VP4	Low	Low	Minor

8. PRIVATE RESIDENCES

8.1 Summary of Assessment

There are two private residences that are located within a 3km radius of The Site. A third private residence is located to the west of the site however, it is beyond the 3 km buffer. The following maps illustrate the visual exposure of the residence to the site at baseline development and at 10 year establishment. On review it becomes apparent that the residences do have views of the development however these impact of the development on the views does not differ in comparison. Overall the magnitude of change is negligible considering the existing extent of similar structures that are already located in the vicinity.

As indicated in the visibility results, existing vegetation present on site mitigates the visual impact of the Modification Proposal.

The following map demonstrates the level of visual change is **Negligible**.

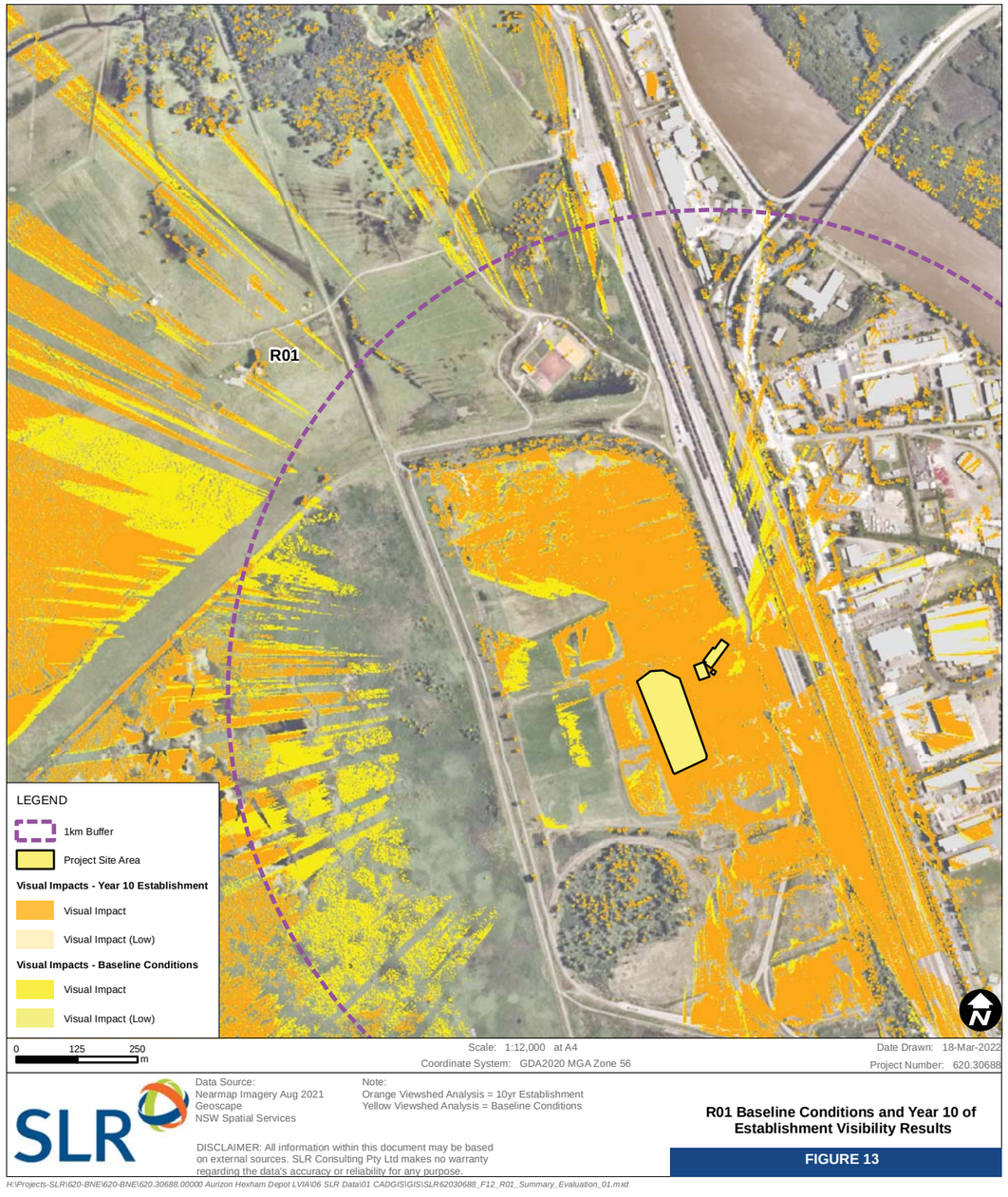


Figure 13. R01 Baseline conditions and year 10 of establishment visibility results

8.2 R01 Summary of Assessment

R01 is located at 30 Woodlands Close, Hexham. The private residence is approx 1.2km distance from The Project Site. Access to the site was not possible. As indicated in **Figure 12** visibility results indicate that the The Modification Proposal would be seen from R01. This would be the case at baseline conditions (represented in yellow) and at year 10 of establishment (indicated in orange).

Visual mitigation to R01 is achieved with the existing vegetative screen planting to the north of the Modification Proposal.

8.3 R02 Summary of Assessment

R02 is located at 1 Woodlands Close, Hexham. The private residence is approx 2.6km distance from The Project Site. As indicated in **Figure 13** visibility results indicate that the The Modification Proposal would not be seen from R02. This is evident by the lack of visibility results within proximity to R02.

Visual mitigation to R02 is achieved with the existing vegetation located to the north of the Modification Proposal.

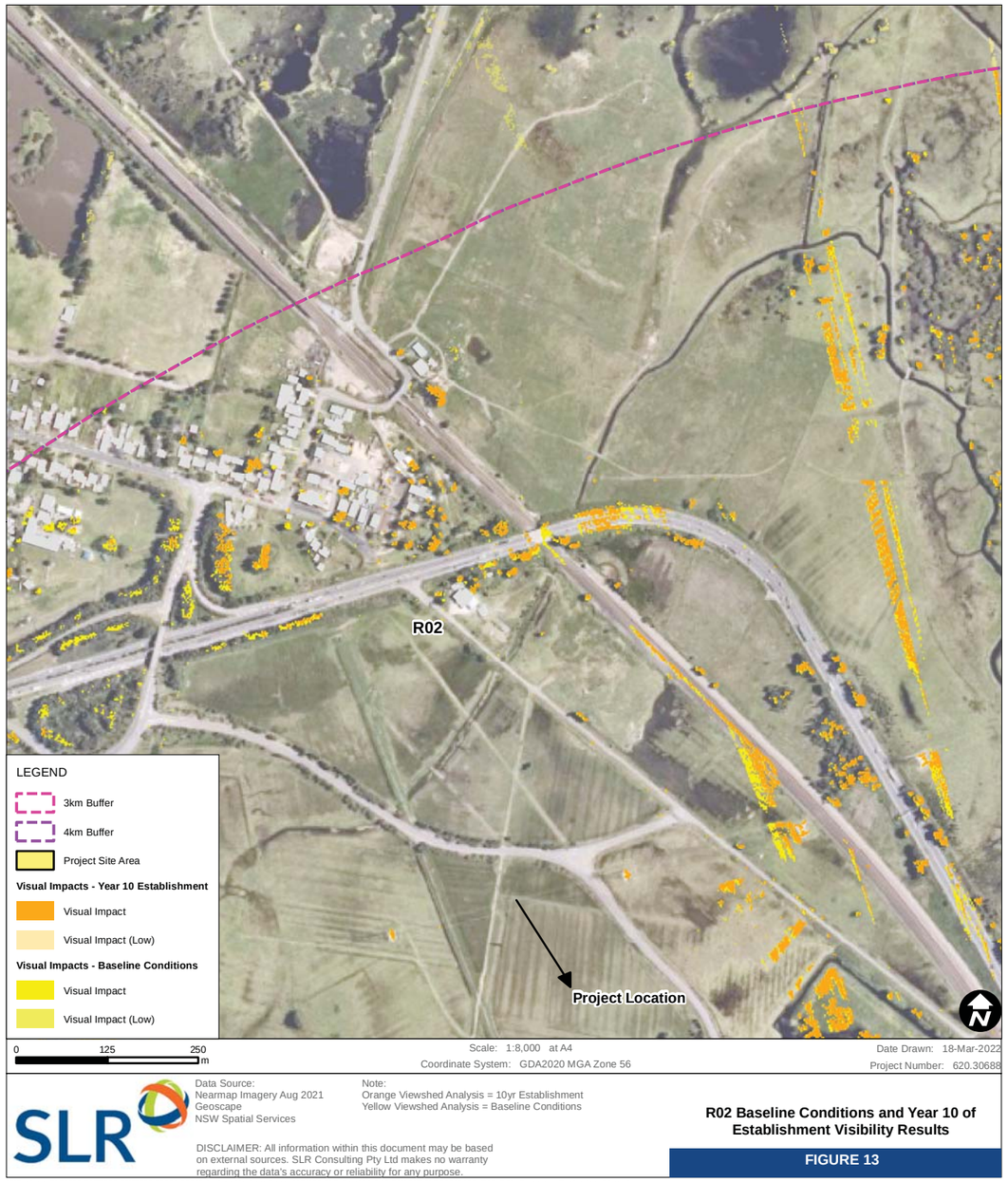


Figure 14. R02 Baseline conditions and year 10 of establishment visibility results

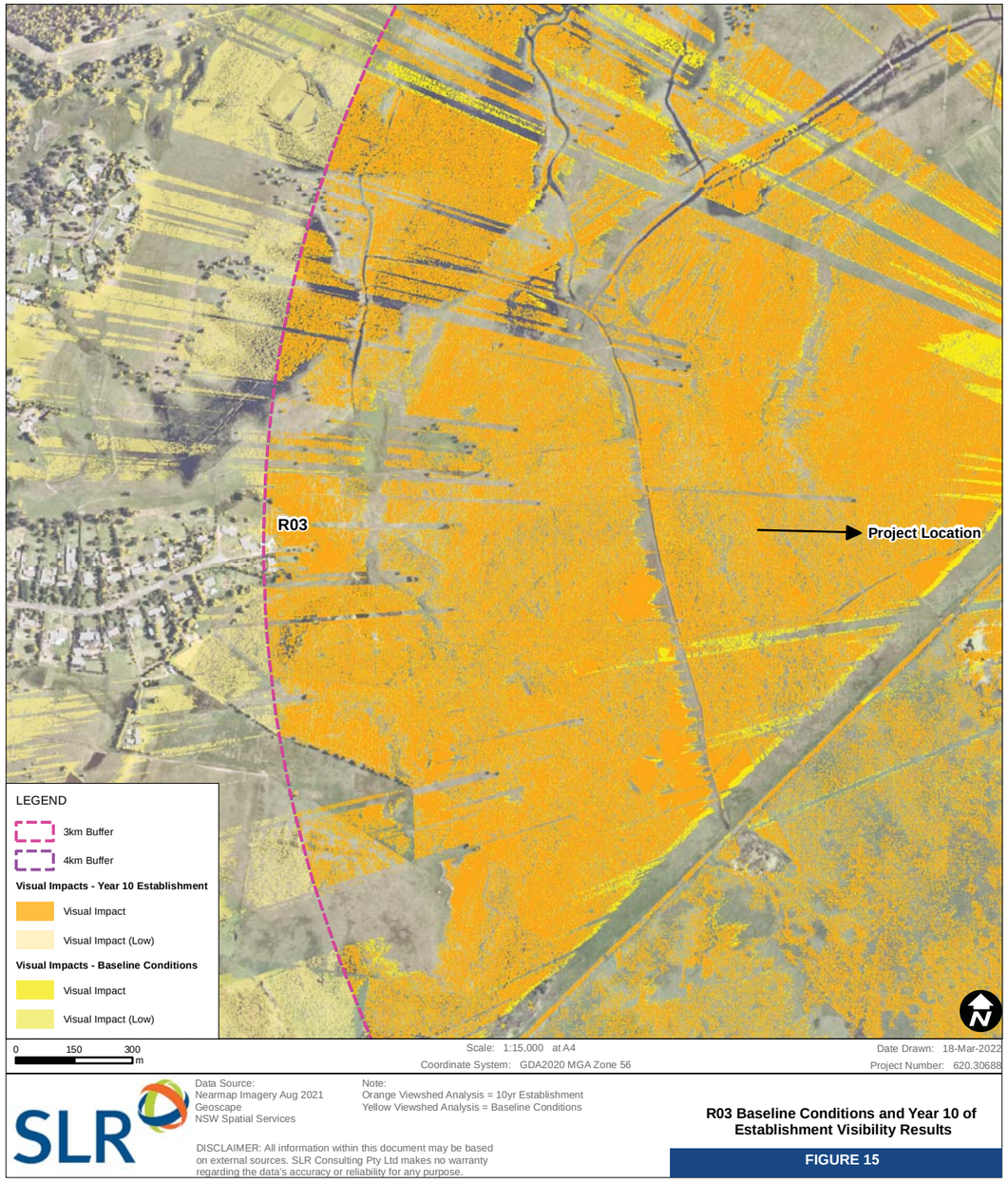


Figure 15. R03 Baseline and year 10 of establishment visibility results

8.4 R03 Summary of Assessment

R03 is located at 31 Forsythe Parade, Black Hill. The private residence is approx 3km distance from The Project Site. As indicated in **Figure 14** visibility results indicate that the The Modification Proposal would have low visibility when seen from R03. This would be the case at baseline conditions (represented in yellow) and at year 10 of establishment (indicated in orange).

Due to the distance R03 is from the Modification Proposal, no visual mitigation is proposed.

9. MITIGATION MEASURES

9.1 Mitigation Measures

The Hexham LTTSF Project (MP 07_0117 – now SSI 6090 Mod 1) is located in an area that has well established vegetative screening. In areas that vegetation is not occuring, sensitive receivers are not situated close to the Modification Proposal and are unlikley to be impacted. The mitigation measures proposed for the Modification Proposal are:

- To retain all existing vegetation within the Hexham LTTSF Project Site.

10. REFERENCES

GHD 2021, Operations Depot – Hexham, General Arrangement Plan, Aurizon.

GHD 2021, Operations Depot – Hexham, Cut and Fill Plan, Aurizon.

GHD 2021, Aurizon / Hexham Operation Depot – Architectural Package Issue A.

GHD 2022, Aurizon / Hexham Operation Depot – Architectural Package Issue B.

Jacobs 2019, Hexham Train Support Facility – Ecological Monitoring Program, Operation Monitoring – Closing Report, Aurizon.

Jacobs 2021, Hexham Long Term Support Facility – Biodiversity Development Assessment Report Waiver Request, Aurizon.

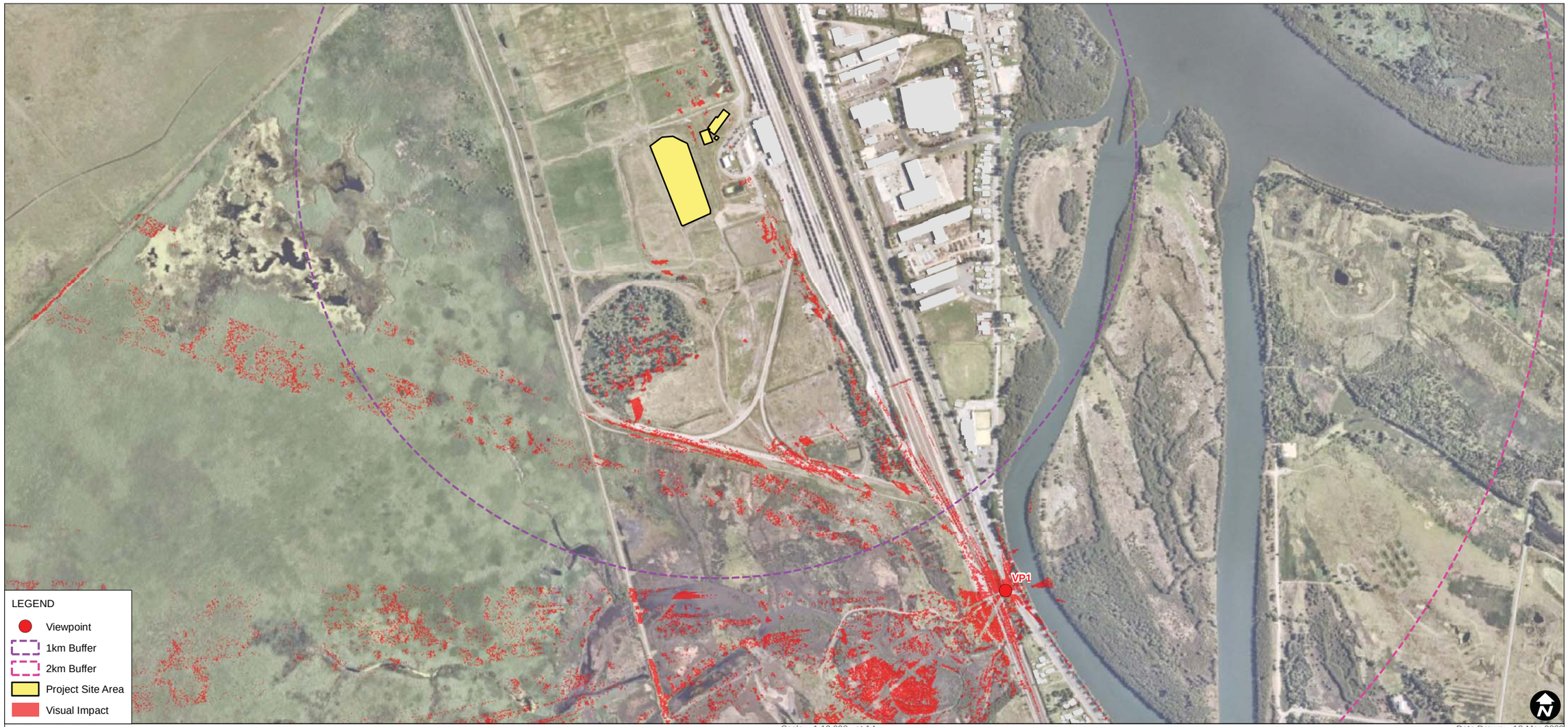
Meraki Green Landscape Architecture, 2021 Landscape Plan Issue B – Proposed Development, Aurizon / Hexham Operation Depot, Hexham.

NSW Government 2021 Planning for freight rail connection between Fassifern and Hexham, Consultation on a recommended corridor for the Lower Hunter Freight Corridor.

WSP 2021, Lower Hunter Freight Corridor – Draft Strategic Environmental Assessment, Transport for NSW.

11. APPENDICES

APPENDIX A



Scale: 1:10,000 at A4
Coordinate System: GDA2020 MGA Zone 56

Date Drawn: 18-Mar-2022
Project Number: 620.30688

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.

Data Source:
Nearmap Imagery Aug 2021
Geoscape
NSW Spatial Services

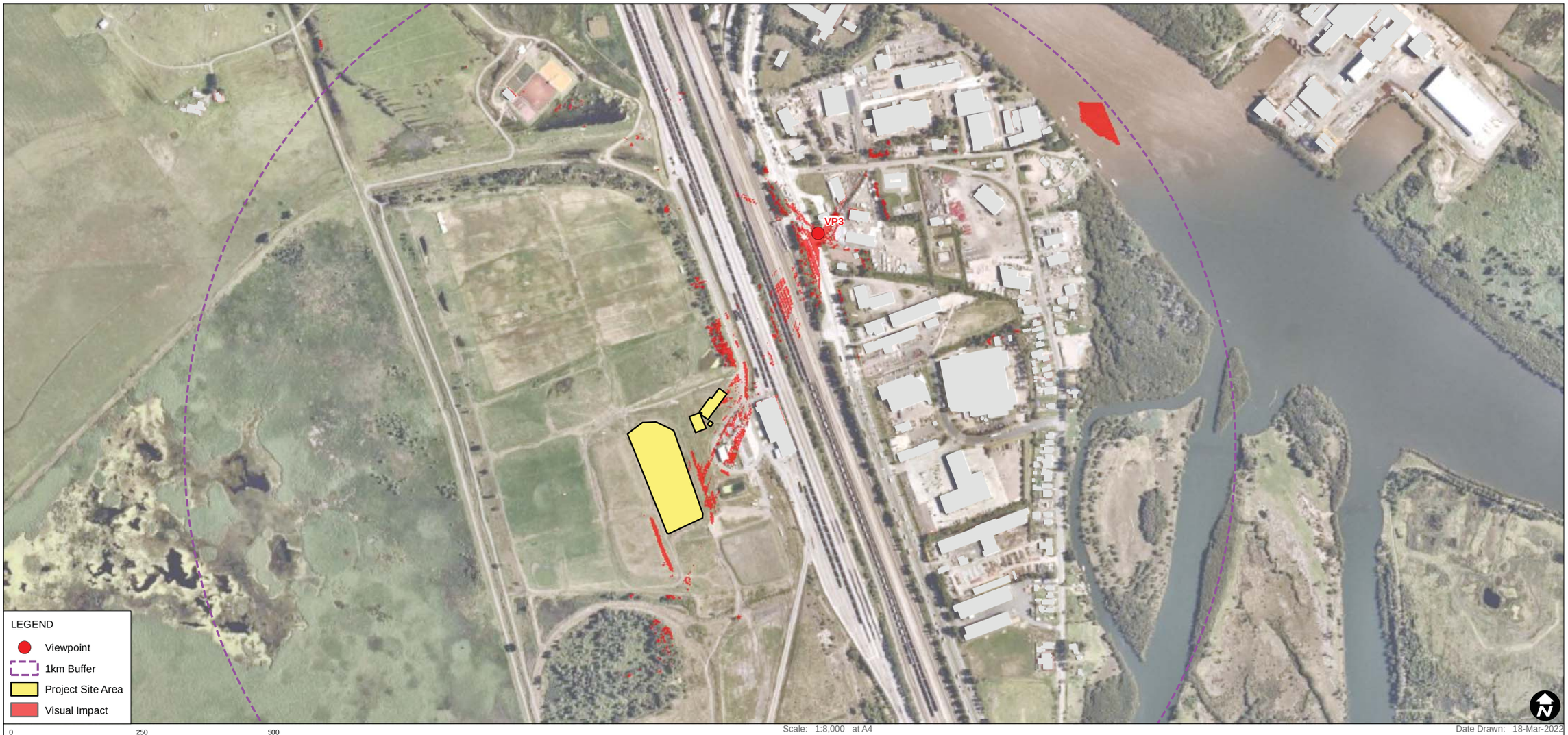
Appendix A - Visability from Viewpoint 1

APPENDIX A

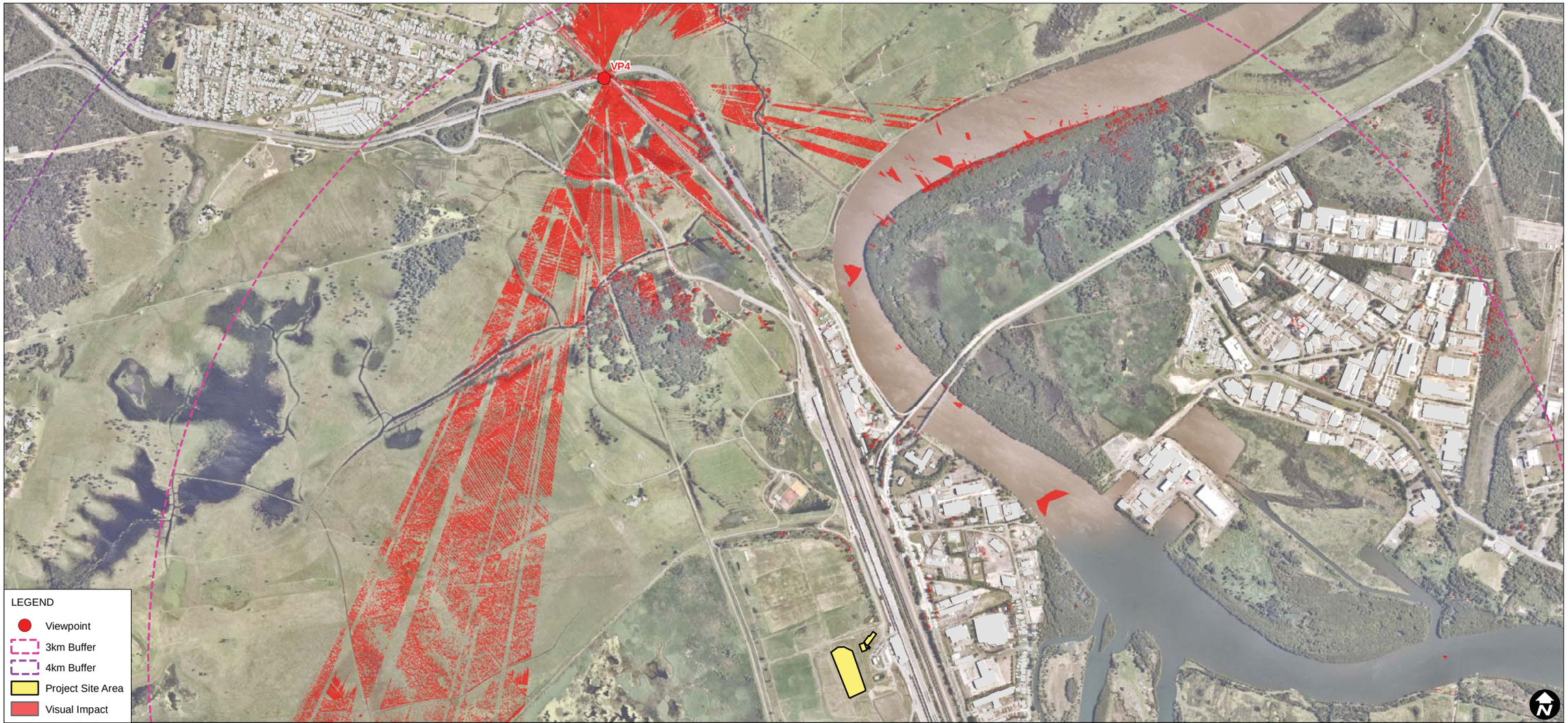
H:\Projects-SLR\620-BNE\620-BNE\620.30688.00000 Aurizon Hexham Depot LVIA\06 SLR Data\01 CADGIS\GIS\SLR62030688_F02_Visability_from_Viewpoint_1_01.mxd

APPENDIX B

APPENDIX C



APPENDIX C



ASIA PACIFIC OFFICES

BRISBANE

Level 16, 175 Eagle Street

Brisbane, QLD 4000

Australia

T: +61 7 3858 4800

F: +61 7 3858 4801

CANBERRA

GPO 410

Canberra ACT 2600

Australia

T: +61 2 6287 0800

F: +61 2 9427 8200

DARWIN

Unit 5, 21 Parap Road

Parap NT 0820

Australia

T: +61 8 8998 0100

F: +61 8 9370 0101

GOLD COAST

Level 2, 194 Varsity Parade

Varsity Lakes QLD 4227

Australia

M: +61 438 763 516

MACKAY

21 River Street

Mackay QLD 4740

Australia

T: +61 7 3181 3300

MELBOURNE

Level 11, 176 Wellington Parade

East Melbourne VIC 3002

Australia

T: +61 3 9249 9400

F: +61 3 9249 9499

NEWCASTLE

10 Kings Road

New Lambton NSW 2305

Australia

T: +61 2 4037 3200

F: +61 2 4037 3201

PERTH

Ground Floor, 503 Murray Street

Perth WA 6000

Australia

T: +61 8 9422 5900

F: +61 8 9422 5901

TOWNSVILLE SOUTH

12 Cannan Street

South Townsville QLD 4810

Australia

T: +61 7 4722 8000

F: +61 7 4722 8001

WOLLONGONG

Level 1, The Central Building

UoW Innovation Campus

North Wollongong NSW 2500

Australia

T: +61 2 4249 1000

AUCKLAND

Level 4, 12 O'Connell Street

Auckland 1010

New Zealand

T: 0800 757 695

NELSON

6/A Cambridge Street

Richmond, Nelson 7020

New Zealand

T: +64 274 898 628

www.slrconsulting.com

DRAFT