



Transport for NSW
TAP 3 - Como Station
Landscape and Visual Impact Assessment

March 2019

Table of contents

Terminology and Abbreviations.....	iv
1. Introduction	1
1.1 Purpose of this report.....	1
1.2 Overview of the Proposal.....	1
1.3 Scope.....	2
1.4 Limitations.....	2
2. Methodology.....	3
2.1 Standards and guidance.....	3
2.2 Landscape and visual existing environment.....	3
2.3 Impact Assessment.....	5
2.4 Mitigation measures.....	9
2.5 Assumptions and Limitations	9
3. Proposal Description	10
3.1 The Proposal site.....	10
3.2 The Proposal.....	12
4. Existing Environment	16
4.1 Study Area	16
4.2 Legislation and Policy	16
4.3 Landscape and visual existing environment.....	22
4.4 Landscape Character Types.....	29
4.5 Sensitive visual receivers and viewpoints	36
5. Impact Assessment.....	39
5.1 Landscape impact assessment	39
5.2 Visual impact assessment	41
5.3 Summary of impacts	51
5.4 Landscape and visual impacts during construction	51
5.5 General response to key legislation and policy objectives	52
6. Mitigation Measures	54
6.1 Mitigation recommendations.....	54
7. Conclusion	56

Table index

Table 1 Terminology Table.....	iv
Table 2 Abbreviations Table.....	iv
Table 3 Sensitivity criteria (landscape)	6

Table 4 Magnitude of change criteria (landscape)	6
Table 5 Sensitivity criteria (visual)	7
Table 6 Magnitude of change criteria (visual)	8
Table 7 Significance of impact matrix	8
Table 8 Viewpoint locations.....	37
Table 9 LCT1 impact assessment.....	39
Table 10 LCT3 impact assessment.....	40
Table 11 Summary of landscape impacts	51
Table 12 Summary of visual impacts	51

Figure index

Figure 1 Proposal location plan.....	11
Figure 2 Proposal components plan	14
Figure 3 Proposal components elevations	15
Figure 4 Land use and heritage	21
Figure 5 Topography, hydrology and vegetation.....	24
Figure 6 Visual analysis (station precinct).....	27
Figure 7 Zone of Theoretical Visibility	28
Figure 8 Landscape character types	30
Figure 9 Viewpoint locations	38

Photograph index

Photograph 1 Fencing and level difference between residential properties on the eastern side of Railway Road opposite the station.....	26
Photograph 2 Water view to the Georges River from the Como Parade footpath above the commuter carpark	26
Photograph 3 Vegetation on rocky slope between rail line and commuter car park.....	26
Photograph 4 Extent of canopy cover viewed from a distance across the Carina Bay valley	26
Photograph 5 Como Parade residential street frontage, north of Como Station	32
Photograph 6 Residential property on Como Parade, south of Warraba Street.....	32
Photograph 7 Residential properties on Riverview Road	32
Photograph 8 Residential properties on Warraba Street	32
Photograph 9 Green Point Observatory	33
Photograph 10 Como School of Arts.....	33

Photograph 11 Rail corridor and Railway Road interface	34
Photograph 12 View to the Georges River from the commuter carpark	34
Photograph 13 Off-street commuter carpark.....	34
Photograph 14 Rock cutting to pedestrian entry ramp.....	34
Photograph 15 Characteristic Angophora species near western station entry	34
Photograph 16 Characteristic Fig tree near western station entry	34
Photograph 17 Como Station looking north, showing dense vegetation to edge	35
Photograph 18 Mangrove area at Carina Bay Reserve foreshore.....	36
Photograph 19 Carina Bay Reserve clearing with surrounding dense vegetation.....	36

Appendices

Appendix A – Photomontages

Terminology and Abbreviations

Table 1 Terminology Table

Terminology	Definition
Angophora tree	<i>Angophora costata</i> or Smooth-barked Apple
Fig tree	<i>Ficus hilli</i> or Hill's Weeping Fig
Impact	The effect of a proposal, which can be adverse or beneficial, when measured against an existing condition.
Landscape character	The combined quality of built, natural and cultural aspects that make up an area and provide its unique sense of place.
Landscape Character Type	An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately adjacent.
Magnitude	The measurement of the scale, form and character of a development proposal when compared to the existing conditions. In the case of visual assessment, this also relates to how far the proposal is from the viewer. Combined with sensitivity, magnitude provides a measurement of impact.
Proposal site	The area that would be directly impacted by the Proposal.
Sensitivity	The sensitivity of a Landscape Character Type (LCT) or visual receiver and its capacity to absorb change. In the case of visual impact, this also relates to the type of viewer. Combined with magnitude, sensitivity provides a measurement of impact.
Study area	Consists of land in the vicinity of, and including, the Proposal site. The study area is a wider area surrounding the proposal site as defined in this assessment, including land that has the potential to be indirectly impacted by the Proposal.
View	The sight or prospect of a landscape or scene.
Visibility	The state or fact of being visible or seen.

Table 2 Abbreviations Table

Abbreviations	Definition
AHD	Australian Height Datum
CCTV	Closed-circuit Television
DCP	Development Control Plan
DDA	<i>Disability Discrimination Act 1992</i>
FAT	Family Accessible Toilet
LCT	Landscape Character Type
LVIA	Landscape and Visual Impact Assessment
REF	Review of Environmental Factors
SSLEP	<i>Sutherland Shire Local Environmental Plan 2015</i>
TAP	Transport Access Program
TGSI	Tactile ground surface indicator
TfNSW	Transport for New South Wales
ZTV	Zone of Theoretical Visibility

1. Introduction

1.1 Purpose of this report

This Landscape and Visual Impact Assessment (LVIA) has been prepared by GHD on behalf of Transport for NSW (TfNSW). The LVIA investigates the impacts related to the proposed accessibility, security, and technology upgrades associated with TfNSW's Transport Access Program (TAP) at Como Station (the Proposal).

The purpose of this report is to assist in the determination of the Proposal by undertaking a landscape and visual impact assessment as part of the overall Review of Environmental Factors, with a view to making recommendations for managing identified landscape and visual issues that may arise from the Proposal.

The report comprises the following:

- an understanding of the landscape and visual attributes of the study area
- identification of sensitivities in relation to landscape and visual change associated with the Proposal
- assessment of potential landscape and visual impacts associated with the Proposal
- provision of recommendations for managing identified landscape and visual impacts arising from the Proposal.

1.2 Overview of the Proposal

The NSW Government is committed to facilitating and encouraging the use of public transport, such as trains, by upgrading stations to make them more accessible, and improving interchanges around stations with other modes of transport such as bicycles, buses and cars.

Como Station does not currently meet key requirements of the *Disability Standards for Accessible Public Transport* (DSAPT) or the Commonwealth *Disability Discrimination Act 1992* (DDA).

The non-compliant access points and stairs to the Como Station concourse and platforms do not facilitate access for people with a disability, reduced mobility, parents/carers with prams or customers with luggage. There are no lift facilities, and the amenities and tactile surfacing to stairs, platforms and interchange facilities are inadequate.

The Proposal would involve upgrade works to Como Station, the commuter carpark and surrounding footpaths. The station is located approximately 21 kilometres from Central Station in the suburb of Como and is serviced by the Illawarra line. Como Station consists of an island platform where the westbound side of the station (Platform 1) provides services to Bondi Junction and eastbound (Platform 2) has services to Cronulla and Waterfall. The Proposal is located within the Sutherland Shire local government area. Como Station is situated between Como Parade to the west and Railway Road to the east, and the adjoining railway stations are Oatley Station to the north and Jannali Station to the south.

The key features of the Proposal are summarised as follows:

- incorporate a new paved area that connects new lift lobby with the underpass on Como Parade
- installation of a new lift and stairs at the commuter carpark off Como Parade to connect to the existing underpass

- removal of the existing non-compliant ramp off Como Parade and make good to the area
- installation of new lift from the underpass to the station island platform
- relocation of the existing non-compliant DDA parking spaces to the commuter car park close to the lift and make them compliant to current standards
- extension of ramp on eastern side (Railway Parade) to provide DDA compliant pedestrian route to the underpass
- new handrails, installation of tactile ground surface indicators (TGSIs) and nosing to the existing stairs
- removal of vegetation and trees as minimally required to accommodate new infrastructure
- modification of existing station building layout to allow for new amenities
- housing of the digital communications equipment in a compliant enclosure within the existing station building
- upgrade to the existing toilets to accommodate one unisex Family Accessible toilet and Ambulant male and female toilets
- ancillary works including adjustments to lighting, opal card readers, new anti-throw screens, handrails, low voltage electrical upgrades, minor drainage works, landscaping, improvements to station communications systems including closed circuit TV (CCTV) cameras, hearing loops, wayfinding signage, emergency help points and installation of TGSIs

1.3 Scope

This LVIA assesses the landscape character and visual impact of the proposed upgrade of Como Station. This includes impacts of both construction and operational stages of the Proposal.

1.4 Limitations

This report: has been prepared by GHD for Transport for NSW and may only be used and relied on by Transport for NSW for the purpose agreed between GHD and Transport for NSW as set out in this report.

GHD otherwise disclaims responsibility to any person other than Transport for NSW arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

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2. Methodology

2.1 Standards and guidance

This landscape and visual impact assessment has been prepared in accordance with the following:

- *Environmental Impact Assessment Guidance Note - Guidelines for landscape character and visual impact assessment (EIA-N04)*, Version 2 (Roads and Maritime, 2013)
- *Guidelines for Landscape and Visual Impact Assessment*, 3rd Edition (Landscape Institute and Institute of Environmental Management & Assessment, 2013).

2.2 Landscape and visual existing environment

2.2.1 Review of legislation and policy

A review of key planning designations, policies and guidance was undertaken in relation to landscape and visual amenity within the LVIA study area. The emphasis of the review was to identify elements outlined within legislation, policy and planning documents relevant to landscape and visual character and identity of the study area.

2.2.2 Desktop analysis of the Proposal, landscape and visual resources

Existing data was gathered and reviewed, including:

- Proposal design information and site photographs
- topography, land use, and vegetation maps
- Google Earth and Google Street View.

Using this data, a preliminary assessment of the landscape and visual environment was undertaken to inform the site inspection.

2.2.3 Zone of Theoretical Visibility assessment

Zone of Theoretical Visibility (ZTV) mapping is a computer-generated analysis which identifies land from which it is theoretically possible to view the components of the Proposal. This has been used primarily to guide the area of site analysis and representative viewpoint selection.

ESRI ArcGIS software was used to model the ZTV of the Proposal. A digital elevation model was produced using one metre contour intervals at a resolution of 25 metres. The ZTV was mapped using the following parameters:

- a viewing height of 1.7 metres, which is the average within the typical viewing level range of an adult
- the indicative levels for the top of proposed lift shafts.

The GIS software then digitally determines the likely extent over which the feature would be visible or not visible. In interpreting the ZTV, the following issues must be considered:

- it only takes into account the landform and does not include land cover factors such as the presence of buildings and trees, therefore it represents the worst-case scenario of potential visual impact
- it does not take into account the effect of distance. The greater the distance from the Proposal, the lower the impact, as the development will take up a smaller portion of the view, and atmospheric conditions may reduce the visual prominence of the Proposal

- the ZTV is only accurate to the resolution of the elevation model.

2.2.4 Site Inspection

A site inspection was undertaken by a Landscape Architect on 17th December 2018. The purpose of the inspection was to:

- inspect the site and appreciate views to / from sensitive visual receivers
- inspect publically accessible locations identified in the desktop study as likely to provide views of the Proposal, including roads, footpaths, station entry points, and platforms
- identify sensitive visual receiver locations
- assess the landscape character of the study area and identify landscape sensitivities
- undertake site photography suitable for photomontage preparation

The coordinates of each viewpoint were recorded during the site inspection.

2.2.5 Definition of existing landscape and visual environment

A landscape existing conditions assessment was undertaken to determine the existing natural and cultural features within the study area. This includes determination of key landscape and spatial elements, features and values. Key aspects considered include:

- land use and built form
- landform, topography and hydrology
- vegetation
- historical features.

A visual existing conditions assessment was also undertaken to establish the key views, viewsheds, and other visual features within the study area.

2.2.6 Landscape character types

Landscape character considers common landscape types defined by typical features and characteristics identified during the desktop assessment and site inspection. Defining landscape character types identifies areas sharing the same homogenous environmental or cultural qualities or pattern such as topography, vegetation, hydrology, land use and settlement, built form scale and character, cultural and recreational characteristics.

This approach has been used to establish the existing landscape character around the Proposal site and to provide a framework for measuring the impact of the Proposal. This assists in:

- defining landscape elements that contribute to defining character
- defining landscape character attributes
- identifying landscape value.

The assessment of the existing environment also considers factors which have influenced landscape change in the past and those that are likely to do so in the future.

2.2.7 Viewpoint selection

Assessment of visual impacts deals with the effects of change and development on the views available to people and their visual amenity. It assesses how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views as a result of the change or loss of existing elements of the landscape and/or the introduction of new elements.

Visual receivers have been considered in terms of the views they are likely to obtain from within the study area including consideration of any key vantage points, such as lookouts, where there is particular interest in the view. Visual receivers are identified based on:

- proximity of the receivers to the Proposal, as the most affected visual receivers are anticipated to be located closest to the Proposal, unless located at an elevated vantage point
- type of receiver, as different viewer types would have different perceptions of the change.

Based on the analysis of the existing landscape and visual environment, sensitive visual receivers were identified and viewpoint locations selected as representative locations for assessment.

2.3 Impact Assessment

2.3.1 Landscape effects

Landscape character refers to a distinct and recognisable pattern of elements that occur consistently in a particular type of landscape. Particular combinations of geology, landform, soils, vegetation, land use and human settlement create character, which makes each part of the landscape distinct and gives each its particular sense of place.

Assessment of landscape effects deals with the effect of change and development on landscape as a resource. The concern is with how the Proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.

The consideration of potential impacts on landscape character is determined based on the sensitivity of the existing landscape to change and the magnitude of change that is likely to occur. The sensitivity of a landscape is judged on the extent to which it can accept change of a particular type and scale without adverse effects on existing landscape character. The level of sensitivity is determined on the basis of:

- the landscape's inherent values and any specific values that may apply such as landscape planning designations
- the landscape's ability to absorb changes associated with the Proposal.

The magnitude of change to landscape character depends on the nature, scale and duration of the change expected to occur. The magnitude of change also depends on the loss, change or addition of any feature to the existing landscape. It is based on that part of the landscape character type which is likely to be impacted to the greatest extent by the Proposal.

The sensitivity and magnitude of landscape effects address the following specific criteria:

- sensitivity of landscape to proposed change, based on the susceptibility to change, and the value of landscape (refer Table 3)
- magnitude of landscape effect, based on the size or scale of change, the geographical extent of effects, and the duration and reversibility of effects (refer Table 4).

A judgement is made on the overall level of significance of the landscape effect in relation to the existing conditions (refer Section 2.3.3).

Table 3 Sensitivity criteria (landscape)

Rating	Criteria
High	<p>Landscape character elements in good or above average condition and/or that make a strong positive contribution to the landscape character. May include nationally important features.</p> <p>The type of development proposed could have a detrimental effect on the landscape character, condition or value. Mitigation measures are unlikely to reduce the impacts of the change.</p>
Moderate	<p>Landscape character elements in reasonably good condition and/or that make an average contribution to the local character, which may include locally important features.</p> <p>Any change caused by the proposed development would be unlikely to have a significant adverse effect on the landscape character, condition or value that could not be mitigated.</p>
Low	<p>Landscape character elements in average condition and/or that are not particularly distinctive local features.</p> <p>Development of this type is unlikely to have an adverse effect on the landscape character, condition or value. Mitigation measures would be effective in neutralising adverse effects.</p>
Negligible	<p>Elements in below average condition and/or that are not distinctive local features.</p> <p>Development of this type is very unlikely to have an adverse effect on the urban landscape character, condition or value. Mitigation measures would be effective in neutralising adverse effects and/or improve the urban landscape character.</p>

Table 4 Magnitude of change criteria (landscape)

Rating	Criteria
High	<p>A substantial/obvious change to the landscape character due to total loss of, or change to, elements, features or characteristics of the landscape. Would cause a landscape to be permanently changed and its quality diminished.</p>
Moderate	<p>Discernible changes in the landscape character due to partial loss of, or change to elements, features or characteristics of the landscape, however has potential to be partly mitigated. The change would be out of scale with the landscape character, and at odds with the local pattern and landform and would leave an adverse impact on the landscape character.</p>
Low	<p>Minor loss or alteration to one or more key landscape character elements, features or characteristics, or the introduction of components that may be new but may not be uncharacteristic within the existing landscape character.</p>
Negligible	<p>Almost imperceptible or no change in the landscape character as there is little or no loss of/or change to the elements, features or characteristics of the landscape.</p>

2.3.2 Visual effects

The evaluation of potential impacts on visual amenity is based on the sensitivity of the viewpoint (and the visual receiver it represents) to change, and the magnitude of change that is likely to occur.

The sensitivity of each viewpoint is considered to be dependent on the:

- importance of the view, its existing scenic qualities and the presence of other existing man-made elements in the view
- type of visual receiver and their likely interest in the view.

The magnitude of change to views and visual amenity depends on the nature, scale and duration of the change that is expected to occur. The magnitude of a change also depends on the loss, change or addition of any feature in the field of view of the receiver including an assessment of the level to which the change contrasts with the existing view or expected view of the landscape. This includes the degree of any change to the backdrop to, or outlook from a viewpoint.

The assessment considers the likely impacts of the Proposal. The level of effects on a view depends on factors such as the extent of visibility, degree of obstruction of existing features, degree of contrast with the existing view, angle of view, duration of view and distance from the Proposal.

Steps undertaken to assess visual effects include:

- identify and map viewpoint locations
- undertake assessment of visual effects, comprising:
 - sensitivity of visual receivers to proposed change, based on: susceptibility of visual receivers to change, and value attached to views (refer Table 5)
 - magnitude of visual effect, based on: size or scale of change; geographical extent of effects, and duration and reversibility of effects (refer Table 6).

An assessment is undertaken of the overall level of significance of the visual effects in relation to the existing view (refer Section 2.3.3).

Table 5 Sensitivity criteria (visual)

Rating	Criteria
High	Occupiers of residential properties, at home or going to or from, with long viewing periods, within close proximity to the proposed development; Communities that place value upon the urban landscape and enjoyment of views of their setting.
Moderate	Outdoor workers who have a key focus on their work who may also have intermittent views of the study area; Viewers at schools, or similar, when outdoor play and recreation areas are located within close proximity but viewing periods are limited; Occupiers of residential properties with long viewing periods, at a distance from or screened from the study area.
Low	Road users in motor vehicles, trains or on transport routes that are passing through or adjacent to the study area and therefore have short term views; Viewers indoor at their place of work, schools or similar.
Negligible	Viewers from locations where there is screening by vegetation or structures where only occasional screened views are available and viewing times are short; Road users in motor vehicles, trains or on transport routes that are passing through/adjacent to the study area and have partially screened views and short viewing times.

Table 6 Magnitude of change criteria (visual)

Rating	Criteria
High	A substantial/obvious change to the existing view due to total loss of, or change to, elements, features or characteristics of the view. Would cause a view to be permanently changed and its quality diminished.
Moderate	Discernible changes in the existing view due to partial loss of, or change to elements, features or characteristics of the view, however has potential to be partly mitigated. The change would be out of scale with the existing view, and would leave an adverse impact on the view.
Low	Minor loss or alteration to one or more key view elements, features or characteristics, or the introduction of components that may be visible but may not be uncharacteristic within the existing view.
Negligible	Almost imperceptible or no change in the view as there is little or no loss of/or change to the elements, features or characteristics of the view.

2.3.3 Significance of impacts

The combination of sensitivity and magnitude determines the significance of the impact on the landscape character or representative viewpoint. Refer Table 7 for the matrix used to determine the significance of impact.

Table 7 Significance of impact matrix

	Magnitude of impact			
	High	Moderate	Low	Negligible
High	High Impact	High-Moderate	Moderate	Negligible
Moderate	High-Moderate	Moderate	Moderate-Low	Negligible
Low	Moderate	Moderate-Low	Low	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

2.3.4 Panorama and photomontage

All photographic images were captured using a 50 millimetre fixed focal length lens on a 35 millimetre full frame format camera at a camera height of 1.6 metres. All photograph locations were recorded and mapped.

A series of nine viewpoint locations were chosen and existing views represented using a panorama technique. This technique involves the stitching together of a number of adjoining images using the Adobe Photoshop software program.

Of the nine viewpoint locations, two viewpoints were selected for the production of photomontage images to represent proposed views following the completion of the Proposal. The software used to model and render the photomontages was Autodesk 3D Studio Max. In order to achieve an accurate photomontage of the Proposal and surrounding landscape, one metre contours with a digital terrain model to a resolution of 25 metres were used to model the surrounding landform.

Once the 3D model incorporating both the landscape and new Proposal elements were created, a virtual camera was placed in the software at the same location the photographs were taken. The film, focal lens and height of the virtual camera matches the real camera utilised to take the

photographs. The photographs of the site were used in 3D Studio Max as a background to accurately match the 3D model with the Proposal elements to the perspective of the photographs. From the camera view, rendered images of the Proposal were produced to match the daylight exposure of the photographs. The rendered images were imported into Adobe Photoshop for post-production editing and collation of the photomontages. Refer to Appendix A for photomontages of the Proposal.

The final result is the 3D model of the Proposal shown in the correct 3D location in the photographs (refer Appendix A). The final images were produced to a high resolution, suitable for printing.

2.4 Mitigation measures

Potential mitigation measures may include:

- adopting alternative designs or revisions to the basic engineering and architectural design to prevent and/or minimise negative impacts
- remedial measures such as colour and textural treatment of structural features
- compensatory measures such as landscape design to compensate for unavoidable negative impacts and to attempt to generate long-term positive impacts.

2.5 Assumptions and Limitations

This methodology includes the following assumptions and limitations:

- there is no national guidance on the assessment of landscape and visual impacts specific to Australia, however, the industry typically refers to *Guidelines for Landscape and Visual Impact Assessment, Third Edition (2013)* and the *Environmental Impact Assessment Practice Note Guideline for Landscape Character and Visual Impact Assessment EIA-N04 (2013)*
- the assessment aims to be objective and describe any changes factually. While potential changes resulting from the Proposal are defined, the significance of these changes requires qualitative (subjective) judgements. This assessment's conclusion therefore combines objective measurement and professional interpretation. While this assessment aims to be objective, it is recognised that visual impact assessment can be subjective and individuals are likely to associate different visual experiences to the study area
- the assessment is based on the information provided to GHD at the time of writing
- existing conditions were assessed during the site inspection on 17th December 2018
- this assessment does not include landscape and visual impacts from lighting.

3. Proposal Description

3.1 The Proposal site

The Proposal is located at Como Station in the Sutherland Shire, along the Illawarra Line. The Proposal site is defined as the area in which the proposed station accessibility upgrades would occur. Indicatively this would include the area between Como Parade to the west and Railway Road to the east, including the station buildings, platforms and commuter car park on Como Parade. The adjoining stations are Oatley Station to the north and Jannali Station to the south.

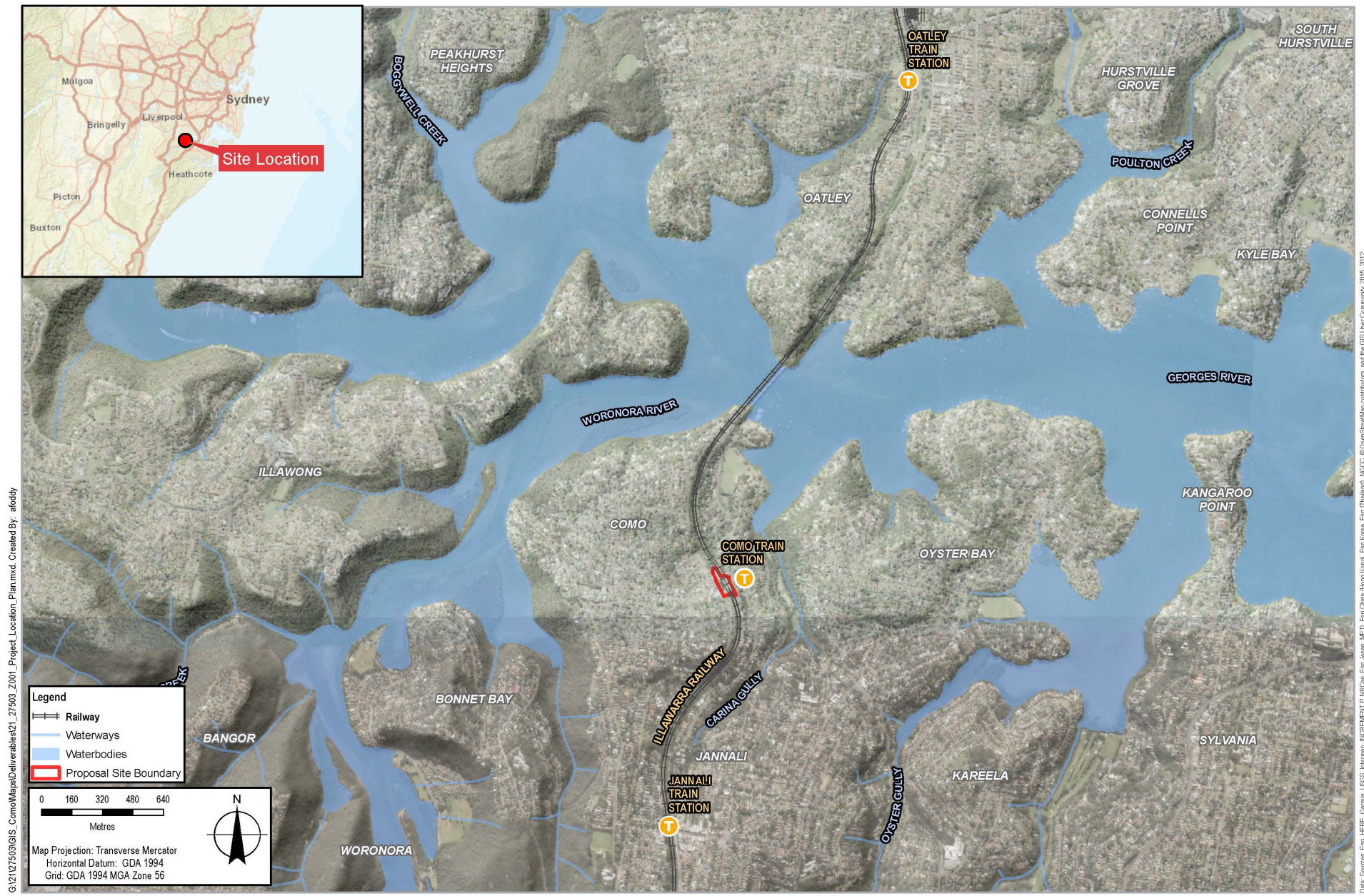
Land immediately surrounding the station includes:

- Railway Road along the eastern edge, with
 - a medium density residential area to the east
 - an environmental living residential area to the north-east
- Como Parade to the western edge, with
 - a low density residential area to the west

Como is situated on the southern banks of the Georges River on an elevated headland, with the Woronora River to the west and Carina Bay forming an inlet to the east. The rail line follows the natural terrain, curving across the headland south of the Como rail bridge towards Jannali.

Como Station is situated on an elevation midway along the eastern slope of the headland, with views towards the Georges River. The station itself is comprised of a curved island platform with a centrally located station building. Facilities include an off-street commuter carpark, toilets, bike racks and lockers, accessible parking, and an informal 'kiss and ride'. A below-ground pedestrian underpass connects Railway Road and Como Parade with ramps at either end. A centrally located stairs provides access to the platforms from the underpass.

Refer to Figure 1 for Proposal location plan.



G:\12\7503\GIS_Como\Maps\Deliverables\21_27503_2001_Project_Location_Plan.mxd. Created By: afoddy

Data Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, Esri Korea, Esri (Thailand), NECN, © OpenStreetMap contributors, and the GIS User Community, 2015, 2012, NSW Crown Copyright - Department of Planning and Environment, (c) State of New South Wales and Office of Environment and Heritage, (d) Commonwealth of Australia (Department of the Environment), 2013, 2014.

Figure 1 Proposal location plan

3.2 The Proposal

As part of the TAP initiative, TfNSW are proposing accessibility, security, and facilities upgrades to Como Station to improve the public transport customer experience.

3.2.1 Operation phase

The Proposal includes the following key elements:

- Railway Road entrance (eastern access)
 - extension of the existing pedestrian ramp to reduce the grade and make compliant
 - provision of a formal 'kiss and ride' adjacent to the station
- Como Parade entrance (western access)
 - extension of the existing underpass, requiring a cutting through existing sandstone
 - provision of a new lift (to a height of approximately six metres) from the new underpass extension up to the commuter carpark
 - provision of new stairs from the commuter car park down to the extended underpass
 - provision of new, and upgrade to existing, DDA car parking spaces, with new retaining wall
 - provision of new paving to the pedestrian entry
 - removal of existing pedestrian access ramp, to be replaced with soil and planting
 - new fence adjacent to the street footpath
- Toilets in station building
 - conversion of existing male toilet into one or two ambulant unisex toilet/s
 - conversion of existing female toilets into a new Family Accessible Toilet (FAT)
 - widening of entrances to new FAT and ambulant toilets, as required
- Platform
 - provision of a new lift (to a height of approximately six metres) from the existing underpass up to the island platform
 - new canopy roof extension connecting the existing station to the new lift
 - resurfacing and regrading of the platform to floor level of station building in order to provide safe and accessible access
 - CCTV and lighting upgrades
 - hearing loop upgrades
 - update existing signage and wayfinding on all platforms and access points

Refer to Figure 2 and Figure 3 for the Proposal components.

3.2.2 Construction phase

The following activities are likely to be experienced during construction:

- Railway Road entrance (eastern access)
 - removal of three trees at the station entry, including a Sweetgum, a Coast Banksia, and a tree group consisting of a River Bottlebrush, a Brush Daphne, and an African Olive tree
- Como Parade entrance (western access)
 - removal of existing non-accessible ramp

- removal of five trees at the station entry, including three Smooth-barked Apple trees, one Spotted Gum, one Smooth Cheesetree
 - possible removal of four additional trees to the station entry, three of which are Smooth-barked Apple trees, whilst the fourth tree has died
 - excavation of the existing carpark for new lift pit and stairs
 - potential use of piling rig (if required), mounted on tracks, with access through the maintenance gate on Como Parade
 - crane storage and operation within the commuter car park
- Toilets in station building
 - removal of internal walls, fixtures and fittings
- Platform
 - excavation of the existing platform for new lift pit
 - removal of a number of light poles, and an area of paving on the platform
 - relocation of existing benches
- General
 - establishment of a site compound with hoarding
 - construction of the operation phase Proposal components identified in Section 3.2.1.

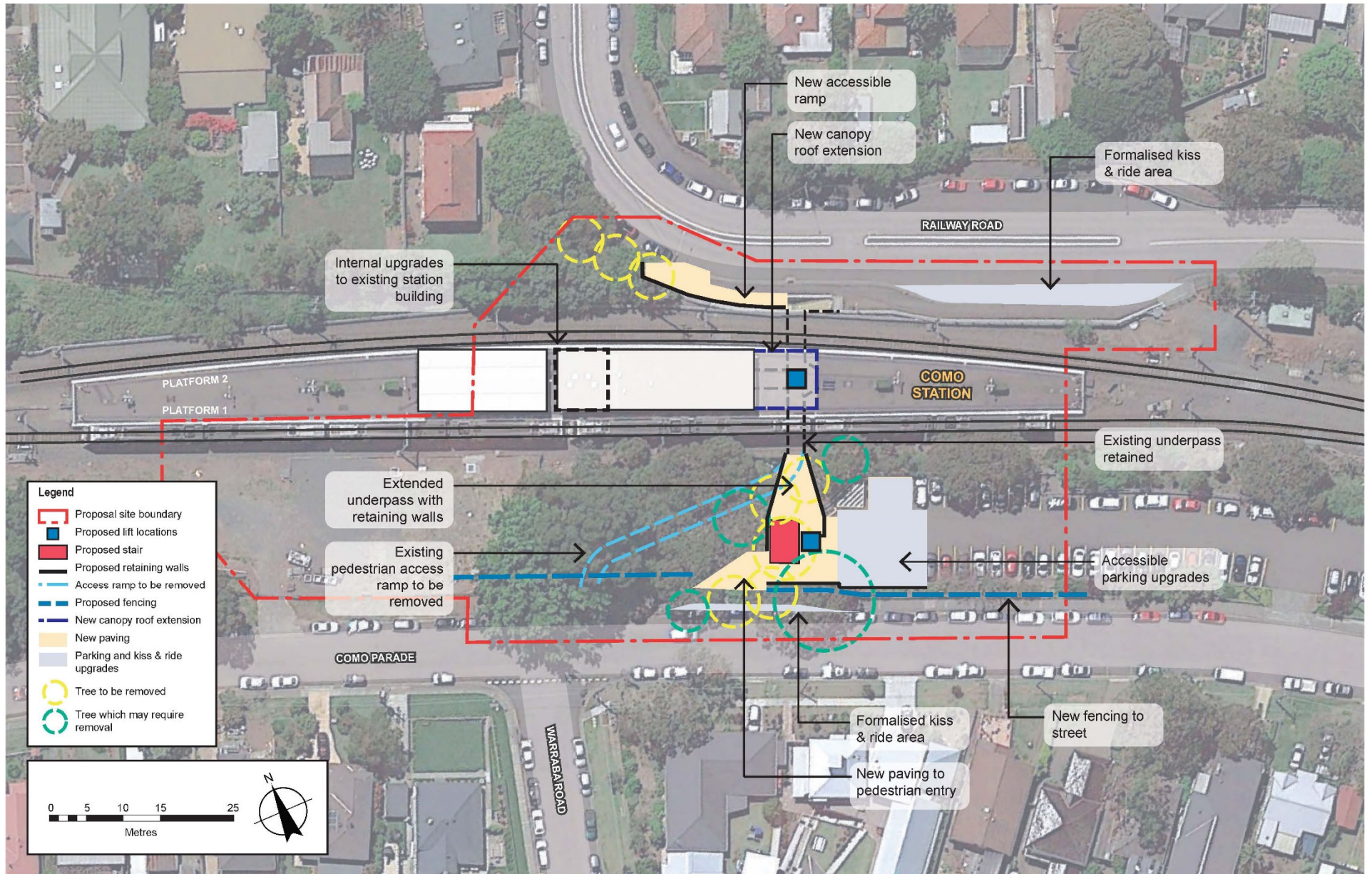
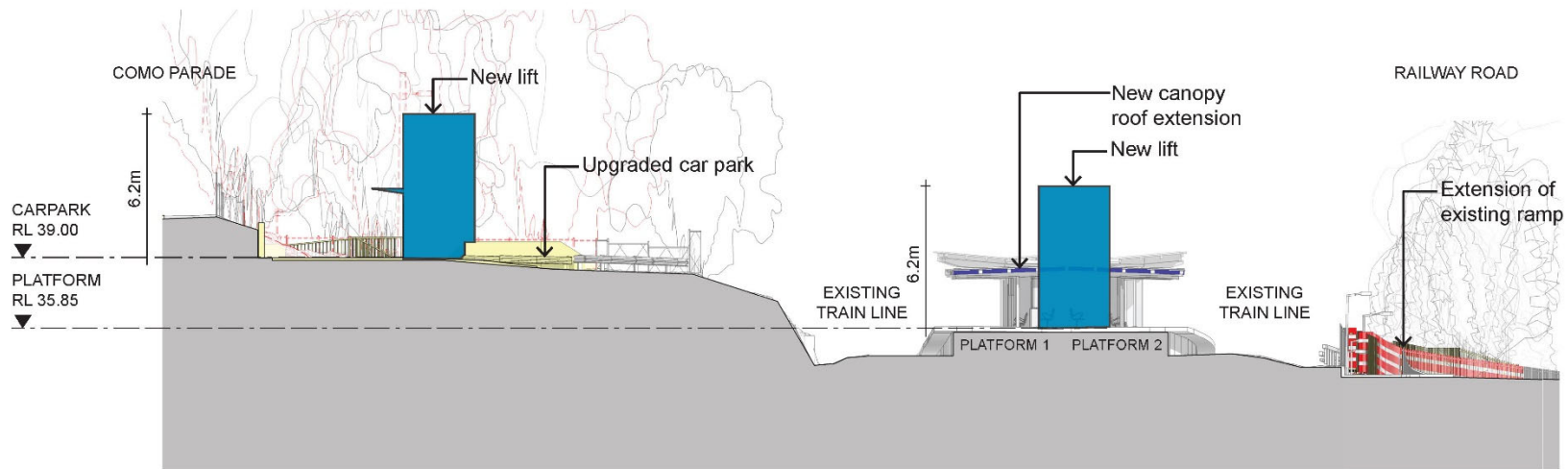
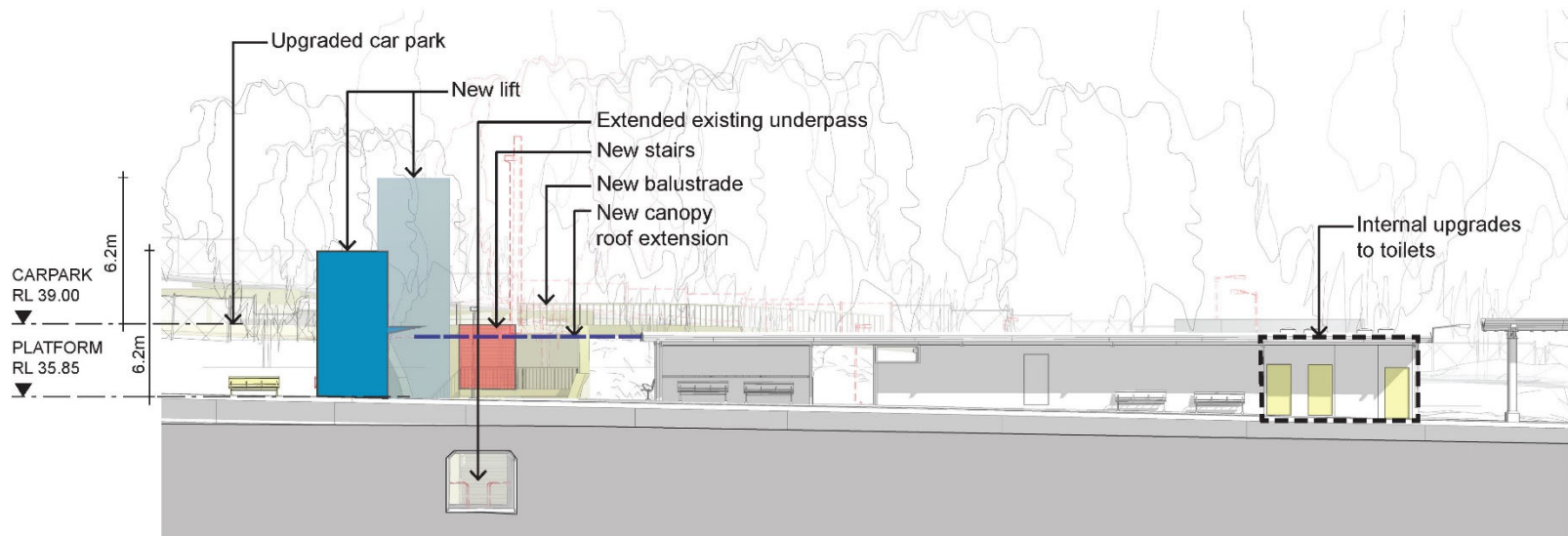


Figure 2 Proposal components plan



CROSS SECTION THROUGH EXISTING PLATFORM LOOKING NORTH-WEST



ELEVATION VIEW FROM STATION PLATFORM 2 LOOKING SOUTH-WEST TOWARDS COMO PARADE

Figure 3 Proposal components elevations

4. Existing Environment

The following section provides an overview of relevant legislation and policy objectives, land use and built form, topography, hydrology and vegetation, and key views and viewsheds in the vicinity of the Proposal site. These features all contribute to the landscape character and visual amenity of the study area. Landscape character types will subsequently be defined and described.

4.1 Study Area

An indicative study area for the LVIA has been defined as land within approximately 500 metres of the Proposal site. This study area has been determined based on the following:

- an analysis of the ZTV mapping (refer Section 2.2.3)
- a desktop study examining aerial photographs and topographic maps considering both landform and land cover
- a site inspection examining the existing visual catchment
- previous studies of a similar nature.

4.2 Legislation and Policy

The following section identifies legislation and policy objectives relevant to the Proposal. These have been used to inform the assessment of both landscape and visual impact.

4.2.1 Sutherland Shire Local Environmental Plan 2015

The study area is located within the Sutherland Shire local government area and therefore falls under the *Sutherland Shire Local Environmental Plan 2015* (SSLEP). This plan identifies a number of aims relevant to the landscape and visual amenity of the study area.

Particular aims of the SSLEP relevant to this study include:

- ‘to establish a broad planning framework for controlling development, minimising adverse impacts of development, protecting areas from inappropriate development and promoting a high standard of urban design’
- ‘to protect and enhance the amenity of residents, workers and visitors in all localities throughout Sutherland Shire’
- ‘to protect and enhance the natural environment and scenic quality of the Sutherland Shire through the retention and rehabilitation of wildlife habitats, wildlife corridors, bushland, foreshores and waterways’
- ‘to conserve, protect and enhance the environmental and cultural heritage of Sutherland Shire’

Land use zones

Refer to Figure 4 for land uses within the study area.

The following land used zones outlined in the SSLEP have specific objectives relevant to landscape and visual amenity:

Zone R2 Low Density Residential

- ‘to protect and enhance existing vegetation and other natural features and encourage appropriate bushland restoration particularly along ridgelines and in areas of high visual significance’
- ‘to ensure the single dwelling character, landscaped character, neighbourhood character and streetscapes of the zone are maintained over time and not diminished by the cumulative impact of multi dwelling housing or seniors housing’

Zone R3 Medium Density Residential

- ‘to promote a high standard of urban design and residential amenity in a high quality landscape setting that is compatible with natural features’
- ‘to allow development that is of a scale and nature that provides an appropriate transition to adjoining land uses’

Zone RE1 Public Recreation

- ‘to provide a range of recreational settings and activities and compatible land uses’
- ‘to protect and enhance the natural environment for recreational purposes’

Zone E2 Environmental Conservation

- ‘to protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values’
- ‘to prevent development that could destroy, damage or otherwise have an adverse effect on those values’
- ‘to ensure that development, by way of its type, design and location, complements and enhances the natural environment in environmentally sensitive areas’

Zone E3 Environmental Management

- ‘to protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values’
- ‘to allow development of a scale and nature that maintains the predominantly natural landscape setting of the locality and protects and conserves existing vegetation and other natural features of the locality’
- ‘to share views between new and existing development and also from public space’

Zone E4 Environmental Living

- ‘to provide for low-impact residential development in areas with special ecological, scientific or aesthetic values’
- ‘to allow for development that preserves and enhances the natural landscape setting of the locality’
- ‘to protect and restore trees, bushland and scenic values particularly along ridgelines and in other areas of high visual significance’
- ‘to ensure the character of the locality is not diminished by the cumulative impacts of development’
- ‘to share views between new and existing development and also from public space’

Zone W1 Natural Waterways

- ‘to protect the ecological and scenic values of natural waterways’
- ‘to ensure that the natural scenic qualities of waterways are not diminished through the cumulative impact of man-made structures’

Height of buildings

SSLEP includes limitations to the height of buildings within the study area. Objectives of building height limitations include:

- ‘to ensure that the scale of buildings:
 - *is compatible with adjoining development, and*
 - *is consistent with the desired scale and character of the street and locality in which the buildings are located or the desired future scale and character, and*
 - *complements any natural landscape setting of the buildings’*
- ‘to allow reasonable daylight access to all buildings and the public domain’
- ‘to minimise the impacts of new buildings on adjoining or nearby properties from loss of views, loss of privacy, overshadowing or visual intrusion’
- ‘to ensure that the visual impact of buildings is minimised when viewed from adjoining properties, the street, waterways and public reserves’

The maximum height of buildings in the study area is twelve metres in the vicinity of the Wolger Street shopping area and Como Public School. All other residential areas are limited to 8.5 metres, with a height limit of nine metres for medium density residential between Novara Crescent and Railway Road east of Como Station.

Urban Design – general

The SSLEP includes a general objective for urban design within Sutherland Shire for consideration:

- ‘the extent to which high quality design and development outcomes for the urban environment of Sutherland Shire have been attained, or will be attained, by the development’
- ‘the extent to which any buildings are designed and will be constructed to:
 - *strengthen, enhance or integrate into the existing character of distinctive locations, neighbourhoods and streetscapes, and*
 - *contribute to the desired future character of the locality concerned’*
- ‘the extent to which the natural environment will be retained or enhanced by the development’
- ‘the extent to which the development will respond to the natural landform of the site of the development’
- ‘the extent to which the development will preserve, enhance or reinforce specific areas of high visual quality, ridgelines and landmark locations, including gateways, nodes, views and vistas’

Environmentally Sensitive Land

Areas of environmentally sensitive land are located within the study area, including areas valued for terrestrial biodiversity, and those for their environmental and scenic quality associated with their natural landforms. Areas of terrestrial biodiversity are located in low-lying areas around the

foreshore edge and within the Carina Bay Reserve; areas with valued natural landforms are predominantly located on the Carina Bay gully slope west of Riverview Road.

Objectives of the natural landform protection include:

- 'to protect and enhance the environmental and scenic qualities of natural landforms, including rock outcrops, cliffs, beaches and rock platforms'

Heritage conservation

Two areas with heritage conservation protections are present within the study area. These include the following:

- House (105 Como Parade, opposite Como Station)
- Woronora –Penshurst pipeline

Relevant objectives of the heritage conservation protection include:

- 'to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views'

Refer to Figure 4 showing location of heritage conservation within the study area.

4.2.2 Sutherland Shire Development Control Plan 2015

Relevant objectives of the Sutherland Shire Development Control Plan (DCP) include the following:

Streetscape, building form and siting

- 'ensure that all elements of development visible from the street, waterways and public domain make a positive contribution to the streetscape, foreshore and natural features of the area'
- 'ensure development is compatible with the scale, character and landscape setting of the streetscape'
- 'ensure development is sited and designed so that the visual and acoustic privacy of neighbours and intended occupants is to acceptable levels'

Special considerations for trees which contribute to scenic and visual quality

- 'prevent the degradation of visual amenity and scenic quality by requiring the retention and enhancement of vegetation in areas of high scenic quality'
- 'preserve existing streetscape character'
- 'preserve trees in areas where trees of a similar type or scale make a strong contribution to neighbourhood character'
- 'retain individual trees which are local landmarks or which singularly make a positive contribution to the quality of the streetscape or locality'
- 'ensure trees are retained along ridge tops where they provide a backdrop to development'
- 'ensure remnant trees are retained throughout the urban area'
- 'provide an appropriate balance between residents' desire for views from their properties and the achievement of the objectives of this section'

4.2.3 Urban Tree and Bushland Policy (2011)

Relevant objectives of this policy include the following:

- 'to improve the quality and increase the quantity of bushland and the tree canopy throughout the Sutherland Shire'
- 'to increase and enhance the extent of tree canopy throughout the Sutherland Shire through planting of appropriately selected trees in streets and open spaces'

4.2.4 Greenweb Strategy (2001)

Sutherland Shire Council's *Greenweb Strategy* aims to identify and manage significant vegetation and vegetated links throughout the Shire to ensure the long term conservation of biodiversity whilst providing for recreational opportunities and improvements to water and air quality. This is to be achieved via a greenweb network of habitat nodes and corridors.

Relevant objectives of the strategy include the following:

- 'to identify, conserve and enhance biodiversity, environmental health, natural heritage and landscape amenity'
- 'to maintain and enhance the unique bushland character of the Shire'
- 'to conserve and enhance links with bushland and corridors in adjoining Local Government Areas'

Within the study area, the strategy recognises the rail corridor as a 'restoration' component of the greenweb. The function of this corridor is to provide links between areas of 'core' habitat.

4.2.5 TfNSW Around the Tracks: urban design for heavy and light rail (2017)

Relevant principles outlined in *Around the Tracks: urban design for heavy and light rail* include the following:

- 'Principle 1: Draw on a comprehensive site and context analysis to inform the design direction'
- 'Principle 4: Integrate the project with the surrounding area'
- 'Principle 5: Maximise the amenity of the public domain'
- 'Principle 6: Protect and enhance heritage features and significant trees'
- 'Principle 7: Maximise positive view opportunities'

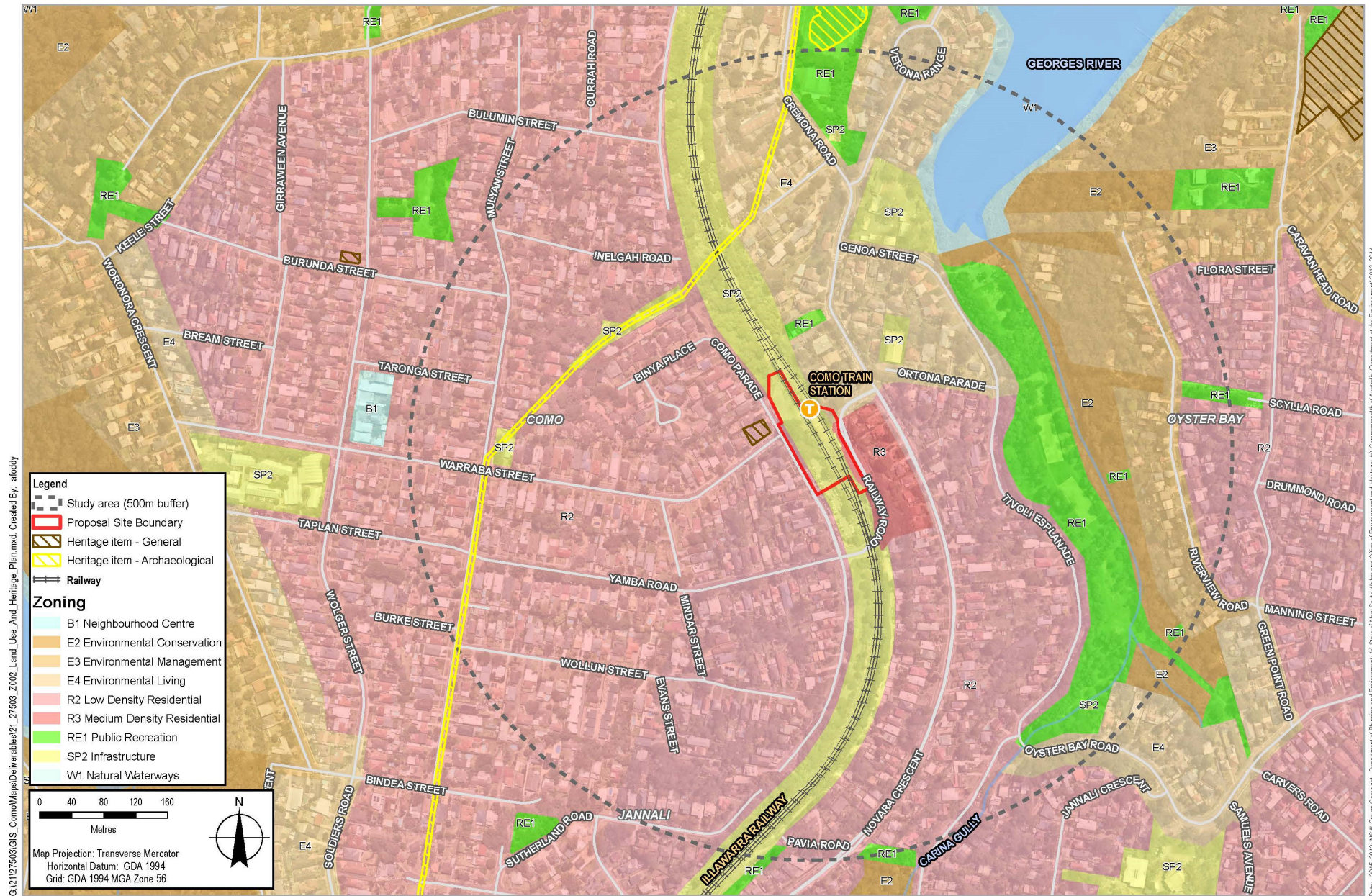


Figure 4 Land use and heritage

4.3 Landscape and visual existing environment

The following section provides a general description of the study area.

4.3.1 Land use and built form

Como Station is located within a primarily residential area within the suburb of Como in the Sutherland Shire. The suburb was named after Lake Como in Italy, most likely due to its tranquil, leafy, elevated setting near the water. The Italian influence is reflected in some of the street names. Key cultural features in Como include the historical Como Hotel, the Como Pleasures Grounds, and the Como Marina. An historical rail bridge connects the Como headland to Oatley to the north.

The main commercial area consists of a small row of shops on Wolger Street within walking distance to the station via Warraba Street. The residential areas consist primarily of low density residential zones to the upper elevations of the headland, and environmental management and environmental living zones on the lower elevation wrapping around the waterfront wedges. Built form associated with these are primarily single to double storey detached dwelling oriented towards the lower elevations, valley and waterfront. A residential area zoned medium density is located immediately to the south-eastern side of the station, however this currently consists of single storey detached dwellings.

Two education facilities are present within the study area including the Como School of Arts and Como Public School, located on the eastern side of the rail corridor. Open space areas within the study area include Carina Bay Reserve and the Skylla Bay Oval, with recreational facilities including playing fields and walking paths. Key transport corridors include the rail line, Tivoli Esplanade and Novara Crescent.

4.3.2 Topography and hydrology

Como is situated on a minor headland on the southern banks of the Georges River. Geology primarily consists of Hawkesbury Sandstone, overlaying the Narrabeen Group of sandstone and claystone. A gully is present to the east of Como, draining through a series of mangroves into Carina Bay. Rocky outcrops are common on ridgelines and in creeks, and sandy permeable soils of low fertility.

The rail line is situated on an elevation midway along the eastern slope of the headland, with the station at an elevation of approximately 34 metres AHD. High points within the study area include the ridgeline along the western edge at an elevation of approximately 74 metres AHD. The lowest point is at approximately two metres AHD at Carina Bay, rising again steeply to the east up to 68 metres AHD at Greenpoint Road. The study area is predominantly sloping terrain with very few flat areas aside from areas within Carina Bay Reserve. As such, built form within the study area is typically located on a slope, either elevated or lowered from the roadside, and often requiring stair access.

Como Station is located perpendicular to the slope, with station facilities stepping down across the landform from Como Parade at approximately 38 metres AHD to Railway Road at 34 metres AHD. The existing pedestrian underpass and access ramps are within a sandstone cutting.

To the east of the station, Railway Parade slopes up relatively steeply from Novara Crescent, flattening out as it aligns with the station itself before sloping up again to bridge over the railway line. To the west of the station, Como Parade slopes down gradually from Yamba Road towards the station, before dropping off steeply north of the station entry towards a drainage line near Binya Place.

Refer Figure 5 for topography and hydrology within the study area.

4.3.3 Vegetation

Remnant vegetation communities within the study area include the Coastal Enriched Sandstone Dry Forest, a portion of which is present along the northern section of the rail corridor beyond the station. This is a tall open eucalypt forest with an understorey of dry sclerophyll shrubs with ferns and herbaceous plants amongst the groundcovers. Dominant canopy species including the *Angophora costata*, *Corymbia gummifera*, *Eucalyptus piperita* and *Eucalyptus pilularis*. Areas of Sydney Foreshore Shale Forest, Estuarine Mangrove Forest, and Hinterland Riverflat Eucalypt Forest are located within the Carina Bay Reserve and foreshore area.

As outlined in the Proposal *Arboricultural / Ecological Assessment* Memorandum, no stands of intact native vegetation are present within the Proposal site. The occurrence of a number of *Angophora costata* species amongst non-indigenous species on the western side of Como Station indicates a gradient between the nearby patches of Coastal Enriched Sandstone Dry Forest, the vegetation type which probably originally occurred on the site.

The residential areas contain a significant amount of tall native canopy vegetation, both as street trees and within private property. Some existing species in and around the station precinct include Eucalypt, Ficus, Angophora, Callistemon, Allocasuarina, and Jacaranda.

Figure 5 indicates the extent of canopy cover within the study area.



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Figure 5 Topography, hydrology and vegetation

4.3.4 Key views and viewsheds

Key views are typically achieved from elevated locations within the study area from the upper elevations of the ridgelines. Of particular note are the following:

- distant water views towards the Georges River from the southern end of the station platforms
- distant views across the valley (across Carina Bay Reserve) from the eastern and western ridge lines (predominantly achieved from private residential properties) (refer Photograph 4)

As previously mentioned, an abundance of canopy vegetation is present, blanketing the suburban terrain. This vegetation creates a visual buffer so that many views are short and mid-range, allowing glimpses to distant views in limited isolated locations. However, distant views of the abundant canopy vegetation create a pleasant green outlook, as the urban bushland mirrors the sloping terrain whilst mitigating the appearance of the suburban built form (refer Photograph 4).

The key views mentioned are achieved as glimpses from roadways and footpaths between canopy trees. However, it is likely ridgeline residential properties are oriented to maximise these viewing experiences from the home. Within the immediate vicinity of the station, views to the water can be seen from the southern end of the station as mentioned, the southern end of the commuter car park (refer Photograph 2), as well as an isolated location on the south-western side of Como Parade, as illustrated in Figure 6.

Regarding visibility of the Proposal itself, ZTV mapping was undertaken as shown in Figure 7, illustrating the areas where the lift shaft components may be theoretically visible. As mentioned in Section 2.2.3, this digital mapping considers landform only and does not take into consideration land cover such as built form and vegetation, nor does it consider the effect of distance of the viewer from the Proposal.

The site inspection revealed that the presence of canopy trees and built form create a visual barrier to many views shown as areas of theoretical visibility. Therefore, the viewshed for the Proposal is largely confined to the streets immediately surrounding the station precinct, as well as isolated location on the eastern ridgeline.

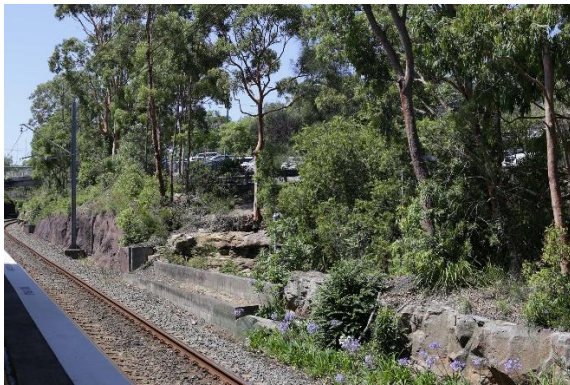
Of particular note is the presence of relatively dense vegetation on the western side of the station precinct, providing a visual buffer to views from many residential sensitive receivers on Como Parade and Warraba Street (refer Photograph 3 for an example of this). Also of note is the marked elevation change between Railway Parade and the adjoining residents to the east. These residential properties are sited much lower than Railway Parade and oriented towards the Novara Crescent / the valley, therefore no views can be achieved from these properties towards the Proposal (refer to Photograph 1). Vegetation within the rail corridor to the north of the station also provides a visual barrier to views from residential properties on elevated locations to the north. The site inspection was unable to adequately quantify or illustrate this from publically accessible locations, however it is likely that a cluster of properties in this location do currently have views of the northern portion of the station, as they can be seen from the platform.



Photograph 1 Fencing and level difference between residential properties on the eastern side of Railway Road opposite the station



Photograph 2 Water view to the Georges River from the Como Parade footpath above the commuter carpark



Photograph 3 Vegetation on rocky slope between rail line and commuter car park



Photograph 4 Extent of canopy cover viewed from a distance across the Carina Bay valley

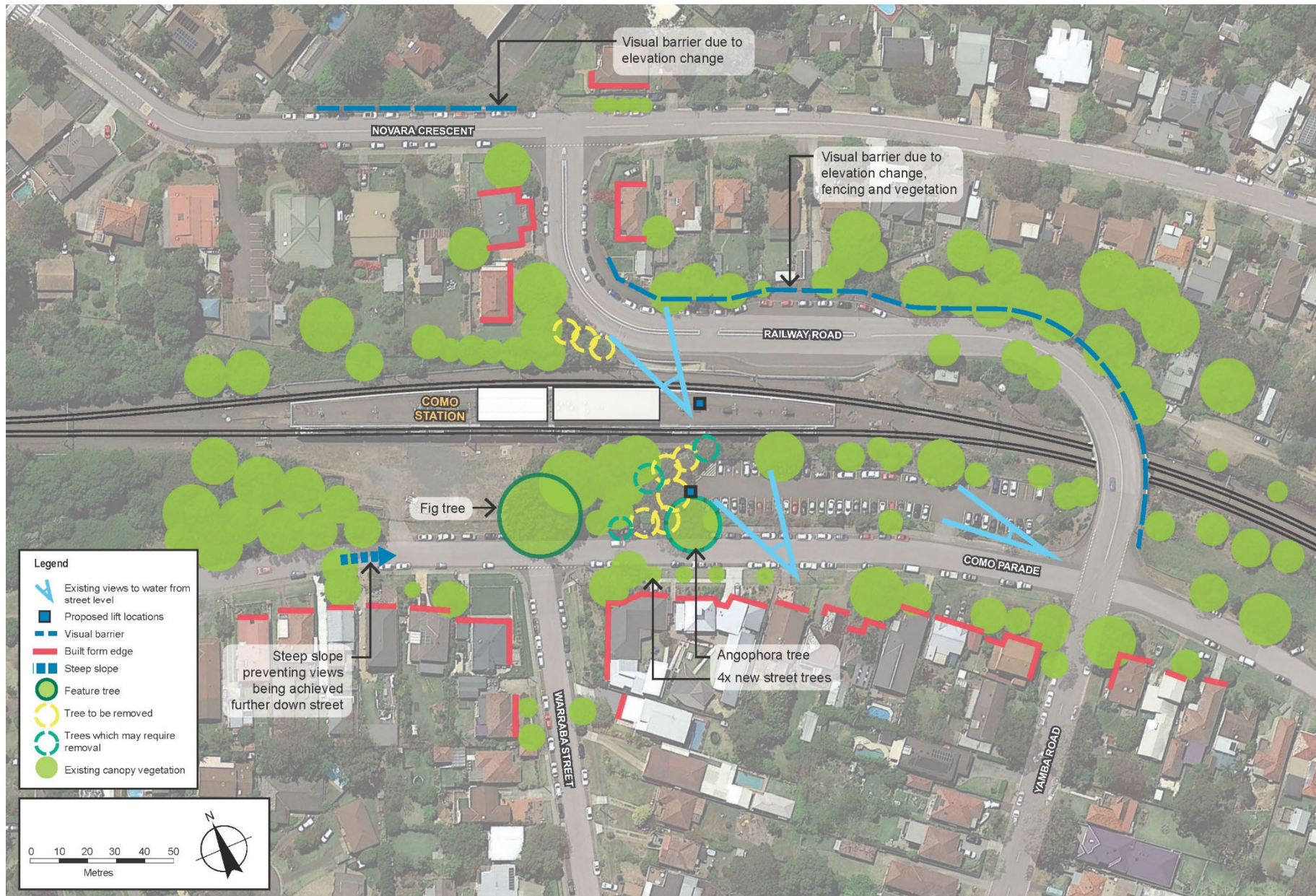
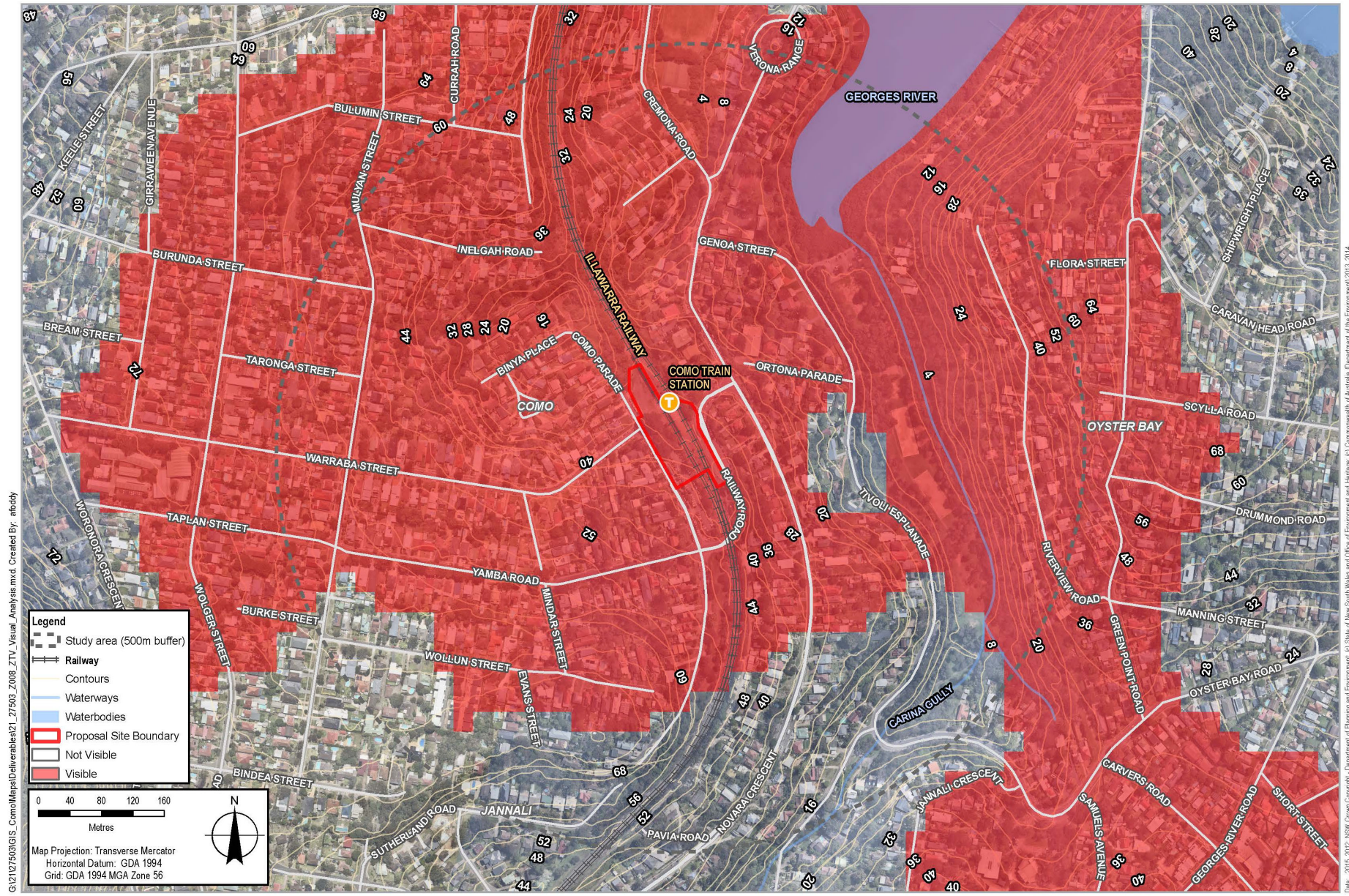


Figure 6 Visual analysis (station precinct)



Note: This ZTV is representative only and illustrates the zone in which the lift shaft would be theoretically visible without taking into account the presence of vegetation or buildings.

Figure 7 Zone of Theoretical Visibility

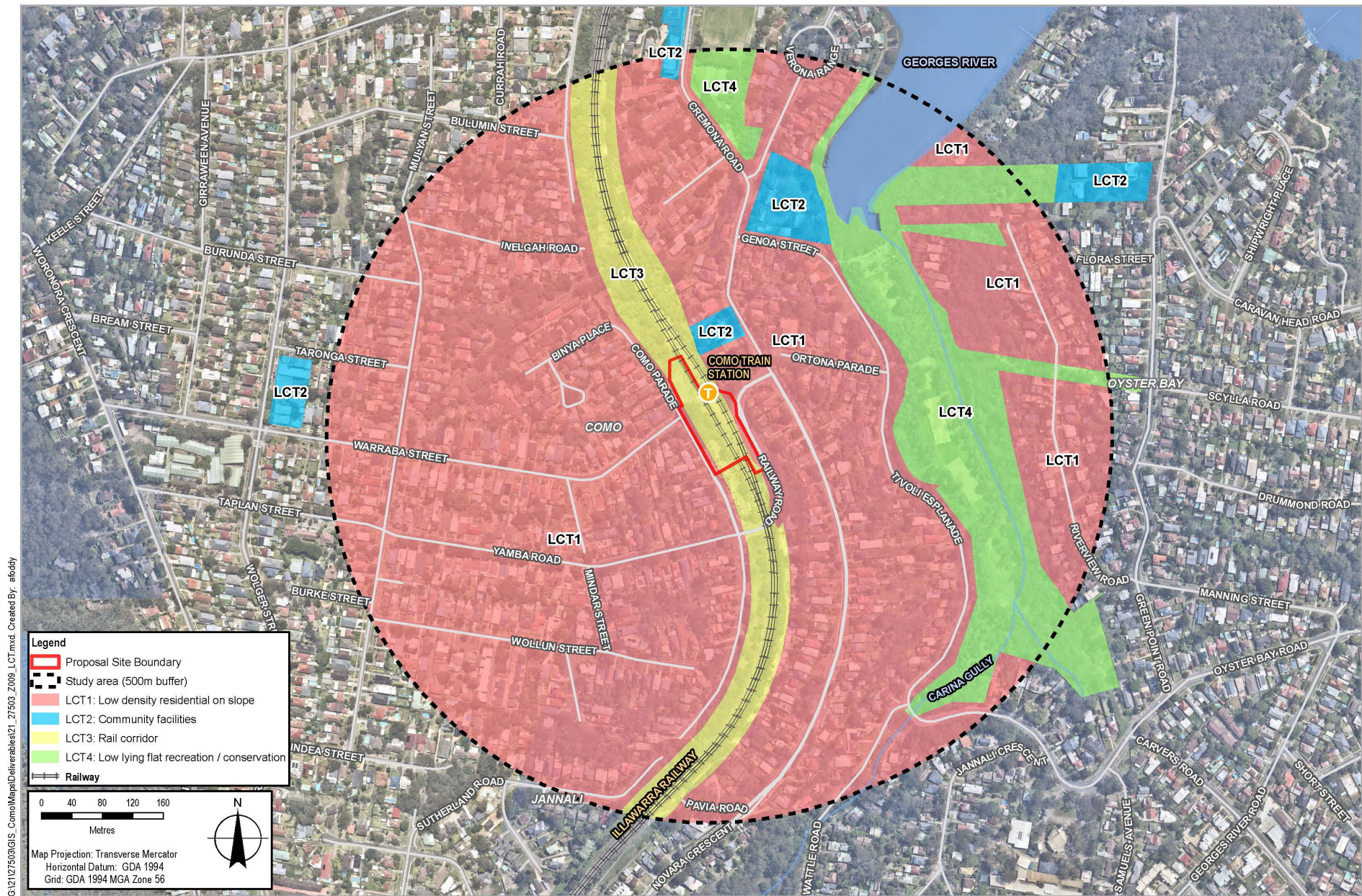
4.4 Landscape Character Types

Based on the assessment of natural and cultural influences shaping the landscape, Landscape Character Types (LCT's) have been defined representing broadly homogenous characteristics and urban patterns.

The following LCT's have been identified for the study area:

- LCT1 Low density residential on slope
- LCT2 Community facilities
- LCT3 Rail corridor
- LCT4 Low lying flat recreation / conservation

Refer Figure 8 for landscape character types plan.



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Figure 8 Landscape character types

4.4.1 Landscape character type 1: Low density residential on slope

LCT1 includes the residential areas within the study area on either side of the rail corridor, both on the Como headland and the ridgeline to the east. The areas are situated on terrain with slopes between five and thirty percent.

Key characteristics of LCT1 include the following:

- one to two storey detached dwellings, with setbacks of approximately five to ten metres from the street
- built form oriented towards the street frontage, often with elevated veranda or porch area to the front of the dwelling
- a combination of older style brick and weatherboard houses with tiled or corrugated iron roofs, and modern dwellings, typically with the ground floor elevated, with garage or carport to the ground level below living areas
- streetscape alignment largely following the topography, with a small portion to the west of the study area forming a grid
- some concrete footpaths are present to both sides of the street, to one side only, or not present at all
- front fences or walls along the streetscape are both present and not
- verges are steep in parts, with stair access common to residential properties from the streetscape, and along the streetscape footpath itself
- inconsistently planted street trees present, both native and exotic, young and old; mature tall canopy vegetation generally scattered through public and private space
- overhead power lines present
- one house of local heritage value present on the corner of Como Parade and Warraba Street

As outlined in Section 4.2, values associated with LCT1 include the existing neighbourhood character and landscape amenity of the suburb, defined by the natural features of the surroundings, the bushland character of the residential area, the streetscape character and low density built form. Planning objectives seek to protect and retain this through protection of existing vegetation, particularly in visually sensitive ridgetop locations. Constraints are also placed on built form heights to minimise the impact on this existing character and views from other dwellings. Additionally, strategies seek to retain and enhance tree canopy cover and retain remnant species and those that contribute positively to the neighbourhood character.

One property of local heritage significance is present; planning strategies seek to protect the associated fabric, setting and views of this property. The residential slopes west of Riverview Road are valued for their environmental and scenic qualities associated with their natural landform, and the SSLEP aims to protect and enhance these values. Some residential areas contain significant patches of Sydney Foreshore Shale Forest, particularly on the eastern side of the Carina Bay gully, which is to be retained and protected.

Photograph 5 through to Photograph 8 show images with LCT1 characteristics.



Photograph 5 Como Parade residential street frontage, north of Como Station



Photograph 6 Residential property on Como Parade, south of Warraba Street



Photograph 7 Residential properties on Riverview Road



Photograph 8 Residential properties on Warraba Street

4.4.2 Landscape character type 2: Community facilities

LCT2 comprises businesses and community facilities in various locations across the study area, including the local shops on Wolger Street, the Como School of Arts and adjoining preschool, Como Public School, the Como Hotel, and the Green Point Observatory.

Key characteristics of LCT2 include:

- commercial or community use
- larger building footprint when compared to LCT1
- architectural styles vary
- orientation varies, either towards the street if commercial, or internal facing to common shared open spaces, carparks, or internal roadways
- may include internal roadway and footpath network connected to public local roads, with off-street car parking facilities

Specific values associated with LCT2 relevant to landscape and visual amenity are limited, as indicated in Section 4.2, and the building height limit is at its highest in these areas. However, overarching values associated with the retention of neighbourhood character, bushland character, and tree retention, remain relevant. The Como Hotel, although not formally protected, has characteristic architecture and an aesthetic landscape setting. The school site is likely to contain vegetation of high ecological value due to its location adjacent to LCT4.

Photograph 9 to Photograph 10 show places with LCT2 characteristics.



Photograph 9 Green Point Observatory



Photograph 10 Como School of Arts

4.4.3 Landscape character type 3: Rail corridor

LCT3 includes the rail corridor and Como Station precinct. Key characteristics of LCT3 include the following:

- linear rail infrastructure corridor approximately 50 metres wide comprising of two rail lines, overhead line elements and vegetation, and the station building, platforms and associated facilities within the station precinct
- single storey brick station building situated on the centrally located platform, with pedestrian underpass access to Railway Road and Como Parade; white palisade fencing to the eastern station entry
- a combination of linear infrastructure and natural features stepping down across the slope, with the station and appear elevated on the terrain with a forested backdrop
- road on either side, with a road bridge over the rail corridor on the southern side of the station precinct
- water views from the southern end of the station platforms and elevated portion of the commuter carpark
- dense canopy vegetation to the western station entry and within the commuter carpark, contrasting with the western entry on Railway Road which is exposed, with few trees. Characteristic tree specimens at street level include a large Fig and Angophora, contributing positively to the neighbourhood character
- natural features prevalent on the western side of the station, with exposed natural rock cutting forming the edge to the existing ramp to the pedestrian underpass, as well as a rock wall, partially stabilised with shotcrete, on the edge of the rail corridor itself

Similar to LCT2, specific values associated with LCT3 relevant to landscape and visual amenity are limited, as indicated in Section 4.2. Sutherland Shire Council's *Greenweb Strategy* recognises the rail corridor as a restoration corridor, with aims to conserve and enhance the bushland link. Remnant Coastal Enriched Sandstone Dry Forest is present within the rail corridor to the north and south of the station precinct. Overarching values associated with the retention of neighbourhood character, bushland character, and tree retention remain relevant to LCT3. Of particular note are the Fig and Angophora species to the station's western entry, the natural rock cutting with dense native vegetation, and the views to the Georges River, all which contribute positively to the landscape character. During community consultation, specific concerns were raised in relation to the Fig tree, indicating the community value for this tree.

Photograph 11 to show LCT3 characteristics.



Photograph 11 Rail corridor and Railway Road interface



Photograph 12 View to the Georges River from the commuter carpark



Photograph 13 Off-street commuter carpark



Photograph 14 Rock cutting to pedestrian entry ramp



Photograph 15 Characteristic Angophora species near western station entry



Photograph 16 Characteristic Fig tree near western station entry



Photograph 17 Como Station looking north, showing dense vegetation to edge

4.4.4 Landscape character type 4: Low-lying flat recreation / conservation

LCT4 comprises of the low-lying recreation and conservation areas adjacent to waterways, including the Carina Bay Reserve, Scylla Bay Oval, and a bushland area associated with Carina Gully near Wattle Road.

Key characteristics of LCT4 include the following:

- no significant built form elements
- linear open space corridor aligned with drainage pattern and topography
- edges comprising of roads, waterfront, or rear of residential properties
- off-street carpark
- limited formal facilities such as footpaths and seating
- relatively flat topography
- vegetated ground cover comprising of mown grass, bushland and riparian areas, with linear treed corridors
- dense canopy vegetation to edges, with centrally located clearings allowing for formal recreation
- dominant canopy vegetation of eucalypts and allocasuarinas.

LCT4 is highly valued for its landscape and visual amenity as indicated in section 4.2. This is primarily associated with its contribution to biodiversity, however this is closely aligned with landscape character. LCT4 is recognised as environmentally sensitive land within the SSLEP, and contains a variety of ecological communities associated with its riparian location. The Greenweb Strategy also recognises the Carina Bay Reserve as a core biodiversity corridor. LCT4 is also valued for its natural setting for the purposes of recreation. Scylla Bay has cultural significance associated with archaeological heritage.

Photograph 18 and Photograph 19 show places with LCT4 characteristics.



Photograph 18 Mangrove area at Carina Bay Reserve foreshore



Photograph 19 Carina Bay Reserve clearing with surrounding dense vegetation

4.5 Sensitive visual receivers and viewpoints

Based on the landscape and visual existing environment analysis, sensitive visual receivers were identified and viewpoint locations selected for assessment.

4.5.1 Sensitive visual receivers

Sensitive visual receivers within the Proposal viewshed are limited to the following:

- a number of residential properties on Como Parade in the immediate vicinity of the station precinct
- a number of residential properties on Riverview Road
- commuters using Como Station, including platforms, commuter carpark, and pedestrian underpass
- pedestrians and road users on Como Parade, Railway Road, Warraba Street, and Novara Crescent
- possibly a number of elevated residential properties on Como Parade south of Bulumin Street, which can be seen from the station platforms.

4.5.2 Viewpoint locations

Table 8 and Figure 9 identify representative viewpoints for assessment of views from the most sensitive visual receivers.

Table 8 Viewpoint locations

Viewpoint	Location	Description
VP1	105 Como Parade	This view is representative of residents and pedestrians north of the station on the western side of Como Parade.
VP2	Warraba Street	This view is representative of residents and pedestrians on the northern side of Warraba Street
VP3	109-111 Como Parade	This view is representative of residents and pedestrians on the western side of Como Parade opposite the station
VP4	113 Como Parade	This view is representative of residents and pedestrians on the western side of Como Parade south of the station
VP5	Yamba Road	This view is representative of residents, pedestrians and road users at the Como Parade and Yamba Road intersection
VP6	Novara Crescent	This view is representative of pedestrians and road users at the Novara Crescent Railway Road intersection
VP7	Railway Road bridge	This view is representative of pedestrians and road users crossing the Railway Road bridge
VP8	Railway Road	This view is representative of pedestrians and road users of Railway Road
VP9	19 Riverview Road	This view represents residents on Riverview Road

As previously mentioned, the viewshed for the Proposal is constrained due to the presence of built form and canopy vegetation within the study area. A number of sensitive receiver locations were visited during the site inspection that appeared within the ZTV mapping, however no views towards the Proposal were achieved from the ground level of publically accessible locations. The following locations were inspected and no views could be achieved towards the Proposal:

- Novara Crescent (aside from its intersection with Railway Road)
- Como School of Arts off-street carpark
- Tivoli Esplanade and Genoa Street
- Verona Range
- Como Parade south of Bulumin Street
- Inelgah Road
- eastern end of Wollun Street
- Carina Bay Reserve
- Green Point Road
- Green Point Observatory



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Figure 9 Viewpoint locations

5. Impact Assessment

5.1 Landscape impact assessment

This section includes an assessment of impacts to landscape character from the Proposal. Refer to Figure 8 for location of LCTs.

5.1.1 Landscape character type 1: Low density residential on slope

Refer to Table 9 below for LCT impact assessment.

Table 9 LCT1 impact assessment

Landscape character type 1: Low density residential on slope	
Anticipated change to landscape character	<p>The Proposal will occur wholly within the adjacent LCT3, however as LCT1 is currently viewed from LCT1, anticipated changes and effects to landscape character are taken into consideration.</p> <p>The anticipated changes will include the removal of trees to the western station entry on Como Parade, and the eastern station entry on Railway Road, of which the final numbers are yet to be determined. New lift shafts to a height of approximately six metres from ground level will appear both within the northern end of the existing commuter carpark as well as on the station platform. A new canopy roof extension is proposed, connecting the station building to the new lift on the station platform. A new stair is also proposed adjacent to the new lift within the commuter carpark. The existing pedestrian access ramp on the western side is proposed to be infilled and closed, therefore the primary station access on the western side of the station will be at the northern end of the commuter carpark. New fencing and paving are proposed to the new station entry point on both sides of the station.</p> <p>These changes may be experienced more so on the western residential edge on the Como Parade interface with LCT3.</p>
Sensitivity to change	Moderate. Although there are limited formal planning designations, this LCT has a generally high level of landscape amenity due to the natural features such as topography and canopy vegetation, combined with low density development.
Magnitude of change	Negligible. There is no change to the elements that define the landscape character of LCT1. Regarding adjacencies and transition, the lift shaft on Como Parade is located away from the streetscape, with a small built form footprint, and is below the building height limits of LCT1, therefore integrates well with LCT1. Tree removal is relatively limited considering the existing density, and the Proposal allows space for tree replacement planting to be undertaken, again, softening the station entry and LCT1 interface over time. Due to the nature of the anticipated change, LCT1 is unlikely to experience a significant adverse effect on the landscape character, condition or value that could not be mitigated.
Significance of impact	Negligible

5.1.2 Landscape character type 2: Community facilities

No impact as the Proposal has affected no change to the elements that define the landscape character type as described in Section 4.4.

5.1.3 Landscape character type 3: Rail corridor

Table 10 LCT3 impact assessment

Landscape character type 3: Rail corridor	
Anticipated change to landscape character	As the Proposal is located wholly within LCT3, the anticipated change includes all project components. This includes two new lift shafts (to approximately six metres high from ground level), new canopy roof extension, underpass extension and stairs connecting the station platform to Como Parade, upgrades to the carpark, footpaths and kiss and ride, and upgrades to the toilet facilities within the station building. A number of trees will require removal, the final number of which are yet to be determined. A large Angophora tree to the western station entry, which currently contributes positively to character of LCT3, may require removal. New fencing is proposed to Como Parade, and the existing access ramp from Como Parade will be infilled and closed, with the primary access point being via the northern end of the commuter carpark. The existing exposed rock wall to the access ramp, which currently contributes positively to the character of LCT3, will no longer be seen. At the time of writing, the proposed tree planting and landscape strategy is unknown, however remediation works to the access ramp will likely include new tree planting.
Sensitivity to change	Low. The key landscape character values associated with LCT3 are related to the natural features within the rail corridor as outlined in section 4.4. These include the bushland corridor to the north and south of the station (outside of the Proposal area), the dense native tree planting forming a backdrop to the station, the exposed rock to the existing access ramp, characteristic feature trees to the western station entry, and the water views achieved from the platform and commuter carpark. However, aside from the vegetation communities within the rail corridor beyond the extent of the Proposal, these values are not specifically recognised or protected, only in a broad sense within the reviewed policy and legislation. Built form infrastructure associated with the station is in poor to average condition.
Magnitude of change	Low. Similarly, the magnitude of the change is relatively constrained to the introduction of the new lift shafts, canopy roof extension, tree removal, particularly to the western station entry, and infilling of the existing access ramp from Como Parade. The lifts are new vertical built form features, however their siting amongst tall trees on terrain already with large elevation changes across the landscape, to a proposed height below the surrounding area building height limits, will mitigate these new elements. The canopy roof extension is to the same height as the existing station building, and would be similar in form and materiality to the existing roof canopy to the northern side of the station. The loss of a cluster of trees, specifically the potential loss of the Angophora species, will be a noticeable change. However, the Proposal allows adequate space for replacement planting of a similar character, therefore this change will not be permanent. As the Proposal footprint is relatively constrained to the lift shafts and stair, canopy roof, internal building upgrades and areas of paving, the Proposal is unlikely to have an adverse effect on the landscape character, condition or value, with mitigation measures likely to be effective in neutralising any adverse effects.
Significance of impact	Low

5.1.4 Landscape character type 4: Low lying flat recreation / conservation

No impact as the Proposal has affected no change to the elements that define the landscape character type as described in section 4.4.

5.2 Visual impact assessment

The following section assesses the visual impact of the Proposal from the following viewpoint locations:

- VP1: 105 Como Parade
- VP2: Warraba Street
- VP3: 109-111 Como Parade
- VP4: 113 Como Parade
- VP5: Yamba Road
- VP6: Novara Crescent
- VP7: Railway Road bridge
- VP8: Railway Road
- VP9: 19 Riverview Road

Refer to Figure 9 for the location of viewpoints, and the following sections for descriptions and visual assessment.

This assessment is based on the Proposal in operation, after construction is complete.

5.2.1 Viewpoint location 1



Criteria	Comments
Location and View Direction	105 Como Parade. VP1 is located on the northern corner of Como Parade and Warraba Street near the corner property of 105 Como Parade, which is of local heritage significance. VP1 is approximately 50 metres from the proposed Como Parade lift. VP1 is looking south-east.
Description of Existing View	VP1 comprises of Como Parade with on-street car parking to the foreground with dense canopy vegetation immediately behind. This creates a visual barrier along the streetscape edge, preventing views to the commuter carpark, platforms and station. The viewpoint location is low due to the ascending slope of Como Parade to a peak to the right of the view. Stair access to the residential footpath edge can be seen to the right of the view, to the right of which are residential frontages. A red post box marks the station pedestrian entry access ramp to the underpass. The large Fig tree can be seen to the right of the view, with the mature Angophora tree to the centre right within the station precinct.
Anticipated Change to View	This would include the removal of a number of adjacent trees, creating a continuous gap in vegetation along the centre of the view where the widened paving area is proposed. The lift shaft would likely be seen through this gap, between the Fig and Angophora trees, the canopies of which may partially screen the lift. Some existing vegetation along the carpark boundary will form a backdrop to the lift, and replacement planting in this area will establish this further. The kiss and ride would be formalised, and there would likely be a reduction of parked cars in this area due to parking restrictions. New fencing would be seen along the street footpath edge. The Angophora tree may or may not be removed.
Sensitivity to Change	Moderate. VP1 represents residential receivers who may experience this view at home or going to or from, within relatively close proximity to the Proposal. The property has a low hedges wrapping around the corner boundary and large windows and porch to the street frontage. However, the single storey dwelling is oriented to the street frontage towards more distant valley or water views. The viewpoint location is also at a lower elevation to the change anticipated within the commuter carpark and street interface, therefore somewhat less susceptible to this change.
Magnitude of Change	Low , as although the new lift and fencing would be noticeable new changes, they are not uncharacteristic to the existing view. The proposed tree removal will be a noticeable change to a characteristic feature of the view, however considering the amount of vegetation already present and with the retention of the Angophora species and other replacement planting, this change will likely be somewhat mitigated over time.
Significance of Impact	Moderate-Low

5.2.2 Viewpoint location 2



Criteria	Comments
Location and View Direction	Warraba Street. VP2 is located on the northern side of Warraba Street, on the footpath between property number 1 and 1A Warraba Street, approximately 85 metres from the proposed lift shaft on Como Parade. VP2 is looking north-east. Residential properties in this location are single storey dwellings.
Description of Existing View	VP1 comprises of Warraba Street parked cars, footpath and verge to the centre of the view, with dense canopy vegetation to both sides along the residential interfaces. A hedge forms the boundary of the streetscape to the left. Electricity poles, wires and street lights cross through the centre of the view, behind which the Fig tree marks the station entry, forming a dark green dense backdrop. A tall Eucalypt tree can be seen behind. The intersection with Railway Parade is not clearly visible due to the descending slope of the view towards the station. The existing perimeter fence to the rail corridor and station entry to the access ramp is largely obscured by canopy shade provided by the Fig tree.
Anticipated Change to View	This would include the possible removal of a small portion of canopy to the right of the Fig tree. New perimeter fencing is proposed along the streetscape edge which would include the section across the centre of this view including fencing closing off the existing access ramp entry, however this will not likely be a significantly noticeable in this view. The new lift will not be visible from this location.
Sensitivity to Change	Moderate. VP2 represents residential receivers as well as pedestrians and/or commuters. As shown, residences are sited below the street level and oriented towards Warraba Street, therefore anticipated less susceptible to changes in the location of the Proposal. Setbacks typically comprise of a moderate amount of screening vegetation to the front of the properties. Residents would likely experience this view when going to or from home from the front of their property, rather than from inside the house.
Magnitude of Change	Negligible as the anticipated scale of the change is expected to be very minor and within the characteristics of the existing view. Any minor discernible reduction in canopy vegetation has the capacity to be mitigated over time.
Significance of Impact	Negligible

5.2.3 Viewpoint location 3



Criteria	Comments
Location and View Direction	109-111 Como Parade. VP3 is located on the western side of Como Parade near the properties 109-111 Como Parade, approximately 25 metres from the proposed Como Parade lift, looking north-east. The properties are two and three storey townhouses with parking to the ground level.
Description of Existing View	VP3 comprises of Como Parade with parked cars across the horizontal extent of view, behind which is the station precinct. This is dominated by canopy vegetation, particularly from the characteristic Angophora tree to the centre of the view. A gap in vegetation exists to the right, revealing a portion of sky and background trees. The station entry to the access ramp is marked by the orange 'T' sign to the centre left of view. The commuter carpark entry does not appear apparent. To the left of view, canopy leaves from relatively newly planted native street trees partially shield the view down Como Parade. The small portion of the roof of the southern end of the station building can be seen through foreground vegetation between the blue and green cars, revealing the elevation change across the station precinct. Water views are not achieved from street level, although they are likely to be from the upper levels of residential buildings in this location.
Anticipated Change to View	This includes the removal of five trees on either side of the Angophora tree, and possibly an additional four trees including the Angophora itself, resulting in a noticeable decrease in canopy extents to the centre of the view. More sky would be seen, more of the existing station building, and a small portion of the new canopy extension to the station. The new lift within the commuter carpark would also appear to the right of the Angophora tree, with existing vegetation forming a thin backdrop. A small portion of the new lift to the platform may also be see filtered through vegetation to the right of the view. New fencing to the street edge may also be discernible. More commuters are also likely to form part of the anticipated change, as the primary pedestrian entry will change from the access ramp to the commuter carpark.
Sensitivity to Change	High. VP3 represents residential receivers who may experience this view at home or going to or from, with long viewing periods within relatively close proximity to the Proposal. The properties are multi-level with windows and a balcony to the street frontage, and situated on upper elevations therefore are likely to look down over the station precinct towards the distant valley, making them more susceptible to proposed changes.
Magnitude of Change	Moderate, as the new lifts will be noticeable new built form elements to an existing view dominated by vegetation. The proposed tree removal will also be a noticeable change to the existing view, particularly if the Angophora species is removed which provides a broad canopy and characteristic branching. The appearance of more commuters will not be uncharacteristic to the existing view.
Significance of Impact	High-Moderate

5.2.4 Viewpoint location 4



Criteria	Comments
Location and View Direction	113 Como Parade. VP4 is located on the western side of Como Parade near 113 Como Parade, approximately 35 metres from the proposed Como Parade lift, looking north. The property is a two storey house with parking to the ground level, with no pedestrian footpath to the verge.
Description of Existing View	VP4 comprises of Como Parade with parked cars across the horizontal extent of view, behind which is the station precinct. This is dominated by dense canopy vegetation and an opening revealing distant views to the Georges River. Street trees and private garden planting appears to the left of the view, both to the foreground and background. The orange 'T' sign can be seen to the centre left of the view marking the station entry, with the large Angophora tree to the centre of view. The station building itself is largely obscured from view due to the higher elevation of this viewpoint, however a very small section of roof can be seen behind vegetation. Similarly, the commuter carpark is also obscured due to the level change, however a few parked cars can be seen below the area of water. Overhead power lines feature in the view within the rail corridor and streetscape.
Anticipated Change to View	This would include the removal of five trees behind the Angophora tree, and possibly an additional four trees including the Angophora itself, resulting in a noticeable decrease in canopy extents to the centre of the view. More sky would be seen in this location, as well as background vegetation. The new lift within the commuter carpark would appear in the centre of the view. A portion of the new lift to the platform will also be seen filtered through vegetation, also to the centre of the view. The new canopy roof extension will also be seen to the left of the proposed platform lift. New fencing to the street edge may also be discernible. More commuters are also likely to form part of the anticipated change as the primary pedestrian access point will change from the access ramp to the commuter carpark. The primary water views achieved from this viewpoint are not likely to be screened by the Proposal due to the lower elevation of the station platform. Refer to Appendix A for photomontage.
Sensitivity to Change	High. VP4 represents residential receivers who may experience this view at home or going to or from, with long viewing periods within relatively close proximity to the Proposal. The properties are multi-level with windows and entry porch facing the street on the first floor, therefore are likely to look down over the station precinct towards the distant valley making them perhaps more susceptible to proposed changes.
Magnitude of Change	Moderate, as the new lifts will be noticeable new built form elements to an existing view dominated by vegetation. The proposed tree removal will also be a noticeable change to the view, particularly if the Angophora species is removed which provides a broad canopy and characteristic branching. The appearance of more commuters will not be uncharacteristic to the existing view.
Significance of Impact	High-Moderate

5.2.1 Viewpoint location 5



Criteria	Comments
Location and View Direction	Yamba Road. VP5 is located on the south-west corner of the Yamba Road and Como Parade intersection, on the corner of 127 Como Parade, approximately 140 metres from the proposed Como Parade lift. VP5 is looking north. There is no pedestrian footpath in this location.
Description of Existing View	VP5 comprises of Yamba Road extending across the view to the foreground with the Railway Road bridge crossing the rail corridor to the right. Como Parade is to the centre of the view descending towards the station entry, with parked cars to either side. The backdrop comprises of a dense continuous stand of layered canopy vegetation, mostly located along Railway Road and within the rail corridor as well as some distant vegetation to the centre of the view. To the left, mature vegetation is present associated with private property frontages and Yamba Road street trees, with fencing and built form secondary features. Road signage and electrical wires feature in the view to the foreground. The commuter car park and light poles are just seen, partially screened by vegetation and cars. The Angophora tree is discernible at the station entry.
Anticipated Change to View	This would include some tree removal to the centre of the view, possibly including and behind the Angophora tree. The lift to the commuter carpark would appear to the right of the Angophora tree to a similar height as the light pole seen in this location. The canopy of the Angophora tree, if retained, may partially screen the proposed lift. Distant vegetation would continue to form a backdrop to the new lift. Existing canopy vegetation to the commuter carpark boundary to the rail line would screen views to the proposed platform lift from this location, the height of which would be much lower than the Como Parade lift as shown in Figure 3. New fencing along the streetscape will also appear in this view, although largely screened by parked cars along Como Parade.
Sensitivity to Change	Moderate. VP5 represents residential receivers who may experience a similar view at home or going to or from, at a relative distance to the Proposal. Nearby properties are sited on elevated terrain, often with large windows to the upper levels oriented towards the valley and Georges River. This location is at a higher elevation than the Proposal, therefore direct views are largely at canopy level as shown.
Magnitude of Change	Low , as although the anticipated changes are confined to the centre of the view. The loss of vegetation, although likely to create a noticeable gap, will be partially mitigated by existing background vegetation and new tree planting. The new carpark lift, although visible, is not out of scale within the existing context considering the scale of trees, presence of light poles already in the view, and foreground road sign.
Significance of Impact	Moderate-Low

5.2.1 Viewpoint location 6



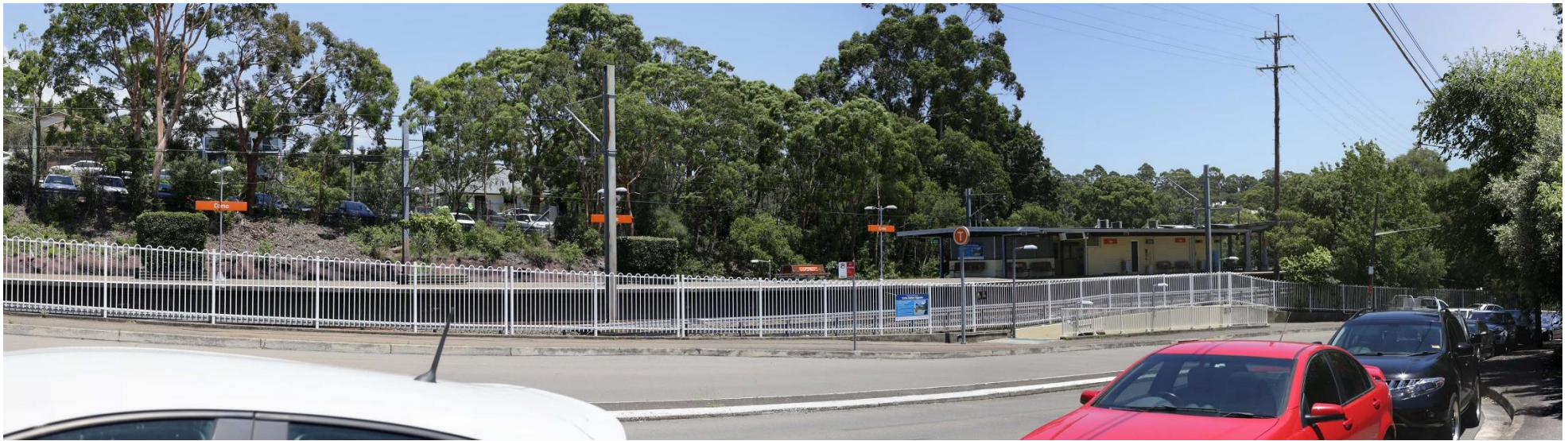
Criteria	Comments
Location and View Direction	Novara Crescent. VP6 is located at the Novara Crescent and Railway Road intersection near the top of a pedestrian connection from Ortona Parade. This location is approximately 95 metres from the proposed platform lift, and looking south-west. No footpath is present along Novara Crescent in this location.
Description of Existing View	VP6 comprises of Novara Crescent to the foreground across the view, with Railway Road, with parked cars and footpaths, ascending up to the station precinct. The southern end of the station building can be seen to the centre of the view in the background, with dense canopy trees behind and to the right. The station fencing can be seen to the front of the station building and along Railway Road behind parked cars. Residential properties appear to the left of the view, oriented towards Novara Crescent and surrounded by screening vegetation, including canopy trees behind. To the right, white timber fencing can be seen with trees behind. Electrical poles and wires, road signage and lights all feature in the view.
Anticipated Change to View	This would include the removal of three medium sized trees to the right of the Railway Road pedestrian entry, as well as canopy trees to the commuter carpark behind the station building. This would create a gap in vegetation, revealing more view of the station building and platform, as well as a reduction in green backdrop to the station building. The platform lift and canopy roof extension would appear directly to the left of the station building, partially screened by shrubs on Railway Road. The commuter carpark lift would appear directly behind the left side of the station building, at a higher elevation. Some retained existing vegetation behind both lifts will form somewhat of a backdrop, however not to the density within the existing view. New fencing would be seen along the street footpath edge, as well as possible new signage to the extended entry ramp.
Sensitivity to Change	Low. VP6 represents primarily road users in motor vehicles and pedestrians using the Ortona Parade pedestrian link to access the station. These viewers would be passing nearby the Proposal and views would be short term. This view location is lower than the Proposal, therefore viewers would be less susceptible to changes associated with the station.
Magnitude of Change	Low, as the removal of vegetation is contained to the centre of the view, and although the change would be noticeable, it is relatively minor. The lifts will be new features in the view, however are not uncharacteristic considering the station building is already viewed as well as other built form elements. Surrounding vegetation and other vertical elements in the view will also mitigate the height of the lifts.
Significance of Impact	Low

5.2.2 Viewpoint location 7



Criteria	Comments
Location and View Direction	Railway Road bridge. VP7 is located on the Railway Road bridge above the rail corridor to the south of the station, approximately 120 metres from the proposed lift to the station platform. VP7 is looking north-west. The viewpoint is taken from the northern footpath.
Description of Existing View	VP7 comprises of the rail line and Como Station to the centre of view in front of which overhead line infrastructure is visible. The station building can be seen, with rail lines to either side of the platform. Railway Road descends the slope past the station to the right, in front of which is a substation, electrical poles and foreground vegetation. To the left of the view, a portion of commuter carpark is visible, although largely screened by the dense vegetation on the rocky slope to the centre left of view. A number of Como Parade houses can be seen above the carpark as well as a large tree on the western side of Como Parade. Distant green hills with intermittent houses form the backdrop to the view.
Anticipated Change to View	The new platform lift would appear to the front of the station building to a height above the existing light poles and below the overhead line element. This would be a vertical element to a similar width as the station building. A portion of the new canopy roof extension may also be seen on either side of the new lift. Some tree removal is likely to be evident on the slope between the commuter carpark and station, however this will appear more as a reduction in density rather than a significant gap. It is unlikely the carpark lift will be visible due to foreground vegetation along this slope. New replacement fencing will be visible to the right of the station along Railway Road, and new entry signage may also be discernible. Tree removal to Railway Road will not be noticeable from this viewpoint due to background vegetation present.
Sensitivity to Change	Low. VP7 represents road users and pedestrians travelling across the rail corridor who would experience this view short term and possibly at speed. The existing pedestrian amenity facilities on the bridge is relatively poor and there is no designated location to stop and experience this view aside from the narrow footpath.
Magnitude of Change	Low, as although the new platform lift would be a new feature in the view, it is not uncharacteristic to the existing view elements. It's location to the front of the existing station and amongst other infrastructure elements also mitigates the type and form of this new feature. The reduction in density anticipated to existing vegetation on the rail corridor slope may be noticeable however somewhat mitigated by existing vegetation screening to the foreground. The new replacement fencing will not be dissimilar to that already appearing in the view.
Significance of Impact	Low

5.2.1 Viewpoint location 8



Criteria	Comments
Location and View Direction	Railway Road. VP8 is located on the eastern side of Railway Road on the footpath adjacent to the rear of property 35 Novara Crescent, approximately 50 metres from the proposed platform lift, looking in a north-west direction.
Description of Existing View	VP8 is a view of Railway Road and the station precinct. To the centre of the view, the Como station building can be seen with the platforms to the left and white rail corridor fencing in front. Behind the station to the left, the mature canopy trees form a dense backdrop to the station precinct along the slope, behind which the commuter carpark and Como Parade residences are just visible through filtered trees. Behind the station building, more distant canopy trees can be seen as well as a larger portion of sky. To the right, Railway Road appears sloping away from the viewer, with parked cars to the foreground and mature canopy vegetation behind. Entry to the pedestrian underpass can be seen in front of the station building on Railway Road. Signage, overhead line elements, electrical poles and wires all feature throughout the extent of view.
Anticipated Change to View	The new platform lift and station canopy roof extension would appear to the centre of the view to the left of the station building. The lift would extend to a height below the canopy vegetation along the rail corridor behind. The lift within the commuter carpark would appear to the left of the centrally located vertical overhead line element, and would appear to extend to a similar height as the platform lift. The upper portion of the lifts would be a transparent glass with ventilation to the top, whilst the lower portion would be a solid cladding. The proposed stair and retaining walls would be visible as an open cutting within the sandstone wall between the two lifts. Vegetation removal would be noticeable between the two lifts above this cutting, as well as to the right of the station building in the middle ground along Railway Road. Refer to Appendix A for photomontage.
Sensitivity to Change	Low. VP8 represents road users and pedestrians travelling alongside the station precinct who would experience this view short term and possibly at speed. There is no designated locations to stop and experience this view along this section of footpath, and road crossing is prevented due to the location of vehicle barriers. Nearby residences do no views towards the station from this location.
Magnitude of Change	Moderate. The change would include a discernible partial loss of tree canopy, noticeable primarily to the background, as well as the addition of three new built form features to the view, two of which are vertical elements of height. The new lifts would be somewhat out of scale with the built form already in the view, however does not penetrate the canopy vegetation behind, even with partial removal.
Significance of Impact	Moderate-Low

5.2.1 Viewpoint location 9



Criteria	Comments
Location and View Direction	19 Riverview Road. VP9 is located on Riverview Road adjacent to the residential property number 19. VP9 is approximately 430 metres from the proposed platform lift, looking in a south-west direction. There is no formal pedestrian footpath to the street in this location.
Description of Existing View	VP9 is a view across the valley towards the station, comprising largely of the developed slopes of Como with a consistent covering of canopy vegetation creating a predominantly green outlook. To the right of the view, a two storey house sits at a lower elevation to the verge, oriented towards valley views. To the lower centre of view, the roof of another house can be seen, of which is significantly lower than the verge and also oriented towards the valley. The rail corridor is discernible across the view extents, indicated by the increase in density of canopy vegetation, particularly noticeable to the left of the view. Of the station precinct, a portion of the commuter carpark is visible through gaps in vegetation, as well as one Como station sign located on the southern end of the platform. The station building is screened from view by existing vegetation. A number of houses on the western side of Como Parade opposite the station can be seen. The view is framed to the left by foreground vegetation.
Anticipated Change to View	This would include a minor amount of canopy tree removal to the centre of the view, within the rail corridor below the horizon, possibly revealing a small increase in the amount of built form visible. From this angle, the lift to the commuter carpark and that on the platform are in alignment. These would together be situated behind and above the residential house appearing in the view, located at 31 Novara Crescent. It is possible the upper portion of the commuter carpark lift may be visible considering the tree removal in this location, located behind and above the aforementioned property within the centre of the view. The platform lift is likely to be entirely obscured by vegetation situated to the front.
Sensitivity to Change	Moderate. VP9 represents residential receivers who would likely experience this view at home, although at a distance to the Proposal. The majority of the residential dwellings along this steep slope are oriented away from the street and towards the valley and station. Due to the steepness of the terrain, pleasant valley views to the west in the direction of the Proposal are easily achieved without the obstruction of other buildings, therefore are likely to be enjoyed frequently from the home, with long viewing periods.
Magnitude of Change	Negligible , as the scale and extent of the anticipated change is very minor and the change will not detract from the key elements, features of characteristics of the view.
Significance of Impact	Negligible

5.3 Summary of impacts

The following Table 11 and Table 12 provide a summary of landscape and visual impacts for the Proposal.

Table 11 Summary of landscape impacts

LCT	Description	Sensitivity to change	Magnitude of change	Overall Rating
LCT1	Low density residential on slope	Moderate	Negligible	Negligible
LCT2	Community facilities	N/A	N/A	N/A
LCT3	Rail corridor	Low	Low	Low
LCT4	Low lying flat recreation / conservation	N/A	N/A	N/A

Table 12 Summary of visual impacts

LCT	Location	Sensitivity to change	Magnitude of change	Overall Rating
VP1	105 Como Parade	Moderate	Low	Moderate-Low
VP2	Warraba Street	Moderate	Negligible	Negligible
VP3	109-111 Como Parade	High	Moderate	High-Moderate
VP4	113 Como Parade	High	Moderate	High-Moderate
VP5	Yamba Road	Moderate	Low	Moderate-Low
VP6	Novara Crescent	Low	Low	Low
VP7	Railway Road bridge	Low	Low	Low
VP8	Railway Road	Low	Moderate	Moderate-Low
VP9	19 Riverview Road	Moderate	Negligible	Negligible

5.4 Landscape and visual impacts during construction

Construction works will result in temporary landscape and visual impacts which may extend beyond the Proposal site. Landscape and visual impacts associated with construction activities are generally of greater magnitude than those associated with operation, however are temporary in nature.

Landscape and visual impacts during construction resulting from those activities outlined in Section 3.2.2 may include:

- the presence of a crane required for lift construction, proposed to be located within the commuter carpark
- the presence of an excavator, crane truck, concrete truck, and concrete pump
- the presence of a piling rig (if required), mounted on tracks, with access through the maintenance gate on Como Parade
- temporary hoarding between the work being undertaken and the public domain, platform and concourse; this would include an area on the platform, and two separate areas to the northern end of the commuter carpark
- presence of construction traffic and workers
- temporary parking areas
- importation and storage of construction equipment and plant

- materials stockpiling and the presence of incomplete structures
- construction activities to the pedestrian underpass, lifts, stairs, station entry zones on Como Parade and Railway Road, and within the station building
- activities associated with the removal of mature trees
- the presence of tree protection fencing to a number of existing trees to be retained
- replacement work to existing rail corridor fencing along the adjacent streetscapes.

5.5 General response to key legislation and policy objectives

The following is a summary of how the Proposal responds to the key landscape and visual legislation and policy objectives identified within the study area, as outlined in section 4.2.

Protect and enhance existing vegetation

Legislation and policy aims to protect and enhance vegetation for the benefit of protecting the bushland character of the Sutherland Shire, preserving the visual backdrop provided by canopy vegetation particularly in ridgetop locations, and preserving areas of high scenic quality. The importance of individual trees which are local landmarks and those that singularly make a positive contribution to the quality of the streetscape or locale is also recognised.

As mentioned, the Proposal includes the removal of a minimum of eight trees, possibly with the removal of an additional four. Of most importance is this possible removal of the Angophora tree which, although not formally protected, displays local character and identity and contributes positively to the streetscape and station precinct address.

Minimise the visual impact of buildings when viewed from adjoining residences and public spaces; ensure the scale of buildings are compatible with adjoining development

The legislation and policy objectives aim to limit built form heights in certain areas and ensure new development does not negatively impact the visual amenity, neighbourhood and landscape character of the area.

The Proposal does not exceed the height limits of the surrounding residential area. The proposed lift in the commuter carpark, although a relatively isolated new built form element, is set back from the street and at a lower elevation than the street level and within the context of tall canopy trees. Its scale and height will therefore integrate well into the existing context. The new lift proposed to the station platform is located adjacent to the existing station building of a similar scale, in front of a backdrop of canopy vegetation on a rocky slope. Additionally, the canopy vegetation is present to the eastern side of Railway Road as well as the elevated Railway Road bridge on the southern edge of the station precinct. These combine to visually mitigate the scale and height of the proposed new lift.

As illustrated in the previous section, the Proposal does not result in the loss of views from sensitive receiver locations. The glimpses achieved of the Georges River from the upper elevations of Como Parade from street level across the station precinct will not be diminished primarily due to the presence of existing vegetation and the elevation change across the slope from Como Parade to Railway Road.

Retention and enhancement of existing natural environment and features

Policy and legislation seeks to retain and enhance the existing natural features of the area, as well as ensure new development responds to the natural landform of the site and broader setting.

The Proposal is not located on a ridgetop nor a landmark location, therefore retention of ridgetop vegetation is not an issue. However, the station precinct does include dense native canopy vegetation to the upper elevations, natural rock formation, as well as the sandstone cutting of the existing access ramp. The Proposal involves the removal of some native vegetation, construction works in and around the vegetated rocky slopes, a new cutting through sandstone with large retaining walls to either side, and the removal and infilling of the existing rock cutting and access ramp to Como Parade.

Heritage conservation

The Proposal does not have a significant impact on the setting or views from the nearby heritage property of local heritage significance, as described in section 5.2.

6. Mitigation Measures

The following section recommends mitigation measures that respond to issues arising within the assessment that have potential to adversely impact on:

- the character of the landscape within which the Proposal is located
- views to the Proposal.

Mitigation measures address the most visual elements of the Proposal as well as referencing any relevant considerations drawn from the legislation and policy review.

6.1 Mitigation recommendations

6.1.1 Vegetation and tree canopy

As indicated within legislation and policy objectives and through site analysis, vegetation and tree canopy is valued for its contribution to landscape character as well as provision of visual amenity.

General considerations for the retention of vegetation associated with the Proposal include:

- retain the existing Angophora tree to the commuter carpark entry, as this individual tree contributes positively to the character and identity of the station precinct as well as providing a level of visual screening of the Proposal for residents along Como Parade opposite the station precinct
- retain and protect the existing Fig tree within the station precinct on Como Parade for its positive contribution to landscape character and visual amenity of the station precinct
- retain and protect as much existing vegetation as possible, particularly mature canopy trees, for their provision of visual amenity, visual integration for the Proposal, and screening
- ensure any infill landscape treatment to the existing access ramp from Como Parade utilises a planting palette consistent with the existing station precinct to achieve an integrated outcome
- where possible, introduce new tree planting in the immediate vicinity of trees to be removed, of a similar scale and character to existing, to mitigate any visual impact of the Proposal and ensure integration of the Proposal into the station precinct context.
- investigate strategically located new canopy tree planting opportunities along the eastern edge of Como Parade to screen views to the Proposal, in consultation with relevant stakeholders including residents on Como Parade. Consider the location between the commuter car park and on-street footpath for new tree placement, to ensure adequate pedestrian station access pathways are maintained. Ensure any new canopy tree planting compliments the urban bushland setting of the station precinct, and maintains a balance between visual mitigation and retention of existing valued water views.

6.1.2 Urban design

General considerations for urban design components include:

- ensure the Proposal components and materiality are of high quality and sympathetic to the existing natural features of the station precinct, contributing positively to the existing landscape character values of the surrounding context

- ensure the design and materiality of retaining walls to the extended underpass and new stair respond sensitively to the natural context of the station precinct, with consideration of views from within the underpass and from the station platform
- ensure the design and materiality of the new lifts respond to the character of the existing station building to ensure precinct integration
- ensure the form, structural components and materiality of the proposed canopy roof extension is consistent with the existing station building canopy, creating a seamless extension. Ensure materiality and colour is of low reflectivity.
- minimise the number of services poles required within the public realm and station precinct by utilising built form mounting and combining services on shared poles.

6.1.3 Construction activity and storage

General considerations for the construction phase include:

- take all practical measures to ensure construction equipment, stockpiles, and other visible elements are located away from key views to or from the sensitive visual receivers identified in this assessment. Should such equipment or stockpiles be located in a visually prominent location for any reasonable period of time, incorporate screening measures and practices to ensure sites are kept tidy
- ensure construction activities, equipment and storage areas are, where possible, located away from existing vegetation, the dripline of canopy trees, and other natural landscape features.

7. Conclusion

This LVIA has been undertaken to understand the potential effects of the accessibility, security and technology upgrades proposed at Como Station as part of the TAP program. At the time of writing, the Proposal was in the concept design phase.

Como is a leafy residential suburb located on a headland on the southern side of the Georges River. The rail line curves along the natural terrain of the ridgeline, with Como Station situated on the eastern slope stepping down between Como Parade and Railway Road. The areas surrounding the station are predominantly low density residential situated on valley edges often sited at elevation and oriented towards the Carina Bay gully below. A significant amount of canopy vegetation is present both within the station precinct and the surrounding area. This is valued for its contribution to urban character and visual amenity.

A total of four landscape character types were identified within the 500 metre study area, including LCT1 Low density residential on slopes, LCT2 Community facilities, LCT3 Rail corridor, and LCT4 Low-lying flat recreation / conservation. Of these, LCT2 and LCT4 were not impacted by the Proposal; LCT1 resulted in a Negligible impact, and the impact to LCT3 was found to be Low.

Sensitive visual receivers in the study area include a number of residential properties on Como Parade opposite the station precinct, and a number of residential properties on Riverview Road across the Carina Bay gully. Additionally, commuters and road users on Como Parade, Railway Road, Warraba Street and Novara Crescent are within the project viewshed.

Nine viewpoint locations were chosen to assess the visual impact of the Proposal on sensitive receivers within the study area. Visual impacts were assessed using panoramas of the existing view, and photomontages were created illustrating the proposed view of the Proposal from two viewpoint locations. The assessment found that the visual impacts from the Proposal range from Negligible to High-Moderate. VP3 and VP4 would be the most visually affected, due to their residential receiver type and their proximity to the Proposal.

Mitigation measures proposed for the construction and operational stages respond to the legislation and policy objectives as well as site analysis undertaken as part of this assessment. These measures should be taken into consideration in the next design phase of the project.

References

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Landscape Institute and Institute of Environmental Management & Assessment, UK (2013), *Guidelines for Landscape and Visual Impact Assessment, Third Edition*.

Roads and Maritime Services, Australia (2013), *Environmental Impact Assessment Practice Note - Guidelines for Landscape Character and Visual Impact Assessment, EIA-NO4 Version 2.0*.

TfNSW, *Around the Tracks: urban design for heavy and light rail*, December 2016 (interim issue)

Appendices

Appendix A – Photomontages

Appendix A includes photomontages of the proposed view from VP4 and VP8



EXISTING VIEW



PROPOSED VIEW

NOTE: Actual tree removal to be determined at detailed design stage.



View Direction: 12°
 Horizontal Field Of View: 60°
 Camera Height: 1.7 m
 Camera Type: Cannon 6D
 Lens Type: 50 mm
 Photograph Time & Date: 11:55 am,
 17th December 2019

Location: 113 Como Parade, Como
 NSW 2226, Australia
 Coordinates: 321657.518, 13764358.986
 (GDA 1994 MGA Zone 56)
 Viewpoint Elevation: 63.7 m
 Date of Photomontage: 15th January 2019
 Issue: v01

TAP3 Como Station
Transport for NSW
Viewpoint 4

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EXISTING VIEW



PROPOSED VIEW

NOTE: Actual tree removal to be determined at detailed design stage.



261°

Railway Road, Como
 NSW 2226, Australia
 321570.581, 13764403.461

Viewpoint 8

46 m

10:55 am,
 17th December 2019

GHD

Level 7

180 Lonsdale Street, Melbourne VIC 3000







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Document1

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Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
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