BaT project

Appendix H
Landscape and visual amenity

Contents

Appendix H. Landscape and visual amenity

H.1 Terms and definitions

Terms and definitions that have been used for the landscape and visual impact assessment (LVIA) are outlined in **Table H-1**. Where appropriate, definitions have been drawn from published literature, as this is considered to provide the best indication of international practice for LVIA.

Table H-1 Terms and definitions

Term	Definition
Contrast	May be described as the degree to which the proposed development or component of the proposed development differs visually from its landscape backdrop.
Cumulative impacts/ effects	May be defined as the additional changes caused by a proposed development in conjunction with other similar developments, or as the combined effect of a set of developments, taken together (SNH, 2009).
Digital elevation model (DEM)	Refers to the way in which a computer represents a piece of topography in three dimensions as a digital mode, excluding vertical elements eg vegetation, buildings (SNH, 2006).
Integration	Refers to the extent to which the proposed development or component of the proposed development can be blended into the existing landscape.
Landscape character	Is the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people.
Landscape character types	Landscape character types are distinct types of landscape that are relatively homogeneous in character...generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation and historical land use and settlement pattern (Landscape Character Assessment: Guidance for England and Scotland, CA and SNH, 2002).
Landscape condition	Landscape condition is based upon judgements about the physical state of the landscape...its intactness, from visual, functional, and ecological perspectives. It also reflects the state of repair of individual features and elements which make up the character in any one place (Landscape Character Assessment: Guidance for England and Scotland, CA and SNH, 2002).
Landscape effects (impact)	Effects on the landscape as a resource in its own right (Landscape Institute and Institute of Environmental Management and Assessment, 2013)
Landscape sensitivity	Landscape sensitivity is related to landscape character and how vulnerable this is to change… Landscapes which are highly sensitive are at risk of having their key characteristics fundamentally altered, leading to a different landscape character… Sensitivity is assessed by considering the physical characteristics and the perceptual characteristics of landscapes in light of particular forms of development'. (Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity, SNH, 2002).
Landscape value	Landscape value is the relative value or importance attached to a landscape (often as a basis for designation or recognition), which expresses national or local consensus, because of its quality, special features including 'perceptual aspects such as scenic beauty, tranquillity...cultural associations....and presence of conservation interests... nationally or locally' (CA and SNH, 2002).
Landscape and visual impact assessment	LVIA is the professional and methodical process by which assessment of the impacts of a proposed development on the landscape and visual resource is undertaken. It comprises two separate and distinct parts – Landscape Impact

Term	Definition
(LVIA)	Assessment and Visual Impact Assessment (Visual Representation of Windfarms: Good Practice Guidance, SNH, 2006).
Landscape impact assessment	Landscape impact assessment is the process by which assessment is undertaken of the impacts of a proposed development on the landscape, its character and quality. The Guidelines for Landscape and Visual Impact Assessment (LI and IEMA, 2002) states that landscape effects derive from changes in the physical landscape, which may give rise to changes in its character and how it is experienced.
Mitigation	Measures, including any process, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development.
Townscape effects (impacts)	Effects on the character and composition of the built environment including the buildings and the relationships between them the different types of urban open space, including green spaces, and the relationship between buildings and open spaces (Landscape Institute and Institute of Environmental Management and Assessment, 2013).
Visual amenity	“Amenity” generally means people’s appreciation of a particular place. In the context of this report, it is the visual character of an activity or area (design, colour, texture, scale, foci), which make up the area’s “visual amenity”. Impacts on visual amenity as perceived by people are clearly distinguished from, although closely linked to, impacts on landscape character and resources.
Visual effects	Effects on specific views and on the general visual amenity experienced by people (Landscape Institute and Institute of Environmental Management and Assessment, 2013)
Visual impact assessment	Visual impact assessment is the professional and methodical process which is used to assess the impacts of a proposed development on the visual appearance of a landscape and its visual amenity. The Guidelines for Landscape and Visual Impact Assessment (LI and IEMA, 2002) states that "visual effects relate to the changes that arise in the composition of available views as a result of changes to the landscape, to people's responses to the changes, and to the overall effects with respect to visual amenity".
Zone of theoretical visibility (ZTV)	ZTV represents the area over which a development can theoretically be seen, based on a DEM. The ZTV usually presents a ‘bare ground’ scenario; that is, a landscape without screening structures or vegetation. This information is usually presented upon a map base (Visual Representation of Windfarms: Good Practice Guidance, SNH, 2006).

H.2 Assessment methodology

H.2.1 Types of impacts

The LVIA methodology is applicable to the assessment of:

- landscape effects, which include the effects on the landscape as a resource in its own right. Due to the built nature of the existing landscape this assessment is primarily concerned with townscape effects
- visual effects, being effects on specific views and on the general visual amenity experienced by people
- likely effects during the construction and operation of the Project
- likely effects during both day time and (for key potential light sources) night time.

Key sources of potential impact are outlined in **Chapter 13 – Landscape and visual amenity**. The assessment of impacts assumes that all mitigation measures are fully integrated into the Project, including land form modifications, planting, as well as assumptions on specific components of the Project.

Impacts may be described as being adverse (negative), beneficial (positive) or neutral (different, but neither obviously worse nor better than the current situation). Impacts can also be:

- direct (ie directly or physically affecting a landscape resource) or indirect (ie physical changes elsewhere, which affect the landscape character or views within adjacent or more distant areas)
- temporary/ short-term (ie those occurring during installation/ construction) or permanent/ long-term (ie those lasting for the life of the project)
- wide spread or localised.

Impacts on designated landscapes (such as parks) are generally assessed against the criteria for landscape impacts, although visual aspects may also be considered using the criteria for assessing visual impacts.

The approach distinguishes landscape, visual and lighting impacts, although in practice, these have been considered together using a unified precinct-based approach that integrates consideration of landscape and visual impacts.

It should be noted that the assessment tables are intended as a guide to process only and the descriptions of magnitude and sensitivity are illustrative as there is no defined boundary between levels of impacts.

H.2.2 Assessment limitations

Limitations associated with the LVIA include:

- the LVIA process aims to be objective and describe factually any anticipated changes to landscape character, views and visual amenity. Potential changes as a result of the Project have been defined, however, the significance of these changes requires qualitative judgements to be made. The conclusions to this assessment combine objective measurement and professional interpretation and are therefore in part subjective.
- the description and understanding of the Project is based on the Reference Design. The end form could change to some degree from that described
- this assessment considers surface level impacts on landscape character, views, visual amenity and lighting an does not comment on related topic areas covered by other chapters of the EIS. For example, the assessment does not consider potential impacts that may result in long-term impacts to soil structure and associated land cover or the impacts of changes to views on property prices.

H.2.3 Desktop analysis

Information sources identified and reviewed as a component of the desktop analysis included:

- relevant planning policies, strategies and guidelines from Brisbane City Council and the Queensland Government
- publically available information on recreation spaces and public visitor areas
- digital aerial photography (imagery dated 2014 from Google Earth)
- cadastral data, showing roads, property boundaries and built areas

- LVIAs prepared for similar projects, particularly the visual amenity and lighting assessment prepared for the Cross River Rail EIS.

A preliminary desktop analysis of existing landscape character and visual amenity, within the study area was undertaken to inform this LVIA. This included analysis of the underlying topography using a digital elevation model, land cover and high level landscape values. Findings of the desktop analysis were confirmed during field visits.

H.2.4 Field survey

Field surveys were undertaken on 31 March 2014, 1 April 2014 and 2 April 2014 to ground truth the findings of the desktop analysis and to undertake an on-site assessment of landscape character and visual amenity. Photographs were taken to:

- portray landscape character
- inform the viewpoint assessment from representative viewpoints.

The field survey focussed on those aspects of the landscape with potential to be of greatest sensitivity to the Project, and on gaining an appreciation of those aspects of the Project most likely to affect landscape character and visual amenity.

Five precincts were identified corresponding to the areas near surface infrastructure. These included:

- Precinct 1: Dutton Park (southern connection)
- Precinct 2: Woolloongabba Station
- Precinct 3: George Street Station
- Precinct 4: Roma Street Station
- Precinct 5: Spring Hill (northern connection).

The field survey concentrated on that area about 500m from the major infrastructure, where impacts on landscape or visual amenity were considered likely to be of greater significance.

H.2.5 Landscape assessment (precinct analysis)

Description of existing landscape

Landscape character assessment identifies what makes one place different from another. It identifies what makes a place distinctive, without necessarily assigning a value to it. This approach has been used to establish the existing character of the landscape and to provide a framework for measuring the impact of the Project on landscape character. A number of precincts were defined that provide a framework for methodically describing the landscape within the study area.

Judgement of landscape sensitivity

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. Levels of sensitivity vary according to the type of development and the nature of the landscape. Aspects that were considered in identifying the level of sensitivity associated with each precinct included:

- the landscape's inherent values (eg perceptual qualities, cultural importance) and any specific values that may apply such as landscape planning designations

- the landscape's ability to absorb changes associated with the Project (eg the extent to which the Project may fit or be absorbed into the landform, land use, pattern, scale or texture of the existing landscape).

Levels of sensitivity and the attributes considered in determining the level of sensitivity are described in **Table H-2**.

Table H-2 Defining landscape sensitivity

Sensitivity of landscape	Attributes of landscape sensitivity categories
High	A landscape protected by national designation and/ or widely acknowledged for its quality and value. A landscape with distinctive character and low capacity to accommodate the type of change envisaged.
Medium	A moderately valued landscape, perhaps a regionally important landscape and/ or protected by regional/ state designation, or where its character, land use, pattern and scale may have some capacity to accommodate a degree of the type of change envisaged.
Low	A landscape valued to a limited extent, perhaps a locally important landscape or where its character, land use, pattern and scale is likely to have the capacity to accommodate the type of change envisaged.
Negligible	A landscape which is not valued for its scenic quality or where its character, existing land use, pattern and scale are tolerant of the type of change envisaged, and the landscape has capacity to accommodate change.

Magnitude of change to landscape character

The magnitude of change to landscape character depends on the nature, scale and duration of the change. It 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 most impacted by the Project (ie worst case scenario), before the application of any mitigation measures. The magnitude of change is described as being negligible (barely perceptible), low (noticeable), medium (considerable) or high (dominant change).

Table H-3 describes the magnitude of change used for this assessment. The descriptions of magnitude and sensitivity are illustrative as there is no defined boundary between levels of impacts.

Table H-3 Defining magnitude of change to landscape character

Magnitude of change	Typical examples
High (dominant change)	A clearly evident and frequent/ continuous change in landscape characteristics affecting an extensive area, which is likely to fundamentally change the character of the landscape and is of permanent (long-term) duration
Medium (considerable change)	A considerable change in landscape characteristics, frequent or continuous and over a wide area and of permanent duration or a clearly evident change, but over a restricted area and/ or of temporary (short-term) duration
Low (noticeable change)	A noticeable change in landscape characteristics over a wide area or permanent duration or a considerable change over a restricted area, but would not fundamentally change the character of the landscape and/ or of temporary (short-term) duration
Negligible (barely perceptible change)	An imperceptible, barely or rarely perceptible change in landscape characteristics

Level of effect on landscape character

An evaluation of overall potential impacts on landscape character is based on the sensitivity of the existing landscape to change and the magnitude of change that is likely to occur.

No prescribed methods for assessment of significance of landscape impacts exist and professional judgement and experience are applied in identifying the level of significance. Each of the Project's precincts was assessed on its own merits, as factors unique to each circumstance need to be considered. However, there are general principles that were used to guide this process and provide transparency about how judgements have been made.

The overall significance of change to landscape character is determined with reference to **Table H-4**.

Table H-4 Determining level of effect on landscape character

Significance of Impact		Magnitude of change in landscape			
		High (dominant change)	**Medium (considerable change)**	**Low (noticeable change)**	**Negligible (barely perceptible change)**
Sensitivity of landscape	High	Major	Moderate to major	Moderate	Minor to moderate
	Medium	Moderate to major	Moderate	Minor to moderate	Minor
	Low	Moderate	Minor to moderate	Minor	Minor to negligible
	Negligible	Minor to moderate	Minor	Minor to negligible	Negligible

Denotes a 'significant' impact

Denotes a 'not significant' impact

H.2.6 Visual amenity assessment

Identification and description of visual receptor audiences and viewpoints

Visual receptors were assessed and described in terms of the views that can be obtained from selected representative viewpoints within the study area. Representative viewpoints were identified for the LVIA that illustrate locations from which views to the Project may be obtained including locations likely to be most affected by the Project as well as key vantage points, such as lookouts, where there is particular interest in the view. Visual receptors were identified and described based on:

- proximity of the receptors, as the most effected visual receptors are anticipated to be located closest to the project, unless located at an elevated vantage point
- type of receptor (eg residents, those passing through the area by vehicle, pedestrians or workers) as different viewer types would have different perceptions of the change.

Judgement of visual sensitivity

The sensitivity of each viewpoint, and the visual receptors which it represents, is considered to be dependent on the:

- importance of the view, its existing scenic qualities and the presence of other existing manmade elements in the view

- visual receptor and their likely interest in the view (eg residents, visitors to important/ valued landscapes or visitors to non-designated areas, motorists)
- volume of visual receptors and the duration of time that receptors spend experiencing the view.

Levels of sensitivity, shown in **Table H-5** vary according to the type of development and the visual receptor audience.

Table H-5 Defining viewpoint sensitivity

Sensitivity of viewpoint	Attributes of viewpoint sensitivity categories
High	Large numbers of viewers, particularly those with proprietary interest and prolonged viewing opportunities such as residents or tourists and users of attractive and/ or well-used recreational facilities. Views from a regionally important location such as a scenic lookout where interest is specifically focussed on the landscape.
Medium	Medium numbers of viewers with an interest in their environment, such as residents or visitors eg visitors to urban parks. Larger numbers of travellers with an interest in their surroundings.
Low	Small numbers of people or viewers with only a passing interest in their surroundings eg those travelling along principal roads. Viewers whose interest is not specifically focussed on the landscape eg workers, commuters.
Negligible	Very occasional numbers of viewers with only a passing interest in their surroundings eg those travelling along minor roads, views from the air

Magnitude of change to visual amenity from representative viewpoints

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 change also depends on the loss, change or addition of any feature in the field of view of the receptor 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 assumes a worst case scenario without mitigation as well as the potential for proposed mitigation (eg screen planting) to affect the view in the longer term. The level of effects on a view depend on a wide range of factors including 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 Project. Magnitude of change is described as being barely perceptible, noticeable, considerable or dominant, as illustrated in **Table H-6**.

Table H-6 Defining magnitude of change to visual amenity

Magnitude of change	Typical examples
High (dominant change)	Major changes in view typically at close distances, affecting a substantial part of the view, continuously visible, or obstructing a substantial part or important elements of view, particularly where the change is expected to contrast strongly with the existing landscape and is of permanent (long-term) duration.
Medium (considerable change)	Clearly perceptible changes in views, typically at intermediate distances, resulting in either a distinct new element in a significant part of the view, or a wider ranging, less concentrated change across a wider area including situations where the change would be visible but is not expected to contrast strongly with the existing landscape. Typically situations where the change is of permanent (long-term) duration.
Low (noticeable change)	Minor changes in views, typically at longer distances or visible for a short duration,

Magnitude of change	Typical examples
	and/ or are expected to blend in with the existing view to a moderate extent including situations where there is likely to be a low contrast between the nature of the current and proposed view. Also situations where there is a dominant or considerable change in the view but of temporary (short-term) duration
Negligible (barely perceptible change)	Change which is barely visible, typically at a very long distances or visible for a very short duration, and/ or are expected to blend with the existing view with minimal contrast. Also noticeable changes which are of temporary (short-term) duration.

Overall significance of impact on visual amenity from representative viewpoints

The evaluation of overall potential impacts on visual amenity is based on the sensitivity of existing views to change and the magnitude of change that is likely to occur. No prescribed methods for assessment of significance of impacts exist; therefore professional judgement and experience are applied in order to identify the level of significance. Each viewpoint is assessed on its own merits, as factors unique to each circumstance need to be considered. However, there are general principles which can be used as a guide to this process; which provides transparency about how judgements have been made.

The overall significance of change to visual amenity and individual viewpoints is determined by using **Table H-7**.

Table H-7 Determining level of effect on visual amenity

Significance of Impact		Magnitude of change in views			
		High (dominant change)	Medium (considerable change)	Low (noticeable change)	Negligible (barely perceptible change)
Sensitivity of viewpoint	High	Major	Moderate to major	Moderate	Minor to moderate
	Medium	Moderate to major	Moderate	Minor to moderate	Minor
	Low	Moderate	Minor to moderate	Minor	Minor to negligible
	Negligible	Minor to moderate	Minor	Minor to negligible	Negligible

Denotes a 'significant' impact

Denotes a 'not significant' impact

H.2.7 Lighting assessment on visual amenity

Definition and description of the lighting assessment

A qualitative assessment of the impacts of lighting on visual amenity has been undertaken based upon determination of the current level of lighting within the Project area and any potential changes to lighting levels that may be associated with the Project. As there is no prescribed assessment method for the impacts of lighting on visual amenity, guidance and terminology has been taken from the *Guidance Notes for Reduction of Obstructive Lighting* (2005), prepared by The Institution of Lighting Engineers UK, and *Australian Standard 4282 – Control of Obtrusive Effects of Outdoor Lighting* (1997). This information has then been combined with the standard method of assessment for impacts on visual amenity. Visual receptor audiences are assumed to be the same as those identified in the Visual Amenity Assessment.

Judgement of visual sensitivity

The sensitivity of each representative viewpoint to changes in after-dark lighting conditions as a result of the Project has been based upon elements illustrated in **Table H-78** including:

- the proximity of the viewpoint to the greatest lighting source that is associated with the Project (specifically defined for every project and the type of impacts that may be associated with that project's specific infrastructure)
- the public and private accessibility of the representative viewpoint location and the likely number of viewers who will visit the viewpoint.

Table H-8 Visual sensitivity to project lighting

Lighting sensitivity	Description
High	• Clusters of permanent residences and apartments • People residing at hotels on a permanent or temporary basis • Natural recreation areas used at night eg parks and riverside walks • Sites visited by receptors with a specific interest in the landscape eg scenic viewpoints such as Kangaroo Point Cliffs
Medium	• Medium number of permanent residences eg city suburbs • Viewpoints experienced by those visiting and working night-time shifts at local employment centres eg pubs and hotels
Low	• Sections of roads passing through landscapes which are already lit eg from commercial businesses, industrial uses • Viewpoints experienced by those working night-time shifts at establishments with moderate-low levels of external lighting eg hospitals
Negligible	• Viewpoints experienced by those working and visiting industrial landscapes that are highly lit eg heavy industry

Magnitude of change to visual amenity from representative viewpoints

The magnitude of change to views and visual amenity, as a result of lighting conditions, depends on the nature, scale and duration of the change to lighting that is expected to occur. The magnitude of change also considers any change to the backdrop to, or outlook from, the representative viewpoint. The assessment assumes a worst case scenario without mitigation. The level of effect on a view depend on the extent of visibility, degree of obstruction of existing features, degree of contrast with the existing view, and angle of view.

The magnitude of changes in lighting is judged through the consideration of the existing condition against the potential condition. These conditions include very dark, predominantly dark, predominantly lit, or brightly lit landscapes as a measure of change in visual conditions. These conditions are defined as:

- **very dark –** landscapes with minimal artificial lighting other than that which is localised lighting of a dwelling. Typically no street lighting and no industrial lighting
- **predominantly dark –** landscapes where dwellings are still largely isolated from one another, creating a relatively dark atmosphere with intermittent sources of lighting (such as street lighting) such as acreage properties

- **predominantly lit –** landscapes with standard elements of lighting such as suburbs with street lighting and lighting from residential dwellings, commercial businesses and some industrial lighting
- **brightly lit –** city centres and/ or large scale industrial landscapes with high levels of lighting.

The outcome of this judgement will result in either a dominant, considerable, noticeable or imperceptible change to lighting conditions from the representative viewpoint, as defined in **Table H-9**.

Table H-9 Defining magnitude of change to visual amenity

Magnitude of change	Typical examples
Dominant change (high)	Occurs when an intrinsically dark landscape becomes brightly lit.
Considerable change (medium)	Occurs when an intrinsically dark landscape becomes predominantly lit or a predominantly dark landscape becomes brightly lit.
Noticeable change (low)	Occurs when an intrinsically dark landscape become predominantly dark, a predominantly dark landscape becomes predominantly lit or a predominantly lit landscape becomes brightly lit.
Barely perceptible change (negligible)	Occurs when a landscape experiences negligible changes from the existing lighting conditions to the proposed lighting conditions.

Overall significance of impact on visual amenity from representative viewpoints

This evaluation considers sensitivity of each representative night time viewpoint and the magnitude of change that is likely to occur. Professional judgement and experience have been applied in order to identify the visual sensitivity to lighting and the potential magnitude of change. Each viewpoint is assessed on its own merits, as factors unique to each circumstance need to be considered. However, there are general principles which can be used as a guide to this process and provide transparency about how judgements have been made. The overall significance of change to visual amenity and individual viewpoints is determined using **Table H-10**.

Table H-10 Determining level of effect on lighting

Significance of impact		Magnitude of lighting change			
		High (dominant change)	Medium (considerable change)	Low (noticeable change)	Negligible (barely perceptible change)
Sensitivity of landscape to lighting	High	Major	Moderate to Major	Moderate	Minor to Moderate
	Medium	Moderate to Major	Moderate	Minor to Moderate	Minor
	Low	Moderate	Minor to Moderate	Minor	Minor to Negligible
	Negligible	Minor to Moderate	Minor	Minor to Negligible	Negligible

Denotes a 'Significant' impact.

Denotes a 'Not Significant' impact.

H.2.8 Preparation of mitigation measures

Following on from the assessment of impacts on landscape (precinct) character, visual amenity and night time lighting, a set of mitigation measures which are not inherent in the original description of the

Project have been developed. These measures aim to further avoid and reduce adverse impacts as far as reasonably practicable during the construction and operation phases of the Project.

H.2.9 Photography specifications

Photographs have been taken to best represent and mimic near-to-true daytime conditions. Images used in the representative viewpoint assessment were taken on a Canon 600D with a 35mm lens (equivalent of 50mm SLR) representative of human vision.

Whilst it is common to limit the maximum horizontal field of view to no more than 90°, which is considered representative of the human field of view, in most instances a series of individual images have been joined. This is more indicative of someone moving their head to gain a wider view which provides greater contextual appreciation of the urban environment.

H.3 Assessment of landscape and visual impacts

H.3.1 Likely extent of impacts

A number of project impacts occur across the study corridor. An assessment was undertaken of the identified landscape character types and associated character areas for each precinct that is likely to experience changes arising from the Project. This analysis considered:

Whether the proposed alignment pass directly through the precinct

- if yes, it is considered that there is potential for direct landscape and visual impacts
- if no, it is considered unlikely that there would be landscape impacts although the potential for indirect visual impacts remains, dependent upon the type of structure present, elevation and distance of the precinct from the structure at its closest point.

Whether permanent above ground structures are proposed within or visible from the precinct:

- if yes, it is considered that there is potential for direct and/ or indirect landscape and visual impacts during operation
- if no, (for example structures are underground) then it is considered that there would be no landscape and or visual impacts during operation.

Finally, whether temporary construction compounds are proposed within or visible from this precinct:

- if yes, it is considered that there is potential for direct and/ or indirect landscape and visual impacts during construction
- if no, it is considered that there would be no landscape and or visual impacts during construction.

Table H-11 summarises the outcomes of this assessment.

Table H-11 Analysis of potential landscape and visual impacts on landscape character areas

Precinct	Potential landscape impacts (direct)	Potential visual impacts (direct or indirect)	Precinct where impact evaluated
Landscape type: Parklands			
P1: Dutton Park	No	Yes	Precinct 1: Dutton Park
P2: Kangaroo Point	No	No	n/a – not considered further
P3: Botanic Gardens	No	Yes	Precinct 3: George Street Station
P4: Roma Street Parkland	Yes	Yes	Precinct 4: Roma Street Station
P5: Victoria Park	Yes	Yes	Precinct 5: Victoria Park
P6: Victoria Park Golf Course	No	Yes	Precinct 5: Victoria Park
Landscape type: Residential			
R1: Fairfield Road	No	Yes	Precinct 1: Dutton Park
R2: Cornwall Street	No	Yes	Precinct 1: Dutton Park
R3: Dutton Street	No	Yes	Precinct 1: Dutton Park
R4: Lochaber Street	No	Yes	Precinct 1: Dutton Park
R5: Fleurs Street	No	Yes	Precinct 1: Dutton Park
R6: Qualtrough Street	No	No*	n/a – not considered further
R7:Stephens Road	No	No*	n/a – not considered further
R8: Hawthorne Street	No	Yes	Precinct 2: Woolloongabba Station
R9: Main Street	No	Yes	Precinct 2: Woolloongabba Station
R10: Boundary Street	No	Yes	Precinct 5: Victoria Park
Landscape type: Institutional			
I1: PA Hospital	No	Yes	Precinct 1: Dutton Park
I2: Boggo Road Urban Village	No	Yes	Precinct 1: Dutton Park
I3: Mater Hospital	No	No	n/a – not considered further
I4: GoPrint	Yes	Yes	Precinct 2: Woolloongabba Station
I5: Government/ QUT	No	Yes	Precinct 3: George Street Station
I6: Brisbane Girls Grammar	No	Yes	Precinct 5: Victoria Park
I7: RBW Hospital	No	Yes	Precinct 5: Victoria Park
Landscape type: Commercial			
C1: Burke Street	No	Yes	Precinct 1: Dutton Park
C2: Annerley Road	No	No*	n/a – not considered further
C3: Ipswich Road/ Stanley Street	Yes	Yes	Precinct 2: Woolloongabba Station
Landscape type: City Centre			

Precinct	Potential landscape impacts (direct)	Potential visual impacts (direct or indirect)	Precinct where impact evaluated
CC1: Vulture Street/ Grey Street	No	No*	n/a – not considered further
CC2: Brisbane CBD	Yes	Yes	Precinct 3: George Street Station
CC3: Spring Hill	No	No*	n/a – not considered further
Landscape type: Transport corridor			
T1: Eastern Busway/ Dutton Park Railway	Yes	Yes	Precinct 1: Dutton Park
T2: Pacific Motorway (South East Freeway/ South East Busway)	No	Yes	Precinct 3: George Street Station
T3: Roma Street Railway	Yes	Yes	Precinct 4: Roma Street Station
Landscape type: Sports and entertainment			
SE1: The Gabba Stadium	No	Yes	Precinct 2: Woolloongabba Station
SE2: RNA Showgrounds	No	Yes	Precinct 5: Victoria Park
Landscape type: Waterway			
W1: Brisbane River	No	No	n/a – not considered further

**no significant impacts likely due to distance*

H.3.2 Corridor-wide impacts

Precinct 1: Dutton Park (Southern Connection)

Landscape impacts are presented in **Table H-12** and

Table H-13. Visual impacts are presented in **Table H-14** to **Table H-17**.

Table H-12 Landscape character area I2: Boggo Road Ecosciences Precinct

Issue	Impact on landscape values
Nature of the existing landscape	The Boggo Road Urban Village Precinct (I2) is described in **Chapter 13 – Landscape and visual impact assessment**. Whilst the amenity of the landscape is improving; it is largely immature and has capacity to accept further change.
Potential landscape impact	The Project would not impact on the majority of this landscape character area. However, a vacant site and an area of landscaped greenspace (Outlook Park) east of the Ecosciences building would be affected for by the Project's cut and cover works.
Landscape sensitivity	*Low* – this landscape is of local value only and is currently in flux and is, therefore, considered to have capacity to accept change.

Issue	Impact on landscape values	
	Construction	**Operation**
Magnitude of landscape impact	*Low* – Outlook Park and the adjacent vacant site would experience considerable change during construction due to the removal of the parkland features and replacement with a construction worksite, including the tunnel boring machine (TBM) launch site and acoustic shed or enclosure.	*Negligible* – This area would be reinstated to a similar standard following completion of construction works including replanting of trees and the direct change is unlikely to be perceptible.
Significance of landscape impact	*Minor adverse (temporary)*	*Minor to negligible adverse (permanent)*

Table H-13 Landscape character area T1: Eastern Busway/ Dutton Park Railway Corridor

Issue	Impact on landscape values	
Nature of the existing landscape	T1 comprises typical rail and busway infrastructure. Except for the station platforms, it is not accessible to the general public. There is no significant vegetation.	
Potential landscape impact	During construction, this landscape character area would be affected by the presence of a large construction worksite including acoustic shed and track works. During operation the main change would be the presence of the two rail portals, the feeder station and a ventilation outlet (approximately two to four metres of which would be visible protruding above the finished ground level). A new bus stop/ layover area would also be present on Kent Street between the Princess Alexandra Hospital and the rail corridor.	
Landscape sensitivity	*Negligible* – this landscape is an existing transport corridor not valued for its scenic quality or character and is therefore considered to have considerable capacity to accept changes from the Project.	
	Construction	**Operation**
Magnitude of landscape impact	*Low* – construction activities would be a noticeable temporary adverse change in the landscape but would not be out of character.	*Low* –New transport infrastructure would be present within the landscape. However, the new infrastructure is anticipated to blend into the current landscape character so would be a neutral change and would not fundamentally change the character of the landscape.
Significance of landscape impact	*Minor to negligible adverse (temporary)*	*Minor to negligible neutral (permanent)*

Table H-14 Representative Viewpoint 1: Burke Street

Issue	Impact on visual values of surrounding residents	
Nature of the Existing view	Viewpoint 1 is taken from the boundary of the commercial and residential area at the transition of Burke Street and Elliot Street, Woolloongabba. It is considered a worst case example of the kind of views that may be obtained from residential properties around the site as well as indicative of views obtained by workers in the Burke Street Commercial area.	
Potential visual Impact	During construction, demolition works and an acoustic shed or enclosure located east of the Ecosciences building would be visible. During operation, the main change would be the presence of retaining structures and infrastructure associated with the tunnel portal and the removal of the dominant retaining wall structure. A ventilation outlet would also be visible protruding up to four metres above ground level in the vicinity of the Ecosciences building.	
Visual sensitivity	*Low* – residential viewers are generally considered to have a medium to high level of sensitivity to changes in view. However, very few residents would be affected; and in the vicinity of this viewpoint residential views are typically oriented away from the transport corridor therefore, the sensitivity is considered to be low.	
	Construction	**Operation**
Magnitude of landscape impact	*Low* – the view has been affected in recent years by the construction of the Ecosciences building and other infrastructure. Accordingly, there would be a noticeable change in the view from this location during construction due to the presence of the acoustic shed and other obvious elements associated with the construction activities.	*Negligible* – the change in view would be minimal as the change would integrate with the existing view and would be consistent with the existing view of a transport corridor.
Significance of visual impact	*Minor adverse (temporary)*	*Minor to negligible neutral (permanent).*

Table H-15 Representative Viewpoint 2: PA Hospital Busway Station

Issue	Impact on visual values of public transport users	
Nature of the existing view	This view is obtained from the PA Hospital Busway Station looking west over the Project. It is an elevated panoramic view encapsulating the PA Hospital to the left, the Eastern Busway including portal in the centre and the Ecosciences building beyond. Ipswich Road is also visible to the right of the view. The view obtained from this vantage point would only be obtained by busway users, but is representative of pedestrian amenity around the Project site.	
Potential visual Impact	During construction, demolition works, the acoustic shed or enclosure east of the Ecosciences building and the acoustic shed west of the railway corridor would be visible. Other grading and construction works are also likely to be visible including works associated with the construction of the new rail link. During operations, reconfiguration of infrastructure elements may be discernible.	
Visual sensitivity	*Low* – users of the PA Hospital Busway Station are likely to be primarily focussed on travelling to/ from the busway station rather than on the visual quality of their surroundings.	
	Construction	**Operation**
Magnitude of landscape impact	*Low* – there would be a considerable change in the view from this location during construction due to the presence of acoustic sheds and other construction related infrastructure. However, the change is of only temporary duration.	*Negligible* – the change in view would be barely perceptible as it would blend with the existing view.
Significance of visual impact	*Minor adverse (temporary)*	*Minor to negligible neutral (permanent)*

Table H-16 Viewpoint 3: View from Pacemaker Café, Pharmacy Australia Centre of Excellence

Issue	Impact on visual values of workers in multi-storey buildings	
Nature of the existing view	This view is obtained from the Pacemaker Cafe on Cornwall Street, Annerley, looking north over the Project. It is an elevated panoramic view accessible to the public and considered representative of the type of views that may be obtained from the PA Hospital and other multi-storey buildings such as the Leukaemia Foundation. In this view, the residential properties of LCA R3 are visible, separated from the rail corridor by a high noise barrier. Infrastructure associated with the rail corridor is also visible as well as the current car parking. The city is visible in the distance to the right of the view.	
Potential visual Impact	During construction, demolition works, an acoustic shed and worksite east of the railway corridor would be visible. Other grading and construction works, including works for the Kent Street bus layover would be evident. During operation, the main change would be the presence of the proposed feeder station and glimpsed views of the hardstand and drivers' facility at the Kent Street bus layover. The minor reconfiguration of transport infrastructure may also be discernable, including the rail portals, one of which would be present in the centre left of the view.	
Visual sensitivity	*Low* – relatively low numbers of users access the Pacemaker Cafe and/ or those working or recovering in hospital buildings around the site are unlikely to be primarily focussed on the view.	
	Construction	**Operation**
Magnitude of landscape impact	*Low* – there would be a considerable change in the view from this location during construction due to the presence of an acoustic shed and other construction related infrastructure. However, the change would be temporary.	*Low* – the change in view would be noticeable but the change would blend with the existing view. Whilst the transport elements would be different, they would be generally consistent with the existing character.
Significance of landscape impact	*Minor adverse (temporary)*	*Minor neutral (permanent)*

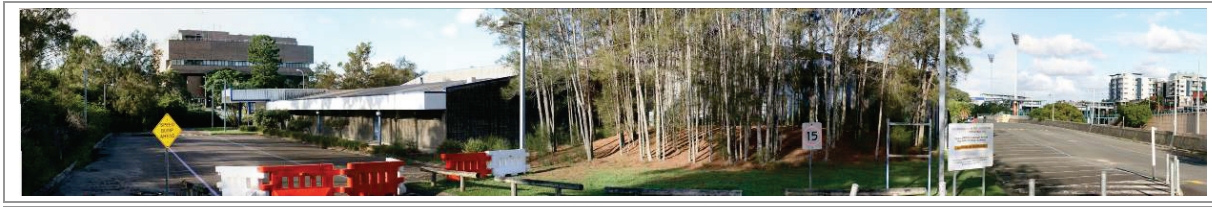
Table H-17 Representative Viewpoint 4: View from Annerley Road near Dutton Park Station

Issue	Impact on visual values of road users	
Nature of the existing view	This view is obtained from the junction of Annerley Road and Cornwall Street, adjacent to Hefferan Park. Dutton Park Station, including the island platforms, characterised by white bow-top railings, galvanised steel access ramps and station buildings, is visible from this location. The Queensland Rail State heritage listed shelter is visible in the centre of the view. The rail corridor is dominated by rail infrastructure including timber noise barriers along Railway Terrace. The Ecosciences building is prominent in the back centre of the view. Mature trees on Cornwall Street provide visual relief from the built infrastructure.	
Potential visual Impact	Changes to the view in this area relate primarily to construction works within the rail corridor. During operation, the visual impact would relate to minor changes to grading associated with the transition structure including the presence of retaining walls and rail portals as well as a feeder station in the middle distance of the view. The Annerley Road bridge would also be widened in the vicinity of this viewpoint, resulting in construction impacts and subtle modifications to the bridge upon completion.	
Visual sensitivity	*Low* – this view is indicative of the nature of views obtained into the project site by road users, whilst there are many road users these are focussed on driving rather than the quality of the view. A medium sensitivity would be associated with users of Hefferan Park adjacent to this viewpoint.	
	Construction	**Operation**
Magnitude of landscape impact	*Low* – there would be a considerable change in the view from this location associated with the construction activities within the rail corridor. However, the change is of only short-term (temporary) duration.	*Low* – the view would remain dominated by transport infrastructure. The minor bridge widening works would be noticeable but not impact on the quality of the view.
Significance of landscape impact	*Minor adverse (temporary)*	*Minor beneficial (permanent)*

Impacts on Precinct 2: Woolloongabba Station

Landscape impacts presented in **Table H-18**, while visual impacts are presented in **Table H-19** to **Table H-21**.

Table H-18 Landscape character area l4: GoPrint



Issue	Impact on landscape values of l4	
Nature of the existing landscape	The GoPrint buildings were constructed in the late 1970s/ early 1980s and are single storey 'warehouse type' buildings considered to be of low visual amenity and appeal. The buildings occupy the majority of the precinct. The buildings are surrounded by parking areas and stands of mature trees including casuarinas and gums with vegetated banks of ornamental shrubs (*Bauhinia galpinii*).	
Potential landscape impact	During construction the existing buildings and vegetation would be removed and the site would be established as a construction worksite, including an acoustic shed. During operation a station building and forecourt would be visually prominent elements of the Project.	
Landscape sensitivity	*Low* – this landscape has some local value largely related to the mature vegetation on site and is considered to have capacity to accept change.	
	Construction	**Operation**
Magnitude of landscape impact	*Low* – the loss of existing vegetation is the main landscape issue during construction. Although this vegetation is mature it is not of particularly high amenity and could readily be compensated.	*Medium* – the new station building and ventilation outlet would be noticeable but is anticipated to have a positive urban and architectural design quality that would change but not diminish the character of the site. It is anticipated that the site would be complemented by new replacement civic planting that would largely mitigate the loss of the existing vegetation. The character of the site would accord with ongoing change and development in the wider local environment and in the longer term the station building is expected to support the development intent of the Woolloongabba area with a positive urban design character resulting in enhancement of the site character.
Significance of landscape impact	*Minor adverse (temporary)*	*Minor to moderate neutral (permanent)* with potential for *minor to moderate beneficial* if urban design objectives are realised through future redevelopment.

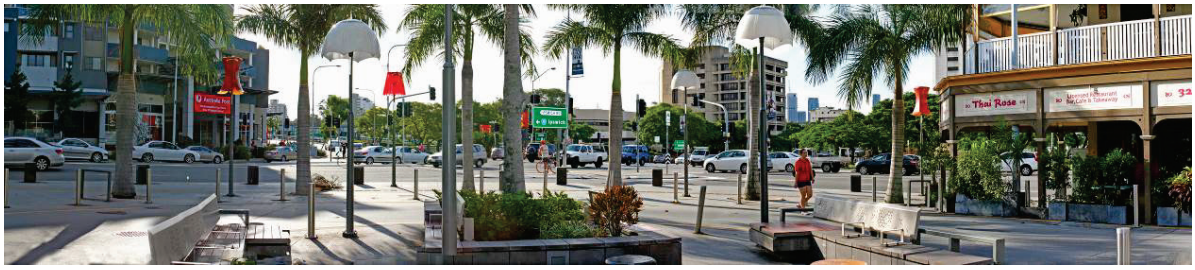
Table H-19 Representative Viewpoint 5: Vulture Street

Issue	Impact on visual values on residential properties and road users	
Nature of the existing view	The existing view is taken from Vulture Street looking south towards the Land Centre and existing GoPrint building. This view illustrates the influence of Vulture Street, which is a busy main road in the foreground of the view, as well as the low quality of the existing buildings on the site and the presence of significant vegetation that screens and provides a setting from the site. Although the view is taken from Vulture Street, it represents a worst-case example of potential views from nearby residential areas, including within LCA R9: Main Street.	
Potential visual Impact	During construction the view would change due to clearance of the existing building and vegetation and the erection of security fencing around the site and the emergence of the acoustic shed associated with the station construction above the fencing. During operation, the view would comprise the new station building and associated multi-storey building. The ventilation outlet may also be visible, depending on the configuration of the new buildings	
Visual sensitivity	*Medium* – residential viewers are generally considered to have a medium to high level of sensitivity to changes in view, although it is expected that relatively few residents are likely to be affected, with views largely obtained from the rear windows of residences located at Mark Lane. Other viewers from this location (ie road users) would have a lower sensitivity to changes from the Project. The area is also anticipated to undergo significant change as a result of various developments proposed in this area.	
	Construction	**Operation**
Magnitude of visual impact	*Low* – the acoustic shed and other construction activities would be a noticeable but temporary adverse change in visual amenity as experienced from this viewpoint. The presence of construction activities on this site is consistent with the ongoing activities in the wider Woolloongabba area.	*Medium* – the Project would be a considerable change in this location, due to the removal of the existing GoPrint building and replacement with a new station building and ventilation outlet. It is anticipated that the station building would be a civic building of higher quality than the existing landscape. Therefore, the change would be neutral. In the longer term it is anticipated that the site would be used as a redevelopment opportunity resulting in positive uplift to the visual character of Woolloongabba.
Significance of visual impact	*Minor to moderate adverse (temporary)*	*Moderate neutral (permanent)* with potential for *moderate beneficial (permanent)* over the longer term, should anticipated redevelopment be realised

Table H-20 Representative Viewpoint 6: Stanley Street

Issue	Impact on visual values on cafes and pedestrians	
Nature of the existing view	The existing view is taken from Stanley Street looking north over Stanley Street (a busy multi-lane road) towards the Land Centre (in right of view) and existing GoPrint building (in left of view), beyond the South East Busway in the foreground. This view illustrates the low quality of the existing buildings on the site and the presence of significant vegetation that screens and provides a setting from the site, particularly along the eastern boundary.	
Potential visual impact	During construction the view would change due to demolition of the existing GoPrint building and clearance of vegetation around the site, which would be bounded by security fencing. The proposed acoustic shed associated with the station construction would be a prominent element of the view. During operation, the view would comprise the new station building and associated multi-storey building. The ventilation outlet is also likely to be visible.	
Visual sensitivity	*Medium* – This view is obtained by pedestrians along Stanley Street and by users of the outdoor dining area along the commercial strip in this area (C3). It is representative of the views experienced by users of the South East busway although this group is anticipated to have a low visual sensitivity as they would experience only transient views. It is noted that this area is anticipated to undergo significant change as a result of various developments proposed in this area.	
	Construction	**Operation**
Magnitude of visual impact	*Low* – the acoustic shed and other construction activities would be a noticeable but temporary adverse change in visual amenity as experienced from this viewpoint.	*Medium* – the new buildings would be an obvious change that is likely to enhance the urban civic character of the area. It is anticipated that in the longer term the building would be set within a landscape setting that would enhance the visual character of Woolloongabba.
Significance of visual impact	*Minor to moderate adverse (temporary)*	*Moderate neutral (permanent)* with potential for *moderate beneficial (permanent)* over the longer term should anticipated redevelopment including landmark building and civic square be realised.

Table H-21 Representative Viewpoint 7: Main Street

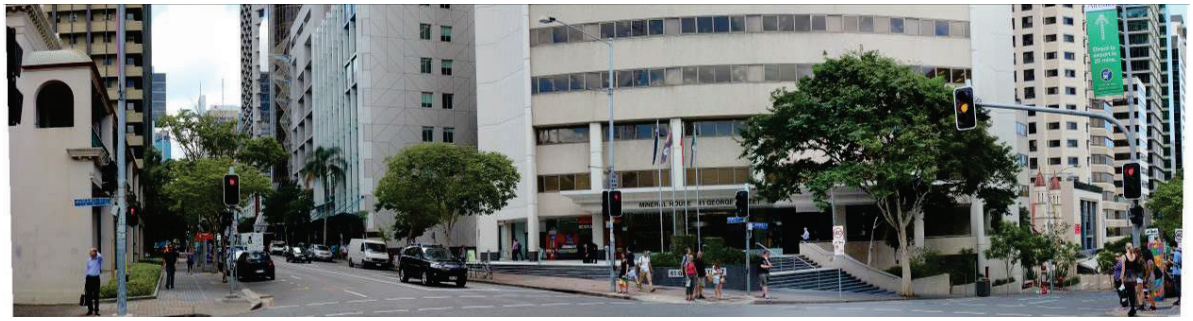


Issue	Impact on visual values on workers in commercial buildings and visitors to the Gabba	
Nature of the existing view	The existing view is taken from the Logan Road retail and café complex east of Ipswich Road looking west over the Land Centre (centre of the view). From this vantage point, the mature trees associated with the South East Busway create a green context for the Project site. The viewpoint is dominated by foreground buildings including the new mixed use development on the south-western corner of Main Street and Stanley Street.	
Potential visual impact	During construction the lower elements (hoarding and security fencing) are not likely to be visible as they would be screened by existing trees. The hoarding is likely to be observable in the centre left of the view. During operation the new building would be perceptible, including a 24m high ventilation outlet that is likely to protrude above the existing treeline.	
Visual sensitivity	*Low* – people visiting this precinct are likely to be focussed on the retail experience so would not be highly sensitive to the view. Similar views would be obtained by visitors to the Gabba. These may have a moderate sensitivity, however would be focussed on the sporting event.	
	Construction	**Operation**
Magnitude of visual impact	*Negligible* – the acoustic shed would be a noticeable temporary adverse change in the landscape but would be partly screened by the existing trees and surrounding buildings as experienced from this vantage point and would be consistent with the ongoing changing views associated with construction in this area.	*Low* – the new buildings would enhance the urban civic character of the area, consistent with the changing character of the wider Woolloongabba landscape. While the ventilation outlet would be noticeable, it is expected to blend with the character of the surrounding townscape.
Significance of visual impact	*Minor adverse (temporary)*	*Minor neutral (permanent)* with potential *minor beneficial* over time if urban design objectives are realised.

Impacts on Precinct 3: George Street Station

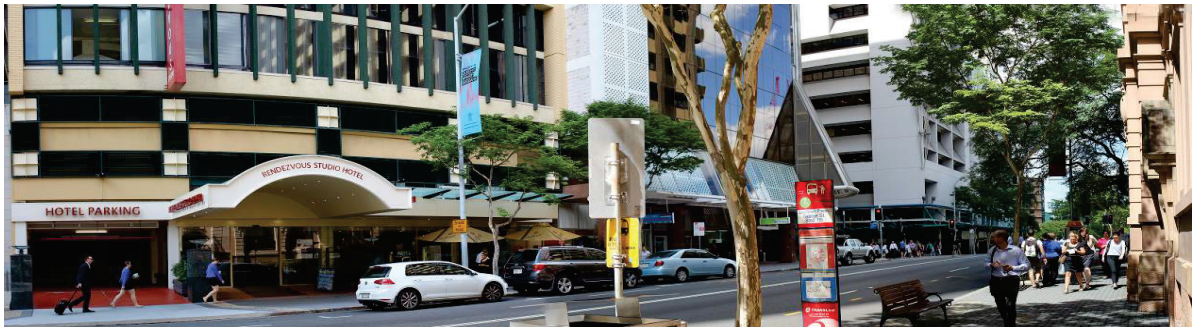
Landscape impacts are presented in **Table H-22**, while visual impacts are presented in **Table H-23** to **Table H-25**.

Table H-22 Landscape character area CC2: Brisbane CBD



Issue	Impact on landscape values of CC2	
Nature of the existing landscape	The landscape of the Brisbane CBD near the Project comprises buildings on George Street and Mary Street. As shown in the representative viewpoint photograph, the area around the Project comprises a variety of older (typically lower) buildings and newer multi-storey hotels, commercial buildings and apartments. The streetscape is enhanced by the presence of mature Leopard Trees (*Caesalpinia ferrea*) and palms.	
Potential landscape impact	The Project would result in the demolition of the existing office building at 63 George Street and removal of street trees at Mary Street and George Street adjacent to the site. During construction a large acoustic shed would be present extending partly over George Street. A new station building would be provided at the site, with an entrance in Mary Street and smaller, secondary entrance in George Street. It is expected that the station building would be integrated into a new building, possibly up to about 40 storeys high. The ventilation outlet would be assimilated into the architecture of the new building.	
Landscape sensitivity	*Medium* – this landscape is an important inner-city location, although it is considered to have capacity to accommodate landscape change. The existing building is a non-descript eight storey, concrete structure that is not considered to be of particularly high architectural merit. It has associated artwork, but this is not of high landscape value. The building is thought to originate from the 1980s and does not have heritage value.	
	Construction	**Operation**
Magnitude of landscape impact	*Low* – the acoustic shed and other construction activities would be a noticeable change over a restricted area of the CBD. This would include the loss of mature street trees and the building at 63 George Street. However, the presence of temporary construction sites and associated activities would be consistent with the dynamic CBD environment.	*Low* – whilst the new building would be noticeably different from the existing building, it would be assimilated into the urban fabric and would not result in a change of landscape character. It is anticipated that new street tree planting and landscaping provided as part of the Project, would mitigate the impact of vegetation loss.
Significance of landscape impact	*Minor to moderate adverse (temporary)*	*Minor to moderate adverse (permanent)* with potential for *Minor to moderate neutral (permanent) assuming a new building is developed that integrates the ventilation outlet.*

Table H-23 Representative Viewpoint 8: George Street near Rendezvous Hotel



Issue	Impact on visual values on residential apartment buildings/ hotels	
Nature of the existing view	The existing view is located on the southern side of George Street, opposite the Rendezvous Studio Hotel. It is typical of the views for pedestrians looking south-east along George Street, but also gives a 'worst case' view typical of elevated residential buildings and hotels near the site. The viewpoint is located adjacent to a three storey sandstone heritage building (located in LCA I5: Government Precinct/ QUT). The existing building at 63 George Street is visible to the right of the view. It is characterised by a green awning at street level and an artwork feature on the corner of George Street and Mary Street, but is otherwise undistinguished.	
Potential visual Impact	The Project would result in the removal of the building at 63 George Street including adjoining street trees on Mary Street and George Street. During the construction phase a large acoustic shed would be visible with an awning extending partly over George Street. During operation, the station entrance at Mary Street would form a prominent element of the view from this point. A ventilation outlet is proposed adjacent to the station building. It is expected that this would be integrated within a new building located above the station, up to about 40 storeys high. If a high rise development does not occur above the station, a freestanding ventilation outlet would be an uncharacteristic element of the view.	
Visual sensitivity	*High* – there are large numbers of potential viewers who are expected to have a high level of interest in the amenity of the view. This includes visitors staying at hotels (such as The Rendezvous Studio Hotel) near the Project.	
	Construction	**Operation**
Magnitude of visual impact	*Low* – the construction shed and other construction activities would have a considerable adverse change on the city centre in the immediate vicinity of 63 George Street. This change would be temporary and would not be fundamentally out of character as ongoing redevelopment entailing the presence of construction sites is a characteristic of the city centre landscape	*Medium* – the new station entrance would be a distinctive new, permanent element in the view, albeit it would accord with the existing character of the view. Redevelopment over the station could result in an improvement to the streetscape when viewed from this direction, possibly creating a positive civic character and focal point. If redevelopment does not occur over the station, the ventilation outlet would be visible within the environment.

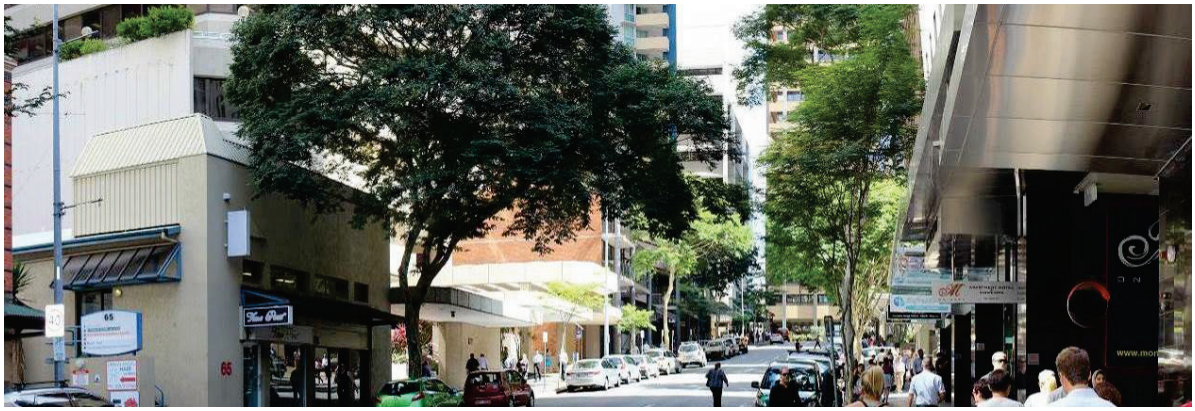
Significance of visual impact	*Moderate adverse (temporary)*	*Moderate to major adverse* with potential for long-term *moderate to major neutral* or even *beneficial.*

Table H-24 Representative Viewpoint 9: George Street near Botanic Gardens and Parliament House

Issue	Impact on visual values on residential apartment blocks/ hotels
Nature of the existing view	This viewpoint is located at the corner of George Street and Alice Street. It is representative of the views for pedestrians looking north-west along George Street. The viewpoint is located adjacent to a number of heritage buildings including the Queensland Club (on right side of view), The Mansions and Harris Terraces (on left side of view) and Parliament House (behind the viewer). The building at 63 George Street is visible in the centre of the view. While it is visible, it is not a particularly prominent or focal feature of the streetscape.
Potential visual Impact	The construction phase of the Project would result in the removal of the building at 63 George Street including adjoining street trees on Mary Street and George Street. During this time the acoustic shed would be visible from this vantage point. During operation, the building above the George Street Station would be visible curtailing views of the current multi-storey building at the north-eastern corner of Mary Street and George Street.
Visual sensitivity	*Medium* – this vantage point is typical of views for pedestrians. This view is also representative of 'worst case' views that could be obtained from locations such as Parliament House and the City Botanic Gardens, which are valued and highly-visited landscapes. However, whilst such viewers are anticipated to have a high level of interest in the visual character of their surroundings, their focus is likely to be on the Gardens or buildings. Therefore, it is expected they would typically be facing the opposite direction. Typical viewers at this vantage point are assessed to be of medium sensitivity. It is noted that from within the City Botanic Gardens, views are typically enclosed and curtailed by existing vegetation and foreground buildings.

	Construction	Operation
Magnitude of visual impact	*Low* – the construction shed and other construction activities would have an adverse, but temporary, effect on the city centre in the immediate vicinity of 63 George Street.	*Medium* – the new station building would be a permanent and distinctive, but relatively small element, in this view and would blend with the character of the surrounding streetscape. It is expected that the ventilation outlet would be integrated into a new building on the site. If redevelopment does not occur over the station, a freestanding ventilation outlet 25m high, would be a distinctive new element which is unlikely to contribute positively to the urban character.
Significance of visual impact	*Minor to moderate adverse (temporary)*	*Moderate adverse* with potential for long-term *moderate neutral* or even *beneficial.*

Table H-25 Representative Viewpoint 10: Mary Street



Issue	Impact on visual values of users and workers of cafes, restaurants and retail establishments
Nature of the Existing view	This view is obtained from Mary Street looking south-west along Mary Street, towards George Street. The existing view is dominated by multi-storey commercial and residential buildings. At street level there are a number of mature street trees. Awnings associated with the buildings extend over the footpath and accommodate outdoor dining areas. The building at 63 George Street is noticeable as it is shorter than the majority of the adjoining buildings, but is otherwise undistinguished from this direction.
Potential visual Impact	The construction phase of the Project would result in the removal of the building at 63 George Street including the Leopard Trees visible at the junction of Mary Street and George Street. The acoustic shed would be visible from this vantage point for the duration of the construction works. During operation, the George Street Station would be visible integrating into the existing streetscape character and distinguished by a station entrance located at Mary Street.
Visual sensitivity	*Medium* – this viewpoint is experienced by users and workers of cafes, restaurants and retail establishments at Mary Street. These receptors are considered to have a moderate level of sensitivity, as they are only partly interested in the visual quality of their surroundings.

	Construction	Operation
Magnitude of visual impact	*Low* – the construction shed and other construction activities would have an adverse, but temporary, effect on the city centre in the immediate vicinity of 63 George Street as experienced from Mary Street.	*Medium* – the new station building would be a distinctive but relatively small element in the view and would blend with the character of the surrounding streetscape. Development of a new building over the station would contribute positively to the streetscape character. If redevelopment does not occur over the station, the ventilation outlet is likely to be screened by existing buildings in views from Mary Street, except at its junction with George Street.
Significance of visual impact	*Minor to moderate adverse (temporary)*	*Moderate neutral* with potential for long-term *moderate beneficial (permanent).*

Impacts on Precinct 4: Roma Street Station

Landscape impacts are presented in **Table H-26** to **Table H-28**, while visual impacts are presented in **Table H-29** to **Table H-31**.

Table H-26 Landscape Character Area P4: Roma Street Parkland

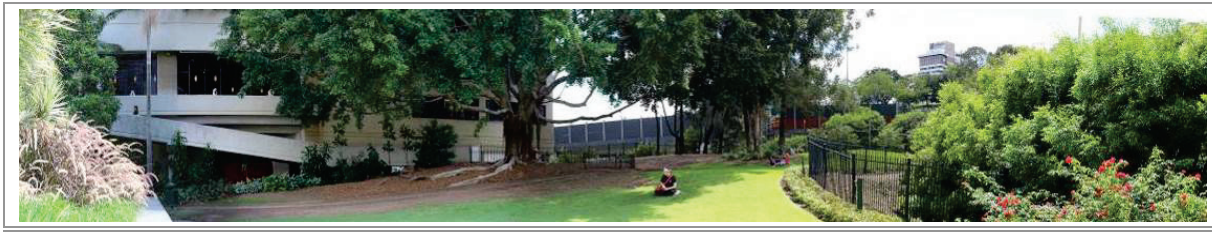
Issue	Impact on landscape values
Nature of the existing landscape	Roma Street Parkland is characterised by terraced and undulating urban greenspace located between the city and Spring Hill with elevated views across the city. It comprises swathes of subtropical planting incorporating large mature trees. Modern residential apartment blocks are located between the park and the railway line, but otherwise the only built parkland features support recreational uses.
Potential landscape impact	During construction it is anticipated that a small part of the Roma Street Parkland along Parkland Boulevard would become inaccessible. An acoustic shed would be present for the duration of the works. During operation, the landscape would be reinstated including a new plaza at the entrance to the Roma Street Station. It may be possible to discern the proposed ventilation outlet (located in the adjoining T3 LCA) from a small area of Roma Street Parkland, although it is unlikely from the selected representative viewpoint.
Landscape sensitivity	*Medium* - Roma Street Parkland includes a large number of valued landscape elements including mature trees and is considered to be of high sensitivity to change. However, the area likely to be directly impacted by the works does not contain valued landscape elements.

	Construction	Operation
Magnitude of landscape impact	*Low* – only a small area of parkland would become inaccessible during the works and the landscape elements in this area are relatively recent. The change would be of a temporary nature.	*Negligible* – a relatively restricted area of the parkland would be changed as a result of the works. It is anticipated that a positive new entrance would be created with a new station plaza and possible control centre. This would be consistent with the existing character of the landscape which is already affected by rail infrastructure.
Significance of landscape impact	*Minor to moderate adverse (temporary)*	*Minor neutral (permanent)*

Table H-27 Landscape Character Area T3: Roma Street railway corridor

Issue	Impact on landscape values	
Nature of the existing landscape	The station is dominated by rail infrastructure. The main feature of landscape interest is the original State heritage listed Roma Street Station which is now engulfed in newer infrastructure including the Brisbane Transit Centre built in the 1980's. The Roma Street Parkland exit from the station has poor civic character defined by a road leading to the residential apartment blocks to the north of the rail line with a high retaining wall and car parking area.	
Potential landscape impact	During construction the car park and current entrance road would become a construction worksite including a large acoustic shed. During operation, an 8m high new ventilation outlet and possible control centre would be present within the landscape.	
Landscape sensitivity	*Low* – The works do not extend to the State heritage listed original station building. However, the ventilation outlet would be located in the open grassy area to the west of this building. The affected area is considered to be of low sensitivity; being of only local importance despite its city location (due primarily to its relationship to the adjoining Roma Street Parkland).	
	Construction	**Operation**
Magnitude of landscape impact	*Low* – the construction activities would not result in the loss of any significant elements, although the construction shed and associated activities would temporarily modify the character of the landscape in the vicinity of the works.	*Low* – the new infrastructure would create a civic 'front' to Roma Street Station from this direction including a new civic plaza. The ventilation outlet would also be visible adjacent to the existing car park structure. This infrastructure is anticipated to assimilate into the existing urban environment of the rail corridor.
Significance of landscape impact	*Minor adverse (temporary)*	*Minor neutral (permanent)*

Table H-28 Landscape Character Area CC2: Brisbane CBD (Emma Miller Place)



Issue	Impact on landscape values	
Nature of the existing landscape	Emma Miller Place, Gallipoli Place and the former Roma Street Station gardens are important areas of city green space. The landscape comprises terraced grass areas and established trees and palms that impart a sub-tropical character including large Figs (*Ficus benjamina*), Leopard trees (*Caesalpinia ferrea*), Jacarandas (*jacaranda mimosifolium*), Tuckeroo (*Cupaniopsis anacardiodes*), Tulip tree (*Liriodendron tulipifera*), Poinciana (*Delonix regia*) and Hoop Pine (*Araucaria cunninghamii)*. The parks provide a pleasant shady character, although they are not as well used as may be expected. This may be due to its location adjacent to the busy Roma Street.	
Potential landscape impact	The existing trees within Emma Miller Place, Gallipoli Place and the former station garden would be removed. Following construction, these areas would be reinstated with new landscaping and compensatory tree planting.	
Landscape sensitivity	*High* – urban parkland, particularly areas such as this which include large mature trees is highly valued in the city environment.	
	Construction	**Operation**
Magnitude of landscape impact	*Medium* – the construction activities would result in the permanent loss of valued landscape elements, including large mature street trees, and the site would be temporarily dominated by fencing and construction activities.	*Low* – with the reinstatement of the green space post-construction, it would be evident that the parkland character has changed, particularly with the loss of mature trees. However, as the area would be reinstated to parkland, there would be no fundamental change to the character of the landscape, particularly as replacement tree planting matures.
Significance of landscape impact	*Moderate to major adverse (temporary)*	*Moderate adverse (permanent)* noting that if appropriate new landscape design is undertaken and associated tree planting matures there is potential for *neutral* or even *beneficial* longer-term impact.

Table H-29 Representative Viewpoint 11: Parkland Boulevard

Issue	Impact on visual values of residents (including apartments overlooking the Roma Street Parkland) and pedestrians accessing the park from the CBD
Nature of the existing view	This view is obtained looking north-west from the viewing platform located at Parkland Boulevard in Roma Street Parkland. It provides an elevated panoramic view over Roma Street Station, encompassing (from left to right) the Brisbane Transit Centre, original heritage station building, platforms with associated shelters, residential apartment buildings, and Roma Street Parkland, comprising shelters and the café building. Mount Coot-tha is also visible in the background.
Potential visual Impact	During construction, the right hand side of the view would be dominated by the worksite for Roma Street Station, including an acoustic shed. The construction worksite would extend from the rear of the existing platform over the existing cliff edge running through the parkland but would not require the removal of the existing structures and trees. During operation, the new Roma Street Station entrance and civic plaza would be prominent from this vantage point. The Project control centre building in front of the existing Platform 10 buildings may also be visible. The ventilation outlet would be visible to the right of the original heritage station building. The ventilation outlet would be about 8m in height, and would partially screen the Inner Northern Busway colonnade beyond. It is anticipated that the ventilation outlet would fall below the roofline of the existing buildings and would not obscure views of Mount Coot-tha.
Visual sensitivity	*Medium* – pedestrians using the parkland are typically considered to be of high sensitivity since they are concerned with the visual quality of their surroundings. However, it is noted that visitors to the parkland usually access other more attractive locations further from the railway line so this particular vantage point is assessed to be of lower sensitivity since views are likely to be transient. This view is also illustrative of elevated views that may be obtained from the southward-facing windows of the residential apartment blocks overlooking the site; whilst these viewers would be interested in the quality of their surrounds they currently look over a railway line (rather than, for example, the high quality of the parkland to the north) so are also considered to be of medium sensitivity to change.

	Construction	Operation
Magnitude of visual impact	*Low* – the construction activities, particularly the acoustic shed, would be a dominant element in the view causing a considerable change in the view at this close distance. However, this would be of only temporary duration.	*Medium* – the new station entrance and civic plaza would create a positive civic 'front' to Roma Street Station which is anticipated to enhance the townscape character of this part of the station/ parkland with likely overall improvements to the connectivity and legibility of the city centre. Whilst the ventilation outlet would be visible it is expected to assimilate into the existing transport corridor environment.
Significance of visual impact	*Minor to moderate adverse (temporary)*	*Moderate neutral (permanent)*

Table H-30 Representative Viewpoint 12: The Lookout, Roma Street Parkland

Issue	Impact on visual values of recreational users of Roma Street parklands
Nature of the Existing view	This vantage point is located in Roma Street Parkland and provides an elevated panoramic view over the parklands. It is representative of views obtained within the parklands where landform and tree-cover lead to a variety of settings from contained private spaces to elevated outlooks with extensive vistas over the city. From this vantage point, the steep cliffs and terraces within the parklands are visible, stepping down to the central lake and event space. The extensive tree cover within the parkland is visible, providing a green 'oasis' in contrast to the apartment blocks and city behind. Roma Street Station is barely perceptible in the centre-left of the view.
Potential visual Impact	The construction works would occupy only a relatively small part of this view due to the effect of distance and screening by vegetation at the lower level. It is likely that the acoustic shed would be visible, rising above the tree line. However it would remain below the roof line of the existing buildings so would partly integrate into the current city scape. During operation, views to the new station may be possible from some parts of the parkland. However, from this location it is anticipated that while these features would be different they would not change the character or quality of the view. Similarly, views of the ventilation outlet may be possible to discern through the break in the residential apartment blocks in the centre of the view. However this would integrate into the existing built environment.
Visual sensitivity	*Medium* – recreational users of the parkland, including visitors to Brisbane, are typically considered to be of high sensitivity since they tend to be visiting the parklands for enjoyment and, therefore, are concerned with the visual quality of their surroundings. However, this vantage point is anticipated to attract only a medium number of sensitive receptors as visitors tend to concentrate in other parts of the park.

	Construction	Operation
Magnitude of visual impact	*Low* – whilst the construction activities including acoustic shed would be noticeable from this vantage point and other locations within Roma Street Parklands, the infrastructure would partially integrate into the city setting. Furthermore, the change would be of only a temporary nature.	*Low* – the new station entrance and associated infrastructure, including the ventilation outlet, is unlikely to be particularly noticeable from this location and is anticipated to blend with the existing view representing a neutral change. From other parkland locations, features such as the ventilation outlet may be more noticeable but the change would still be barely perceptible because the existing landscape is already strongly influenced by built elements including transport infrastructure.
Significance of visual impact	*Minor to moderate adverse (temporary)*	*Minor to moderate neutral (permanent)*

Table H-31 Representative Viewpoint 13: Intersection of Roma Street and Countess Street

Issue	Impact on visual values of local road users
Nature of the Existing view	This view is obtained at the boundary of Countess Street and Roma Street and is representative of the view obtained by motorists passing along streets surrounding the site. The view encompasses the rail bridge over Countess Street (left hand side), the portal structure and urban design 'colonnade' associated with the Inner Northern Busway (centre) and Roma Street and adjoining commercial buildings (right hand side). While the rail station is not visible, the residential buildings on the edge of Roma Street Parkland are key features of the view.
Potential visual impact	Due to the effect of distance and the presence of transport infrastructure in the foreground it is considered unlikely that the worksite would be visible. However, it is likely that the large acoustic shed would be noticeable beyond the colonnade in the centre left of the view. During operation, the station building and other features are unlikely to be visible, with the exception of the upper parts of the new ventilation outlet which is likely to protrude above the colonnade – any taller elements would blend into the existing streetscape which already includes transport infrastructure and tall buildings.
Visual sensitivity	*Low* – motorists are typically focussed on traffic conditions rather than the view which is, currently, not of high visual amenity.

Issue	Impact on visual values of local road users	
	Construction	**Operation**
Magnitude of visual impact	*Low* – the construction shed and other construction activities would be a temporary noticeable adverse change.	*Negligible* – it is not anticipated that the new infrastructure would be prominent or contrast with existing built elements from this vantage point.
Significance of visual impact	*Minor adverse (temporary)*	*Minor to negligible neutral (permanent)*

Impacts on Precinct 5: Victoria Park (Northern Connection)

Landscape impacts are presented in **Table H-32** and **Table H-33,** while visual impacts are presented in **Table H-34** to **Table H-37**.

Table H-32 Landscape Character Area P5: Victoria Park Parklands

Issue	Impact on landscape values
Nature of the existing landscape	Victoria Park is a regionally significant open space corridor, and is listed on the Queensland Heritage Register. The parkland comprises grassy slopes that fall steeply towards the ICB. There are many avenues and groups of mature trees across the site including figs, large stands of native eucalypts and the more recent planting associated with the Diamond Jubilee Walk. Many of the trees are valued by the community on account of their aesthetic and functional values and/ or because of community involvement in their establishment. They also provides some visual relief of the rail corridor and ICB from within Victoria Park and along Gregory Terrace.
Potential landscape impact	The Project would include the establishment of permanent busway and rail infrastructure that would be located within the existing railway corridor. The tunnel would emerge within the railway corridor near to the existing Land Bridge. This would involve the construction of retaining walls and transition structures. The busway would continue in structure over the rail corridor before crossing over ICB on bridge structure. There would be no permanent surface infrastructure within Victoria Park, south of the ICB. The bridge structure would result in the loss of parkland area north of the ICB (within the LCA P6: Victoria Park Golf Course described elsewhere). This area is used for playing fields, although is currently being temporarily used as workforce parking for the Legacy Way project. The bridge structure would erode the character and tranquillity of parts of the existing parkland, principally affecting the area between the land bridge and those areas used by Brisbane City Council and Energex compound at operation. Construction of the Project would require the removal of mature trees adjacent to the railway corridor, including stands of eucalypts near to the Brisbane City Council natural assets compound and mature figs adjacent to the rail corridor; although the mature trees located immediately south of the Land Bridge would be retained. A small section of the recently planted Diamond Jubilee Walk would also be removed. The construction worksite and cut and cover works for the tunnel and TBM retrieval shaft would also temporarily restrict access to areas of open park, south of the ICB. This

Issue	Impact on landscape values	
	includes an area of about 6,380m^2 south of the Land Bridge and about 17,940m^2 north of the Land Bridge, adjacent to the railway corridor.	
Landscape sensitivity	*High* – Victoria Park includes a large number of landscape elements of community value, including mature trees and informal green space. Accordingly it is considered to be of high sensitivity to change. This sensitivity is potentially exacerbated by previous incremental incursions into the parkland for transport infrastructure such as the ICB and Northern Busway, which have affected its quality and tranquillity in parts and increased the level of community concern regarding further impacts on the remaining parkland.	
	Construction	**Operation**
Magnitude of landscape impact	*Medium* – the construction activities would result in the loss of valued landscape elements particularly mature trees and landform modification. The site would, for the temporary duration of the works, be dominated by fencing and construction plant considerably changing the character of the affected area. However, it is recognised that the works are confined to part of the park and are of temporary duration.	*Medium* – although reinstatement and landscaping works would occur, there would be long-term adverse impacts on part of the parkland within this LCA due to the loss of mature trees (south of the ICB). There would be no permanent surface infrastructure within the parkland south of the ICB, although the Project would also result in the loss of a small area of playing fields within the LCA P6: Victoria Park Golf Course, north of the ICB. It is likely that the influence of transport networks on the parkland would also appear greater than is currently the case, particularly due to the presence of the busway connection over the ICB, which would intensify the perception of built transport infrastructure throughout this character area. The feeder station and other ancillary infrastructure, such as the ventilation outlet, would also be key elements that would erode the parkland character, albeit these would be sited within the existing railway corridor, adjacent to a lower-lying (and therefore less prominent) part of the park. Rehabilitation of those areas affected by construction works, through a master planning process for Victoria Park, are likely to provide screening, diminishing the perception of the severity of the impact over time.
Significance of landscape impact	*Moderate to major adverse (temporary)*	*Moderate to major adverse (permanent)* noting that if appropriate new landscape design is undertaken and the associated tree planting matures there is potential for this to diminish to a *moderate impact* over time.

Table H-33 Landscape Character Area P6: Victoria Park Golf Course

Issue	Impact on landscape values	
Nature of the existing landscape	The majority of LCA P6 would be unaffected by the works. The area is located in the vicinity of the existing BCC sports fields to the west of the Inner City Bypass. This area comprises flat sports fields and an adjacent area currently occupied by a construction worksite and car park for the Legacy Way project.	
Potential landscape impact	The construction worksite would continue to be used as a construction compound for the BaT Project and would be surrounded by fencing with a site office, laydown area and parking during the construction period. The worksite has already been substantially cleared of significant vegetation. Plant such as cranes involved in the construction of the bridge would be visible during construction. During operation, the site would be reinstated. This is likely to include restoration of sports fields to the south and informal greenspace including tree planting located beneath the ramped access to the busway bridge.	
Landscape sensitivity	*Low* – in respect to the sensitivity of the area actually expected to be impacted by the works due to its current use as a construction site.	
	Construction	**Operation**
Magnitude of landscape impact	*Negligible* – the construction activities are congruent with the current use of the site and would not noticeably lead to a change in the character of the landscape.	*Low* – The new infrastructure, particularly the bridge, would be a noticeable new element of the landscape that would affect the open character of the sports fields.
Significance of landscape impact	*Minor to negligible adverse (temporary)*	*Minor adverse (permanent)*

Table H-34 Representative Viewpoint 14: Gregory Terrace

Issue	Impacts on visual values of residents
Nature of the Existing view	This vantage point is illustrative of the current views of Victoria Park for residents at Gregory Terrace, Spring Hill. In the view, the eastern side of Brisbane Girls Grammar School is visible (to the left), while the RBWH is visible in the centre of the view. Gregory Terrace occupies the right of the view and is overlooked by residential properties located along this ridgeline. Victoria Park is the dominant element of the view, characterised by large mature trees and palms sloping steeply down before rising north of the ICB and existing railway line (not visible) to the vegetated hillsides of Victoria Park Golf Course beyond.

Issue	Impacts on visual values of residents	
Potential visual Impact	From this vantage point, due to the northerly sloping landform it is considered that the lower levels of the construction worksite would be largely screened by the existing mature vegetation that would be retained along the southern edge of the park. However, there would be some noticeable tree clearance in the lower parkland area south of the tennis courts around Union Street in the centre right of the view. Beyond which, the acoustic shed associated with the TBM recovery is also likely to be visible. During operation, the main effect would be the continued absence of an area of mature vegetation, required to be cleared for construction. However, following restoration of the parkland, over time this effect would diminish as vegetation matures.	
Visual sensitivity	*High* – the existing residential properties have sustained quality views over vegetated parkland and are considered to have a high sensitivity to change.	
	Construction	**Operation**
Magnitude of visual impact	*Low* – the construction activities, particularly the acoustic shed, would be a clearly perceptible element in the view (albeit over a relatively confined area) causing a considerable change in the view but for a short duration of time.	*Low* – the absence of trees would continue to be a noticeable change in the view, although over time there is potential for this to decline to negligible (ie barely perceptible change) as restoration tree planting undertaken following construction matures.
Significance of visual impact	*Moderate adverse (temporary)*	*Moderate adverse* potentially declining to *Minor to moderate neutral* as planting matures.

Table H-35 Representative Viewpoint 15: Land Bridge, Victoria Park

Issue	Impacts on recreational users of Victoria Parklands
Nature of the existing view	This viewpoint is located on the Land Bridge crossing over the ICB from LCA P6 (Victoria Park Golf Course) to P5 (Victoria Park Parkland). The viewpoint is representative of views obtained from the Land Bridge, which would be experienced by cyclists and pedestrian users of the park. The bridge concentrates users so views experienced from here are likely to be of concern to the local community. Views are revealed sequentially when moving across the bridge. It provides a contained view across the parkland dominated by mature trees, artwork and the parapets/ safety barriers of the bridge. From other parts of the land bridge there are views of the ICB and the existing cycle network and tennis courts, as users move towards Victoria Park.
Potential visual Impact	There is a considerable amount of construction work that would occur near the land bridge, mostly falling within the existing transportation corridor. Consequently, it would be likely that some vegetation would be cleared from the foreground of the view. However, it is anticipated that it would be possible to retain the mature figs that form a prominent element of the view. The construction worksite would be defined by a temporary security fence. From other vantage points along the bridge it would also be possible to view the acoustic shed associated with the TBM recovery.

Issue	Impacts on recreational users of Victoria Parklands	
	During operation, it would be possible to see the ventilation outlet located within the railway corridor, which would be approximately 8m high. It would also be possible in some views obtained from the bridge to view the realigned bikeway, new rail lines and the new busway heading north-east on elevated structure over the rail lines within the existing railway corridor. Compensatory landscaping, particularly replacement of trees cleared for construction, is likely to diminish the perception of change over time, although there would be long-term reduction of naturalistic parkland landscape views over a small part of the park as experienced from this location.	
Visual sensitivity	*High* – this location is frequented by a large number of cyclists and pedestrians crossing through the parklands between land lying north and south of the ICB who are likely to be very interested in the visual quality of the parkland environment. This will include a large number of local community members who are known to be concerned about the potential for visual impacts on the parkland landscape.	
	Construction	**Operation**
Magnitude of visual impact	*Medium* – the construction activities, particularly the cut and cover works, loss of vegetation and presence of the acoustic shed, would considerably change the view at close distance to the affected viewers. However, the changes are likely to be of temporary duration.	*Medium* – the replacement of the existing trees with a busway in cutting and introduction of an 8m high ventilation outlet would be a change in the view; although would be experienced in the context of the existing views over the ICB and railway corridor. Over time there is potential for this impact to reduce to *low* once compensatory tree plantings mature.
Significance of visual impact	*Moderate to major adverse (temporary)*	*Moderate to major adverse (permanent)* potentially declining to *Moderate (permanent)* as planting matures.

Table H-36 Representative Viewpoint 16: Pedestrian path close to off-leash area, Victoria Park

Issue	Impact on public transport users and pedestrians
Nature of the existing view	This viewpoint is located on the pedestrian walkway within Victoria Park that connects the Land Bridge to the entrance of Victoria Park at Gregory Terrace. From this vantage point, it is possible to see the current utilitarian buildings associated with the Brisbane City Council Field Services Group facility, Queensland Health Biomedical Technology Services facility and, to the north, Energex substation. The Brisbane City Council facility is fenced with a chain link fence covered with shade cloth. Existing mature trees, predominantly native eucalypts and figs are visible and provide some integration of the buildings into their parkland setting, particularly when experienced from more distant vantage points. The buildings of the RBWH are visible on the horizon

Issue	Impact on public transport users and pedestrians	
	beyond. Whilst this area is within the parkland, this part of the park is less attractive and appears to be less well used than other areas of Victoria Park,	
Potential visual impact	During construction, this footpath would fall within the proposed construction worksite requiring pedestrians and cyclists to be temporarily re-routed to the east. Temporary fencing would be erected around the compound during construction and all trees falling within the compound would be felled to accommodate the construction works and laydown areas. The existing utilitarian building at the southern end of the compound visible on the left hand side of the viewpoint would be removed. During operation, the majority of the parkland affected by construction would be reinstated. The bus turn-back loop within the railway corridor on the southern side of the ICB would be visible. The elevated busway structure over the ICB would also be visible beyond which would increase the presence of visible transport infrastructure in this part of the parkland. The existing buildings to the north of the Brisbane City Council compound would remain and revegetation, including new tree planting, would occur to assist in the integration of the buildings into the parkland setting.	
Visual sensitivity	*Medium* – people walking or cycling along this pedestrian path are likely to be park visitors who would be interested in recreation and the quality of the view. Although people generally do not stay for long periods in this part of Victoria Park (presumably due to the lower visual quality of the existing landscape in contrast to other areas of the park), the path is frequented by a moderately large number of cyclists and pedestrians crossing through the parklands between the entrance at Gregory Terrace and the Land Bridge/ other areas of the parkland. Users of the popular dog off-leash area would also be likely to be concerned about visual amenity in this area the parkland.	
	Construction	**Operation**
Magnitude of visual impact	*Medium* –The construction compound would be a dominant element of the view and associated activities, particularly the removal of trees, would result in a major adverse change in the view. The view would also be affected by the removal of the existing building but this is a utilitarian structure and its loss is of low importance from a visual perspective. The change in view arising from construction would be temporary.	*Medium* – the bus turning facility, ICB on-ramp and views to the busway structure over the ICB would result in a change in the view. This change would not be dominant because the park is already affected by the presence of utilitarian buildings in this location, so there is not a high level of contrast with the existing view, although it is anticipated that the community would consider the change to be adverse. The changes in the view experienced from this location would be large scale and cannot be readily mitigated, although urban design of the bridge elements and undertaking screen tree planting using fast-growing species has potential to reduce the level of impact over time. Therefore, in the longer term, the loss of trees within the parkland would appear less evident as compensatory tree plantings mature and assist in the integration/ screening of the structures within the parkland landscape.
Significance of visual impact	*Moderate adverse (temporary)*	*Moderate adverse (permanent)*

Table H-37 Representative Viewpoint 17: Pedestrian Bridge, Royal Children's Hospital

Issue	Impact on public transport users and pedestrians	
Nature of the existing view	This viewpoint is located on the pedestrian walkway leading from the Royal Children's Hospital Busway Station over the Northern Busway in the vicinity of Gilchrist Avenue. From this elevated vantage point, it is possible to see the existing Legacy Way worksite in the foreground (to the right of the view) and beyond this, the rising landscape of Victoria Park, distinguished by its densely vegetated appearance. The Energex substation buildings can be discerned within the parkland, while beyond this, tall buildings in the city and Spring Hill are visible. The red-tiled buildings of Brisbane Girls Grammar School are prominent on elevated land to the right of the viewpoint.	
Potential visual Impact	During construction, the impact on this view would include the proposed construction worksite including offices, parking and laydown areas, surrounded by security fencing located within the current worksite on Gilchrist Avenue. Beyond this, there would also be visible plant and construction activities associated with the construction of the bridge leading from the Northern busway over the ICB to Victoria Park. Within Victoria Park, the clearance of vegetation in the vicinity of the Energex building to accommodate the works compound and laydown area would be an obvious change to the view, although because the landform rises it is likely that a vegetated horizon would be maintained, lowering the potential impact of the change. In the centre of the view there would be considerable construction activity evident due to the removal of existing buildings and formation of the bus turning circle. During operation, the view would be dominated by the busway structure over the ICB connecting the new busway with the existing busway. Much of the existing parkland in the vicinity of the Land Bridge is screened by existing trees adjoining the ICB. The bus layover at Gilchrist Avenue would be noticeable from other parts of this footpath. These can be accommodated without loss of the existing trees along this road and would assimilate into the existing landscape.	
Visual sensitivity	*Low* – people walking or cycling along this pedestrian path are likely to be focussed mostly on transit. However, some users of the pathway may also have some interest in the quality of the view, which is already affected by construction compounds and transport infrastructure. This view is also indicative of the likely worst case views from the institutional buildings overlooking Victoria Park, including the Royal Children's Hospital and RBWH.	
	Construction	**Operation**
Magnitude of visual impact	*Medium* – the construction activities, particularly associated with the construction of the busway bridge would be a prominent temporary element in the view. However, the activities would blend to some extent with the character of the existing works compound.	*High* – the new bridge structure would block a large portion of the view to Victoria Park beyond, representing a dominant change in the view and visual quality. This would be partly congruent with the existing transport infrastructure and busway structures already visible from parts of this footpath. Since it will not be possible to completely

Issue	Impact on public transport users and pedestrians	
		screen the new structures, mitigation will need to be focussed on enhancing the urban design quality, with involvement from the community where possible. In the longer term, the loss of trees within the parkland would appear less evident as compensatory tree plantings mature which will also help to assimilate the new bridge into its parkland setting.
Significance of visual impact	*Minor to moderate adverse (temporary)*	*Moderate adverse (permanent)*

H.3.3 Assessment of lighting impacts

Table H-38 Impact of night works across the study corridor

Issue	Night works across the study corridor
Nature of the existing asset	The current landscape is in a major city and therefore lighting levels are relatively high across the area.
Potential impact	Construction activities including construction work and haulage would occur 24 hours due to the scale of the project and the need to complete certain works outside of peak business hours. This would bring about impacts associated with the presence of night lighting and increased after-hours construction traffic along the identified construction routes and associated approach roads. Currently the proposals assume the use of main roads wherever possible.
Sensitivity	*Medium* – the construction traffic would have an impact on a range of visual receptors, the most sensitive of which are considered to be local residents and tourists (for example those staying in hotels in the CBD) who would have a high sensitivity due to their interest in the view. Those most likely to be affected are those residents located close to the main construction sites where building activities would occur after dark.
Magnitude	*Low* – The magnitude of change is considered low because the impact is of relatively short duration (construction period only) and mitigation (including restricted after dark working hours) is likely to restrict the perception of impact.
Significance of impact	*Minor to moderate adverse (temporary)*.

Table H-39 Lighting impacts on Precinct 1: Dutton Park (southern connection)

Issue	Impact of lighting on visual receptors	
Nature of the existing lighting	*Predominantly Lit:* the existing rail corridor is not well-lit at night, although, the surrounding busways and city streets are lit to a level expected in a major city. Light spill from the adjoining hospital buildings is also evident.	
Potential lighting impact	Changes to this precinct associated with lighting predominantly relate to effects of night lighting during construction. During operation, it is not anticipated that the surface components would be differentially lit than the existing transport infrastructure.	
Lighting sensitivity	*Medium* – there are few permanent residents around this area. Those workers present (eg in the Ecosciences precinct or hospital) are unlikely to be disturbed by the light levels. However, residents of Dutton Street and patients in the PA Hospital and ESA Village are anticipated to have greater sensitivity to night lighting.	
	Construction	**Operation**
Magnitude of lighting impact	*Low* – construction lighting is likely to be noticeable.	*Negligible* – the increased lighting is anticipated to be barely perceptible and would be indistinguishable from the existing lighting level of the site.
Significance of landscape impact	*Minor to moderate adverse (temporary)*	*Minor neutral (permanent)*

Table H-40 Lighting impacts on Precinct 2: Woolloongabba

Issue	Impact of lighting on visual receptors	
Nature of the existing lighting	*Predominantly Lit:* whilst the GoPrint site is not well lit at night, the surrounding busways and city streets are lit to a level expected in a major city. During night-time sporting events, the Gabba is likely to be well lit with extensive floodlighting.	
Potential lighting impact	Changes to this precinct associated with lighting predominantly relate to effects of night lighting during the construction phase. At operation, it is likely that the precinct would become more brightly lit commensurate with the safety levels required to service the new station.	
Lighting sensitivity	*Low* – There are few permanent residents around this area as the area is mostly surrounded by commercial buildings and sporting venues.	
	Construction	**Operation**
Magnitude of lighting impact	*Low* – construction lighting may be noticeable.	*Low* – the increased lighting is anticipated to be noticeable but would be congruent with the urban context of the site.
Significance of landscape impact	*Minor adverse (temporary)*	*Minor neutral for existing viewers but beneficial for future users for safety reasons (permanent)*

Table H-41 Lighting impacts on Precinct 3: George Street Station

Issue	Impact of lighting on visual receptors	
Nature of the existing lighting	*Brightly lit:* this city centre location is brightly lit throughout the night.	
Potential lighting Impact	Changes to this precinct associated with lighting predominantly relate to effects of night lighting during the construction phase. During operation, it is likely that the precinct would become slightly more brightly lit in the immediate vicinity of George Street Station commensurate with the safety levels required to service the new station.	
Lighting sensitivity	*Medium* – there are permanent residents and visitors present in apartments and hotels around this area.	
	Construction	**Operation**
Magnitude of lighting impact	*Low* – construction lighting may be noticeable.	*Negligible* – the increased lighting is anticipated to be noticeable but would be congruent with the urban context of the site.
Significance of landscape impact	*Minor to moderate adverse (temporary)*	*Minor neutral for existing viewers but beneficial for future users for safety reasons (permanent)*

Table H-42 Lighting impacts on Precinct 4: Roma Street Station

Issue	Impact of lighting on visual receptors	
Nature of the existing lighting	*Predominantly lit:* Roma Street Station is well-lit at night, however the adjoining parklands are relatively dark.	
Potential lighting Impact	Changes to this precinct associated with lighting predominantly relate to effects of night lighting during the construction phase. At operation, it is likely that the precinct would become slightly more brightly lit in the immediate vicinity of the Project Roma Street Station commensurate with the safety levels required to service the new station.	
Lighting sensitivity	*Low* – there are a small number of permanent residents present in the residential apartments around Roma Street Station.	
	Construction	**Operation**
Magnitude of lighting impact	*Low* – construction lighting may be noticeable.	*Negligible* – the increased lighting is anticipated to be only noticeable and would be congruent with the urban context of the site.
Significance of landscape impact	*Minor adverse (temporary)*	*Minor to negligible neutral for existing viewers but beneficial for future users for safety reasons (permanent)*

Table H-43 Lighting impacts on Precinct 5: Victoria Park

Issue	Impact of lighting on visual receptors	
Nature of the existing lighting	*Predominantly lit:* whilst Victoria Park is not well lit at night there is considerable light spill into the parkland from the adjacent ICB.	
Potential lighting impact	Changes to this precinct associated with lighting predominantly relate to effects of night lighting during the construction phase. During operation, it is likely that the precinct would become noticeably more lit due to the presence of the new busway link through the parkland.	
Lighting sensitivity	*Negligible* – there are no permanent residents present in the immediate vicinity of the proposed busway and other receptors are considered too far away to experience impact from light spill or are transient vehicular users of the ICB who would benefit from a well-lit environment.	
	Construction	**Operation**
Magnitude of lighting impact	*Low* – construction lighting is likely to be noticeable.	*Low* – the increased lighting is anticipated to be noticeable.
Significance of landscape impact	*Minor to negligible adverse (temporary)*	*Minor to negligible neutral (permanent)*