MP 09_0131 Part 3A Concept Plan Application for mixed use development

# TRUenergy Tallawarra Land, Yallah Bay Road, Tallawarra

Visual, landscape and scenic resource management considerations

Report prepared for TRUenergy Tallawarra Lands

by Dr. Richard Lamb

February 2011

1/134 Military Road, Neutral Bay, NSW 2089 PO Box 1727 Neutral Bay NSW 2089
T 02 99530922 F 02 99538911 E info@richardlamb.com.au W www.richardlamb.com.au

# Table of Contents

# Executive Summary

## Introduction

1. This Report is commissioned by TRUenergy Tallawarra Pty Ltd.
2. It is an assessment of the potential visual and landscape constraints and opportunities of the subject land (the site) to support the proposed mixed use development comprising of part residential, part commercial, part industrial/employment, part tourism, part open spaces and conservation and recreation uses under Major Projects Application MP 09_0131, Part 3A Concept Plan for the surplus land to the Tallawarra Gas Power Station site which will occupy 40 Ha of the total area of the site of 565 Ha, called Tallawarra Lands.
3. The report addresses the Director General's Requirements relevant to potential visual and landscape character impacts. In particular, it addresses Key Issues 7(a and b) part, 8(b), 16(a) part and Plans and Documents (view analysis).

## Methodology

4. The visual opportunities and constraints of the site were identified in terms of the existing scenic resources of the site, the scenic quality of different parts of the site and visual exposure of the site.
5. The predominant parts of the site are presently rural in character comprising of mostly grazing land with a varied topography. Parts of the site also exhibit industrial landscape character. The site topography varies from the elevated north, northeastern and northwestern parts to the relatively flat and low lying southern parts.
6. The major scenic resources of the site are the Mount Brown hills and its associated prominent slopes, creeklines, drainage lines and its associated vegetation, the Lake Illawarra foreshore edge and pockets of riparian and swamp forest vegetation and some significant strands of native vegetation including the ecologically endangered communities of vegetation
7. The site was divided into scenic quality zones based on its intrinsic visual constraints. These zones are identified on the basis of their visual exposure from external viewing locations, physical and natural features and their spatial arrangement with the immediate surrounding context.
8. The effective visual catchment for the site is relatively large. This is in response to elevated parts of the site associated with Mount Brown prominent slopes and the location of part of the site adjacent to the Lake Illawarra foreshore. Only parts of the site are visible from individual external view directions.
9. Close viewing locations include Yallah Bay Road, a section of Old Princes Highway, Princes Highway, public recreation area along the Lake foreshore in the vicinity of the inlet channel to the power station and the northern parts of Haywards Bay
10. Middle distance viewing locations are found within the suburbs immediately to the west (Koonawarra) and north (Kanahooka) from locations close to the Lake foreshore and from a section of Carlyle Close, Illawarra Highway, Yallah Road and Marshall Mount Road.

There is no significant visibility of the site from the residences and residential roads in these suburbs.

11. There are distant views of parts of the site from locations close to the Lake foreshores in Albion Park, Oak Flats, Shellharbour, Mt Warrigal, Windang, Primbee, Lake Heights, Berkeley, localities. Visibility of the site is mainly from along the lake foreshore, reserves and beaches. Parts of the site are also visible from some high points in Shellharbour, Mt Warrigal, Lake Heights and Berkeley which includes some residential streets and residences.
12. The analysis then informed the location, spatial arrangement, built form and envelopes and internal road network for the proposed uses on the basis of the identified opportunities, constraints and strategies recommended for scenic resource conservation, adaptation and enhancement and.
13. The proposed concept plan was then analysed against the identified visual opportunities and constraints of the site and how it responded to the existing scenic resources and scenic quality and maintained predominant views into the site.

**Assessment and findings**

14. The findings of the assessment of the proposed concept plan are;
    - The proposed concept plan is compatible with the scenic resource management principles.
    - In most views the residential developments on the site will be seen in the context of the residential developments of the lakeside suburbs such as Koonawarra, Haywards Bay, Oak Flats, Shellharbour, Mt Warrigal and others and/or the suburbs of Dapto and Kanahooka.
    - The employment uses (industry/business) are proposed on parts of the site with low external visual exposure and will not have any significant visibility from the external domain with the exception of some views from the south and southwest of the site.
    - Other employment uses (neighbourhood centre and enterprise/business) are also proposed on parts of the site with limited external visual exposure.
    - The proposed concept plan appropriately retains, adapts and enhances the scenic resources of the site which include Mount Brown slopes, ridgelines, creek lines, Lake foreshore edge and water bodies.
    - It provides for new visual and physical linkages and internal road networks that provide increased and improved access to internal scenic resources as well as externalises the site with the surrounding context.
    - Views of the important ridgelines, high points and prominent slopes will be maintained by strategic location of residential development below the visual horizon at the finer grain.
    - There would not be any significant interruption of existing views from the external domain. The view composition of part of the view comprising of the site may alter, but the overall visual experience will not be affected.

## Visual and urban design considerations

15. As part of the formulation of the urban design principles at the fine grain, specific measures will be taken to create a high quality residential environment by using the principles of environmentally sustainable design. This and some other urban design considerations include:

    - Appropriate building orientations, setbacks, landscape settings, provision of pocket parks, opportunities for views outward and access to scenic resources.
    - Visual privacy between neighbours will be maintained by commitments to appropriate setbacks, building orientations, locations of doors, windows and balconies and landscaping.
    - Locations of the building envelopes will be below the horizon of the views from the external domain.
    - Roads orientations and public domain landscape will assist in minimising visibility of buildings on ridge lines. There will be minimal visibility of internal roads from the external domain.
    - Appropriate landscaped setting and visual and physical separation between built forms for the residential uses will be incorporated.
    - Appropriate use of material and colours to reduce prominence will be incorporated.
    - Street networks will provide axial views through the site.
    - Appropriate recreational use of large water bodies is proposed.
    - Further regeneration of pockets of native vegetation, creekline vegetation and conservation of ecologically endangered communities is proposed.
    - Appropriate building profiles, envelopes, finished heights, articulation and roof forms will be proposed.
    - Appropriate landscape strategy for industrial and commercial uses will be incorporated.
    - The height of the general industrial buildings will be restricted to not rise above the vegetation canopy to the south of Duck Creek and along the creek corridor.

## Conclusions

16. The proposed Concept Plan incorporates the scenic resource management guidelines identified by the visual assessment and subject to the incorporation of and development of a number of urban design guidelines and commitments at the fine grain; it is considered that the site has the potential for development as proposed.

# 1.0 Introduction

## 1.1 Purpose of this report

This Report is commissioned by TRUenergy Tallawarra Pty Ltd. It is an assessment of the potential visual and landscape constraints and opportunities of the subject land (the site) to support the proposed mixed use development comprising of part residential, part commercial, part industrial/ employment, part tourism, part open spaces and conservation and recreation uses under Major Projects Application MP 09_0131, Part 3A Concept Plan.

The land which is the subject of this Concept Plan Application is owned by TRUenergy and is the surplus land to the Tallawarra Gas Power Station site which will occupy 36.25 Ha of the total area of the site of 535.9 Ha, called Tallawarra Lands.

The Report is based on the field assessments carried out on 17 February, 3 and 24 March 2010. It addresses the Director General's Requirements relevant to potential visual and landscape character impacts. In particular, it addresses Key Issues 7(a and b) part, 8(b), 16(a) part and Plans and Documents (view analysis).

The site was subject to rezoning proposals as part of the Draft LEP to Wollongong City Council and the Local Environmental Plan 2009 incorporates the new zoning within it.

## 1.2 Documents consulted

We have perused the following documents in the preparation of this Report;

1. The Masterplan Concept for the proposed development, prepared by Warren Lee Urban Design Pty Ltd and Corkery Consulting, dated December 2010.
2. Preliminary studies to inform the Concept Plan undertaken by;
   - Biosis (Historical Heritage and Aboriginal Cultural Heritage Assessment Consultants),
   - Corkery Consulting (Landscape Consultants),
   - Warren Lee Urban Design Pty Ltd (Urban Design Consultants),
   - Eco Logical (Ecology and Bushfire Consultants)
   - Gabites Porter (Traffic consultants)
   - Don Fox Planning (Land Use Assessment Consultants)
   - Urbis (Ecologically Sustainable Development Consultants)
   - Elton Consulting (Public Consultation Consultants)
3. Development Concept Plan prepared by Cox Richardson and Context, dated March 2009.
4. Preliminary Assessment Report, Tallawarra Concept Plan, prepared by Don Fox Planning, dated 22 June 2009.
5. Tallawarra Lands Structure Plan Report, prepared by Cox and Others, dated June 2009.

6. Tallawarra Lands Local Environmental Study (LES), prepared by Willana Associates and Others, dated December 2006.
7. Item 7 of the Minutes of the Environment and Planning Committee Meeting of Wollongong Council, dated 7 May 2007 in regard to Tallawarra Lands LES and Council's resolution to adopt the LES and prepare a Draft LEP.
8. Draft Wollongong LEP 2009 Summary of rezoning proposals, Precinct Rezoning Proposals – Endorsed by Council for Exhibition, 1.1 Tallawarra – Yallah Bay Road, Yallah.
9. Director General's Requirements for the Concept Plan Application for the proposed mixed use development
10. Illawarra Combined Cycle Gas Turbine Power station, Visual Assessment, prepared by Landscan Pty Ltd, dated October 1997.
11. Combined Cycle Gas Turbine Power Station, Environmental Impact Statement, Part 14 Visual Impacts,
12. Wollongong Local Environmental Plan 1990.
13. Wollongong Local Environmental Plan 2009.

## 1.3 Visual and landscape assessment methodology

This report is a commentary on the visual resources issues that relate to the proposed Concept Plan, the means taken for the conservation of those resources and their integration into the Master Planning for the site and the potential for alternative, or improved and enhanced levels of scenic protection.

The methodology that is employed for assessment of the site and project has been developed over several years and uses relevant aspects of methods accepted in landscape assessment, extended and modified to adapt to urban environments. The modifications introduced are derived from visual perception research carried out by others and ourselves in both natural and urban contexts.

The assessment of visual impacts is a field that requires a degree of subjective judgment and is not completely objective. It is therefore necessary to limit the subjectivity of the work by adopting a systematic, explicit and comprehensive approach. This has the aim of separating aspects that can be more objective, for example the physical setting, visual character, visibility and visual qualities of a proposal, from more subjective elements, such as attractiveness and compatibility of the proposal within the setting.

The objectives of the methodology used, is to provide a consistent and practicable assessment of the site and its setting. The work involved to complete the project involves close familiarisation with the site, its physical, natural and cultural components and the meanings of the connections between individual components of the landscape, both tangible and intangible. It involves the identification, ranking and prioritisation of existing and likely future visual resources, in the context of existing and future visual exposure parameters, integrated with assessment of the appropriate responses, scale, bulk, line, form, texture, colour and materials of the built form.

It also involves the assessment and mapping of the biological and physical attributes of the setting and the visual exposure of it to views from the public and private realms. The identification and recording of the information collected is presented both descriptively and graphically in the form of maps, photographs and narrative.

The major components of the assessment are:

1. Identification and description of the visual context of the land, the components of the natural and cultural landscape and its scenic setting. (Section 2.1)
2. Description of the proposed landuse distribution in the Concept Plan (Section 2.2)
3. Identification of the existing scenic resources of the land and Scenic Quality Zones (Section 2.3 and 2.4)
4. Analysis of the visual exposure of the existing and future land uses:
    a. Identification and indication of the viewing place and direction of existing views (Section 2.5);
        i. Into the land
        ii. Out of the land
        iii. Assessment of the likely scenic quality expectations of different kinds of viewers exposed to the site.
5. Generation of scenic resources management principles (Section 3.0)
        i. general
        ii. preservation
        iii. adaptation
        iv. linkage
        v. enhancement
6. Assessment of the proposed Concept Plan vis-à-vis the identified scenic resources principles (Section 4.0)
7. Assessment of specific visual effects of the proposal (Section 5.0) to include:
        i. Potential visual exposure of the proposal
        ii. Recommendation for urban design strategies
        iii. Potential view loss effects and interruption of views
        iv. Potential internal residential amenity including views and visual privacy
8. Summary and Conclusions (Section 7.0)

# 2.0 Assessment

## 2.1 Visual context and character of the environs

Map 1 shows the location of the site within its surrounding context. The site is located along the western foreshores of Lake Illawarra and to the east of the Princes Highway and South Coast Railway Line. The immediate residential context of the site consists of Dapto to the northwest, Koonawarra and Kanahooka to the north and Haywards Bay to the south. The rural areas of Penrose and Albion Park are located further to the west, northwest and southwest.

The main local, regional and State roads within the context of the site are the Old Princes Highway and the Princes Highway to the east, Illawarra Highway to the southwest and Yallah Road to the west. Yallah Bay Road off Old Princes Highway runs through the site in an east-west direction and terminates near the newly commissioned TRUenergy Gas Fired Power Station. This is the only access road to the site at present, off the Old Princes Highway.

The wider visual context of the site consists of localities along the southern, eastern and northern foreshores of Lake Illawarra to include, anti-clockwise from the south west: Albion Park, Oak Flats, Shellharbour, Mt Warrigal, Windang, Primbee, Lake Heights and Berkeley.

The parts of the site predominantly visible from outside the site are presently rural in character comprising of grazing and pastoral land with a varied topography. Parts of the site also exhibit industrial landscape character associated with the Power Station site. Much of the low lying parts of the site that are of lower external visibility consist of filled ash dams resulting from the waste deposited from previous coal-fired power station activities. The areas vary from highly degraded and infested with weed growth to partly regenerating with natural vegetation. The site topography varies from the elevated north, northeastern and northwestern parts to the relatively flat and low lying central and southern parts. The area is drained by Duck Creek which flows from the north east to south west to meet the waters of Lake Illawarra.

Mount Brown and its associated Reserve are located immediately northwest of the site. The Mount Brown Reserve land also forms part of the northwestern sector of the site. There are four prominent ridgelines which emanate from Mount Brown and Mount Brown Reserve, three of which run in a generally easterly direction in the northern sector of the site. There is also a pocket of slightly elevated land in the southwest sector of the site, adjacent to Old Princes Highway.

Part of the western foreshores of Lake Illawarra adjacent to the site is characterized by public recreation area, to the east of the TRUenergy power station. Duck Creek passes through the site and meets Lake Illawarra in the southern sector of the site. The land to the south of Duck Creek consists of swamp forests and has potentially Endangered Ecological Communities. There are also other significant pockets of ecologically endangered communities of vegetation within the southwest part of the site.


Site boundary

TRUenergy Power Station site

Contour interval 10m

**Map 1**
**The site and its imediate context**

Not to Scale

The site is zoned as follows under Wollongong LEP 2009;

Part R2 (Low Density Residential), Part R5 (Large Lot Residential), Part RE1 (Public Recreation)

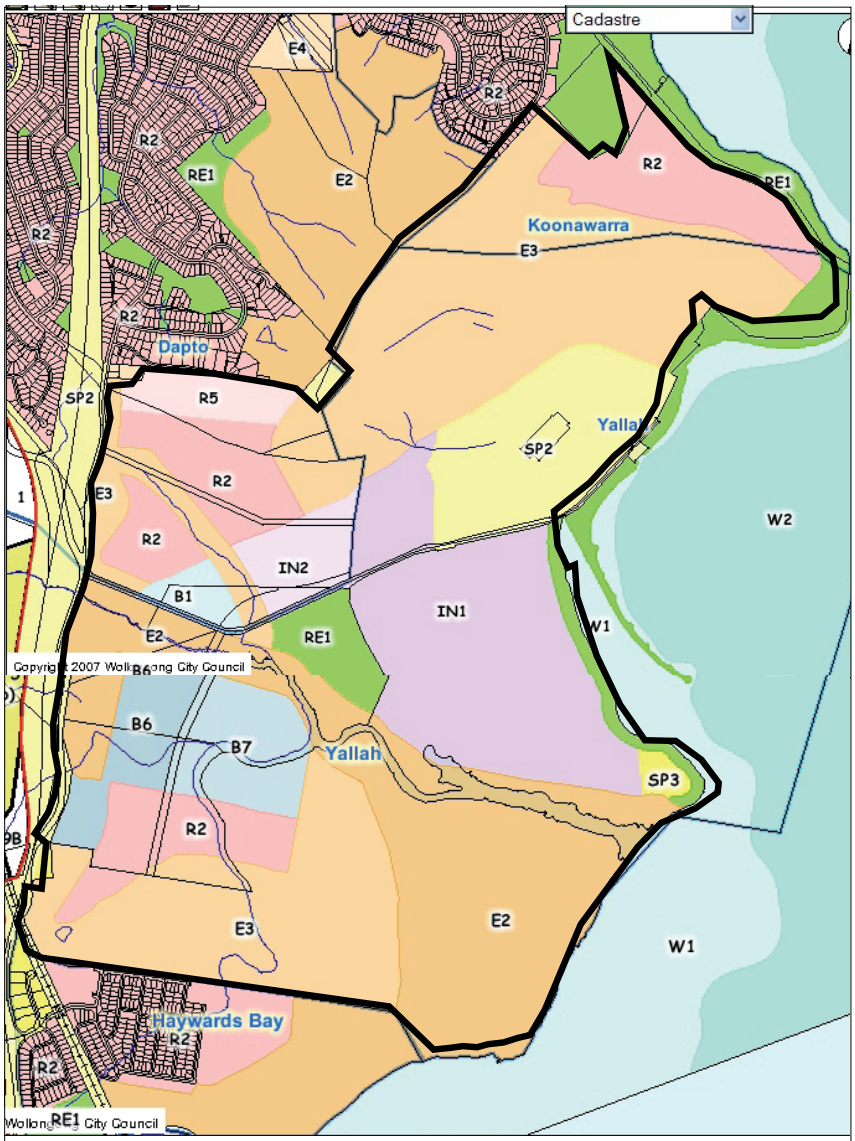
Part E2 (Environmental Conservation), Part E3 (Environmental Management)

Part SP2 (Infrastructure), Part SP3 (Tourist)

Part IN1 (General Industrial), Part IN2 (Light Industrial)

Part B1 (Neighbourhood Centre), B6 (Enterprise Corridor), B7 (Business Park).

Refer to the abstract of the Zoning Plan (Map 1A).




**Map 1A**
**Abstract of the zoning map Wollongong LEP 2009**

## 2.2 The proposed land use distribution under the Concept Plan

The proposed land use distribution is in accordance with the LEP zonings for the different parts of the site.

Four precincts of residential development are proposed (Refer to the attached Concept Plan-to be inserted). Hillside residential/large lots residential is proposed in the vicinity of Mount Brown, along part of its side slopes in the northwest part of the site. The predominant orientation of these Lots is toward the southwest. Further south of the Large Lot Residential Precinct, on the southern elevated and sloping lands associated with Mount Brown in the northwest part of the site, is proposed a central residential precinct. A north shore residential precinct is proposed in the northern part of the site to the north and below a predominant ridgeline in that part of the site. A lakeside residential precinct is proposed in the southwest part of the site in the vicinity of two large water bodies present there. Some pocket parks and treed ridgeline backgrounds are proposed along the edges of these residential precincts.

Three main areas of Environmental and recreational reserves are proposed. These are i) on the eastern and northeastern slopes of Mount Brown, ii) along the foreshore edge to the south of Yallah Bay Road in the eastern part of the site, to be used as a cycling track and iii) to the south of Duck Creek in the southeast part of the site.

Employment uses (industry/business) are proposed mainly on part of the site closer to the TRUenergy Power station immediately to the north of Yallah Bay Road within the interior (and enclosed parts) of the site. This area is part of the lowest slopes of Mount Brown in the central part of the site, which has predominantly low visual exposure from the external public domain.

Employment uses (enterprise/business) are proposed in the southwest part of the site, closer to the Old Princes Highway. A primary school and a retirement village are proposed to be possible uses to the east of this enterprise/business corridor.

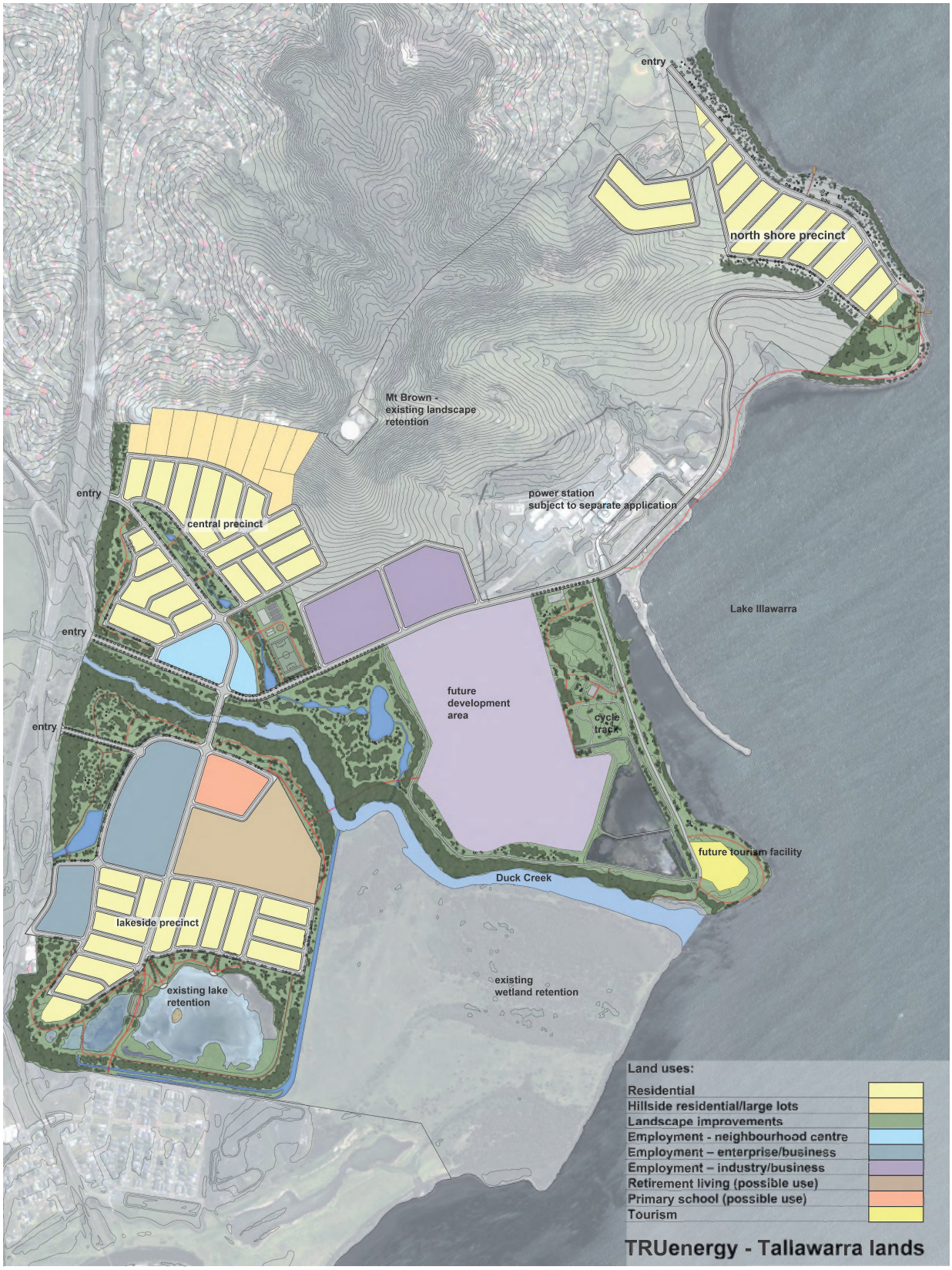
Employments use (neighbourhood centre) is proposed to the north of Yallah Bay Road, adjacent to and south of the central residential precinct.

A sports ground is proposed to the north of Yallah Bay Road, between a creekline and the proposed employment uses (industry/business). A Tourism area/facility is proposed at Wollingurry Point along the Lake foreshore.

A future development area is shown on the south side of Yallah Bay Road for Employment purposes which is not part of the current Application. It will be subject to further geotechnical and other technical investigations in the future.

The Concept Plan also incorporates retention and regeneration of riparian vegetation, significant pockets of dense vegetation, ecologically endangered communities and swamp forests. It also incorporates adequate APZs, riparian setbacks, landscape improvements, perimeter roads and fire trails where necessary. Details of how the proposed concept plan responds to the visual, environmental and physical opportunities and constraints of the site is discussed in the following sections.

Warren Lee Urban Design Pty Ltd are the Urban Design Consultants and have prepared material representing the potential built form in terms of height, scale, form, number of storeys and some general urban design principles including landscaping. Also refer to the material from Corkery Consulting in this regard. These have been submitted with the Application package.


entry
north shore precinct
Mt Brown -
existing landscape
retention
entry
central precinct
power station
subject to separate application
Lake Illawarra
entry
future
development
area
cycle
track
entry
future tourism facility
Duck Creek
lakeside precinct
existing
wetland retention
existing lake
retention
Land uses:
Residential
Hillside residential/large lots
Landscape improvements
Employment - neighbourhood centre
Employment – enterprise/business
Employment – industry/business
Retirement living (possible use)
Primary school (possible use)
Tourism
TRUenergy - Tallawarra lands
0
1500m
concept plan
December 2010

## 2.3 Scenic resources of the site

Existing visual features of the site and the potential scenic experiences that they can provide in a future development scenario are described below as the Scenic Resources of the site. The predominant existing Scenic Resources are mapped on Map 2. A significant proportion of the site south of Yallah Bay Road near its northeast terminus has minor or insignificant existing visual resources and low intrinsic scenic quality due to the land degradation and landform modification caused by former coal fired power station activities. Wollingury Point along the Lake Foreshore has been identified as area of high archaeological sensitivity and cultural value by Biosis, the heritage consultants for the Project.

There are a small number of heritage items within the site or immediately adjacent to it that are listed in Wollongong LEP 2009. The heritage consultants have also identified a number of unlisted sites of interest which are potential historical archaeological sites. These may require consideration in regard to their curtilages and/or settings.

There are expansive to panoramic views from the high points in the northern sector of the site in the north, northeast, east, southeast and south directions. Mount Brown and its slopes are landmark features of the site. Views of parts of the site from the external domain have a distant backdrop of views of the Illawarra Escarpment.

The scenic resources form a framework for strategically planning future high scenic amenity for both the existing and designed landscape. The major scenic resources of the site are;

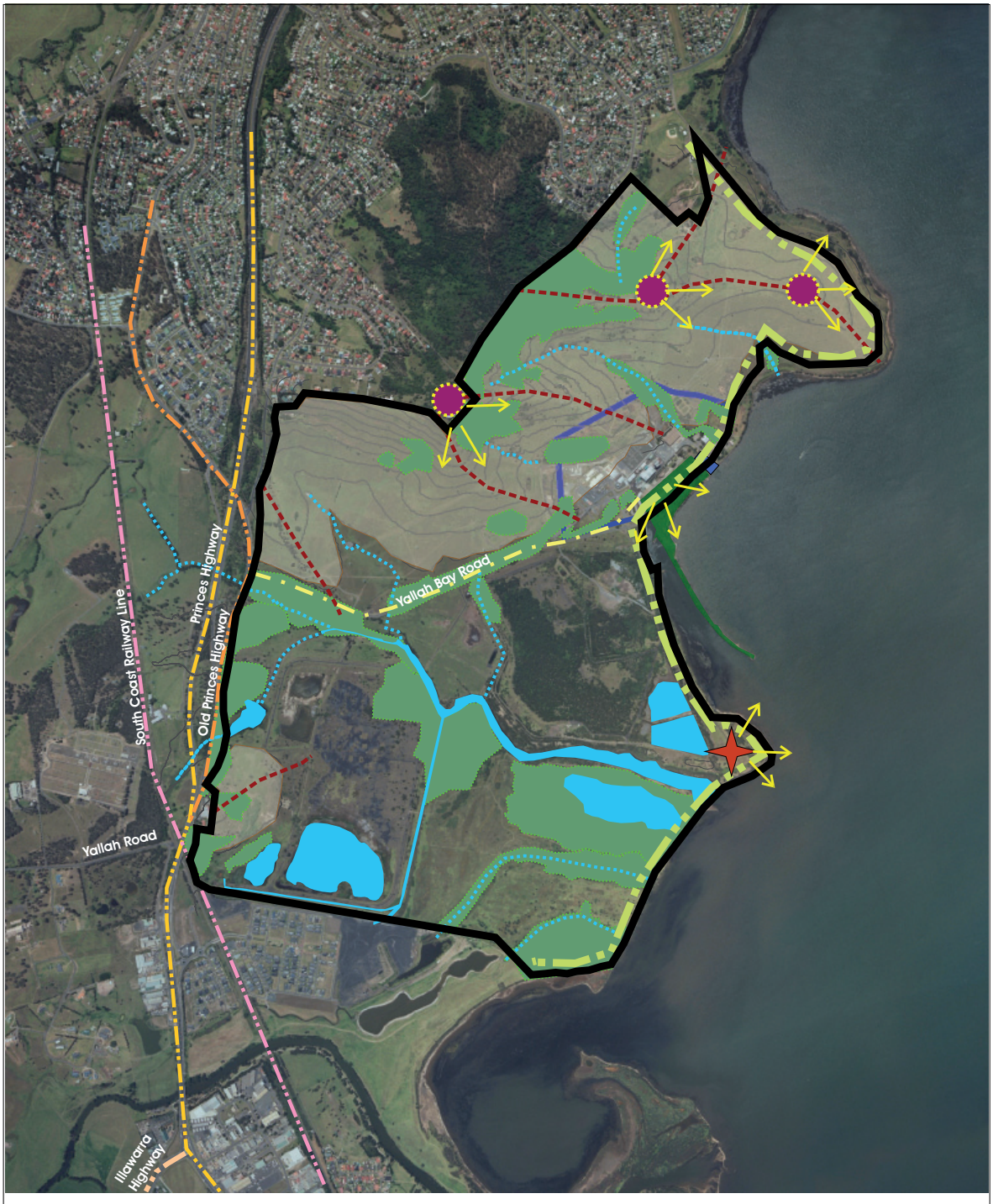
### The Mount Brown hills and associated prominent slopes

These are one of the higher value scenic resources of the site. The Mount Brown Reserve vegetation, notwithstanding it is partly degraded by weed invasion is also of high scenic value. These form part of the horizon of the view in many views from the west and southwest directions. These parts of the site are suitable for low intensity developments subject to incorporation of strategies for maintenance and enhancement of the scenic value and retention of its views from the external domain.

### Lower slopes and parts of low lying lands

The predominant character of the central spine of the land parallel to and to the north of Yallah Bay Road consists of lower side slopes with minor topographic relief that have various orientations. The predominant orientations are south, southeast and southwest across flood plains of minor creeks. These contain a few scattered individual trees and groups of trees but consist of predominantly cleared land. The lower slopes are of lower intrinsic scenic quality and resource value and therefore demand a higher degree of future intervention and design input so as to sustain and increase their visual quality.

Low lying lands mainly in the eastern part of the site on the filled ash dams can be seen to dominate this part of the site. The land is of low intrinsic scenic value with a high capacity to absorb development and interventions to increase and sustain higher levels of scenic value in the future.




**Map 2**
**Visual context and visual resources of the site**

### Creeklines, drainage lines and associated vegetation

These features are predominantly flat land occupying the alluvial flood plains of Duck Creek and other minor drainage lines in the southern part of the site. They are mainly associated with riparian vegetation, coastal swamp oak forests and extensively cleared, grazed lands. Creek and drainage lines provide future view corridors, the potential for direct public access to scenic resources as designed views and also have high potential to become part of a series of open space links that can provide access to visual resources that are not otherwise available to general views (eg. pocket parks, parkway linkages and sequences of views).

The large residual water bodies also have the potential to be retained and adapted as recreational spaces.

### The Lake Illawarra foreshore edge

The foreshore edge to Lake Illawarra is one of the high value scenic resources of the site with high visual exposure.

The foreshore edge east and further north of TRUenergy power station is proposed to be developed for public access and recreation under a Yallah Bay Foreshore Precinct Lake Illawarra by the Lake Illawarra Authority. This part of the foreshore edge is predominantly cleared with the exception of some native and exotic vegetation associated with the public recreation area near the water inlet to the Power Station.

The foreshore edge in the southern sector of the site is relatively flat and consists predominantly of weed growth, with the exception of riparian vegetation associated with Duck Creek and the creeklines to the south of it.

### Pockets of riparian and swamp forest vegetation, ecologically endangered communities and some significant strands of native vegetation.

The significant pockets of vegetation can be adapted as part of public recreational reserves. The land to the south of Duck Creek is of relatively high natural and scenic value and can be adapted as an environmental management and conservation reserve. Significant pockets of ecologically endangered communities of vegetation within the southwest part of the site are of high scenic and ecological value and need to be conserved. These areas vary from moderate to high scenic quality when seen at the small scale and close range and provide significant intrinsic screening effects on views into the site from the south and from Lake Illawarra. Subject to controls on the intensity and nature of use, they have high visual resource values to the proposed development.

## 2.4 Scenic Quality Zones

We have assessed the major issues for scenic quality by identifying the visual opportunities and constraints of the site (Refer Map 3 and 3A). The variation in topography, creekline vegetation, other stands of vegetation and the various edges of the site with its immediate external context pose varied degrees and nature of opportunities and constraints for the proposed development.

The site was divided into Scenic Quality Zones based on its intrinsic visual quality and constraints. These zones are identified on the basis of their visual exposure from external viewing locations, physical and natural features and their spatial arrangement within the immediate surrounding context.

The Scenic Quality Zones are described at Map 3A. Zones A, B, C and E are considered to be of highest intrinsic visual constraint. Zone D is considered to be of moderate intrinsic visual constraint and Zone F is of low intrinsic visual constraint.

Scenic Quality Zones A and B pose some constraints for future development due to their locations adjacent to the Lake, high visual exposure to the lake and foreshore public domain. Scenic Quality Zone B exhibits high naturalness and integrity and proximity to culturally and archeologically significant land (Wollingury Point). They are suitable for foreshore pedestrian access, some tourism use (Wollingury Point) and low intensity development such as residential depending on the suitability of land and subject to significant urban and landscape design measures.

The predominant ridgelines, undulating topography and the high points constrain the upper slopes within the Scenic Quality Zone C for future high impact uses, ie. general employment uses which would require higher levels of impact mitigation. They are considered to be more suitable for low impact uses, such as residential, recreation, environment reserve or local centre. The lower slopes within this zone, adjacent to Yallah Bay Road have the potential to accommodate some employment uses.

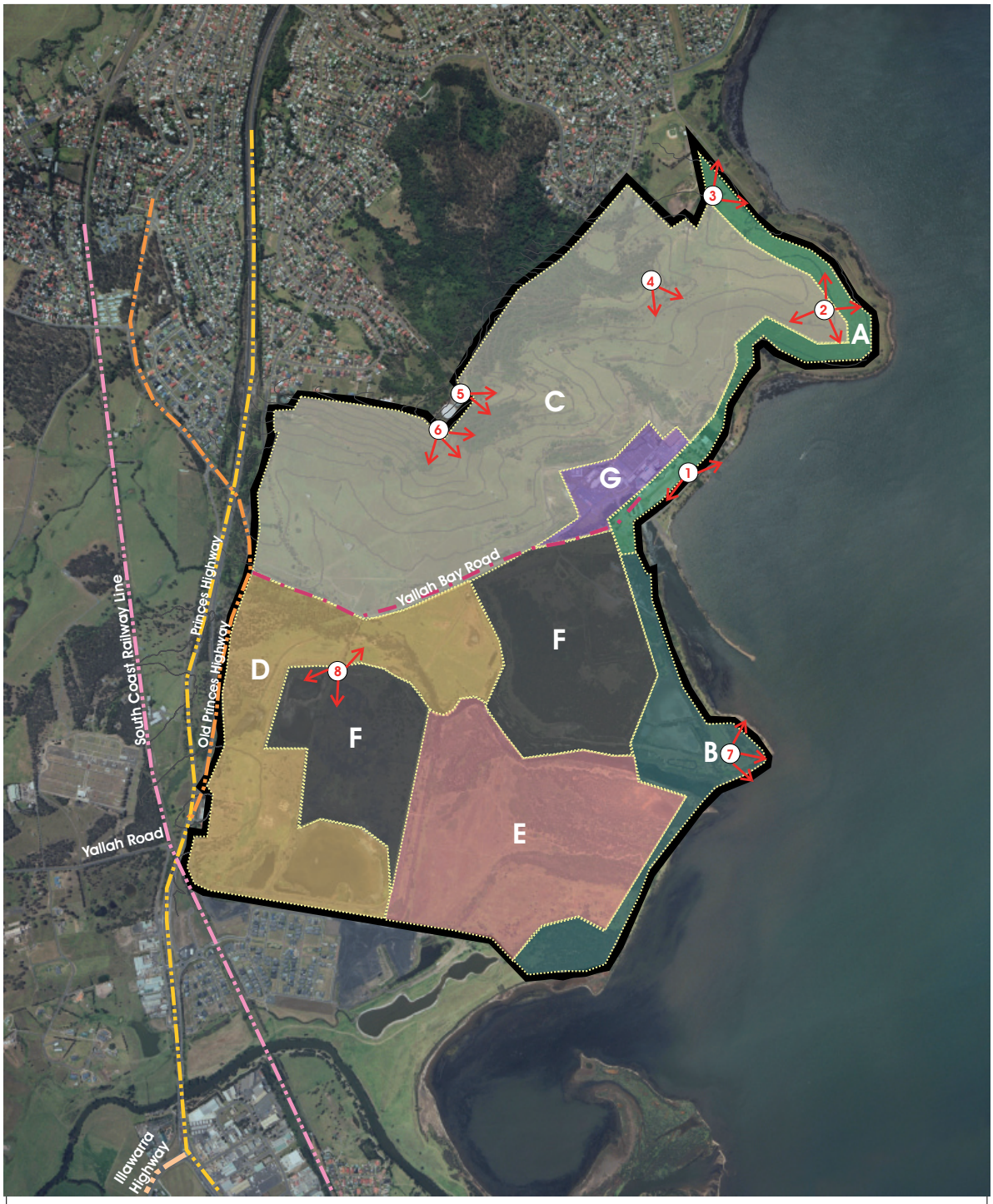
Scenic Quality Zone D poses some constraints due to its proximity to the Old Princes Highway, the Princes Highway and Haywards Bay locality and the presence of pockets of prominent native vegetation and ecologically endangered vegetation. Both Scenic Quality Zone D and its adjoining Scenic Quality Zone F are suitable for part commercial and part residential uses subject to policies for buffer zones, landscape treatments, controls on colours and materials and close consideration of significant view lines. Small scale institutional use can also be incorporated subject to a positive response to the vegetation communities and provision of adequate APZ and riparian setbacks.

The land to the south of Duck Creek in the southeast sector of the site is constrained due to its high scenic and natural quality and presence of potentially Endangered Ecological Species (Scenic Quality Zone E and part of B). It has the potential to be conserved and managed as a Reserve.

Part of Scenic Quality Zone Zone F in the vicinity of Yallah Bay Road is the least constrained visually and is suitable for high impact uses such as general industrial development (Employment (industry/business), subject to future geo-technical investigations and policies for buffer zones, heights of buildings and landscape treatments.

The existing major and minor creek lines and their associated vegetation are of moderate scenic quality and have the potential to be further adapted as future riparian corridors, flood plains and vegetated corridors. These corridors would also provide vegetated character and the benefits of screening effects to parts of the future development.

In general, it is assessed that the site has the potential for a mixed development comprising zones of commercial, employment and residential developments, recreation and conservation land as proposed, subject to consideration of a number of mitigation measures and strategies, which are discussed below.




① To ⑧ Internal viewing locations (Refer to Photographic Plates at Appendix A)

Scenic Quality Zones (refer to accompanying sheet Map 3A)

Site boundary

**Map 3**
**Scenic quality zones**

Not to Scale

A

Scenic Quality Zone A consists of the land within the site which is closer to Lake Illawarra Foreshore and forms the lowest parts of the Mount Brown slopes. It is adjacent to land owned by Lake Illawarra Foreshore Authority which is proposed to be developed for public access and recreation under a Project called Yallah Bay Foreshore Precinct Lake Illawarra. The land is predominantly cleared with the exception of some native and exotic vegetation associated with the public recreation area near the water inlet channel to the Power Station. This part of the site is constrained for future development due to its sensitive location and high visual exposure. Some residential development can be accommodated in the northern part of this Zone, as proposed.

B

Scenic Quality Zone B consists of the land which forms the foreshore of Lake Illawarra in the southern sector of the site. This land is relatively flat and consists predominantly of weed growth, with the exception of riparian vegetation associated with Duck Creek and the creeklines to the south of it. This part of the site is constrained for future development due to its sensitive location and high visual exposure. Wollingury Point forms part of this Zone and has the potential for a landmark lakeside development such as Tourism, as proposed.

C

Scenic Quality Zone C is characterised by the high altitude and lower slopes of Mount Brown. There are expansive views in the south, southeast, east, northeast and north directions from this land. The land is mostly cleared of vegetation with the exception of the vegetation within Mount Brown Reserve, some pockets of native vegetation and those associated with creeklines. This land has relatively higher scenic quality and parts of this Zone have moderate to high constraint for future development. The western part of this Zone has the capacity to accommodate large lot and low density residential development strategically located to be below the horizon of the critical views from the external domain. The most northern part, consisting of the lower slopes of Mount Brown, has a similar capacity to accommodate some residential development. The upper and middle slopes of the southern, southeastern and eastern part of this Zone are constrained for future development due to their visibility as part of the visual horizon of the views from the south, southeast and east directions from the external domain. This land can be developed as private landscaped reserve, as proposed. The southern lower slopes closer to Yallah Bay Road have the potential for low density residential, light or general industrial and some commercial uses, as proposed.

D

Scenic Quality Zone D is characterised by low lying land in the south western part of the site adjacent to Yallah Bay Road and the Old Princes Highway. It is characterised by some cleared land, vegetation associated with Duck Creek and dense pockets of remnant riverine Forest. The land adjacent to Duck Creek is constrained for any future development. It is proposed to be developed as a public recreation space. The land in the northwestern corner of this Zone as well as some sections adjacent to the Old Princes Highway is constrained for future development due to the presence of dense native vegetation. The southern part of this Zone which is located closer to Yallah Bay House, some commercial development and the Haywards Bay residential edge is proposed for some commercial and residential development, as is appropriate. A Primary School and a Retirement Village are also proposed at locations within this Zone which are less constrained. The Pond and its adjacent land located near the southern boundary of the site is to be developed as a public recreation area. This Zone has low visual constraints for the proposed uses.

E

Scenic Quality Zone E is characterised by swamp native forest lands and land associated with Duck Creek. It has relatively high natural and scenic value and is constrained for any future development. This Zone is proposed for Environmental Management and Conservation Reserve, as is appropriate.

F

Scenic Quality Zone F is characterised by the presence of filled ash dams from previous power station activities. These are low lying lands consisting predominantly of weed and re-growth. These lands have low visual exposure from the external domain and parts of this Zone have the potential for future industrial development, subject to further detailed geo-technical investigations, buffers from the foreshore edge. The land in the southwest sector of the site within this Zone is suitable for a mix of employment (enterprise) and low density residential developments. .

G

Scenic Quality Zone G is characterised by the TRUenergy Power Station. This part of the site has low visual exposure from the external domain with the exception of views from a section of Yallah Bay Road and the recreation area along the foreshore. The exhaust stack associated with the Power Station is visible from some close and middle distance external viewing locations to the north, northwest and west and some distant locations to the northeast and east of the site..

**Map 3A**
**Description of Scenic Quality Zones**

## 2.5 Existing visual exposure of the site

### Views in to the site

The effective visual catchment for the site is relatively large. This is in response to elevated parts of the site associated with Mount Brown, prominent slopes and the location of part of the site adjacent to the Lake Illawarra foreshore. Only parts of the site are visible from individual external view directions, in the majority of views.

As such, views to the site are predominantly from middle distance and distant viewing locations. Close viewing locations include Yallah Bay Road, a section of the Old Princes Highway, the Princes Highway, public recreation area along the Lake foreshore in the vicinity of the inlet channel to the power station and the northern parts of Haywards Bay

Middle distance viewing locations are found within the suburbs immediately to the west (Koonawarra) and north (Kanahooka) from locations close to the Lake foreshore and from a section of Carlyle Close, Illawarra Highway, Yallah Road and Marshall Mount Road. There is no significant visibility of the site from the residences and residential roads in these suburbs.

There are distant views of parts of the site from locations close to the Lake foreshores in Albion Park, Oak Flats, Shellharbour, Mt Warrigal, Windang, Primbee, Lake Heights and the Berkeley localities. Visibility of the site is mainly from along the lake foreshore, reserves and beaches. Parts of the site are also visible from some high points in Shellharbour, Mt Warrigal, Lake Heights and Berkeley which includes some residential streets and residences.

The site is not visible from Mt Warrigal Reserve due to the confinement of the outward views from there by the vegetation within the Reserve itself.

The external Visual Exposure Zones and their description are represented on Maps 4 and 4A. The viewing locations analysed as part of this Report are shown on Maps 4, 5 and 6 and the photographs are appended at Appendix B. The nature of the views of the site, viewing locations and directions is represented in the Table below;

**Table 2.1 Existing visual exposure of the site (Refer Maps 4, 4A, 5 & 6 and Photographic Plates at Appendix B)**

| Viewing locations | Part of the site visible and the nature of views |
|---|---|
| Visibility from Yallah Bay Road at close range<br>(Viewing locations 12 to 15) | Visual Exposure Zones A and C, southern part of Visual Exposure Zone B. Parts of Visual Exposure Zones A and B form the horizon of the views. The vegetation associated with Duck Creek partly confines the views in the east direction beyond which there can be distant horizon views of the Illawarra Escarpment. |
| Visibility from Lake foreshore adjacent to the site from close to middle distance range<br>(Viewing location 11) | Visual Exposure Zones B and F. Parts of Visual Exposure Zone A. There are panoramic views from these locations. The northern part of the site is visible with a backdrop of the residential context of Koonawarra and Kanahooka. Views in the southwest direction are confined by vegetation in the low lying land in the southern sector of the site. |

| Viewing locations | Part of the site visible and the nature of views |
|---|---|
| Visibility from the Old Princes Highway from close range (Viewing locations 16 to 19) | Visual Exposure Zone D and western parts of Visual Exposure Zone C. There are filtered views of the interior of the site due to the presence of pockets of native vegetation. Visibility from the Old Princes Highway is predominantly between Yallah Bay Road in the north and its merger with Princes Highway in the south. |
| Visibility from the Princes Highway from close to middle distance range (Viewing locations 21 to 23) | Visibility from the Princes Highway predominantly between the roundabout south of Hayward Bay and where Duck Creek crosses the Highway. Visual Exposure Zones A and D are visible. Parts of Visual Exposure Zone A forms parts of the horizon of the view. Visibility of Visual Exposure Zone D is mostly only from locations to the south of its merger with Old Princes Highway to up to the roundabout south of Hayward Bay. |
| Visibility from Illawarra Highway from middle to distant range (Viewing locations 25 & 26) | Visibility predominantly from a section of Illawarra Highway between where Macquarie Rivulet runs the closest to it and its intersection with Crome Lane in the form of focal/axial view. Visual Exposure Zones A and D are visible. Highly filtered visibility of Visual Exposure Zone D due to screening effect of vegetation and intervening developments. Visual Exposure Zone A forms part of the horizon of the view. |
| Visibility from locations to the west from middle to distant range (viewing locations 27 to 29) | Visibility mostly from a section of Marshall Mount Road in Penrose between Yallah Road to the south and where three Transmission Lines cross the Road to the north. Visual Exposure Zone A is visible in the residential context of Dapto. Both Visual Exposure Zone A and part of the Dapto residential context form part of the horizon of the view. |
| Visibility from locations to the south, southeast and east from distant range (Viewing locations 20, 30 to 38) | Apart from views from Haywards Bay locality, the views from these directions are distant views. Parts of Visual Exposure Zones A, B, D and E are visible from Haywards Bay locations.<br>Part of Visual Exposure Zone E is visible from some foreshore locations in Albion Park.<br>Parts of Visual Exposure Zones A, B and E are visible from foreshore locations in Oak Flats locations.<br>Parts of Visual Exposure Zones A, B, E and F are visible from foreshore locations in Shellharbour, Mt Warrigal and Windang locations.<br>Parts of Visual Exposure Zones A, B, D, E and F are visible from some high points in Shellharbour and Mt Warrigal.<br>Illawarra Escarpment forms the horizon of the views. From most of the locations the site is seen in the residential and built context of localities adjacent to Lake Illawarra foreshore. |
| Visibility from locations to the northeast and north from distant range (Viewing locations 39 to 44) | Visual Exposure Zone B is visible from some high points and some foreshore locations in Primbee, Lake Heights and Berkeley. It is visible from some foreshore locations in Kanahooka and Koonawarra which are middle distance views.<br>Illawarra Escarpment forms the horizon of the views. From most of the locations the site is seen in the residential and built context of localities adjacent to Lake Illawarra foreshore. |


9 To 24 Close range external viewing locations (Refer to Photographic Plates at Appendix B)

Site boundary

Visual exposure zones (refer to accompanying Map 4A)

**Map 4**
**Visual exposure Zones and visibility from close range viewing locations**

Not to Scale

A

Visual Exposure Zone A is characterised by the western and southwestern sloping land of Mount Brown. This part of the site is highly exposed in views from the west, southwest, south and southeast directions. It forms part of the horizon of the view in some of the close range and middle distance views from these directions. It is significantly below the visual horizon formed by the Illawarra Escarpment in distant views from these directions. There is :

- Visual exposure of this Zone in close distance views from Yallah Bay Road.
- Visual exposure of this Zone in close to middle distance views from a section of the Princes Highway, Yallah Road, Marshall Mount Road and Illawarra Highway to the west and southwest of the site.
- Visual exposure of this Zone in middle distance views from the Haywards Bay locality to the immediate south of the site.
- Visual exposure of parts of this Zone in distant views from locations close to the lake foreshore in Albion Park, Oak Flats, Shellharbour, Mt Warrigal and Windang localities and from a small number of high points in the Shellharbour locality.

B

Visual Exposure Zone B is characterised by the southeast, east and northeast facing sloping land of Mount Brown. This part of the site is highly exposed in views from the lake foreshore along the site and from distant and middle distance locations to the south, southeast, east, northeast and north. It forms part of the horizon of the view in some of the close and middle range views from the lake foreshore and locations to the north. It is significantly below the visual horizon formed by Illawarra Escarpment in distant views from the east, northeast and north. There is :

- Visual exposure of this Zone in close to middle distance views from the Lake foreshore including the public recreation area to the south of the TRUenergy Power Station.
- Visual exposure of this Zone in distant views from locations closer to the lake foreshore in Oak Flats, Shellharbour, Mt Warrigal, Windang, Primbee, Lake Heights, Berekley, Kanahooka and Koonawarra localities.
- There are also views from some high points in Shellharbour, Mt Warrigal, Lake Heights and Berkeley localities.

C

Visual Exposure Zone C consists of a part of the site to the south of Yallah Bay Road. It is predominantly confined between Yallah Bay Road and the vegetation associated with Duck Creek. There is :

- Visual exposure of this Zone in close range views from Yallah Bay Road.
- There are no significant views of this part of the site from other external viewing locations.

D

Visual Exposure Zone D consists of the southwest sector of the site between the Old Princes Highway and the creek vegetation associated with a rivulet off Duck Creek running in a north south direction. There is :

- Visual exposure of this Zone in close range views from a section of the Old Princes Highway, Princes Highway and Illawarra Highway.
- Visual exposure of this Zone in close range views from Haywards Bay Drive, Athanline Avenue and some residences in the Haywards Bay locality.

E

Visual Exposure Zone E consists of the southeast sector of the site, to the south of Duck Creek. There is :

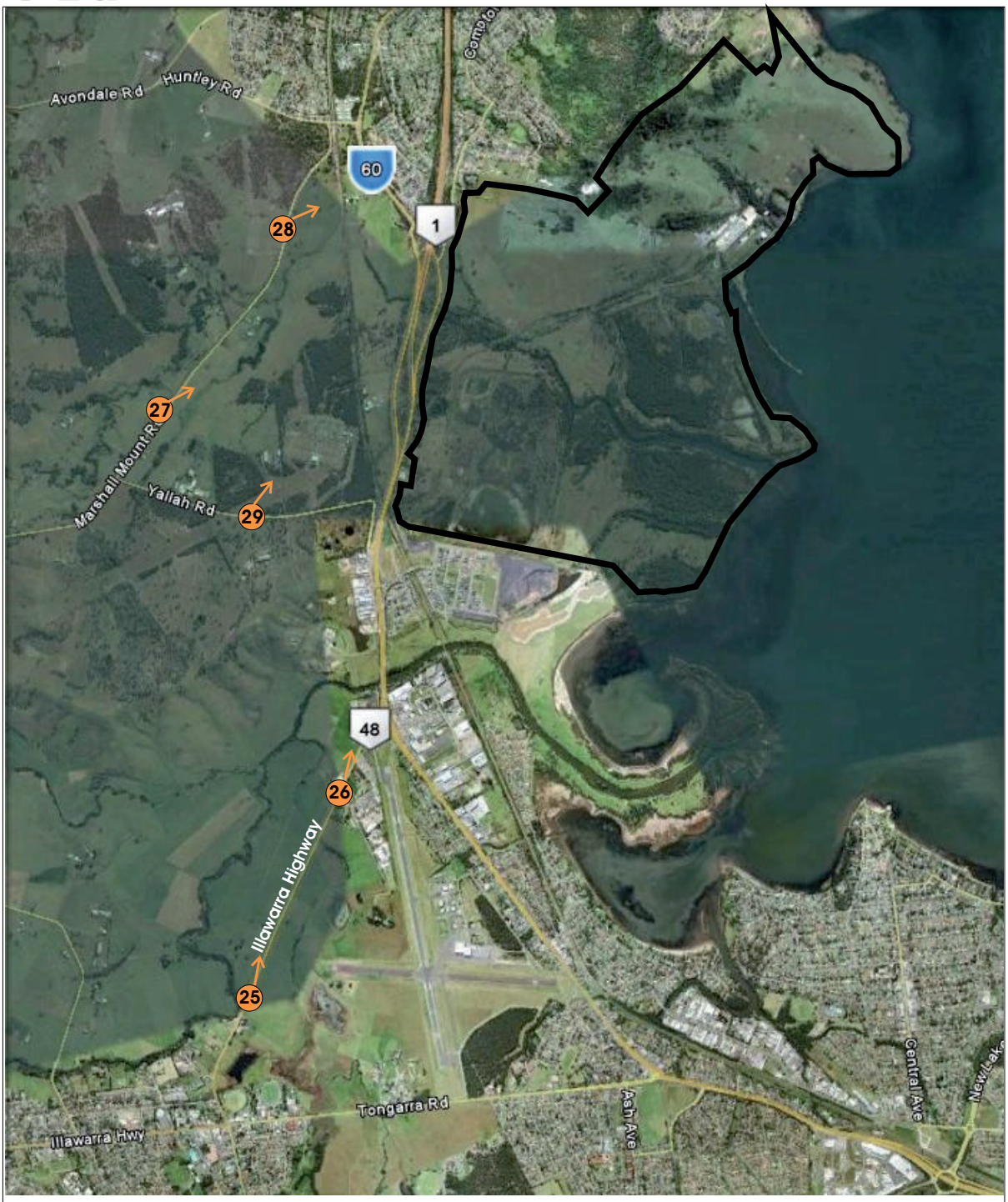
- Visual exposure of this Zone in close range views from Haywards Bay Drive, Athanline Avenue and some residences in Haywards Bay locality.
- Visual exposure of this Zone in distant views from locations close to the Lake foreshore in Albion Park, Oak Flats, Shellharbour and Mt Warrigal.

F

Visual Exposure Zone F consists of a part of the site characterised by the presence of Ash Dams. Part of the Zone is adjacent to the Lake and it also includes Wollingurry Point. The Zone is contained by a creekline to the west which runs into Duck Creek and the Lake foreshore to the east. There is :

- Visual exposure of parts of this Zone in close range views from the Lake foreshore within the site and from the foreshore proposed to be public recreation by Lake Illawarra Foreshore Authority.
- Highly screened visibility of parts of this Zone in distant views from locations close to the Lake foreshore in Windang, Primbee and Lake Heights. .

**Map 4A**
**Description of Visual Exposure Zones**




25 To 29 Medium range external viewing locations to the west and southwest of the site
(Refer to Photographic Plates at Appendix B)

Site boundary

**Map 5**
**Visual exposure from viewing locations to the west southwest of the site**

Not to Scale


30 To 45 Distant viewing locations
(Refer to Photographic Plates at Appendix B)

Site boundary

**Map 6**
**Visual exposure from distant locations (and locations to the north)**

Not to Scale

## Views out of the site

Views out of the site are predominantly from elevated lands associated with the Mount Brown upper and middle slopes and the southern edges of the site. Views from the interior and flatter areas of the site are restricted in the foregrounds and at other distances by vegetation.

From Mount Brown and side slopes there are panoramic views in the north, northeast east, southeast and south directions and include those of the lower parts of the site itself, Lake Illawarra, the suburbs adjacent to the Lake, distant hills and horizons including Illawarra Escarpment.

There are panoramic views out from the locations close to the Lake foreshore in the north, northeast east, southeast and south directions which also include the elements described above.

There are views out of the immediate surrounding context from the southwest and southern edges of the site which includes those of the Highway and Haywards Bay locality.

## 3.0 Scenic Resource Management Principles

Particular care needs to be taken in managing the scenic resources of the land so that there is an overall high level of scenic amenity, that the best elements of view experiences are preserved, and that major physical adaptations to the landscape provide the best quality scenic environment. Care also needs to be taken to ensure that the most significant resources are visually and/or physically linked into a system of quality visual experiences and that, wherever feasible, existing resources are enhanced in character and quality for the future.

### 3.1 General

The existing scenic resources of the prominent hills and the foreshore edge should be a priority focus for landscape conservation. This is an important issue that requires attention to both visual and physical links and, in the fullness of time, to consideration of the height, bulk and location of the built form of the development.

Because of their relatively gentle topographic relief, the development of the lower slopes should be provided with the greatest potential for access to views either across lower land or towards prominent features. Since there is a limit to which this can be achieved for a static viewing place, physical links, travel routes, landscape open space and walkable environments should be part of the linking strategy.

Creeks and drainage lines provide the greatest potential for spatial separation between development areas and for linkage into either physical or visual experience corridors. Connections between these areas and prominent areas need careful consideration, particularly on side slopes, where the gentle topography means that visual links need to be worked out in three dimensions, rather than simply in plan.

Significant groups of trees, ecologically endangered species and swamp forest vegetation, should be preserved as a matter of priority. Significant vegetation is also important to signify and locate recreation areas and therefore combinations of topographic and vegetation resources are of the highest scenic protection priority. It is important that such resources are not land-locked by large scale development or visually isolated from the residential settings where there are other alternatives that can create physical linkages.

Existing cultural landscape elements, historical sites and heritage items are considered to be useful and potentially valuable resources that not only provide a visual and historic context with the past but also present the potential for conversion or adaptation into future tourism and landscape settings. Where they are associated with prominent visual exposure and natural linkages to other resources, they are to be carefully integrated into the future landscape management. Views to and from the heritage items and historical sites need to be maintained and appropriate response to their setting and curtilage should be integrated in the Concept Plan.

### 2.2 Strategies for Scenic Protection and Enhancement

Apart from the urban design principles on the built form and associated landscaping which will be discussed later in this report, other strategies include the protection, enhancement and adaptation of

the scenic resources of the site which will also help in reducing visual exposure of the development or setting into a less constrained context. Adopting a low impact strategy and working with the natural features of the environment, while accepting high levels of intervention on areas already degraded and of lower scenic quality is also consistent with ESD principles. The least demand on high quality resources results in the lowest environmental costs and the highest scenic quality protection. Concentrating higher densities of urban form on low scenic quality land, where the constraints on design and public domain production are also lower, ensures a closer matching of impacts to natural resources, and hence a lesser environmental footprint.

Future walkways/parkland can be integrated with the creeklines, water bodies, ridges and Lake Edge. The existing predominant ridges could be re-vegetated to enhance the existing scenic resources of the site and assist in decreasing the impact of buildings seen on the side slopes from specific viewing locations. Re-establishment and regeneration of some of the existing woodland character of the landscape would assist in enhancing the vegetated and natural character of parts of the site.

Appropriate view corridors through parts of the site and views of the horizon beyond from external viewing places as identified above should be maintained with considered spatial arrangement, heights, distributions and setbacks of the future development and the nature, location and landscape of the internal road network.

## Preservation

Preservation of existing high quality scenic resources in natural combination should be a priority. Combinations of prominent hills, significant vegetation and cultural elements for example should be given highest priority in preservation and should attract minimal alterations to landform, soil profiles, vegetation structure and drainage so as to retain and protect the scenic resources. In the same way, combinations of creek lines, existing significant vegetation and open vistas should be given priority in providing visual access, parkway potential, linkages between open space areas and visual access to parks and prominent features from higher density residential development areas and civic spaces.

## Adaptation

Adaptation of scenic resources should have the priority intention of increasing the quality and range of visual experiences within the site, without compromising linkages between resources or devaluing the scenic quality of what is adapted. For example, the conservation of significant trees in pocket parks must ensure that regeneration and future appropriate vegetation structure can be assured, so that the resource value of the trees is not transitory and is not lost in the future. Road layouts, drainage works, gross earthworks and so on should be directed by the need to adapt the existing landscape to the use intended, mindful of conserving scenic resources, rather than with the intention of designing future landscape to replace all lower scenic quality areas. Adaptation of existing topography should wherever possible conserve and protect scenic natural and cultural elements.

A significant part of the site has a high capacity to absorb adaptations without significant loss of existing scenic resources. The development footprint is concentrated in these areas. Adaptations should provide high internal public domain quality, access to internal and external views and high amenity for residents and land users.

## Linkages

The conservation of existing physical and visual linkages should be given priority, particularly where the effect will be to maintain a sense of the existing landscape's underlying cultural, scenic and natural structure. Where resources are isolated among elements that prevent physical visual contact, links as open space, pathways and parkways should ensure the opportunity for residents to move through sequences of high scenic amenity experiences.

Vistas to parks, hills, prominent slopes and cultural elements, present and future, need to be designed and protected. Future landscape design should not conflict with view access corridors (eg. tree lined boulevards aligned with view corridors that disrupt or prevent future view access).

The relationship between building form and visual resources access needs to be considered, so that higher intensity development does not have the effect of alienating lower density and lower forms of residential development from the major scenic resources. For example, a band of higher density development either side of a creek line may prevent lower density development behind from having visual access to the most important resources, such as hill top parks and associated vegetation.

Linkages with Lake foreshore, as well as the enhancement of the interface between urban land and the scenic value of the foreshore should be a priority.

In terms of physical linkage with the external environmental, there is only one access; Yallah Bay Road in the present case. The site is as such highly enclosed physically and the visual resources are highly internalised with the exception of the Mount Brown slopes and the foreshore edge. Further external visual linkages could be incorporated that could assist in making the site a little more externalised, engaging, inviting and a destination.

## Enhancement

Existing scenic resources have been degraded in the past by clearing of vegetation, grazing use of the land, former power station activities and some weed growth. The enhancement of the underlying potential of the landscape to yield a pictorial story about its past and future should be a priority for all areas, but particularly for lower scenic resource areas. Public domain landscape should generally enhance the existing natural and cultural landscape elements and provide high quality internal views and access to scenic resources inside and outside the site, rather than overpowering them with excessive formality, however there are logical limits for more formal civic spaces.

Formal and exotic planting should be employed appropriately so as not to conflict with the existing underlying resource base of the site, where this can be retained. For example, hill top parks that have significant resources of indigenous trees and natural topography should have minimal additional planting of exotic species, modification of topography and manicuring. Enhancement of the existing indigenous vegetation by regeneration with appropriate species should be a priority. Enhancement of the character of lower slopes and creek/drainage lines should be an objective of landscape design for parkway linkages, drainage retention areas, future water features and recreational areas associated with these areas.

Remnant areas of indigenous and cultural vegetation deserve consideration for enhancement as future civic active and passive recreational spaces of various use types, associated particularly with higher density public use areas.

## 4.0 Assessment of the proposed Concept Plan against the scenic resources management principles

The proposed concept plan is now assessed in terms of its address and response to the indentified scenic resources and Scenic Quality Zones and in terms of the strategies identified for their management.

### 4.1 Scenic resource identification

The proposed concept plan appropriately identifies and responds to the scenic resources and scenic quality of the site. It proposes low intensity (residential developments) on parts of the site which have high intrinsic scenic quality such as the prominent slopes, some locations closer to the lake foreshore and in some cases locating them closer to other scenic resources such as lakes and creek lines to improve internal amenity.

The Employment Uses (industry/business) are proposed in those parts of the site which have lower slopes, low external visibility and lesser constraint with respect to adaptation of the existing landform/topography.

The employment uses (enterprise/business) are proposed closer to Old Princes Highway, set in the context of existing retail/enterprise uses and in a partly vegetated setting.

The local centre is proposed closer to residential developments on lower slopes that has low to moderate visual exposure and potential to be integrated into the scenic context with little difficulty.

The primary school and retirement village are two possible uses proposed to be located in the vicinity of vegetated creek lines and provide for high level of internal amenity, while being of low or negligible visibility from external view points.

The scenic resources of the site are also identified in terms of appropriate placement of tourism on Wollingury Point to conserve and adapt to the cultural landscape.

The environmental and recreation reserves are proposed on parts of the site which pose natural constraints and are of high intrinsic scenic quality. Pedestrian access is proposed along the lake foreshore. Pocket parks are proposed adjacent to residential developments and ridge line parks are proposed to further enhance the existing scenic resources and topographic experiences.

The proposed uses subject to further micro level urban design guidelines in terms of commitments on scale, form, profile, roof forms, colours and materials of the built form and landscaping is considered to positively respond to the Scenic Quality Zones identified on Maps 3 and 3A.

The proposed uses and their spatial arrangement are responsive to the significance, setting, curtilages and views to and from the heritage items and historical site. Refer to the Report from the Heritage Consultants.

## 4.2 Preservation of existing resources

The proposed concept plan incorporates preservation of the existing resources which are indentified at Section 2.3 above with appropriately proposed landuses that respond positively to them. These include the major water bodies, creek lines, vegetation, ridgelines, high points, Mount Brown, Mount Brown Reserve and prominent slopes, the sensitive natural land and the foreshore edges.

## 4.3 Linkages

The proposed concept plan retains the existing physical linkage of the Yallah Bay Road and proposes three more linkages with the external environment. These include two off Old Princes Highway, one each in the western part of the site within the central residential precinct and one in the southwestern part of the site near employment (enterprise/business). The third physical linkage is provided off Gilba Road in the northern sector of the site near the proposed north shore residential precinct. These physical linkages enhance the opportunity for the external domain to experience the internal visual resources of the site and assist in partly externalising the site with the surrounding context.

The proposed concept plan also provides further internal physical and visual linkages that assist in connecting individual scenic resources of the site such as lakes, pocket parks and environmental reserves, thereby enhancing the internal amenity and increasing the opportunity for the population to experience the resources.

The internal road layouts are such that they will generally not have any significant visibility from the external domain. They are proposed predominantly oblique to external view lines and internal ridgelines.

Close views from Lake Illawarra will include subdivision roads on the north eastern shoreline of the land, however the foreshore is undergoing extensive regeneration work at present and the future public domain landscape on the shore and inside the development site will have the objective of providing filtered views out but insignificant views into the roads.

## 4.4 Adaptation of existing and future visual landscape elements

The proposed concept plan proposes future walkways/parkland with the alignment of the creeklines, water bodies, ridges and the Lake edges. The existing predominant ridges are proposed to be re-vegetated to enhance the existing scenic resources of the site and assist in decreasing the impact of buildings seen on the side slopes from specific viewing locations. Re-establishment and regeneration of some of the existing woodland character of the landscape to enhance the vegetated and natural character of parts of the site and conservation of ecologically endangered species is also proposed.

Appropriate view corridors through parts of the site and views of the horizon beyond from external viewing places as identified above will be maintained with commitments to considered spatial arrangement, heights, distributions and setbacks of the future development and design of the internal road network.

The extent of adaptation of landform and existing vegetation is not able to be ascertained accurately at the concept plan stage. However, in general the layout that is proposed in the Concept Plan has been determined to be practically achievable and will be accompanied by relevant commitments with regard to strategies for design.

# 5.0 Specific visual effects and impacts of the proposed Concept Plan

## 5.1 Potential visual exposure

The potential visual exposure of the proposed land uses is described in the table below in relation to individual viewing locations and viewing directions. Refer to the Photographic Plates at Appendix B, Maps 4, 4A and the proposed Concept Plan.

**Table 5.1 Potential visual exposure of the proposed concept plan**

| Viewing locations | Potential visibility of the proposal |
|---|---|
| Visibility from Yallah Bay Road at close range (Viewing locations 12 to 15) | Proposed large lot residential and low density residential (central residential precinct and display village) will be visible on upper slopes (in Visual Exposure zone A).<br><br>Employment (Industry/business), Local Centre and Sports Ground will be visible adjacent to the Street on its north side (in Visual Exposure zone A).<br><br>No built form is proposed immediately south of Yallah Bay Road (between Yallah Bay Road and Duck Creek) in the current Application. The future potential development - Employment (Industry/business) in Visual Exposure Zone F will be partly visible. (This is not subject of the current application and requires further detailed geo-technical investigations)<br><br>There may be highly filtered visibility of Employment uses (enterprise/business) and primary school proposed in the south west sector of the site (in Visual Exposure Zone D). |
| Visibility from Lake foreshore adjacent to the site from close to middle distance range (Viewing location 11) | No development proposed in Visual Exposure zone A will be visible. Parts of low density residential (north shore residential precinct) in Visual Exposure Zone B will be visible. Environmental reserve in Visual Exposure Zones B and F will be visible. |
| Visibility from Old Princes Highway from close range (Viewing locations 16 to 19) | Employment (enterprise/business) and parts of low density residential (lakeside residential precinct) in Visual Exposure Zone D will be visible. |
| Visibility from Princes Highway from close to middle distance range (Viewing locations 21 to 23) | Parts of the proposed large lot residential and low density residential (central residential precinct) will be visible on upper slopes in Visual Exposure Zone A.<br><br>Employment (enterprise/business) and low density residential (lakeside residential precinct) in Visual Exposure Zone D will be visible (This will not be visible from locations further north of Yallah Bay Road). |

| Viewing locations | Potential visibility of the proposal |
|---|---|
| Visibility from Illawarra Highway from middle to distant range (Viewing locations 25 & 26) | Parts of the proposed large lot residential and low density residential (central residential precinct) will be visible on upper slopes in Visual Exposure Zone A.<br><br>Employment (enterprise/business) and low density residential (lakeside residential precinct) in Visual Exposure Zone D will be visible. |
| Visibility from locations to the west from middle to distant range (viewing locations 27 to 29) | Parts of the proposed large lot residential and low density residential (central residential precinct) will be visible on upper slopes in Visual Exposure zone A mainly in the context of Dapto residential development. |
| Visibility from locations to the south, southeast and east from distant range (Viewing locations 20, 30 to 38) | Parts of the proposed large lot residential and low density residential (central residential precinct) will be visible on upper slopes in Visual Exposure Zone A from Haywards Bay, the eastern part of Oak Flats, foreshore locations in Shellharbour, Mt Warrigal and Windang locations.<br><br>Low density residential (north shore residential precinct) proposed in Visual Exposure Zone B will be visible from some locations in Oak Flats, Shellharbour, Mt Warrigal and Windang.<br><br>Upper parts of the future potential development - Employment (Industry/business) in Visual Exposure Zone F may be visible from locations in Shellharbour, Mt Warrigal and Windang. (This is not subject of the current application and requires further detailed geo-technical investigations)<br><br>Upper parts of Employment (enterprise/business) and low density residential (lakeside residential precinct) in Visual Exposure Zone D may be visible from some high points in Shellharbour and Mt Warrigal. |
| Visibility from locations to the northeast and north from distant range (Viewing locations 39 to 44) | Parts of the proposed low density residential (north shore residential precinct) proposed in Visual Exposure Zone B will be visible. |

## 5.2 Recommended urban design strategies

Following are a number of urban design and landscape strategies to be adopted at fine grain to reduce the potential visual exposure and contrast with the view composition and increase the compatibility of the proposal within the view composition for each view direction.

**Strategies for proposed large lot and central residential precinct in Visual Exposure Zone A and north shore residential precinct in Visual Exposure Zone B**

1. Locations of the building envelopes to be below the horizon of the views.
2. Roads orientations and public domain landscape to assist in minimising visibility of buildings on ridge lines. There should be minimal visibility of internal roads from the external domain.
3. Appropriate landscaped setting and visual and physical separation between built forms for the residential uses.
4. Appropriate use of material and colours to reduce prominence.

**Strategies for proposed lakeside residential precinct in Visual Exposure Zone D**

1. Similar strategies for residential development as above.
2. Street network to provide axial views through the site.
3. Appropriate recreational use of large water bodies.
4. Further regeneration of some pockets of native vegetation and conservation of ecologically endangered communities.

**Strategies for proposed employment in Visual Exposure Zones A and D.**

1. Appropriate building profiles, envelopes, finished heights, articulation and roof forms
2. Appropriate landscape strategy for industrial and commercial uses.
3. The height of the general industrial buildings to be restricted to not rise above the vegetation canopy to the south of Duck Creek and along the creek corridor.
4. Appropriate use of material and colours to reduce prominence.
5. Appropriate further regeneration of vegetation in Visual Exposure Zones E and F, significant groups of vegetation in Visual Exposure Zone D and along creek lines to provide higher than existing level screening effects.

## 5.3 Potential view loss effects and interruption of existing view lines

The proposed concept plan is responsive to the topography of the site and to the important view lines from the external domain.

The heavily screened views of the south western part of the site and across it to the interior will continue to be available from close and medium range viewing locations to the west, southwest and south.

Views of the southeast part of the site will be retained as is from the external domain. Views of the foreshore edge of the site will also be retained. There would be a marked change in the character of the view of parts of the site from Yallah Bay Road; however, views of high scenic values such as prominent slopes, creeklines and groups of vegetation will be maintained.

Views of the important ridgelines, high points and prominent slopes will be maintained by strategic location of residential development below the visual horizon at the finer grain.

Overall, it is considered that there would not be any significant interruption of existing views from the external domain. The view composition of part of the view comprising of the site may alter, but the overall visual experience will not be affected.

In most views the residential developments on the site will be seen in the context of the residential developments of the lakeside suburbs and/or the suburbs of Dapto and Kanahooka.

## 5.4 Potential internal residential amenity

As part of the formulation of the urban design principles at the fine grain, specific measures will be taken to create a high quality residential environment by using the principles of environmentally sustainable design. This will include appropriate building orientations, setbacks, landscape settings, provision of pocket parks, opportunities for views outward and access to scenic resources.

Visual privacy between neighbours will also be maintained by commitments to appropriate setbacks, building orientations, locations of doors, windows and balconies and landscaping.

These measures could be easily incorporated at the fine grain for the proposed concept plan.

## 6.0 Visual simulations of the appearance of the proposed built form and surrounding context

Haycraft Duloy Pty Ltd has been appointed to prepare artistic impressions of the proposed Concept Plan for a number of nominated external viewing locations. We nominated the viewing locations based on the findings of our field assessment. The viewing locations were selected to represent the kind of views available from the whole visual catchment and the range of locations from which they are available. The representative viewing locations are the following;

1. Haywards Bay Drive looking north
2. From the Princes Highway looking north-northeast
3. Illawarra Highway near intersection with Crome Lane looking north
4. Mount Marshall Road near No. 301, looking north
5. From the edge of the lake in Central Park on The Boulevard in the Shellharbour locality.
6. Intersection of Cuthbert Drive and Landy Drive, Mt Warrigal.
7. From a reserve (Koonawarra Bay Improvement) off Lakeside Drive in the Koonawarra locality, looking south.
8. From high point (reserve) on Lamerton Crescent in the vicinity of Shellharbour City Council Chambers looking north-northwest.
9. From the southern edge of the water tank near Mount Brown, looking south-southeast

These viewing locations are shown on Maps A, B, C and D at Appendix C.

The artistic impressions represent how the proposal will be seen in relation to the topography of the site and the surroundings as well as the surrounding built and natural contexts. They also show Stage B of the Tallawarra Gas Power Station which is subject to a separate Major Project Application already submitted to the NSW Department of Planning, where visible. The Combined Cycle Option for Stage B has been shown which consists of one additional stack and a bay of six cooling towers with landscape mound in front of them.

The approach adopted in the preparation of these artistic impressions is provided at Appendix C in the form of a Statement from Haycraft Duloy Pty Ltd.

These external views artistic impressions depict the high compatibility of the proposed uses in the surrounding context.

Seven internal artistic impressions were also prepared which included two from Yallah Bay Road. Warren Lee, the Urban Design Consultant has selected the indicative internal viewing locations. These are shown on Map E at Appendix C. The internal viewing locations were selected to represent the potential built form for the various proposed uses.

For the purpose of the impressions, the pylons associated with the transmission lines have been faded as many of them are going to be reconfigured, rationalised or removed.

The future development area for Employment purposes is also shown with the help of a faint blue outline in the views in which it will be visible, in both internal and external views.

## 7.0 Conclusion

We consider from the above assessment that the site has a relatively close match in terms of visual impacts issues to the proposed Concept Plan Application. It incorporates the scenic resource management guidelines identified and subject to the incorporation of and development of a number of urban design guidelines and commitments at the fine grain, we consider that the site has the potential for development as proposed.

By adequately identifying and addressing the main scenic resources of the site and protecting and managing these resources for the future in a way that will provide for high quality scenic amenity, the application satisfies the DGRs and adds value to the outcome.

# Appendix A

## Photographic Plates (Internal Viewing Locations)

## Refer to Map 3 for viewing locations

**Plate 1A (Viewing location 1)**
From near the Inlet channel to the Power Station, looking north-northeast.

**Plate 1B (Viewing location 1)**
From near the Inlet channel to the Power Station, looking southwest.

**Plate 2A (Viewing location 2)**
From approximately the alignment of the ridgeline in the northern part of the site looking north towards Koonawarra.

**Plate 2B (Viewing location 2)**
From approximately the alignment of the ridgeline in the northern part of the site looking towards Windang.

**Plate 2C (Viewing location 2)**
From approximately the alignment of the ridgeline in the northern part of the site looking towards Shellharbour.

**Plate 2D (Viewing location 2)**
From approximately the alignment of the ridgeline in the northern part of the site looking west towards Mount Brown.