3.4 Castle Hill Town centre

The study area includes Arthur Whitling Park and the buildings and uses on adjoining streets in Old Northern Road, Old Castle Hill Road, Castle Street and McMullen Avenue.

Character

The well established commercial and retail activities of Castle Hill town centre are the site for the proposed Castle Hill Station. The locality is dominated by street edge built form including office blocks, large multi-storey shopping complexes such as the Castle Towers Shopping Centre, and strip shopping streets. A large town park and the main green space, Arthur Whitling Park, is located at the eastern end of the town beside Old Northern Road which is a busy arterial route.

Castle Hill Main Street Planning Study (1999) proposes a revitalisation of the Castle Hill area, particularly above the proposed underground station in Arthur Whitling Park. These plans are reflected in the proposed station design.

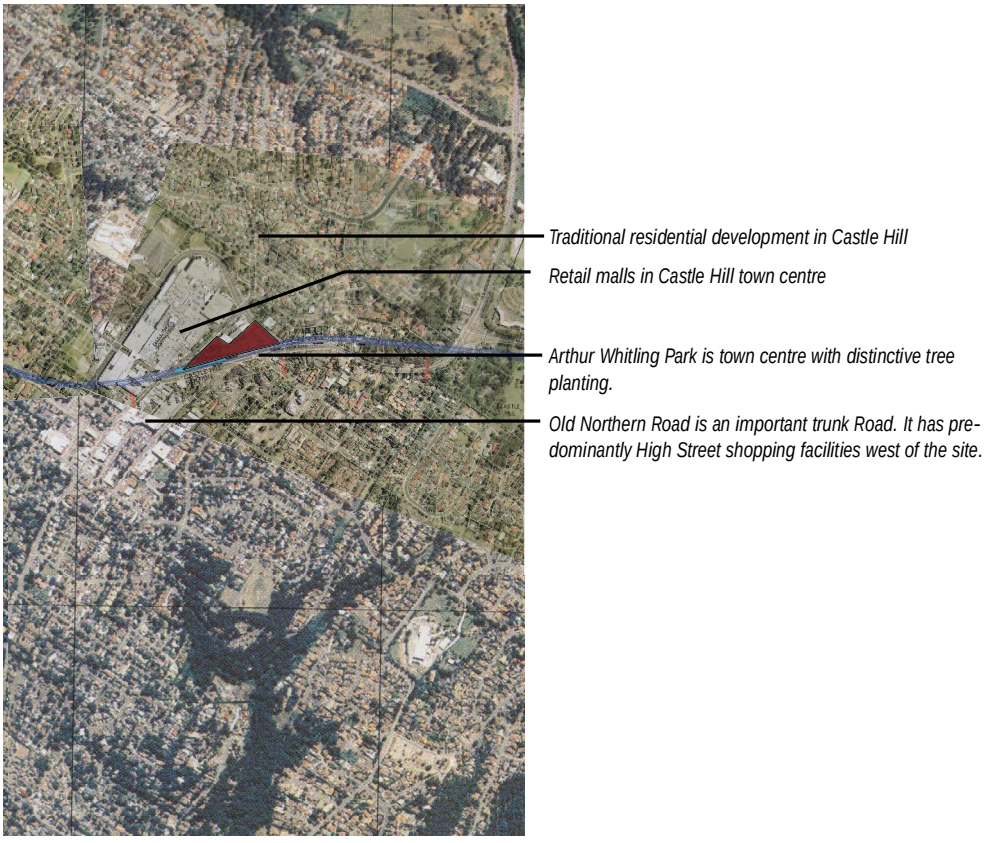

Figure 3.13 Aerial photo of castle Hill town centre

Landform

Old Northern Road is located on a ridge line that runs north-south. The immediate topography for the station location at Castle Hill Park is relatively flat. The land grades down to the north and south of Arthur Whitling Park.

Vegetation

Castle Hill Park is the main grassed park in the town centre with a mix of native and exotic species. An avenue of established Brush Box line the southern perimeter of the park on Old Northern Road, while mature figs, pines and other species exist within the park. Old Castle Hill road is lined with mature plane trees.

There is minimal to no street tree planting on other street in the town centre.

Figure 3.14 Mixed plantings in Arthur Whitling Park with an avenue of brush boxes

Land use

Castle Hill Town Centre is a regional centre dominated by commercial and retail uses with large provisions of structured car parking. Arthur Whitling Park is a civic space at the edge of the business areas. The city park sits strategically in a wedge arrangement between Old Northern Road, Old Castle Hill Road, Castle Street and McMullen Avenue. The Mainstreet Planning Study proposes to enhance the village green area, improve a water feature at the northern end and pedestrianise the intersection of Castle Street, and Old Castle Hill Road.

The roads in the town centre are heavily used for arterial purposes including buses for public transport. The Mainstreet Planning Study proposes to reroute private vehicular traffic from Old Northern Road to Terminus Street. The RTA has approved a ring road proposal to allow through traffic to by-pass the town centre, allowing Old Northern Road to become a local road and revitalise the character of the town centre.

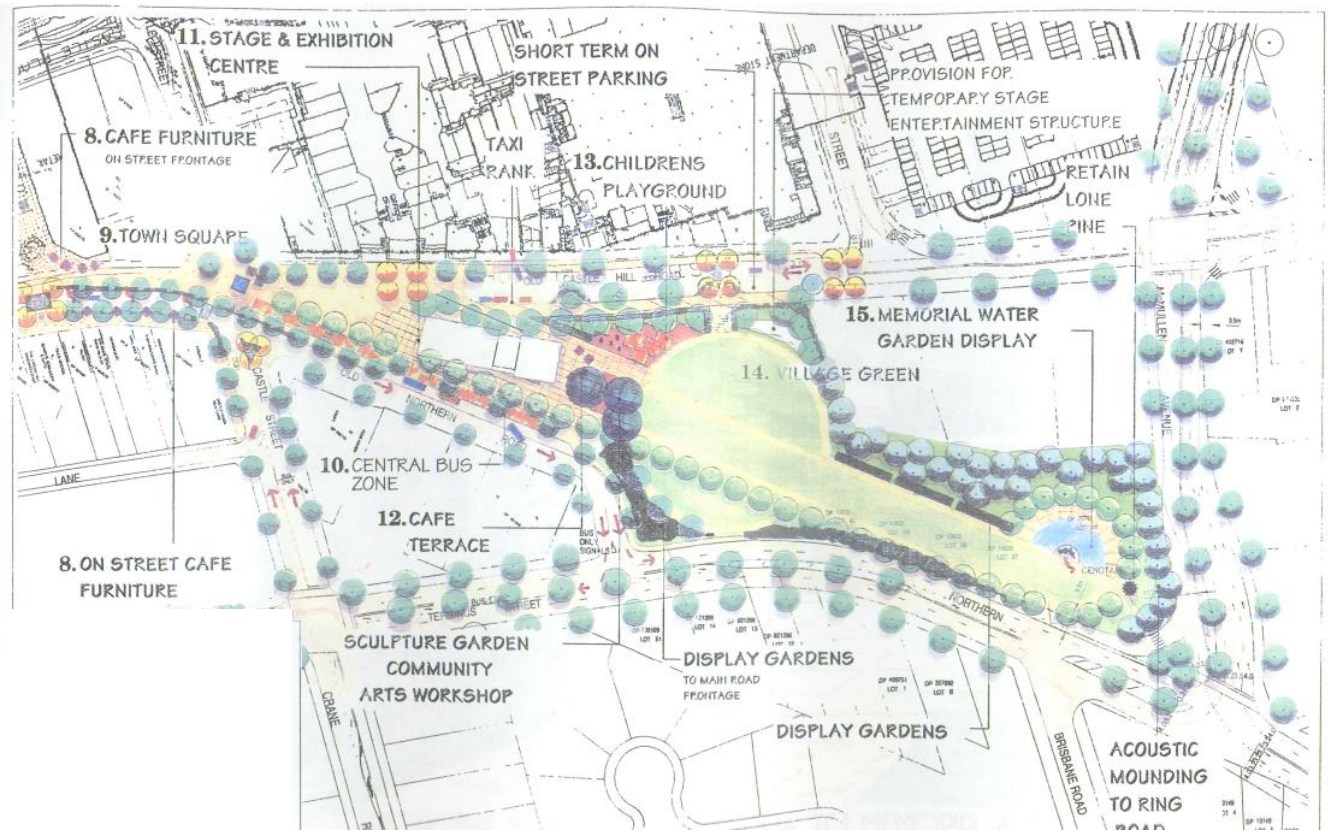

Figure 3.15 The Mainstreet Planning Study master plan

Built form

Built form is predominantly 2 to 5 storey buildings with retail on ground floor and car parking or office use on the upper floors. Most built form is located on the street edge, with wide footpaths allowing pedestrian movement.

Taller buildings are common around the park. A major car park entry is located opposite the park. Lower strip shopping buildings are common to the south and west of the station site.

Public Access

Access around the station site and the broader town centre is clear and permeable, although access across the Old Northern Road is restricted by its traffic volumes.

The grid of streets and mid block arcades through the shopping malls assists in making Arthur Whitling Park highly accessible from all parts of the town centre. Access into the park is limited to the southern corner and on Old Northern Road frontage where at grade access is possible. Elsewhere steps are provided to link the park to the surrounding streets.

The area has a potential for a good level of amenity and safety. Footpaths are wide, but are not always universally accessible. At present the amenity of the Park and proposed station surrounds suffers from the heavy traffic on Old Castle Hill Road. This will be addressed when the Mainstreet Plan is implemented. Elsewhere Castle Hill town centre is well defined and signposted. Footpaths on Old Castle Hill Road have shade from street trees.

The park provides seating and quiet respite spaces. Unfortunately the quality of these spaces are marred by the park's orientation to the heavily trafficked Old Northern Road, rather than the local traffic of Old Castle Hill Road. This will also be addressed when the Mainstreet Plan is implemented.

Visual corridors

Distant views from the park is affected by the car park entry on Old Castle Hill Road. There is a good stock of existing trees on this park, but a lack of clear and legible spaces. There is potential to enhance the comfort, safety and visual quality of the park when reorganising the station entry.

Figure 3.16 Old Castle Hill Road with footpaths, shopping mall entry to the left and Arthur Whitling Park to the right; Water feature in Arthur Whitling Park to be upgraded as part of the mainstreet plan.

3.5 Hills Centre

The Hills Centre Station would be located adjacent to the Castle Hill Showground, the Hills Centre and Baulkham Hills Shire Council Offices on the site of the existing council depot.

Character

The proposed Hills Centre Station is located in an area of mixed residential, commercial, light industry and open space. The character of the area reflects the mixed uses that include the rural setting of the showground, the civic setting of the Council buildings, low density residential settings on Carrington Road and large industrial factory / warehouse sites to the south.

Landform

The proposed station site is located on a relatively flat area of land that slopes gently towards Cattai Creek in the west and gently rises to the north to the Showground at Showground Road. The station is at 90m AHD. Residential houses to the south are sited at 100 to 110m AHD.

Figure 3.17 Aerial photo of the Hills centre

Vegetation

Scattered Eucalypts occur throughout the Showground site, dotted between exhibition halls and around the Showground Oval. Cattai Creek flows north on the edge of the site, and includes some fragmented stands of native vegetation but is largely overrun with exotic weeds such as Morning Glory. The Council depot is cleared.

Land use

The locality includes light industrial warehouses to the west, residential housing on Carrington Road to the south, The Hills Centre and Baulkham Hills Shire Council to the east. The nearest town centre to the site is at Castle Hill, or Baulkham Hills.

The Castle Hill Showground borders the north and northwest perimeters of the station and consists of numerous event halls and a large showground oval. Directly to the south of the proposed site is the Baulkham Hills Shire depot consisting of a collection of maintenance sheds and buildings in a cleared yard off Doran Drive. To the south is detached residential housing on Carrington Road.

To the north of Showground Road the catchment includes Fred Caterson Reserve, an 80 ha regional multi use park, and further residential areas. Large areas of regional sports fields and community parks are nearby in the showground and at Fred Caterson Reserve.

Figure 3.17 Vegetation patterns: Top Remnant vegetation at Fred Caterson Reserve; Middle: Showground with a rural character, Bottom: manicured landscape around the civic buildings.

Built form

Built form consists of:

- large masonry civic buildings (Hills Centre and Baulkham Hills Shire Council);
- single storey detached housing; and
- large industrial buildings and rural sheds.

Figure 3.18 Carrington Road: residential road with on-road cycle path.

Public Access

Public pedestrian and cycle access is currently restricted to street footpaths.

There is currently an on-road bicycle path on Carrington Road.

There is limited direct access from the site to the industrial area to the west, and limited vehicular access or pedestrian access from the site to the residential and recreational areas to the north.

Showground Road and Cattai Creek are currently physical barriers which inhibit safe access to the site.

View corridors

At the moment views to the site are dominated by tall vegetation and large areas of car parking.

Important views out of the site focus on the Cattai Creek corridor and the Fred Catterson Reserve.

Figure 3.19 Car park outside the Hills centre. Industrial area in the background beyond line of vegetation on Cattai Creek.

3.6 Norwest Business Park

The Norwest Station site would be located near the centre of the business park.

Character

The Norwest Business Park is a business complex incorporating numerous multi-storey office developments, retail and commercial units, associated car parking, recreational facilities in a parkland setting, with some sections still under development. The business park has a light industrial/commercial character, bordered to the northwest by open space of small-scale agriculture and to the south-east and west by recent residential developments.

Landform

The topography of the station site is generally flat (at approx. 80m AHD). The ground slopes upwards to the southwest. An artificial lake is located to the northwest of the site.

Vegetation

There are insignificant amounts of established vegetation within the Norwest Business Park. The majority of plantings form part of the recent developments, including new plantings of mixed tree species with feature shrubs and groundcovers. New plantings associated with recent developments include mixed avenue tree, both exotic and native.

Land use

In the immediate surrounds of the site is the retail and social centre of the business park. This includes the Norwest Marketown, a large retail complex, the Hills Christian Life Centre, a recreational ice rink, and a variety of industrial / commercial buildings. The area is typified by 3-5 storey commercial and retail built form, or large industrial type sheds with associated car parking facilities and service structure.

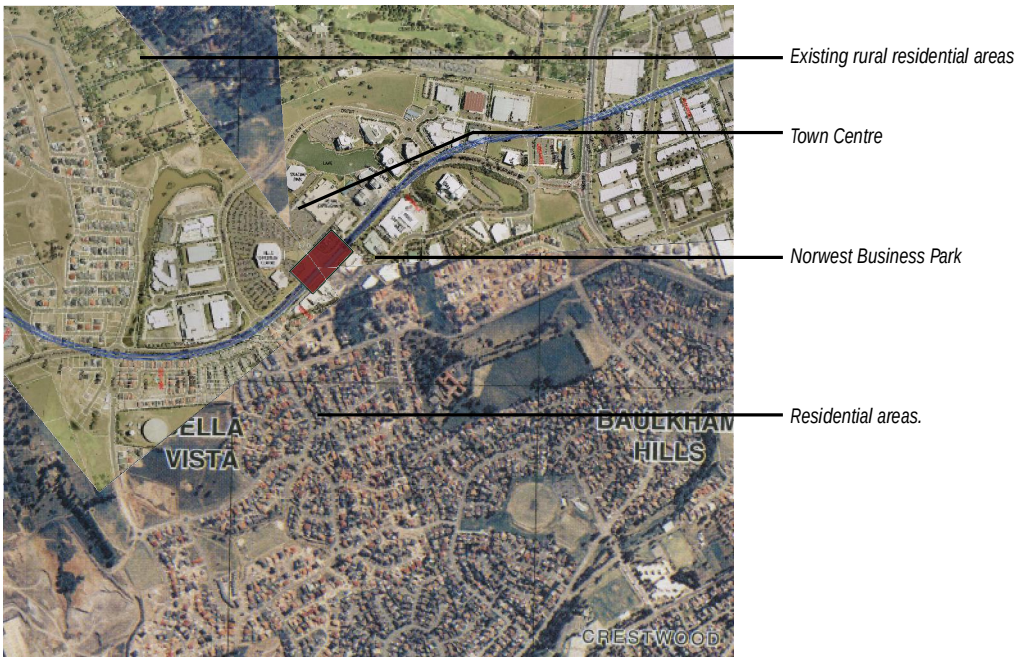

Figure 3.21 Aerial photo of Norwest Business Park, highlighting the proposed station precinct

Built Form

Built form is typically commercial and industrial, with a mix of large scale built elements, commercial services and infrastructure and social facilities. Built form is typically detached, set back from streets and set in parklands with large articulated footprints.

Nearby built form in residential is typically two storey detached housing. Back fences face major arterials.

Public Access

Access around the town centre and within the business park is formed by footpaths and public paved areas. A grid of streets and public pathways makes the area legible and accessible. Roads are wide and accommodate a variety of traffic including bicycles.

The surrounding residential areas to the south do not have direct access to the town centre. There is only one connecting road to the town centre, which limits the pedestrian access from the spread out residential areas. Access and movement across major arterial routes such as Norwest Boulevard are constrained by cul-de-sac street patterning and traffic.

The area has a good level of amenity and safety. At present the amenity of the town centre and proposed station surrounds are well laid out, legible, well defined and signposted. Footpaths on Norwest Boulevard have shade from street trees.

View corridors

At the moment views to the site are dominated by the urban setting with glimpses to suburban development on the periphery.

Figure 3.22 Views along Brookhollow Drive and views along Norwest Boulevard.

3.7 Norwest to Burns Road

The line between Norwest and Burns Road stations is proposed to be partly bored tunnel and partly cut and cover tunnel. The proposed cut and cover tunnel between Norwest and Burns Road occurs to the north of the new suburb of Bella Vista in an area of semi-rural small holdings of undulating grasslands and remnant vegetation stands. The study area only considers the cut and cover tunnel section.

Character

The cut and cover section is located in an open landscape character of small-scale agricultural holdings and pastureland interspersed with semi-rural residential plots. The character is changing rapidly with future subdivision planning proposals, such as the Balmoral Road Release Area likely to form a landscape of medium density residential developments with some commercial / light industrial.

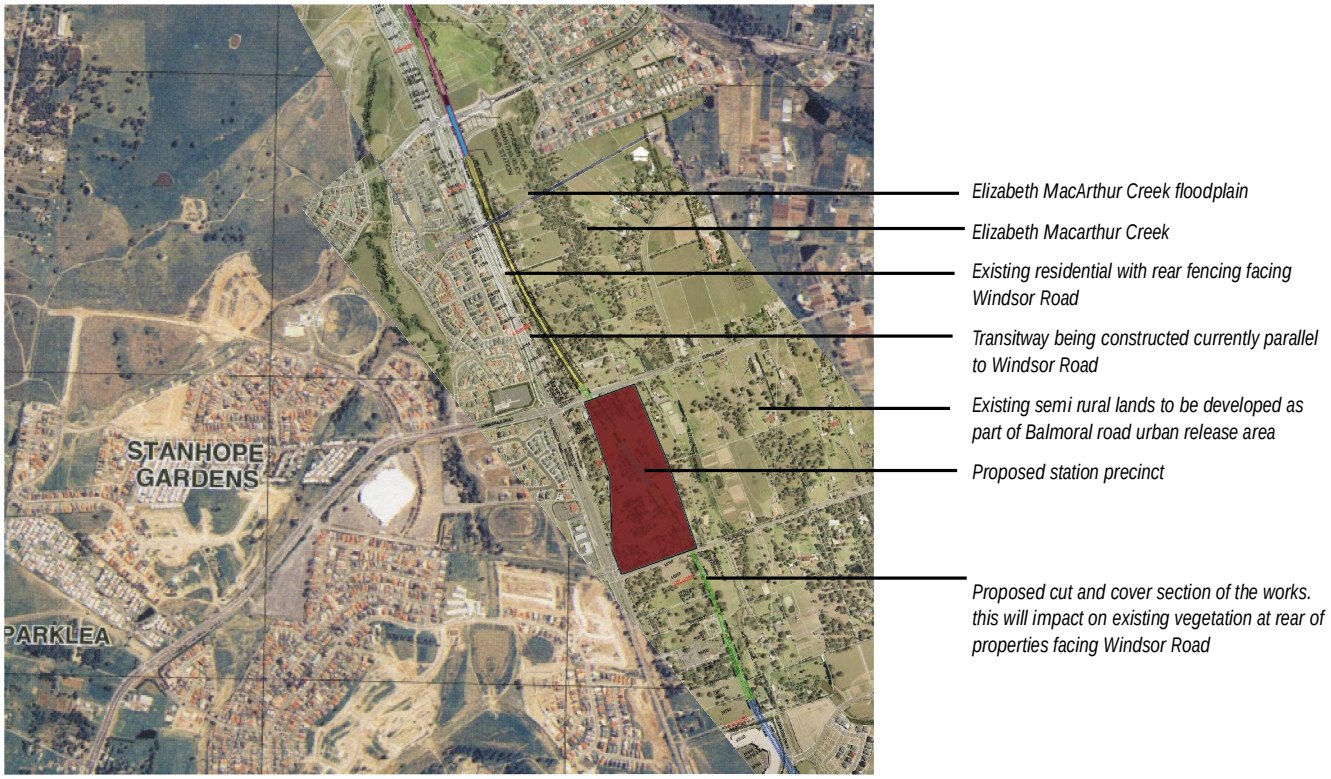

Figure 3.23 Aerial view of Balmoral Road and Burns Road precinct

Landform

The topography north of Norwest Business Park is typified by undulating semi-rural rolling hills peaking at around 90m AHD, changing to the flat open floodplain of Elizabeth Macarthur Creek to the north of Balmoral Road.

The natural drainage system to the north feeds the Hawkesbury River system. The northern extent of Windsor Road and located adjacent to or within 1:100 year flood liable land.

Vegetation

Scattered stands of remnant Cumberland Woodland are dotted throughout the precinct and occur heavily in the residential plots on the southern side of Balmoral Road. These stands comprise mature tree specimens with little or no understorey present. Smaller stands of remnant vegetation, predominately Eucalypts and Casuarinas, can be found along Elizabeth Macarthur Creek between Balmoral Road and Burns Road. These creeks are widely infested with exotic weeds closer to the banks.

Exotic amenity planting predominates in residential areas with some remnant native vegetation.

Figure 3.24 Views along Balmoral Road and into the semi rural land uses.

Land use

The predominant land use character of the area north of Bella Vista in the north-western region of Sydney is residential, with some large pockets of remnant semi rural residential land use.

Currently, the northern sector of the north-west region consists of a patchwork of urban release areas along the main arteries including Sunnyholt Road, Balmoral Road, and Old Windsor Road. The NWRL is proposed to bisect these release areas, running parallel and near to Old Windsor Road.

The release areas with mixed densities form a major part of the emerging built character. Land that was formerly large rural residential lots is slowly being transformed to primarily low density single detached dwellings with small pockets of villas and low rise units, mainly located near neighbourhood or town centres with public transport.

The nearest town centre is at Norwest, though with the proposed Balmoral Road Release Area there will be a new town centre in the vicinity of the Burn Road station. The nearest public parks are currently located within the Glenwood subdivision.

The Balmoral Road Release Area has a gazetted Local Environment plan and a new Development Control Plan on exhibition. It shows a new subdivision for detached housing in all areas between Elizabeth MacArthur Creek and Windsor Road.

Old Windsor Road is a dominant transport infrastructure land use with a six lane highway, a parallel Transitway, and a parallel local road that fronts properties formerly fronting Old Windsor Road.

Built form

Built form near the rail line is typically one to two storey detached dwellings on large lots of about 2 ha with a number of outbuildings, sheds etc. Built form has considerable set back from the roads.

In the adjoining release areas in Glenwood the built form is low density residential, with detached housing on small to medium sized lots, with domestic gardens and an eclectic mix of species.

Public Access

Balmoral Road is currently a rural residents access road with no designated footpaths.

A transit way stop is being constructed at Balmoral Road / Old Windsor Road intersection.

Formal paths exist to the west via Miami Avenue to Glenwood residential areas and the Glenwood Reserve. Access and movement across major arterial routes such as Old Windsor Road are constrained by cul-de-sac street patterning and traffic.

The area is dominated by the major transport corridor of Old Windsor Road. The Transitway includes future pedestrian / cycle path routes, currently being constructed.

At present there is little amenity for pedestrians or cyclists, but this may be improved with the Transitway development.

View corridors

There is a good visual quality in the semi rural character of the site, but this is gradually being eroded by the inexorable development of urban release areas that are excising distant views to tree lined ridges.

3.8 Burns Road Future Station Precinct

The proposed station is to be located between Elizabeth Macarthur Creek and Old Windsor Road, between Burns Road and Balmoral Road. It is to be located beside the 150 space car park at the Burns interchange for the Transitway.

Character

The cut and cover station is located in an open landscape character of small-scale agricultural holdings and pastureland interspersed with semi-rural residential plots. The character is changing rapidly with future sub-division planning proposals likely to form a landscape of medium density residential developments with some retail /commercial / light industrial in a town centre.

Landform

The landform has a flat topography of the Caddies Creek and Elizabeth Macarthur Creek floodplain. The station would rest at an elevation of approximately 60m above sea level.

The natural drainage system to the north feeds the Hawkesbury River system. The northern extents of Windsor Road are located adjacent to or within 1:100 year flood liable land.

Vegetation

Scattered stands of remnant Cumberland Woodland are dotted throughout the area. These stands comprise mature tree specimens with little or no understorey present. Smaller stands of natives can be found along Elizabeth Macarthur Creek between Balmoral Road and Burns Road of predominately Eucalypts and Casuarinas, often infested with exotic weeds closer to the creek banks.

Exotic amenity plantings predominate in residential areas with some remnant native vegetation.

Figure 3.24 Scattered vegetation on Elizabeth Macarthur Creek

Figure 3.24 Windsor Road is a major arterial road that is parallel to the proposed rail line

Land use

The predominant land use of the station precinct is transport infrastructure. Burns Road, which links with Sunnyholt Road at the Old Windsor Road intersection provides an arterial access route between the western suburbs of Blacktown and Castle Hill to the east. Old Windsor Road is an important transport route, heavily trafficked and currently being upgraded to a dual lane carriageway. The proposed Blacktown to Castle Hill Bus Transitway runs parallel to the Old Windsor Road intersecting at Burns Road with the proposed Parramatta to Rouse Hill Bus Transitway.

The urban release areas form a major part of the emerging built character. Land that was formerly large rural residential lots is slowly being transformed to primarily low density single detached dwellings with a small percentage of villas and low rise units, mainly located near neighbourhood or town centres with public transport.

The nearest town centre is at Parklea Markets. The nearest public parks are located within the Glenwood subdivision.

Built form

Built form near the Future station is typically one to two storey detached dwellings on large lots of about 2 ha with a number of outbuildings, sheds etc. Built form has considerable set back from the roads.

In the adjoining release areas in Stanhope Gardens and Parklea the built form is low density residential, with detached housing on small to medium sized lots, with domestic gardens and an eclectic mix of species.

Public Access

Burns Road is currently an important arterial link from Blacktown to Castle Hill. It has no designated footpaths.

The transit way stop is to be constructed at the intersection with Old Windsor Road.

Formal paths exist to the west via Sunnyholt Road to Stanhope Gardens and Parklea. Access and movement across major arterial routes such as Old Windsor Road are constrained by cul-de-sac street patterning and traffic.

The Old Windsor Road has a cycle way / pedestrian path adjacent to it providing regional north south links.

At present there is little amenity for pedestrians or cyclists, but this may be improved with the transitway development.

Visual corridors

There is a good visual quality in the semi rural character of the site, but this is gradually being eroded by the development of urban release areas.

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3.9 Burns Road to Rouse Hill

The proposed rail line is to be a surface rail line located between Elizabeth Macarthur Creek and Old Windsor Road, from Burns Road through to Rouse Hill. It is to be located within the broad transport corridor incorporating Windsor road and the Transitway that is currently under construction.

Character

This precinct is dominated by the busy transport corridor of Old Windsor Road / Windsor Road running north - south through the landscape between Parramatta and Windsor. Four lanes of vehicle traffic are bordered by a pedestrian / cycleway to the west and the proposed Parramatta to Rouse Hill Bus Transitway to the east, creating a strong linear corridor.

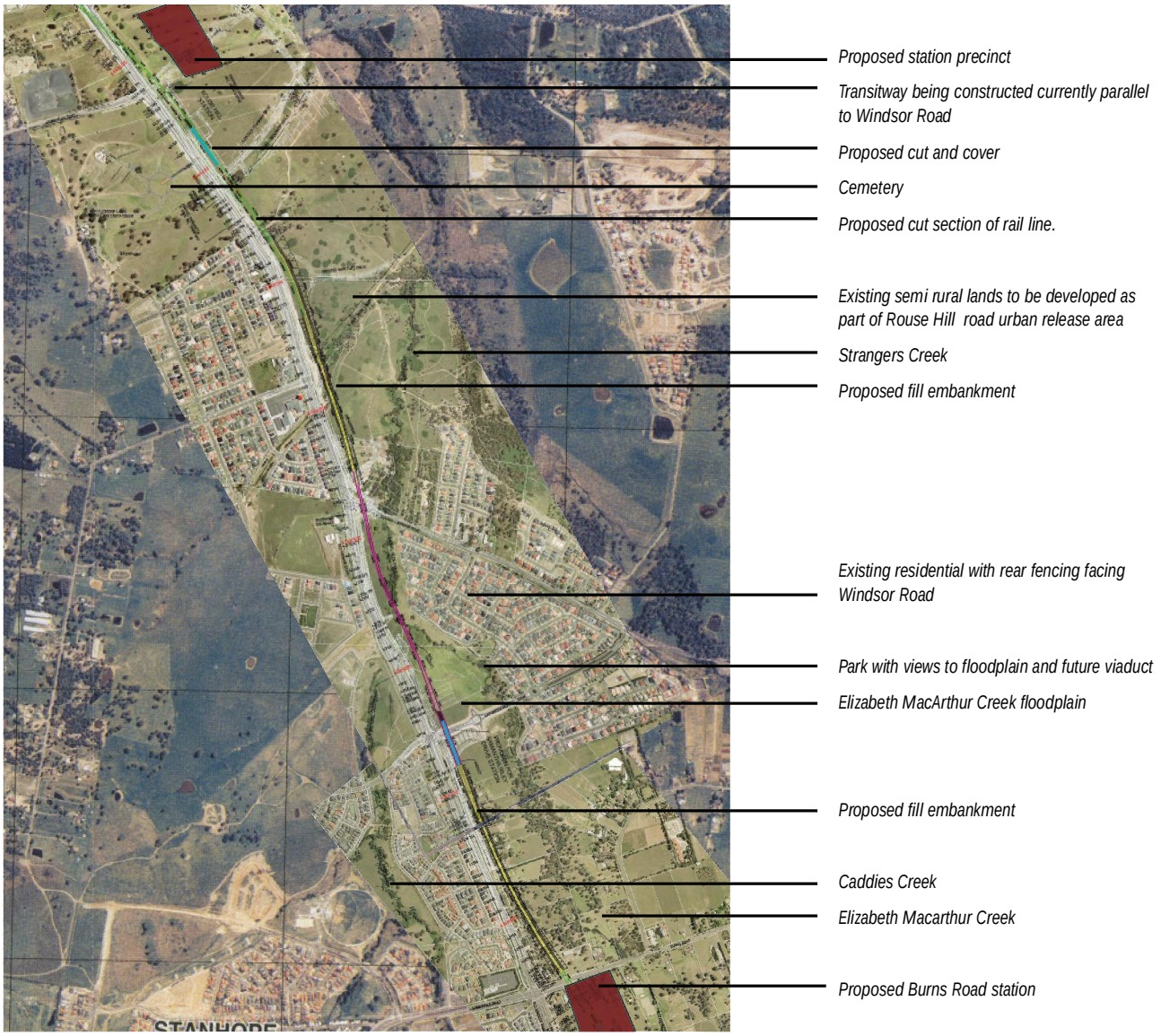

Figure 3.24 aerial photo of Burns road to Rouse Hill section

The landscape is dominated by the low lying floodplain of Caddies Creek with copses of trees.

To the south the precinct is surrounded by a semi-rural character. Elsewhere there are scattered pockets of new residential development such as the Newbury Estate on the western side of Old Windsor Road. The Balmoral and Rouse Hill Release Areas to the east and Castlebrook Release Area to the west would form the proposed future residential subdivision character of low-density single detached dwellings.

Places such as the Fiddlers Arms reveal the heritage and history of Windsor Road as a traditional link between Sydney and Windsor.

Landform

The surrounding landform is predominantly flat, forming part of the Elizabeth Macarthur Creek floodplain with gently rolling hills to the west of the Windsor Road. Caddies Creek winds through the landscape opening into a wetland as it crosses Old Windsor Road.

The grade of the land slopes up from a level of 50m AHD to approximately 60m AHD to the northwest in the Castlebrook Release Area, with potential for future residential properties to gain views to the proposed rail line.

Figure 3.24 Views of Caddies Creek floodplain

Figure 3.25 View of Caddies Creek vegetation

Vegetation

The majority of the landscape is typified by open pasture with scattered strips of Cumberland Plain Woodland vegetation. Riparian vegetation occurs in the wetland area adjacent to Old Windsor Road and along Elizabeth Macarthur Creek and Caddies Creek.

The vegetation in the wetland is distinctively marsh like, with sparse trees and occasional copses of Casuarina..

Land use

The surrounding area is semi-rural in character.

The urban release areas form a major part of the emerging built character. Land that was formerly large rural residential lots is slowly being transformed to primarily low density single detached dwellings with a small percentage of villas and low rise units, mainly located near neighbourhood or town centres with public transport. The residential development fringes the corridor to the northeast approximately 50m away

Figure 3.26 Views across floodplain to residential areas beyond Old Windsor Road

Figure 3.27 Residential development with rear fencing on Windsor Road

at the closest point.

Built form

South of Samantha Riley Drive built form near the rail line is typically one to two storey detached dwellings on large lots of about 2 ha with a number of outbuildings, sheds etc. Built form has a considerable set back from Old Windsor Road which they address.

North of Samantha Riley Drive built form is low density residential, with detached housing on small to medium sized lots, with domestic gardens of exotic amenity planting.

The nearest town centre is at Parklea Markets. The nearest public parks are located within the Stanhope Gardens and Beaumont Hills subdivision.

Public Access

Most roads in the area are local cul de sacs that service residential areas. Main access is achieved on trunk roads such as Windsor Road, Samantha Riley Drive, and Merriville Road. These roads currently have no footpaths but ones are planned as part of the Transitway proposals.

Transitway stops are to be at the intersection of Samantha Riley Drive and Merrivile Road with Old Windsor Road.

Access and movement across Old Windsor Road is constrained by cul-de-sac street patterning and traffic.

The area is dominated by the transport link of Old Windsor Road. The Old Windsor Road Transitway alignment has a cycle way / pedestrian path adjacent to it providing regional north south links.

At present there is little amenity for pedestrians or cyclists, but this may be improved with the transitway development.

View corridors

There is a good visual quality in the semi rural character of the site, but this is gradually changing with the development of urban release areas. The landscape maintains its semi-rural vistas to the adjacent floodplain, rolling topography and distant residential subdivisions while vegetation becomes less fragmented with substantial stands of remnant woodland vegetation to the West.

Figure 3.28 Cycle way on Windsor Road

Figure 3.29 Views along Merriville Road to Strangers Creek

Figure 3.29 Construction work currently underway at Rouse Hill

3.10 Rouse Hill

The NWRL would terminate at the planned regional centre of Rouse Hill.

Character

The proposed station site is to be located within what is currently an open semi-rural setting, which is designated as the planned site for the Rouse Hill Regional Centre. Development to the north of the site includes the Kellyville Golf Course, and to the west, beyond Windsor Road, the Castlebrook Lawn Cemetery.

Landform

The immediate surrounds of the terminus site are predominantly flat, formed by the low lying flood plain of Caddies Creek. The topography to the west of Windsor Road rises to an elevation of approximately 70m AHD within the Castlebrook Lawn Cemetery.

Vegetation

The vegetation is typified by pastureland and scattered trees to the east and the manicured grass lawns of the Cemetery to the West. Some riparian vegetation and small stands of native trees lining Caddies Creek.

Exotic amenity plantings predominate in residential areas with some remnant native vegetation concentrated particularly along creek lines or in existing rural residential areas that have been relatively undeveloped.

Figure 3.31 Proposed Rouse Hill town centre

Land use

Rouse Hill Release Area is undergoing further detailed site planning design work. The Local Environment Plan (LEP) and Development Control Plan (DCP) documents have been gazetted. A DA has recently been submitted for the town centre. The Centre would provide a mix of retail, employment and residential as well as community facilities, parklands and urban squares. Higher density housing is planned in the Centre to provide activity and life to the main urban places and spaces, both day and night. It includes:

- Commercial space (which may include offices, educational facilities, health care premises, hotel/serviced apartments);
- Retail shops including Supermarkets, Department Stores and specialty shops;
- An 8-12 screen cinema/entertainment complex;
- Residential dwellings;
- Entertainment and Recreation Facilities and Areas;
- Civic and Community Facilities including a Council Library and Community Centre;
- Infrastructure including roads and intersections;
- Car parking;
- Landscaping and public domain works; and
- Public Transport Infrastructure, including a Transit Interchange.

The Rouse Hill Regional Centre is a 15 year development project that has begun construction and will serve a population of up to 80,000 people.

Built form

Built form, access and amenity is the subject of the proposed Regional Centre development planning.

Figure 3.29 View of model showing nature of built form proposed at Rouse Hill town centre.

Figure 3.30 Cumberland Plain vegetation at edge of Stabling Yards

3.11 Stabling Yard Facility

After the final station on the route the rail line would continue in a north westerly direction beneath Windsor Road to a Stabling Yard facility.

Character

The rail route and stabling yard would cut through a series of semi-rural residential plots.

Landform

The proposed stabling yard would be located in an area of slight undulations varying between 40m AHD to the west and 60m AHD to the east. The land rises to the north of the site toward Rouse Hill and Razorback Ridge and also to the west towards Schofields Road. The Second Ponds Creek meanders directly through the centre of the area, running north to south.

Vegetation

The proposed stabling yard area includes large stands of remnant Cumberland Plain Woodland vegetation, with sparse understorey and grassland. Riparian vegetation occurs along Second Ponds Creek, however many sections are infested with exotic weeds. The vegetation creates a significant character to the area linking to the nearby Rouse Hill Regional Park.

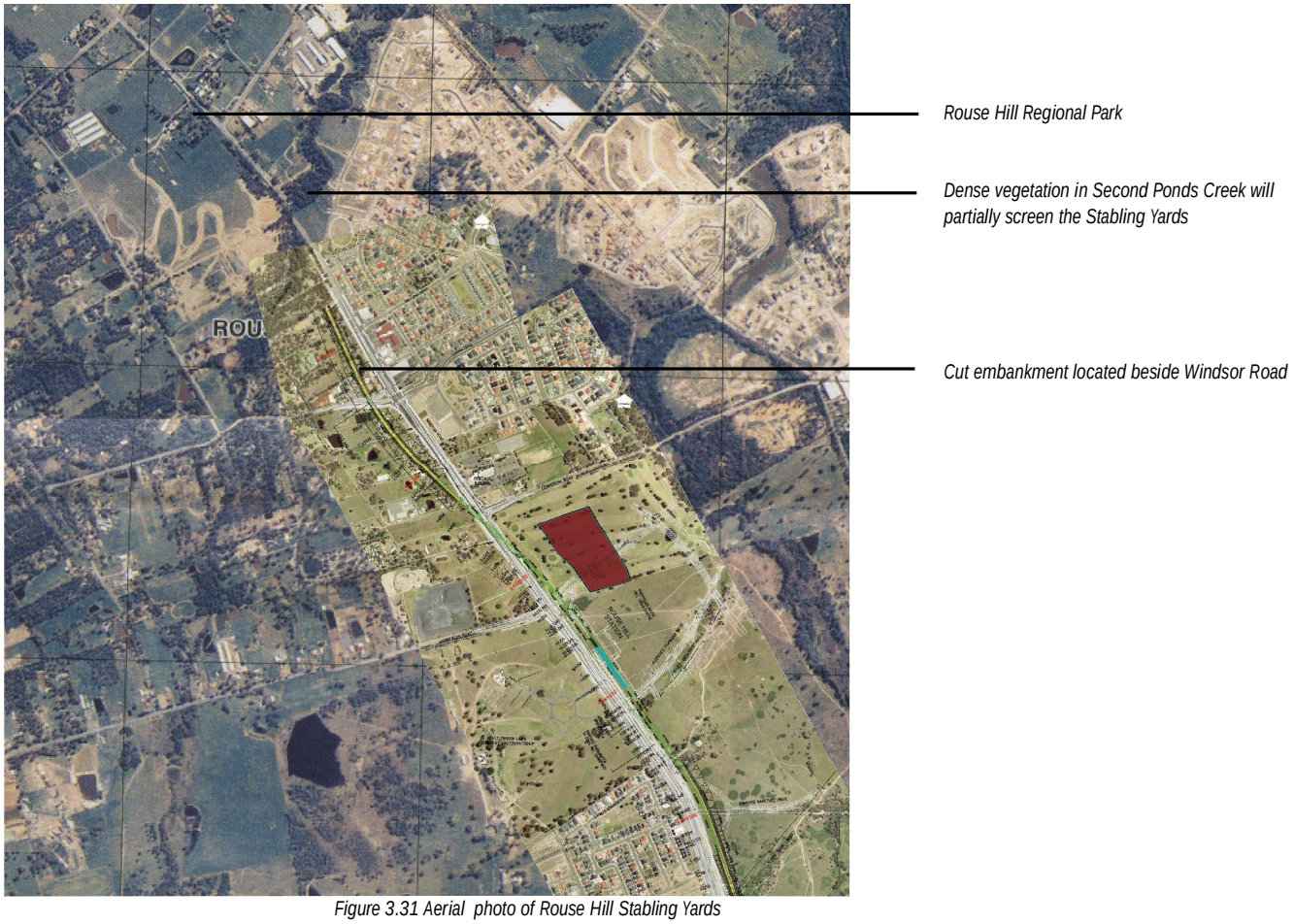

Figure 3.31 Aerial photo of Rouse Hill Stabling Yards

Land use

Land uses in the rural residential lots affected by the proposal are primarily rural residential properties adjoining or in the vicinity of Second Ponds Creek.

The Area 20 urban release areas will form a major part of the emerging built character. Land that was formerly large rural residential lots will be transformed to primarily low density single detached dwellings with a small percentage of villas and low rise units, mainly located near neighbourhood or town centres with public transport. The residential development fringes the corridor to the northeast approximately 50m away at the closest point.

Public access

Rouse Road is a low key rural residential road that services rural residential properties to the west. It has no footpath system.

View corridors

Second Ponds Creek and its vegetation, which borders the site is important as part of the visual catchment of Rouse Hill Regional Park.

Figure 3.32 Existing land uses at or near to proposed Stabling Yards

Figure 4.1 Existing planted embankments will be replaced with earth reinforced retaining walls.

Figure 4.2 Typical earth retaining walls used at Epping Station

4.1 General

The following is an indicative description of proposed works that would affect the landscape and its visual qualities, based on current information, which is subject to additional planning, detailed design and further assessment. It is not intended that this is a complete description of proposed works, as some would be underground, hidden from view or inconsequential to landscape systems.

4.2 Epping to Beecroft - Quadruplication of existing line

The proposal entails a quadruplication of the existing line between Epping and Beecroft. The quadruplication occurs within the existing rail reservation. It will entail four new outer tracks to be installed on either side of existing main track, from approximately 400m north of Epping Station to 500m south of Beecroft Station. The four new lines will require extension to existing overhead electrification masts or new overhead structures. Specific location works associated with this includes:

- two single track dive structures 400 to 500m north of Epping Station (Ch 23.775 –23.950) with multispan concrete viaducts;
- two new reinforced earth retaining walls at edge of Cambridge Street to replace planted embankments;
- narrowing of Cambridge Street in 165m section;
- two new reinforced earth retaining walls and embankments at the edge of the reserve beside Beecroft Road to replace planted embankments;
- new underbridge for bus lane at Surrey Street Epping including new retaining walls;
- two new two span 60m long viaducts over Devlins Creek, each 60m long, on either side of existing rail viaduct;
- two new two span underbridges over the M2, each 65m long, on either side of existing rail underbridge;
- modifications to Cheltenham Station including new pedestrian overbridge, lifts, modifications to existing buildings, and alterations to carparks on east and west side of rail line;
- extension to Cheltenham Road overbridge, including removal of vegetation;
- one new reinforced earth retaining wall and planted embankments at rear of Sutherland Road properties to replace existing vegetated embankments;
- four new reinforced earth retaining wall beside west verge of Sutherland Road to replace existing vegetated embankments;
- cuttings beside west verge of Sutherland Street. Cuttings to be retained by earth embankments and exposed rock;
- two new reinforced earth retaining wall beside west verge of Sutherland Road to replace existing vegetated embankments;
- cuttings beside east verge of The Crescent. Cuttings to be retained by earth embankments, earth reinforced retaining walls or exposed rock;
- removal of section hut beside The Crescent east verge;
- removal of scout hall beside The Crescent east verge; and
- two new dive structures with arched shotcrete finishes on walls.

Figure 4.3 Epping to Beecroft section showing extent of proposed reinforced earth retaining walls on street edge where loss of vegetation will be likely.

4.3 Franklin Road – future station precinct

Franklin Road Station would be constructed by cut and cover. The station would be underground, along with commuter car parking. The surface structures would include

- a high canopy structure of 30m x 60m over stairs, a glass lift and escalators;
- an access road from Franklin Road to the Castle Hill Road / Glenmore Road intersection, the latter being signalised;
- maintenance vehicle parking area;
- a light shaft; and
- vents and emergency stair exits.

In conjunction with the new station works, the proposal includes redevelopment of land in an area of approximately 250 m by 250m that would form a local centre. This area is currently occupied by low density detached housing, some broad landscape areas with tall remnant trees and a high voltage electricity easement. Redevelopment would involve removal of existing buildings and most of the landscape and includes:

- a new grid of roads that originate from Franklin Road and Castle Hill Road;
- a new local centre boulevard with a wide median / park that runs at right angles to castle Hill Road; and
- development sites with a notional footprint that suggests perimeter block development, 3 storey buildings and central courtyards.

Figure 4.4 Proposed Franklin Road Station surface laid over aerial photograph to show extent of vegetation removal.

4.4 Castle Hill town centre – future station precinct

Castle Hill Station would be constructed by cavern construction. The station would be underground and there is potential for underground pedestrian cross connections to the adjoining Castle Towers retail development. The surface structures would be located in Arthur Whitling Park and on part of Old Castle Hill Road and would include:

- a high canopy structure of 30m x 60m over a glass lift and escalators;
- a pedestrian mall at the southern end of Old Castle Hill Road;
- maintenance vehicle parking area;
- light shaft trumpets; and
- vents and emergency stair exits located in the park.

In conjunction with the new station works, the proposal includes redevelopment of the streets around the station. This includes:

- reconfiguration of Old Northern Road and Crane Street to facilitate pedestrian access to the station egress;
- a pedestrian mall on the eastern end of Castle Street; and
- a new layout, regrading and revegetation of the park.

Figure 4.5 Proposed Castle Hill Station surface laid over aerial photograph.

4.5 Hills Centre – future station precinct

Hills Centre Station is to be constructed by cut and cover. The station would be underground, along with commuter car parking. The surface structures would include:

- a high canopy structure of 30 m x 60m over stairs, a glass lift and escalators;
- an access road from Showground Road to Carrington Road / Ashford Road intersection;
- light shaft trumpets; and
- vents and emergency stair exits.

In conjunction with the new station works, the proposal includes redevelopment of land in an area of approximately 150 m by 150m to establish a neighbourhood centre. This includes:

- new pedestrian access to Carrington Road in the south and the light industrial area to the west; and
- development sites in existing car parks with a notional footprint that suggests perimeter block development, 3 storey buildings and central courtyards.

Figure 4.6 Proposed Hills Station surface laid over aerial photograph.

4.6 Norwest Business Park – future station precinct

Norwest Station is to be constructed by cavern construction. The station would be underground. The surface structures would be located on Norwest Boulevard at or near its intersection with Brookhollow Avenue and include:

- three high canopy structures of 20m x 10m over a glass lift and escalators; and
- two emergency egress / ventilation buildings.

In conjunction with the new station works, the proposal includes redevelopment of the streets around the station. This includes extensive paved areas at the intersection of Norwest Boulevard and Brookhollow Avenue, leading from the town centre in the north.

Figure 4.7 Norwest Business Park Station surface laid over aerial photograph.

4.7 Norwest to Burns Road – future cut and cover tunnel section

The proposal requires a cut and cover tunnel for an 800m section south of the proposed Burns Road Station. The cover will entail reinstatement of existing surface features. Depth of soil to roof of rail cover varies from 1m to 9m. The alignment of the cut and cover is at the rear of properties facing Old Windsor Road.

4.8 Burns Road - future station precinct

Burns Road Station is located within a cutting. The station platforms would be covered by a large open sided canopy. The canopy would be elevated above surrounding ground level and extend beyond the platforms to provide cover to stairs, escalator and lift access points. The canopy would be 25m wide and 100m long, and will be partly glazed to allow light onto the platform. Two single-storey emergency egress and ventilation buildings are would be located on either end of the station.

In conjunction with the new station works, the proposal includes redevelopment of land in an area of approximately 400 m by 200m that will form a town centre, and that would be the focus of the Balmoral Road Release Area . Redevelopment involves removal of existing buildings and most of the landscape. The features of the new centre would be:

- a new grid of roads that originate from Burns Road and Balmoral Road;
- a new town centre square at the northern end of the station;
- a transport interchange, which includes the Parramatta to Windsor Transitway, the Ryde to Blacktown transitway and the NWRL; and
- development sites with a notional footprint that suggests perimeter block development, 4 storey buildings and central courtyards.

Figure 4.8 Burns Road Station surface laid over aerial photograph.

4.9 Burns Road to Rouse Hill town centre – future surface rail line

The proposal includes the following in this section:

- a cut and cover tunnel for two tracks in a 150m section north of the proposed Burns Road Station. The cover would entail reinstatement of existing surface features. Depth of soil over rail ceiling varies from 1m to 2m;
- two tracks in a cutting which would to be a planted embankment of maximum 5 metre height and 200m in length. Noise walls will be provided where embankment is less than 3m high;
- two tracks on a fill embankment which would to be a planted. Maximum height of embankment is 4 metres. Length is to be 600m. Noise walls would be provided on both sides of rail lines;
- two tracks on elevated viaduct 960m in length over Caddies Creek floodplain. The viaduct varies in height from 2m to 5.5m above existing ground level. Viaduct to be 30m spans. Deck and parapet to be 1200mm deep supported by 1200mm deep headstock and triple 1200mm diameter columns. Noise walls would be installed above decks;
- two tracks on a fill embankment which would be planted. Maximum height of embankment is 5 metres. Length is to be 500m. Noise walls would be provided on both sides of rail lines;
- two tracks in a cutting which would be a planted embankment of maximum 5 metre height and 200m in length. Noise walls would be provided where the embankment is less than 3m high; and
- a cut and cover tunnel for two tracks in a 600m section south of the proposed Rouse Hill Station. The cover will entail reinstatement of existing surface features. Depth of soil to roof of rail cover varies from 1m to 2m.

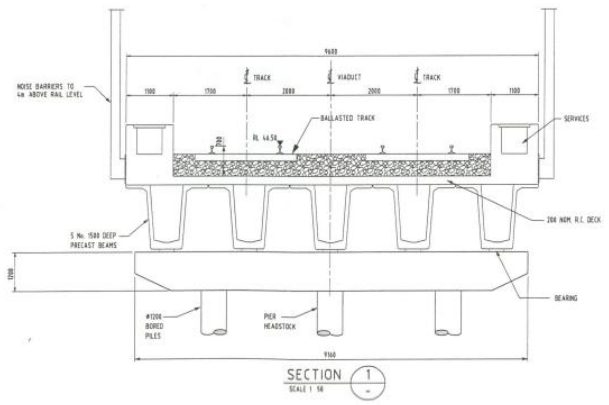

Figure 4.9 Proposed bridge cross section. Refer Section 5 for comments on this design.

4.10 Rouse Hill – future station precinct

Rouse Hill Station would be an open cut station. The station platforms would be covered by a large open sided canopy. The canopy would be elevated above surrounding ground level and extend horizontally to provide cover to stairs, escalator and lift access points. The canopy would be 25m wide and 100m long, and will be partly glazed to allow light onto the platform and open sided to allow for natural ventilation. Two single-storey emergency egress and ventilation buildings would be located on either end of the station.

The station is planned to be developed in town centre of Rouse Hill, which is the subject of a separate project. The town centre proposal includes:

— a new grid of roads that service the town centre;

— a railway town square at the northern end of the station; and

— development sites with notional 4 storey buildings.

4.11 Rouse Hill to stabling yards

The proposal includes the following treatments:

— a cut and cover tunnel for two tracks for a 650m section north of the proposed Rouse Hill Station, and under Windsor Road. A small cut and cover section would also be provided at Rouse Road. The cover would involve reinstatement of existing surface features including Windsor Road and Rouse Road. Depth of soil to roof of rail cover varies from 1m to 2m; and

— two tracks in a cutting which would be a planted embankment of maximum 14 metre height and 600m in length. No general arrangements are yet available but it is understood that the facility will include car parking, access roads, noise barriers and washdown facilities, of similar scale to facilities at Macdonaldtown stabling facilities.

Figure 4.10 Rouse Hill Station Stabling Yards proposal laid over aerial photograph.