



Transport
Roads & Maritime
Services

New England Highway Urban Design Framework

Urban Design Vision, Objectives and Design Principles
for the Upgrade of the New England Highway





< COVER: NEW ENGLAND HIGHWAY VIEWED FROM MOONBI HILL

^ THIS PAGE: BUILT ELEMENTS ALONG THE HUNTER EXPRESSWAY
FRAME VIEWS TO THE SURROUNDING LANDSCAPE

< BACK COVER: NOISE WALLS ALONG THE HUNTER EXPRESSWAY
REFERENCES THE ADJACENT VINEYARD CONTEXT

Contents

1.0	Introduction	1
2.0	Purpose.....	1
3.0	Methodology.....	2
4.0	Analysis	4
4.1	History	4
4.2	Rest Areas	4
4.3	Regional Habitat Connectivity.....	6
4.4	Pedestrian and Cycle Facilities	6
4.5	Rail and Bus Networks	7
4.6	Signage	7
4.7	Views and Vistas: Natural and Built Landmarks	8
4.8	Landscape Character Zones.....	10
5.0	Landscape Character Zone Sensitivity	48
6.0	Corridor Strategy.....	50
6.1	Corridor Objectives and Principles	50
6.2	Corridor Challenges	60
7.0	How to Use the Framework.....	66
8.0	References.....	67

Figures

Figure 1: New England Highway - Overall Route	3
Figure 2: Existing Rest Area locations along the New England Highway Corridor	5
Figure 3: Views and Vistas: Natural and Built Landmarks	9
Figure 4: New England High Country - Northern Section	15
Figure 5: Tenterfield.....	16
Figure 6: Glen Innes.....	18
Figure 7: New England High Country - Southern Section	20
Figure 8: Guyra	22
Figure 9: Armidale.....	24
Figure 10: Uralla.....	26
Figure 11: Tamworth Valley and Liverpool Plains.....	29
Figure 12: Kootingal.....	30
Figure 13: Tamworth	32
Figure 14: Upper Hunter Country	35
Figure 15: Murrurundi	36
Figure 16: Scone.....	38
Figure 17: Aberdeen	40
Figure 18: Muswellbrook.....	42
Figure 19: Singleton.....	44
Figure 20: Lower Hunter Country	47
Figure 21: New England Highway - Landscape Character Zone Sensitivity	49
Figure 22: New England Highway - Corridor Strategy and Challenges	51

1.0 Introduction

The New England Highway, designated as the A15 or M15, is part of the National Land Transport Network between Sydney and Brisbane and provides an alternative inland route to the coastal Pacific Highway. It is an important hinterland transport corridor linking the Newcastle CBD on the coastline to Jennings/Wallangarra at the NSW/QLD border. It connects townships within the New England North West and Hunter Regions as well as performing a vital freight transport role linking inland mining areas in the Hunter to the Port of Newcastle. The Gwydir and Oxley Highways and Waterfall Way provide east-west road connections across the Great Dividing Range into the Upper and Mid North Coast and Northern Rivers regions, and provide important links to the west. The Main North Rail network operates to Armidale and provides an alternate freight and passenger access into the Hunter region.

Key centres in the region located along the highway corridor route include the regional centres of Tamworth and Armidale. Major towns comprise Aberdeen, Singleton, Muswellbrook, Scone, Kootingal and Glenn Innes, and smaller towns such as Tenterfield, Guyra and a number of villages.

The Hunter Expressway is the most recently constructed contiguous section of the New England Highway route extending from the M1 Motorway to Branxton. The high quality architectural design of the bridge and noise wall structures, in particular, creates a memorable journey experience.

Completed, current or proposed improvements on the New England Highway include:

- Tenterfield Heavy Vehicle Bypass
- Bolivia Hill Upgrade
- Scone Bypass
- Fitzgerald Bridge at Aberdeen
- Muswellbrook Bypass
- Singleton Rail Underpass
- Singleton Bypass
- Belford to the Golden Highway
- Rutherford Safety Improvements.

2.0 Purpose

There are a number of projects currently in planning along the New England Highway route which have generated a need for an urban design framework to ensure a consistent urban design approach to any current or future road upgrades. It is intended that the Urban Design Framework will be utilised in the upgrade design process and give direction to any retrofitting to the corridor. The framework will also expedite the systematic preparations of environmental assessments for individual projects.

3.0 Methodology

A broad urban design analysis of the New England Highway was undertaken comprising desktop and field assessments to assess the regional corridor environment and at a more detailed local level the characteristics of the adjacent landscape. Characteristics assessed included: Geology, topography, ecology, culture, economy, road environment, land use, pedestrian/ cycle amenity, spatial quality, vegetation, hydrology, views, built form. Urban centres were mapped according to the Department of Planning and Environment designations in the appropriate Regional Plan for that region.

Based on the broader analysis findings, the corridor was further divided into four distinct sub-regions (*Refer Figure 1*):

- New England High Country
- Tamworth Valley and Liverpool Plains
- Upper Hunter Country
- Lower Hunter Country

These four sub-regions were further divided into landscape character zones, defined as being dominant characteristics of the road and adjacent roadside environment distinct to those immediately to the north and south. The terms 'Urban' and 'Rural' used in the landscape character zone in this context refer to whether or not the character zone is located within a town or identifiable locality.

The urban areas were looked at in more detail and at a larger scale due to their diversity in comparison to the rural countryside. These include the regional centres of Tamworth and Armidale, major towns of Singleton, Muswellbrook, Scone, Kootingal and Glenn Innes, and towns such as Tenterfield and Guyra. Landscape Character zones were documented identifying similarities between them and unique points of interest.

The Landscape Character zones' sensitivity were rated from high to low. The sensitivity was determined based on an assessment of the landscape character zone and its degree of modification, amenity and sensitivity of receivers. For example industrial areas with a high degree of modification and low amenity were rated low. An area of forest is relatively pristine and has a high scenic quality and therefore a high sensitivity. This helped to identify areas in which character would ideally be protected with any upgrade to the corridor, areas where improvements could be made to improve road amenity and where constraints to road upgrades and improvements may be encountered.

An Urban Design Strategy was formulated based on an understanding of the existing road corridor character and the landscape character zone qualities. The Strategy comprises a Vision, Objectives and Principles. It is expected that the objectives and principles will be adapted by each upgrade project to reflect the particularities of the area and project.

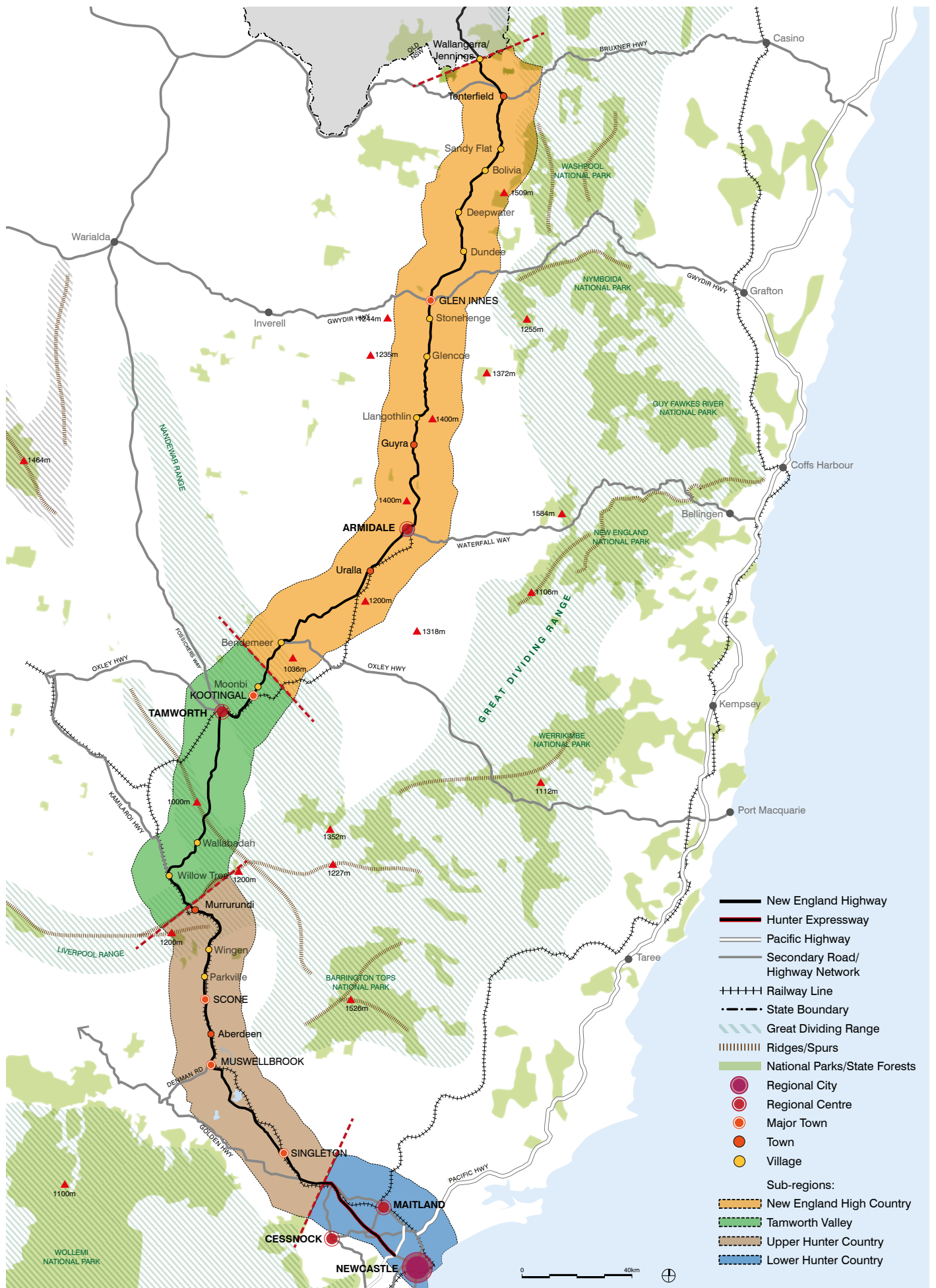


Figure 1: New England Highway - Overall Route

4.0 Analysis

The New England Highway is a scenic, country hinterland road, defined by its relationship to the Great Dividing Range as it traverses the plains, plateaus, spurs and ranges. Views alternate between open rolling plains and pasturelands to enclosed wooded steeply sloping terrain.

The highway has a distinct character from other National Highways, such as the Pacific and Hume Highways, due to its hinterland location, modest scale of the road corridor and integrated urban relationship to towns and villages. The highway journey is characterised by long stretches of highway through rich agricultural countryside/ grazing lands and hilly forested areas punctuated by regional centres, towns and villages. Vegetation reinforces the pattern of land use, alternating between enclosed forest to more open, scattered trees on pasture grasses. Towns and local landmarks provide legibility and interest in the journey experience. The Main North Rail Line weaves over, under and alongside the highway providing another unique reference point.

The highway predominantly comprises a two lane road for most of its length, with widening for turning lanes or overtaking lanes. Separated carriageways are provided on limited sections at the Hunter Expressway, through the towns of Glenn Innes, Tamworth and in certain sections such as through the Moonbi foothills near Moonbi Lookout.

The New England Highway Corridor traverses four distinct sub-regions, predominantly defined by the topography of the Great Dividing Range and the land uses in each section. They are:

- New England High Country
- Tamworth Valley and Liverpool Plains
- Upper Hunter Country
- Lower Hunter Country

4.1 History

The New England Highway began as a track which developed north from Newcastle to reach the prime wool growing areas of the New England region. It was originally known as the Great Northern Road until 1928, then the Great Northern Highway (State Highway 9). At that time the route included sections of what has now become the Pacific Highway. It extended from Sydney to Queensland, via Newcastle, Hexham and Tenterfield. From Tenterfield it continued to the Queensland border near Mount Lindesay. In 1931, the North Coast Highway (State Highway 10) was renamed the Pacific Highway and extended south to Milsons Point and in 1933 the Great Northern Highway was renamed the New England Highway and officially originated at Hexham rather than Sydney.

In 1954 Main Road 374, running from Tenterfield to Wallangarra, was redesignated as part of State Highway 9 and became part of the New England Highway rather than through Mount Lindesay. At this time the New England Highway was designated a National Route Number 15¹.

4.2 Rest Areas

Refer Figure 2.

Rest Areas have been provided along the highway alignment, between towns and villages, usually aligned with a natural landmark/features or scenic point of interest such as the Rest Areas at Bluff Rock, Moonbi Lookout or the First Fleet Park at Wallabadah. Rest Areas vary from those offering a full range of amenities (picnic shelters, toilet facilities etc) to layover areas provided as pull in bays for freight driver change over. Rest Areas are under varied ownership - RMS or Council - and asset maintenance varies.

¹ http://www.newenglandnorthwest.com.au/content_common/pg-new-england-highway-scenic-drive.seo

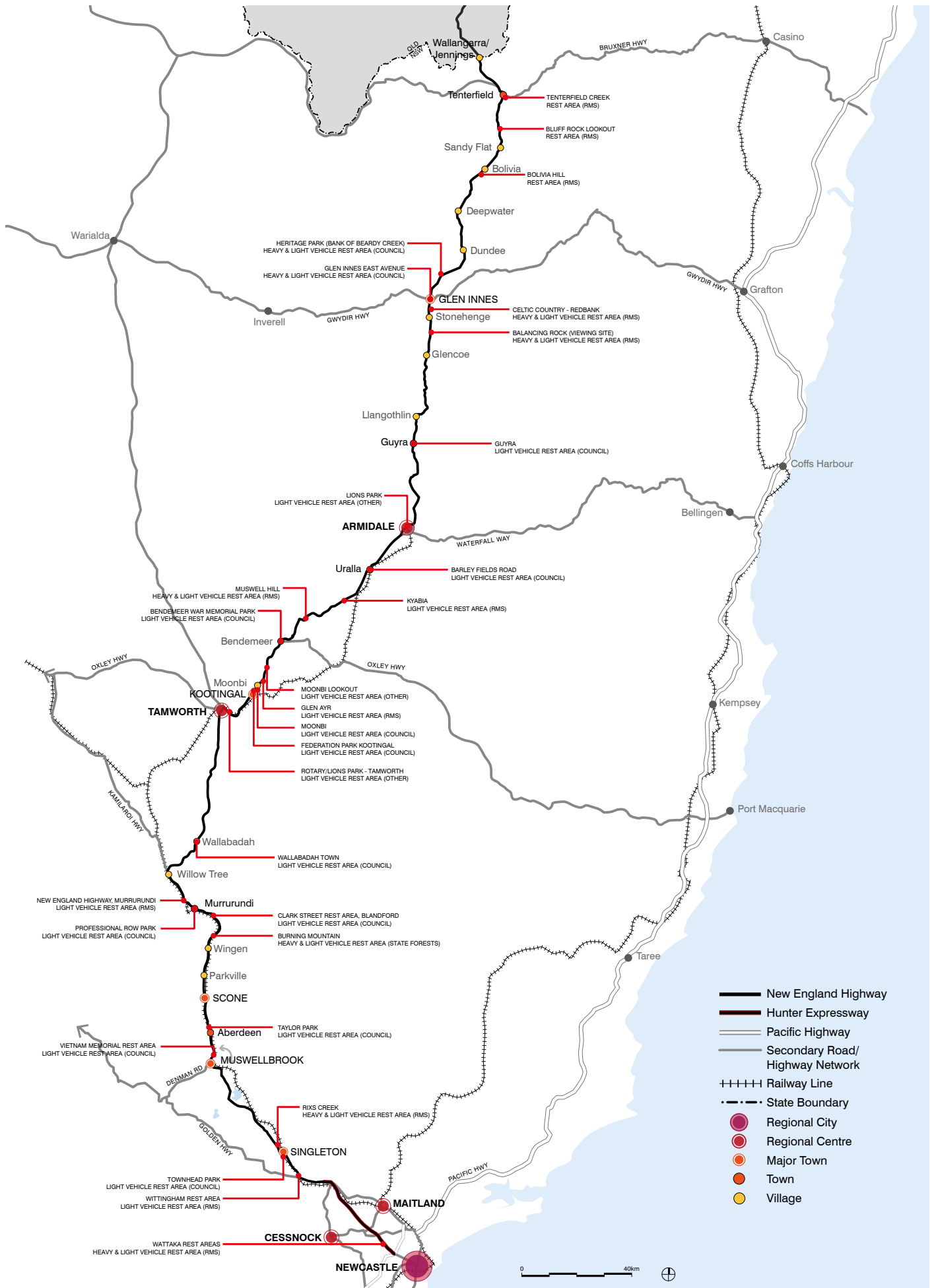


Figure 2: Existing Rest Area locations along the New England Highway Corridor

4.3 Regional Habitat Connectivity

Ultimately the NSW government strategy includes rehabilitation of the adjacent landscape where mining is currently occurring. The Upper Hunter Valley Link has been identified as part of the national Great Eastern Ranges initiative to enhance north-south connectivity. The aim of conservation planning will be to protect large patches of existing vegetation between the Wollemi National Park, Manobalai Nature Reserve and Barrington Tops National Park through the ongoing management and progressive rehabilitation of mining activities.

4.4 Pedestrian and Cycle Facilities

Larger towns and villages tend to have kerbed verges with full width footpaths in the main town centres and narrower width footpaths with grassed verges on the town centre edges. In some places such as Tamworth, Murrurundi and Guyra some on road cycle facilities are also provided. Smaller villages are generally not kerbed, have limited footpaths and no cycle facilities. As part of the road upgrade works at Aberdeen, a new bridge was built replacing the existing two single lane bridges. The existing southbound heritage metal lattice truss bridge, built in 1893 was retained for use by pedestrians and cyclists, improving cyclist and pedestrian safety through this section of highway and retaining a heritage landmark.



▲ THE ROAD THROUGH MURRURUNDI FEATURES BIKE LANES ON EITHER SIDE



▲ THE HERITAGE RAIL BRIDGE AT ABERDEEN HAS BEEN REPURPOSED TO NOW FORM PART OF THE CYCLEWAY

4.5 Rail and Bus Networks

The Main North Railway operates to Armidale only and provides freight and passenger rail transport. A commuter service operates from Hamilton to Scone via Singleton. The railway is visible at many locations along the highway as it runs alongside the highway alignment or weaves around underneath. There is currently a level crossing at Scone for which a strategic design has been prepared to remove this crossing. Previously the railway operated to the border at Wallangara where it had to change gauge to continue into Queensland. The section from Armidale to Wallangara is not in operation and some of the rail bridges are failing.



▲ THE MAIN NORTH RAILWAY IS VISIBLE AT MANY LOCATIONS FROM THE NEW ENGLAND HIGHWAY

Bus Networks include local and regional services. Local bus networks include school buses. Regional Bus routes for the New England sub region include Tamworth to Coffs Harbour via Armidale, University of New England, Uralla, Bendemeer and Moonbi. Tamworth to Brisbane bus service is via Moonbi, Bendemeer, Uralla, University of New England, Armidale, Guyra, Glen Innes, Deepwater, Tenterfield and Wallangarra. Regional Tamworth Valley services include to Quirindi, Bendemeer, Manilla, Attunga, Hallsville, Moonbi, Kootingal and Nundle. Upper Hunter bus services operate to Murrurundi, Muswellbrook, Aberdeen, Scone and Denman. Lower Hunter Bus services link Singleton through to Newcastle.

4.6 Signage

Some towns and villages have Council signage that is individual character to the town or village.



▲ TOWN SIGNAGE AT MURRURUNDI



▲ TOWN SIGNAGE AT URALLA

4.7 Views and Vistas: Natural and Built Landmarks

Refer Figure 3.

The following are nine key natural landmarks of the New England Highway. Along with the towns and communities along the route, they form important milestones along the journey.

- Bluff Rock
- Bolivia Hill
- Thunderbolts Rock
- Great Dividing Range
- Nandewar Mountain Range
- Moonbi Hill
- Liverpool Mountain Range
- Hunter River at Aberdeen
- Hunter River at Singleton

As well as these natural landmarks there are a number of built landmarks on the highway which include:

- Grain Loading Facility at Willow Tree
- Willow Tree Inn
- The Big Golden Guitar at Tamworth
- First Fleet Park Wallabadah
- Aberdeen Heritage Metal Lattice Truss Bridge
- Muswellbrook Memorial Grove
- Muswellbrook Railway Bridge
- Liddell Power Station
- Bayswater Power Station
- Sugarloaf Ranges
- Sequence of distinctive banded walled abutment bridges on the Hunter Expressway



▲ GRAIN LOADING FACILITY NORTH OF MURRURUNDI



▲ THE BIG GOLDEN GUITAR AT TAMWORTH



▲ THUNDERBOLTS ROCKS SOUTH OF URALLA



▲ BLUFF ROCK SOUTH OF TENTERFIELD

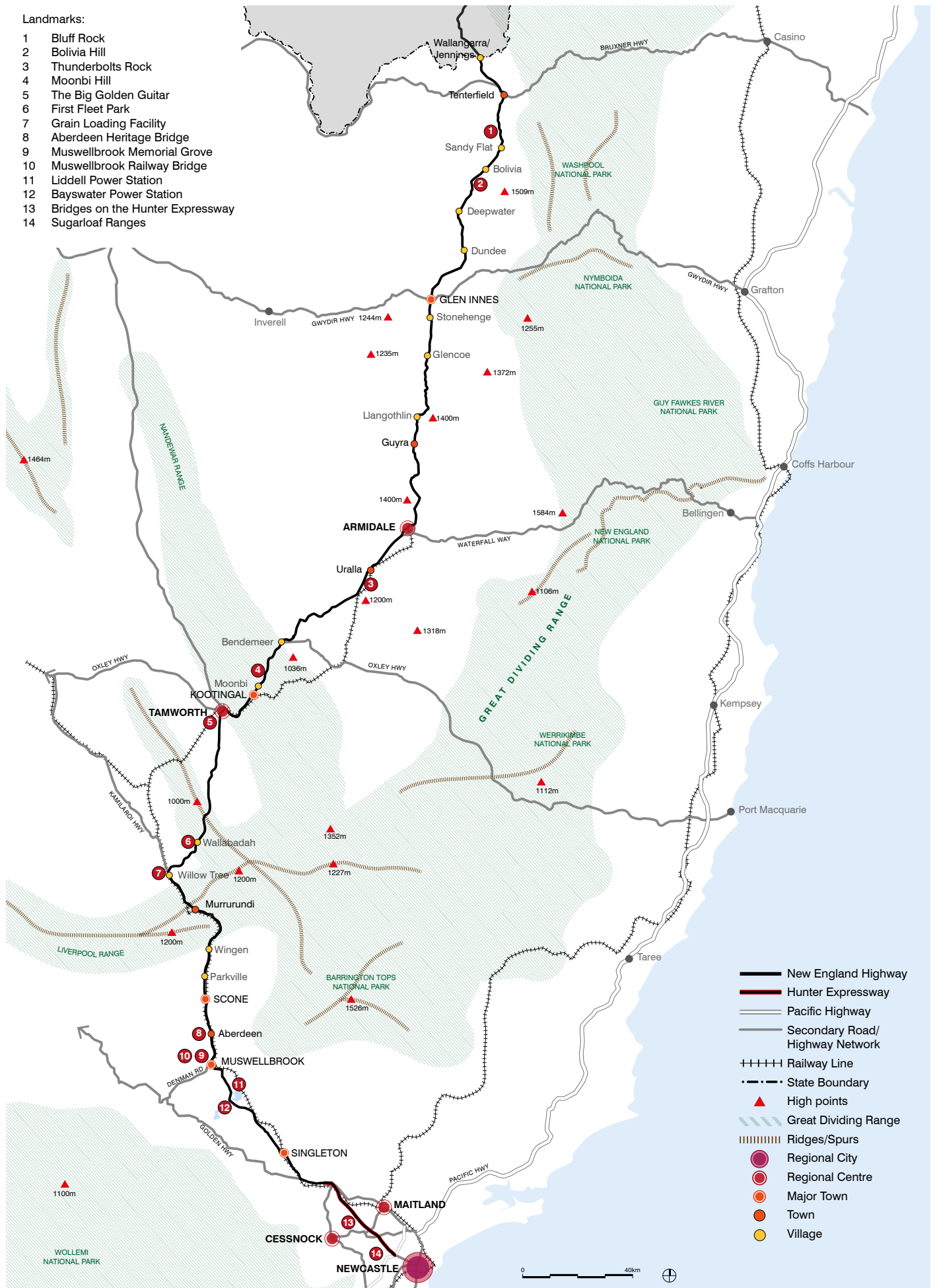


Figure 3: Views and Vistas: Natural and Built Landmarks

4.8 Landscape Character Zones

The route character was further analysed and mapped by landscape character zones to understand commonalities over the entire route. The following table provides a description of the character zone by land use, built form, vegetation and pedestrian/ cycle amenity.

Typology	Defining Characteristic(s) description	
Urban Residential	Land use	Residential. Occasional other land use eg motel, corner shop, interspersed between dwelling buildings.
	Built form	Mostly single storey detached dwellings. Occasional multi-storey (generally maximum two storey) detached dwellings or apartment buildings. Buildings setback from corridor boundary.
	Vegetation	Highly individualised by each lot owner.
	Pedestrian/cycle amenity	Varied across the corridor. Discontinuous and narrow paths discourage use.
Urban Services	Land use	Large scale service industries for travel/ tourism/ freight such as petrol stations, hotels, information centres.
	Built form	Low scale, 1-2 storey utilitarian structures with large footprint carparks/ service areas.
	Pedestrian/cycle amenity	Discontinuous or absent pathways; where paths are present they feel subservient to driveway crossings.
Urban Industrial	Land use	Light industrial and bulky goods retail.
	Built form	Large, slab-sided factory/warehouse buildings. Car parking and signage often between building and kerb.
	Pedestrian/cycle amenity	Discontinuous or absent pathways; where paths are present they feel subservient to driveway crossings.
Urban Civic	Land use	Civic buildings such as court houses, council chambers, cultural centres, galleries.
	Built form	Cultural buildings with architectural or heritage quality usually arranged in combination with each other forming focal points for urban centres.
	Pedestrian/cycle amenity	Usually continuous, reasonably wide paths in front of buildings, however limited connections provided external to civic precincts in adjacent areas.

Landscape Character Zones (cont.)

Typology	Defining Characteristic(s) description	
Urban Retail Town Centre	Land use	Small scale retail or service outlets such as shops, cafes, services (banks, doctors surgeries etc) Small scale retail or service outlets such as shops, cafes, services (banks, doctors surgeries etc), mixed use/residential in the form of shop top housing, occasional house.
	Built form	Attached or closely spaced shopfronts with awnings, mostly two storey, usually on both verges.
	Spatial quality	Enclosed built edge to highway - buildings line both sides of the corridor.
	Economy	Retail trade forms local focus for economy with shops serving residents and tourists as well as forming source of livelihood for shop owners.
	Pedestrian/cycle amenity	Awnings and wide footpaths mean amenity of these areas is generally high. Level of use of paths suggests pedestrian and cycle conflict.
Urban Retail- Large	Land use	Large scale retail outlets such as supermarkets, shopping malls, service stations and chain fast food restaurants.
	Built form	Large shopping-mall type buildings usually from pre-cast concrete tilt-up panels or facades displaying featurism. Single-story buildings built to two-storey height.
	Spatial quality	Open due to these areas being located in areas with wide road reserves, large setbacks and large at ground carparks.
	Economy	Shopping centre provides local employment, but draws trade away from smaller retail shops/ main streets.
	Pedestrian/cycle amenity	Inconsistent level of amenity provided across the corridor.

Landscape Character Zones (cont.)

Typology	Defining Characteristic(s) description	
Urban Open Space	Land use	Formal and informal recreation use including parks and playing fields
	Vegetation	Generally restricted to canopy level (i.e. trees) in groups of varying density with turf understorey, but sometimes denser against road forming edge to area
	Spatial quality	Open due to large areas of turf for active or passive recreation
Urban River/Creek/ Riparian	Views	Views of waterway from approaches and when crossing.
	Built form	Bridge structure crossing waterway
	Vegetation	Cultural planting often along watercourse on both banks perpendicular to highway.
	Hydrology	River of appreciable width, act of crossing it gives notable sense of transition
Rural Agriculture	Land use	Agricultural, most commonly grazing/ cattle farm with occasional crops
	Vegetation	Cleared understorey with clusters of remnant trees
	Topography	Flat to rolling plains/ hills
	Spatial quality	Open to partially enclosed depending on vegetation
Rural Lake/ Watercourse	Vegetation	Occasionally taller at extremities such as remnant forest. Low lying on fringes of water body in form of sedges or grasses. Where in proximity to human activity, sometimes in form of turf.
	Hydrology	Lake, river, creek or swamp of varying widths and depths
	Topography	At base of gentle to steep inclinations
	Views	Views along road on approach to waterway, and outwards from road when traversing waterway, in particular Lake Liddell and Hunter River.

Landscape Character Zones (cont.)

Typology	Defining Characteristic(s) description	
Rural Residential	Land use	Medium scale allotments usually as part of a working farm, usually on approaches to rural centres
	Built form	Large residential buildings with landscape curtilage
	Vegetation	Open to semi-enclosed woodland of remnant or regrowth plantings with cleared understorey, usually mown. Exotic plantings also common. Perimeter/ fence tree plantings common.
Rural Forest	Vegetation	Forest of remnant or regrowth trees with intact understorey adjacent to travel lanes or with cleared areas to accommodate overhead power lines.
	Topography	Gently to steeply undulating.
	Spatial Quality	Enclosed due to vegetation.
	Ecology	Forest may occasionally be formed from threatened species or endangered communities. Forest will also form habitat for threatened species.
	Views	Confined to road corridor, sometimes frames views to Dividing Ranges in the distance.

4.8.1 New England High Country

The New England High Country comprises about half of the New England Highway route. It is part of the New England Tablelands, a plateau and region of the Great Dividing Range. The northern extent of the New England High Country is defined by the border with Queensland and the southern extent by the foothills of the Moonbi Range. The plateau starts at 1000 metres above sea level climbing to 1400 metres near Armidale, Australia's highest city at 980 metres above sea level. The soil is derived from granite rocks with extensive sandy loams. This provides distinctive rock boulder clusters along the highway route such as Bluff Rock south of Tenterfield and Thunderbolts Rocks south of Uralla. Bolivia Hill is a notable climb and descent to Bolivia and Sandy Flat. The Moonbi Range is another notable uphill climb as the motorist ascends from Moonbi to the Northern Tablelands and the village of Bendemeer. (Refer Figure 4 and Refer Figure 7)

The route character comprises long stretches of highway through agricultural/ grazing lands, hilly forested areas and town centres/ villages and town centre/ village edges.

Through the town of Tenterfield, the highway passes through the centre of town with picturesque heritage buildings adjoining the highway. The corridor is narrow, with parallel parking and narrower footpaths and buildings with no setbacks to the street. (Refer Figure 5)

Glenn Innes is a major town centre. Through Glenn Innes the highway route avoids the main town centre and is a divided carriageway with a central landscaped/ paved median, planted roundabouts at road intersections and a footpath on both sides for the main five blocks and a narrow footpath on one edge only. (Refer Figure 6)

Guyra is a small town, the highway route avoids the main town centre, with a wide corridor, narrow footpaths on both sides and generous building setbacks. (Refer Figure 8)

Armidale is a major regional centre but the highway bypasses the main town centre to the west through a previous upgrade. Large round-a-bouts make the entry/exit points to Armidale Town Centre. (Refer Figure 9)

Through the town of Uralla, the highway passes through the centre of town with picturesque heritage buildings adjoining the highway. The road corridor is generous in width with rear to kerb parking, wide footpaths and streetscape planting and lighting. (Refer Figure 10)

Through smaller villages, in comparison to larger towns, the road corridor is generally not kerbed, there are few footpaths and buildings have large setbacks.



▲ LOOKING SOUTH FROM THE QUEENSLAND BORDER



▲ VIEW TO BLUFF ROCK FROM THE BLUFF ROCK REST AREA



▲ BOLIVIA HILL



▲ VIEW WEST FROM BLUFF ROCK REST AREA

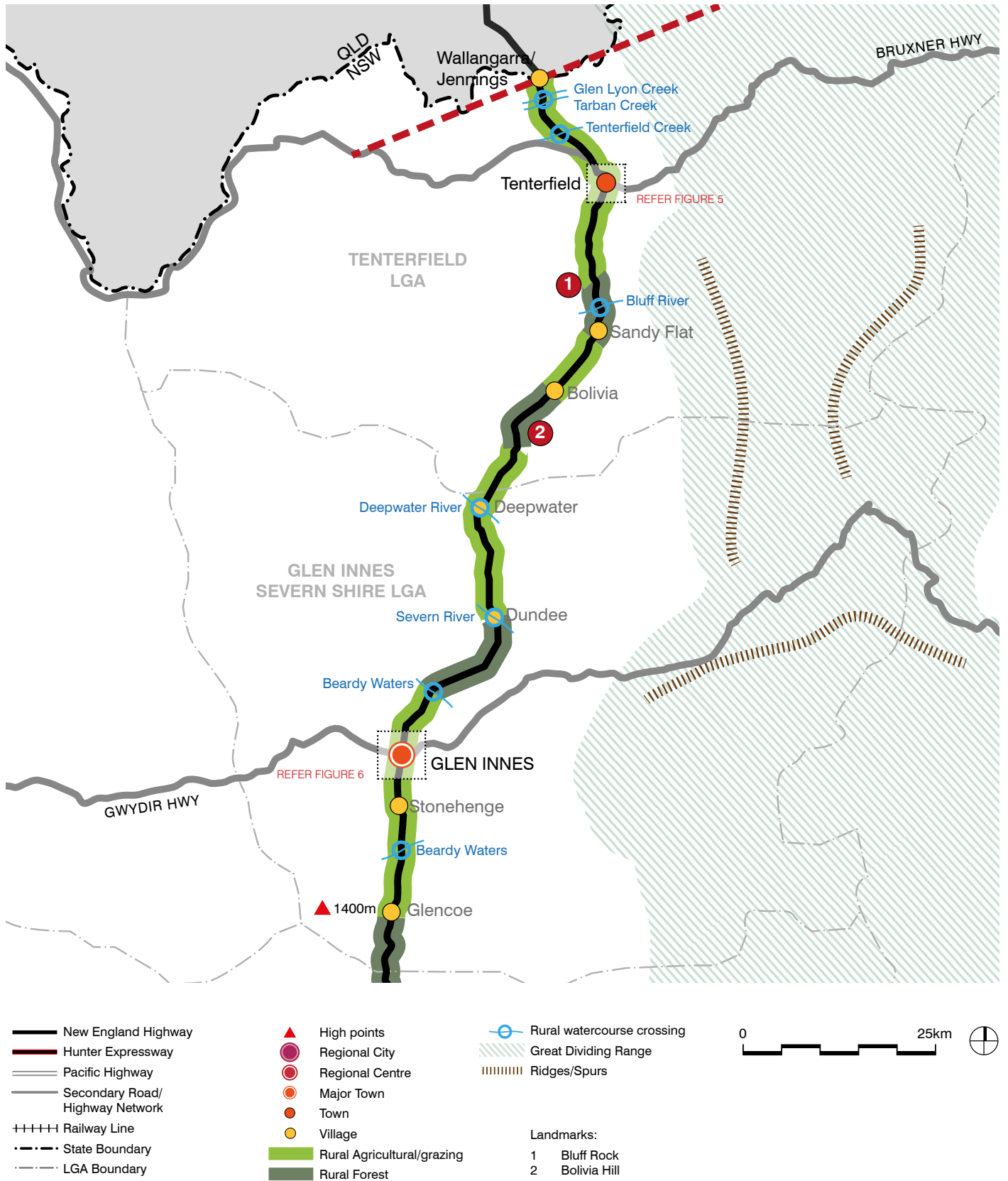


Figure 4: New England High Country - Northern Section

4.8.1.1 Tenterfield



- Urban Services
- Urban Residential
- Urban Industrial
- Urban Retail/Town Centre
- Urban Retail Large
- Urban Open Space
- Urban River/Creek/Riparian

- Rural Agriculture
- Rural Residential
- Rural Forest
- Rural Lake/ zWatercourse
- Railway Line
- Disused Railway Line

- Town Centre (if not on New England Highway)
- Water crossing



Figure 5: Tenterfield



▲ TENTERFIELD TOWN CENTRE



▲ TENTERFIELD POST OFFICE AT INTERSECTION OF MANNERS STREET AND NEW ENGLAND HIGHWAY



▲ PLANTING THROUGH TOWN CENTRE ALONG NEW ENGLAND HIGHWAY

- the highway passes through the centre of town
- picturesque heritage buildings adjoining the highway
- narrow corridor

- parallel parking
- narrow footpaths
- no setbacks to the street

4.8.1.2 Glen Innes



- Urban Services
- Urban Residential
- Urban Industrial
- Urban Retail/Town Centre
- Urban Retail Large
- Urban Open Space
- Urban River/Creek/Riparian

- Rural Agriculture
- Rural Residential
- Rural Forest
- Rural Lake/ zWatercourse
- Railway Line
- Disused Railway Line

- Town Centre
(if not on New England Highway)
- Water crossing



Figure 6: Glen Innes



▲ PLANTED MEDIAN IN CORRIDOR THROUGH GLEN INNES.



▲ PLANTED ROUNDABOUT AT INTERSECTION OF NEW ENGLAND HIGHWAY AND GWYDIR HIGHWAY.



▲ PLANTED MEDIAN IN CORRIDOR THROUGH GLEN INNES.



▲ GLEN INNES. TOWN CENTRE (NOT ON NEW ENGLAND HIGHWAY)

- major town centre
- the highway route avoids the main town centre
- divided carriageway with a central landscaped/ paved median

- planted roundabouts at road intersections
- footpath on both sides for the main five blocks
- narrow footpath on one edge only on town edges

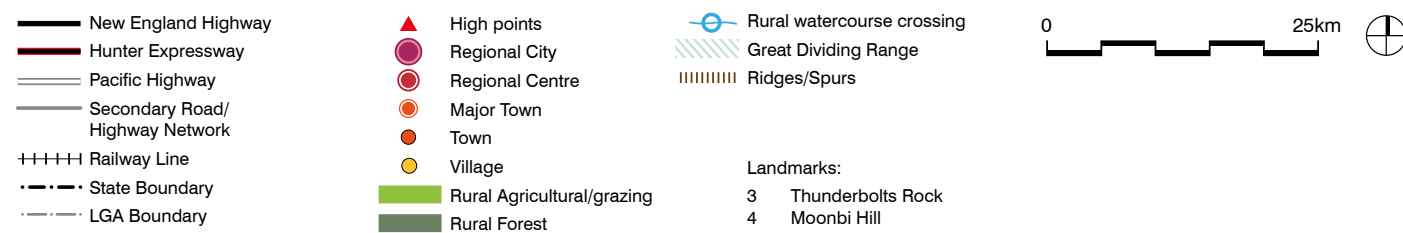
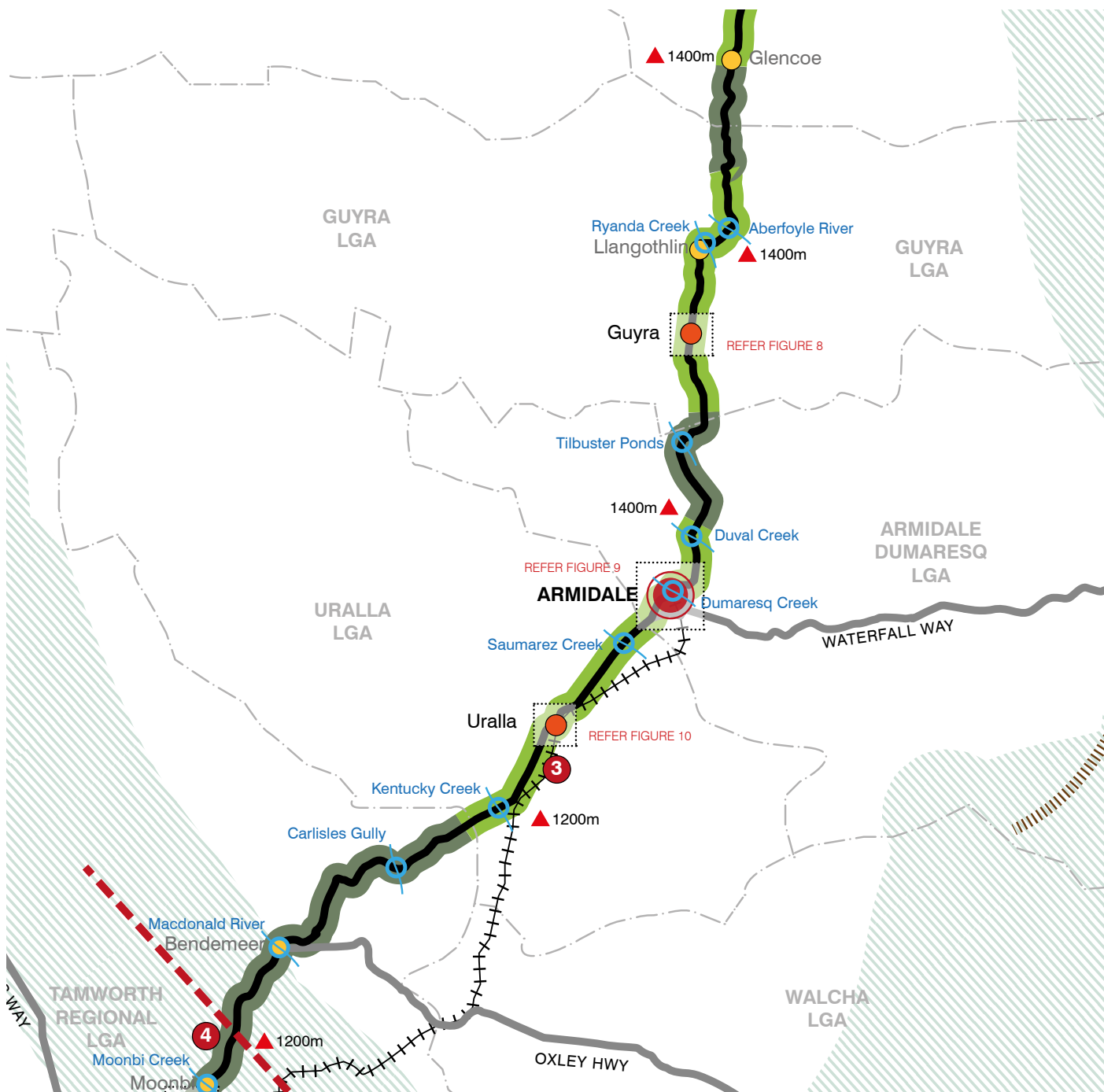


Figure 7: New England High Country - Southern Section



▲ EUROPEAN PLANTINGS ALONG FENCELINES - TYPICAL OF THE NEW ENGLAND HIGH COUNTRY.



▲ VIEWS TO THE SURROUNDING LANDSCAPE AROUND THUNDERBOLTS ROCKS.

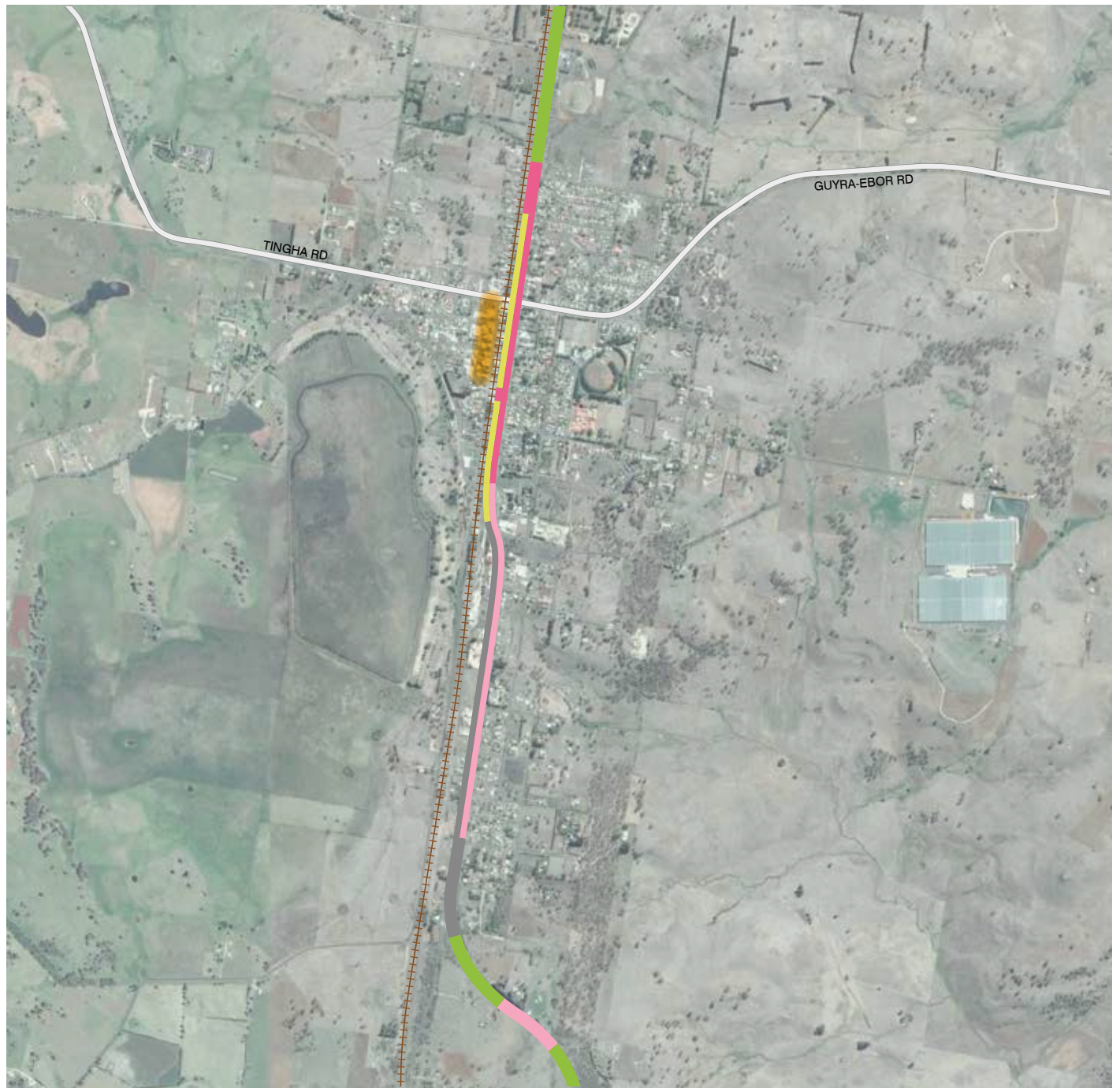


▲ TYPICAL OPEN WOODLANDS ADJACENT TO THE NEW ENGLAND HIGHWAY AROUND URALLA.



▲ VIEWS WEST TO THE MOONBI RANGE FOOTHILLS FROM THE NEW ENGLAND HIGHWAY SOUTH OF URALLA.

4.8.1.3 Guyra



- Urban Services
- Urban Residential
- Urban Industrial
- Urban Retail/Town Centre
- Urban Retail Large
- Urban Open Space
- Urban River/Creek/Riparian

- Rural Agriculture
- Rural Residential
- Rural Forest
- Rural Lake/ zWatercourse
- Railway Line
- Disused Railway Line

- Town Centre
(if not on New England Highway)
- Water crossing



Figure 8: Guyra



▲ NEW ENGLAND HIGHWAY APPROACH TO GUYRA



▲ GENEROUS SETBACKS ON BOTH SIDES OF THE CORRIDOR



▲ NARROW FOOTPATH ALONGSIDE THE CORRIDOR

- the highway route avoids the main town centre
- wide corridor
- narrow footpaths on both sides
- generous building setbacks

4.8.1.4 Armidale



Figure 9: Armidale



^ ARMIDALE BYPASS



^ QUEEN ELIZABETH DRIVE PASSING OVER NEW ENGLAND HIGHWAY (ARMIDALE BYPASS)



^ ROUNDABOUT AT NORTHERN END OF ARMIDALE BYPASS AT INTERSECTION WITH GLEN INNES ROAD.
(IMAGE CREDIT: GOOGLE)



^ ROUNDABOUT AT SOUTHERN END OF ARMIDALE BYPASS AT INTERSECTION WITH URALLA ROAD.
(IMAGE CREDIT: GOOGLE)

- major regional centre
- highway bypasses the main town centre to the west through a previous upgrade

4.8.1.5 Uralla



- Urban Services
- Urban Residential
- Urban Industrial
- Urban Retail/Town Centre
- Urban Retail Large
- Urban Open Space
- Urban River/Creek/Riparian

- Rural Agriculture
- Rural Residential
- Rural Forest
- Rural Lake/ zWatercourse
- Railway Line
- Disused Railway Line

- Town Centre
(if not on New England Highway)
- Water crossing



Figure 10: Uralla



▲ DISTINCTIVE STREET PLANTING AND LIGHTING IN URALLA TOWN CENTRE



▲ UNIQUE TOWN SIGNAGE OF URALLA



▲ THE NEW ENGLAND HIGHWAY PASSES THROUGH THE TOWN CENTRE OF URALLA

- the highway passes through the centre of town
- picturesque heritage buildings adjoining the highway
- road corridor is generous in width
- rear to kerb parking
- wide footpaths
- streetscape planting and lighting

4.8.2 The Tamworth Valley and Liverpool Plains

The Tamworth Valley and Liverpool Plains sub-region is defined by the foothills of the Nandewar and Liverpool Ranges, part of the Great Dividing Range landscape. The route character comprises stretches of highway through predominantly agricultural crop lands, forested slopes and town centres/ villages and town centre/ village edges. The journey heading north provides distinctive vistas to the peak of the Moonbi Range and heading south to the Liverpool Range. Local landmarks visible in the road journey include Moonbi Lookout, the Willow Tree Inn, the Grain Loading Facility north of Willow Tree and First Fleet Park at Wallabadah. Cuttings comprise natural stone. (Refer Figure 11)

The village of Moonbi has small road setbacks with retail shops on an adjacent road.

Kootingal is designated a Major Town. The two lane highway skirts the rural residential edge with development set well back from the road. (Refer Figure 12)

Tamworth is a major regional centre, home to the Tamworth Country Music Festival. The highway bypasses the main town centre to the east. The Big Golden Guitar provides a cultural landmark, albeit somewhat hidden by the large fast food and retail outlet signage. Through Tamworth the road is a divided carriageway with a central turfed/ treed median, dedicated bike lanes either side and parallel parking for the first kilometre. At Vera Street it deviates to the north-east skirting the town centre edge and is a two lane road with views to the surrounding Moonbi Ranges. At Peel River/ Peel Street it becomes a divided road again with a central landscaped median, and parallel parking to the Oxley Highway intersection where it once again becomes a two lane road leading out of Tamworth. (Refer Figure 13)

Through the villages of Wallabadah and Willow Tree, the corridor is wide, the highway has kerbed edges with footpaths either on one side or both, residential buildings are setback from the road corridor and retail buildings have zero setback.



▲ GRAIN LOADING FACILITY NORTH OF MURRURUNDI



▲ FIRST FLEET PARK AT WALLABADAH, NORTH OF MURRURUNDI



▲ MOONBI HILL, NORTH OF KOOTINGAL



▲ VIEWS TO THE NANDEWAR RANGE



▲ VIEW SOUTH FROM MOONBI HILL



▲ THE LIVERPOOL PLAINS

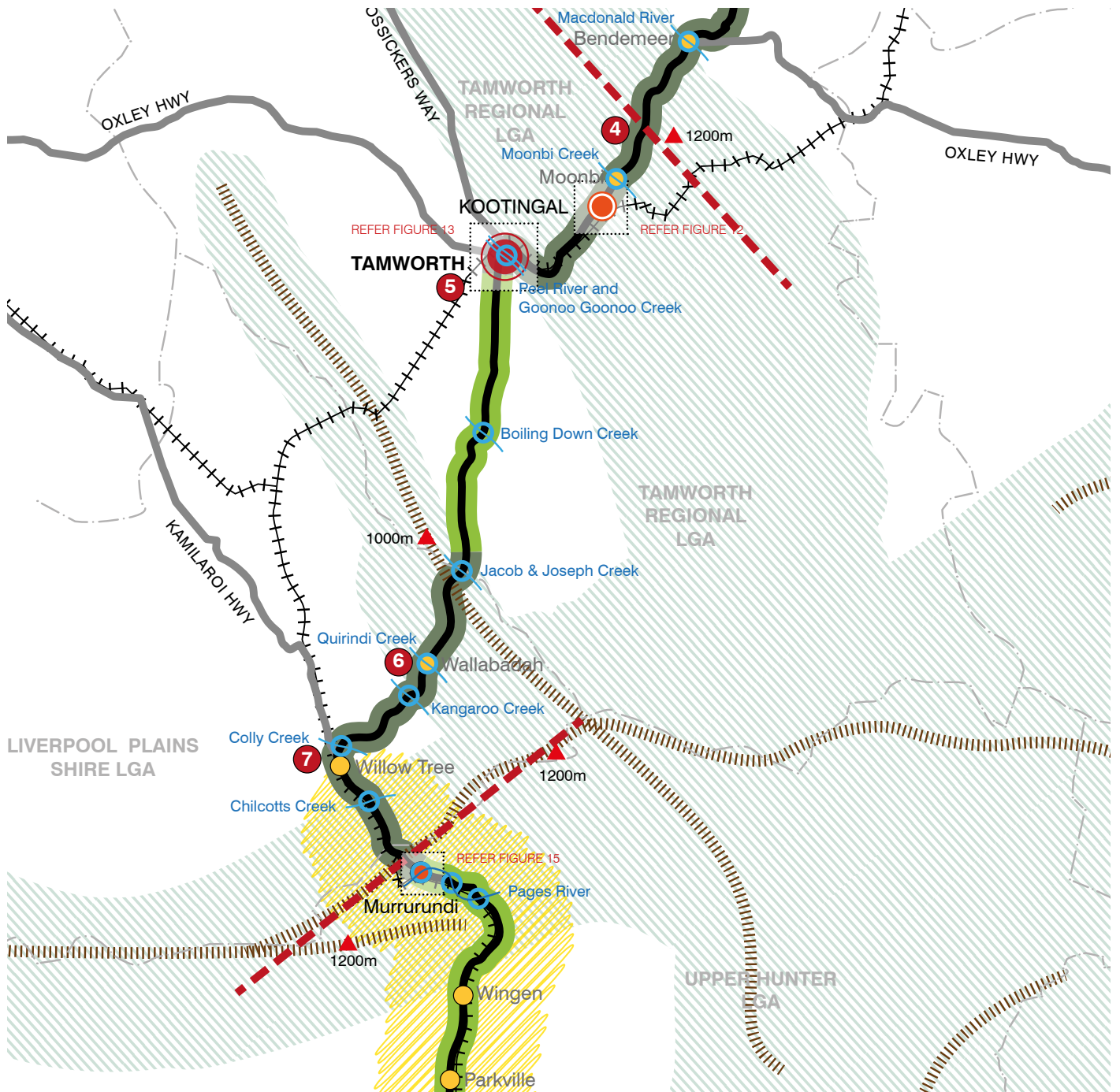


Figure 11: Tamworth Valley and Liverpool Plains

4.8.2.1 Kootingal



- Urban Services
- Urban Residential
- Urban Industrial
- Urban Retail/Town Centre
- Urban Retail Large
- Urban Open Space
- Urban River/Creek/Riparian

- Rural Agriculture
- Rural Residential
- Rural Forest
- Rural Lake/ zWatercourse
- Railway Line
- Disused Railway Line

- Town Centre (if not on New England Highway)
- Water crossing



Figure 12: Kootingal



▲ THE HIGHWAY PASSES BY THE EDGE OF KOOTINGAL WITH VIEWS TO THE NANDEWAR MOUNTAIN RANGE

- designated a Major Town
- the two lane highway skirts the rural residential edge with development set well back from the road
- the journey north provides distinctive vistas to the peaks of the Nandewar Range and south to the Liverpool Range

4.8.2.2 Tamworth

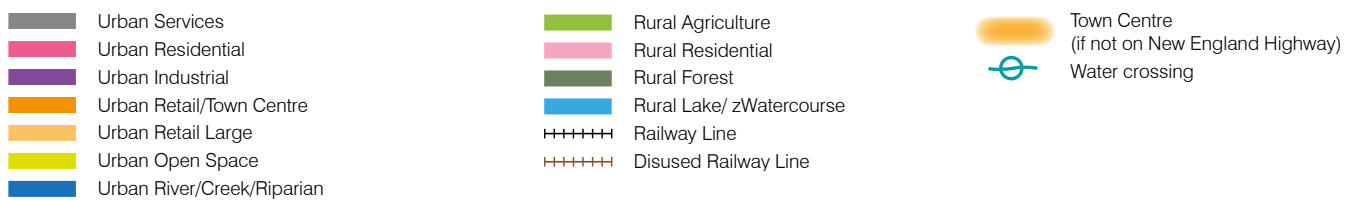
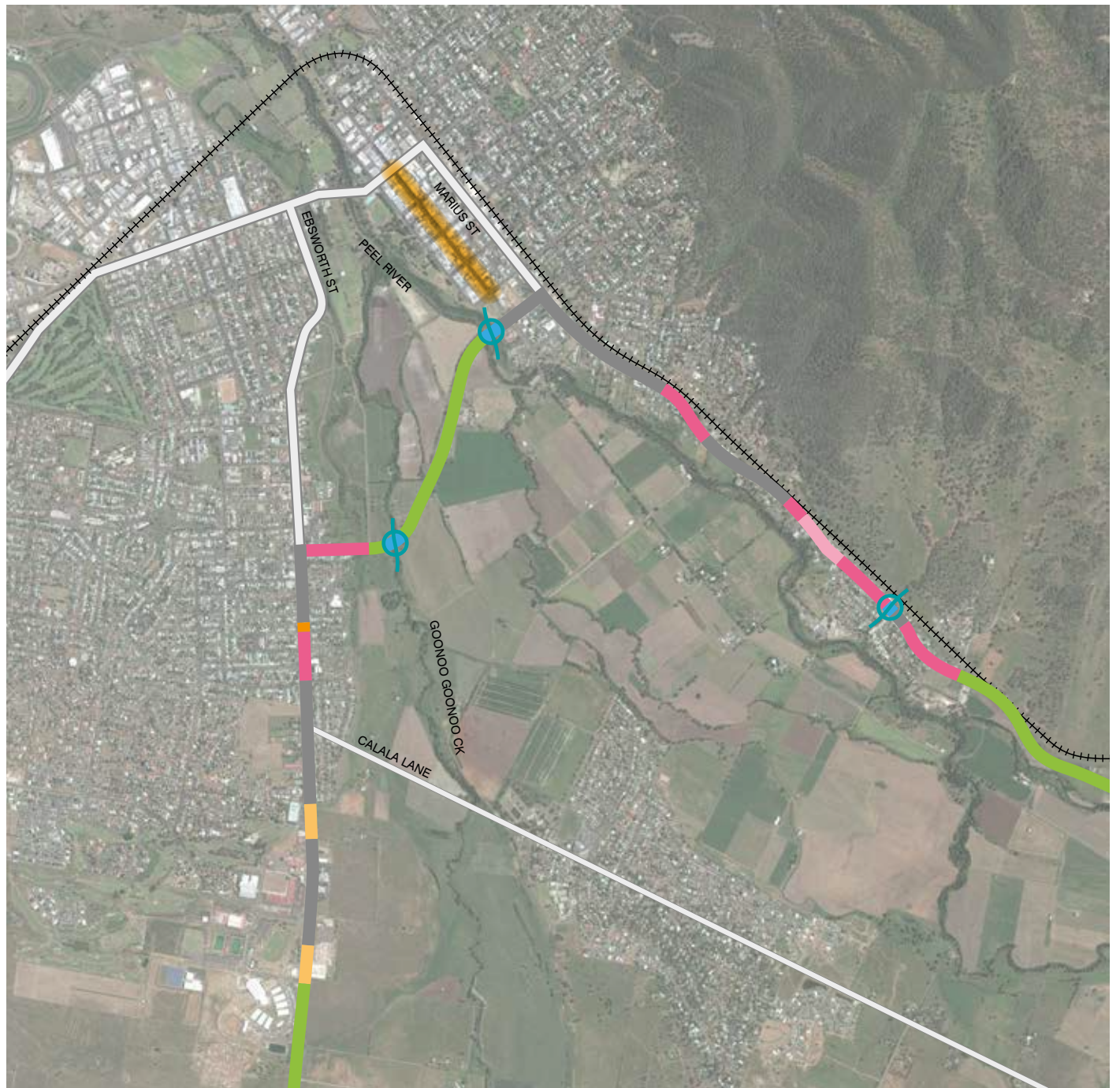


Figure 13: Tamworth



▲ THE ROAD IS A DIVIDED CARRIAGEWAY WITH A TURFED/TREED MEDIAN AND BIKE LANES ON EITHER SIDE



▲ THE INTERSECTION WITH THE OXLEY HIGHWAY



▲ LANDMARK GOLDEN GUITAR IS HIDDEN BY SIGNAGE



▲ THE BIG GOLDEN GUITAR

- major regional centre
- the highway bypasses the main town centre to the east
- Cultural landmark of the Big Golden Guitar somewhat hidden by the large fast food and retail outlet signage
- the road is a divided carriageway
- central turfed/ treed median
- dedicated bike lanes either side

- parallel parking for the first kilometre
- two lane deviation at Vera Street skirts the town centre edge
- between Peel River/ Peel Street and Oxley Highway it becomes a divided road again with a central landscaped median and parallel parking
- from Oxley Highway intersection it once again becomes a two lane road

4.8.3 Upper Hunter Country

The Great Dividing Range and Great Escarpment are dominant landscape features with the Liverpool Range forming the northern extent of this sub-region. The route character comprises stretches of highway through agricultural/ equine grazing lands, coal mining areas and town centres/ villages and town centre/ village edges. The Hunter is Australia's oldest and most productive coal mining region and has the second largest concentration of horse stud farms in the world ². Mines are clustered to the east and west of the New England Highway from Muswellbrook to Singleton. From Murrurundi to Aberdeen, the equine industry is concentrated with its distinctive timber fencing and cultural screen/ avenue planting along property fence lines. Viticulture industry is located further to the west, which the New England Highway provides access to. The road has long flat to undulating stretches with open pastoral views to rolling plains and forested hills in the distant view. New bridges have been constructed to allow for future dual carriageways such as at Rix Creek. (Refer Figure 14)

Murrurundi is a picturesque historic town nestled in the foothills of the Liverpool Ranges and Pages River. The highway passes through the centre of town and the road corridor is four lanes wide, with parallel parking and two dedicated cycle lanes either side of the highway. Street setbacks vary from none for heritage buildings to small for other building types. (Refer Figure 15)

Scone, Muswellbrook and Singleton are Major Town Centres. The highway passes through the main town centres of Scone and Muswellbrook but not Singleton. Scone is known as the Horse Capital of Australia and comprises a road four lanes wide with a landscaped median and parallel parking, a historic strip retail main street, wide footpaths shaded by awnings with no building setbacks to the road corridor. (Refer Figure 16)

Muswellbrook is similar but less well landscaped comprising four lanes with a paved median and parallel parking, an historic strip retail main street, wide footpaths shaded by awnings with no building setbacks to the road corridor. The highway narrows to a single lane either way at the Railway Bridge where gateway signage announces the gateway to Muswellbrook. On the outskirts of Muswellbrook, to the south, the median is landscaped with crepe myrtle trees with native grass understorey plantings providing a colourful and distinctive journey experience. To the north of Muswellbrook is the Muswellbrook Memorial Grove featuring a one kilometre avenue of trees located on the eastern verge between the highway and the railway line. It comprises a memorial to veterans of World War II, Vietnam, National Service, the Korean, Malayan and Borneo campaigns. (Refer Figure 18)

The approach to Singleton from the north provides views over the Singleton Valley from McDougalls Hill. The highway crosses the Hunter River on the town centre outskirts and is the only major river crossing on the highway route. The highway corridor is narrow through Singleton, with historic strip retail buildings aligning the corridor with no setbacks to the street and no landscaping. The southern outskirts have a narrow turfed verge with footpaths and small setbacks to residential buildings. (Refer Figure 19)

² <http://www.planning.nsw.gov.au/~media/Files/DPE/Plans-and-policies/draft-hunter-regional-plan-2015-11.ashx>



▲ BAYSWATER POWER STATION VISIBLE FROM THE HIGHWAY.



▲ TIMBER FENCING AND PLANTING ALONG PROPERTY FENCE LINES TYPICAL OF THE EQUINE INDUSTRY



▲ VIEWS TO THE ESCARPMENT WEST OF THE HIGHWAY.

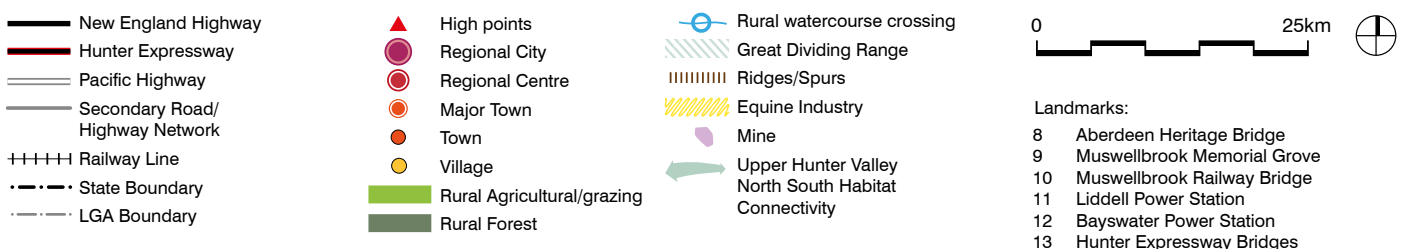
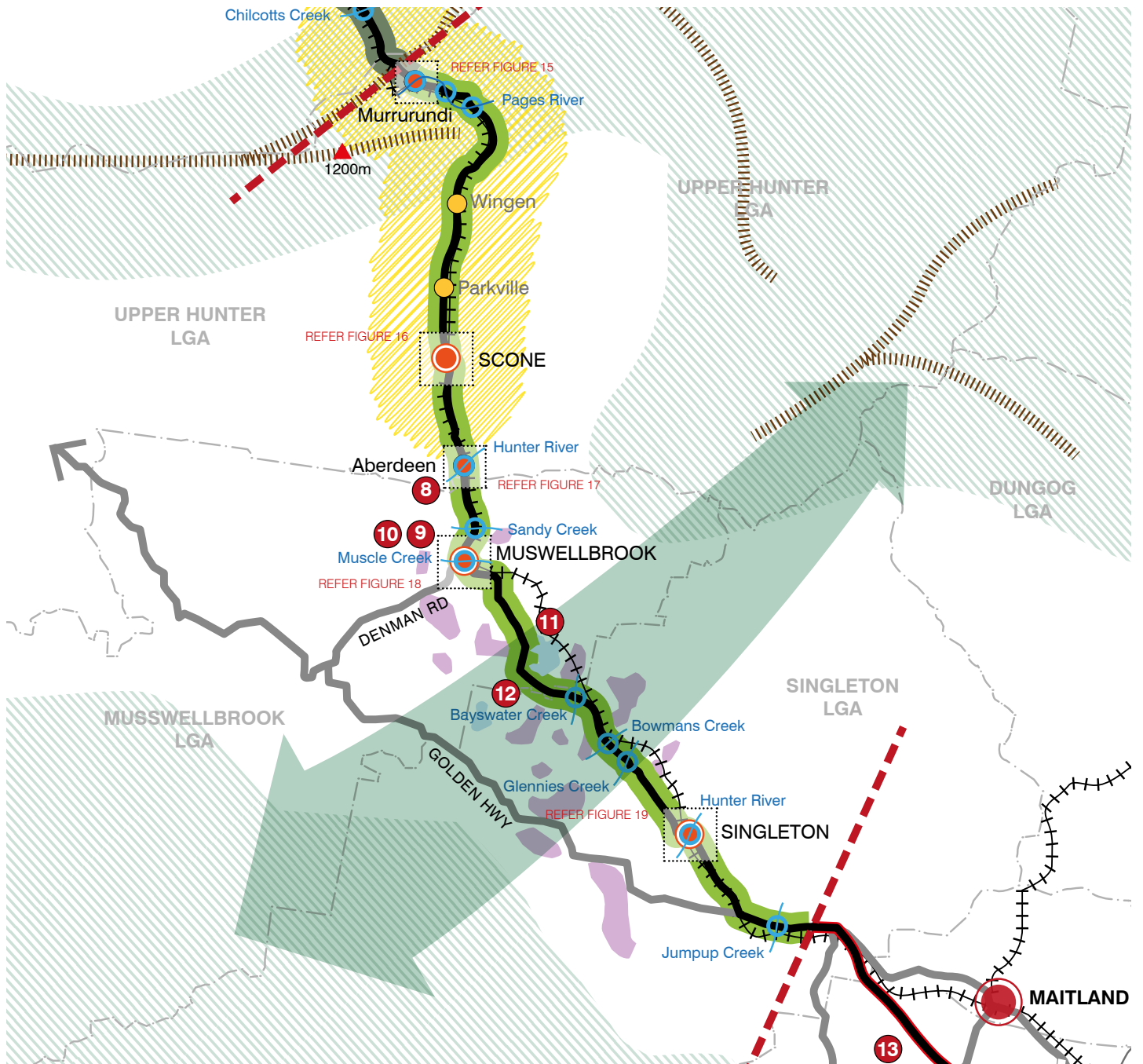


Figure 14: Upper Hunter Country

4.8.3.1 Murrurundi



- Urban Services
- Urban Residential
- Urban Industrial
- Urban Retail/Town Centre
- Urban Retail Large
- Urban Open Space
- Urban River/Creek/Riparian

- Rural Agriculture
- Rural Residential
- Rural Forest
- Rural Lake/ zWatercourse
- Railway Line
- Disused Railway Line

- Town Centre
(if not on New England Highway)
- Water crossing



Figure 15: Murrurundi



▲ DISTINCTIVE GATEWAY SIGNAGE TO MURRURUNDI



▲ PICTURESQUE HERITAGE BUILDINGS



▲ THE ROAD THROUGH MURRURUNDI FEATURES BIKE LANES ON EITHER SIDE



▲ NO STREET SETBACKS FOR HERITAGE BUILDINGS

- a picturesque historic town
- the highway passes through the centre of town
- the road corridor is four lanes wide
- parallel parking and two dedicated cycle lanes either side of the highway
- street setbacks vary from none for heritage buildings to small for other building types
- distinctive timber fencing and cultural screen/ avenue planting along property fence lines

4.8.3.2 Scone



- Urban Services
- Urban Residential
- Urban Industrial
- Urban Retail/Town Centre
- Urban Retail Large
- Urban Open Space
- Urban River/Creek/Riparian

- Rural Agriculture
- Rural Residential
- Rural Forest
- Rural Lake/ zWatercourse
- Railway Line
- Disused Railway Line

- Town Centre
(if not on New England Highway)
- Water crossing



Figure 16: Scone



^ THE HIGHWAY PASSES THROUGH THE TOWN CENTRE



^ THE HISTORIC STRIP RETAIL MAIN STREET FEATURES A LANDSCAPED MEDIAN, NO SETBACKS AND AWNINGS



^ AVENUE OF TREES ON APPROACH TO SCONE

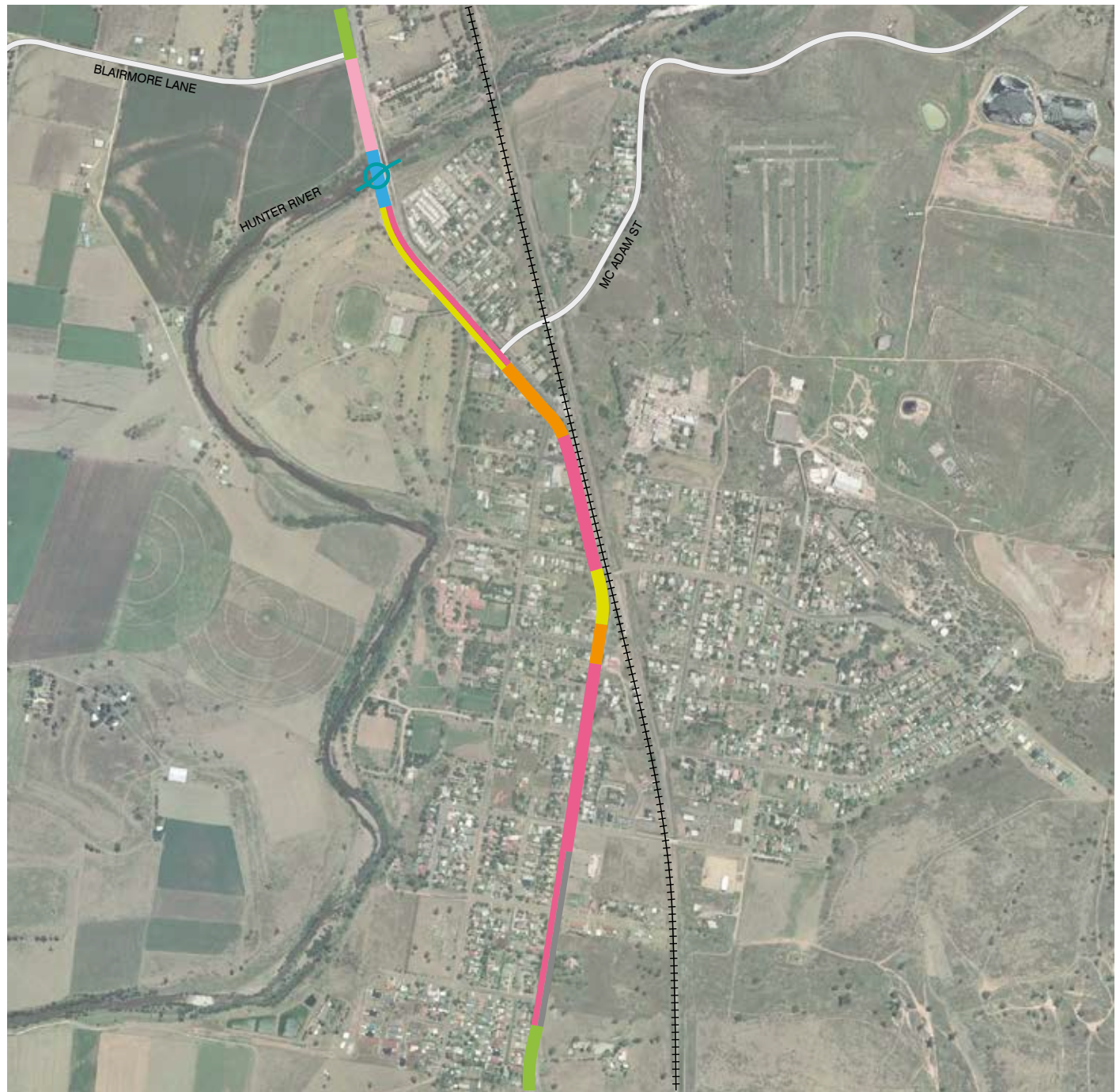


^ VIEWS TO HINTERLAND

- designated a Major Town Centre
- the highway passes through the main town centre
- known as the Horse Capital of Australia
- comprises a road four lanes wide with a landscaped median and parallel parking

- historic strip retail main street with wide footpaths shaded by awnings
- no building setbacks to the road corridor

4.8.3.3 Aberdeen



- Urban Services
- Urban Residential
- Urban Industrial
- Urban Retail/Town Centre
- Urban Retail Large
- Urban Open Space
- Urban River/Creek/Riparian

- Rural Agriculture
- Rural Residential
- Rural Forest
- Rural Lake/ zWatercourse
- Railway Line
- Disused Railway Line

- Town Centre
(if not on New England Highway)
- Water crossing



Figure 17: Aberdeen



^ AVENUE PLANTING ALONG FENCELINES ON APPROACH TO ABERDEEN



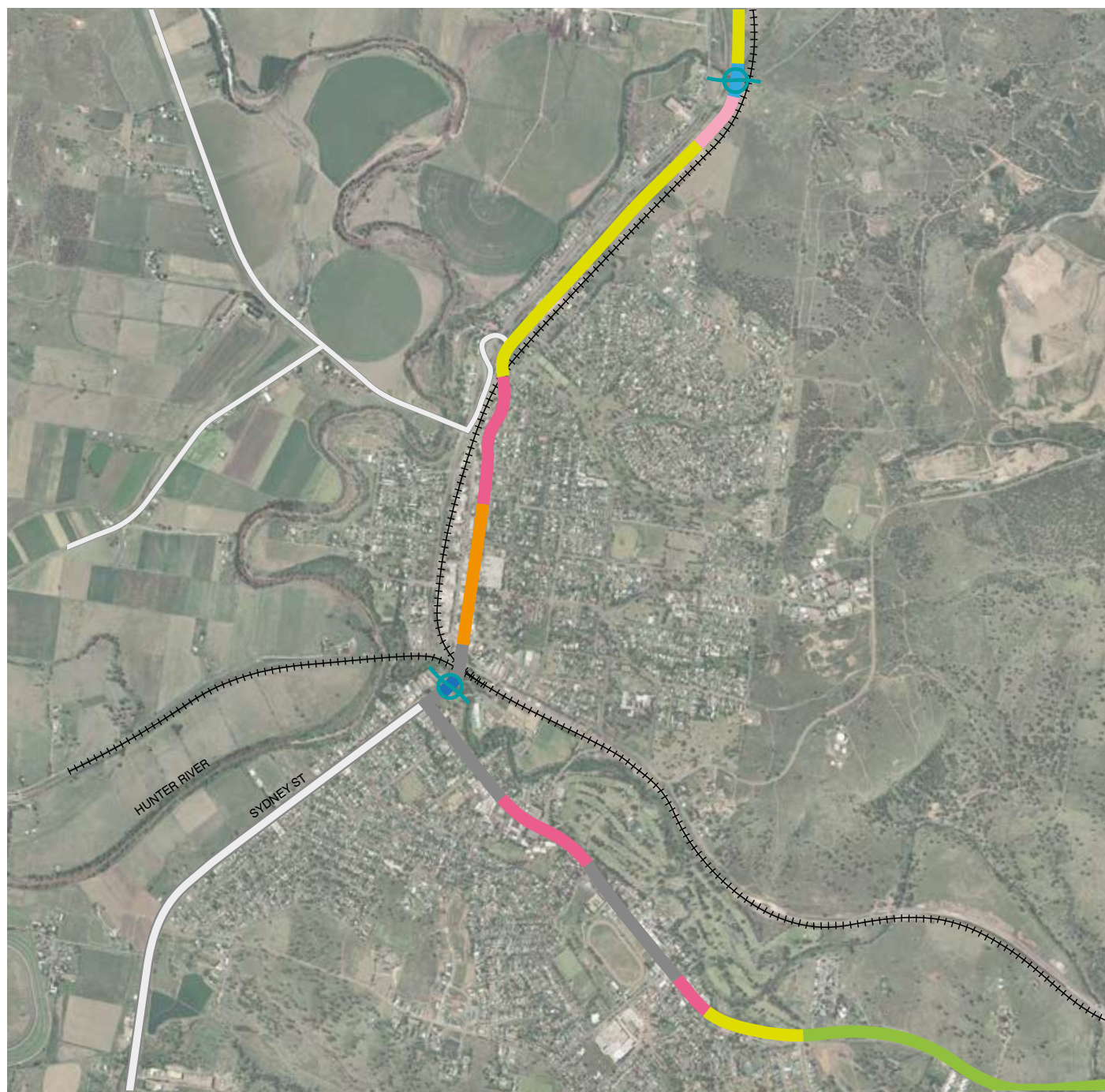
^ AVENUE PLANTING THROUGH ABERDEEN



^ THE ROAD CORRIDOR IS NARROW THROUGH ABERDEEN

- distinctive timber fencing and cultural screen/ avenue planting along property fence lines
- pedestrian and cycle link

4.8.3.4 Muswellbrook



- Urban Services
- Urban Residential
- Urban Industrial
- Urban Retail/Town Centre
- Urban Retail Large
- Urban Open Space
- Urban River/Creek/Riparian

- Rural Agriculture
- Rural Residential
- Rural Forest
- Rural Lake/ zWatercourse
- Railway Line
- Disused Railway Line

- Town Centre (if not on New England Highway)
- Water crossing



Figure 18: Muswellbrook



^ MUSWELLBROOK MEMORIAL GROVE



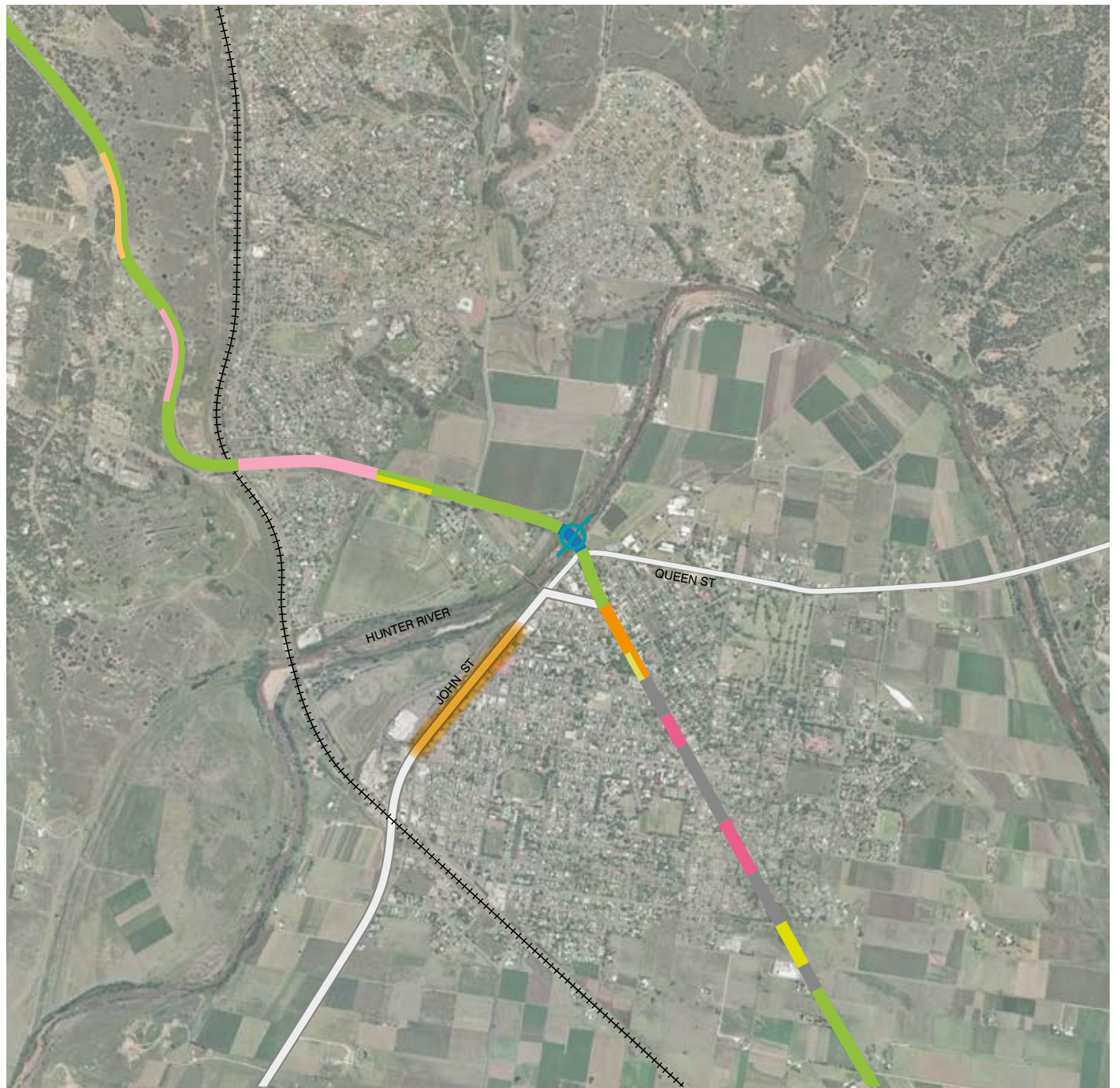
^ THE HIGHWAY NARROWS AT THE RAILWAY BRIDGE



^ THE HIGHWAY PASSES THROUGH THE HISTORIC MAIN TOWN CENTRE

- designated a Major Town Centre
- the highway passes through the main town centre
- the road comprises four lanes with a paved median and parallel parking
- an historic strip retail main street with wide footpaths shaded by awnings
- no building setbacks to the road corridor
- the highway narrows to a single lane either way at the Railway Bridge
- at the southern outskirts the median is landscaped with crepe myrtle trees with native grass understorey plantings
- local landmark visible in the road journey includes the Muswellbrook Memorial Grove to the north of the town

4.8.3.5 Singleton



- Urban Services
- Urban Residential
- Urban Industrial
- Urban Retail/Town Centre
- Urban Retail Large
- Urban Open Space
- Urban River/Creek/Riparian

- Rural Agriculture
- Rural Residential
- Rural Forest
- Rural Lake/ zWatercourse
- Railway Line
- Disused Railway Line

- Town Centre (if not on New England Highway)
- Water crossing



Figure 19: Singleton



▲ THE HIGHWAY CORRIDOR IS NARROW THROUGH SINGLETON AND FEATURES HISTORIC STRIP RETAIL BUILDINGS



▲ HIGHWAY RETAIL



▲ NARROW CORRIDOR THROUGH SINGLETON

- designated a Major Town Centre
- the highway corridor is narrow through Singleton
- historic strip retail buildings align the corridor with no setbacks to the street and no landscaping
- the southern outskirts have a narrow turfed verge with footpaths and small setbacks to residential buildings
- the approach from the north provides views over the Singleton Valley from McDougalls Hill
- the highway crosses the Hunter River on the town centre outskirts and is the only major river crossing on the highway route

4.8.4 Lower Hunter Country

The Lower Hunter Country section of the New England Highway is defined by the divided motorway character of the Hunter Expressway and Newcastle Link Road to the north and Newcastle Regional City Centre to the south-east. It is characterised by areas of rural agricultural, forested lands, city centre and suburbs. Key industries include wine production and associated tourism. (Refer Figure 20)

The route character to the north comprises large stretches of divided four lane motorway through agricultural lands and forests (the Hunter Expressway). Views are confined to the corridor predominantly with heavily landscaped and forested edges. The Hunter Expressway provides a distinctive journey with bridges that frame views, noise walls that reference the adjacent context and a forested landscape. At Wallsend, the highway has an urban arterial character with four traffic lanes, a median paved or landscaped, a dedicated bike path either side and parallel parking.



▲ THE CORRIDOR FEATURES HEAVILY LANDSCAPED AND FORESTED EDGES



^ VIEWS TO THE SUGARLOAF RANGES FROM THE HUNTER EXPRESSWAY

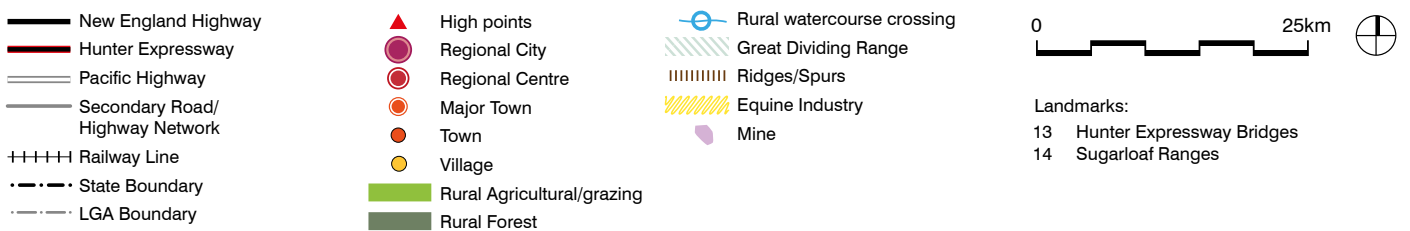
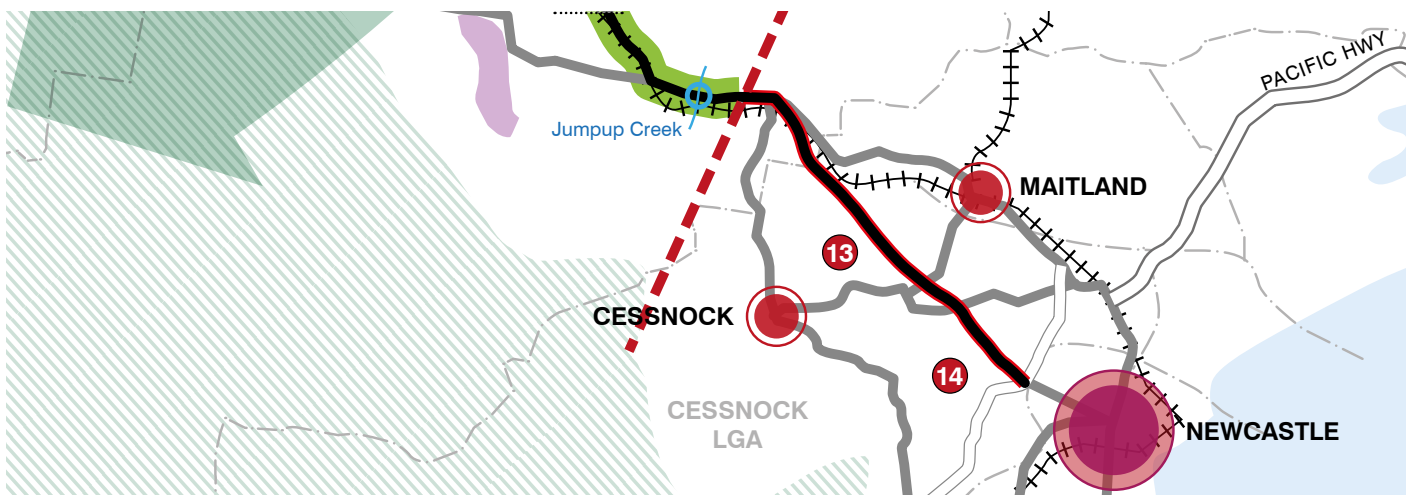


Figure 20: Lower Hunter Country

5.0 Landscape Character Zone Sensitivity

Refer Figure 21.

The overall landscape character and visual quality of the typologies is consistent for the New England High Country, Tamworth Valley, Lower Hunter Country and the northern section of the Upper Hunter Country. The only exceptions are the southern section of the Upper Hunter Country below Muswellbrook, where mining activities have led to a high degree of modification of the landscape and therefore a lower sensitivity and the Tamworth Valley where the topography is less varied.

In town centres with heritage streetscapes, at river and creek crossings and scenic areas such as Moonbi and Bolivia Hill, the sensitivity is high to very high. In the New England High Country, Lower Hunter Country and the northern section of the Upper Hunter Country, the sensitivity varies from medium to high depending on the degree of modification and land use activity. For example, villages are generally more sensitive than pasture or agricultural lands and urban residential more sensitive than urban industrial.

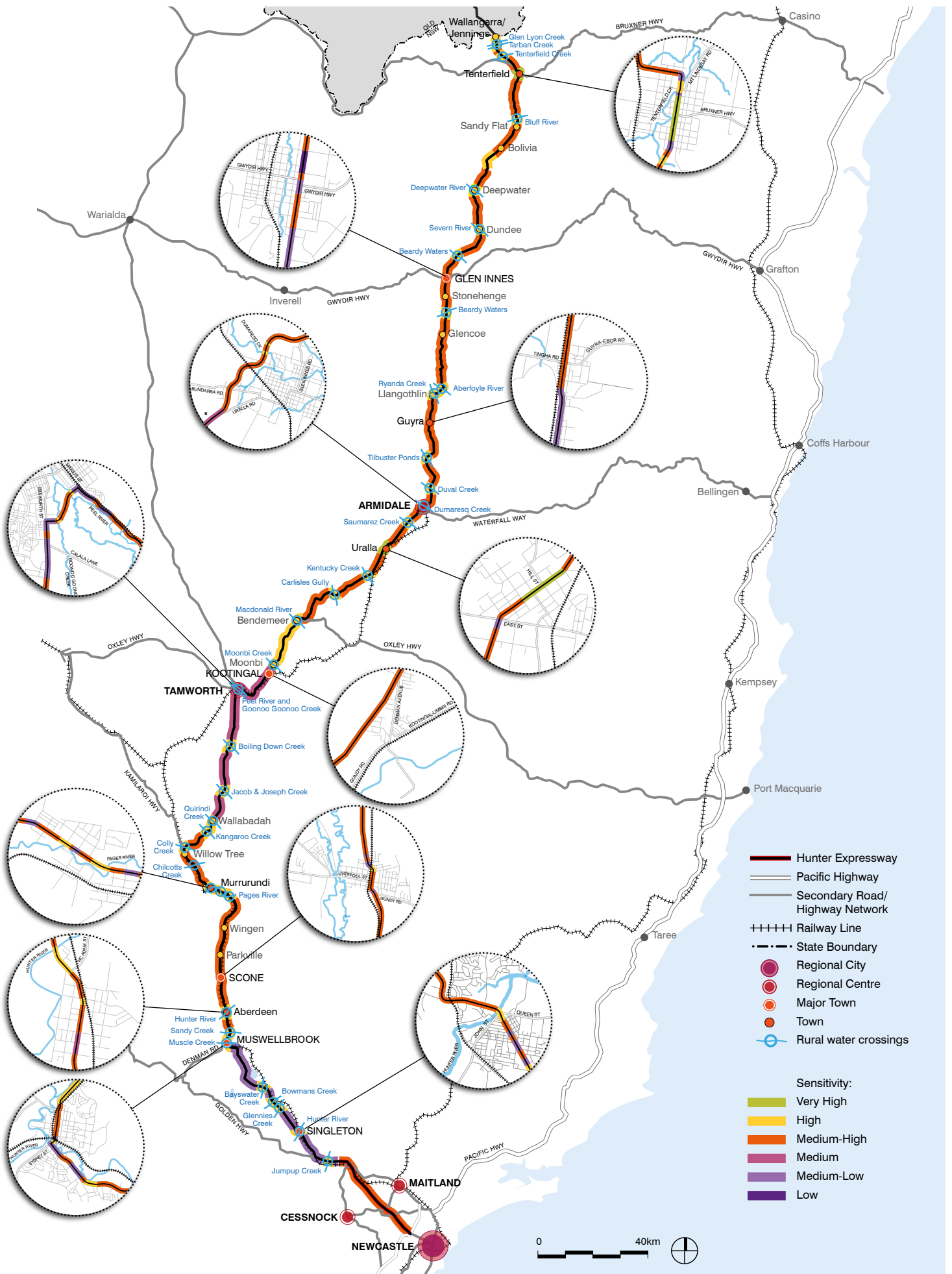


Figure 21: New England Highway - Landscape Character Zone Sensitivity

6.0 Corridor Strategy

Refer Figure 22.

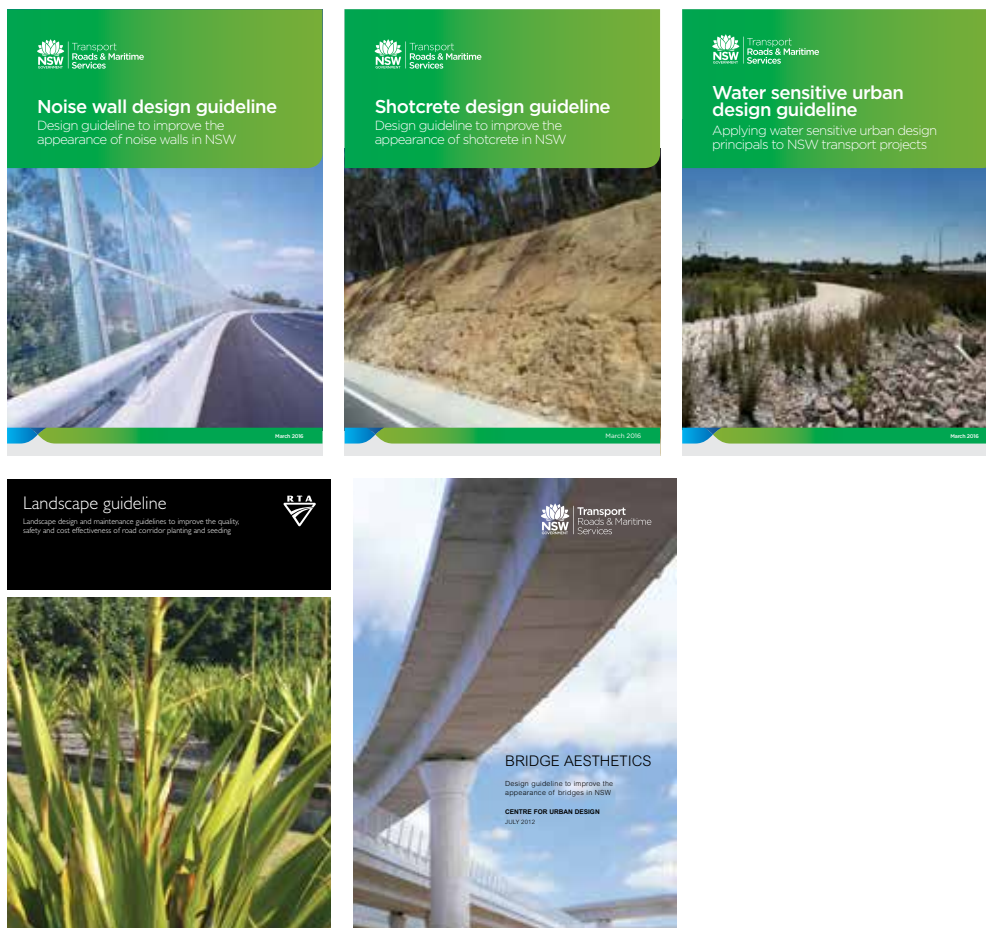
The following Vision seeks to retain and enhance the distinct character of the New England Highway and its sub-regions.

The New England Highway will be an attractive well vegetated hinterland highway that takes its identity and character from its unique relationship to the regional geography of the Great Dividing Range, rivers, creeks, forests, town centres, agricultural and energy lands. It will provide a journey experience that distinguishes between the New England High Country, Tamworth Valley, Liverpool Plains, Upper and Lower Hunter sub regions. It will provide for various modes of movement, including freight, passenger and local journeys that promote universal accessibility and sustainability.

The road journey offers a variety of experiences, designed in response to the adjacent built and landscape context, as it passes through the Upper and Lower Hunter, the Tamworth Valley, Liverpool Plains and New England High country. This responsiveness to context provides a degree of legibility along the road for local people as well as wider regional users. These landscape experiences include distant views to the Great Dividing Ranges, Liverpool and Moonbi Ranges, local views to adjacent landmarks such as the historic towns and villages, the Big Golden Guitar in Tamworth, horse farms through Aberdeen and Scone, Moonbi Hill, Bluff Rock, Thunderbolts Rock, the Grain Loading Facility at Willow Tree, First Fleet Park at Wallabadah and the Railway Line.

6.1 Corridor Objectives and Principles

The following objectives adapt, revise and augment the nine RMS urban design principles in “Beyond The Pavement” to enable the New England Highway vision and guide potential road upgrades, improvements and maintenance along the New England Highway. They are also supplemented by the following RMS Guidelines.



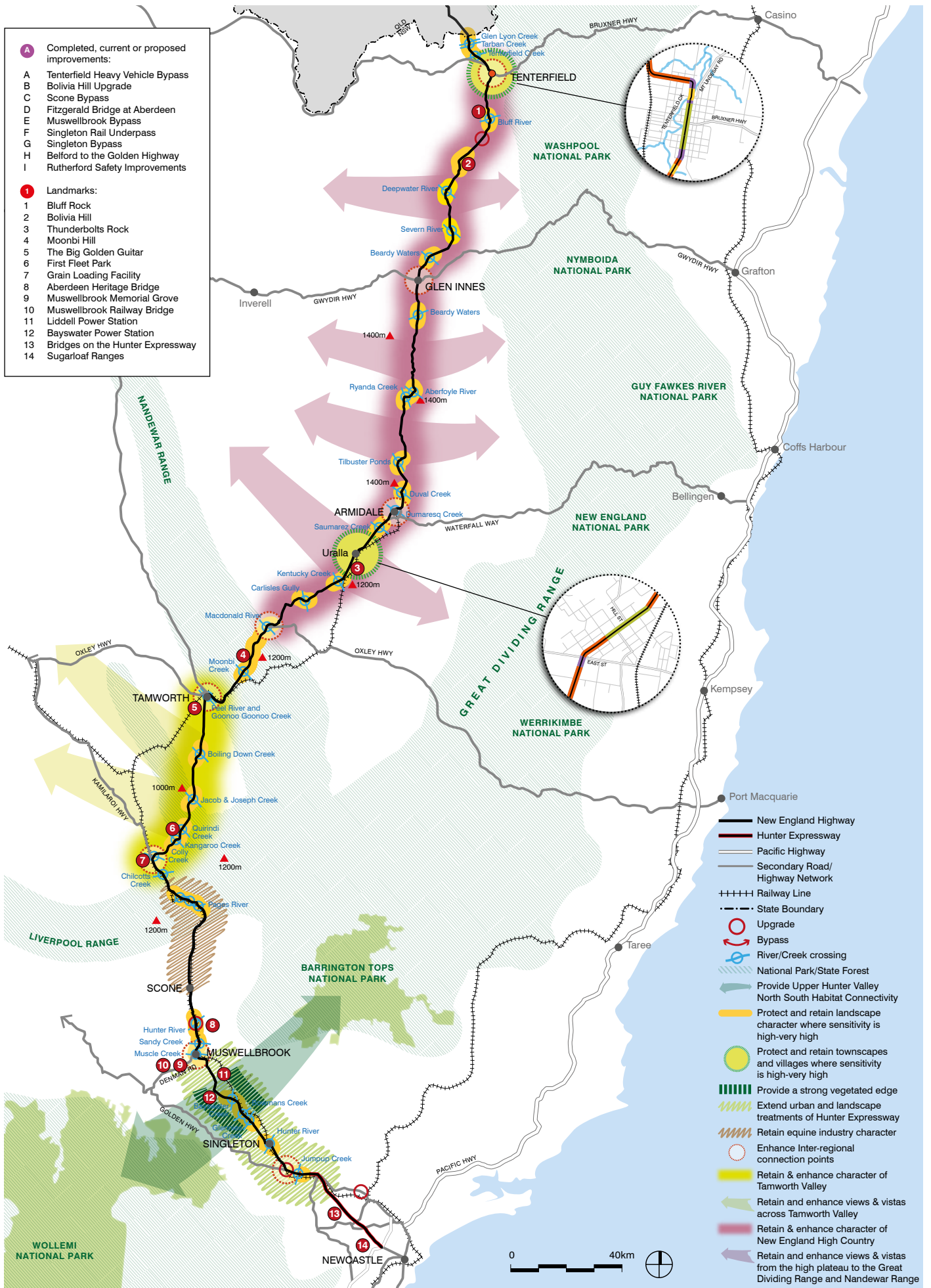


Figure 22: New England Highway - Corridor Strategy and Challenges

Objective 1: Contribute to urban structure and revitalisation and fit with the built, heritage and cultural fabric. Retain and enhance the relationship of the highway to its Regional Centres, Major Towns, Towns and Villages of the New England and Hunter Region that provide identity and legibility in the New England Highway journey:

- Consider both transport and community needs in the planning and design of upgrades and enhancements, improving safety and operational efficiency and also maintaining amenity and economic viability for the community.
- Retain the sense of place and distinct identities of the particular urban centres.
- Integrate historic buildings and precincts into the road design.
- Protect and incorporate Aboriginal heritage in the road design.
- Maintain, enhance and protect European cultural plantings, such as plane tree avenues, evident on many approaches to urban centres in the New England and Upper Hunter regions such as Guyra.
- Adapt and re-use heritage infrastructure and protect bridges of heritage significance within their setting. A recent example is the new shared path bridge at Aberdeen which utilises the existing heritage bridge enhancing its significance. Adjacent some parts of the highway there are rail bridges visible from the highway such as at Tenterfield Creek which provide interest in the journey experience. Preserve roads that provide a sense of history.
- Minimise construction and operation impacts on the community and local environment by keeping the road footprint to the minimum possible to achieve a good design outcome.
- Avoid adverse visual impacts in the planning and design. Screen views to sensitive receivers such as residences where impacts are unavoidable.
- Consider the potential use of adjoining land and ensure the highway design consider access issues related to the use.
- Consider the role of road transport infrastructure in revitalizing and transforming areas.
- Consider the potential opportunities of a reduction in traffic volume for better amenity outcomes such as a reduction in noise, improved pedestrian safety and potential for urban revitalisation opportunities such as road pavement narrowing, increased footpath widths, street parking, cycleways and street tree plantings.



^ THE NEW ROAD BRIDGE AT ABERDEEN PROVIDES A STREAMLINED ELEGANT STRUCTURE THAT VISUALLY COMPLEMENTS AND IS SYMPATHETIC TO THE HERITAGE BRIDGE, WITH PIERS THAT ALIGN IN PLAN, A ROUNDED PIER SHAPE THAT IS SIMILAR TO THE HERITAGE PIER BUT DOES NOT REPLICATE IT



^ HERITAGE STREETSCAPES SUCH AS URALLA NEED TO BE SENSITIVELY INTEGRATED

Objective 2: Fit with the landform. Respond to changes in landform as the New England Highway traverses the plains, plateaus, spurs and ranges of the Great Dividing Range.

- Form a road in response to topography and landform. Provide a constantly varying horizontal (curving, straight) and vertical (undulating, flat) alignment.
- Adopt variable embankment slopes to meet the topography rather than adopting a constant grade.
- Minimise the physical footprint, including during the construction phase.
- Consider slope stabilisation design as part of the project:
 - Provide soft, feathered transitions. Tops, bottoms and ends of cuttings should be rounded off to remove hard edges to landform.
 - Grade out landform to match existing adjacent slopes but no steeper than 1(V) in 2(H), unless rock. In flatter open areas such as through the Liverpool Plains, minimise embankments and mounding.
 - Avoid shotcrete and minimise areas of shotcrete if required.
 - Where shotcrete is visible from the highway or residences, it should be screened by vegetation if practicable or designed to be visually recessive and unobtrusive through colour and texture matching. In highly scenic areas such as key views/ vistas and towns shotcrete should not be visible and faced with concrete panels.
- Utilise landform such as positioning of cuttings or embankments or noise mounds for noise attenuation if required.



▲ HERITAGE RAIL BRIDGES VISIBLE FROM THE NEW ENGLAND HIGHWAY

Objective 3: Design an experience in movement and create a self-explaining road environment that recognises and reflects the interaction with the topography of the Great Dividing Range, the changes between urban and rural areas, local natural and heritage landmarks and the unique industries of the Hunter and New England Regions with the road alignment.

- Enhance and frame views from the road. Considering lower height plant species where views are available. Maximise views to key landmarks identified in 4.7 *Views and Vistas: Natural and Built Landmarks* including:
 - The granite rock boulder outcrops in the New England High Country;
 - Distant vistas to the Liverpool, Nandewar and Great Dividing Ranges;
 - Town centre signage; and
 - Local landmarks.
- Provide visual stimuli within the road corridor to enliven the road journey experience.
- Retain and enhance the progressive sequence of visual events such as:
 - The character of the equine industry around Scone and Aberdeen with its distinctive horse fence railings.
- Consider the inclusion of interpretive signage or artwork on sections with few distinctive landmarks.



▲ DISTINCTIVE HORSE FENCE RAILINGS AROUND SCONE AND ABERDEEN



▲ TOWN CENTRE SIGNAGE AT MURRURUNDI



▲ DISTANT VIEWS TO THE LIVERPOOL RANGE



▲ GRANITE BOULDER OUTCROPS IN THE NEW ENGLAND HIGH COUNTRY

Objective 4: Respond to natural vegetation patterns. Ensure the road design reflects the change in landscape character from enclosed forest to more open, scattered trees on pasture grasses and waterway crossings.

- Integrate natural patterns and systems into the road design. Identify adjacent vegetation communities and land use patterns and design complementary highway landscape.
- Ensure physical continuity of natural systems. Provide connectivity and safe, effective crossings for native fauna.
- Minimise the impact on native vegetation and retain as much native vegetation in the highway design as possible through steepening embankments, widened medians or utilising barriers to reduce clearance zone distances.
- Avoid the introduction of native weed species.
- Enhance waterway crossings and retain views out from the road. Where noise walls may be required on bridges consider the use of transparent panels to retain views.
- Provide distinctive trees at key points such as rest areas, town centre entryways and major interchange points. For example, utilising species already evident including:
 - Poplars (*Populus sp.*) (along property boundaries and to screen properties from the highway)
 - Plane Trees (*Platanus sp.*) (Singleton, Tamworth, Glenn Innes)
 - Canary Island Palms (*Phoenix canariensis*) (Singleton)
 - Hoop Pine (*Araucaria cunninghamii*) (Singleton)
 - Silky Oaks (*Grevillea robusta*) (Kootingal)
 - Crepe Myrtles (*Lagerstroemia indica*) (Aberdeen, Scone)
 - Prunus sp. (Kootingal)
 - Tuckeroos (*Cupaniopsis anacardioides*) (Aberdeen)
 - Figs (Muswellbrook)
 - Jacaranda sp. (Singleton, Muswellbrook)
 - Brushbox (*Lophostemon confertus*)



▲ AVENUE OF POPLARS



▲ MEDIAN PLANTING AT GLEN INNES



▲ MEDIAN PLANTING AT MUSWELLBROOK

Objective 5: Connect transport modes (road, rail, cycling) and communities

- Consider requirements for connections into and through surrounding street, footpath and cycle networks.
- Consider requirements for community access to road, rail and cycling facilities.
- Consider where people want to cross and the quality of crossing points.

Objective 6: Achieve integrated and minimal maintenance design.

- Utilise robust durable materials fit for purpose and place.
- Provide a self-reliant and minimal maintenance natural landscape.
- Avoid opportunities for vandalism. Provide landscape screening to wall surfaces as far as possible to deter graffiti.



▲ ON ROAD CYCLEWAYS THROUGH TAMWORTH

Objective 7: Provide a simple, coordinated and neat composition of road elements along the corridor

- Signage, Variable Message Signs
 - Keep all signage below the skyline with a backdrop of landform and vegetation.
 - Ensure signage does not block important views and avoid putting in highly scenic areas.
- Fencing
 - Locate fencing to minimise visual impact. Where fencing will be visible and not able to be screened by vegetation utilise dark coloured mesh.
- Bridges

Overbridges and bridges over rivers should belong to the same design family and should be considered as part of a suite of unified elements along the whole highway. For example:

 - For the Lower Hunter north of the Hunter Expressway and the Upper Hunter to Muswellbrook, consider using walled abutment bridges without piers to continue the “framed view” character of bridges from the Hunter Expressway. Consider also the banded walled abutment design adjusted to reflect adjacent cultural materials to the north.
 - From the Liverpool Plains north to the border, consider utilising spill through abutments for bridges to maximise views through and over the highway. Piers should be columnar without headstocks or a blade design.
 - Consider opportunities for one off distinctive bridges where appropriate.
 - Maximise views by utilising twin rail barriers.



▲ SPILL THROUGH ABUTMENTS MAXIMISE VIEWS - PACIFIC HIGHWAY EXAMPLE



▲ WALLED ABUTMENTS ON THE HUNTER EXPRESSWAY

Objective 7: Provide a simple, coordinated and neat composition of road elements along the corridor (continued)

- Noise and Retaining Walls
 - Minimise the visibility of walls by providing landscape screening in front of walls or using transparent noise walls on bridges.
 - Ensure walls have a smooth top edge (no stepping), following the horizontal alignment of the carriageway.
 - Where noise and retaining walls are visible with limited screening opportunities, utilise textures, patterns, colour to provide a secondary layer of meaning referencing the adjacent context providing recognition in the road journey for motorists.
 - Where noise walls are screened by vegetation and require painting to minimise visual impact, particularly for modular panel walls, utilise dark recessive colour finishes such as charcoal.
 - Enable views from bridges to surrounding context by utilising transparent noise walls.
 - Ensure walls have a simple plan alignment, straight or smoothly curved with no kinks.
 - Minimise the perceived height of walls through laying back the vertical face.
 - Panel surface design should discourage graffiti and consider methods for removal.
- Safety and Visual/Headlight Screens
 - Consider providing design continuity in form with the Hunter Expressway north to Musswellbrook.
 - Integrate screens into the design of bridges and barriers.
 - Ensure screens have a smooth top edge (no stepping), following the horizontal alignment of the carriageway.
 - Headlight screens should be a dark recessive colour. Consider utilising a mesh that allows views from one direction but blocks headlights in the other.



▲ HUNTER EXPRESSWAY CRANKED STEEL BEAM SAFETY SCREEN



▲ HUNTER EXPRESSWAY NOISE WALL PATTERNING REFERENCES THE ADJACENT VINEYARD CONTEXT

Objective 7: Provide a simple, coordinated and neat composition of road elements along the corridor (continued)

- Rest Areas
 - Locate rest areas as far as practicable in scenic areas or where there are views to surrounding landscape.
 - Provide rest areas that are landscaped, with shade trees and grassed areas. Parking areas should also be separated by planting.
 - Consider requirements of different users for example truck and trailer parking requirements versus light vehicle requirements for quiet restful areas.



▲ BUCHANAN REST AREA AMENITIES ON THE HUNTER EXPRESSWAY



▲ BUCHANAN REST AREA ON THE HUNTER EXPRESSWAY PROVIDES GOOD QUALITY AMENITIES AND SCENIC VIEWS

6.2 Corridor Challenges

- **Protect and retain landscape character, particularly where landscape sensitivity is high.** Where upgrades or safety works are required to improve alignments, safe sight distances, add overtaking lanes or widen shoulders, whilst applying current design standards, consider the unique characteristics of the landscape as an additional layer to the engineering design. Strategies to consider in the design process include:
 - Identify and retain significant views to the Great Dividing Range, Main National Railway, local landmarks and unique landscapes.
 - Balance straightening alignments with maintaining some curves to respond to the variations in landscape and provide a more interesting journey.
 - Locally narrow road footprint design by utilising barriers to protect significant vegetation and minimise visual impact. For example at the Bolivia Hill Upgrade the shoulders were narrowed to reduce the lengths and heights of retaining walls.
 - Where significant variations in topography are encountered, consider cantilevering road carriageway edges to minimise visual impact. For example at the Bolivia Hill Upgrade the carriageway was cantilevered eliminating the need for high retaining walls.
 - Adopt independently graded or split carriageways to better integrate the road into areas where the terrain is steeper, particularly through the Great Dividing Range spurs. For example, north of Murrurundi, the carriageways have been independently graded providing better safety outcomes and a better landscaped outcome through the steeper terrain.
 - Expose underlying rock rather than layback vegetated batters.
 - Steepen batters to protect significant vegetation.

> INDEPENDENTLY GRADED CARRIAGEWAY NORTH OF MURRURUNDI INTEGRATES THE HIGHWAY INTO THE SURROUNDING LANDFORM (IMAGE CREDIT: GOOGLE)



▲ TENTERFIELD CREEK RAIL BRIDGE

- **Improve landscape amenity through the Upper Hunter Country** from the Hunter Expressway north to Muswellbrook. The current corridor landscape through this area has a lower sensitivity and amenity in comparison to other areas due to the high degree of modification of the landscape including the removal of vegetation for mining activities and the heavy freight transport currently occurring. A strategy should be developed for this section that takes into account the future landscape character created through the rehabilitation of the adjacent landscape post mining activities and the proposed north-south Upper Hunter Valley Link. Design considerations may include:
 - Between Muswellbrook and Singleton where the north-south Upper Hunter Valley Link is planned, establish a strong vegetated landscape character such as has been achieved on the Hunter Expressway.
 - Widen medians for improved ecological connectivity and visual outcomes where appropriate. A widened median can allow for retaining existing significant vegetation or new median planting which also breaks down the scale of the road corridor and provide headlight screening.



◀ MEDIAN AT MOONBI PROVIDES AN ENHANCED VISUAL OUTCOME AND BREAKS DOWN THE SCALE OF THE HIGHWAY



▲ STRONG VEGETATED LANDSCAPE CHARACTER ON THE HUNTER EXPRESSWAY IS ENHANCED BY MEDIAN PLANTING

- **Protect and retain historic townscapes and villages** – specific challenges exist for upgrading the highway through Singleton, Muswellbrook, Scone and Tenterfield and some smaller villages due to either a narrow corridor, existing highly valued or historic built form aligning the corridor, or amenity impacts from increased heavy vehicle traffic. Bypasses of these towns and villages will reduce through traffic in particular for heavy vehicles, improving amenity and safety and providing opportunities for urban revitalisation.

Currently for town centres such as Tamworth, Glenn Innes and Guyra the highway bypasses the main street/ retail/ civic centre, skirting the edge of town, so that there is still a sense of passing through the town which breaks up the journey experience, preventing fatigue. These sections often have vegetated medians and avenue tree plantings which also distinguish the journey. Cycle ways and shared paths provide increased amenity and connectivity. It is recommended for smaller towns and villages that require upgrades or safety improvements and that have sufficient corridor width, that this approach is adopted to minimise impacts on sensitive town centre streetscapes. Design considerations include:

- Integrate existing heritage or landmarks by re-using as part of a separated cycle path network such as at Aberdeen.
- Upgrade pedestrian and cycle facilities.



▲ PLANTED MEDIAN IN GLEN INNES
◀ FITZGERALD HERITAGE BRIDGE AT ABERDEEN REUSED AS PART OF CYCLE PATH NETWORK



▲ TAMWORTH TOWN CENTRE - THE HIGHWAY INCLUDES A PLANTED MEDIAN AND VERGES, PARKING LANE AND CYCLE PATHS

For larger towns such as Scone, Muswellbrook, Singleton and Tenterfield, an alternative bypass route offers a more sensitive solution to retain the integrity of the existing highly sensitive streetscapes. For bypasses, important design considerations include:

- Locate bypass far enough away to minimise noise and visual impacts but close enough to ensure a visual connection to the bypassed town to maintain legibility in the road journey. Views to landmarks or built form should be considered in the bypass design with straightforward access associated with the view.
- Provide a distinctive town address for the town on the highway which increases the legibility for the motorist. This could include a distinctive plant palette and layout, signage and landmark elements at main access/ interchange points.
- Improvements to the old highway alignment including streetscaping, tree planting, provision of additional parking spaces and better pedestrian amenity through pedestrian thresholds or widening pavements.
- Access to the bypassed town/ village should generally remain on the same alignment as the original route unless change to the structure and function of the area is desirable. Because land uses such as shopping, housing, schools and open space evolve over time to fit with the main traffic routes through an area, changing these routes can have effects on the community.



▲ IMPROVED STREETSCAPE OPPORTUNITIES



▲ VISUAL CONNECTION TO THE TOWN CENTRE PROVIDED AT THE ALBURY BYPASS

- **Upgrade Rest Area facilities** – there are many small facilities that provide a place to stop, rest and relax.
 - Consider frequency and location of rest stops.
 - Consider minimum amenity requirements according to rest area type. Amenities may include tables, seating and shade structures.
- **Enhance inter-regional connection points to provide legibility in the highway journey at Bruxner Highway, Gwydir Highway, Waterfall Way, Oxley Highway, Kamilaroi Highway and Golden Highway.**
 - At connection points consider providing distinctive tree plantings and/ or plant palette and layout, such as occurs at the intersection/ transition between the Hume Highway and the Federal Highway north of Canberra.



^ BUCHANAN REST AREA ON THE HUNTER EXPRESSWAY SERVICES BOTH MOTORISTS AND TRUCK DRIVERS AND PROVIDES HIGH QUALITY AMENITIES INCLUDING TOILETS, PICNIC SHELTERS AND SEPARATED TRUCK REST AREAS

> AVENUES OF POPLARS MARK THE TRANSITION FROM/ TO THE HUME HIGHWAY AND FEDERAL HIGHWAY NORTH OF CANBERRA. THE DECIDUOUS PLANTS PROVIDE A DISTINCTIVE NATURAL LANDMARK THAT CHANGES WITH THE SEASONS. [PHOTOS GOOGLE MAPS]



- **Improve the amenity and appearance of town centre approaches.** Areas typically characterised by industrial, service or large retail areas or residential. Industrial, service or larger retail areas can be visually cluttered with large signage, have poor quality architecture and large areas of car parking with minimal streetscaping and no footpaths. Residential areas generally have cultural plantings and turf on private property which contribute to the overall landscaped feel but with no plantings in the street verges.

- **Improve the amenity of approaches corridor verges.** Generally these areas
 - A consistent character and improved amenity could be provided by provision of trees for shade and provision of footpaths or shared paths to encourage walking and cycling.
 - Space constraints may require consideration of plantings on private property.

7.0 How to Use the Framework

The Centre for Urban Design should be contacted at the start of any New England Highway project. The New England Highway Framework applies to all phases of the ProjectPack process as follows:

Phase	Stage	Key Urban Design Actions
Development	Strategic Design	<ol style="list-style-type: none"> 1 Centre for Urban Design to review urban design brief for development phase of work. 2 Registered urban design contractor to be engaged to carry out contextual analysis, review New England Highway Urban Design Framework and assess route options against the 7 objectives of the New England Highway Urban Design Framework.
	Environmental Assessment & Approvals Concept Design Development	<ol style="list-style-type: none"> 3 Registered urban design contractor to be engaged with engineers to develop concept design as best practice integrated urban design and engineering in line with New England Highway Urban Design Framework. 4 Registered urban design contractor to be engaged to carry out landscape character and visual impact assessment in parallel with concept development. 5 Centre for Urban Design to review concept design and landscape character and visual impact assessment.
Delivery	Delivery Readiness	<ol style="list-style-type: none"> 6 Centre for Urban Design to review urban design brief or Scope of Works and Technical Criteria 7 Registered urban design contractor to be engaged with engineers to develop detailed design in line with concept design, New England Highway Urban Design Framework and RMS urban design policy and guidelines. 8 Centre for Urban Design to review tender submissions.
	Delivery	<ol style="list-style-type: none"> 9 Project built in accordance with integrated urban design and engineering design. Centre for Urban Design to be involved in monitoring of implementation and KRA assessment against the 7 objectives of the New England Highway Urban Design Framework.
Finalisation/operation	Finalisation	<ol style="list-style-type: none"> 10 Centre for Urban Design to be involved in post completion review. 11 Centre for Urban Design to be involved in monitoring of landscape maintenance. 12 For all additions to the New England Highway such as rest areas, variable message signs, gantries, new bridges and interchanges refer to the Centre for Urban Design for advice on the application of the New England Highway Urban Design Framework and other urban design guideline documents.

8.0 References

- <http://www.planning.nsw.gov.au/~media/Files/DPE/Plans-and-policies/draft-hunter-regional-plan-2015-11.ashx>
- *Beyond the Pavement - RMS urban design policy, procedures and design principles*, RMS, January 2014.
- *Bridge Aesthetics - Design Guidelines to Improve the Appearance of Bridges in NSW*, RMS, July 2012.
- *Landscape guideline - Landscape design and maintenance guidelines to improve the quality, safety and cost effectiveness of road corridor planting and seeding*, RTA, April 2008.
- *Noise wall design guideline - Design guidelines to improve the appearance of noise walls in NSW*, RTA, March 2016.
- *Shotcrete Design Guidelines - Design guideline to improve the appearance of Shotcrete in NSW*, RMS, March 2016.
- *Pacific Highway Urban Design Framework 2013 - Urban Design Vision, Objectives and Design Principles for the Upgrade of the Pacific Highway from Hexham to Tweed Heads*,

