

NSW Roads and Maritime Services

WOOLGOOLGA TO BALLINA | PACIFIC HIGHWAY UPGRADE ENVIRONMENTAL IMPACT STATEMENT

MAIN VOLUME 1A

Chapter 1 – Introduction

Chapter summary

This chapter introduces and provides a brief description of the project.

NSW Roads and Maritime Services (RMS) is seeking approval to upgrade the Woolgoolga to Ballina section of the Pacific Highway under Part 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The project represents the final part (known as Priority 3) in providing a four-lane divided road along the eastern seaboard of Australia. It would see the delivery of a four-lane dual carriageway motorway with interchanges at major population centres along its 155 kilometre length.

The project would improve road safety, reduce vehicle travel times, enhance freight carrying capacity, improve accessibility to regional and local centres, and support regional economic development.

The EIS describes the highway upgrade and presents a detailed description of the construction work needed to build it, and how the highway would function once it is built.

The EIS also provides an assessment of all potential environmental impacts of the upgrade that could occur as a result of its construction and operation.

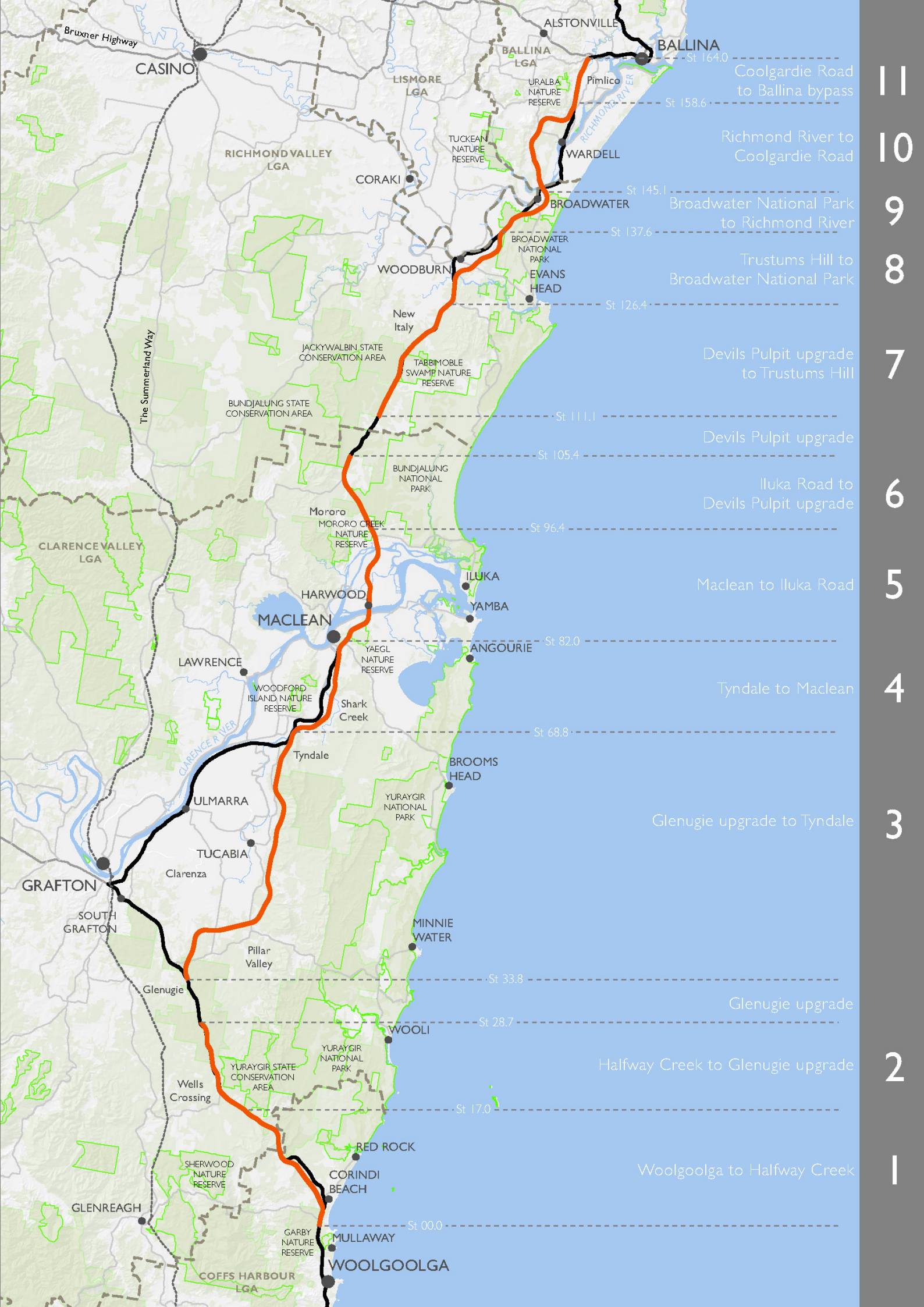
This EIS is divided into thirteen volumes:

- Volume 1A and Volume 1B: The main document of the EIS
- Volumes 2, 3, 4A, 4B, 5, 6A, 6B, 6C, 7A, 7B and Volume 8: The specialist working papers supporting the EIS.

This chapter presents an overview of the project area and sets out the structure for the environmental impact statement.

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Coolgardie Road
to Ballina bypass

Richmond River to
Coolgardie Road

Broadwater National Park
to Richmond River

Trustums Hill to
Broadwater National Park

Devils Pulpit upgrade
to Trustums Hill

Devils Pulpit upgrade

Iluka Road to
Devils Pulpit upgrade

Maclean to Iluka Road

Tyndale to Maclean

Glenugie upgrade to Tyndale

Halfway Creek to Glenugie upgrade

Woolgoolga to Halfway Creek

Contents

1.	Introduction	1-1
1.1	The project	1-1
1.1.1	Project overview	1-1
1.1.2	Benefits of the project.....	1-3
1.1.3	The proposed standard of the upgrade.....	1-3
1.1.4	Project features	1-4
1.1.5	Construction staging and activities.....	1-6
1.2	Project location.....	1-7
1.2.1	Land uses and features in the study area	1-7
1.3	Purpose of this report	1-13
1.4	Structure of this environmental impact statement	1-13

Tables and Figures

Table 1-1:	Structure of this environmental impact statement.....	1-13
Figure 1-1:	Location of the project.....	1-2
Figure 1-2:	Project overview.....	1-5
Figure 1-3:	The project alignment: Arrawarra to Glenugie	1-8
Figure 1-4:	The project alignment: Glenugie to Tyndale	1-9
Figure 1-5:	The project alignment: Tyndale to Devils Pulpit.....	1-10
Figure 1-6:	The project alignment: Devils Pulpit to Woodburn	1-11
Figure 1-7:	The project alignment: Woodburn to Ballina	1-12

1. Introduction

This chapter introduces and provides a brief description of the project. It also presents an overview of the project area and sets out the structure for the environmental impact statement.

Director General's requirements	Where addressed
The Environmental Impact Statement must include the following:	
<ul style="list-style-type: none"> The address of the land: <ul style="list-style-type: none"> In respect of which the development application is to be made, or On which the activity or infrastructure to which the statement relates is to be carried out. 	Section 1.3
Supplementary Director General's requirements	Where addressed
The following matters must be addressed in the environmental assessment:	
<ul style="list-style-type: none"> The title of the action 	Section 1.1.1
<ul style="list-style-type: none"> The location of the action 	Section 1.3, Figures 1-1 and 1-2
<ul style="list-style-type: none"> The current status of the action. 	Section 1.1.1

1.1 The project

1.1.1 Project overview

NSW Roads and Maritime Services (RMS) is seeking approval for the Woolgoolga to Ballina Pacific Highway upgrade project (the project / the action), on the NSW North Coast. The approval is sought under Part 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). The location of the project in the NSW North Coast region is shown in Figure 1-1 and an overview of the project is shown in Figure 1-2.

Since 1996, both the Australian and NSW governments have contributed funds to the upgrade of the 664-kilometre section of the Pacific Highway between Hexham and the Queensland border, as part of the Pacific Highway Upgrade Program.

Both governments have a shared commitment to finish upgrading the highway to a four-lane divided road as soon as possible. For the purposes of the EIS assessment, the NSW Government has nominated the end of 2016 as the desired opening date for a four-lane divided road for the project. However, the actual timing of construction, opening to traffic and completion is dependent on funding negotiations between the Australian and NSW governments. Assessments based on a 2016 opening date would be adjusted accordingly based on actual opening dates, for example noise and traffic predictions.

The project would upgrade around 155 kilometres of highway and represents the last priority (known as 'Priority 3' in the upgrade program) in achieving a four-lane divided road between Hexham and the NSW/Queensland Border. The project therefore forms a major part of the overall upgrade program and when constructed, would complete the four-lane divided road program.

The project is estimated to cost \$4.2 billion based on an opening by the end of 2016. It would be jointly funded by the NSW and Australian governments.

The project does not include the Pacific Highway upgrades at Glenugie and Devils Pulpit, which are located between Woolgoolga and Ballina. These are separate projects, with Glenugie now complete and Devils Pulpit under construction. Altogether, these three projects would upgrade 164 kilometres of the Pacific Highway. The project does include a partial upgrade of the existing dual carriageways at Halfway Creek.

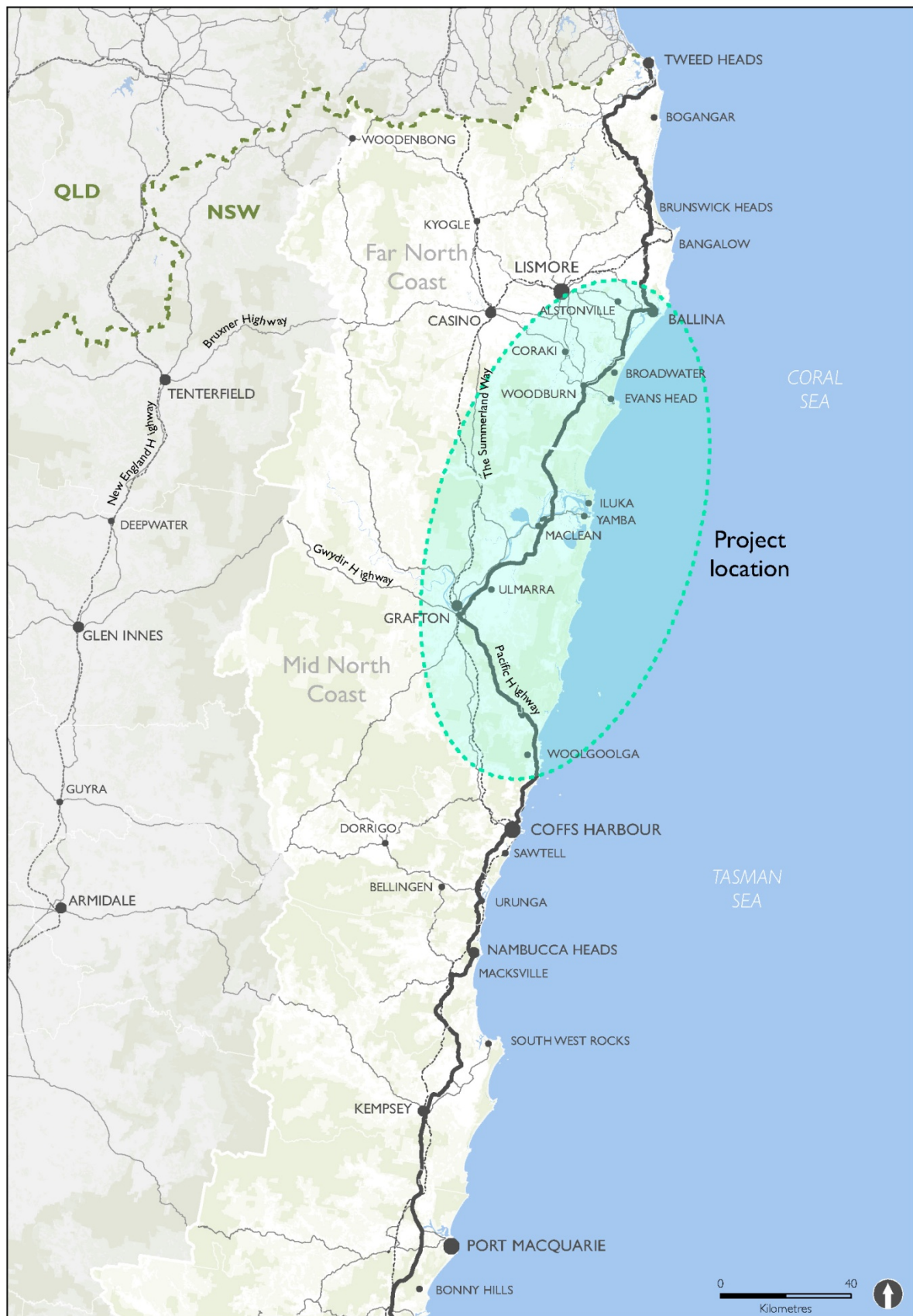


Figure 1-1: Location of the project

1.1.2 Benefits of the project

The Woolgoolga to Ballina upgrade is one of a series of projects that together form the Pacific Highway Upgrade Program between Hexham and the NSW / Queensland Border. Some 346 kilometres (or 52 per cent) of the final length of 664 kilometres is now dual carriageway, another 59 kilometres (nine per cent) are under construction and the remaining 121 kilometres have received planning approval and are being prepared for construction.

The Pacific Highway corridor along the east coast of Australia is a vital piece of national infrastructure and will bring significant travel time and safety benefits when fully upgraded. For the 155 kilometre section of upgrade between Woolgoolga and Ballina:

- The length would reduce from 180 kilometres to 167 kilometres, a saving of about 13 kilometres in travel distance
- With the shorter length and a higher posted speed of 100/110 km/hr, travel time would reduce from 130 minutes to 105 minutes, a saving of 25 minutes for all vehicles
- With the provision of divided carriageways and separation of through and local traffic, there would be fewer crashes, reducing by 29 per cent, from 51 crashes per year to 36 crashes per year at opening
- Offer improved reliability of travel through improved flood immunity, fewer planned and unplanned incidents and more readily available alternative routes in the event of major incidents.

An upgraded Pacific Highway would also improve the overall amenity of people living in towns and villages along the upgraded route and support local and regional economic development through improved accessibility.

The project would provide benefits to the local community, the NSW North Coast region and the State as a whole by:

- Significantly improving road safety
- Enhancing freight carrying capacity and reducing transport costs
- Improving accessibility for regional and local centres
- Reducing vehicle travel times
- Supporting regional economic development.

1.1.3 The proposed standard of the upgrade

RMS is seeking project approval for a motorway standard of upgrade, however the project would be built initially to a combination of motorway (called class M) and arterial standard (called class A).

About eighty-seven kilometres of the highway that would deviate from the existing highway alignment (eg between Glenugie and Tyndale) would be built straight to motorway standard. The remaining sixty-eight kilometres would be initially upgraded to arterial standard. The design allows for the highway to be upgraded to a full motorway style highway in the future when warranted by increased traffic volumes.

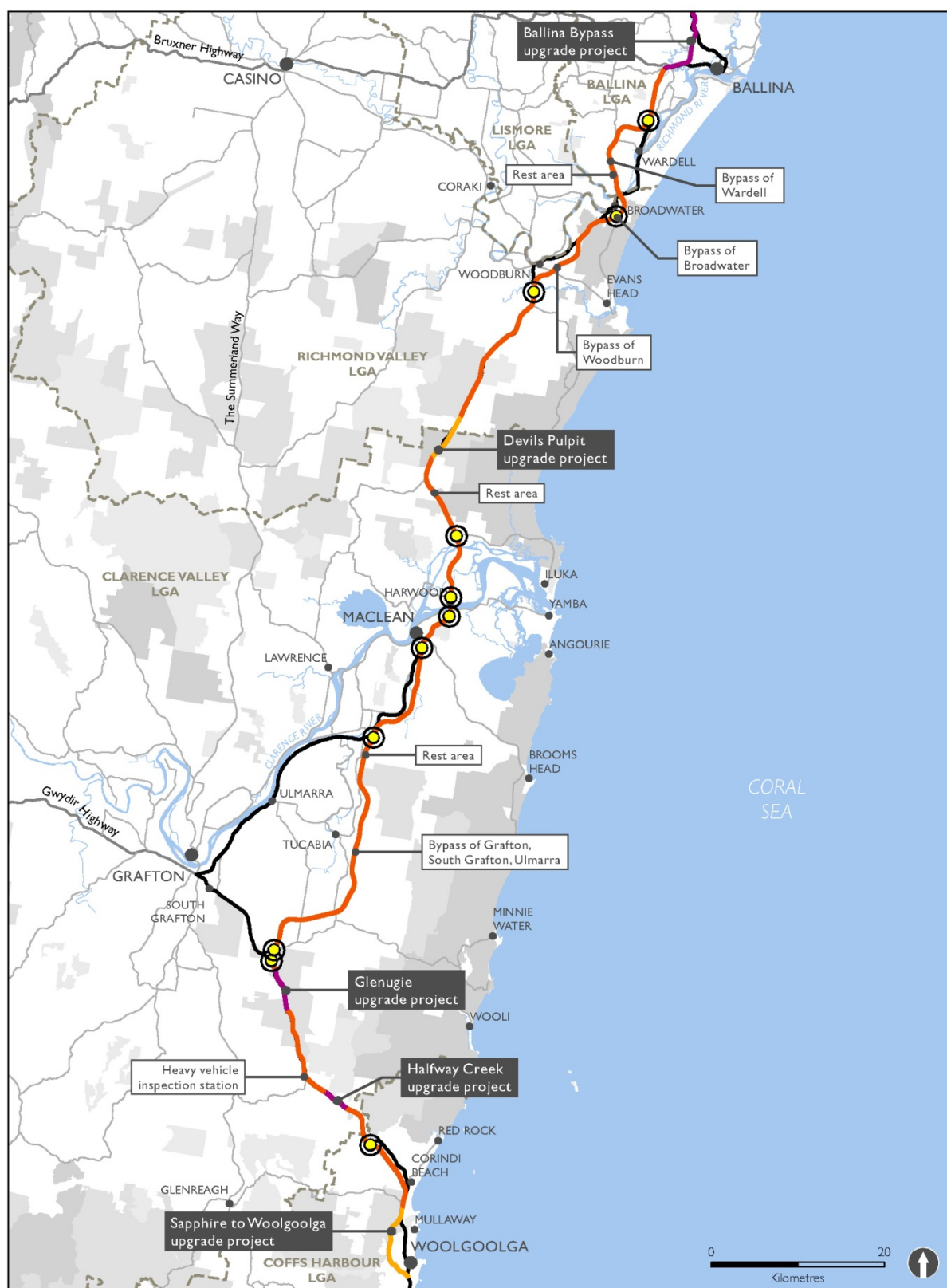
The main difference between these two standards of road is that motorway sections would only be accessible from an interchange and service roads would provide local access. In contrast, arterial standard sections would continue to provide some local access to the highway from upgraded intersections onto the highway. The speed limit on arterial sections would be posted at 100km/h or 110 km/h depending on final access arrangements.

The EIS assesses the environmental impacts of the full motorway and the initial combination of motorway and arterial standards of upgrade.

1.1.4 Project features

The project would include:

- Around 155 kilometres of motorway standard highway, comprising a four-lane divided carriageway (two lanes in each direction) that can be upgraded to a six-lane divided carriageway in the future, if required
- Bypasses of Grafton, South Grafton, Ulmarra, Woodburn, Broadwater and Wardell
- The following interchanges to provide access to and from the upgraded highway at:
 - Corindi (Range Road)
 - Glenugie (Glenugie/ Eight Mile Lane)
 - Tyndale (Sheeys Lane/ Bensons Lane)
 - Maclean (Goodwood Street)
 - Harwood (Yamba Road / Watts Lane)
 - Woombah (Iluka Road)
 - Woodburn (Trustums Hill Road)
 - Broadwater (Evans Head Road)
 - Wardell (Coolgardie Road)
- Forty bridge crossings of waterways or floodplains, including major bridges over the Clarence and Richmond rivers
- Fifty-five bridges and underpasses to maintain access along local roads crossed by the project
- Viaducts located where the project would cross low-lying or flood-prone areas
- Service roads and access roads to maintain connections to existing local roads and properties
- Structures to help wildlife cross above or below the project, including three median crossings for arboreal mammals, eight dedicated culverts and four land bridges
- Rest areas located at around 50-kilometre intervals at:
 - Pine Brush, Tyndale (for northbound and southbound traffic)
 - North of Mororo Road (for southbound traffic)
 - Richmond River (for northbound and southbound traffic)
- Checking stations for heavy vehicles near Halfway Creek and within the proposed Richmond River rest area.



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway
- Project interchange

Figure 1-2: Project overview

1.1.5 Construction staging and activities

Both the Australian and NSW governments have provided the necessary funding to prepare the 155 kilometre of highway upgrade for construction. This includes preparing the EIS, land acquisition, key field activities such as geotechnical and environmental investigations and detailed design on the section between Woogoolga and Glenugie. Both governments are continuing discussion on funding for the main construction.

RMS is considering a range of different packaging and procurement options for the 155 kilometres of highway upgrade, ranging from one single 155 kilometre project to up to 11 individual projects. The adopted packaging and procurement strategy would depend on the available funding for the main construction, the priority for upgrading construction and achieving project efficiencies and economies of scale such as how to best manage construction and material resources.

Staging options would include some sections being constructed and opened as four –lane arterial standard road. Priority would be given to upgrade of sections that deliver the best outcomes in terms of safety, traffic improvements and value for money.

For the purposes of this EIS an assumed opening to traffic by end of 2016 is made and the following packaging arrangement is considered:

- Enabling works on time critical soft soil treatment sections: From third quarter of 2013
- Woolgoolga (Ararwarra) to Glenugie: From first quarter of 2015
- Glenugie upgrade to Tyndale: From third quarter of 2013
- Tyndale to Devils Pulpit upgrade: From third quarter of 2013
- Devils Pulpit upgrade to Woodburn: From first quarter of 2015
- Woodburn to Ballina: From first quarter of 2014.

The project would be constructed using the conventional techniques used on most major highway projects. RMS will look to find ways of improving of the overall efficiency of delivery for the 155 kilometre of highway upgrade. For example, RMS seeks approval for construction working hours for 6am and 7pm on weekdays and between 8am–5pm on Saturdays.

An indicative outline of construction activities includes:

- Establishment of the construction site and ancillary facilities
- Enabling works, including adjustments to utilities, property adjustments, works to existing drainage and provision of construction access roads
- Clearing and grubbing of vegetation, stripping of topsoil and stockpiling for re-use
- Construction of road cuttings and embankments
- Treating areas of soft soil to stabilise the underlying soil sub layers
- Installing drainage and bridging structures
- Laying of pavement materials
- Installing pavement markings, signposting, street lighting and progressive landscaping.

Further information on the project can be found in Chapter 5 (Description of the project operation) and Chapter 6 (Description of the project construction). The project alignment is shown in Figure 1-3 to Figure 1-7.

For the detailed description in Chapter 5, the project is divided into 11 sections. Where relevant, those parts of each section to be constructed initially as either class M or class A, are described.

1.2 Project location

The project is located on the NSW North Coast. Figure 1-1 shows the location of the project in the region and Figure 1-2 shows an overview of the project features. The southern extent of the project is located about five kilometres north of Woolgoolga (at Arrawarra Beach Road), with the northern extent about six kilometres south of Ballina (at Pimlico Road).

The project is proposed to be carried out on land described as:

- From Arrawarra Beach Road approximately 5 kilometres north of Woolgoolga to approximately 21 kilometres south of Grafton (the Franklins Road intersection with the Pacific Highway)
- From approximately 13 kilometres south of Grafton (the Eight Mile Lane intersection with the Pacific Highway) to approximately 66 kilometres north of Grafton
- From approximately 72 kilometres north of Grafton to the Ballina bypass approximately 6 kilometres south of Ballina.

The land includes the road reserve area needed to maintain and operate the project and the area needed to contain the construction footprint. Further details of the project alignment between Woolgoolga to Ballina is shown in Figures 1-3 to Figure 1-7.

It is recorded that the traditional owners of the landscape in which the project is located are the Bundjalung, Gumbayngirr and the Yaegl Aboriginal people.

1.2.1 Land uses and features in the study area

The project is in the local government areas of Coffs Harbour City, Clarence Valley, Richmond Valley and Ballina Shire. Coffs Harbour, Grafton and Ballina are the major regional centres, supported by the major towns of Woolgoolga and Maclean and other towns and villages such as Tucabia, Yamba, Harwood, Evans Head, Woodburn, Broadwater and Wardell.

The project area features large areas of forest contained within national parks, nature reserves and State conservation areas. These forests include important areas of remnant subtropical and temperate rainforest on slopes. There are also State forests; forestry and timber production are important land uses.

There are also large rural and semi-rural landholdings. Agriculture is a dominant land use. Regional agricultural industries include sugar cane, cattle rearing, fruit and vegetable production.

Other land uses include urban residential and commercial development.

The project is located within the Clarence Moreton basin, which is potentially important for coal seam gas exploration and extraction.

The project is within the Bellinger, Clarence and Richmond river basin catchments. The project alignment crosses the floodplain of one of the largest river systems in eastern Australia – the Clarence River, including some of its tributaries such as the Coldstream basin. The alignment also crosses the Richmond River floodplain as well as many smaller river and wetland systems such as Corindi River.

The Pacific Highway is the main north–south route on the NSW North Coast. It is also the major interstate and regional route connecting Sydney to Brisbane along the NSW coastline. The North Coast Railway and New England Highway are the main alternative land transport links to the northern parts of NSW, and between NSW and Queensland. The Summerland Way also provides a road link between Grafton and Lismore. The Gwydir Highway provides a link between Grafton and Inverell, and the Bruxner Highway links from Ballina to Tenterfield.

The topography surrounding the project alignment is dominated by the floodplains and wetlands of the Clarence and Richmond valleys. The Summervale Range dominates to the east, the Richmond and Blackwall ranges to the west and the Dirty Creek Range to the south. These features have historically influenced the alignment of the major roads and restricted access between Woolgoolga and Ballina.

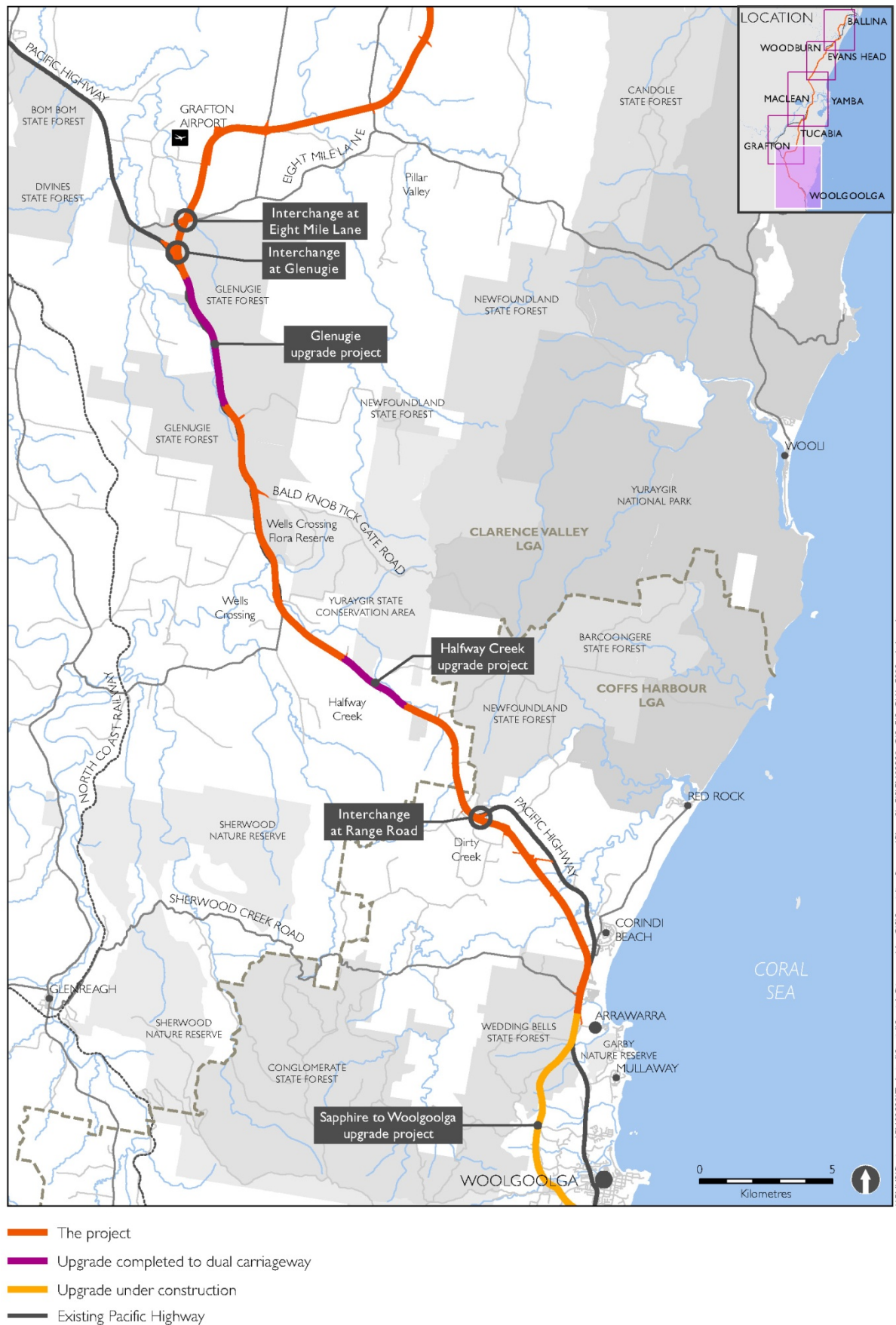


Figure 1-3: The project alignment: Woolgoolga (Ararwarra) to Glenugie

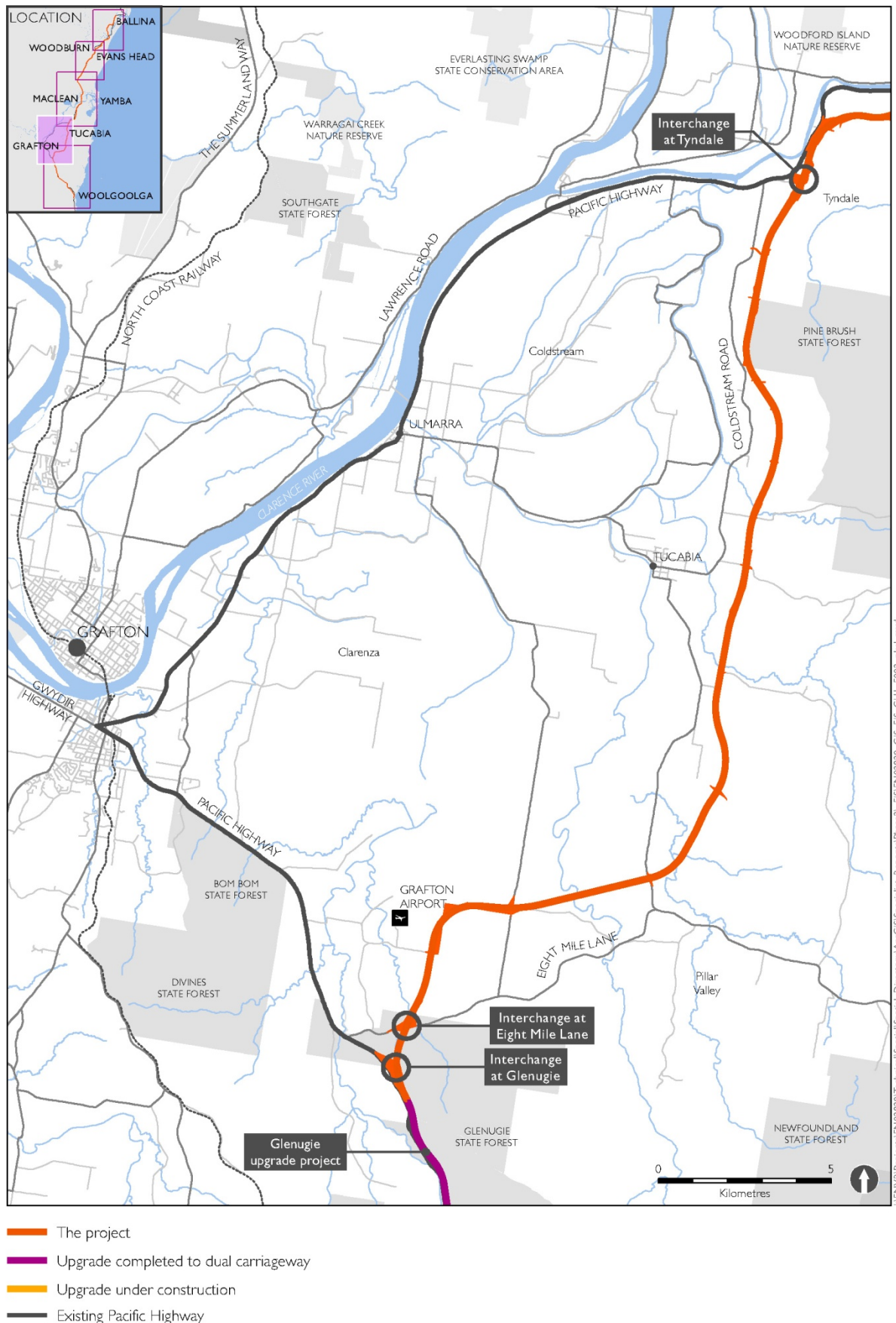


Figure 1-4: The project alignment: Glenugie to Tyndale

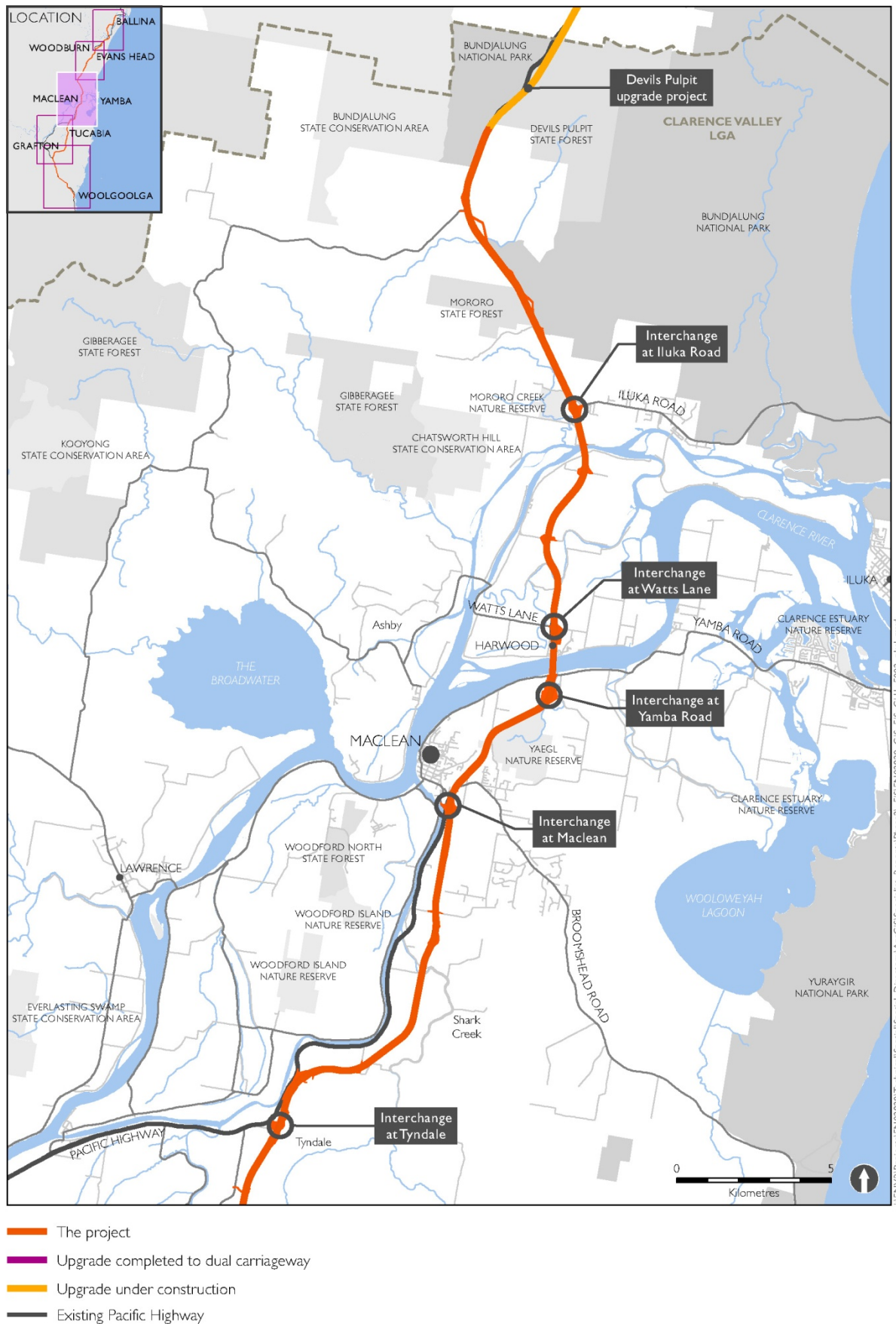


Figure 1-5: The project alignment: Tyndale to Devils Pulpit



Figure 1-6: The project alignment: Devils Pulpit to Woodburn

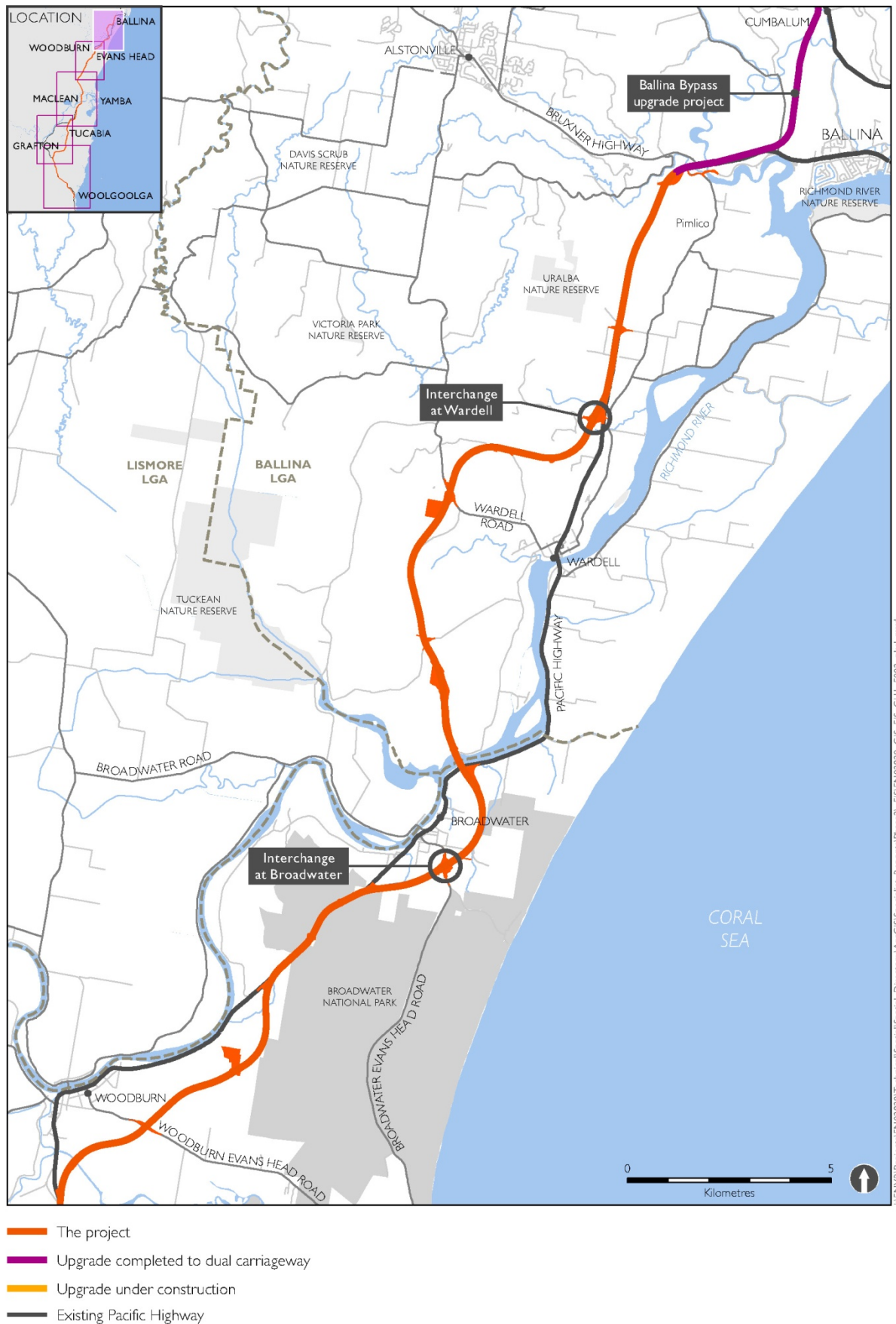


Figure 1-7: The project alignment: Woodburn to Ballina

1.3 Purpose of this report

This environmental impact statement (EIS) report has been prepared in accordance with the relevant provisions under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This EIS describes the project. It provides an assessment of the key issues, as determined by the environmental assessment requirements issued by the Director-General of the Department of Planning and Infrastructure, and by the Department of Sustainability, Environment, Water, Population and Communities.

In accordance with Part 5.1 of the EP&A Act, the document presents an assessment of all potential environmental issues identified during the planning and assessment of the project. The document integrates the assessment of the impacts of the action on the relevant matters of national environmental significance in accordance with the EPBC Act. The assessment considers the area directly or indirectly affected by construction and operation of the project.

The public exhibition of the EIS gives the community, government agencies and other interested parties an understanding of the project and provides the opportunity to comment on the project. RMS would consider this feedback in the further development of the project.

1.4 Structure of this environmental impact statement

This EIS is comprised of a main document and eleven separate working papers that support the main document. The main document is separated into two volumes – Volume 1A and Volume 1B. The specialist working papers supporting the EIS are provided in eleven volumes separate to the main document.

The structure and content of the EIS is presented in Table 1-1.

Table 1-1: Structure of this environmental impact statement

Volume	Title	Description
Main volume		
1A	Executive Summary	Provides a summary of the EIS
	Chapter 1: Introduction	Provides a broad overview of the project and identifies the purpose and structure of the EIS
	Chapter 2: Assessment process	Outlines the statutory requirements and explains the steps in the assessment and approval process for the project
	Chapter 3: Strategic justification and project need	Provides the strategic context and outlines the need for and objectives of the project
	Chapter 4: Project development and alternatives	Describes the process used to develop the project and the route options considered
	Chapter 5: Description of the project – operation	Describes the project as built, including features of the project, design standards and criteria, and the route alignment
	Chapter 6: Description of the project – construction	Describes construction activities, facilities and construction management
	Chapter 7: Consultation	Describes the consultation undertaken, and identifies the corresponding issues raised and where they are addressed in this EIS
	Chapter 8 to Chapter 10: Key issue assessments:	Identifies the key environmental issues, the potential environmental impacts and the proposed impact mitigation and management measures.
	<ul style="list-style-type: none"> Chapter 8: Hydrology and flooding Chapter 9: Soils sediments and water Chapter 10: Biodiversity 	Outlines the methods used in the assessment and summarises the key findings of the detailed technical studies undertaken for these key environmental issues.

Volume	Title	Description
1B	Chapter 10 to Chapter 17: Key issues: <ul style="list-style-type: none"> Chapter 10: Biodiversity Chapter 11: Urban design, landscape character and visual impact Chapter 12: Aboriginal cultural heritage Chapter 13: Historical (non-Aboriginal) heritage Chapter 14: Traffic and transport Chapter 15: Noise and vibration Chapter 16: Land use and property Chapter 17: Social and economic 	Identifies the key environmental issues, the potential environmental impacts and the proposed impact mitigation and management measures. Outlines the methods used in the assessment and summarises the key findings of the detailed technical studies undertaken for these key environmental issues.
	Chapter 18: Other issues <ul style="list-style-type: none"> Greenhouse gas emissions Air quality Waste and resource management 	Identifies the other (non-key) environmental issues, the potential environmental impacts and the impact mitigation and management recommendations.
	Chapter 19: Environmental management measures	Collates the impact mitigation and management measures identified in Chapters 8 to 18.
	Chapter 20: Environmental risk analysis	Provides an assessment of the potential environmental risks from the project.
	Chapter 21: Justification and conclusion	Justifies the project and summarises the environmental issues.
	Chapter 22: References	Details information sources referred to in the EIS
	Appendix A	Director General's environmental assessment requirements and checklist
	Appendix B	EP&A Regulation 2000 Part 3 of Schedule 2 and EPBC Regulation Schedule 4 checklist
	Appendix C	Environmental record of person proposing to take the action
	Appendix D	Glossary of terms and abbreviations
Working papers		
Volume 2	Hydrology and flooding	
Volume 3	Water quality	
Volume 3	Groundwater	
Volume 4A	Biodiversity (Part I)	
Volume 4B	Biodiversity (Part II)	
Volume 5	Urban design, landscape character and visual impact	
Volume 5	Historical (non-Aboriginal) heritage	
Volume 6A	Aboriginal cultural heritage (Woolgoolga to Wells Crossing)	
Volume 6A	Aboriginal cultural heritage (Wells Crossing to Iluka Road)	
Volume 6B	Aboriginal cultural heritage (Iluka Road to Woodburn)	
Volume 6C	Aboriginal cultural heritage (Woodburn to Ballina)	
Volume 7A	Noise and vibration (Part I)	
Volume 7B	Noise and vibration (Part II)	
Volume 8	Traffic and transport	

Volume	Title	Description
Volume 8	Land use and property	
Volume 8	Social and economic	