



New South Wales Government



Iluka Road to Woodburn

Upgrading the Pacific Highway

**PREFERRED CONCEPT DESIGN REPORT
JULY 2008**

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Connell Wagner



*Pacific Highway Upgrade
Iluka Road to Woodburn*

Preferred Concept Design Report

Final – July 2008

ISBN 978-1-921474-25-5

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Glossary

AADT	Annual average daily traffic volumes
ABS	Australian Bureau of Statistics
ADT	Average daily traffic volumes
AEP	Annual exceedance probability
AHD	Australian height datum
ANZECC	Australian and New Zealand Environment Conservation Council
ARI	Average recurrence interval (for rainfall events)
At-grade	At the same level; eg a t-intersection or seagull
B-double	A combination road vehicle consisting of a prime mover towing two semi-trailers
BCR	Benefit cost ratio
BH	Bore hole
CIS	Community information session
Class A	Divided road with at least two lanes in each direction and shoulders and some direct accesses
Class M	Divided road with at least two lanes in each direction and shoulders with no direct accesses and with flyover type interchanges
CLG	Community liaison group
CMP	Conservation Management Plan
CDR	Concept Design Report – Published March 2006 (ISBN 1920907661)
Concept design	Initial alignment for consultation with community and other stakeholders. Concept design has been developed for the upgrade of the Pacific Highway between Iluka Road to Woodburn
Preferred Concept Design	Revised Concept Design alignment following consultation with community and other stakeholders in March 2006.
CRAFTI	Comprehensive Regional Assessment Aerial Photograph Interpretation vegetation maps
dB(A)	Decibel. Unit used for 'A-weighted' sound pressure levels. A-weighting is an adjustment made to sound-level measurement to approximate the response of the human ear
DECC	Department of Environment and Climate Change (comprising National Parks and Wildlife Service and Environment Protection Authority)
DNR	Department of Natural Resources
DoP	Department of Planning
Dual carriageway	Double lane divided road
DPI	Department of Primary Industries (NSW Fisheries, NSW Agriculture, NSW Forests)
DHV	Design hour volume
EEC	Endangered ecological community
EA	Environmental assessment
EIS	Environmental impact statement
Endangered	Species listed as 'endangered' under the <i>Threatened Species Conservation Act 1995</i>
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
ESD	Ecologically sustainable development
Flyover	An overpass to enable separation of main road traffic and minor crossing traffic
FMZ	Forest Management Zones
Grade-separated	Refers to roads constructed at different levels such as flyovers, interchanges and overpasses
Gradient	Angle of ascent or descent expressed as a percentage ratio
Horizontal alignment	Refers to the road geometry on a flat plain i.e left and right hand bends in a road and connecting straights.

Glossary (cont.)

hr	Hour
Interchange	Any junction enabling movements between the main road and a minor road
km/h	Kilometres per hour
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local government area
LOS	Level of Service
MLEP	Maclean Local Environmental Plan 2001
Model Provisions	<i>Environmental Planning and Assessment Model Provisions 1980</i>
Mvkt	Million vehicle kilometres travelled
NPWS	National Parks and Wildlife Service
NRMA	National Roads and Motoring Association
NSW	New South Wales
PADS	Potential archaeological deposits
pc/h	Passenger cars per hour
PFM	Planning focus meeting
pH	Value taken to represent acidity or alkalinity of an aqueous solution
PHUP	Pacific Highway Upgrade Program
PVB	Present value of benefits
PVC	Present value of costs
REP	Regional Environmental Plan
RL	Reduced level
RRLEP	<i>Richmond River Local Environmental Plan 1992</i>
RTA	Roads and Traffic Authority
Seagull	T-intersection on a divided road with deceleration and acceleration lanes in the median
SEPP 4	<i>State Environmental Planning Policy No. 4 – Development Without Consent and Miscellaneous and Complying Development</i>
SEPP 14	<i>State Environmental Planning Policy No. 14 – Coastal Wetlands</i>
Service road	Through route adjacent to Class M providing a link to access roads and local communities
Shoulder	The area beside a main road where a driver can stop in an emergency
Threatened	Species listed as 'threatened' under the <i>Threatened Species Conservation Act 1995</i>
T-intersection	Where one road meets another without crossing it, forming the shape of a letter 'T'
TSC Act	<i>Threatened Species Conservation Act 1995</i>
TSS	Total suspended solids
U-turn bay	Facility to enable one to turn and travel in the opposite direction
Vertical alignment	Refers the changes in grade of a roadway, i.e vertical curves and connecting Grades, up or down.
VOC	Vehicle operating costs
vpd	<i>Vehicles per day</i>
Vulnerable	Species listed as 'vulnerable' under the <i>Threatened Species Conservation Act 1995</i>

Executive Summary

The Pacific Highway is part of the National Land Transport Network. By 2009, the NSW Government will have spent \$2.45 billion and the Australian Government \$1.45 billion towards the upgrade of the Pacific Highway.

Currently 267 of a total 679 kilometres are now double-lane divided road. A further 87 kilometres are under construction. The remaining kilometres are either approved for construction or have had a preferred route identified. (Refer to **Figure A**).

The Iluka Road to Woodburn section of the Pacific Highway forms part of the Pacific Highway Upgrade Program. The Iluka Road to Woodburn project involves the proposed upgrade of approximately 33 km of the Pacific Highway on the North Coast of NSW. The project commences approximately 500 m north of Iluka Road and ends approximately 1.5 km south of Woodburn near Trustums Hill. The aim of the project is to upgrade the highway to a high standard dual carriageway facility mainly using the existing road corridor and by means of duplication of the existing carriageway. The study area is shown in **Figures B** and **C**.

This section will join the Wells Crossing to Iluka Road section to the south and Woodburn to Ballina section to the north.

Purpose of the report

This report provides information regarding the development of the preferred concept design for the Iluka Road to Woodburn section of the Pacific Highway Upgrade Programme. This report provides information on the investigations undertaken and the constraints considered in the refinement of the concept design following its issue and subsequent public consultation in March 2006.

Project development

The Iluka Road to Woodburn section of the highway has undergone a process comprising the following:

- Concept Design Report (March 2006).
- Specialist investigations for the development of the concept design and preferred concept design of the route.

Following completion of the concept design phase, further development of the project will be required. These activities could include:

- Environmental assessment
- Property acquisition
- Detailed design
- Further specialist investigations for both the environmental assessment and detailed design phase
- Preparation of construction tender documentation
- Construction of the project

Investigations informing the preferred concept design

A range of investigations have been undertaken in preparing the concept design and the preferred concept design. Investigations include; flora and fauna, non-indigenous heritage, indigenous heritage, traffic and transport, geotechnical, hydrology and hydraulics, public utilities and property impacts.

Key issues arising from the concept design are as follows:

- Impacts on threatened flora species, particularly *Melaleuca irbyana*
- Fauna habitat fragmentation and loss of key habitat
- Impacts on items of heritage significance

- Impacts on items of Aboriginal significance
- Impacts on and acquisition of private property
- Access arrangements

Project description

The project length is 33 km, comprising 27 km of duplication and 6 km of deviation, with 25 km of full reuse of the existing highway. Under current planning the project will have a number of at grade intersections, five bridge creek crossings on the main alignment and one overbridge carrying local traffic over the main alignment at a grade-separated interchange at the northern end.

Design Standards

Two highway upgrade scenarios are being considered as part of the project:

- Arterial road style (referred to as Class A) — two lanes in each direction (median width to accommodate future upgrading to three lanes in each direction), 100 km per hour posted speed, limited access condition roadway with at grade intersections.
- Motorway style (referred to as Class M) — two lanes in each direction (median width to accommodate future upgrading to three lanes in each direction), 110 km per hour posted speed, controlled access condition roadway with grade separated interchange access, and a continuous alternative route.

The arterial style is likely to be adopted in the first instance with further upgrading to the motorway style design potentially occurring at some time following the initial upgrade.

Staging

It is likely that the project will be staged, during the development of the initial upgrade to allow for appropriate consideration of funding, road user safety and construction constraints.

Refinement of the route following publication and consultation of the concept design

The Iluka Road to Woodburn project was announced in October 2004 and the concept design displayed in March 2006.

Following community responses to the published concept design in March 2006 and further investigations, there have been a number of changes to the design to form the preferred concept design. These include but are not limited to:

Strategic changes:

- Emergency stopping bays, emergency u-turns and maintenance crossovers removed and replaced with combined u-turn, crossover facilities located at an average of 3 km at:
 - CH 58.000.
 - CH 61.800.
 - CH 65.000.
 - CH 68.500.
 - CH 70.800.
 - CH 73.600.
 - CH 77.300.
 - CH 81.300.
 - CH 81.300 with u-turn north to south only.
 - CH 87.450.
- Bus stops added to egress side of selected side roads.

Specific design changes (from south to north):

- Iluka Road access to be designed to connect final dual carriageway under Wells Crossing to Iluka Road Project, as a result Banana Road would connect to the Iluka Road Interchange via a new slip road.
- U-turn located at CH 59.400 just north of Mororo Road.
- Rest area just north of Mororo Road to be retained under Class A only.
- Southbound rest area to be shifted 30 m north to reduce environmental impact.
- Jacky Bulbin Road seagull to include u-turn.
- Offline section realigned to conform with revised cadastral information.
- Median right turn added at CH 65.650 into private access.
- Merge Taper added at Serendipity Road.
- Median right turn added at CH 80.400 into Cypress Road.
- Cut at New Italy reduced to decrease impact on area, including *Melaleuca irbyana*.
- Road realigned between Cypress Road and New Italy Road to reduce land acquisition and impact of mango trees. Retaining wall added to eliminate batter adjacent to mango trees and well.
- Access to four properties 300 to 600 m north of Cypress Road to be combined to one egress only.
- Parking area to be formalised at New Italy to enable parking for 60 vehicles.
- Median right turn added with u-turn facility at Whites Road.
- Bend at Gap Road realigned to 1000 m to reduce impact on western side.
- Cut at New Italy reduced to decrease footprint and impact on area.
- U-turn located at CH 85.800 Nortons Road.
- Parallel service road from Wondawee Way to Trustums Hill Road added.
- Major design change at northern tie-in due to excessive material requirements for the Woodburn to Ballina project. Full dumbbell interchange to be incorporated into design with future north facing ramps.

The major design change for the project is the location of a grade-separated interchange between The Gap Road and Trustums Hill Road. Following feedback regarding access to Woodburn and an opportunity to reduce net cut and fill balance of materials for both schemes, the grade-separated interchange has been located 800 m south in order to create a net reduction in fill material required. This has also provided the opportunity for the communities at The Gap Road and Wondawee Way to travel directly to Woodburn via service roads without the need to use the Pacific Highway upgrade when built. The Preferred Concept Design is shown in **Figures D1-D5**.

Way forward

The information contained in this report provides two key functions:

- Defines a project impact boundary for display in relevant council local environmental plans.
- Provides a basis for the future environmental assessment of the project.

Following the display of the preferred concept design, the Roads and Traffic Authority (RTA) will consider any issues raised. Once this process is finalised the relevant local council will be approached to have the corridor formally reserved in its local planning instrument. The boundaries of the corridor will be based on the final concept design. Detailed environmental assessment will commence and formal planning approval sought closer to construction, the timing of which would depend upon funding availability. Further refinements may occur during the environmental assessment stage of the project and in response to community comments.

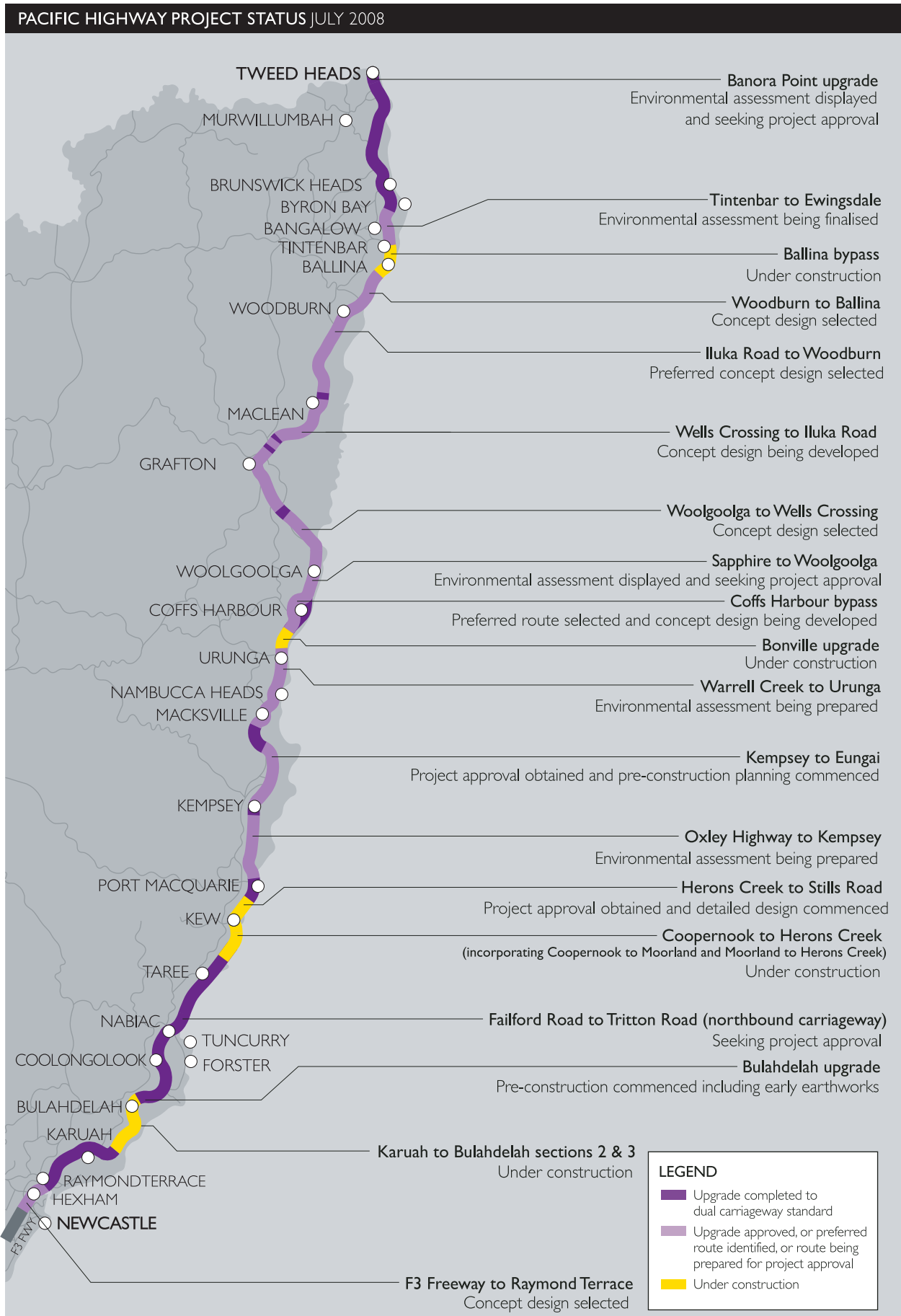


Figure A

Pacific Highway Upgrade Program as at July 2008



Figure B

Study Area - North Coast Regional Context



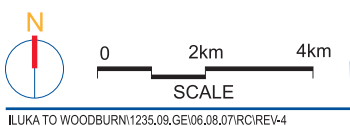
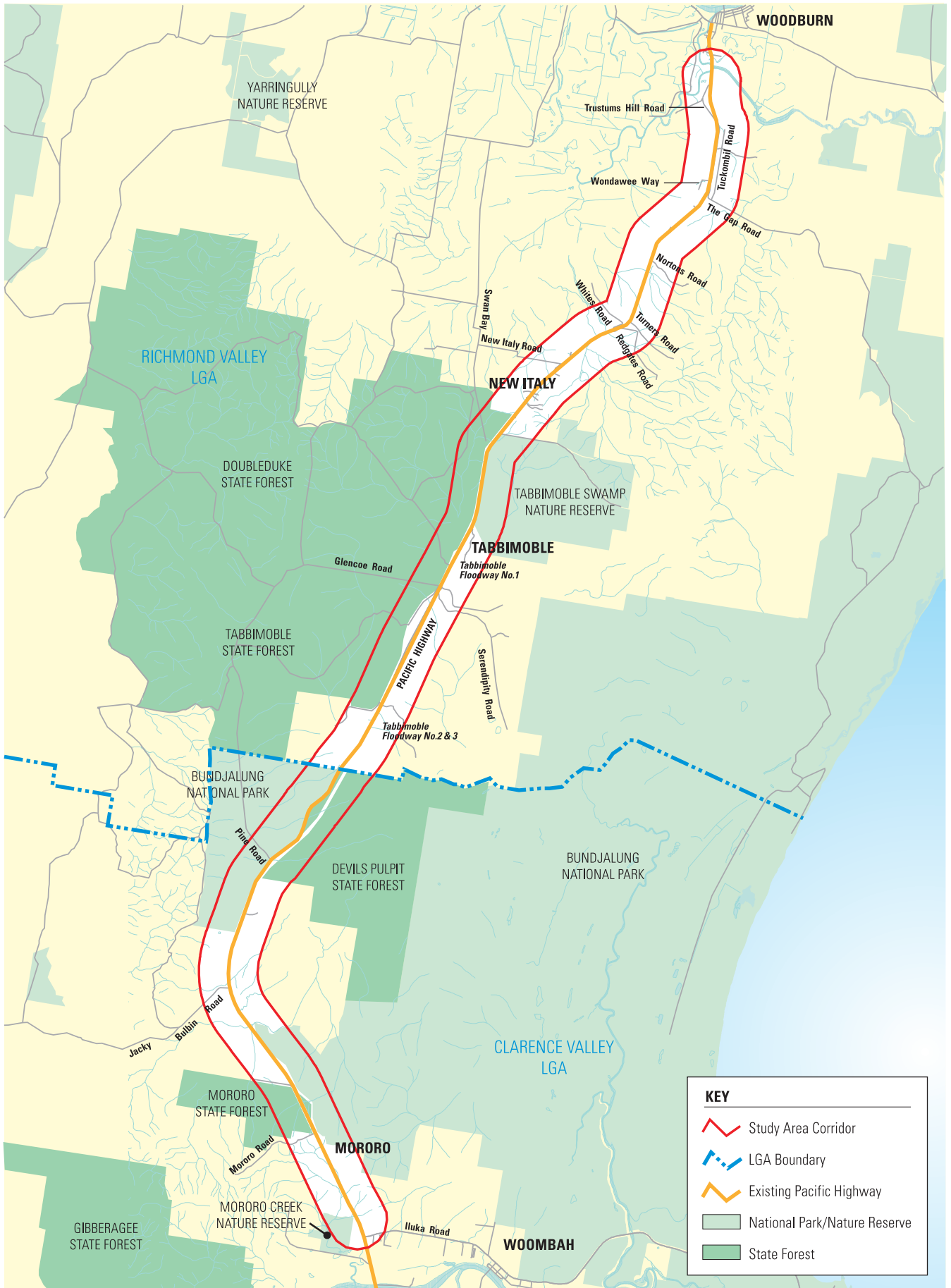


Figure C
Study area

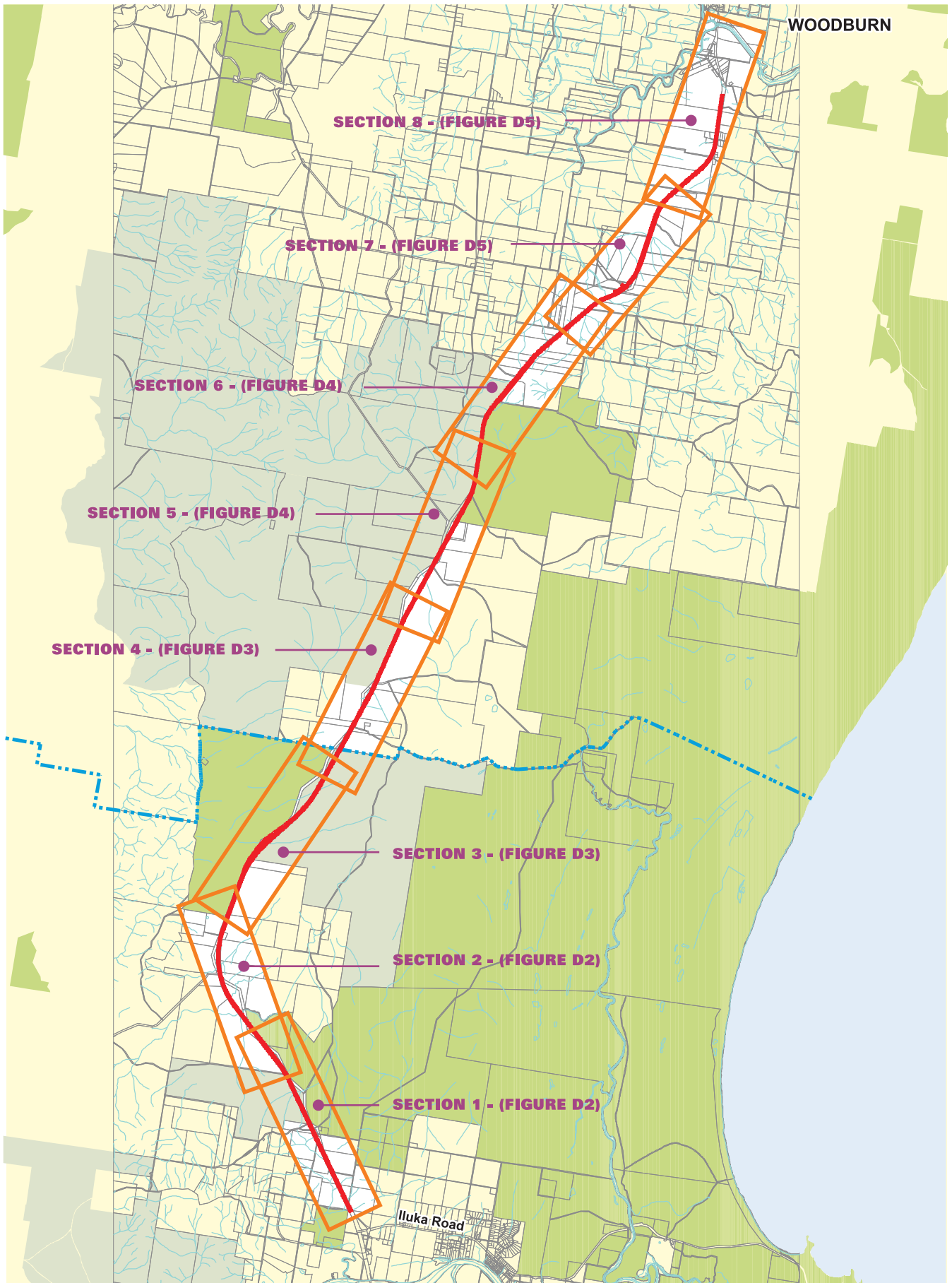
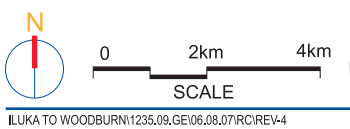


Figure D1

Preferred Concept Design Sections Map - Arterial (class A)



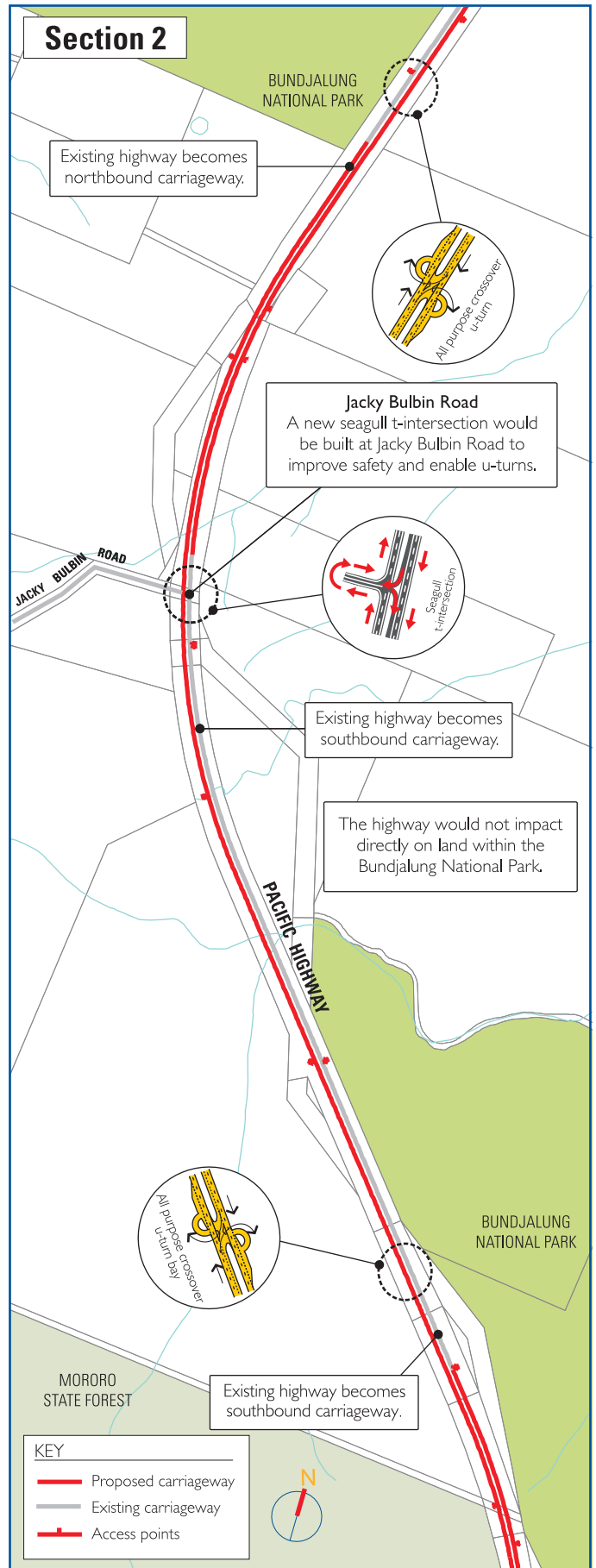
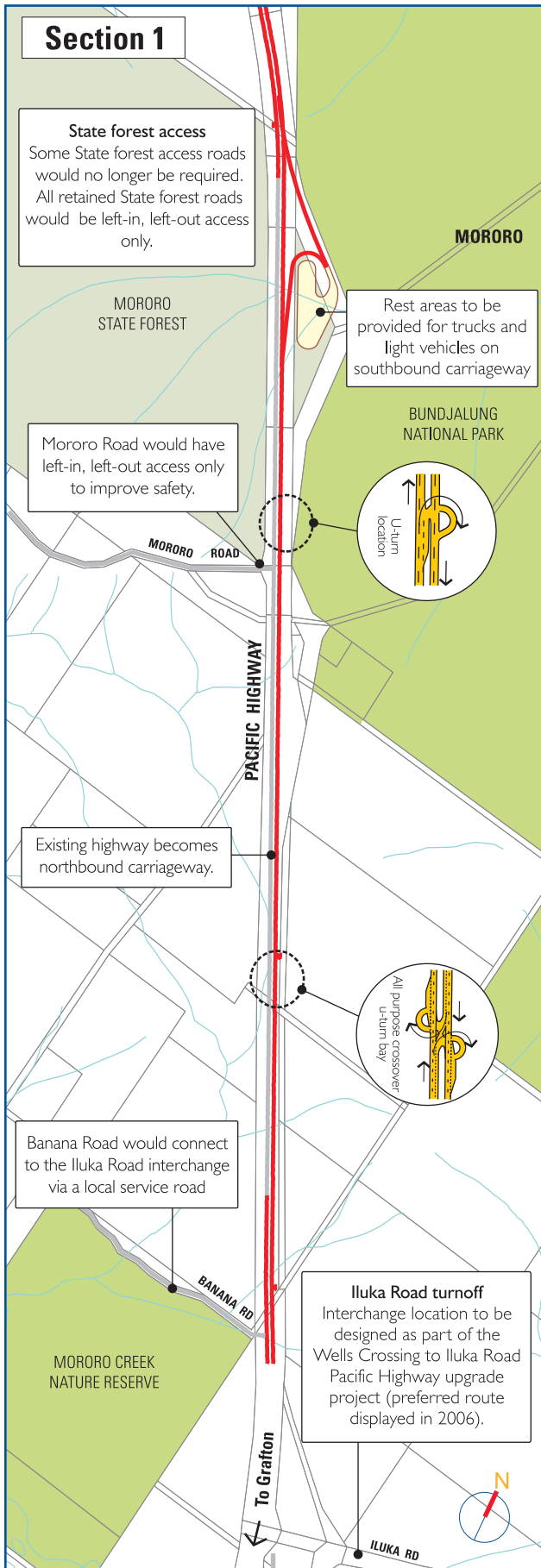


Figure D2

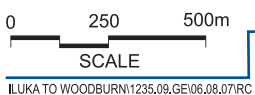
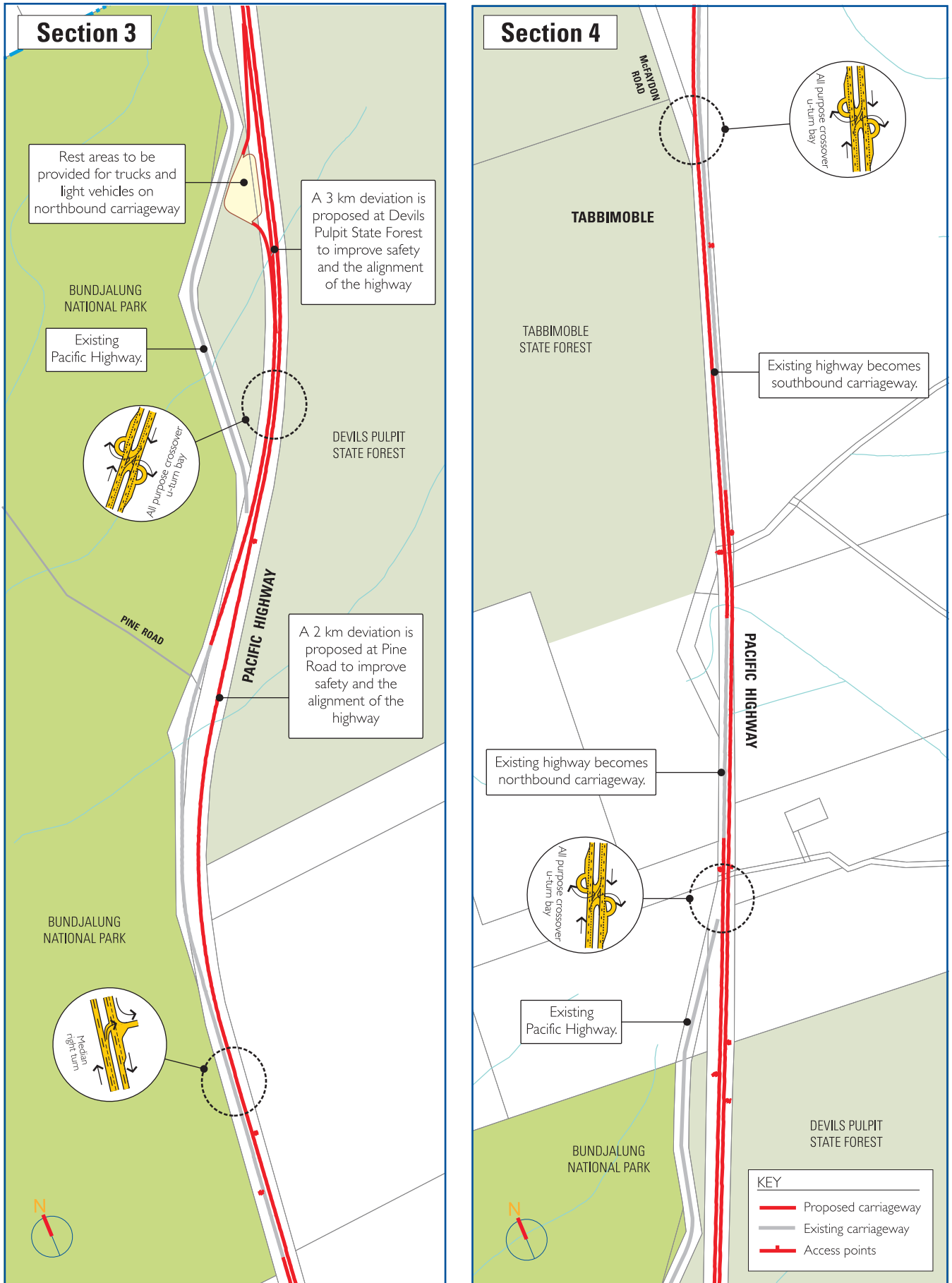


Figure D3

Preferred Concept Design (Arterial (class A))

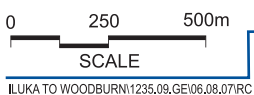
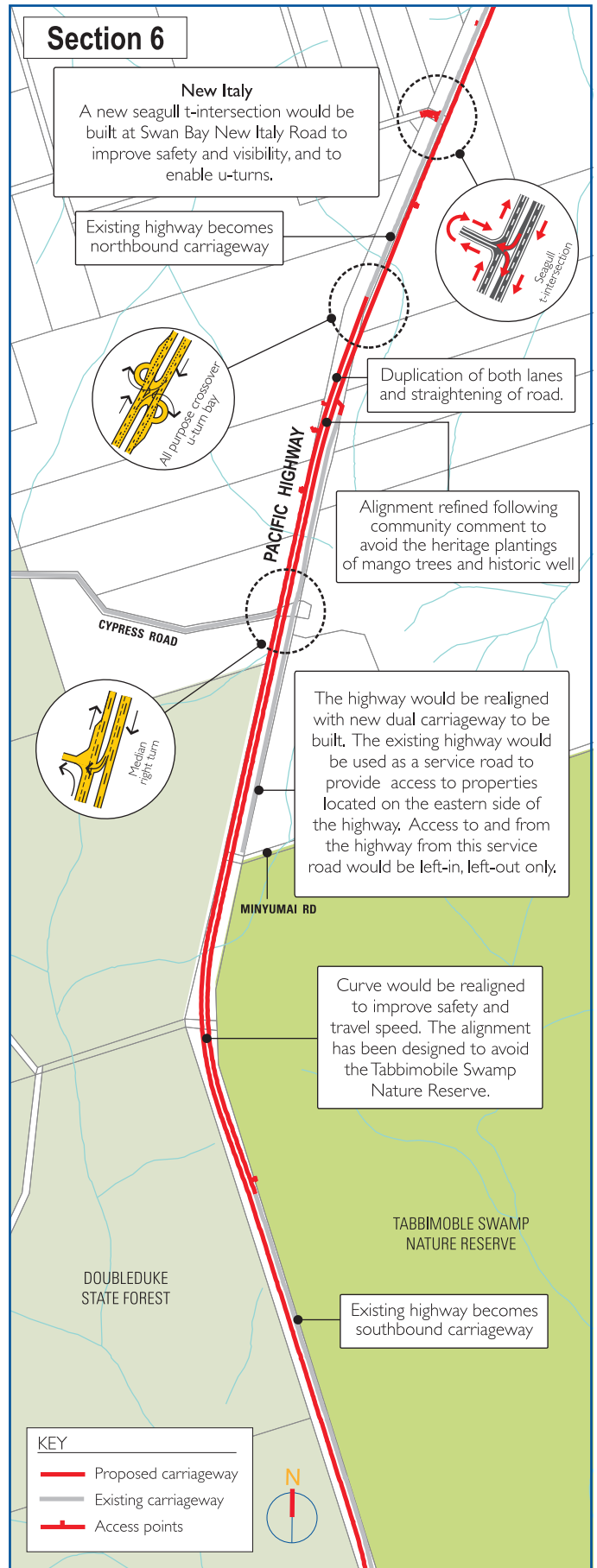
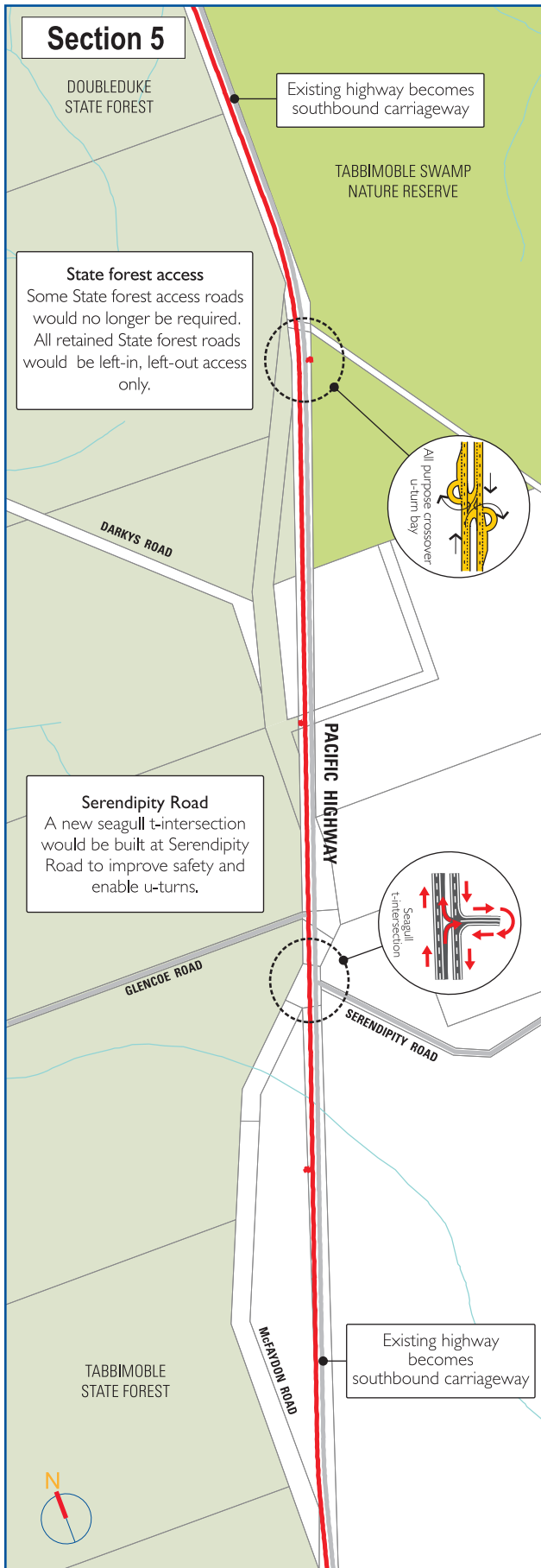


Figure D4

Preferred Concept Design Arterial (class A)

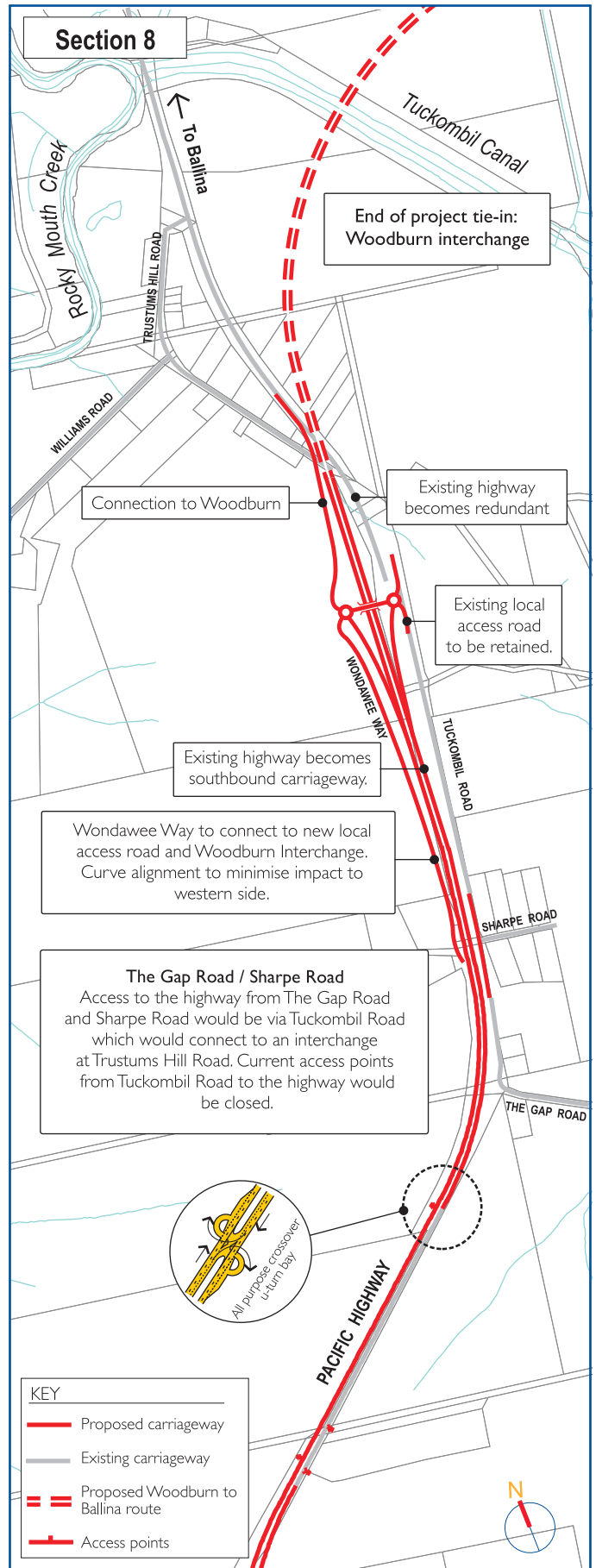
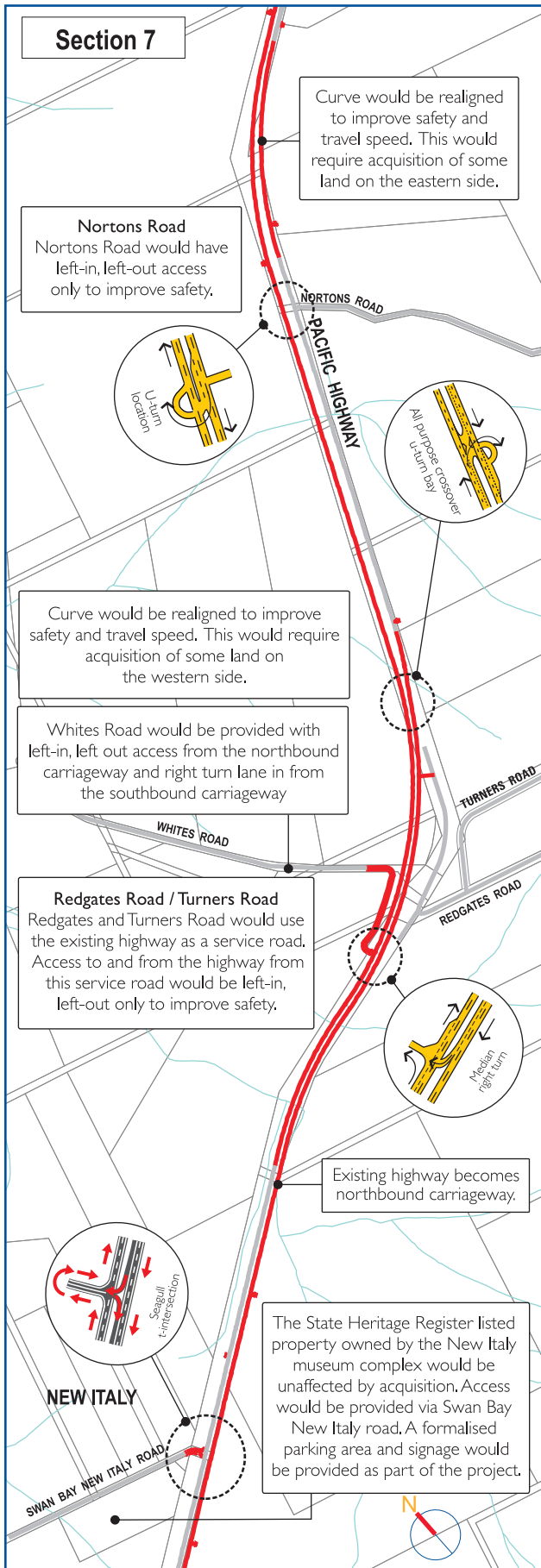


Figure D5