



Roads and Traffic Authority of NSW

Oxley Highway to Kempsey Upgrading the Pacific Highway Environmental Assessment

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11. Social and economic

This chapter describes the socio-economic environment of the Proposal, including a demographic profile, notable cultural and social aspects as well as key business characteristics.

The Director-General's environmental assessment requirements identify social and economic impacts to be a key issue. **Table 11-1** indicates where the aspects of the Director-General's environmental assessment requirements that relate to social and economic impacts are addressed, either in this chapter or in other chapters (in *italics*).

Table 11-1 Social and economic impacts

Environmental assessment requirements	Where addressed
Social and Economic – including but not limited to:	
<ul style="list-style-type: none"> Regional economic impacts to the agricultural sector taking into account the loss of regional and State Significant farmland as identified in the <i>Draft Mid-North Coast Farmland Mapping Project</i> (Department of Planning, 2007). 	Section 11.2.2
<ul style="list-style-type: none"> Local community socio-economic impacts associated with access, landuse, property and amenity related changes. 	Section 11.2.3
<ul style="list-style-type: none"> The overall viability, property infrastructure (ie sheds, water supplies, etc), profitability, productivity, sustainability and natural resource values of businesses (including agricultural producers and Forests NSW). 	Sections 11.2.2 and 11.2.4
<ul style="list-style-type: none"> Impacts on oyster priority areas in accordance with the <i>NSW Oyster Industry Sustainable Aquaculture Strategy 2006</i>. 	Section 11.2.2

The potential impacts of the Proposal on these characteristics are discussed along with proposed management measures. The assessment presented in this chapter draws upon the findings of the impact assessments in other chapters of this Environmental Assessment relating to urban and residential amenity including traffic (**Chapter 18 Traffic and transport**), noise (**Chapter 16 Noise and vibration**), visual amenity (**Chapter 17 Visual amenity and urban design**), and air quality (**Section 20.1**). Impacts relating to agricultural land use are discussed in detail in **Chapter 10 Land use and property**. This chapter addresses the social and economic impact of the Proposal on local and regional communities and businesses.

11.1 Existing social and economic environment

11.1.1 Regional context

Population

The Proposal is located within the southern portion of the Mid North Coast region of NSW, between Port Macquarie and Kempsey. The *Mid North Coast Regional Strategy* (Department of Planning 2009a) estimates that the Mid North Coast could experience a potential population increase of 91,000 between 2006 and 2031. This would take the population from 333,600 to 424,600, an increase of more than 28 per cent.

The *Mid North Coast Regional Strategy* predicts the average annual growth rate to be 1.1 per cent over the next 25 years, which would be amongst the highest regional growth rates in NSW.

Port Macquarie is the largest settlement within the region in terms of population, employment, retail and service provision. Kempsey is a large rural town servicing a relatively large rural population area.

According to the 2006 Census, the Port Macquarie-Hastings local government area has an overall population of 68,429 (Australian Bureau of Statistics (ABS) 2006). The main towns in the local government area are Port Macquarie and Wauchope. Port Macquarie is located on the coast approximately 10 kilometres to the east of the Proposal area and had a population of 39,219 in 2006 (ABS 2006). It is a major tourist destination and regional centre for the area. Wauchope, located approximately 7 kilometres to the west of the Proposal area on the Oxley Highway, serves as a regional inland centre, particularly for the rural communities along the Oxley Highway and the associated agricultural industries. The village of Telegraph Point is located in the Proposal area, adjacent to the Wilson River in the Port Macquarie-Hastings local government area.

The total population of the Kempsey local government area is 27,388 according to the 2006 Census (ABS 2006). Kempsey, with a population of approximately 8137 people in 2006 (ABS 2006), is the largest town in the local government area. The village of Kundabung, in the north of the Proposal area, is located in the Kempsey local government area.

Economy

Census data gathered by the ABS provides information relating to the economic environment of the Mid North Coast region. The data indicates that the region has a relatively broad economic base with tourism, services, forestry and agriculture (including oyster production) being important contributors to the economy.

The estimated gross regional product at factor (or industry value-added) cost for the greater Port Macquarie region increased by 0.5 per cent to \$1.7 billion in 2004/05. The greater Port Macquarie region contributed 22.4 per cent to the gross regional / State product of the Mid North Coast statistical district (\$7.7 billion) and 0.6 per cent to NSW (\$269.4 billion) in 2004/05 (Port Macquarie-Hastings Council 2006).

The largest industry sector contribution was made by property and business services at approximately \$198.2 million, or 11.5 per cent of the total gross regional product for the greater Port Macquarie region. The retail trade (9.5 per cent), health and community services (9.3 per cent), manufacturing (9.2 per cent), and electricity, gas and water supply (7.5 per cent) sectors were the next highest group of industry sector contributors to the gross regional product of the greater Port Macquarie region (Port Macquarie-Hastings Council 2006).

The gross regional product for Kempsey Local Government Area increased by 3.3 per cent to \$784.1 million in 2005/06. Kempsey Local Government Area contributed 8.7 per cent to the gross regional / State product of the Mid North Coast statistical district (\$9 billion), and 0.2 per cent to NSW (\$319.5 billion) in 2005/06 (Kempsey Shire Council 2007).

The Kempsey local government area has a multi-skilled and stable workforce that supports a range of industries. The largest industry contribution was made by the manufacturing sector at approximately \$92.3 million, or 11.8 per cent of the total gross regional product for the Kempsey local government area. The retail trade (8.6 per cent), health and community services (8.5 per cent), and property and business services (7.5 per cent) sectors were significant contributors to the gross regional product of the Kempsey local government area (Kempsey Shire Council 2007), reflecting similar trends to the greater Port Macquarie region.

Future growth areas

The *Hastings Urban Growth Strategy* (Hastings Council 2001a), prepared by the former Hastings Shire Council, identifies Area 13 Thrumster as an urban investigation area. Area 13 Thrumster is situated between the Oxley Highway and Fernbank Creek Road and lies in the south-eastern portion of the Proposal area. In May 2006, Port Macquarie-Hastings Council adopted the *Area 13 Urban Investigation Area, Structure Plan, Urban Design Guidelines* (Deicke Richards 2006). This plan identifies the framework for development of Area 13, which is planned to accommodate an ultimate population of 11,000 people and 4500 new dwellings.

Whilst the Kempsey local government area is experiencing growth, there are no identified growth areas within the Proposal area.

Primary industry

The local agriculture, forestry, fishing and aquaculture industries underpin the local rural economy. There is a diverse range of agriculture activities including cattle grazing, orcharding, tea tree plantations, vineyards, and poultry farms throughout the region.

The location and extent of regionally significant farmland is discussed in **Section 10.1**.

The Proposal passes through three state forests: Cairncross State Forest, Ballengarra State Forest and Maria River State Forest. These forests are discussed in **Section 10.1**. Timber harvesting and other forestry activities occur in these three forests and in the adjacent Kalateenee State Forest, which is located north of the Maria River to the west of the Proposal area. The existing Pacific Highway is used to access these forests via a series of forestry tracks and roads.

Aquaculture and oyster industry

Aquaculture is an important part of the local economy and includes oyster farming in the Hastings River. Aquaculture farms are also located to the north of Telegraph Point (currently non-operational) and in and around Kundabung.

The *NSW Oyster Industry Sustainable Aquaculture Strategy* (DPI 2006) identifies priority areas within NSW estuaries suitable for oyster aquaculture. It aims to:

- Secure resource access rights for present and future oyster farmers throughout NSW.
- Document and promote environmental, social and economic best practice for NSW oyster farming.
- Integrate the principles of ecologically sustainable development, community expectations and the needs of other user groups into the management and operation of the NSW oyster industry.

Parts of the Hastings River are nominated in the strategy as a priority oyster aquaculture area. Oyster priority areas and working leases are located both upstream and downstream of the Proposal's crossing of the Hastings River. Further information on oyster priority areas is provided in **Chapter 13 Water quality**.

11.1.2 Local context

Employment

In the Port Macquarie-Hastings local government area, the sector of the economy that employs the most people is retail trade (15.4 per cent), followed by health care and social assistance (13.3 per cent), construction (9.5 per cent), and education and training (8.1 per cent) (Port Macquarie-Hastings Council 2006).

In the Kempsey local government area, intermediate clerical, sales and service workers (6.7 per cent) is the sector of the economy employing the most people, followed by elementary clerical, sales and service workers (5.3 per cent), tradespersons and related workers (5.1 per cent) and labourers and related workers (4.5 per cent) (ABS 2006).

Business activity

In the Proposal area, particularly in the northern section, a relatively high proportion of the workforce is in agriculture, forestry, fishing and construction compared with the Mid North Coast (ABS 2006). Cattle grazing, orchard and aquaculture enterprises are important rural economic activities in the Proposal area. Two service stations and possibly local businesses in Telegraph Point and Kundabung receive a small proportion of passing trade from the Pacific Highway. Other industries such as sawmills, quarries, marine engineering, construction spare parts, construction materials, waste management and a winery are important businesses in the local economy relying on the Pacific Highway for access and transportation.

Amenity and lifestyle

Reflecting broader lifestyle trends throughout the Mid North Coast, increasing numbers of new residents have been attracted to the region. The lifestyle in the local area can be described as one in which people value and enjoy the coastal, semi-rural and rural settlement amenity and natural landscapes, along with proximity to local services and amenities provided in the Port Macquarie and Kempsey. The region's diversity of lifestyle, social and economic opportunities is reflected in a variety of local cultures and individual communities of varying sizes.

Tourism

Tourism is an important and growing industry for areas surrounding coastal towns such as Port Macquarie. In recent decades, increasing numbers of visitors have been attracted to the region's ocean beaches and its natural and rural hinterland. The Pacific Highway is the primary form of transportation for tourism in the area, and is integral to the local tourism industry. Tourism facilities such as a winery and a watersports park are serviced by the existing Pacific Highway and the local road network.

Community access and mobility

The existing Pacific Highway currently forms a physical barrier between some community precincts within the Proposal area. The location of the existing highway, along with other environmental characteristics, has influenced the form and separation of settlements such as Telegraph Point and Kundabung.

The Pacific Highway is the dominant transport link in the Proposal area. It provides connection between the small communities along the route and provides the main link from Port Macquarie to Kempsey. **Chapter 18 Traffic and transport** indicates that the Pacific Highway has an annual average daily traffic volume of approximately 12,300 south of Hastings River drive, increasing to approximately 14,300 at the Kempsey local government area boundary. Traffic on the existing highway generates conflict with local road users, making it difficult for crossing the existing highway, moving between urban areas and accessing the town or village centres. Refer to **Chapter 18 Traffic and transport** for more details on traffic and transport.

11.2 Socio-economic impacts

The Proposal has the potential to have both positive and negative impacts on people at a number of levels including as landowners and residents, road users, and as a community. A qualitative assessment of the range of potential impacts that could arise from the construction and operation of the Proposal is outlined below.

11.2.1 State-wide, regional and local benefits

The Proposal would have a number of social and economic benefits for the local communities, the region and NSW. Benefits would be produced as a result of improved traffic safety and reduced travel times. The Proposal also has the potential to facilitate economic growth in the region by improving links to inter-regional markets, which in turn increases access to goods and services.

It is anticipated that there may be a range of economic benefits for businesses in Port Macquarie, Telegraph Point, Kundabung and Kempsey throughout the construction phase as a result of increased demand for accommodation, goods and services. The size and composition of the construction workforce is expected to vary and will depend on the delivery and staging options adopted. An onsite workforce of approximately 300 people could be employed at any given time during the construction phase which is expected to take three to five years depending on the construction delivery and staging options adopted. The workforce would comprise labourers, plant operators, engineers, concreters and others.

Additional employment opportunities may be generated during the construction period in the local area, especially through subcontractor and material supply.

Other socio-economic benefits of the Proposal would include improved road safety and a reduction in road crashes, reduction in the amount of heavy vehicle traffic through villages, particularly Telegraph Point. The Proposal would also improve State-wide and regional north-south access, which would support tourism, access to markets and regional employment in NSW. It also would result in reduced travel times on the upgraded highway and therefore a reduction in user costs, and may facilitate and encourage positive changes in driver behaviour by providing rest areas.

11.2.2 Regional socio-economic impacts

Impacts on agriculture sector

The profitability of agricultural businesses may be adversely affected by a reduction in the area of land available or changes to the operation of businesses.

The Proposal would result in:

- Severance of areas of regionally significant farmland identified in the *Mid-North Coast Farmland Mapping Project* (Department of Planning 2009b).
- The loss of some agricultural land.

- The fragmentation of some agricultural properties and changes to access arrangements within those properties.
- Changes to access for some properties.

Since the issue of the amended Director-General's environmental assessment requirements on 14 November 2008, a final recommendations report for the *Draft Mid-North Coast Farmland Mapping Project* (Department of Planning 2007) was issued in March 2009. The final report only uses one category of farmland, 'regionally significant'; State significant farmland is no longer included as a category of farmland. This assessment therefore only addresses the loss of regionally significant farmland.

As discussed in **Section 10.2**, approximately 49.4 hectares of regionally significant farmland would potentially be acquired for the Proposal. Impacts would generally be restricted to small areas of land adjacent to watercourses. The viability and operational capacity of these agricultural businesses would generally not be significantly affected due to the relatively small area of the properties that would be acquired. The Proposal would not result in the loss or reduction in capacity to the extent that the viability or sustainability of these agricultural properties was endangered. Based on this assessment, the Proposal would not negatively impact the economic viability of the agricultural sector on a regional scale.

While the productivity of some individual properties, not identified as regionally significant farmland, may be reduced, the viability and operational capacity of agricultural businesses impacted by the Proposal would not be significantly affected. This is generally due to the small area of these properties that would be acquired.

The concept design has sought to maintain existing access arrangements where possible on agricultural properties, such as maintaining access to high ground and access for transportation of supplies and produce. As outlined in **Section 11.3**, management measures to reduce impacts on individual agricultural properties would be developed in consultation with individual landholders during detailed design and property acquisition negotiations.

The Proposal would result in the fragmentation of some working agricultural properties and, in some cases, isolation of areas of land from direct access. This would affect land and stock management on some properties by reducing the land area available for cultivation or pasture. It may also reduce accessibility within properties. However, with the application of management measures and the provision of alternative access where existing access is impacted, the Proposal would not adversely impact the viability of the agricultural sector in the area.

Oyster priority areas

As discussed in **Chapter 13 Water quality**, the *NSW Oyster Industry Sustainable Aquaculture Strategy* (Department of Primary Industries 2006) establishes a set of water quality guidelines, flow objectives and management measures for the healthy growth of oysters that are safe for human consumption. The strategy identifies 120.5 hectares of priority oyster aquaculture areas within the Hastings River and lower reaches of the Maria River near its confluence with the Hastings River. Priority oyster aquaculture areas are located on the Hastings River, approximately 1 kilometre upstream and approximately 2.5 kilometres downstream of the Proposal. The majority of priority oyster aquaculture areas are located generally downstream of the confluence of the Hastings and Maria rivers, approximately 3 kilometres downstream of the Proposal.

At a meeting convened with the Port Macquarie-Hastings Shellfish Association on 13 September 2007, the primary concern expressed by the association was the impact of acid sulfate soil disturbance on the Hastings River floodplain during construction.

Acid sulfate soils have the potential to threaten oyster farming in the Hastings River with flow-on effects for the wider oyster industry. High risk acid sulfate soils have been identified adjacent to the Hastings River. The Hastings River is a nursery for young oysters that are exported to other oyster farming areas of NSW. The risk of acid sulfate soil exposure as a result of the Proposal is the greatest during construction.

Acid sulfate soils and sedimentation would be managed during construction in accordance with DECCW and RTA environmental management practices, as detailed in **Sections 13.4.1** and **20.3**. Residual risks associated with acid sulfate soil exposure after the completion of construction activities would be managed through appropriate structure design, post-construction management and the appropriate rehabilitation of exposed areas. Water management measures described in **Section 13.4** would control water quality to limit any runoff and spills from the Proposal during the operational phase. Given implementation of these management measures, it is not expected that acid sulfate soils would have a significant impact on oyster priority areas.

Other potential impacts on oyster priority areas in the vicinity of the Proposal include increased sedimentation and runoff, and disruptions to access during construction and operation. The Proposal has incorporated appropriate measures to manage and minimise these impacts. No acquisition of individual oyster farms or priority areas would be required by the Proposal.

Quarries

Two quarries operate in the area, one to the north of Sancrox Road and the second on Yarrabee Road (regionally significant). These quarries produce hard rock, aggregate, mattress rock and manufactured sand and would be potential resources for the Proposal. The Proposal would improve access to the quarries as a result of replacing the existing intersections with the proposed traffic arrangement. An overbridge south of Sancrox Road would improve the safety of cross-highway movements for quarry trucks; similarly the proposed vehicular underpass for connection with Yarrabee Road would improve accessibility and road safety. No acquisition of quarry land would be required by the Proposal.

The sand mining operation adjacent to the existing highway and Hastings River would not be significantly impacted as a result of the Proposal and would provide a potential resource for the Proposal.

Impacts on forestry sector

As discussed in **Section 10.2** approximately 114 hectares of state forest would be acquired for the Proposal. The acquisition of forest land and changed access arrangements have the potential to affect the sustainability and natural resource value of the Cairncross State Forest, Ballengarra State Forest and Maria River State Forest. The acquisition of forest land may also result in some severance of forest resources.

Forests NSW has identified the areas of forest that would be acquired or severed for the Proposal as having limited production and harvesting value as well as having high visual aesthetic values.

The alignment of the Proposal through state forest areas is shown in **Figure 6-2a** to **Figure 6-2q**. **Table 11-2** summarises the severance impacts on the three state forests.

The acquisition of land in Cairncross State Forest would result in a section of the harvestable forest being isolated between the existing Pacific Highway and the Proposal. However, this is a comparatively small percentage (less than 1 per cent) of the overall forest, and would not impact the sustainability of logging the remaining sections of Cairncross State Forest.

Similarly, the acquisition of land in the Ballengarra and Maria River state forests would not impact the sustainability of the remaining areas of these state forests. Due to the limited area of the forests that would be acquired, the Proposal would not reduce the business viability or sustainability of these forests.

The major land use impacts on state forests are on the FMZ 4 – General Management, and FMZ – 3B Special Prescription management zones within each forest. Timber harvesting potential would be lost for approximately 17.1 hectares due to land acquisition, with other production potential lost for a further 53.1 hectares. Impacts on state forests are outlined further in **Section 10.2.3**.

Acquisition of state forest land would occur following an Act of Parliament, resolution of Parliament, or notice in the Government Gazette. However, an option available to the RTA and Forests NSW could include a land exchange. A land exchange could be appropriate where suitable land is available from other RTA projects in the case where land holdings exceed requirements. The RTA would undertake negotiations with Forests NSW to determine the suitability of a land exchange. More details on the requirements of the *Forestry Act 1916* are provided in **Section 10.3**.

Table 11-2 State forest severance impacts

State forest	Impact
Cairncross	<ul style="list-style-type: none"> 46.4 hectares (0.8 %) of the total 5909 hectare state forest to be acquired. Currently severed by existing Pacific Highway. Existing highway corridor widened between south of Blackmans Point Road and Extension Road. A new alignment between Extension Road and northern forest boundary, to the east of the existing highway. A portion of the forest landlocked between the Proposal and the existing highway. Some forestry access roads severed by the new alignment. No direct access to the upgraded highway. Access would be provided via Bill Hill Road.
Ballengarra	<ul style="list-style-type: none"> 33.7 hectares (0.5%) of the total 6319.7 hectares state forest to be acquired. Currently severed by existing Pacific Highway. Existing corridor widened to accommodate the Proposal. No additional severance impacts. Some forestry access tracks impacted by the Proposal. No direct access to the upgraded highway. Access would be provided via the service and access road network.
Maria River	<ul style="list-style-type: none"> 34.3 hectares (1.6%) of the total 2118.4 hectare state forest to be acquired. Currently severed by existing Pacific Highway. A new alignment between Bloodwood Ridge Road and the Maria River to the east of the existing highway corridor. Small portions of the forest would be isolated where the Proposal alignment deviates slightly from the existing highway corridor. Some forestry tracks impacted by the Proposal. Access is to be provided via the service and access road network.

The Proposal has been developed to provide alternative means of forestry access and to minimise the separation of areas within state forest. Access to areas of forest not directly impacted by the Proposal would be maintained for forestry operations during construction and following completion of the Proposal. Access would be provided by connections to the service and access road network. This would reduce the impact on the productivity and management of the state forests.

The acquisition of timber harvesting areas for the Proposal is not expected to have a significant impact upon either Forests NSW operations or that of local timber mills. Forests NSW would be provided with the opportunity to remove any harvestable timber prior to construction. The overall viability and operational capacity of the state forests would not be significantly reduced as a result of the Proposal.

11.2.3 Local community socio-economic impacts

Community severance

At present, the Pacific Highway route through the settlements around Sancrox Road, at Telegraph Point, and at Kundabung limits community cohesion. The separation of local and highway traffic and improved access arrangements as the result of the Proposal has the potential to encourage greater community cohesion in these areas, particularly Kundabung. The need to provide safe and adequate access to properties has been an integral part of the Proposal's concept design. Design elements include the appropriate location and design of interchanges and traffic arrangements, overbridges, vehicular underpasses and connections to the local road network.

Improved community interaction as a result of a safer vehicle, pedestrian and cyclist environment, improved environmental amenity and improved accessibility would be a direct positive outcome of the separation of local and highway traffic. However, the Proposal could add extra travel time to areas such as north-east of Haydons Wharf Road and Kundabung Road as a result of the location and design of interchanges, traffic arrangements and connections to the service and access road network.

Potential community severance impacts on settlements at Sancrox Road, Telegraph Point and Kundabung are discussed below.

Sancrox Road

Connectivity between the rural-residential communities on the eastern and western sides of the Pacific Highway in the area of Sancrox Road and Fernbank Creek Road would be improved by the construction of an overbridge to the south of Sancrox Road. Safety would be improved by the provision of this overbridge, as cross-highway traffic movements would be eliminated.

Access to the upgraded highway would be maintained and available from the service and access road network in this area. The service and access road network would assist to facilitate the future economic development in the area through improved logistics, land development and increased accessibility. Connectivity to other activity clusters would be maintained via the proposed service and access roads with marginally longer travel times; however connectivity to regional centres such as Kempsey and Port Macquarie would be improved via the Proposal. The integrity of the existing industrial precinct would not be affected by the Proposal.

What is community severance?

If a large or busy road cuts through an area, it can have the effect of driving a wedge through a community by limiting people's ability or desire to move through that area, which in turn can reduce accessibility to key services and damage local social networks and community 'cohesion'.

The cumulative impact of psychological and physical barriers to movement and social participation created by the transport infrastructure is what constitutes 'community severance' (UK Department for Transport 2006).

Telegraph Point

Community cohesion in Telegraph Point is expected to be improved as a result of the Proposal.

The existing Pacific Highway would be retained as the service and access road connection from the Proposal to Telegraph Point. Amenity would be significantly improved for residences in close proximity to the existing highway due to reduced traffic volumes. The Proposal would improve connectivity and road safety within the village through the separation of local and through traffic creating opportunities for an improved environment.

However, this section of the Proposal would form a distinct physical and visual barrier between numerous rural properties, particularly to the east of Telegraph Point. The Proposal to the east of Telegraph Point through a rural landscape has the potential to be perceived as severing rural residences in that location. While physical access would be maintained, residents to the east of the Proposal could feel segregated from residents to the west.

The service and access road network would improve connectivity between Telegraph Point and other regional centres such as Kempsey and Port Macquarie with a safer, lower-speed environment separated from through traffic on the upgraded highway.

Kundabung

The existing Pacific Highway currently bisects Kundabung, and residents are required to use and cross the existing highway to travel between the eastern and western sides of the village. The Proposal includes an overbridge to link the eastern and western sides of the village providing an opportunity to improve connectivity within the village. The Proposal would also separate local traffic from highway traffic for movements within the village thereby significantly improving safety conditions. Access to and from the upgraded highway would be improved via the construction of connecting service and access roads.

The current integrity of the rural properties surrounding Kundabung would not be impacted following the construction of the Proposal.

Property access

To improve safety conditions, the Proposal would rationalise at-grade access from local connecting roads and private property. The Proposal would provide access to properties via local connecting roads. The local connecting roads would connect to the upgraded highway using interchanges and traffic arrangements or grade separated on-ramps and off-ramps. Access for agricultural producers and state forests would be maintained.

Whilst a number of individual properties that currently access the highway directly would have altered access arrangements as a result of the Proposal, alternative access arrangements to and from the upgraded highway would be provided. The result would be an overall improvement in safety for property access.

Construction access

Activities during the construction phase have the potential to disrupt traffic on local roads and along the existing highway, particularly if the works cause delays, interruptions or additional travel time. The duration of any such disruption would depend on specific construction staging plans but would be expected to be less than six months in more complex or constrained locations.

Disruptions during construction are most likely to occur where the Proposal would upgrade or cross the existing highway. Disruptions would also occur on other local roads such as Sancrox Road and Fernbank Creek Road, Blackmans Point Road, Haydons Wharf Road, Yarrabee Road, Mingaletta Road and Wharf Road, Kundabung Road and Rodeo Drive. Alternative access would always be provided where access restrictions would be long-term. Any adverse impacts on community cohesion during construction would be temporary, as the focal point of impact would move as construction progresses along the route. There are not expected to be any ongoing negative community cohesion issues arising from the construction phase.

Land use impacts

The Proposal would affect a number of privately owned properties. The impacts of the Proposal on land use and property have been assessed in **Section 10.2**. Many of those impacts are directly related to social and economic characteristics of communities in the Proposal area.

Property acquisition, changes to property access and some relocations would be the main land use impacts. Potential socio-economic impacts associated with property access and acquisition include implications for the operation of agricultural and rural residential properties, forestry impacts, altered access and mobility between private properties, and local and regional community facilities. It could also affect individuals required to relocate through disruption to social networks, employment and sense of place; uncertainty about decisions and outcomes affecting their properties; and uncertainty about property values and changes in amenity.

Property infrastructure

Acquisition of whole properties or property portions for the Proposal would result in the loss of some property infrastructure. Examples of property infrastructure that would be lost are farm sheds, water supplies, windmills and fences. These effects are however expected to be isolated and minor. Where this is the case, negotiations with landowners would be undertaken to examine options to provide alternative infrastructure, or to develop compensatory measures.

Environmental amenity

The potential exists to impact upon the environmental amenity enjoyed by residents in close proximity to the Proposal. Noise and visual impacts would create a change to the current amenity enjoyed by residents within 200 metres of the Proposal. A perceived reduction in air quality may also influence some residents. Although the pollutant levels would be low, the perception of pollution would influence the amenity of those in close proximity to the Proposal. Issues relating to noise and vibration, visual impacts and air quality are discussed separately in **Chapter 16 Noise and vibration**, **Chapter 17 Visual amenity and urban design** and **Section 20.1**.

11.2.4 Impacts on businesses

Viability and productivity

Construction phase

In the sections of the Proposal where the existing highway is to be duplicated, some businesses that have direct access to the Pacific Highway may be affected by temporary access changes during construction. Some disruption to local and through traffic would potentially affect businesses at Kundabung and south of Telegraph Point. These changes may affect patronage, particularly for those with a high reliance on passing traffic. However the overall impact on businesses would be expected to be minor due to the anticipated short duration of disruptions.

Further, in the section that bypasses Telegraph Point, access would be maintained to the existing local road network during construction and as such, road access to businesses would be maintained.

There may be impacts on businesses and community services such as education, medical, social and community facilities through additional patronage resulting from labour (and their families) relocating to the area. The size and composition of the construction workforce is expected to vary and will depend on the delivery and staging options adopted. The workforce would comprise labourers, plant operators, engineers, concreters and others. An onsite workforce of up to approximately 300 people may be employed at any given time during the construction phase.

It is anticipated that there would be a range of economic benefits to the local area as discussed in **Section 11.2.1** above.

Operation phase

Research into the economic impacts of bypasses similar to the Proposal (Parolin and Garner 1996) indicates that the loss of 'stopper' traffic would have impacts on businesses such as service stations and food outlets. Potential reduction in turnover and possibly decreased employment opportunities could occur. The extent of these adverse impacts would depend on the businesses' reliance on passing trade.

As discussed in **Section 6.3**, Telegraph Point is the only village to be bypassed by the Proposal. Access to Telegraph Point would be maintained via the existing Pacific Highway, which is to be retained as a local service road. The existing Pacific Highway currently bypasses the business centre of Telegraph Point and highway traffic must leave the existing highway and enter the village to access most of the available services.

The businesses in Telegraph Point predominantly serve local customers and are not typical businesses that target and rely on passing trade from highway traffic. 'Stopper' traffic is more likely to be from a local or regional source, rather than long distance highway traffic. Highway traffic predominantly uses the highway service centre located to the south at the Oxley Highway interchange. A small service station operates south of Telegraph Point and relies to an extent on passing trade. The businesses in Telegraph Point may benefit from the safer access provided for local and regional traffic. Overall it is considered that the viability of these businesses would not be detrimentally affected by the Proposal.

Access to the winery is currently via Fernbank Creek Road. This access would not be impacted by the Proposal, and the proposed Sancrox Road/Fernbank Creek Road traffic arrangement would enable highway traffic to access the winery.

As discussed in **Chapter 10 Land use and property**, about 50 agricultural properties would be impacted by the Proposal. The majority of impacts on agricultural properties would be from the acquisition of land. Existing legal access to agricultural properties would be maintained. Where this is not feasible, alternative access arrangements would be provided following consultation with the affected landowner. Whilst impacts to agricultural properties would result from the operation of the Proposal, the viability of these properties would not be significantly reduced as a result of the operation of the Proposal.

The local economy is likely to benefit from the improved road infrastructure provided by the Proposal. The Proposal has the potential to provide economic growth for the region through improved freight efficiency and travel times. These would provide flow-on benefits resulting in a reduction in transportation times and costs, providing better access for goods and services to markets as well as opening and strengthening access to inter-regional markets.

Impacts on infrastructure

The Proposal would produce a net benefit to businesses through the improvement of the regional and local transportation network. Impacts on businesses that currently have access to the existing highway are discussed above. However, the Proposal would allow for more efficient movement of goods, and greater accessibility to businesses through improvement to the local road network. The improved local road infrastructure would allow for safer local traffic movements separate from highway traffic.

Infrastructure on individual properties such as buildings, access roads and farm infrastructure would be removed as result of the Proposal. Where infrastructure is removed, the RTA would negotiate with affected landowners for alternative arrangements or compensation.

Natural resource values

The landscape along the Proposal is a mixture of cleared pastureland (27.8 per cent), plantations or partially cleared areas with scattered trees (5.4 per cent) and natural vegetation of varying quality (66.7 per cent). Large portions of the natural vegetation have been modified as a result of agricultural practices, pastoralism and logging.

The Proposal would require the clearing of approximately 203 hectares of native vegetation. Privately owned land would make up the largest percentage of land required for the Proposal (47.5 per cent) with state forest land the next largest (44.8 per cent). Impacts on individual properties and state forests are described in **Section 10.2** and **Table 10-4**. Other land with natural resource values includes nature reserves and local watercourses.

The visual impacts from vegetation clearance and the construction of road infrastructure would result in the loss of amenity, and the potential reduction in natural resource values. Examples of impacts would include agricultural properties that are severed or that have portions of land parcels isolated, or state forests that have portions of the forest isolated.

Measures to minimise the loss of natural resource values for individual properties, state forests and other land are outlined in both **Sections 10.3** and **15.4** and measures to reduce the potential visual impact are outlined in **Section 17.4**.

11.2.5 Staging implications

In preparing this Environmental Assessment, the potential social and economic impacts of the possible staging option described in **Section 7.3.2** in comparison to the construction of the entire Proposal to a full motorway standard have been considered as outlined below.

Should the Proposal be delivered in stages, the staging report described in **Section 7.3.3** would detail the social and economic impacts of the selected staging option. If any additional or altered impacts are identified, the staging report would further assess these impacts and identify appropriate management measures.

Economic and business impacts

As described in **Section 10.2.6**, the RTA would acquire sufficient land to cater for the ultimate motorway standard upgrade and would not need to acquire any additional land to allow for the construction of the possible staging option. As such, the economic and business impacts described in this chapter, particularly relating to property acquisition, would be similar, regardless of whether the possible staging option was adopted or the Proposal was constructed to the ultimate motorway standard.

Traffic arrangements for this staging option with regard to access to the Kundabung area are discussed in more detail below and in **Section 18.3.3**. The access arrangements for businesses in the Kundabung area would be similar for road users and most residents. However, some residents from Mingaletta Road, Mobbs Road, Upper Smiths Creek Road and Wharf Road would have to travel slightly further due to the need to use a U-turn bay to gain access to, or return from, those businesses. While the journey from most of these locations to the businesses would be between 3 and 6 kilometres longer for this staging option, the return journey would be of a similar distance to the ultimate motorway standard upgrade journey. For Upper Smiths Creek Road this would be reversed, with the journey to the businesses being similar, but with the return journey being slightly longer.

Given the improved safety of this staging option, and the small additional travel distance involved, it is considered that this additional travel requirement would not impact on the long term viability of businesses in the Kundabung area.

Access

Property access would be maintained during the construction phase using either existing or altered arrangements as appropriate, for both the possible staging option and the ultimate motorway standard upgrade. The social and economic impacts on property access would therefore be the same in both situations.

In the motorway standard upgrade, access to the upgraded highway would only be possible at interchanges and traffic arrangements. However, the possible staging option would involve the provision of at-grade intersections in place of overbridges and service roads at a number of locations, including Cooperabung Close, Cooperabung Drive, Mingaletta Road, Mobbs Road, Upper Smiths Creek Road, Wharf Road and Kemps Road. Apart from Cooperabung Drive, which would be a left-in only facility, these at-grade intersections would provide left-in / left-out access to and from the upgraded highway. No right turn movements into or out of any of these at-grade intersections would be permitted.

Overbridges at key locations such as Kundabung Road and Haydons Wharf Road half interchange, as well as U-turn facilities (refer to **Section 6.4.11**) would be provided in the possible staging option to permit vehicles to change direction of travel. Provision would also be made in this staging option for northbound vehicles to enter the access road on the eastern side of the upgraded highway to the north of Pipers Creek in the Kundabung area, by making a right-hand turn across southbound traffic. No other right turn movements would be available in this staging option.

Access to and from the upgraded highway from the local area at Kundabung would be different for the possible staging option when compared with the ultimate motorway standard upgrade. The distance that residents would have to travel would be similar in most cases. However, residents in Mingaletta Road, Mobs Road, Upper Smiths Creek Road and Wharf Road would have to travel an extra distance of between 3 and 6 kilometres to gain access either into or out of their properties for this staging option. Similarly, residents travelling north from Kemps Road would have to travel approximately 3 kilometres further, but the return journey would be of a similar length to the ultimate motorway standard upgrade.

Access to the Ballengarra and Maria River state forests for the possible staging option would also be limited to left-in / left out movements at appropriate locations. This could result in additional travel distances of between 3 and 6 kilometres in one direction only, depending on the direction of travel of the vehicle. The location of the access points for these state forest areas would be determined in consultation with Forests NSW during the detailed design phase if this staging option is adopted.

Any other existing direct property access to the highway that would be retained under this staging option would be limited to left-in / left-out only movements. These accesses would also be reviewed and rationalised where possible to ensure the safety of the land owners and road users. This would be done in consultation with the affected land owners and the relevant local authorities.

All at-grade intersections and U-turn facilities in this staging option would be designed to comply with RTA road safety design guidelines, but would still include some potential traffic conflicts between local and through traffic, resulting in an environment less safe than the motorway standard upgrade. Notwithstanding this, the possible staging option would still be significantly safer than the existing situation.

11.3 Management of impacts

The route and design of the Proposal have been developed in consultation with landowners, business owners, Forests NSW, councils and other relevant stakeholders. The location and configuration of interchanges and traffic arrangements, alignment of the Proposal and the provision of both public road and private property access have been developed to minimise the socio-economic impacts of the Proposal and provide opportunities for growth in the area. There would be continuing consultation with the community during the development of the detailed design. Further consultation would also occur prior to and during construction.

The key measures to manage the socio-economic impacts during the construction and operation phases are outlined below:

- Impacts to property would be mitigated by acquisition in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* and the *RTA Land Acquisitions Policy* (1999a), as described in **Section 10.3.1**.
- The loss of productive agricultural lands through acquisition for the Proposal would be offset by the provision of alternative access where required, and reinstatement of fencing and other farm infrastructure. The purchase by individual land owners of any adjoining residual parcels of land where available could also help to offset the loss of farming land due to acquisition. Additionally the loss of productive forestry lands could be offset by a land exchange agreement between RTA and Forests NSW.
- Consultation with property owners and businesses would continue during the property acquisition and detailed design phase with early communication of any access changes, road closures or impacts on farm infrastructure.

Design measures and features developed to minimise social and economic impacts and maximise development opportunities include:

- Blackmans Point Road interchange – improved access and road safety for state forest operations and local Blackmans Point residents and businesses.
- Sancrox Road/ Fernbank Creek Road interchange – improved access and road safety for Sancrox Road/ Fernbank Creek Road businesses and facilitate the future industrial and rural residential development in the area.
- Haydons Wharf Road half interchange – improved access and road safety for Haydons Wharf residents and businesses and facilitates access to Telegraph Point and the surrounding area through a local service road network.
- Mingaletta Road/Wharf Road bridge – improved access and road safety for Mingaletta Road/ Wharf Road residents and facilitates a rest area for the convenience of highway users.
- Yarrabee Road vehicular underpass – would improve access and road safety for Yarrabee quarry and other local residents.
- Kundabung Road/ Rodeo Drive overbridge – improved connectivity between the eastern and western sides of Kundabung and improve community cohesion by separating local traffic from through traffic.
- Telegraph Point bypass – improved connectivity and contiguity within Telegraph Point and the surrounding area.
- Service and local roads – connecting the existing local road network with the Proposal and facilitate better access throughout the study area.
- Signage – proposed to identify Port Macquarie and surrounding centres and destinations.
- Property access – alternative access arrangements would be provided in consultation with affected property owners.
- Noise – noise management measures for residences where relevant noise criteria are exceeded, as described in **Section 16.3**.
- Visual – landscaping at appropriate locations to mitigate visual impacts.
- Pedestrian and bicycle access – ability for pedestrians and bicycle users to use the service road network to maintain connectivity to other residential and commercial areas as well as provision of pedestrian footways on Sancrox Road, Haydons Wharf Road and Kundabung Road overbridges.

Additional specific management measures are identified in other chapters of this Environmental Assessment, including **Chapter 10 Land use and property**, **Chapter 16 Noise and vibration**, **Chapter 17 Visual amenity and urban design**, **Chapter 18 Traffic and transport**, and **Section 21.120.1**.

The management measures for individual properties and businesses would be further developed during the property acquisition and detailed design phase, in consultation with landowners and other relevant stakeholders.