



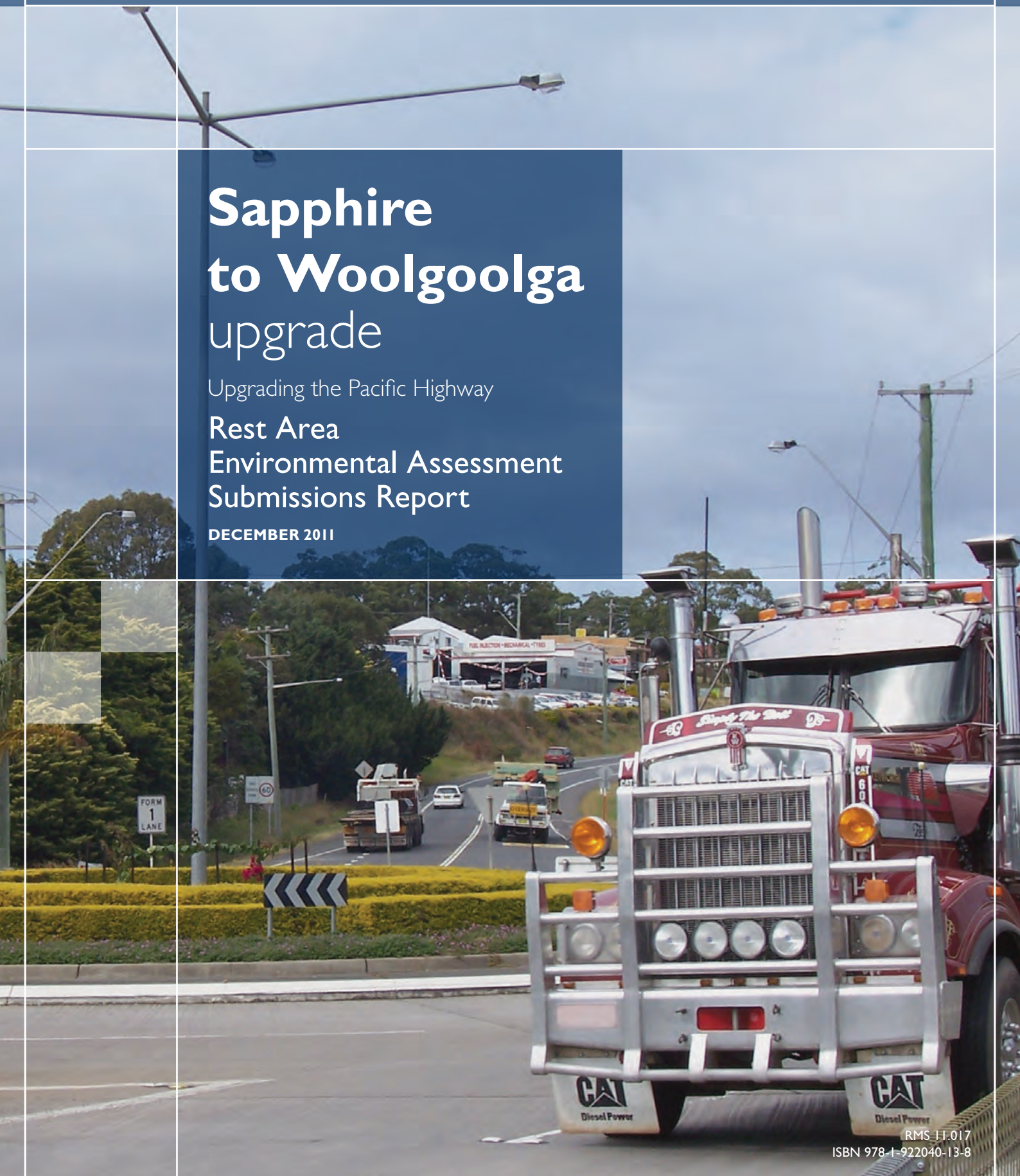
Transport
Roads & Maritime
Services

Sapphire to Woolgoolga upgrade

Upgrading the Pacific Highway

Rest Area
Environmental Assessment
Submissions Report

DECEMBER 2011



Roads and Maritime Services

Sapphire to Woolgoolga Pacific Highway Upgrade project

Rest area environmental assessment submissions report

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I Introduction

I.1 Background to the Sapphire to Woolgoolga Pacific Highway upgrade

Roads and Maritime Services (RMS, formerly Roads and Traffic Authority) is upgrading the Pacific Highway from approximately eight kilometres north of Coffs Harbour at Sapphire, extending for approximately 25 kilometres to the vicinity of Arrawarra Beach Road, north of Woolgoolga (the project). The Minister for Planning approved the project (excluding the provision of a rest area at Arrawarra) subject to 56 conditions on 13 January 2009. The project is currently under construction.

RMS has prepared several documents as part of the process for seeking planning approval of the project under Part 3A of the Environmental Planning and Assessment (EP&A) Act 1979. Key recent documents prepared as part of this process include:

- Coffs Harbour Highway Planning Sapphire to Woolgoolga section Project Application Report, October 2006 (the project application report).
- Coffs Harbour Highway Planning Sapphire to Woolgoolga section Environmental Assessment, Volumes 1- 3, November 2007 (the environmental assessment).
- Coffs Harbour Highway Planning Sapphire to Woolgoolga section Environmental Assessment Submissions Report, July 2008 (the submissions report).
- Sapphire to Woolgoolga Upgrade: Rest Area Assessment Report, September 2009.
- Sapphire to Woolgoolga Upgrade: Rest Area Assessment Submissions Report, May 2010.
- Sapphire to Woolgoolga upgrade: Rest Area Environmental Assessment Report, April 2011 (rest area environmental assessment report).

I.2 Rest area background

I.2.1 Environmental assessment stage

The environmental assessment of the Sapphire to Woolgoolga Pacific Highway project identified a rest area location at the Arrawarra Interchange (Section 7.5.11 of the environmental assessment). During the exhibition of the environmental assessment, a number of submissions were received in relation to the rest area location.

The issues raised by community and government agencies in relation to the rest area predominantly included ecological impacts (fauna movement, removal of hollow bearing trees, impacts to vegetation communities etc) and suggested alternative locations for the rest area. These issues are identified in section 2.2.12 of the environmental assessment submissions report.

Based on the number of submissions received and issues raised, RMS recognised the need for further consideration into the location of a rest area. RMS therefore decided to remove the proposed rest area at Arrawarra Interchange from the project approval process. RMS advised the then Department of Planning of this decision on 29 October 2008.

I.2.2 Rest area comparative assessment

Based on submissions made, RMS further reviewed options for a location of a rest area and produced the Rest Area Assessment Report, September 2009. The report identified a number of options for potential rest area locations and provided a comparative assessment of two-short listed locations (south Woolgoolga and Arrawarra) relative to a “base case”.

The base case is the Sapphire to Woolgoolga project as described in the environmental assessment exclusive of the rest area at Arrawarra Interchange. As well as comparing a rest area at both locations, the construction of a potential future highway service centre was also assessed.

1.2.3 Announcement of preferred rest area location and display of rest area submissions report

Submissions from exhibition of rest area assessment report

The rest area assessment report was placed on public display for community comment from 28 September 2009 to 30 October 2009. The report identified options for the location of rest areas and potential future highway service centres and examined and compared the key features of the options. Sixty-two submissions were received from the exhibition of the rest area assessment report.

The main issues raised in the submissions included:

- The need for a rest area.
- Impacts on road safety and traffic volumes.
- Business impacts.
- Impacts on existing and proposed land use.
- Impacts on native vegetation and animals.

Selection of preferred location for rest area

The Arrawarra Interchange was selected as the preferred location for a rest area for the upgrade based on consideration of:

- The issues raised in the submissions received from the exhibition of the rest area assessment report.
- Consultation with government agencies.
- RMS technical investigations.

The Arrawarra Interchange was selected as the preferred location as, compared to the south Woolgoolga option, it would:

- Have less noise and other amenity impacts.
- Have less impact on existing agricultural properties.
- Have less impact on properties proposed to be rezoned for industrial purposes.
- Be less expensive to build.

Refinements to the rest area at Arrawarra

It is acknowledged that a rest area at Arrawarra would have a greater impact on native vegetation and animals than one at south Woolgoolga.

To avoid impacts on the native vegetation in the State Forest north of Arrawarra Beach Road, the possible future highway service centre has been moved to the rest area site south of the road. The concept design for the rest area has been refined to accommodate the possible future highway service centre.

Key features of the refined rest area include:

- Heavy vehicle parking areas in the western portion of the rest area site.
- Light vehicle and bus parking areas, toilets and picnic facilities in the north eastern corner of the site.
- Noise walls and / or mounds along the northern and eastern boundaries of the rest area.
- Provision for possible additional heavy vehicle parking, if required in the future.
- Provision for a possible future highway service centre in the eastern portion of the site.

1.2.4 Display of Rest Area Environmental Assessment Report

With the location for the rest area identified, RMS prepared an environmental assessment for the preferred rest area location at Arrawarra. The rest area environmental assessment report was displayed for public comments between 6 April 2011 and 9 May 2011. The community was informed of the publication of the rest area environmental assessment by a media release, letters to all residents on the project database and by advertisements in local newspapers. The rest area environmental assessment was also available for public viewing on the project website. As a result of the exhibition, a number of submissions were made to RMS.

1.3 Purpose of this report

During the exhibition of the rest area environmental assessment report, 16 submissions were made in relation to the report. Several submissions were received by RMS after the period for public comment. All submissions received until the end of September 2011 have been addressed within this submissions report.

This report identifies the issues raised in community submissions received in response to the rest area environmental assessment and provides RMS's responses to those issues (section 2).

2 Consideration of submissions

2.1 Response to submissions

A total of 16 submissions were received from the community during and subsequent to the public display period. Each submission was reviewed individually and issues identified.

The following sections describe the issues raised by the community and provide RMS's response to each issue. Due to privacy reasons, respondents are not identified other than by an ID number. The exception is government agencies.

2.2 Need for rest area

Submission numbers

10, 15

Issue

A rest area at Arrawarra is not necessary as it is less than 50 km from Grafton and there is a rest area at Halfway Creek.

Response

In the *Pacific Highway Safety Review 2004*, a strategic plan for rest areas on the Pacific Highway recognised that additional areas need to be developed in the Coffs Harbour / Woolgoolga area. As part of the Pacific Highway Upgrade program, RMS is implementing a strategy to establish rest areas at approximately 50 km intervals along the upgraded highway.

A rest area is proposed to be located at the future Nambucca Heads Interchange as part of the upgrade of the highway between Warrell Creek south of Macksville and Urunga. As the proposed rest area at the Nambucca Heads Interchange and the existing rest area at Halfway Creek are located approximately 96 km apart, an additional rest area site is required in the Coffs Harbour / Woolgoolga area. The existing south Coffs Harbour facility has limited parking for heavy vehicles and would be bypassed by the proposed Coffs Harbour bypass. The facility is not included in the RMS's strategy for rest areas on the Pacific Highway.

The Arrawarra Interchange was selected as the preferred location for the rest area as, compared to the south Woolgoolga option, it would:

- Have less noise and other amenity impacts.
- Have less impact on existing agricultural properties.
- Have less impact on properties proposed to be re-zoned for industrial purposes.
- Be less expensive to build.

While Arrawarra has been selected as the preferred location for the rest area, RMS acknowledges that the site would result in greater ecological impacts than the south Woolgoolga site.

2.3 Selection of the site

Submission numbers

01, 04, 05, 06, 07, 08, 10, 11, 12, 13, 14, 15

Issues

1. Rest area should be located in a town like Woolgoolga.
2. Previous submissions express that the environmental impact would have been virtually nil in constructing the rest area and service centre at south Woolgoolga on old banana lands.
3. The decision to develop the rest area at Arrawarra was based on money.
4. Selection process and the skills of the RMS team who assessed the options must be carefully examined.
5. Better planning is required at the south Woolgoolga rest area option. If access could be resolved, it would be a better option than Arrawarra.

Response

- 1.-3. It is acknowledged that the Arrawarra location would have a greater impact on ecology than the south Woolgoolga option (biodiversity impacts have been addressed in Section 7.7 of the rest area EA report). However, a rest area / highway service centre at the south Woolgoolga Interchange would have greater socio-economic impacts than one at the Arrawarra Interchange, including:

- Greater noise and other amenity impacts.
- Impacts on agricultural properties and land identified by Coffs Harbour City Council for rezoning for industrial purposes.
- The acquisition of private property. (Rest Area Assessment Submissions Report, May 2010).

The Arrawarra Interchange site was selected as the preferred location for the rest area as, compared to the south Woolgoolga option, it would:

- Have less noise and other amenity impacts.
- Have less impact on existing agricultural properties.
- Have less impact on properties proposed to be re-zoned for industrial purposes.
- Be less expensive to build.

While RMS has selected Arrawarra as the preferred rest area location, in acknowledgement of the ecological impacts, RMS reduced the footprint of the rest area to minimise potential ecological impacts.

4. The selection of a preferred rest area location was based on information contained within the rest area assessment report (including specialist reports for ecology, noise and vibration and visual impact), submissions received from the public display of the report and consultation with Government Agencies and Coffs Harbour City Council. RMS, in determining the preferred site, sought to balance a range of issues through using a triple bottom line approach (balancing functionality, physical and social issues) and cost. Further details of the site selection process are detailed in Chapter 4 of the rest area assessment report.

5. Even if the access arrangements at the south Woolgoolga site could be improved, the site would still result in a number of additional impacts. These include:
 - Increase in noise levels and other amenity impacts at adjacent residences.
 - Additional impacts on privately owned agricultural properties.
 - Impacts on private properties proposed to be re-zoned industrial.
 - Possible future service centre could compete with businesses in Woolgoolga.

The Arrawarra Interchange site was selected as the preferred location for the rest area as, compared to the south Woolgoolga option, it would:

- Have less noise and other amenity impacts.
- Have less impact on existing agricultural properties.
- Have less impact on properties proposed to be re-zoned for industrial purposes.
- Be less expensive to build.

2.4 Assessment process

Submission numbers

05, 06, 07, 09, 10, 12

Issues

1. The rest area EA report is inadequate as it does not provide the detail required to assess the real impacts of the site. A new study should be commissioned.
2. While the environmental impacts at the site have been acknowledged, virtually nothing has been done to assess and evaluate and address the full extent of the impacts.
3. Thought that the decision on the rest area had been made but were informed by neighbours that the final decision had not been made.

Response

- 1.-2. RMS has undertaken a number of specialist reports to assess and evaluate the impact of the two short listed options (the south Woolgoolga and Arrawarra sites). The rest area environmental assessment report should be read in conjunction with the previously prepared documents which further detail the existing environment, potential impacts and mitigation measures to be implemented:

- Sapphire to Woolgoolga Pacific Highway Upgrade EA (Volumes 1 to 3) (the environmental assessment).
- Sapphire to Woolgoolga Pacific Highway upgrade submissions report.
- Sapphire to Woolgoolga rest area assessment report (including appendices).

It should be noted that an ecological assessment of the Arrawarra Interchange site was undertaken as part of the environmental assessment (Arrawarra Interchange Pacific Highway upgrade - Sapphire to Woolgoolga, Flora and Fauna report) - see Appendix C. A further ecological assessment was undertaken in 2009 as part of the rest area assessment report. This assessment detailed the potential ecological impacts of the rest area, of which a summary was provided in the rest area assessment report and the rest area environmental assessment.

Both of these ecological assessments have been published and are available on the RMS website.

From the rest area assessment report, RMS acknowledged the ecological impact that would result and altered the layout of the rest area to include any potential future service centre south of Arrawarra Beach Road. This altered layout avoided impacts to 1.41 hectares of endangered ecological community and fauna habitat.

3. Having considered the rest area assessment report, submissions received from the public display of the report and consultation with government agencies, RMS selected the Arrawarra Interchange as the preferred location for the rest area.

The Department of Planning and Infrastructure will consider the rest area environmental assessment report and this submissions report prior to making a decision as to whether to approve the proposed Arrawarra rest area.

2.5 Community consultation

Submission numbers

05, 07, 09, 10, 15

Issues

1. The letter accompanying the EA CD did not mention that an exhibition period was underway. However, the March 2010 community update stated that "an environmental assessment of the preferred rest area will be prepared and displayed for community comment. Following the display of the environmental assessment, RMS will again consider community submissions". Cover letter indicated that the reporting was finished. Many of the community did not notice that it included an opportunity for another submission.
2. The property at 1 Arrawarra Beach Road was bought from previous owners 2 years ago - the new owner has been unaware of the rest area proposal.

Response

1. The rest area environmental assessment report was displayed for public comment between 6 April 2011 and 9 May 2011. The community was informed of the publication of the rest area environmental assessment by a media release, letters to all residents on the project database and by advertisements in local newspapers. The rest area environmental assessment was also available for public viewing on the project website. As a result of the exhibition, a number of submissions were made to RMS. All submissions received up until 1 August 2011 are included in this submissions report. The first advertisement advised the community of the rest area environmental assessment and where it could be obtained from. This advertisement was published on 6 and 7 April 2011. The second advertisement, which was published on 21, 25 and 28 April, advised the community of the consultation period and where the rest area environmental assessment could be obtained from. The period for accepting comments was extended to include consideration of all comments that were received.
2. The rest area environmental assessment report was displayed for public comments between 6 April 2011 and 9 May 2011. The community was informed of the publication of the rest area environmental assessment by a media release, letters to all residents on the project database and by advertisements in local newspapers. The rest area environmental assessment was also available for public viewing on the project website. As a result of the exhibition, a number of submissions were made to RMS. All submissions received up until 1 August 2011 are included in this submissions report. The submission received from the resident at 1 Arrawarra Beach Road is included in this submissions report.

2.6 Flora and fauna

Submissions numbers

02, 03 OEH, 05, 07, 09, 10, 12, 15

Issues

1. The Arrawarra rest area is core habitat for threatened forest fauna including squirrel gliders and would impact on squirrel gliders, sugar gliders, feathertails and yellow bellied gliders in the areas.
2. Issues of the presence of squirrel gliders and the hoary wattled bat continue not to be addressed. Further investigations should be undertaken.
3. Supplementary planting of glider feed trees should be undertaken as part of the project and glider crossing structures be included to enhance the fauna corridor function of the site and beyond.
4. The Arrawarra regional habitat corridor links Garby Nature Reserve and Coffs Regional Park to Wedding Bells State Forest and hinterland forests and is an important resource for squirrel gliders and other animals including Wallum Froglet, Glossy Black Cockatoo, Grey headed flying fox and micro-bats.
5. Arboreal mammals are currently able to cross the existing highway by accessing the canopy trees now available near the Arrawarra Creek Bridge.
6. EA report does not identify safe animal movement passages. Squirrel and sugar gliders can cover distances of up to 50 metres. Yellow bellied gliders can reach up to 140 metres.
7. The construction of the Interchange, rest area and highway at Arrawarra will impact adversely on the free movement of all the native fauna.
8. No consideration has been given to appropriate fauna crossings as these were removed from the original plans for the rest of the highway upgrade Sapphire to Woolgoolga. Running water in culverts and bridges could be an obstacle to fauna movement, doubts that they would have adequate headroom for kangaroos.
9. What specific mitigation measures are planned to address the presence of Wallum Froglet and Giant Barred Frog.
10. The EA report is misleading for a process that is intended to be stages (two parts- one for the rest area and the other for the service centre).
11. Land clearing for the rest area would need to be restricted with much of the bush area retained.
12. The rest area would impact on the overall biodiversity values of Garby Nature Reserve if it became isolated from forested area to the west of the highway. The vegetation and connection between vegetation needs to be retained.

Response

- 1.-4. The rest area environmental assessment report was prepared to complement the work undertaken on the environmental assessment of the Sapphire to Woolgoolga upgrade project. The ecological assessments undertaken for the environmental assessment that assessed the Arrawarra location included an ecological assessment of the Arrawarra Interchange site (including the rest area location) (Arrawarra Interchange Pacific Highway Upgrade - Sapphire to Woolgoolga, Flora and Fauna Report, August 2007) and a targeted frog survey (Proposed Pacific Highway Upgrade between Sapphire and Arrawarra, targeted frog survey, March 2006). These reports were appended to the environmental assessment as Appendix F.

A further ecological assessment of the rest area location was undertaken in 2009 as part of the rest area assessment report (Pacific Highway Upgrade Sapphire to Woolgoolga Comparison of Ecological Constraints for Potential Rest Area and Service Centre Options (appended as Appendix C)). This assessment detailed the impacts of the rest area, of which a summary was provided in the rest area assessment report and the rest area environmental assessment report.

These assessments identified the potential for frog, glider and bat species in certain locations including through the Wedding Bells State Forest and at the Arrawarra Interchange and rest area locations. The Arrawarra Interchange flora and fauna report (Appendix F of the environmental assessment) identified that the removal of hollow bearing trees could impact on the habitat resources for glider and bat species. As a result of these assessments, the environmental assessment report, consultation with agencies and community feedback, a number of statement of commitments were identified for future stages of the project.

The additional ecological assessment undertaken in 2009 identified that the Arrawarra site “contains known habitat resources for eight fauna species and potential habitat resources for an additional 21 fauna species ...”. These species included the Wallum Froglet, Glossy Black cockatoo, Koala, Yellow-bellied and Squirrel Gliders, Grey headed Flying Fox and other microbat species including the Hoary Wattled Bat.

5.-8. The statement of commitments (in particular F12 and F15) identified in the environmental assessment (and environmental assessment submissions report), outlined measures to minimise impacts to fauna habitat and maintain terrestrial fauna connectivity. As the crossing impacts at this location would relate to the widened highway corridor, rather than the rest area, these would be mitigated through the statements of commitments:

- F14 – Culverts identified in the environmental assessment as having a potential role in fauna crossing will be designed to facilitate fauna movements.
- F14A – The locations of fauna movement structures will be consistent with forest management zoning and the management intent of the adjacent Wedding Bells State Forest and identified in consultation with (the then) DPI (Forests).
- F15 – Expert advice will be sought to assist in identifying the need and location for crossing points for glider populations. If required, and in consultation with the relevant government agencies, the location and design of crossing points will be incorporated into the Proposal.

The Sapphire to Woolgoolga Pacific Highway Upgrade makes provision for fauna fencing along the Woolgoolga bypass through the Wedding Bells State Forest. To the east of the highway, fauna fencing would be erected along Eggins Drive to the Arrawarra Beach Road intersection before traversing along Arrawarra Beach Road to the highway and running parallel to the northern extent of the project (refer to the EA section 17).

Fauna crossings consist of both dedicated structures and drainage structures that provide incidental fauna passage. The fauna passage provisions for the length of the approved highway upgrade have been developed as a cohesive strategy. The Arrawarra rest area will not adversely impact on the fauna crossing strategy developed as part of the Sapphire to Woolgoolga Pacific Highway Upgrade.

During discussions with representatives of Office of Environment and Heritage (OEH) on 25 May 2011, RMS undertook to erect a glider crossing pole in the highway median adjacent to Arrawarra Creek. This pole would provide a connection between the vegetation to the east of the highway (Wedding Bells State Forest and the Garby Nature Reserve) and the Wedding Bells State Forest to the west of the highway for gliders.

A two stage clearing process would be used with pre-clearing fauna checks by a qualified ecologist, in accordance with the Sapphire to Woolgoolga Flora and Fauna Construction

Environmental Management Plan.

9. The ecological assessment for the environmental assessment has identified that the rest area site contains potential habitat for some frog species, including the Wallum Froglet.
A two stage clearing process would be used with pre-clearing fauna checks (including frogs) by a qualified ecologist, in accordance with the Sapphire to Woolgoolga Flora and Fauna Construction Environmental Management Plan. Accordingly, the direct impacts to frogs will be minimised. Vegetation retained on site could be used as a refuge for frogs during the site clearing for the rest area.
The project also makes provision for fauna fencing along the Woolgoolga bypass through the Wedding Bells State Forest. To the east of the highway, fauna fencing would be erected along Eggins Drive to the Arrawarra Beach Road intersection before traversing along Arrawarra Beach Road to the highway and running parallel to the northern extent of the project (refer to EA section 17). Where appropriate, the fauna fencing would include frog exclusion fencing installed in a manner similar to a number of other Pacific Highway projects. The design for the frog exclusion fencing would be developed with OEH and take into account frog monitoring results.
- 10.-11. The service centre is not part of the current proposal for which approval is being sought. RMS is not proposing to construct a service centre at the Arrawarra Interchange. Any development of a service centre would be undertaken by a third party sometime in the future (and would be subject to a separate environmental assessment and approval for its construction and operation). The RTA would construct the rest area only and mature vegetation indicated within the rest area EA report for retention would be temporarily fenced during the construction period and protected.
12. Through the Wedding Bells State Forest section of the Sapphire to Woolgoolga Pacific Highway upgrade, there are a number of fauna crossing structures. Little Arrawarra Creek and Arrawarra Creek bridges would enable fauna movement, with a glider crossing pole proposed at Arrawarra Creek. The project also includes fauna fencing through the Wedding Bells State Forest to the west of the highway. To the east of the highway, fauna fencing would be erected along Eggins Drive to the Arrawarra Beach Road intersection before traversing along Arrawarra Beach Road to the highway and running parallel to the northern extent of the project. These measures would facilitate the cross highway fauna movement, while limiting access to the highway.

2.7 Hydrology / stormwater

Submission numbers

02, 03 OEH, 07, 09, 10, 12, 15

Issues

1. EA states that there could potentially be an increase in runoff - what is the extent of runoff increase and the nature of the potential pollutant in the runoff?
2. Concern about whether the increase in stormwater has been addressed. What effect would this have on the water levels of the Arrawarra and Yarrawarra creeks?
3. OEH requests further information on the revised design and demonstration of the efficiency of these improvements.
4. In areas of heavy rain, water backs up on low lying areas around Arrawarra Beach Road and Eggins Drive. Raising the rest area with fill will exacerbate this issue.

5. Impact on hydrology in Arrawarra as a result of the proposed rest area and Interchange need to be considered in conjunction with the Coffs Harbour Coastal Processes and Hazard Definition Study.
6. There are significant problems with erosion adjacent to Yarrawarra Creek on the southern tip of the Coffs Coast Regional Park containing SEPP 26 remnant littoral rainforests. The potential impacts of stormwater runoff has not been addressed fully enough as it relates to these issues.

Response

1.-6. The rest area will involve hard stand areas (around 10,000m²) which will potentially increase run-off and pollutants. The pollutants are anticipated to include hydrocarbons and gross pollutants (further information on stormwater pollutants is provided in Section 2.8). The rest area site is not anticipated to exacerbate flooding in the area, with stormwater and runoff to be detained on site via swales. The stormwater detention arrangements would detain stormwater on-site during rainfall events and release it slowly to the surrounding natural drainage. Hence the rest area will not exacerbate any flooding in Arrawarra Creek and to surrounding land and would not increase erosion of those drainage channels. A review of mapping from the Coffs Harbour Coastal Processes and Hazard Definition Study (BMT WBM Pty Ltd, 2011) indicates that the subject site and immediate surrounding land is not anticipated to be subject to inundation from extreme weather for the immediate, 2050 and 2100. The hydraulic assessment of the rest area will take into consideration the filling of the rest area site. Appropriate stormwater and runoff measures will be incorporated in the design for the rest area.

The stormwater detention arrangements would facilitate the retention of pollutants on site. Accordingly it is not expected that there would be any deterioration in water quality in the downstream creek system.

Further assessment on the stormwater system would be undertaken during the detailed design stage to ensure that the stormwater detention arrangements are sized appropriately to accommodate run-off that would be generated from the site and minimise impacts to surrounding land and creek water levels and quality.

2.8 Water quality / pollution

Submission numbers

03 OEH, 09, 10, 16, MPA

Issues

1. Seeks clarification on details of water management features and how they will achieve maintenance of high quality water leaving the site and into Arrawarra Creek catchment. Design should include controls to manage gross pollutants and hydrocarbons.
2. Not confident that the mitigation measures identified in the report will prevent contamination and siltation of Arrawarra Creek - which in turn would impact on the Solitary Islands Marine Park.
3. Stormwater detention ponds will detain stormwater however, over a period of time the hydrocarbons may enter the natural watercourse and accumulate in Arrawarra Creek having detrimental effects on the water quality and marine life.

4. Marine Parks Authority concerned that rubbish would enter the stormwater or be windblown into Arrawarra Creek catchment area.
5. The rest area would need to have proper recycling facilities.

Response

- 1.-3. The proximity of the proposed rest area to the Solitary Islands Marine Park is acknowledged, being situated just over 400 metres away from Arrawarra Creek. Use of the hardstand area (around 10,000m²) without any management measures could result in an increase in pollution entering the downstream stormwater system.

However, as part of the rest area design, swales, possibly in combination with a bio-retention system, would be provided on site. These management measures would be designed to contain and treat pollutants (such as hydrocarbons and gross pollutants typical of those found on highways), prior to the release of the water into the downstream water system.

Swales provide some removal of hydrocarbons through the process of settlement of particles which have hydrocarbons (as well as other forms of pollution) adsorbed to them. Modelling of the proposed rest area swales undertaken showed that their use would reduce the amount of pollutants in the stormwater by:

- 76% of Total suspended solids.
- 54% of Total phosphorous.
- 16% of Total nitrogen.

However, hydrocarbon removal may be limited because a substantial proportion of hydrocarbons are likely to be transported as a thin floating film on the water surface. The water in the swale therefore acts as a separating phase between the floating hydrocarbons and the soil.

To overcome this separation, it is recommended that treatment devices that include infiltration (such as bio-retention systems) be employed where practical. The use of bio-retention systems in the rest area would be considered further during detailed design. The bio-retention systems are able to remove stormwater pollutants through physical, biological and chemical processes and treat petroleum hydrocarbons primarily through sorption and filtration.

Stormwater quality modelling has been undertaken to quantify the extent of mitigation that could be provided through the use of bio-retention systems. The results of the modelling are shown below together with the NSW stormwater treatment targets identified in the DECC NSW, Managing urban stormwater: environmental targets, Consultation draft – October 2007:

- 92% of Total suspended solids removed. (NSW target 85% removal).
- 74% of Total phosphorous removed. (NSW target 65% removal).
- 48% of Total nitrogen removed. (NSW target 45% removal).

As shown above, this reduction in pollutants would exceed the NSW stormwater treatment targets. In addition, bio-retention systems have shown to remove between 80 and 95% of total petroleum hydrocarbons (Hong et al. 2006). These studies also showed that biodegradation of petroleum hydrocarbons took place in a thin layer of mulch placed on the surface of bio-retention media. Most of the petroleum hydrocarbons were biodegraded within two to eight days after a runoff event (depending on the particular compound).

In regards to sewage, this would be captured and pumped via an underground pump to Coffs Harbour City Council sewerage scheme at Arrawarra Beach and would not contaminate surrounding land or watercourses.

- 4.-5. Appropriate garbage disposal facilities will be provided for at the rest area. The site will also include on-site stormwater detention arrangements to minimise the risk of any waste being transported off site.

2.9 Noise

Submission numbers

10, 11, 15

Issues

1. Surrounding area would be subject to noise pollution. Considerable work on noise barriers would need to be done to restrict noise resonating into the Arrawarra area.
2. Excessive noise from trucks accessing the rest area- no noise walls could stop that noise.

Response

- 1.-2. Noise impacts and mitigation measures are addressed in Chapter 8 of the Rest Area Assessment Report, September 2010. The noise assessment assessed trucks accessing the Interchange ramps to enter or exit the rest area as well as moving through the rest area and while at rest.

To reduce potential increase in noise to residences in Arrawarra, a noise wall would be constructed to the north of the site and also along the eastern boundary (section 7.3.3 of the rest area submissions report).

Under the rest area only scenario, there would not be any change from the base case scenario (ie the upgraded highway with no rest area) at any nearby residence.

2.10 Safety / security

Submission numbers

11, 15

Issues

1. There are no police at Arrawarra at night should anything happen. Closest police are at Coffs Harbour.
2. There is the potential of people camping and lighting fires and would set the surrounding bushland and homes on fire.

Response

1. There are currently few examples of security issues at rest areas along the Pacific Highway, possibly due to the presence of users of the facility.
2. No BBQ facilities are proposed to be provided at the rest area. During periods of fire ban, open fires would be prohibited which would minimise the risk of fires getting out of control. Suitable signage indicating that camping is not permitted will be erected.

2.11 Miscellaneous

Submission numbers

12

Issues

1. National Parks Association of NSW (NPA) made a submission to the Arrawarra Rest Area EA and was pleased to find many recommendations had been taken on board, particularly in environmental mitigation and compensatory habitat.

Response

1. Noted.

3 Conclusion

This submissions report has addressed issues and concerns raised in submissions received in response to the rest area environmental assessment report, a modification to the Sapphire to Woolgoolga Pacific Highway upgrade project.

In consideration of the above, Roads and Maritime Services (formerly Roads and Traffic Authority) seeks the approval of the Minister for Planning under Part 3A of the EP&A Act for the rest area as described in the rest area environmental assessment report.

Should the rest area be approved, construction of the rest area facility is proposed to be undertaken as part of the construction for the Sapphire to Woolgoolga Pacific Highway upgrade project.

4 References

Hong et al. (2006). Hong, E. Y., E. A. Seagren and A. P. Davis. *Sustainable oil and grease removal from synthetic stormwater runoff using bench-scale bioretention studies*. *Water Environment Research* 78(2): 141-155.