



**BRUNSWICK HEADS TO YELGUN
PACIFIC HIGHWAY UPGRADE PROJECT
SECOND SIX MONTHLY REPORT ON
ENVIRONMENTAL PERFORMANCE**

JANUARY 2006 TO JULY 2006

- VOLUME 1 -



Abigroup
Constructing Australia's Future

Second Six Monthly Report

Volume 1 Main Report

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1.0 INTRODUCTION

The Brunswick Heads to Yelgun Pacific Highway Upgrade is a 9 kilometre project awarded as a Design, Construct and Maintain (DCM) contract by the RTA to Abigroup Contractors in February 2005. The proposed new alignment is shown in Figure 1.

Substantial construction commenced on 20 July 2005 and construction is due for completion in March 2007.

This is the second six-monthly report, and covers the period from January to July 2006. This report has been prepared to fulfil the requirements of the DIPNR (Department of Planning) Condition of Approval no. 14, which states:

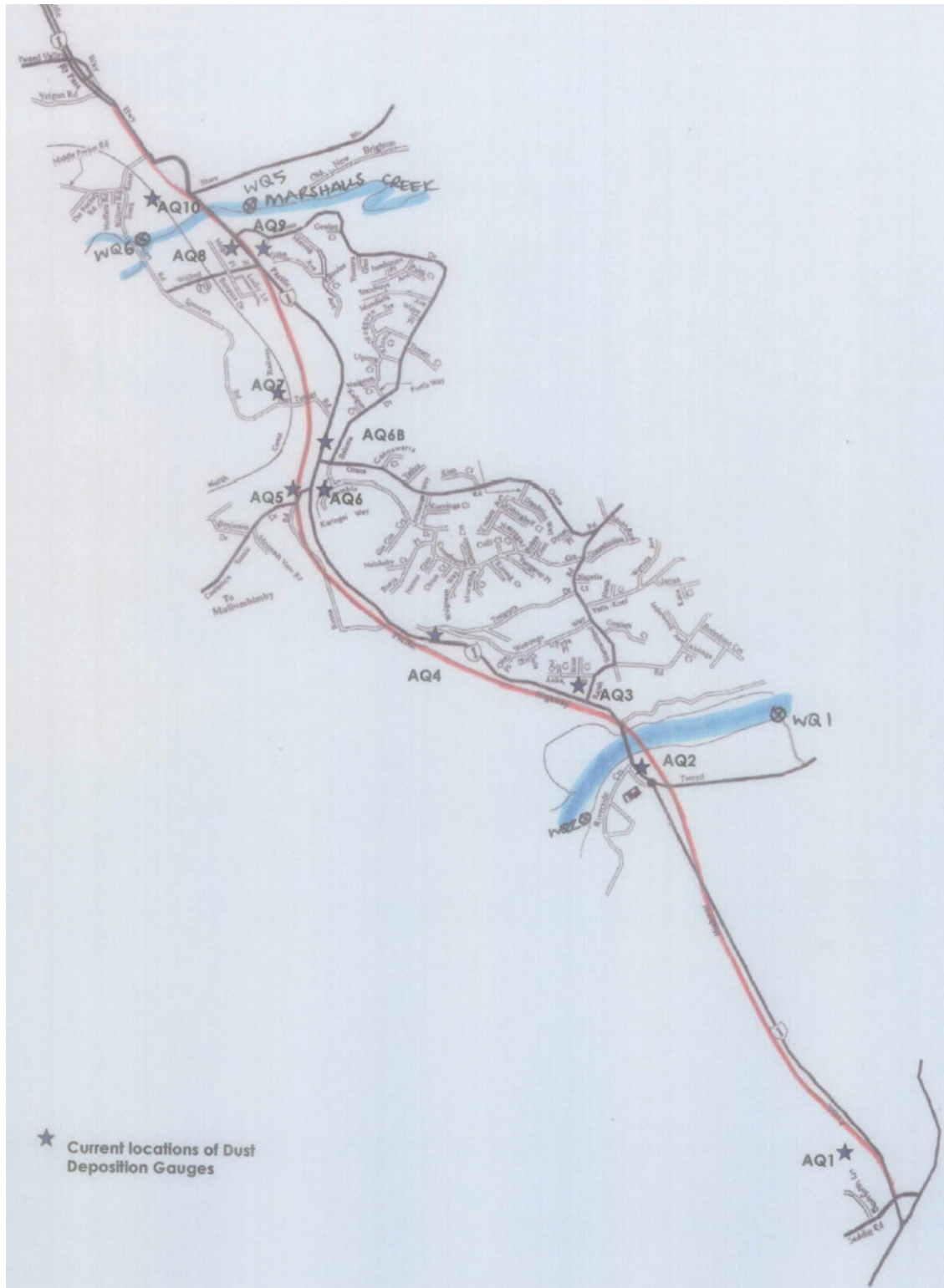
The Proponent shall submit to the Director-General, a report(s) in respect of the environmental performance of the construction works and compliance with the EMP (Construction Stage) and any other relevant conditions of this approval. The reports shall be prepared six months after the start of substantial construction and thereafter at six monthly intervals or at other such periods as requested by the Director-General to ensure adequate environmental performance over the duration of the construction works. The report(s) shall include, but not be limited to, information on:

- | | |
|---|------------------------|
| <i>(i) applications for consents, licences and approvals, and responses from relevant authorities;</i> | Addressed in Section 2 |
| <i>(ii) implementation and effectiveness of environmental controls and conditions relating to the work undertaken;</i> | Addressed in Section 3 |
| <i>(iii) identification of construction impact predictions made in the EIS and any supplementary studies and details of the extent to which actual impacts reflected the predictions;</i> | Addressed in Section 3 |
| <i>(iv) details and analysis of results of environmental monitoring;</i> | Addressed in Section 3 |
| <i>(v) number and details of any complaints, including summary of main areas of complaint, action taken, response given and intended strategies to reduce complaints of a similar nature; and</i> | Addressed in Section 4 |
| <i>(vi) any other matter relating to the compliance by the Proponent with the conditions of this approval or as requested by the Director-General.</i> | Addressed in Section 5 |

The report(s) shall be provided to the EPA, NPWS, DLWC, NSW Fisheries and Byron Shire Council, and any other relevant government agency nominated by the Director-General. The report(s) shall also be made publicly available.

Volume 1 provides the main text of this second six-monthly report. Volume 2 is a collection of photographs of key issues and events during the reporting period, and Volume 3 contains the appendices.

Figure 1: Brunswick Heads to Yelgun Pacific Highway Upgrade, showing monitoring locations for air quality (AQ) and water quality (WQ).



2.0 Consents, licenses and approvals

2.1 Licenses, Permits and Consents

When substantial construction commenced in July 2005 there were numerous permits and consent in place, and documented in the First Six Monthly Report. The project has now been underway for a full 12 month period and as a consequence, several of the original approvals and licences have been, or are in the process of being renewed. A number of others remain current for existing works.

Table 2.1 summarises the current consents, licenses and approvals obtained or renewed during this reporting period (January to July 2006).

Table 2.1

| License/Permit/Consent | Authority | Holder | Date Issued |
|---|-----------|----------|----------------------------|
| EPA License Variation 2 | DEC/EPA | Abigroup | 29 March 2006 |
| Harm Marine Vegetation Permit – North and South Banks of the Brunswick River | DPI | Abigroup | Renewed 8 February 2006 |
| Decision Report for REF for Proposed Concrete Batch Plant at the Yelgun Rest Area | RTA | Abigroup | 6 June 2006 |
| Decision Report for REF for the Temporary Access Road to Wetland B | RTA | Abigroup | 23 June 2006 |
| Decision Report for Addendum to the Environmental Assessment for the Spoil Stockpile Site | RTA | Abigroup | 5 June 2006 |
| Decision Report for REF for Trimming of Overhead Tree Branches (Fill 4) | DEC | Abigroup | 8 March 2006 |

The Environmental Review Group (ERG) has continued to meet on a regular basis during the reporting period. Meetings took place on:

- Meeting 8, 20 January 2006
- Meeting 9, 24 February 2006
- Meeting 10, 6 April 2006
- Meeting 11, 19 May 2006.

This regular meeting of project officers with state agency representatives and the Environmental Management Representative (EMR) provides regular agency contact and a structure for site inspections.

3.0 Implementation of Controls and Monitoring of Environmental Impacts

3.1 Introduction

The following is a discussion of major works occurring during the reporting period and the main controls used to prevent and mitigate associated environmental and community impacts.

Information in this section addresses the following aspects of Condition 14:

- (ii) *implementation and effectiveness of environmental controls and conditions relating to the work undertaken;*
- (iii) *identification of construction impact predictions made in the EIS and any supplementary studies and details of the extent to which actual impacts reflected the predictions;*
- (iv) *details and analysis of results of environmental monitoring;*

The project uses an electronic compliance management system to assist in the collation of information and reporting against the conditions of approval for the project. This is referred to as the Abigroup Quality Environment Safety and Engineering (QESE) system.

The advantage of this system is that it allows flexibility in reporting, it hyperlinks associated documentation to a central database, it links and standardises safety, environmental and quality management components and provides multiple live access to nominated users of the system.

Details of environmental monitoring are included in the Appendices.

3.2 Flora and Fauna

3.2.1 Implementation and Effectiveness of Environmental Controls and Conditions

Flora

Following the initial limited clearing process of the main alignment during 2005, minor areas of vegetation clearing continue in 2006 in discrete areas of the project as earthworks and detailed local road works are completed at the edges of the formation.

A number of tall trees located beside Fill 4 (north of the Brunswick River) were identified to be straddling the Construction Buffer Zone boundary, the Road Reserve boundary and neighbouring Brunswick Heads Nature Reserve. In consultation with DEC/NPWS a Review of Environmental Factors (REF) was prepared and approved in March 2006 to undertake trimming of overhead branches.

Accidental damage to one plant of a threatened flora species (Davidson Plum - ID5001 in Fill 9) occurred in February 2006. Notification of the incident was provided to the RTA and DEC/NPWS as well as Commonwealth DEH. Following a detailed investigation of the incident a complete review of the management system for the protection of threatened flora species was undertaken. The following list of actions were identified and implemented:

- a) Revise Permit to Excavate Form

In conjunction with the Quality Manager a revised "BY610A" Form was prepared. The new form requires additional checks to be made for environmentally sensitive areas and protected vegetation in the vicinity of proposed excavation works.

b) Review and Enhance Site Induction Session

The Site Induction session was reviewed by the Environmental Manager. Information regarding the protection of vegetation and the penalties associated with vegetation damage was included on 8 February. Further recommendations for refinement of the session have been discussed with the Safety Manager and Quality Manager and included in the Induction Session from 24 February 2006.

c) Preparation of new display material

New display materials have been placed in the Training Room showing examples of vegetation warning signs and the flagging tape used to delineate significant flora species.

d) Refresher Training to all Field Personnel

During February 2006 additional training was provided as follows:

- Full earthworks crew general induction on the importance of protected vegetation.
- One-on-one toolbox session with field officers involved with the Davidson's Plum incident.
- Full bridgeworks sub-contractor crew environmental toolbox training.
- Follow-up General Toolbox prepared for delivery by each foreman.

e) Republish and Distribute Sensitive Area Plans

All site staff (particularly engineers) were reminded of the importance of referring to the Sensitive Area Plans. A new hard-copy set of the Plans was distributed to each Engineer and Area Foreman for field reference.

f) Full review of threatened species condition and protective measures.

Following a full review of the condition of individual threatened plants along the project (requested by Abigroup), a number of protection measures including protective para-webbing and sediment fencing were adjusted, rectified or added. For one particularly sensitive location near a drain at Ch 45,750 a site meeting was held with the project ecologist and drainage engineer to discuss stormwater drainage around a clump of threatened flora species.

g) Procurement and installation of Protected Vegetation signs

130 "Protected Vegetation" signs have been produced and progressively installed across the site in February and March 2006.

An infringement penalty was received from DEC/NPWS in April 2006 relating to damage to the Davidsons Plum. In May 2006, however, the project ecologist reported that the damaged Davidson Plum was developing new shoots and these new shoots have expanded. The condition of this tree will continue to be monitored.

A complete review of the status of threatened species along the alignment was undertaken by the project ecologist during January. This report was submitted to RTA and DEC/NPWS. Over 200 local native threatened plants are being monitored along length of project alignment.

A review of the condition of plants in the threatened species translocation site was undertaken during March 2006. The review showed that almost all plants were showing signs of good health. The results of the review were presented at the Environmental Review Group meeting in April 2006.

Revegetation and Landscaping

An extensive local native seed collection exercise was conducted in 2005. As a result of a review of local native nurseries, Mullum Creek Native Nursery at Mullumbimby was selected to propagate collected seed stock on behalf of the project. Propagation commenced in January 2006.

Following approval for a translocation program from DEC/NPWS, three local nurseries were also selected to receive cuttings of the threatened species *Acacia bakeri*. To date, two of the nurseries have indicated that they have had some success with establishing the cuttings.

Some of the Burny Bean seed collected earlier by the project ecologist has also been successfully propagated. In accordance with the Burny Bean Report (Benwell, 2005) 20 pots, each containing three healthy plants, have been propagated from local seed stock. The DEC/NPWS have advised that they have no concerns with a proposal to replant the seedlings back into the project site.

A presentation on the draft Landscaping Design for the project was made to the Community Liaison Group meeting in April. Comments were received from Jack Taylor, interested CLG member & member of the local landcare groups.

The landscape design was issued as 100% stage development in July/August 2006.

To support the landscaping program a soil analysis was commissioned and report submitted by Abigroup's designers to RTA and the project verifier. The report indicated that the existing soils in the surrounding landscape are just as acidic (pH 4.9 to 5.8) as those on the road batters. Nevertheless lime treatment of soils on the batters is carried out by inclusion with the hydro-mulching program. There has been a problem with cut batter plant coverage in some cases and this is being addressed by Abigroup in an updated batter revegetation procedure. Tube stock planting of batters is proposed in the upcoming months.

Fauna

A post-clearing fauna impact report was prepared by Abigroup during March 2006 with the assistance of project fauna specialist. The main findings of the report were that:

- Relatively few fauna were recorded from habitat trees at the time of their removal. This was considered to be due to low overall tree hollow occupancy rates in the vicinity of the existing Pacific Highway, but also likely reflects seasonal influences: as evidenced in the low incidence of hollow nesting birds.
- Fifteen of the 20 habitat tree species had hollows as shown in the figure below. Fauna were located in 10 individual trees, of which 8 had hollows:

Table 3.1

| Tree Category | Trunk hollow | Branch hollow | Hollow total | Sample size N = | Average Hollows/tree |
|---------------|--------------|---------------|--------------|--------------------|-------------------------|
| With fauna | 5 | 20 | 25 | 10 | 2.5 |
| Without fauna | 23 | 52 | 77 | 56 | 1.4 |
| All trees | 28 | 72 | 100 | 66 | 1.5 |

Consultation continued with DEC on the development of the fauna underpass structures. In one particular dedicated fauna underpass structure, at culvert C50.71 located at the northern end of the project, timber logs have been included into this structure to further enhance its potential use. An inspection of the crossing was undertaken by the ERG in April 2006.

Other fauna underpasses are combined drainage and fauna passages and are being installed as drainage works progress.

Brendon Taylor, a local PhD student undertaking sand track monitoring at the existing Brunswick Bypass fauna crossings, has advised that recent monitoring shows that the species range using the crossings appears to be consistent with pre construction, but the number of crossings recorded is lower.

Construction of the fish passage culvert (Fill 6 area) continued during the early part of 2006, involving rock lining of the upstream channels. This structure was completed in June 2006 with an inspection by the DPI Fisheries officer.

A revised set of layout plans on the proposed Fauna Fence for the length of the project was distributed in May 2006. This is incorporated into final fencing drawings for the project.

The final report on the Osprey Nest was also forwarded to the RTA in May 2006. This report, prepared by the project fauna ecologist, concluded that:

- Osprey were seen in the vicinity of the original nest tree site on July 2005 and January 2006.
- The Osprey have not been seen on the artificial nest platform, since its installed in May 2005.
- Examination of the landscape in the vicinity of the Brunswick Heads to Yelgun Pacific Highway upgrade reveals extensive forested areas both east & west of the alignment, including forest fringing the Brunswick River.

The abundance of potentially suitable nest sites in the vicinity of the highway upgrade suggest that no additional artificial platform is required.

3.2.2 Construction Impact Predictions made in the EIS and Analysis of Monitoring

Table 3.2 Flora and Fauna predicted impacts

| Predicted Impacts (ref EIS 12.4) | Actual Impacts (as assessed at this construction stage) |
|---|--|
| Impacts on threatened flora species | <p>The condition of translocated plants and those remaining adjacent to the project is reviewed by the project ecologist on a regular basis.</p> <p>Cuttings from the threatened plant, <i>Acacia bakeri</i>, <i>Grevillea hilliana</i>, and the Burny Bean are being propagated at a few local native nurseries for later re-inclusion into the project site.</p> <p>Elsewhere on the project site threatened flora species are fenced off for protection and reviewed by project environmental staff.</p> <p>Inadvertent damage has occurred to one (1) Davidson Plum plant however, the tree has re-shoot, and surviving. A range of measures was undertaken in relation to this matter as described earlier in the report.</p> |
| Removal of fauna habitat | <p>Vegetation within the road footprint containing habitat characteristics was cleared in a two-stage process to reduce impacts on fauna. Only a limited number of fauna were discovered during the clearing process.</p> <p>A program of habitat box construction has been initiated with the project Community Relations team, and will assist in offsetting the removal of bird habitat along the Upgrade alignment.</p> |
| Formation of barriers to animal movement | <p>Many fauna corridors are identified as combined drainage and fauna culverts and are being detailed as formal structures. Regular consultation with DEC and DPI(Fisheries) has been made on the design and location of fauna and fish crossing points. Landscaping at these locations will also assist.</p> |
| Disturbance and degradation of adjacent habitat | <p>Disturbance and degradation to adjacent vegetated areas is minimised through:</p> <ul style="list-style-type: none"> • provision of protective fencing and flagging • education on clearing limits in Site Induction and Toolbox programs • initiating a program of revegetation using locally collected native seed <p>These measures are regularly reviewed and maintained.</p> |
| Impact on SEPP14 coastal wetland areas | <p>On both sides of the Brunswick River, a 3-metre high barrier fencing with shade-cloth cover at the clearing line has been erected along the project footprint boundary. This has similar benefits to that outlined above.</p> <p>Erosion and sediment controls on road reserve adjacent to sensitive areas are inspected by a specialist soil conservationist and the weekly environment inspection team. Recommendations for improvement are implemented by Abigroup.</p> <p>Following heavy storms in January 2006, a new sediment basin was installed down slope of the Yelgun Rest Area. By end of July 2006 there are 16 sediment basins along the alignment.</p> |

3.3 Heritage

3.3.1 Implementation and Effectiveness of Environmental Controls and Conditions

During January and February 2006 representatives of the Tweed Byron Local Aboriginal Land Council (TBLALC) were invited on site to observe works around the north side of Brunswick River. The Project Archaeologist was also contacted but advised that she has been to the same site previously and believed that the TBLALC were best placed to give any site specific guidance if necessary.

Representatives of TBLALC were present to inspect and monitor works associated with:

- the maintenance and relocation of 3 metre high barrier fence to the construction buffer zone boundary in the area around Ch 45,300
- Telstra and sewerage services works at the interface with the Brunswick Heads Nature Reserve
- the Scar Tree on the Brunswick Bypass, which had lost a major limb in the recent windy weather during March 2006
- a proposed temporary Access Road to Wetland B.

A Final Report on the Results of the Section 90 Consent was prepared and forwarded to DEC. The Report covered two consents: #2259 and #2357 being for the impact on aboriginal sites.

- JW-OS-1(PAD 4)
- JW-OS-2 (PAD 5)
- JW-OS-3 (PAD 6)
- SB-OS-1(PAD1, 2, 3)
- B-OS-1
- JW-OS-4 (PAD 7)

Three items were picked up at JW-OS-3 (former Salad Bowl Caravan Park) and the TBLALC have advised that because of the previous disturbance and site history a 'site report' is not required. There were no relics nor any other items discovered at any of the other sites.

The Scar Tree on the Brunswick Bypass (referenced in Ministers Condition 48) lost a limb during windy weather during March 2006. An arborist visited the site and commented that the tree is very old and that there is evidence that a number of similar braches have dropped from it in the past. He further advised that branch dropping is to be expected as part of the tree's natural life cycle. The DEC/NPWS were informed of this detail in March and the parraweb protective fencing damaged by the fallen limb was repaired around the tree.

3.3.2 Construction Impact Predictions made in the EIS and Analysis of Monitoring

Table 3.3 Predicted heritage impacts

| Predicted Impacts (ref EIS 12.4) | Actual Impacts (as assessed at this construction stage) and Heritage Monitoring |
|---|---|
| Seven "Potential Archaeological Deposit" PAD sites were identified as being impacted by road alignment. | <p>The PAD sites were located and marked on the project Sensitive Area Plans (included in the EMP documents).</p> <p>Disturbance to these sites was permitted under the Consent to Destroy permission provided by DEC(NPWS).</p> <p>A representative from the TBLALC was invited and present for all the initial ground disturbing works at the nominated sites. No artefacts or relics of significance were found at any of these sites, and a final report submitted to DEC/NPWS on 22 March 2006. This covered the two consents #2259 and #2357.</p> |

3.4 Water Quality

3.4.1 Implementation and Effectiveness of Environmental Controls and Conditions

Erosion and Sediment Control

The management of soil and stormwater continue to be prominent issues drawing the attention of environmental agencies and the community alike.

Extensive erosion and sediment controls have been provided along the project during this reporting period. These include sand bags, silt fence, sediment basins, drop downs, lining drains, vegetation, rock barriers, booms, bunding, disposal areas, water diversions, drains, progressive revegetation and many other controls. This has corresponded with an increase in the intensity of earthworks and drainage operations and the frequency of recent rain events over summer 05/06. By May 2006, it was estimated that over 50,000 sandbags had been used on the project for erosion and sediment control, with a large number of additional erosion and sediment controls.

Erosion and sediment control measures are inspected weekly and during the rainfall events in conjunction with the Project's Soil Conservationist who provides on-site technical advice and a review of site management practices.

Weekly inspection sheets arising from this (and other) inspections are distributed to the field crews for action. To meet the demand of the earthworks program, an additional field crew was established in February 2006. Three specialist ERSED crews now operate across the project site.

Despite the efforts of the crews and Abigroup's continued commitment to the implementation and maintenance of controls, on two occasions the DEC expressed concern over stormwater discharging at the Yelgun Rest Area during rain. Abigroup constructed a new sediment basin on land outside the approved corridor below the Yelgun Rest Area site. An application to vary the Environmental Protection Licence was submitted to DEC in March 2006 providing details of a variation involving the construction of three new sediment basins as follows:

- A permanent basin in Fill 10

- A new basin downstream of the Yelgun Rest Area
- Using Wetland B as a construction-stage sediment basin

By the end of July 2006 there are 16 licensed sediment basins along the alignment. Formal ERSED training sessions for engineers and erosion and sediment crews were held in February and June 2006. Training has also been delivered on:

- the management of ASS
- the management of sediment basins
- the storage and management of liquid chemicals, with a particular focus on concrete curing compounds

The Project's Environmental Officer continues to work with the Soil Conservationist to revise the Progressive Erosion and Sediment Control Plans (PESCP) for different areas of the project as construction progresses or is completed. The PESCP's have been prepared for the whole project. The project verifier and RTA's site environmental officer are also included in the distribution of these updates.

Apart from the weekly maintenance inspections, there have been numerous internal and external audits on the erosion and sediment controls on the project site. These audits are listed in project audit system in Section 5 of this report.

There have been several formal training sessions, as well as toolbox type training sessions in erosion and sediment control during this period, including sediment basin management. A full list of the training provided is included in Section 5 of this report.

Water Quality Monitoring

Water quality monitoring of the receiving waters (ie. Brunswick River and Marshall's Creek) and of the sediment basins occurs on a regular basis. The results of this monitoring is included in the Monthly Monitoring reports in Appendix 1.

Procedures are in place to ensure that the sediment basin water meets the requirements of the Environmental Protection License issued by DEC/EPA prior to its discharge.

Rock Platforms and Scour Protection

Following the preparation of a detailed Work Method Statement, staged rock removal was commenced on the Brunswick River Bridge rock platform adjacent to the piers for the new service Road Bridge. This work was also accompanied by rock placement on the northern Brunswick River Bridge platform which was required to make up the shortfall during its initial establishment. Removal of the rock platform on the Brunswick River will continue in a staged manner.

Plans for the installation of rock scour protection at Bridge 1 on the Brunswick Bypass and the construction of a temporary creek diversion were developed during April 2006. Completed scour protection works and re-alignment of the creek to its original location were inspected during the Environmental Review Group meeting in May 2006.

3.4.2 Construction Impact Predictions made in the EIS and Analysis of Monitoring

Table 3.4

| Potential Impacts (ref EIS 10.2.3) | Actual Impacts (as assessed at this construction stage) |
|---|---|
| Soil erosion causing deterioration in water quality, damage to aquatic ecosystems and siltation of waterways. | <p>A comprehensive system of soil erosion and sediment control has been designed, documented, installed and maintained across the project.</p> <p>Inspections occur on a regular basis and inspection reports are signed off by site foremen when actions complete.</p> <p>Specially trained erosion and sediment control crews operate across the project.</p> <p>Concern has been expressed by Agencies and the community regarding the discolouration of receiving waters during severe rain events. However, the discolouration cannot be entirely attributed to the project.</p> |
| Acidic drainage due to disturbance of acid sulphate soils. | There has been no reduction in pH levels in receiving waters during construction. All ASS/PASS materials are neutralised and incorporated into the fills. |

3.5 Noise and Vibration

3.5.1 Implementation and Effectiveness of Environmental Controls and Conditions

Noise

Noise monitoring is undertaken at 20 regular sites along the project length. The monitoring also took place on a Rostered Day Off, when there was no construction work, to collect more data on the background noise levels along the project alignment. In the second six-monthly period the monitoring indicates that the construction activity has generally been within the noise predictions for the project, as documented in the Noise and Vibration Management Plan. An exception includes the noise due to piling the Billinudgel pedestrian bridge in May 2006. This was managed by implementing all reasonable and feasible mitigation measures on site, discussed with neighbouring land holders and also at the Community Liaison Group.

Monitoring at a number of sites indicates that traffic on the existing Pacific Highway is the main contribution to noise in the vicinity.

Some night works took place during this reporting period. In February 2006, there was a very large concrete pour associated with the Brunswick River bridge, and this was planned and managed in liaison with the DEC/EPA, the local Council and the CLG. Noise monitoring showed that the activity was barely audible above background noise levels in the area. No complaints were received from this event.

A proposal to initiate on-going night work on the Brunswick River Bridge was presented and agreed by the CLG in June 2006, and this work continued for a month and a half. The community was notified using letter box drops and the activity was guided by a Work Method Statement, toolbox training and consultation with DEC. Noise monitoring was conducted to assess the noise levels associated with this work. The results shown in Table 3.5 indicate that the noise levels were fairly consistent each night and that they are comparable to readings when no work was occurring.

Table 3.5

| | Wednesday 14 th June | Thursday 15 th June | Friday 16 th June | Monday 19 th June | Tuesday 20 th June | Friday 30 th June |
|----------------|------------------------------------|-----------------------------------|---------------------------------|---------------------------------|----------------------------------|---------------------------------|
| Site 3 | | | | | Rain No work | |
| Before 9.30 pm | (59) 50 | (63) 53 | (58) 50 | (59) 50 | (59) 49 | (59) 49 |
| After 9.30 pm | (58) 49 | (59) 50 | (60) 48 | (60) 49 | (60) 49 | - |
| Site 4 | | | | | Rain No work | |
| Before 9.30 pm | (61) 52 | (62) 51 | (59) 49 | (62) 50 | (60) 48 | (60) 50 |
| After 9.30 pm | (60) 45 | (59) 48 | (58) 46 | (59) 46 | (61) 48 | - |
| Site 5 | | | | | Rain No work | |
| Before 9.30 pm | (52) 47 | (44) 37 | (51) 45 | (51) 45 | (53) 47 | (50) 44 |
| After 9.30 pm | (49) 44 | (43) 35 | (50) 44 | (50) 41 | (51) 47 | - |

L₁₀ readings are shown in brackets with the L₉₀ reading following

This work was completed at the end of July 2006, and no complaints were received for these works. Michael Chung, of Renzo Tonin and Associates P/L advised in May 2006 that the updated version of the 85% stage Operational Stage Noise Management Report was available for review. This has been sent to DOP.

Vibration

Vibration monitoring was undertaken at three locations in April 2006 to assess the impact of construction works on people and property. The monitoring was conducted at:

- 1 Rajah Road Impacts due to piling on retaining wall 01
- Riverside Drive Impacts due to road works
- Balemo Drive Impacts due to piling at Bridge 6.

All vibration was within guidelines for human comfort and structural damage.

Vibration monitoring was also undertaken at the Ferry Reserve Caravan Park in May 2006 at the commencement of piling activities associated with Bridge 3. Vibration levels were observed to be well within the criteria for structural damage and human comfort.

3.5.2 Construction Impact Predictions made in the EIS and results of monitoring

Table 3.6

| Potential Impacts (ref EIS 8.3) | Actual Impacts (as assessed at this construction stage) |
|---|---|
| Residences near sections which require extensive fill or cut operations may be exposed to construction noise levels for extended periods. | In many parts of the project the cut and fill areas are naturally shielded by the topography of the area. Noise mitigation treatments at all required neighbouring residents have been completed by the RTA, consisting of reglazing, ducted air conditioning, industrial air conditioning units and additional courtyard walls. |

| Potential Impacts (ref EIS 8.3) | Actual Impacts (as assessed at this construction stage) |
|--|--|
| <p>The predicted noise levels exceed the DEC/EPA goals and construction noise levels would be clearly audible.</p> | <p>The installation of a permanent noise barrier in the Rajah Road area has been completed. A temporary noise shield was provided during the construction period.</p> <p>Monthly noise monitoring indicates that construction noise levels are above the DEC/EPA noise goals at most sites. This was predicted in the EIS (section 8.3.2) and the Noise and Vibration Management Plan.</p> <p>Site specific noise mitigation measures have been implemented as and when required.</p> <p>On most occasions construction noise has been comparable or below background noise (ie traffic) associated with existing Pacific Highway.</p> |

3.6 Dust

3.6.1 Implementation and Effectiveness of Environmental Controls and Conditions

Depositional dust monitoring continues to occur at 11 sites along the project alignment. The results are included in the monthly monitoring reports. At times high dust readings can be correlated to increased earthworks activity nearby. Some of these monitoring sites are surrounded by earthworks (eg sites 9 and 10) and the gauge readings do not necessarily reflect the impacts at nearby residential receivers. For this reason discussions were held with DEC and some of the gauges will be moved closer to neighbouring residential properties.

The management measures undertaken to manage dust on site include:

- A full time suction street sweeper.
- Water carts used to spray exposed earthworks.
- Stabilised access ways to minimise the tracking of dirt & mud onto public roads.
- Implementation of progressive revegetation on the project batters.

There have been no dust complaints from April to July 2006.

3.6.2 Construction Impact Predictions made in the EIS and Environmental Monitoring

Table 3.7

| Potential Impacts (ref EIS 9.5.4) | Actual Impacts (as assessed at this construction stage) |
|--|--|
| <p>Dust would be generated from earthworks associated with the construction.</p> | <p>Earthworks activities generate dust under dry conditions. Results of monitoring conducted during this reporting period have shown a marked decrease in ambient dust levels along the site compared to the previous reporting period. This can be attributed to:</p> <ul style="list-style-type: none"> • Extent of hydromulching and handseeding. • Stabilisation of completed earthworks areas (with stabilised pavement materials (such bitumen, asphalt or road base) • Finalisation of bulk earthworks in some areas |

| Potential Impacts (ref EIS 9.5.4) | Actual Impacts (as assessed at this construction stage) |
|---|---|
| <p>On a hot, dry windy day the amount of dust from wind erosion could be much higher. It is possible that under some extreme wind conditions, construction activities would be stopped.</p> | <ul style="list-style-type: none"> • Wet weather periods <p>Previous monitoring results indicate that during dry periods dust levels are elevated.</p> |

3.7 Contaminated Sites

3.7.1 Implementation and Effectiveness of Environmental Controls and Conditions

Two areas of confirmed contamination have been identified within the project site. They are:

1. Hainsville Cattle Tick Dip Site
2. Former Service Station site at Ocean Shores.

Site works have been completed at the cattle tick dip site. A Remediation Action Plan was prepared for the site, in consultation with a DEC–accredited contaminated site auditor. The remediation method adopted in this case was capping over the site, completed in October 2005.

A Remediation Action Plan has also been developed for the former Service Station site at Ocean Shores. The Plan has been prepared in consultation with a DEC–accredited contaminated site auditor, and at the time of writing this report, the remediation action has not yet been initiated.

3.7.2 Construction Impact Predictions made in the EIS and Environmental Monitoring

Table 3.8

| Potential Impacts (ref EIS 13.7.3) | Actual Impacts (as assessed at this construction stage) |
|--|---|
| <p>Further investigation and assessment of these areas would be required during the detailed design stage.</p> | <p>Following field investigation it was identified that a former Cattle Tick Dip site (Hainsville) and a former Service Station site (Ocean Shores) are located within the Pacific Highway Upgrade alignment. These sites have been investigated and detailed Remediation Action Plans have been prepared. Remediation has been completed to date, on one of the sites.</p> |

4.0 COMPLAINTS SUMMARY AND CONSULTATION ACTIVITIES

4.1 Introduction

Abigroup uses a purpose built ‘Access’ database for the recording and management of all representations, including complaints. The system is called QESE (Quality-Environment-Safety-Engineering).

When someone rings with a request or complaint every effort is made to ensure that they are left satisfied and that their issues have been heard. Representations can be made via the 1800 number, email, mail, fax, personal visit or through a CLG member.

An on-site community relations team has been established. The team has set itself a one hour response time for interim responses to any inquiry, including complaints, with the focus on rapid reaction to ensure stakeholders feel their issue is being taken seriously. In the event that a corrective action can not be achieved in that time, such as when reliant on a third party, stakeholders are advised of the situation so they appreciate the project team is endeavouring to remedy the situation.

Abigroup’s focus, in order of importance, is to:

- Pre-empt issues and take actions to prevent the potential issue flaring
- Respond to issues that do arise as quickly as possible
- Look for patterns/locations with re-occurring issues and work with field staff to manage the activities that generate the issues.

4.2 Complaint Summary

The following table provides an overall summary of complaints received.

Table 4.1

| Type | No. & Nature of complaints | Abigroup Response |
|-----------------|---|--|
| Air/Dust | <u>January</u> 2 x Dust (a) Seeking water cart; (b) Resident advised she was panicked when she couldn’t close her windows. | (a) Superintendent organised water cart to area immediately; (b) Resident seen personally by Community Relations Officer and, when resident admitted panic, assured that she could call 1800 number at any time. |
| | <u>March</u> 2 x dust | 1 – Not from Project (The dust was being generated by a Byron Shire tractor working along-side the road) 1 – The dust was part of a multiple-complaint, and the complaint was made on a rainy day when no dust was evident. Nevertheless there has been a suction street sweeper on the complainant’s street everyday there has been any activity nearby. |
| Water | <u>January</u> 4 x Drainage, 1 x Flooding (a) Concern about construction drainage on resident’s property south of Shara Bvd.; | (a) Issue with Shara Bvd drainage ongoing; meeting with Project Director w/e 26.02.06; (b) Immediately addressed by engineers (rubbish removed from railway culvert)/ Marshalls Creek Overflow bridge construction platform removed/pipes |

| | | |
|-------|---|--|
| | <p>(b) Drainage issue that had re-occurred, exacerbated by heavy rain; (c) 1 x flooding & 2 x drainage concerned 1 resident, similar to (b).</p> | <p>removed on western side of Overflow/Fill 8C drain widened. Resident expressed high satisfaction with all actions. (c) Engineers actioned treatment to alleviate drainage as per (b) above.</p> |
| | <p><u>February</u> 2 Drainage</p> | <p>Concern regarding water ponding on path. Action taken: Spread gravel on walking track to make path safe and convenient Concern about the regular discharge from sediment basin in the drain running across property. Action taken: Crews have temporarily piped discharge line to the creek to minimise nuisance water running across neighbouring property.</p> |
| | <p><u>March</u> 1 Erosion and sediment control. The complaint was that there was dirt on the road which could be washed into the river.</p> | <p>1 – The complainant was advised that the project uses a suction street sweeper which picks up the dirt on the road, and that this street sweeper works continuously on the project.</p> |
| Noise | <p><u>January</u> 1 x Construction Night works in area had not been completed by the 10pm timeframe.</p> | <p>Superintendent asked to reinforce working hours to subcontractors; explanation sought from engineers regarding inaccuracy of timeframe.</p> |
| | <p><u>February</u> 3 Noise</p> | <p>1. Hammering heard at night from the Brunswick River Bridge Piers. Action taken: Stopped the formwork night-work indefinitely. 2. Reverse beepers are becoming annoying near the Salad Bowl area. Action taken: Carpenter erected temporary noise screens at the resident's courtyard. Heard power saws at 1 am from near the Sewerage Treatment Plant Access area. This resident was not included in the resident notifications of the sewer night works in this area. Action taken: In future the notifications will cover a broader distribution area.</p> |
| | <p><u>March</u> 3 noise (two concerning noise nuisance during the day and one regarding out of hours work)</p> | <p>2 – Two noise complaints were part of multiple-complaint about the project. In both cases special attended noise monitoring was undertaken at each of the sites. This is detailed under Noise Monitoring in this report. 1 – The out of hours complaint was initiated at 5:30pm not knowing that approved working hours are till 6pm Monday to Friday.</p> |
| | <p><u>April</u> 2 x night works. Two separate</p> | <p>2 x Apology. Community Relations staff advised the complainants of the process that had been followed to provide notification in advance of night works</p> |

| | | |
|--|--|--|
| | <p>residents complained that they did not receive notice of night works prior to it occurring (works involving closure of the Pacific Highway near Rajah Road).</p> <p><u>May</u></p> <p>1 x Working Hours</p> <p>4 x Construction Noise: The complaints listed included (a) a question on when will the piling stop? (b) criticism that the monitoring only occurs when there is no machinery working; (c) a question on commencing works later in the morning; and (d) when will the piling stop near Stock Route Road?</p> <p><u>June</u></p> <p>1 x 16 June by woman in Balemo Dv complaining that night time traffic noise on the highway is louder. 2 X 17 June due to residents at flats at 2 Rajah not being notified of night works.</p> <p><u>March</u></p> <p>1 vibration</p> <p><u>June</u></p> <p>1 x 3 June cracked window. 1 x 16 June general vibration.</p> | <p>(letter box drops had been delivered!), and in this case, offered motel accommodation to the two affected residents' families.</p> <p>The Piling Contractors were toolboxed as a reminder of the approved hours for the project working hours.</p> <p>The responses included (a) providing information on when piling would be completed at that particular location, in this case the next day; (b) machinery was indeed working in the area last time monitoring occurred; (c) told that piling is undertaken within the approved working hours for the project; (d) piling in the Stock Route Road area would be completed by the end of that week.</p> <p>The complainant was told that the management of noise on the highway once the project is open and operational is covered by an Operational Noise Management Plan.</p> <p>Country Energy did emergency work to repair power cables at the Rajah Road intersection. As a courtesy Abigroup rang the nearby residents to warn them of the pending night work, but did not have the contact numbers for those at 2 Rajah. Their numbers are now known for future.</p> <p>1 - Vibration monitoring was undertaken at this premise, and the work method altered. The work in this area has been intermittent, providing many days of respite period.</p> <p>Abigroup spoke with neighbouring residents and the Real Estate agent for the property in question, and no one else knows about the vibration issue. There was no vibratory roller in that area. Once off incident and the machine no longer works in that area.</p> |
|--|--|--|

In all cases Abigroup's response to the complaints received have been managed in accordance with the Community Information Plan in terms of timeliness and responsiveness.

4.3 Other Community Relations Initiatives

Abigroup is closely involved with the community and has participated in a number of important local events. The following points provide examples of the Company's involvement in local environmental and community programs:

Donations

- "Old and Gold" Festival Brunswick Heads: donated stationery, printed flyers, provided road barriers etc.
- Ocean Shores Art & History Expo: printing of entry forms and flyers.
- Assisted at "Kites 'n' Bikes" fundraiser.
- Provided barriers, chairs, signage etc. for local Open Garden Scheme homes.
- Participated in Australia's Biggest Morning Tea as a whole-of-site project.

Presentations

- U3A Brunswick Heads
- Ocean Shores Garden Club
- Mullumbimby Rotary
- Home Schooling families

Site Inspections

- Byron Shire Council
- Mullumbimby High School x 2 group tours

Other

- Committee member involved with community in the planning for two project celebrations:
 - "Farewell to the Old Bridge" planned for October 2006
 - Project Opening, 2007.
- Arranged successful funding submission for Compensatory Habitat Program, organised Habitat Awareness Day and co-ordination of community nesting box program in conjunction with local high school, USC and Rural Fire Brigade.
- Guest at Lions Driver Reviver Dinner.

5.0 Other Compliance Processes

5.1 Audits

As part of its project management system Abigroup is committed to undertaking scheduled compliance and system audits and regulating site activities through non-conformance and improvement notice procedures.

Audits are conducted both internally and externally by certified and experienced auditors. The following is a list of the audits conducted during the reporting period:

Internal System Audits included:

- 145 Complete PESCP Status Audit (June 06)
- 141 Complaints Register Audit (May 06)
- 139 Noise & Vibration EMP (June 06)
- 135 Soil & Water EMP (May 06)
- 134 Spill Response Equipment (May 06)
- 86 Hydro-mulch audit against RTA specifications (May 06)
- 85 Chemical Storage & Handling (May 06)
- 83 Flooding & Drainage EMP (May 06)
- 79 WMS Works adjacent to BHNR (April 06)
- 78 RTA audit of EMS (March 06)
- 77 Internal audit of EMS (March 06)
- 72 WMS for Pier Shoring (April 06)
- 71 WMS for Open Drains (March 06)
- 70 WMS Culvert at Tweed St (Feb 06)
- 69 EMS Internal audit (March 06)
- 66 EMR Certification of WMS (March 06)
- 62 BRB Night pour audit (Feb 06)
- 61 Under boring Enviro Audit (Feb 06)
- 59 Sediment Basin 12 (Feb 06)
- 58 PESCP 47,000E (Feb 06)
- 57 Audit against Spill Gear (Feb 06)
- 53 Hyder audit of EMS (Jan 06)
- 50 Rock platforms on Brunswick River (Jan 06)
- 49 PESCP 47,000E (Jan 06)

5.2 Environmental Improvement Notices

Environmental Improvement Notices (EINs) are issued by the Project's Environmental Staff as an internal mechanism for addressing deficiencies in work methods and procedures. The EIN process also supports, and helps to foster, a continuous environmental management improvement process.

1. EIN EWKS 012 - Fix up gaps in the fauna fence on the Brunswick Bypass. (Jan 06) Immediate rectification for future day.
2. EIN EWKS 013 – Notification of utility service connections outside the boundary to be raised with the Environmental Manager by the designers.
3. EIN TH 014 – Deficiencies identified in dewatering procedure in Fill 6.(Jan 06) Advice not followed. Immediate rectification.

4. EIN EWKS 015 - Actions for the Construction Manager regarding protection of threatened species. Require toolbox all field crew. Warning signs placed. Remind all
5. EIN EWKS 016 – Refuelling took place on rock formation Reminder to sub-contractors that no re-fuelling of plant within 20 metres of a river or waterway.
6. EIN TH 012 - Reinstate paraweb protective fencing at BH Nature Reserve.
7. EIN EWKS 017 – Small oil spillage whilst mechanics undertook mechanical repair of plant item. Workshop foreman to review procedures for managing mechanical repairs on site. Toolbox Training.
8. EIN EWKS 019 - Seepage water from the underbore operation corrected by subcontractor.
9. EIN EWKS 020 – Spoil stockpiled at Cut 4. Removed.
10. EIN EWKS 021 – Conduits stored on BHNR. Removed.
11. EIN EWKS 018 – Seepage water behind Fill 4 East flowing & causing erosion. Block flow & line channel.

5.3 Environmental Assessments

When delivered as a design and construct contract, there will often be works or infrastructure required for the project that have not previously been identified or assessed in the project's original approval documents.

On the Brunswick to Yelgun Project this has included the construction of several additional sediment basins, tree trimming and the establishment of a concrete batch plant.

Abigroup undertakes to ensure that all works that have not been subject to a prior environmental assessment are comprehensively investigated from a construction, community and environmental perspective.

The assessments for such works are conducted in accordance with current planning and environmental legislation and are subject to the review of all relevant Agencies and Council.

The following environmental assessments have been prepared during the reporting period for review and approval by relevant Agencies:

- Environmental Assessment (REF) for the Proposed Concrete Batch Plant site on RTA Property (Jagwen). The site was inspected by ERG Representatives who also provided comments on the proposal. (NOTE: This site was not selected as the preferred site)
- Environmental assessment (REF) for the Proposed Concrete Batch Plant site at the Yelgun Rest Area. The REF was provided to ERG representatives for comment following a site inspection. Comments were received from the DPI Fisheries and DEC. The REF was forwarded to the RTA for determination which was provided on 6 June 2006.
- A revised Environmental Assessment document (REF) was released for the Temporary Access Road to Wetland B. Comments were received from DPI Fisheries and DEC. The REF was forwarded to the RTA for determination which was provided on 23 June 2006.

- Addendum to the Environmental Assessment for a Spoil Stockpile site. Comments on the addendum were provided by DPI Fisheries and DEC. The Addendum was forwarded to the RTA for determination which was provided early June 2006.

5.4 Environmental Training

Abigroup provides ongoing training to its employees and sub-contractors on a range of environmental, safety, industrial relations and work practice topics.

Formal classroom training is provided by qualified trainers within a dedicated training room on site. However, the majority of training is provided as 'toolbox' sessions at an on-site location where the actual work procedure or control measure will be implemented.

The following environmental topics have been addressed in training and toolbox sessions during this reporting period:

- General Environmental Toolbox
- Refresher Training – General Induction
- Environmental Induction – Bridge works crew
- Environmental Significance of BH Nature Reserve (Telstra)
- Working in a Sensitive Areas (BHNR) (Country Energy)
- RO11 Drainage Works
- Sediment Basin Management
- Erosion and Sediment Control for Construction Sites
- Maintenance and Refuelling of Plant on Site (sub-contractors)
- Conditions associated with an REF for Tree Trimming
- Working in a Sensitive Area (BHNR) (Piling Contractors)
- Acid Sulphate Soils Management.
- Environmental significance of Brunswick River
- Sensitive Area Plans
- WMS for culvert on Tweed Street
- Piling Contractors – Working in creeks
- Indigenous Heritage awareness
- Awareness of REF for Tree Trimming next to BHNR
- Country Energy – Working in a Sensitive Area
- Liquid Chemical Storage (Bridge Crews)
- Clearing adjacent to BHNR
- EMP for Spoil Site on Jagman
- Nightworks pre-planning
- Litter and Waste Management x3
- Basic erosion and Sediment Control x3
- Weed Management & Threatened Species