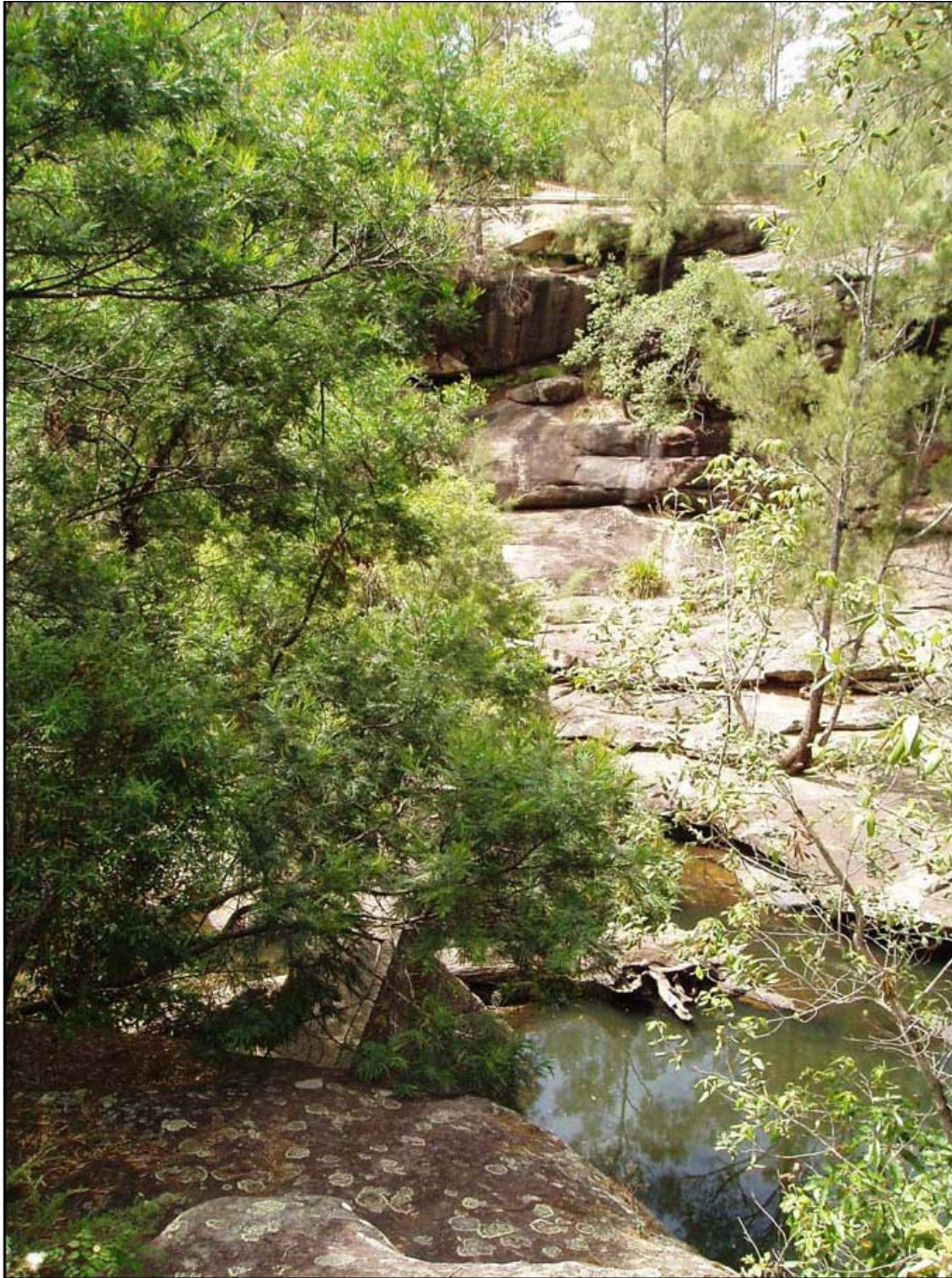


## **VISUAL ASSESMENT OF OPTIONS 1, 2 AND 3 NORTH NOWRA/BOMADERRY LINK ROAD**



Amended Report 13<sup>th</sup> August, 2010

Shoalhaven City Council  
City Services & Operations  
Project Delivery Section

## SUMMARY

This aim of this report is to assess the visual impact of three road route options for North Nowra Link Road proposed by Shoalhaven City Council. Option 1 (Pitt Street – Narang Road) also known as the central route, Option 2 (Illaroo Road – West Bunberrra Street), also known as the southern route and Option 3 (West Cambewarra Road), also known as the northern route. It is recognised that the visual impact assessment forms a part of the Environmental Assessment process for the proposed link road connection between North Nowra and Bomaderry.

The following methodology was used to assess the impacts upon the existing landscape character:

- The visual impact of each option upon the existing surrounding/adjoining landscape, with a focus on the Bomaderry Creek crossing points.
- The quality of existing views into the site by adjoining residential properties.
- The degree and of visual impact rated from severe to negligible depending upon whether views are likely to affect nearby residential property owners or recreational park users. In this report the visual impact of the motorist using any of the proposed routes was not considered.
- Each route was assessed from both internal and external viewing points from within the viewing catchment. E.g views of the proposal by the public using Bomaderry Creek Nature Reserve's existing picnic facilities.

This report identified the landscape character and level of intactness of the existing bushland as a key issue. In Options 1 and 2 there is evidence of past land clearing and infrastructure installation. This has resulted in a deteriorated landscape character and visual amenity when compared to the surrounding remnant and regrowth bushland.

Each option requires an upgrade at the Illaroo Road intersection on the western edge of the site. All three intersection upgrades will require vegetation removal at this location which make way for the proposed infrastructure to comply with Australian Standards for road design, the result is that each option will be open to overlooking external views from adjoining residential properties. All three proposals require an engineered solution to traverse the site from west to east, the proposed road and bridge corridor occupies a footprint of approximately 30m wide. The bridge footprints become more dominant in terms of height, bulk and scale as the Bomaderry Creek gorge becomes wider and deeper to the south, therefore Option 3 has the lower bridge footprint and Option 2 has the greatest. However the recreational park usage is highest at Option 3 and Option 1 with Option 2 being visited in less frequently or easily due to the terrain.

Each option benefits from the addition of a 1.8m wide pedestrian walkway included on the side of the bridge. The intention of the walkway will encourage increased recreational and cultural appreciation of the surrounding area by improving accessibility and views down into the Bomaderry Creek gorge and the immediate bushland. These impacts are localised, internal to the site and not seen from further afield due to dense bushland and the tall Eucalypt forest.

It is considered that the visual impact upon the land surrounding the 30m proposed road corridor and 75 metre bridge crossing over Bomaderry Nature Reserve for Option 1 is slight to moderate.

The visual impact of Option 2 is considered moderately negative along the proposed road route but becomes severe at the 120 metre bridge crossing due to the tranquil and intact nature of the surrounding bushland and the character of the deep rocky gorge. However the severity of the impact is lessened by the isolation of the area which currently is can only be accessed by foot over uneven terrain.

The visual impact of the proposed road route and 75 metre bridge crossing for Option 3 is considered to be moderately negative yet localised due to its siting within dense bushland approximately 30-40m from nearest residential property. The visual impact of this route would minimal due to the extensive amelioration proposed.

In conclusion this report finds all three options create a slight to severe visual impact at various locations along the proposed routes.

## **INTRODUCTION**

This report contains amendments to an earlier visual assessment completed on 8<sup>th</sup> November 2007, which considered the proposal of three road route options for North Nowra Link Road by Shoalhaven City Council. Option 1 (Pitt Street – Narang Road) also known as the central route, Option 2 (Illaroo Road – West Bunberra Street), also known as the southern route and Option 3 (West Cambewarra Road), also known as the northern route. The amendments in this report take into account the supplied proposed general arrangements for the bridge design of each option as provided to Council by Jim Alexander.

## **BACKGROUND**

The three road route options are all sited on land surrounding and traversing Bomaderry Creek, North Nowra. The majority of land is vegetated although clearing has been undertaken in several localised areas of the site. The vegetation consists predominately of remnant shrubby woodland with the dominant and tallest trees appearing in the vicinity of the Bomaderry Creek gorge.

Routine clearing for asset maintenance is regularly undertaken along the electricity transmission line service corridor which is approximately 15m wide and runs for a considerable distance adjoining the route proposed for Option 1 (Pitt Street – Narang Road). Early quarrying and landfill activities have resulted in localised clearing adjoining sections of the road route within Option 2 (Illaroo Road – West Bunberra Street). Both of these areas remain unvegetated apart from kikuyu cover over the landfill and tip site.

## **LOCATION**

The three proposed options are located within a footprint of land bounded by Princes Highway to the east, Illaroo Road to the west, West Cambewarra Road to the north and Falcon Crescent to the south. The land footprint is comprised of Bomaderry Creek Regional Park managed by National Parks and Wildlife Service, Crown land and the remaining land managed by Shoalhaven City Council.

Adjoining the road boundaries mentioned are residential houses which currently overlook dense bushland up to the perimeter edge of the site. Currently access directly onto Bomaderry Creek Regional Park is via a pedestrian pathway linking an existing picnic area and a series of nature trails which lead off from carparking off Narang Road. The site can also be accessed by informal trails which zigzag through the bushland and over natural terrain.

## **ASSESSMENT METHODOLOGY**

To provide an understanding of the overall visual impact of each option, the following criteria have been used to assess the visual impact from key viewpoints:

- The existing landscape character along each road route proposed;
- The visible impact of proposed and existing infrastructure;

- Existing views into the site by adjoining or nearby residential properties where this occurs;
- The visual impact at Bomaderry Creek by each proposed crossing point;
- The visual impact at the site of the Bomaderry Nature Reserve picnic area off Narang Road.

The grades of visual impact are affected by the number of potential viewers and the sensitivity of the views affected. When change in views is likely to affect nearby residential property owners, recreational park users and tourists the determination would be graded as follows:

- Severe
- Substantial
- Moderate
- Slight
- Negligible

The zone of visual influence also impacts upon the significance of the impact. Therefore the more limited the views are of the anticipated zone of visual impact the lower the significance. The site is extensively vegetated and relatively flat other than at either side of the gorge where the terrain falls towards Bomaderry Creek. Therefore overall views tend to be horizontal and for short distances of approximately 100m rather than vertical except at the edge of the gorge on either side of the bank.

The zones of impact were considered as following:

- Localised and internal i.e. views looking onto the proposed route from within the site.
- Localised and external i.e. views looking onto the proposed route from adjacent local roads and properties.
- The viewing catchment extends beyond the boundaries of the site to the adjoining local roads.

#### **OPTION 1 (Pitt Street – Narang Road, central route)**

##### **Siting:**

Option 1 (Pitt Street – Narang Road, central route) is contained within land bound by Illaroo Road to the west and Princes Highway to the east., following a direct route with slight deviation to the north at the proposed bridge crossing at Bomaderry Creek.

##### **The landscape character along the proposed route:**

On the western boundary of the site at the Illaroo Road – Pitt Street intersection entrance the vegetation typology begins with an open forest of Scribbly gums *E. sclerophylla* and red bloodwood - *Corymbia gummifera*, and medium sized Old Man Banksia - *Banksia integrifolia*, with a rich and diverse understory.

A short journey along the central route considerable clearing is encountered at the site of a former quarry now closed and in-filled. Transecting this cleared area are overhead transmission lines which extend from Pitt Street through to Bomaderry Creek and beyond, exiting the site at Narang Road to the north. A 15m service corridor beneath the wires is regularly maintained and cleared to allow access to the transmission lines above.

Heading in a north easterly direction the landform is typically flat and until the slope begins to gently fall away towards gorge above Bomaderry Creek. There is a mix of shrubby prickly plants for example; Kunzea – *Kunzea ambigua*, and Epacris – *Epacris microphylla* which give way to tall trees such as Spotted Gums and Grey Gums – *Corymbia maculata* and *E. punctata*. The ground plane is rocky with strappy leaved clumping plants as the landform falls towards the top of the rocky gorge.

The gorge at the point of the proposed crossing is approximately 35 metres wide and 11 metres deep with both canopy trees and understory vegetation on both sides amongst the rocky outcrops and boulders.

Existing infrastructure such as water piper, transmission wires, nature trails and viewing platforms have led to deterioration in the surrounding bushland. However there is little evidence of significant weed infiltration. Across the gorge to the east the contours slopes upward and patches of vegetation have been disturbed by recent fires, clearing and construction. Recent bush regeneration has been undertaken in the vicinity of the proposed route. There is a mix of mature Eucalypts and Casuarinas sparsely dominating an understory of native grasses.

### **The visible impact of the proposed infrastructure:**

Option 1 road route creates the need for an upgrade of the existing T-intersection at the corner of Pitt Street and Illaroo Road, see Figure 1. Clearing of vegetation along the perimeter boundary for a prescribed distance either side of the proposed new works will result in a diminution of the current bushland edge. This will allow site lines down into the proposed road route looking to the east when viewed from Illaroo Road junction. In addition to views from Illaroo Road, the first three properties in Byron Avenue will also be affected by this option see Figure 2. At this point the zone of visual impact is considered to be localised as it will be mostly viewed from externally and those most affected will be the residential properties overlooking the proposed road. For these stakeholders the visual impact of a new intersection and gun barrel road is considered to be negative and moderate. The negativity of the impact decreases the further the distance away from the proposed intersection. However as substantial bushland will be retained on the remaining perimeter boundary along Illaroo Road the overall impact is greatly lessened and overall is considered to be moderate to slightly negative.





Figure 1 Existing road alignment of Illaroo Road



Figure 2 existing views from rear of residential homes in Byron Avenue

### **The visual impact on Bomaderry Creek at each proposed crossing point:**

At the top of the gorge above Bomaderry Creek the existing infrastructure is clearly seen from either side of the creek. A 600mm water pipe extends across the creek approximately 10m above the water line and directly below this is a modified weir, see Figures 3 and 4. Overhead transmission lines also cross the creek at this point adding to the existing visual clutter at a location in close proximity to an existing picnic and recreation area. This infrastructure and its ongoing maintenance have led to localised land disturbance.

The proposed Option 1 bridge crossing at Bomaderry Creek is adjacent to the existing recreational viewing platform and nature trails within Bomaderry Creek Nature Reserve. The bridge approach slab on the eastern side necessitates the relocation of one trail near to Bernie's Lookout to beneath the abutment. Figure 3 depicts the existing 600mm pipeline adjacent to and highly visible from trail and picnic facilities and creek below. Two other trails located as part of the picnic area are the Western Walk which leads to the Old Weir at the bottom of the gorge and the Eastern Walk which leads to a viewing platform known as Weir Lookout. Figure 4 shows the old weir below the Weir Lookout. The impact upon the weir and lookout is discussed in the next section.

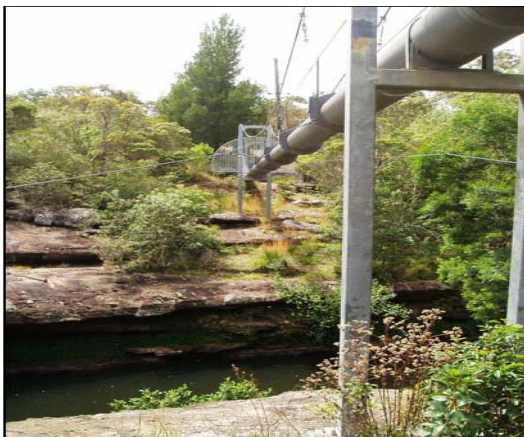


Figure 3. Existing 600mm pipe at proposed bridge crossing point facing east: indicating depth and width of gorge and extent of existing vegetation.



Figure 4. Existing pipeline facing west indicating approximate road route and existing surrounding native vegetation.

### **The impact on the Bomaderry Nature Reserve picnic area off Narang Road:**

The Weir Lookout which overlooks a tree lined gorge and the lower Old Weir currently exist in a tranquil setting as shown in Figure 5 below. Usage of the walking trails and lookouts is constant but low key on both weekdays and weekends. This is based upon personal observation of three separate trips at different times of day and days of week.

Figure 6 indicates the lookout which will not be affected by visual impacts of this route however impact upon the nature trails are moderately significant.

Option 1 terminates at the Narang Road – Princes Highway intersection. The upgrade in infrastructure in this area creates no significant negative visual impact, but does create future opportunities to provide additional landscape as an enhancement to the road reserve leading off from the Princes Highway.



Figure 5. Bomaderry Creek gorge below the weir lookout and picnic area.



Figure 6. Bernie's Lookout trail.

The visual amenity and subsequent recreational experience of park visitors to both the gorge and walking trails although localised would be moderately impacted and therefore negatively affected by the new road alignment proposal.

### **OPTION 2 (Illaroo Road – West Bunberra, southern route)**

#### **The landscape character along this route presents as:**

The remnant vegetation from the start point at Illaroo Road presents as a dry woodland forest consisting mostly of medium to tall Eucalypts and stands of Casuarinas with a patchy shrubby understory such as prickly Mountain Devil - *Lambertia Formosa*, Lomandra - *Lomandra formosa*, Tea Tree – *Leptospermum trinervium*. The proposed route along the plateau swings beside a redundant waste site. In this area the previous bushland typology and landscape quality deteriorates to that of a cleared and modified environment, mostly unvegetated or possessing only kikuyu and weedy cover. Once passed the fence line of the closed north Nowra land fill site (indicated in Figure 7) the ground plane gently undulates towards the Bomaderry Creek gorge. Rocky outcrops occur throughout and the understory alters from dense and prickly to sparse and shrubby as shown in Figure 8. The gorge is approximately 120 metres wide and 29 metres deep with rocky platforms edging the



top of the escarpment to the base of the gorge. The open woodland bushland setting contains a dense understory and is relatively undisturbed, see Figure 9. The terrain and vegetation type remain constant when following an easterly direction, where the proposed ultimately will terminate at the Princes Highway – West Bunberra Street intersection.



Figure 7. closed Landfill Site



Figure 8. Typical remnant vegetation

### **The visible impact of the proposed infrastructure:**

Option 2 will require an installation of an intersection on the eastern side of Illaroo Road. The proposed works will result in considerable vegetation clearing north of Falcon Crescent to make possible adequate pedestrian and vehicular site lines. Due to the localised nature of the necessary proposed road work upgrade and the substantial bushland to be retained which will continue to provide a consistent screen along the perimeter of Illaroo Road the impact is considered negligible.

In the centre of the footprint of land considered for Option 2 is the site of the now closed North Nowra Waste Facility. In this area surrounding the closed landfill site a number of informal bike trails have been created. Although they provide some recreational value the bike trails accompanied by the scrappy weedy vegetation do little to add any positive aesthetic value.

Towards the east at the proposed bridge crossing point over Bomaderry Creek the landform and vegetation is of high aesthetic and recreational value. Figures 9 and 10 depict uncleared bush and rocky outcrops, deep gorge with free flowing water at the base. The negative visual impact of the proposed bridge crossing indicated although localised and internal would be substantial.

The infrastructure upgrade required at the termination of Option 2 at Princes Highway would be considered no less visually negative than the numerous road intersections along the highway.

### **The existing views into the site by adjoining residential properties:**

A clearing of 30m for road reserve is required through the southern section of remnant bushland 60m offset and parallel to the northern boundaries of the residential properties in Falcon Street. The proposed route would be seen with filtered views from nearby residential properties.



Figure 9. Bomaderry Creek nearby proposed crossing point Option 2.

The eastern side of Bomaderry Creek heads towards residential housing aligned to Princes Highway. This is the termination point of Option 2, requiring land acquisition and further infrastructure upgrade.

**The visual impact on Bomaderry Creek at each proposed crossing point:**

The proposed bridge design connects the western and eastern side of Bomaderry Creek via a span of approx 120 metres with two concrete piers of approximately 22 metres tall. Option 2 bridge design has a 1.8m wide pedestrian walkway included on the side of the bridge which in part encourages increased recreational and cultural appreciation of an isolated area. In this instance the proposed bridge crossing initially creates a visual detracting and at the same time by providing easy access it encourages the public to appreciate the bushland setting in which it is placed. These impacts are localised, internal to the site and not seen from further afield due to dense bushland and the tall Eucalypt forest, as shown in Figure 10.



Figure 10. Ch. 1500 at proposed bridge crossing point.



A comparison can be made to a similar bridge crossing in the Douglas Park region on the South Western Freeway. In both instances recreational activities have been created through the opening up of a previously difficult to access recreational area. Figure 11 below is of a bridge crossing at Douglas Park, South Sydney. The engineered solution can be viewed as equally both an interesting man made structure inserted into the natural environment or a visual intrusion. This is a subjective view and for the purpose of this report has not been included into the conclusion.

It is considered that the visual impact of Option 2 at the bridge crossing is severe beyond the local footprint the impact is moderately negative. However by providing improved access into the reserve it can be argued that an increase number of recreational users can benefit from the road and bridge being placed at this location.



Figure 11. Bridge crossing at Douglas Park on the South Western Freeway

### **OPTION 3 (West Cambewarra Road – northern route)**

#### **The landscape character of the landform and terrain along the proposed route:**

Remnant and undisturbed vegetation of Eucalyptus and Black She Oak woodland with a dense shrubby understorey of Holly Lomatia – *Lomatia ilifolia*, Stalked conestick- *Petrophile pedunculata*, and Hakea – *Hakea dactyloides* to name a few. The flora typology is dense along this proposed route and as the contours and aspect falls gently towards the east at the gorge at Bomaderry Creek, the Eucalypts become taller e.g. *Eucalyptus punctata*, *E. maculata* and Turpentines - *Syncarpia glomulifera* emerge. Small shrubby plants appear sparsely dotted between rocky boulders. The Bomaderry Creek gorge at the proposed crossing point is both narrower approximately 76 metres and much shallower approximately 8 metres than the two other proposed crossing points. The eastern side of the Bomaderry Creek along the road route for Option 3 is bordered by cleared fields and agricultural buildings.

### **The visible impact of the proposed infrastructure:**

The proposed bridge span is approximately 75m + an additional 12 metres in approach slabs (6 metres on each side) overall with a concrete column height of approx. 6-8m with 4 concrete columns supporting the bridge.

Option 3 links Illaroo Road to the west with Moss Vale Road to the east via a route parallel to and offset by approximately 40m south of West Cambewarra Road. The proposed intersection of Illaroo Road and West Cambewarra Road requires an infrastructure upgrade and substantial vegetation clearing. This in turn would create greater visibility along the proposed road route for overlooking residential properties. The vegetation at the perimeter of the corner of Illaroo Road and West Cambewarra Road inside the nature reserve would be retained as a screen thus giving the visual appearance of the bush remaining intact. Figure 12 depicts the dense bushland to be retained adjacent to the site of proposed road upgrade.

A number of informal tracks have evolved through walkers entering the site off West Cambewarra Road. As use of these tracks is entirely informal the visual impact varies. The proposed bridge crossing point presents at a key location which would cause a moderate localised negative visual impact upon informal track & bushwalkers, in this green tranquil setting.

### **The existing views into the site by adjoining residential properties:**

The proposed 30m road reserve clearance zone occurs sufficiently into the bush that visibility of the road would be negligible for the adjoining residents of West Cambewarra Road as shown in Figure 13. It is also proposed that an earth mound with the purpose of screening both sight and sound of the traffic created by the proposed road route. The proposed berm would be created with variable heights of approximately 3m be offset 40m inside West Cambewarra Road on the southern side. The bridge crossing point at Bomaderry Creek is of moderately negative yet localised due to the siting within dense bushland approximately 30-40m from nearest residential property.

The visual impact of this route would minimal due to the extensive amelioration proposed.



Figure 12. Existing intersection of West Cambewarra Road and Illaroo Road and



Figure 13. West Cambewarra Road looking west.



## MITIGATION STRATEGIES

Strategies to mitigate the visual impact of the three proposals to provide a link road from North Nowra to Bomaderry depend upon the option, the location and degree of negative visual impact which may warrant mitigation measures. Options are limited to diminish negative visual impacts due to the engineering requirements of the proposal.

The proposed bridge alignments and buttressing on each proposal create opportunities for revegetation in the land immediately adjacent. The clearing for site lines for each of the routes creates opportunities for low entry way landscaping, similar to existing work along the Princes Highway between Bomaderry and Nowra. Further opportunities present to create new and link additional walking trails within other areas of Bomaderry Nature Reserve.

Mitigation opportunities for Option 1 include; (as the route travels in a easterly direction):

- inclusion of a mounded and planted berm located on the south side at the western end of the proposed route. The design details may also include a blade wall for noise attenuation, thereby presenting opportunities for bas relief; examples exist of artistic expression on sound barriers. The mounding which is proposed to be approximately 3m high will provide landscaping enhancement opportunities.
- revegetation of local native species in the area surrounding the transect through the closed quarry.
- relocation of Bernie's Lookout trail which will be impacted upon by the eastern buttresses of the bridge crossing allows for alternative and interesting viewpoints from on and under the bridge.
- mounding and revegetation either side of the road reserve on the eastern portion of the route which traverses past Bomaderry Creek Nature Reserve picnic area and carpark.

Mitigation opportunities for Option 2 include; (as the route travels in a easterly direction):

- an approximately 3m high noise attenuation mound which is envisaged to be located about 60m north of the rear boundary of residents on the north side of Byron Avenue provides planting opportunities as in Option 1. The length and actual siting of the mound is subject to further engineering study and detail.
- revegetating a corridor along the route in the vicinity of the closed landfill site with local native species to provide screening of the site from the proposed road.
- landscaping and softening of the proposed intersection of this route with the Princes Highway with plants selected to maintain appropriate site lines.
- Mitigation opportunities for Option 3 include:
- the proposed noise attenuation berm which is envisaged to be approximately 3m high and offset approximately 40m south of the existing West Cambewarra provides opportunities to reestablished local native vegetation, as in Options 1 and 2.

Mitigation opportunities for Option 3 include:

- Creation of a sound and visual berm, which also provides bush regeneration and native screen planting opportunities.

## CONCLUSION

This report has considered the visual impact of the three route options proposed by Shoalhaven City Council for the North Nowra / Bomaderry Link Road. The site covers land boarded by Princes Highway, Illaroo Road, West Cambewarra Road and Falcon Crescent. The routes are described as Option 1 (Pitt Street – Narang Road central route), Option 2 (Illaroo Road – West Bunberra Street, southern route) and Option 3 (West Cambewarra Road, northern route).

The purpose of this report is to identify and assess the visual impacts associated with each option with specific regard to the proposed bridge crossing designs by Jim Alexander. The impacts of proposed infrastructure, the required 30m (and variable) road reserve and the various bridging crossing points were described assessed and for each route.

The report uses methodology which is based on a qualitative review of viewer sensitivity to provide a visual impact assessment. Each route was assessed from both internal and external viewing points from within the viewing catchment. The key issues associated with each route are the views by adjoining and nearby residential homes and views of the proposal by the public using Bomaderry Creek Nature Reserve's existing picnic facilities.

In addition the report identified the landscape character and level of intactness of the existing bushland as a key issue. In Options 1 and 2 there is evidence of past land clearing and the existing infrastructure has resulted in a deteriorated landscape character and visual amenity when compared to the surrounding remnant and regrowth bushland.

There are no overwhelming differences in the visual impacts of each option. However accessibility to the Bomaderry Nature Park is easier over the flatter terrain to the north of the land and becomes more difficult and therefore less visited towards the south. Each option has a 1.8m wide pedestrian walkway included into the design of the bridge. The walkway will encourage increased recreational and cultural appreciation of this isolated area by improving accessibility and views down into the Bomaderry Creek gorge and the surrounding bushland.

Each road route requires an intersection upgrade on Illaroo road at the route entry location, with each route requiring a bridge crossing point over Bomaderry Creek. Due to the nature of the topography, width and depth of the gorge the infrastructure requirements become greater as Bomaderry Creek travels south and the gorge becomes deeper and wider. Therefore the bridge required for Option 2 would have a greater footprint and therefore more visual impact than that of Options 1 and 3. Each road route requires clearing through remnant native and on one occasion ecologically sensitive bushland.

Option 1 presents as the most direct route, which for a significant part of the route the road reserve is adjacent to existing electricity transmission lines. The maintenance of this infrastructure and clearing which has taken place in the past has contributed to deterioration in the landscape quality in sections of this road route. At the Bomaderry Creek crossing point the route passes within close proximity to an existing picnic area which comprises BBQ facilities, walking trails and viewing platforms. The visual sensitivity, access points and frequency of use have been taken into account in this report. Should this option proceed there are a number of opportunities to address the negative impact such as mounding, planting, repositioning or nature trails and creation of new nature trails.

It is considered that the visual impact upon the land surrounding the 30m proposed road corridor and bridge crossing over Bomaderry Nature Reserve for Option 1 is slight to moderate.

Option 2 also has significant sections of cleared and modified land which gives way to undulating ground plan with vigorous open woodland leading to a deep broad gorge at the Bomaderry Creek crossing point. This route presents with the largest bridge footprint in terms of height and width. The visual impact upon the land adjoining Option 2 is considered moderately to severely negative. However the severity of the impact is lessened by the isolation of the area which currently can only be accessed by foot over uneven terrain. These impacts are localised, internal to the site and not seen from further afield due to dense bushland and the tall Eucalypt forest.

Option 3 road route requires considerable land clearing, mounding and vegetation screening. This option proposes the smallest bridge crossing footprint with the least visual impact on the surrounding bushland due to its siting 30 metres into dense bushland.

After consideration of the size and impact of the each of the engineered solutions required to provide a continuous road route from Illaroo Road through to Princess Highway all three options share similar visual impacts. Each road route requires a similar footprint of land with Options 1 and 2 already possessing considerable amount of clearing along the route.

Option 1 currently has existing infrastructure sited along and within the proposed route and it is with this in mind that this report concludes that Option 1 (Central Route) would result with the least visual impact.