

+ POSITION PAPER RELATING TO ACOUSTIC & LIGHT SPILL IMPACTS FOR SECTION 34 CONFERENCE LAND & ENVIRONMENT COURT No. 2016/178476

KINGS FOREST MP08_0194 MOD 3 – SERVICE STATION & FAST FOOD OUTLETS

At Precinct 1, Lot 7 DP 875447 Tweed Coast Road, Kings Forest

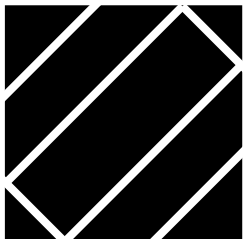


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**REPORT RELATING TO ACOUSTIC & LIGHT SPILL IMPACTS FOR SECTION 34 CONFERENCE
KINGS FOREST MP08_0194 MOD 3**

1.0 INTRODUCTION

Darryl Anderson of DAC Planning Pty Ltd has been instructed by Mills Oakley to prepare a report addressing town planning considerations for the night time operation of the proposed service station/food and drink premises, including the trading hours of comparable service stations and their proximity to residential areas.

2.0 PROPOSED AMENDED SERVICE STATION/FOOD & DRINK PREMISES

Following a review of the respondent's Statement of Facts and Contentions (SOFAC) the Proponent proposes to amend the development as follows:

- ♦ Building location as per original submission (21.0m East setback maintained)
- ♦ Increased North buffer (10m wide vegetated)
- ♦ Building extent to North reduced (station shop reconfigured) to achieve 13.5m setback to vegetated buffer
- ♦ Distance between car bowzers and station shop car parking increased (from 7m to 8m)
- ♦ Bowzers and roof over shifted South to achieve 13.5m setback to roof line
- ♦ Truck bowzers deleted
- ♦ Tanker filling point relocated (Distance of 7m from vegetated buffer to tanker filling point)
- ♦ Revised traffic movements (car and AV swept path)
- ♦ Revised car parking (from total 73 carparks to total 56 carparks)
- ♦ Carwash, dogwash, vacuum, air/water relocated to East of site (carwash building clear of & not within 21.0m East setback)
- ♦ Number of pylon signs reduced (from 4 to 2 signs)
Pylon signs noted on plan
- ♦ Deletion of the roof top terrace
- ♦ The internal stair to the roof terrace has been removed from the plan
- ♦ Roof Terrace floor area (sqm) has been removed from the drawing and subtracted from the total GFA area calculation
- ♦ Deletion of the 2.5m high Colorbond fence on the northern site boundary and replacement with a Koala fence in accordance with the Draft KPOM (JWA)

The amended proposed service station/food and drink premises will still operate 24 hours per day, seven days per week.

The amended suite of Kings Forest Service Station Plans (PUSH) is attached at **Annexure 1**.

As a result of the amendments to the site layout, the car bowser canopy will be 74m from the nearest dwelling and the food/drink building will be 68m from the nearest dwelling. The car parking/manoeuvring areas will be 55m from the nearest dwelling. The plan at **Annexure 2** shows the spatial relationship between the dwelling and the key elements of the proposed service station/food and drink premises.

3.0 COMPARABLE 24 HOUR SERVICE STATIONS

Comparable 24 hour service stations in the Tweed Coast/Tweed Heads area, as far south as Port Macquarie and as far north as Coomera in Queensland, have been investigated in

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relation to their operating hours, facilities and proximity to residential areas. Details of each service station are provided below.

3.1 BP – Highway Service Centre, Chinderah

The BP Highway Service Centre is located at Lot 2 DP 1010771 No. 1 Ozone Street, Chinderah. It is an existing highway service centre with fuel and parking facilities for articulated vehicles and fast food outlets. The location of the site in relation to the nearest residential areas is shown on **Figure 1**. Key distances to the nearest residential dwelling are:

- ♦ The service station/fast food building – 394m
- ♦ Fuel Canopy – 380m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 233m

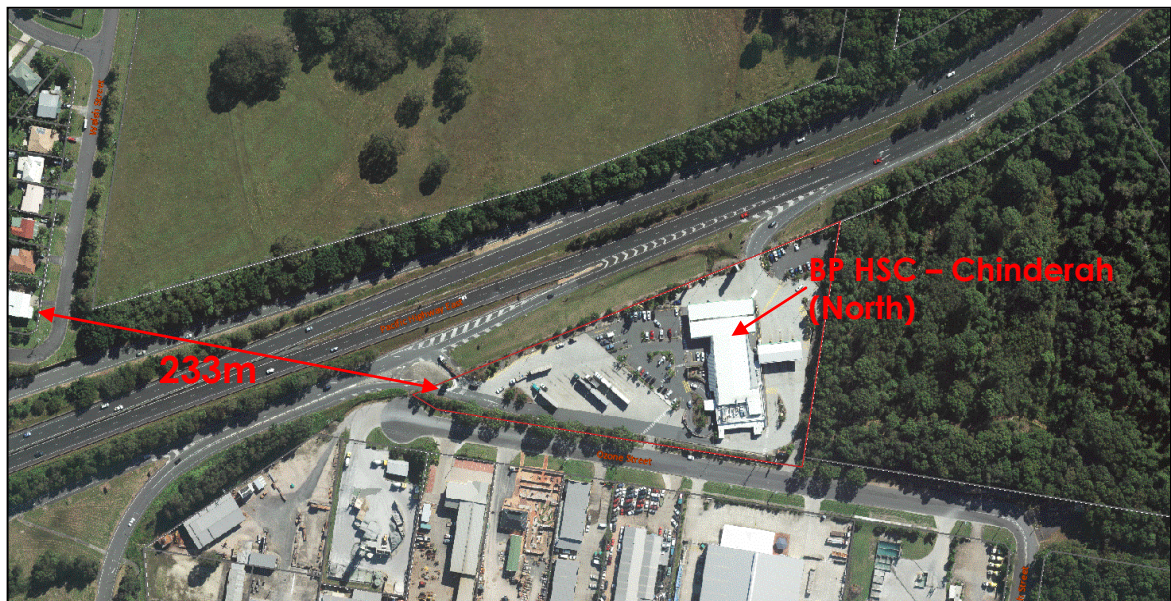


Figure 1 – BP Highway Service Centre Chinderah
Source: Tweed Shire Council

3.2 BP – Chinderah Bay Drive, Chinderah

The BP Chinderah Service Station is located at Lots 9-12 DP 830655 and Lots 9-10 DP 24164 No. 2-12 Chinderah Bay Drive, Chinderah. This is an existing service station with fuel and parking facilities for articulated vehicles. The location of the site in relation to the nearest residential areas is shown on **Figure 2**. Key distances to the nearest residential dwelling are:

- ♦ The service station building – 63m
- ♦ Fuel Canopy – 46m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 43m

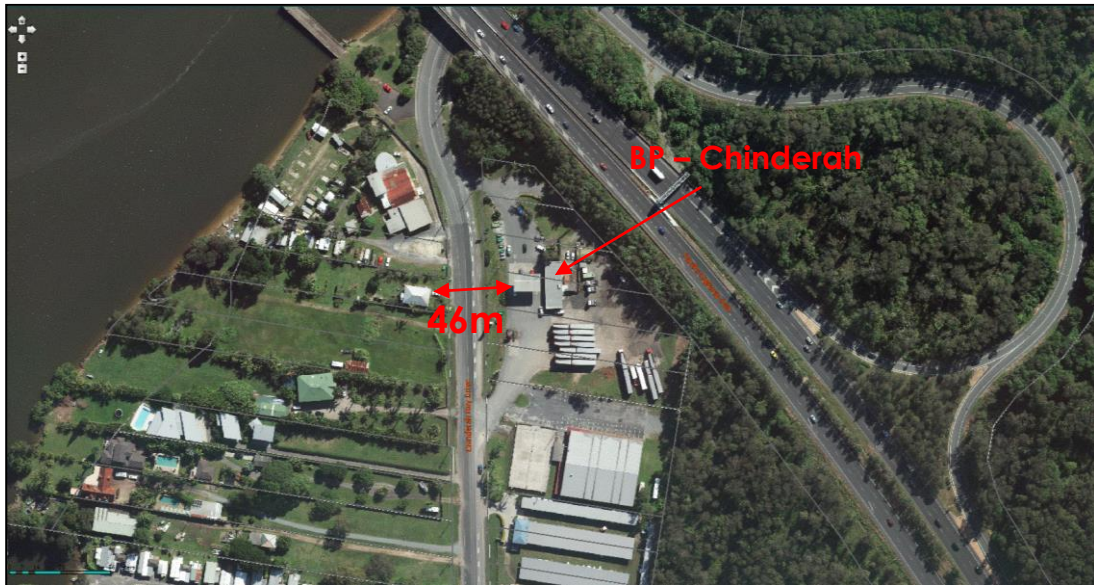


Figure 2 – BP Chinderah Bay Drive, Chinderah
Source: Tweed Shire Council

3.3 Proposed Shell Highway Service Centre – Tweed Valley Way, Chinderah

The proposed Shell Highway Service Centre is located at Lot 112 DP 1208904 Tweed Valley Way, Chinderah. This highway service centre is under construction and will include fast food outlets. The location of the site in relation to the nearest residential areas is shown on **Figure 3**. Key distances to the nearest residential dwelling are:

- ♦ The service station/fast food building – Estimate (not yet constructed) 940m
- ♦ Fuel Canopy – Estimate (not yet constructed) 940m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – Estimate (not yet constructed) 832m

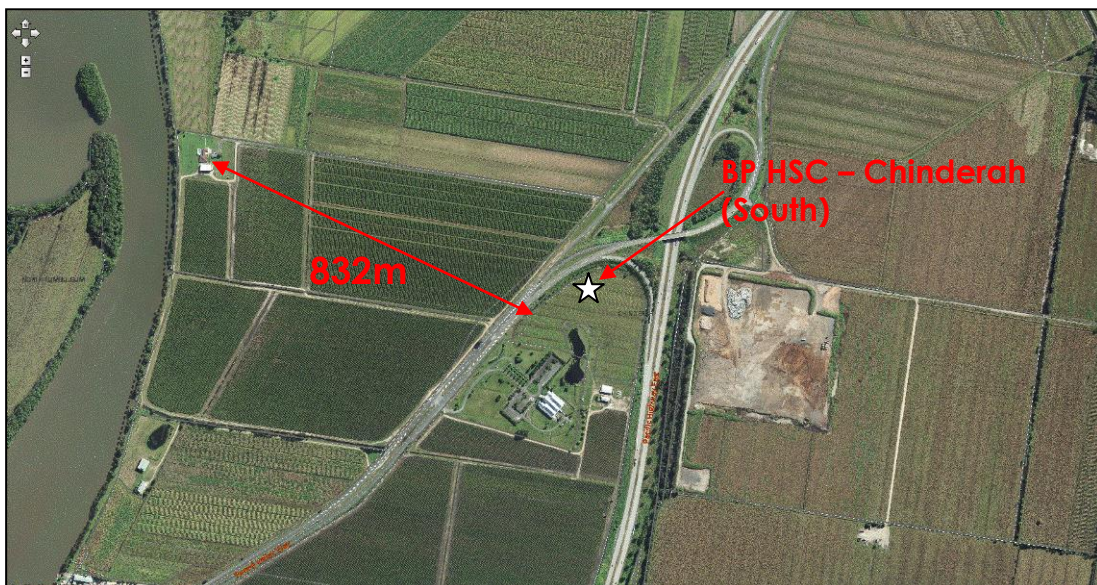


Figure 3 – Shell Highway Service Centre, Chinderah
Source: Tweed Shire Council

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3.4 7 Eleven – Minjungbal Drive, Tweed Heads South

The 7 Eleven Service Station is located at Lot 1 DP 1008592 No. 112 -140 Minjungbal Drive, Tweed Heads South. It is an existing service station with fast food outlets contained within the complex. The location of the site in relation to the nearest residential areas is shown on **Figure 4**. Key distances to the nearest residential dwelling are:

- ♦ The service station building – 72m
- ♦ Fuel Canopy – 67m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 67m

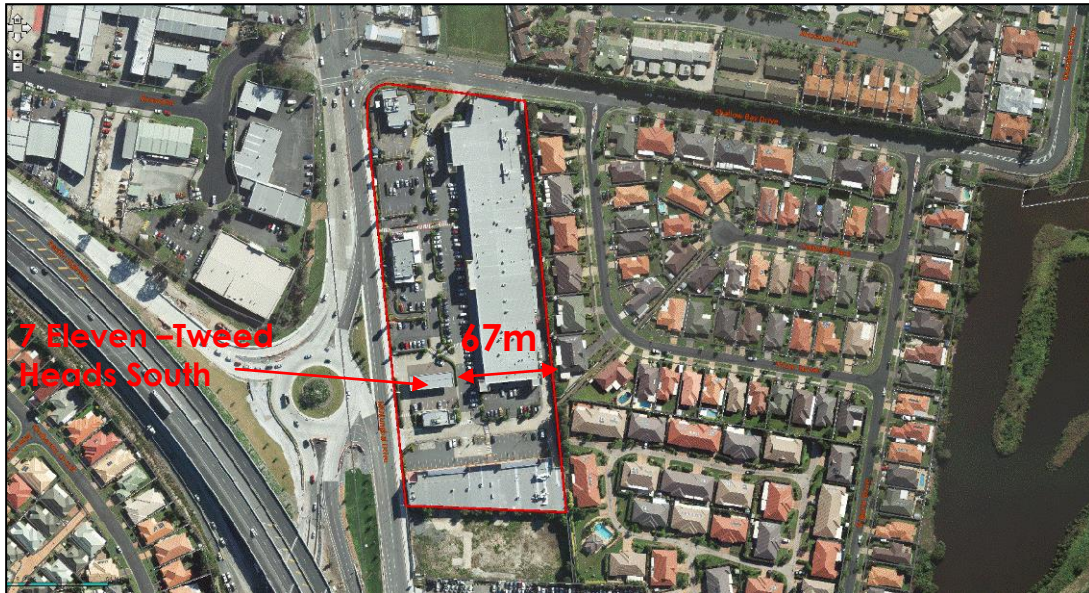


Figure 4 – 7 Eleven Minjungbal Drive, Tweed Heads South
Source: Tweed Shire Council

3.5 Caltex (Woolworths) – Minjungbal Drive, Tweed Heads South

The Caltex (Woolworths) is located at Lot 1 DP 1124767 No. 98-100 Minjungbal Drive, Tweed Heads South. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 5**. Key distances to the nearest residential dwelling are:

- ♦ The service station building – 51m
- ♦ Fuel Canopy - 26m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 15m

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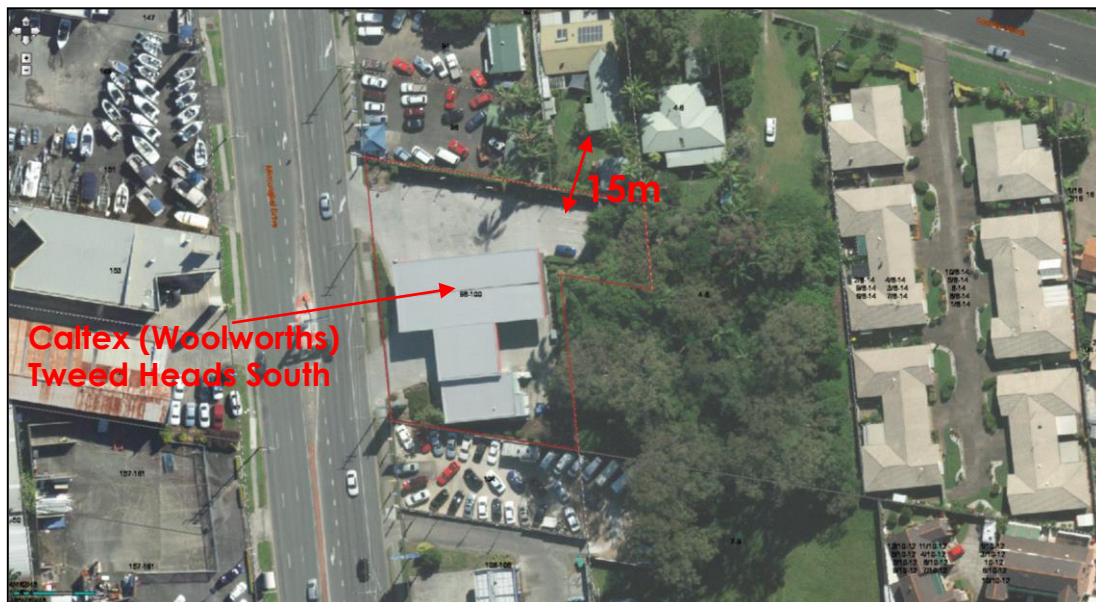


Figure 5 – Caltex (Woolworths) Minjungbal Drive, Tweed Heads South
Source: Tweed Shire Council

3.6 Shell (Coles) – Minjungbal Drive, Tweed Heads South

The Shell (Coles) is located at Lot 1 DP 781509 and Lot 5 Section 2 DP 11478 No. 71 Minjungbal Drive, Tweed Heads South. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 6**. Key distances to the nearest residential dwelling are:

- ♦ The service station/ fast food building – 13m
- ♦ Fuel Canopy – 23m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 13m

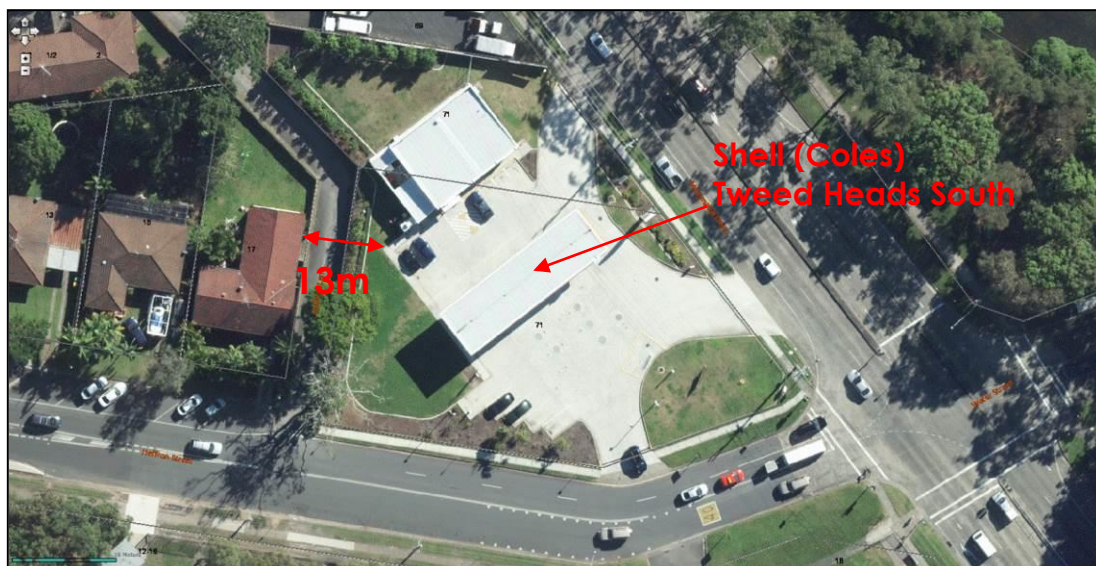


Figure 6 – Shell (Coles) Minjungbal Drive, Tweed Heads South
Source: Tweed Shire Council

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3.7 Shell (Coles) – Wharf Street, Tweed Heads

The Shell (Coles) is located at Lot 32 – 35 DP 237678 No. 30-36 Frances Street, Tweed Heads. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 6**. Key distances to the nearest residential dwelling are:

- ♦ The service station/ fast food building – 13m
- ♦ Fuel Canopy – 23m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 10m



Figure 7 – Shell (Coles) Wharf Street, Tweed Heads
Source: Tweed Shire Council

3.8 United – Wharf Street Tweed Heads

The United is located at Lot 100 DP 1021860 No. 61-65 Wharf Street, Tweed Heads. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 8**. Key distances to the nearest residential dwelling are:

- ♦ The service station building – 57m
- ♦ Fuel Canopy – 60m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 48m

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Figure 8 – United Wharf Street, Tweed Heads
Source: SIX Maps

3.9 Caltex – Kennedy Drive, Tweed Heads West

The Caltex is located at Lot 26 DP 740300 No. 96-98 Kennedy Drive, Tweed Heads West. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 9**. Key distances to the nearest residential dwelling are:

- The service station building – 13m
- Fuel Canopy – 19m
- Closest Car Park or Vehicle Manoeuvring Area – 3m

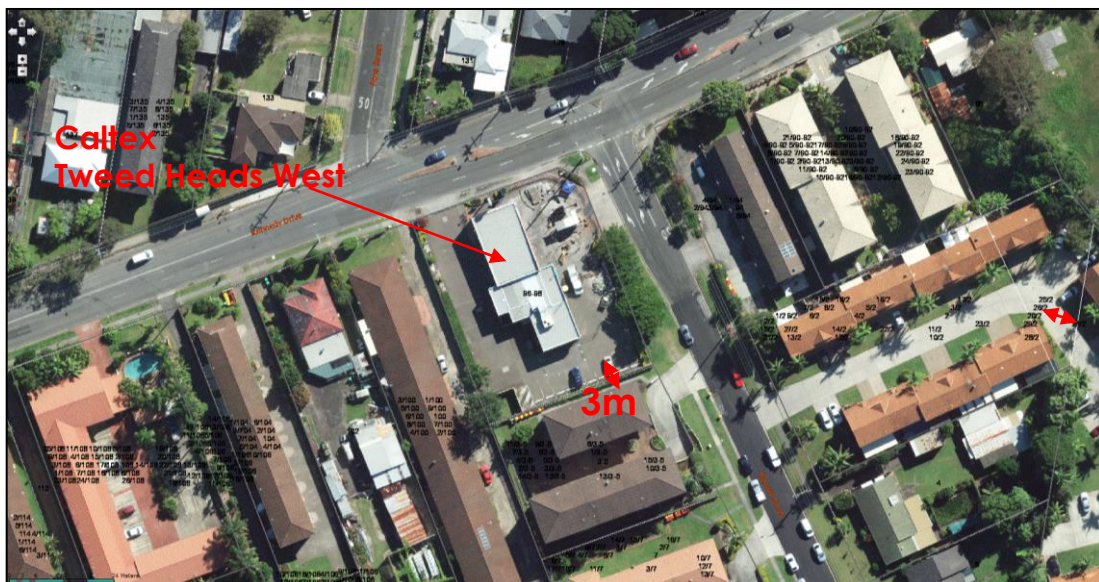


Figure 9 – Caltex Kennedy Drive, Tweed Heads West
Source: Tweed Shire Council

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3.10 BP – Kennedy Drive, Tweed Heads West

The BP is located at Lots 2 -3 DP 28438 and Lot 1 in DP 1125004 No.109 Kennedy Drive, Tweed Heads West. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 10**. Key distances to the nearest residential dwelling are:

- ♦ The service station building – 1m
- ♦ Fuel Canopy – 27m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 12m



Figure 10 – BP Kennedy Drive & Ducat Street, Tweed Heads West
Source: Tweed Shire Council

3.11 BP – River Street, West Ballina

The BP is located at Lot 1 DP 8867162 No. 482 River Street, West Ballina. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 11**. Key distances to the nearest residential dwelling are:

- ♦ The service station building – 4m
- ♦ Fuel Canopy – 19m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 4m

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Figure 11 – BP River Street, West Ballina
Source: SIX Maps

3.12 BP – Southern Cross Drive, Ballina

The BP service station is located at Lot 9 DP 554650 No. 1 Southern Cross Drive, Ballina. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 12**. Key distances to the nearest residential dwelling are:

- ♦ The service station building – 108m
- ♦ Fuel Canopy – 115m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 100m

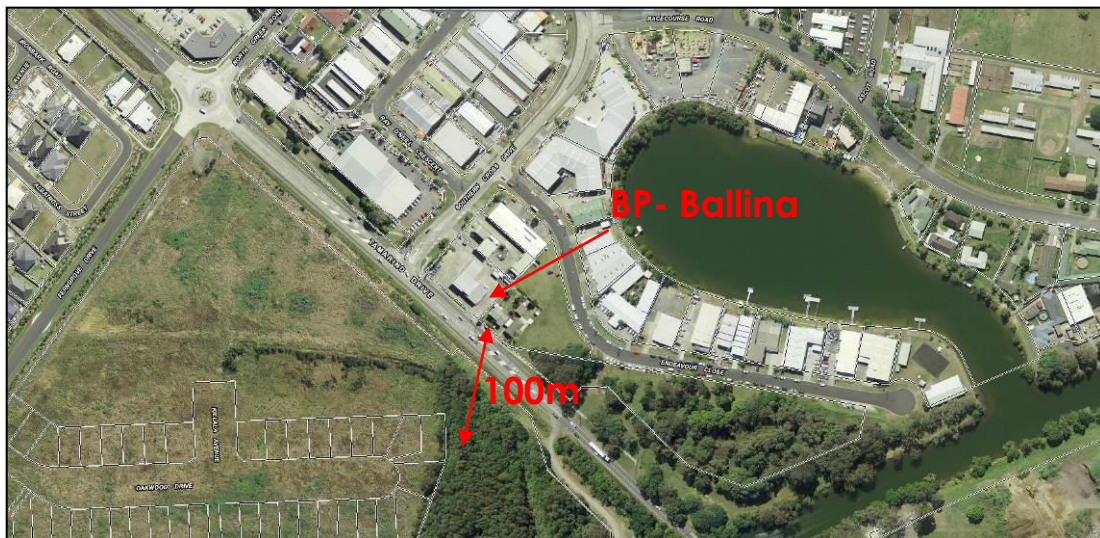


Figure 12 – BP Southern Cross Drive, Ballina
Source: SIX Maps

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3.13 RP Petroleum – Highway Service Centre, Nambucca Interchange

The proposed RP Petroleum Highway Service Centre is located at Lot 53 DP 613620 No. 5 Boggy Creek Road, Valla on the Nambucca Heads Interchange. This highway service centre with fast food outlets is proposed under Development Consent No. 2016/002. The location of the site in relation to the nearest residential areas is shown on **Figure 13**. Key distances to the nearest residential dwelling are:

- ♦ The service station/fast food building – Estimate (not yet constructed) 360m
- ♦ Fuel Canopy – Estimate (not yet constructed) 360m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – Estimate (not yet constructed) 320m

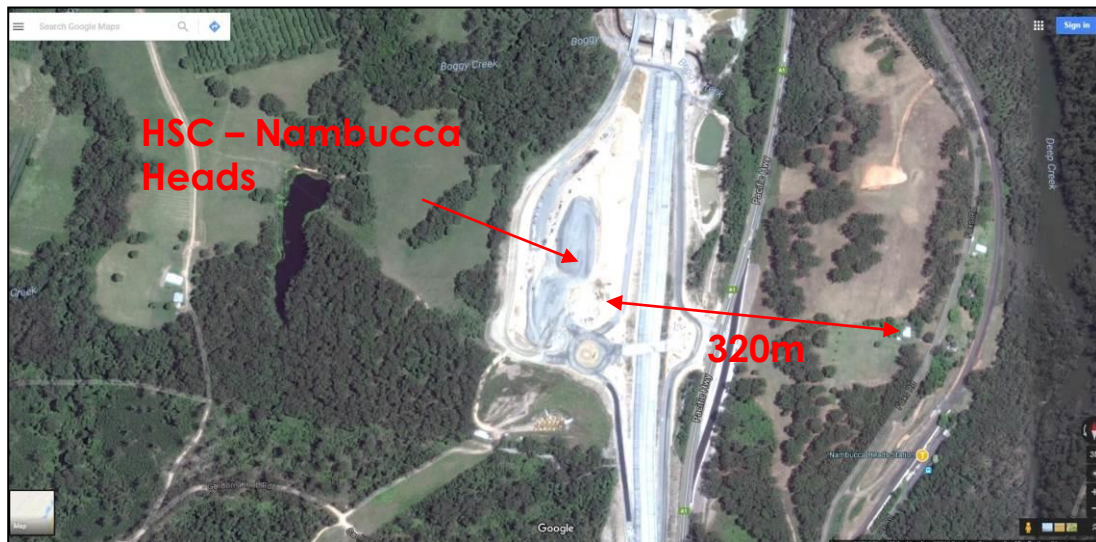


Figure 13 – RP Petroleum Nambucca Interchange
Source: Google Maps

3.14 United – Belgrave Street, Kempsey

The United service station is located at Lot 123 DP 1175574 No. 154 Belgrave Street, Kempsey. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 14**. Key distances to the nearest residential dwelling are:

- ♦ The service station building – 20m
- ♦ Fuel Canopy – 22m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 16m

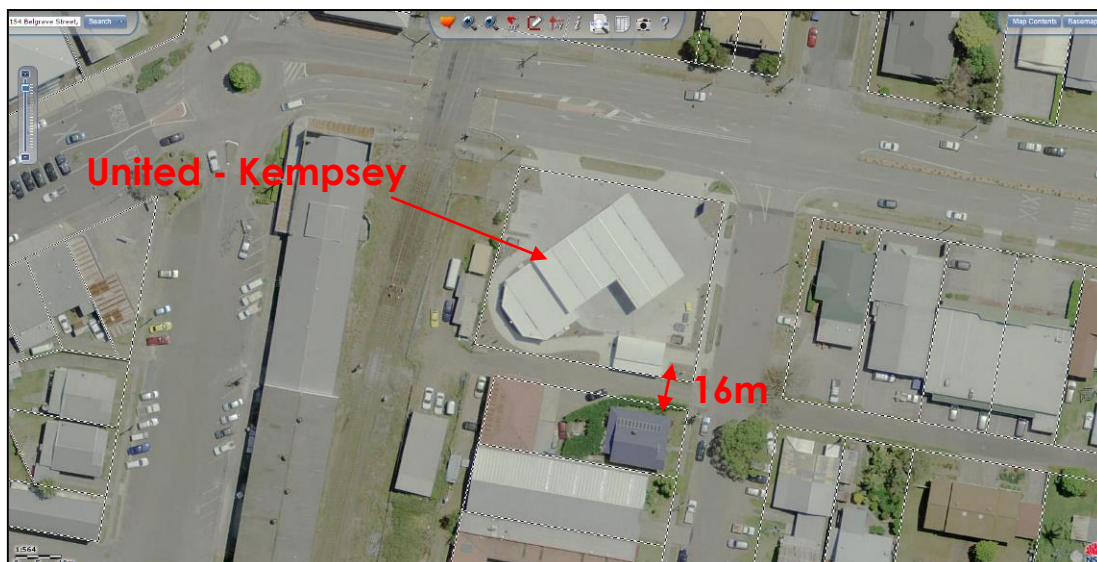


Figure 14 – United Belgrave Street, Kempsey
Source: SIX Maps

3.15 BP – Highway Service Centre, Thrumster (Port Macquarie)

The BP Highway Service Centre is located at Lots 7 - 11 DP 1137444 No. 1061 - 1067 Oxley Highway, Thrumster. It is an existing highway service centre at the intersection of the Pacific Highway and Oxley Highway with fuel, fast food outlets and parking facilities for articulated vehicles. The location of the site in relation to the nearest residential areas is shown on **Figure 15**. Key distances to the nearest residential dwelling and nearest lot within residential zoned land respectively, are:

- ♦ The service station/fast food building – 175m and 271m
- ♦ Fuel Canopy – 215m and 340m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 51m and 244m



Figure 15 – BP Highway Service Centre Pacific/Oxley Highway Interchange
Source: Google Maps

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3.16 Shell (Coles) – Corner Bent & Spring Streets, South Grafton

The Shell (Coles) is located at Lot 2 DP 507634 on the corner of Bent and Spring Streets, Grafton. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 16**. Key distances to the nearest residential dwelling are:

- ♦ The service station/fast food building – 91m
- ♦ Fuel Canopy – 78m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 71m



Figure 16 – Shell (Coles) Corner Bent and Spring Streets South Grafton
Source: Six Maps

3.17 United – Fourways Bent Street, South Grafton

The United service station is located at Lot 2 DP 507634 on the corner of Bent and Spring Streets, South Grafton. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 17**. Key distances to the nearest residential dwelling are:

- ♦ The service station/fast food building – 167m
- ♦ Fuel Canopy – 157m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 142m

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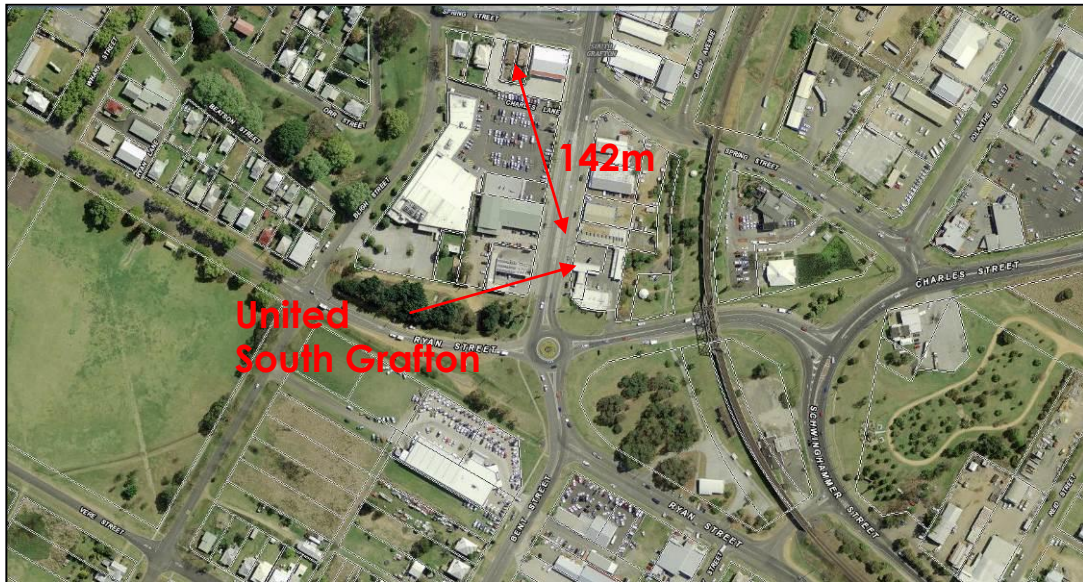


Figure 17 – United Fourways Bent Street South Grafton
Source: Six Maps

3.18 Caltex – Pacific Highway, South Grafton

The Caltex service station is located at Lots 346-347 in DP 751385 and Lot 100 DP 1018524 No. 43 Pacific Highway, South Grafton. It is an existing service station with fast food and parking for articulated vehicles. The location of the site in relation to the nearest residential area is shown on **Figure 18**. Key distances to the nearest residential dwelling are:

- ♦ The service station/fast food building – 200m
- ♦ Fuel Canopy – 196m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 157m



Figure 18 – Caltex Pacific Highway, South Grafton
Source: Six Maps

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3.19 BP – Duncans Road, Clarenza (Grafton)

The BP is located at Lot 11 DP 1036240 at No. 8 Duncans Road, Clarenza (Grafton). It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 19**. Key distances to the nearest residential dwelling are:

- ♦ The service station/fast food building – 300m
- ♦ Fuel Canopy – 277m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 258m

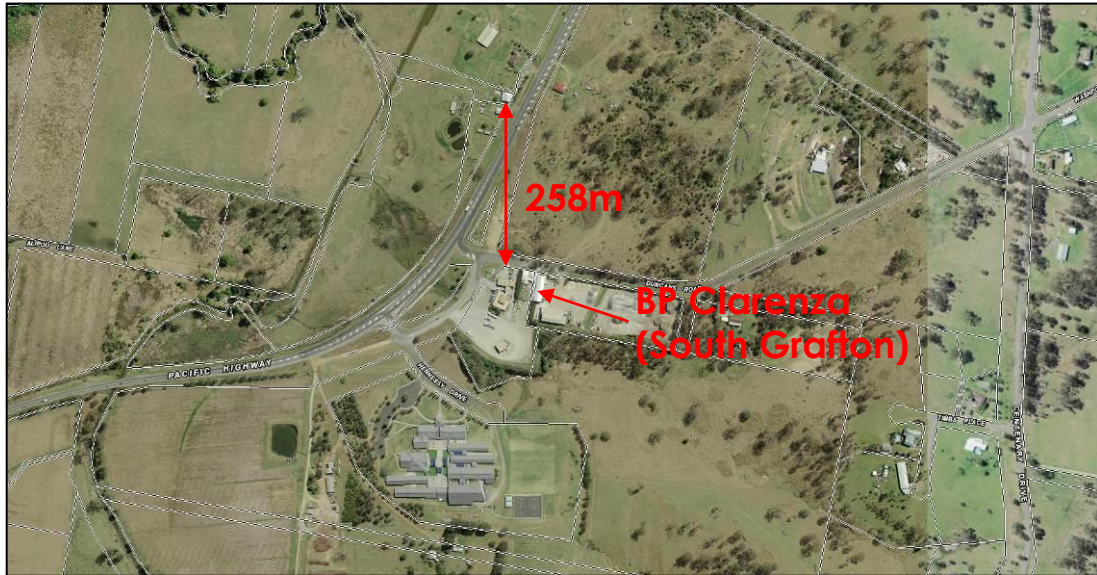


Figure 19 – BP Duncans Road Clarenza (Grafton)
Source: Six Maps

3.20 BP – Skinner Street, South Grafton

The BP is located at Lot 21 DP 803507 at No.26 Skinner Street, South Grafton. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 20**. Key distances to the nearest residential dwelling are:

- ♦ The service station – 43m
- ♦ Fuel Canopy – 63m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 28m



Figure 20 – BP Skinner Street South Grafton
Source: Six Maps

3.21 BP – Highway Service Centre Pacific Highway, Coffs Harbour

The BP Coffs Harbour is located at Lot 2 DP 270248 No. 380 Pacific Highway, North Boambee. It is an existing highway service centre with fuel and parking facilities for articulated vehicles and fast food outlets. The location of the site in relation to the nearest residential areas is shown on **Figure 21**. Key distances to the nearest residential dwelling are:

- The service station/fast food building – 900m
- Fuel Canopy – 963m
- Closest Car Park or Vehicle Manoeuvring Area – 888m



Figure 21 – BP Pacific Highway Coffs Harbour
Source: Google Maps

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3.22 United - Pacific Highway & Marcia Street Coffs Harbour

The United is located at Lot 459 DP 752817 No.165 Grafton Street (Pacific Highway), Coffs Harbour. It is an existing service station. The location of the site in relation to the nearest residential areas is shown on **Figure 22**. Key distances to the nearest residential dwelling are:

- ♦ The service station/fast food building – 63m
- ♦ Fuel Canopy – 62m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 54m



Figure 22 – United Pacific Highway Coffs Harbour
Source: Six Maps

3.23 BP Highway Service Centre – Pacific Highway, Upper Coomera (Queensland)

The BP Highway Service Centre is located at Lot 2 SP 214558 No. 73 Abraham Road, Upper Coomera. This is an existing highway service centre with fast food outlets. The location of the site in relation to the nearest residential areas is shown on **Figure 23**. Key distances to the nearest residential dwelling are:

- ♦ The service station/fast food building – 192m
- ♦ Fuel Canopy – 147m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 157m



Figure 23 – BP Highway Service Centre Pacific Highway Upper Coomera
Source: Google Maps

3.24 7 Eleven Old Pacific Highway & Dreamworld Parkway, Coomera (Queensland)

The 7 Eleven is located at Lot 170 SP 267050 No. 0 Pacific Highway, Coomera. This is an existing service station with a roadhouse café and Charcoal Chicken. The location of the site in relation to the nearest residential areas is shown on **Figure 24**. Key distances to the nearest residential dwelling are:

- The service station/fast food building – 194m
- Fuel Canopy – 190m
- Closest Car Park or Vehicle Manoeuvring Area – 181m



Figure 24 – 7 Eleven Old Pacific Highway & Dreamworld Parkway Coomera
Source: Google Maps

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3.25 Shell (Coles) – Gold Coast Highway Tugun (Queensland)

The Shell (Coles) is located at Lot 1 RP 882313 No. 3 Maud Street, Tugun. This is an existing service station with fast food outlets. The location of the site in relation to the nearest residential areas is shown on **Figure 25**. Key distances to the nearest residential dwelling are:

- ♦ The service station/fast food building – 47m
- ♦ Fuel Canopy – 69m
- ♦ Closest Car Park or Vehicle Manoeuvring Area – 24m



Figure 25 – Shell (Coles) Gold Coast Highway Tugun
Source: Google Maps

3.26 Summary of Existing Service Stations

Table 1 summarises those sites which are comparable to the proposed Kings Forest Service Station in terms of the distance from the nearest dwelling to the fuel canopy and car parking/manoeuvring areas. In summary, there are 11 existing 24 hour service stations in closer proximity to dwellings and manoeuvring areas compared to the proposed Kings Forest Service Station.

TABLE 1 – SUMMARY		
SITE	DISTANCE FROM FUEL CANOPY TO NEAREST DWELLING	DISTANCE TO CAR PARKING/ MANOEUVRING AREAS FROM NEAREST DWELLING
Proposed Kings Forest Service Station	74 metres	55 metres
(3.4) 7 Eleven Minjungbal Drive, Tweed Heads South	67 metres	15 metres
(3.6) Shell Coles Minjungbal Drive, Tweed Heads South	23 metres	13 metres
(3.7) Shell Coles, Wharf Street, Tweed Heads	23 metres	10 metres
(3.8) United, Wharf Street, Tweed Heads	60 metres	48 metres
(3.9) Caltex, Kennedy Drive, Tweed Heads West	19 metres	3 metres
(3.10) BP Kennedy Drive, Tweed Heads West	27 metres	12 metres

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TABLE 1 – SUMMARY		
SITE	DISTANCE FROM FUEL CANOPY TO NEAREST DWELLING	DISTANCE TO CAR PARKING/ MANOEUVRING AREAS FROM NEAREST DWELLING
(3.11) BP River Street, Ballina	19 metres	4 metres
(3.14) United, Belgravia Street, Kempsey	22 metres	16 metres
(3.20) BP Skinner Street, South Grafton	63 metres	28 metres
(3.22) United Pacific Highway/Marsier Street, Coffs Harbour	62 metres	54 metres
(3.25) Shell Coles, Gold Coast Highway, Tugun	69 metres	24 metres

4.0 POTENTIAL IMPACTS ON OLD BOGANGAR ROAD DWELLINGS AS A RESULT OF NIGHT TIME OPERATIONS

4.1 Acoustic Impacts

The Stage 1 Kings Forest Major Project Approval No. MP08_0194 Environmental Assessment Report (JBA Planning Pty Ltd, November 2011) is accompanied by an Environmental Noise Impact Report (ENIR) (CRG, 11 March 2011, Annexure U).

The ENIR forms part of the Major Project Approval as the Environmental Assessment Report prepared by JBA is called up by Condition A3 of the Project Approval.

Section 6.0 (Page 18) of the ENIR contains the following recommendations in relation to the existing dwellings fronting Old Bogangar Road.

“For the 12 existing dwellings fronting the Tweed Coast Road (ie. directly to the north of Kings Forest Park Road) we recommend construction of a 2.5m high acoustic barrier fronting the Tweed Coast Road and Kings Forest Parkway to reduce the predicted levels to within 2dB of the Tweed Coast Road noise criteria; and below the Kings Forest Parkway criteria.”

The recommendation was based on the originally proposed and approved Stage 1 Project Application, which included the Rural Supplies Building in Precinct 1.

MP08_0194 Section 75W Modification 3 (DAC Planning Pty Ltd, September 2015) seeks to replace the Rural Supplies Building with a Service Station/Food and Drink Premises. The Modification Application is accompanied by an Environmental Noise Impact Report (ENIR) (CRG, 21 September 2015) at Appendix D of the Town Planning Report.

Section 2.0 of the ENIR includes the following:

“The proposal is to construct a service station with carwash and two drive-through facilities. The service station would have separate bays for cars and trucks. The proposed onsite building would comprise the service station retail section, six food tenancies and indoor seating areas. For development plans refer to Appendix B.

We are advised that the site intends to operate 24 hours, seven days per week.

Onsite activity noise emissions (i.e. vehicle movements, goods loading activity, deliveries, waste collection and mechanical plant) has the potential to impact upon surrounding noise sensitive receivers and has been assessed in accordance the “NSW Industrial Noise Policy” to ensure an acceptable noise amenity can be achieved.

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The nearest noise sensitive receivers to the subject site include a residential dwelling to the north, a residential dwelling to the east and residential dwellings to the west across Tweed Coast Road.

It is noted that there is an existing roadside acoustic barrier located between the subject site and the western offsite residential dwellings; which is located on the western side of the Tweed Coast Road corridor. The acoustic barrier will provide noise mitigation for some of the proposed onsite activities (i.e. car vacuum bay); however, due to a break in the barrier (for dwelling road access) not all onsite activities will be screened / mitigated by the acoustic barrier."

The ENIR includes the following recommendations:

"Based upon the adopted noise source levels, the following acoustic treatments and management controls are recommended to mitigate onsite activity noise emissions:

- The Service Station and Carwash operate 24 hours per day.*
- The car vacuums be limited to 7am and 10pm, or a further assessment be undertaken to review restriction of use once actual plant is selected.*
- Goods delivery (including fuel delivery) be limited to 7am and 10pm.*
- Waste collection be limited to 7am and 6pm Monday to Saturday.*
- The carwash is to be constructed with solid walls and a solid roof. The carwash is to also have the installation of automatic doors. These doors should provide more than 15 dB noise reduction.*
- Drainage grates over trafficable areas be well fixed to avoid rattling when a vehicle passes over the grate.*
- Mechanical plant be designed and installed to comply with the noise criterion presented in Section 4. As final plant requirements are not known at this stage, additional acoustic assessment/s should be undertaken prior to Commencement of Use to confirm acceptable noise levels have been achieved; and be conditioned within the Development Approval. Based upon the assumed plant noise source levels, acoustic screening to the western dwellings is likely to be required such as locating plant on the eastern side of the service station building envelope; or incorporating acoustic barriers / enclosures at roof-top plant. "*

As indicated in Section 2.0, following receipt of the SOFAC, a number of amendments were made to the project design to mitigate the perceived impacts, including deletion of the truck bowlers and relocation of the car wash, dog wash, vacuums, air/water facilities to the east side of the site.

In response to Contention 41c ii, CRG Acoustics prepared a Position Paper dated 2 September 2016, for the Conciliation Conference. The paper identifies the following noise sources assumed to have no screening to the western dwellings by the barriers:

- "Car door closures in customer car spaces with unobstructed line of sight to the nearest receptors at 242 and 246 Old Bogangar Road. This was assumed to be the propagation line from the car spaces, across Tweed Coast Road and in the opening between the two barriers.*

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- ♦ Car door closures at bowsters with unobstructed line of sight to 242 and 246 Old Bogangar Road. This was assumed to be the propagation line from the car spaces, across Tweed Coast Road and in the opening between the two barriers.
 - ♦ Onsite car movements with unobstructed line of sight to 242 and 246 Old Bogangar Road. This was assumed to be the propagation line from the car spaces, across Tweed Coast Road and in the opening between the two barriers.
 - ♦ Carwash facility foam spray, high pressure rinse and air blower assumed to be taller than the effective screening height of the barrier.
 - ♦ Truck movements, exhaust points assumed to be taller than the effective screening height of the barrier.
 - ♦ Goods unloading assumed to occur in the car parking area adjacent to the building, higher than the effective screening height of the barrier. This is a conservative assumption, as the main loading area is located to the rear of the building, screened to the dwellings to the west.
 - ♦ Waste collection assumed to occur in the car parking area adjacent to the building, higher than the effective screening height of the barrier. This is a conservative assumption, as the bin store is located to the rear of the building, screened to the dwellings to the west."

Comments

- ♦ In accordance with the conditions of the Project Approval and the 2011 CRG ENIR, the existing approximately 1.9m timber acoustic fence on the western side of Tweed Coast Road will be replaced with a 2.5m high acoustic fence. The increased height will further mitigate noise impacts on the nearest offsite noise sensitive receivers.
- ♦ Based on their recommended acoustic treatment (CRG, 21 September 2015), noise impact levels at the nearest offsite noise sensitive receivers are predicted to be below the daytime external noise criterion and within 2dB of the evening and night time external noise criterion. As the average person cannot generally detect a 3dB variation in sound pressure level, a 2dB rise is unlikely to be detectable and is typically considered an acceptable outcome.
- ♦ Relocation of the car wash, dog wash, vacuum bay and air/water bay to the eastern side of the site as proposed will provide a separation distance of approximately 120m to the unscreened (by the acoustic fence) receptors at 242 and 246 Old Bogangar Road. However, the service station/shop/ food and drink building will screen these receptors from the noise sources (see **Annexure 2**).
- ♦ The nearest car parking spaces will be approximately 56m from the unscreened receptors at 242 and 246 Old Bogangar Road and will be partly screened by the acoustic fence (see **Annexure 2**).
- ♦ The proposed service station/food and drink building is approximately 68m and the car bowsters are approximately 78m from the nearest unscreened receptors in Old Bogangar Road.

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In summary, night time operations of the proposed service station/food and drink premises will have minimal impact on the existing dwellings in Old Bogangar Road, based on the proposed amended site layout and the recommended acoustic treatments and management controls contained in the CRG Report, dated 21 September 2015.

4.2 Light Spill Impacts

MDA Consulting Engineers have prepared a Position Paper (13 October 2016) addressing external lighting impacts. A copy of the Position Paper is contained at **Annexure 5**. In summary, the report concludes that upgrading of Tweed Coast Road from the proposed Tweed Coast Road/Kings Forest Parkway roundabout to the northern alignment of Precinct 1 to an urban standard, including street lights, as required by the original Major Project Approval No. 08_0194 will change the streetscape from rural to urban.

With the future addition of a road lighting system to Tweed Coast Road, the visual impact that residences will have from this road lighting system will be significant. As the road lighting system will be the closest lighting system to the residences, it is considered that this system will have more of an effect on the residences than the proposed service station/food and drink premises.

The road lighting system will not project any light onto the Old Bogangar Road properties due to the photometrics of the fixture (source, email Vaughan Oxenford 2/9/16).

Conditions 103 and 104 of Major Project Approval MP08_0194 will ensure that light spill from the service station/food and drink premises does not result in nuisance or interference to any person or place.

Conditions 103 and 104 are in the following terms:

“Reflectivity

103. The visible light reflectivity from building materials used on the facades of the buildings in Precinct 1 shall not exceed 20% and shall be designed so as not to result in glare that causes any nuisance or interference to any person or place. A report demonstrating compliance with these requirements is to be submitted to the satisfaction of the Certifying Authority prior to the issue of a Construction Certificate for the construction of any building in Precinct 1.

Outdoor Lighting

104. All outdoor lighting shall comply with, where relevant, AS/NZ1158.3: 1999 Pedestrian Area Category P) Lighting and AS4282: 1997 Control of the Obtrusive Effects of Outdoor Lighting. Details demonstrating compliance with these requirements are to be submitted to the satisfaction of the Certifying Authority prior to the issue of a Construction Certificate for the construction of any building in Precinct 1.”

In summary, the amendment to the site layout, proposed on site and on street landscaping, proposed acoustic fence and screening of potential Service Station façade lighting and Conditions 103 and 104 will adequately mitigate potential lighting impacts.

DG Anderson
October 2016

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ANNEXURE 1 Kings Forest Service Station Plans (13 Sheets) – Push Architects

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ANNEXURE 2

Plan of Proposed Kings Forest Service Station Showing Distances from Closest Dwelling, Rev A – Landsurv Pty Ltd, 21 September 2016

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**ANNEXURE 3 Landscape Statement of Intent, Tweed Coast Road Fencing and Landscaping,
Issue C – Place Design Group, October 2016**

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ANNEXURE 4 Kings Forest Service Station Proposed Landscape Plan (3 Sheets) – Push Architects

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ANNEXURE 5

**Position Paper Addressing External Lighting Impacts – MDA Consulting Engineers,
13 October 2016, Issue E**

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ANNEXURE 6 Traffic Impact Assessment – Bitzios Consulting, 5 October 2016

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ANNEXURE 7

Kings Forest Intersection Assessment Submission to Council dated 16 October 2014 re Condition 27 and Council's Response dated 14 November 2014

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ANNEXURE 8

**Amended Indicative Plan and Section Tweed Coast Road and Kings Forest
Parkway Ultimate Intersection, Issue A – Mortons Urban Solutions, 20 September
2016**

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