



Our Reference: DOC19/779900-17
SSI-7666
Contact: Stuart Murphy, 02 6640 2520

Mr Michael Young
Principle Planning Officer
Transport Assessments
Department of Planning, Industry and Environment
320 Pitt St
SYDNEY NSW 2000

EIS for Coffs Harbour Bypass SSI 7666 – Request for EPA comment

Dear Mr Young,

I refer to the request from the Department of Planning, Industry and Environment (DPIE) to the NSW Environment Protection Authority (EPA) dated 6 September 2019 to undertake a review of the Environmental Impact Statement (EIS) for the proposed Coffs Harbour Bypass Project SSI 7666. Construction of the Coffs Harbour Bypass triggers the need for an Environment Protection Licence (EPL) under Schedule 1 of the *Protection of the Environment Operations Act 1997*.

The EPA welcomes the inclusion of tunnels in the design and acknowledges the challenging nature of the project including steep slopes, high rainfall, close proximity to urban areas and traffic impacts particularly those at the northern end of the project.

The EPA has reviewed the EIS and has several recommendations and comments in relation to the environmental assessment. In conducting this review, the EPA drew on advice from its own technical specialist resources including the EPA's Technical Advice Water unit (TAW). A full set of recommendations and comments from TAW are embedded in the attached document, however I would like to emphasise the following comments they have provided.

Sediment basins

The EIS highlights that parts of the construction footprint are constrained by the topography within the Project area which would restrict the sizing of sediment basins. Where basin sizing is inconsistent with the relevant guideline it is recommended that the reasons are documented, and enhanced erosion measures are implemented. Given the nature of the receiving environment emphasis on management principles such as erosion control as a pollution prevention strategy should be adopted.

The impacts of construction phase sediment basin discharges are not adequately assessed

The preliminary discharge impact assessment should be revised. The methodology in the report is largely inconsistent with the SEARs, national framework and EPA policy for considering the potential impact of discharges on receiving waters and does not provide the necessary information for considering a licensed discharge(s).

The impact of intercepted groundwater discharges is not assessed

A discharge impact assessment should be provided.

The entirety of EPA's detailed comments and recommendations are contained in Attachment 1. If you have any questions regarding this letter, please contact Stuart Murphy on 02 6640 2520.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Benjamin Lewin', with a horizontal line extending to the right.

Benjamin Lewin
Manager Regional Operations - North Coast
Environment Protection Authority
Attachment 1

Attachment 1: EPA Detailed Comments for Coffs Harbour Bypass EIS SSI 7666**1.0 AIR QUALITY****1.1. Odour**

The EPA acknowledges the proposed mitigation measures for managing odours from asphalt batch plants which include:

- bitumen products will be maintained at the minimum temperature possible to minimise odorous emissions, particulate extraction equipment will be installed, operated and maintained for efficiency in minimising odour impacts
- filters and burners will be adequately maintained to minimise odour impacts
- commission testing will be carried out prior to full operation to ensure that best practice standards are met during the operation of the batch plant.

RECOMMENDATION:

In addition to the proposed mitigation measures identified in the EIS a key consideration is selecting an appropriate site for an asphalt batch plant. Asphalt batch plants have the potential to cause offensive odours during operation. The EPA recommends that an assessment of prevailing winds and the location and direction of receivers be considered when selecting an appropriate site.

2.0 NOISE AND VIBRATION

The noise and vibration chapter has been reviewed by the EPA Technical Noise Assessment Unit, who have provided recommendations. These recommendations are embedded within the comments below.

2.1 Noise Monitoring

- a. There does not appear to be a consistent logic for excluding certain periods marked as extraneous in the noise monitoring graphs in Appendix D. There are multiple occasions where noise monitoring data are not excluded where wind speeds are above 5m/s, without explanation. The proponent is requested to review the data exclusion in the noise monitoring and provide an explanation of the process for excluding periods of noise monitoring data.
- b. The wind speed data presented for the June 2016 monitoring appears to show that there was a significant amount of time where the wind was in excess of 5m/s. The periods excluded in the graphs in Appendix D (assumed to be those periods marked extraneous) indicate that in many cases only 3-4 valid days of data were collected. The proponent should provide a justification that there is sufficient data to base both the background noise levels and noise modelling validation data on or provide additional data to support the assessment.
- c. The wind speed data shown on the graphs in Appendix D are not consistent across all the monitoring data taken in June 2016. However, the noise report states that only one source of meteorological data was used. This indicates that there may have been an error in the noise monitoring processing. The data should be re-processed using appropriate meteorological data and data exclusion rules. The potentially affected locations include but are not limited to Locations 9 to 11 and Locations 16 to 21.
- d. Wind speed has not been included on the graphs of Locations 14, 15 and 21. The proponent should update the graphs to include the wind speed, consistent with the other graphs in Appendix D.

- e. Some of the noise monitoring data appears to be potentially affected by extraneous noise, other than caused by adverse meteorological conditions, which has not been marked extraneous in the graphs. For example:
- Location 3 appears to have extraneous noise during some day, evening and night periods.
 - Location 20 appears to have extraneous noise during some night periods
 - Location 21 appears to have been affected during the evening and some night periods
- These periods may have been affected by insects or some other temporary or seasonal noise source. As a result, the proponent should either provide a justification that the monitoring is representative of long-term background noise levels or provide additional data to support the assessment.

2.2 Noise Catchment Areas and Receivers

- a. NCA09 is not marked on the maps in Appendix A.
- b. The maps in Appendix A do not show the full receiver ID number and receivers do not appear to be numbered in a logical way which makes finding receivers difficult. The proponent is requested to review the maps in Appendix A and clarify the receiver numbering process.
- c. The proponent is requested to clarify the following issues identified with receivers in Appendix J:
- i. There appear to be multiple receivers marked with an address of 9 Ballantine Drive in Appendix J. The proponent is requested to review and clarify duplicate receiver addresses.
 - ii. There appears to be multiple receivers marked with an address of 11 Tranquillity Drive, however there only appears to be one dwelling at the address. The proponent is requested to review and clarify the identification of residential receivers.

2.3 Operational Noise Assessment

- a. There appears to be a typographical error in Table 32 for the calculated median of the Pacific Highway north of Coffs Harbour validation location during the night.
- b. Inconsistencies were identified in the assessment of predicted noise levels in Appendix G of the noise report which require further clarification as follows:
- i. There are receivers which have the same increase in noise level between build and no build scenarios that have different outcomes for the relative increase criteria.
 - ii. Receivers have been marked as exceeding the relative increase criteria which are not identified as being considered for further treatment.
 - iii. Receivers which have predicted an increase greater than the relative increase criteria, which have not been marked as exceeding the relative increase criteria nor identified for consideration of treatment.
- c. The proponent is requested to provide a reference for the heavy vehicle modification factors used in the noise modelling mentioned in Section 4.5.
- d. The proponent is requested to confirm that the assessment of existing noise walls has considered earth berms/mounds that form part of the overall noise barrier height.
- e. If the project is approved, a requirement for an assessment of the final design and an assessment of noise levels once the project is completed should be included in any project approval conditions.
- f. The operational noise levels in the Road Noise Policy are set approximately at the point where the majority of a community would not be highly annoyed by the noise. An operational road satisfying the criteria will

however be clearly audible and will change the acoustic environment of nearby lands. It is essential that EIS documentation assessing the noise impacts of the proposal makes this fact clear so that community engagement on the proposal is well informed.

2.4 Maximum Noise Levels

- a. Section 4.9 provides significant commentary on the potential changes in impacts at receivers adjacent to the existing Pacific Highway however, the report does not sufficiently address the potential impacts on those receivers adjacent to the new sections of the bypass which do not currently experience significant maximum noise events. The proponent should provide clear and concise summaries regarding the impact from maximum noise levels on greenfield areas of the project and provide commentary on how the proposed mitigation measures for other operational noise levels would affect maximum noise levels.
- b. Section 4.9.3 presents some data which concludes that noise levels from compression braking is not significantly higher than non-compression braking events for vehicles travelling downhill. However, the noise monitoring data of maximum noise level events in Appendix I show that at the majority of monitoring locations, the emergence of maximum noise events is greater than 15 dB above the Leq,1hour noise level. In light of this, the proponent is requested to comment on how the data presented in Section 4.9.3 is relevant to the measured data on the existing Pacific Highway in Appendix I. The proponent should also explain how the measured data has been taken into consideration to rank and prioritise design options and noise mitigation strategies.

2.5 Bus Interchange

The potential impact from the new bus interchange is assessed in Section 4.11.1. The proponent is requested to confirm that it is a reasonable assumption that only one bus would enter and exit the new Kororo bus interchange in a 15 minute period during peak usage for the school. Given that there are eight buses using the interchange in peak usage periods, it appears to be an underestimation that only one bus would enter and exit in a 15 minute period.

2.6 Tunnel Ventilation Fans

Section 3.4.1.5 states the project noise trigger level for the Shepards Lane and Gatelys Road tunnel portals have not had the duration correction applied. However, in Section 4.11.2 a 5 dB correction has been applied to the Noise Policy for Industry (NPfI) (EPA, 2017) project noise trigger level (PNTL).

Using the upper estimate of operational times of 1 hour operation means the PNTL would be Leq,15min 42 dBA with a duration correction. The information in Section 4.11.2 implies a predicted noise level from the fans of 44 dBA at the nearest receiver, which is a 2 dB exceedance. The proponent should continue to review reasonable and feasible noise mitigation for the tunnel ventilation fans as part of the detailed design process for the fans to meet the requirements of the NPfI.

2.7 Construction Noise and Vibration Assessment

- a. Table 48 appears to include construction equipment that is not used in any of the scenarios. The proponent is requested to clarify this.
- b. The total sound power levels (SWL) of the Leq,15min and Lmax levels for each construction scenario in Table 48 requires further clarification. In a number of cases the total Lmax level is lower than the Leq,15min level, which would not be observed if measured in the field. The proponent is requested to clarify this approach and comment on how this would affect the management of sleep disturbance from construction activities.
- c. The proponent is requested to review the values in Table 50. Review of the noise contour and receiver maps in Appendix J and Appendix A respectively indicates that some numbers in Table 50 are not consistent with the maps. For example, Table 50 states that there will be 192 receivers impacted above the NMLs in NCA27, however there appears to be less than 110 receivers in this NCA. Another example is that Table 50 states that there will be 215 receivers impacted above the NML in NCA 18, however there appears to be more than this number indicated on the contour maps in Appendix J.

- d. It is not clear why West High Street has been excluded from the construction traffic noise assessment as stated in the note to Table 47. The assessment area for road traffic noise is defined as 600 metres from the centre line of the outermost traffic lane on each side of the subject road. It follows that the assessment area for construction traffic noise is not defined by the assessment area of the bypass but should be defined by roads potentially impacted by additional construction vehicles. In this case, West High Street would be a subject road because there is potential for the project to create noise impacts on it. The proponent is requested to update the assessment accordingly in consideration of this.
- e. The EIS presents worst case noise impacts for receivers affected by construction noise over the 4 year period of construction. However, due to the information constraints, it is not possible at this stage to determine how individual receivers would be affected over the course of the construction. Therefore, the proponent should provide a clear indication of the works that will affect receivers in each NCA, the time of day when the works will occur, the proposed duration they will be impacted and how often they will be impacted including making distinctions between works that happen during and outside of standard construction hours. This information should be included in the construction noise management plan and form part of the community engagement strategy. The adoption of the provisions in the "TfNSW Construction Noise and Vibration Guideline (TfNSW, 2016)" in any construction noise management plan should be considered to guide the provision of additional construction noise and vibration mitigation measures including: community engagement, notification (letterbox drop or equivalent), specific notifications, phone calls, individual briefings, respite offers (movie tickets, coffee vouchers etc), respite construction periods, duration respite, verification noise monitoring and the extreme measure of alternative accommodation. Site specific modifications to trigger thresholds in the guideline could be considered to account for the semi-rural nature of the receiver area.
- f. TANU recognises that there are some activities which may justifiably be carried out outside of standard hours however, since the majority of the alignment is a greenfield site, TANU expects that construction activities are carried out during standard hours wherever possible and work during the evening and night is kept to an absolute minimum.

3.0 URBAN DESIGN, LANDSCAPE AND VISUAL AMENITY

RECOMMENDATION:

The EPA encourages the on-site re-use of mulch produced from vegetation clearing works on the project. Previous Pacific Highway Upgrade projects in the region have successfully utilised mulch combined with topsoil to assist in stabilising and establishing vegetation on batters.

4.0 SUMMARY OF ENVIRONMENTAL MANAGEMENT MEASURES

4.1 Table 26-2 Summary of Environmental Management Measures

4.2 Noise and Vibration Environmental Management Measures

Table 9-29 NV01 states a construction noise and vibration management plan (CNVMP) will be prepared and implemented in accordance with the Construction Noise and Vibration Guideline (CNVG) (RMS 2016a). There is no reference here of the Interim Construction Noise Guidelines (ICNG) (DECCW).

4.3 NV07

At-property operational noise mitigation measures will be implemented during the pre-construction phase of the project, where reasonable and feasible, to assist in reducing noise impacts associated with construction (including out of hours work).

4.4 NV06

Refers to RMS guideline documents only and makes no mention of the ICNG.

RECOMMENDATION:

The EPA encourages RMS to maximise the number of properties eligible for at-property treatments have treatments completed prior to commencing out-of-hours works in areas where residents are likely to be highly impacted. The proponent must ensure the (CNVMP) incorporates the principles of the ICNGs.

4.5 SW05

Mulch stockpiles are proposed to be managed in accordance with the Roads and Maritime Environmental Direction for the Management of Tannins from Vegetation Mulch (Roads and Maritime 2012b). The EPA suggests that the following be taken into consideration to provide a higher level of protection to the environment.

Stockpile Location

- Mulch stockpiles (including freshly mulched material [less than one month old]) should be located not less than 50 metres from a water course or drainage line.
- Mulch stockpiles should be appropriately bunded to ensure no site runoff can enter the mulch stockpile.

Duration of Mulch Stockpiling

- Fresh mulch has the highest risk of producing high levels of tannins. If feasible, covering temporary stockpiles with a tarpaulin or similar will greatly reduce the production of tannins by preventing exposure to weather.
- Temporary stockpiles (less than one week) must be relocated to stockpile areas set up with appropriate controls or removed from site as soon as possible.

Level of Controls Required

- Mulch stockpiles must incorporate an impermeable bund to capture tannin leachate. Impermeable bunds must be a minimum of 500 mm high.
- A sump to retain the tannin leachate must be sized to capture a minimum 150 to 200 mm rainfall event. All bunded stockpiles that are in place for a period longer than a week must include a lined overflow point for extreme rainfall events.
- Stockpiles established on sloping sites must be designed to provide temporary stormwater storage equivalent to a 500mm minimum height bund on a flat sight and include an appropriately sized sump as described above.
- Tannin leachate must be pumped out of bunded stockpiles within 5 days of the end of a rainfall event to maintain storage capacity.
- Bunded stockpiles must be inspected within 24 hours of cessation of any rainfall event greater than 10mm to ensure tannin leachate does not overflow. This requirement is reflected in typical environment protection licenses which contain a condition which requires all erosion and sediment controls measures installed on the premises must be inspected and works undertaken to repair and/or maintain these controls:
 - Weekly during normal construction hours;
 - daily during periods of rainfall; and
 - within 24 hours of the cessation of a rainfall event causing runoff to occur on or from the premises.
 - Stockpiles must be managed to prevent the discharge of tannin impacted water from the stockpile.
 - Stockpiles should ideally free drain to a sump to ensure mulch does not stay wet for extended periods following rainfall.

Note 1: Environment Protection Licences (EPLs) including highway construction projects do not currently allow for the discharge of tannins at any concentration. The EPL issued for the Coffs Harbour Bypass is likely to be consistent with previous licences.

Note 2: The BOD:COD ratio of water sampled from fresh mulch stockpiles indicates that tannins are not readily biodegradable and will take some time to break down in the environment.

Note 3: The temporary stockpiling of mulch must take forecast rainfall into consideration. If forecast rain is expected to cause issues, actions such as appropriate bunding or the relocation to stockpile areas with appropriate controls as described above must be implemented.

Note 4: Where a guidance document details the tannin impacts on water quality the direct toxicity effects of tannins should also be included in addition to impacts on BOD, pH and light penetration.

4.6 Table 26-2 SO1

Will the Soil and Water Management Plan include a rootball re-use strategy?

RECOMMENDATION:

1. The EPA recommends the above-mentioned mulch management measures be taken into consideration to provide a higher level of protection to the environment.
2. The EPA recommends the inclusion of a condition to facilitate the re-use of rootballs such as:

During vegetation clearing, timber and root balls must be retained for reuse in habitat enhancement and rehabilitation work. The retained timber and root balls may be used on or off the SSI site. The Proponent must consult with community and landcare groups and government agencies to determine if retained timber and root balls can be used for environmental rehabilitation projects, before pursuing other disposal options.

5.0 SURFACE WATER QUALITY

5.1 Sediment Basin Design

The EIS states that erosion and sediment controls would be designed consistent with Managing Urban Stormwater, Soils and Construction Vol. 1 (Landcom, 2004) and Vol. 2D Main Road Construction (DECC, 2008). Chapter 19.3 of the EIS states that sediment basins would be sized for:

- 90th percentile, 5-day rainfall event for catchments that drain to Solitary Islands Marine Park; and
- 85th percentile, 5-day rainfall event for all other catchments.

The EIS states that enhanced erosion and sediment control measures would be implemented in accordance with Landcom (2004). However, DECC (2008) recommends that (with or without enhanced erosion controls) where the duration of disturbance is greater than 3 years sediment basins are designed to achieve the required water quality for storms up to:

- the 95th percentile rainfall event for sensitive receiving environments (such as the Solitary Islands Marine Park)
- the 90th percentile rainfall event for standard receiving environments.

The EIS highlights that parts of the construction footprint are constrained by the topography within the Project area which would restrict the sizing of sediment basins. The EIS states that enhanced sediment and erosion

control measures would be implemented and proposes reuse of water from the sediment basins for compaction control, landscape and dust suppression.

RECOMMENDATION:

1. Where site constraints preclude installation of basins designed consistent with DECC (2008), including the 95th percentile rainfall event for sensitive receiving environments and the 90th percentile rainfall event for standard receiving environments, this is clearly documented, and enhanced erosion measures are detailed and implemented.
2. For catchments that drain directly to the Solitary Island Marine Park, the use of enhanced erosion and sediment control measures are clearly documented, including an emphasis on management principles such as erosion control as a pollution prevention strategy.
3. The use of high efficiency sediment basins should be considered.

5.2 Stormwater Discharges

The EIS includes catchment-scale modelling predicting total suspended solids, turbidity, total nitrogen and total phosphorus concentrations of receiving waterways during all wet-weather events and during controlled discharges. This includes preliminary modelling of the construction-phase sediment basins discharges based on Landcom (2004) water quality standards.

This approach is largely inconsistent with the relevant SEARs, national framework and EPA policy for considering the potential impact of discharges on receiving waters.

This catchment scale modelling could potentially be used to investigate cumulative impacts but is not appropriate to assess the impact of controlled discharges on waterways. For example, the approach does not account for localised water quality changes near the point of discharge, particularly for sensitive receiving environments.

It is unclear from the impact assessment whether all pollutants that pose a risk of non-trivial harm to human health or the environment have been considered. Discharges from sediment basins could include, for example, other pollutants such as pH, conductivity, residual coagulants and/or flocculants and their breakdown products.

Under Section 45 of the Protection of the Environment Operations Act 1997, the EPA must consider the environmental values of water when exercising any licensing functions (including issuing a new licence). Discharge criteria for water pollutants that will be discharged as a result of a project must be developed in consideration of the NSW WQOs and the national Water Quality Guidelines (formerly known as ANZECC).

Level of Assessment

The EIS highlights that the Project area is located within three catchment areas:

- Korora Basin: discharges would occur adjacent to the Solitary Island Marine Park, a sensitive receiving environment
- Coffs Creek: proposed discharges are upstream of Solitary Island Marine Park, flowing through areas characterised by agriculture and urban development before discharging to the Marine Park
- Boambee Creek: lower catchment discharges would occur adjacent to Boambee wetlands that is a sensitive receiving environment. Upper catchment discharges would occur to a similar receiving environment to Coffs Creek.

The varying receiving environments within the Project area require varying levels of assessment and mitigation when considering the impact and management of discharges to waterways. As a general rule the level of assessment and consideration of practical and reasonable mitigation measures should be commensurate with the potential water pollution risk/s.

For example, the proposed discharges for Korora Basin and the lower Boambee Creek catchment area are directly adjacent to sensitive receiving environments with high conservation value ecosystems that support numerous environmental values and uses. In this case, the discharges present a higher risk to the waterways and a detailed assessment of the potential impacts and associated mitigation measures is appropriate. The proposed discharges to Coffs Creek and the upper catchment of Boambee Creek are located some distance from sensitive receptors and therefore a less detailed impact assessment would be appropriate to consider potential risks and identify appropriate mitigation measures to manage and residual risks.

Roads and Maritime Services have recently conducted impact assessments that discharge to sensitive receiving environments on the South Coast of NSW e.g. the Digmans Creek Highway Realignment and Batemans Bay Bridge Replacement Project. These could be referred to when considering a revised impact assessment.

RECOMMENDATION:

Consistent with the SEARs for the project it is recommended that construction stormwater discharge impact assessments are conducted commensurate with the level of potential water pollution risk, including, but not limited to:

1. Identify and estimate the quality and quantity of all pollutants that may be introduced into the water cycle by source and discharge point and describe the nature and degree of impact that any discharge(s) may have on the receiving environment, including consideration of all pollutants that pose a risk of non-trivial harm to human health and the environment.
2. Assessment of the potential impact of discharges on the environmental values of the receiving waterway should be done with reference to the national Water Quality Guideline criteria for relevant chemical and non-chemical parameters, including average or typical through to worst-case scenarios.
3. Where a mixing zone is required, demonstrate how the national Water Quality Guideline criteria for relevant chemical and non-chemical parameters are met at the edge of the initial mixing zone of the discharge.
4. Demonstrate how the proposal will be designed and operated to:
 - i. protect the Water Quality Objectives for receiving waters where they are currently being achieved; and
 - ii. contribute towards achievement of the Water Quality Objectives over time where they are not currently being achieved.
5. Demonstrate that all practical and reasonable measures to avoid or minimise water pollution and protect human health and the environment from harm are investigated and implemented.

5.3 Management of Intercepted Groundwater

The EIS proposes directing groundwater that is intercepted by tunnelling activities to wastewater treatment plants and sediment basins for treatment prior to discharge. The EIS states that the Project has adopted the Roads and Maritime Pacific Highway design guidelines for mean annual load pollution reduction for the water treatment design which include an 80% and 45% load reduction for total suspended solids and total phosphorus respectively. The EIS states that proposed discharge limits would be developed in consultation with EPA however, no discharge impact assessment is provided.

RECOMMENDATION:

Consistent with the above recommendation for stormwater discharges, the Applicant should conduct a discharge impact assessment with the level of assessment commensurate with the potential water pollution risk for each proposed wastewater discharge point.

5.4 Groundwater Returns

The EIS proposes that where reasonable and feasible intersected groundwater would be returned to the aquifer downgradient within in the same catchment.

RECOMMENDATION:

North Coast Region consults with Gas Regulation Branch for hydrogeological advice on the proposal to return intercepted groundwater to the aquifer.

5.5 Table 19-14 Environmental Management Measures for Water Quality Impacts

SW04 – Works within or adjacent to waterways. The environmental management measure for this potential impacts states: A detailed Environmental Work Method Statement (EWMS) will be prepared and implemented for all works undertaken within or immediately adjacent to waterways. The EWMS will detail measures to avoid or minimise risks from erosion and sedimentation to water quality and biodiversity. It will be prepared in accordance with relevant guidelines including, but not limited to consideration of:

- Roads and Maritime's Biodiversity Guidelines - Protecting and managing biodiversity on RTA projects, and
- DPIE guidelines Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings.

RECOMMENDATION:

The EWMS prepared for managing this risk should also consider the relevant principles within the Blue Book - Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) to ensure erosion and sediment control management measures are suitable to manage the risks.

6.0 FLOODING AND HYDROLOGY**6.1 Table 17-18 Environmental Management Measures for Flooding and Hydrology Impacts**

FH03 – Temporary waterway crossings. The EPA notes that the environmental management measure for this potential impact includes: Fish passage will be maintained in accordance with the relevant waterway classification and DPIE guideline, Why do fish need to cross the road? Fish passage requirements for waterway crossings (Fairfull & Witheridge 2003); Include erosion and sediment controls in accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004).

RECOMMENDATION:

In relation to FH03 the EPA considers the loss of sediment to waterways that originates from, on or adjacent to temporary crossings to be a risk to the environment during construction. The typical design for a temporary crossing in Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) is unlikely to provide an appropriate level of protection given the volume and intensity of rainfall in the Coffs Harbour region, the extended period of time that the crossings are likely to remain in place and the impact of heavy vehicles utilising the crossings.

6.2 Paragraph 17.5.3

The EPA notes that "Erosion and sediment controls will be included in accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC 2008)".

RECOMMENDATION:

The EPA considers that the loss of sediment to waterways that originates from, on or adjacent to temporary crossings is a risk to the environment during construction. The typical design for a temporary crossing in Volume 1 is unlikely to provide an appropriate level of protection given the volume and intensity of rainfall in the Coffs Harbour region, the extended period of time that the crossings are likely to remain in place and the impact of heavy vehicles utilising the crossings. The EPA seeks clarification on the design principles for temporary crossings. The EPA seeks clarification on the rainfall intensity event that temporary waterway crossings will be designed to. For example, would they be designed to convey water and remain structurally sound in a 1 in 2 year storm event or a 1 in 10 year event?

7.0 PROJECT SYNTHESIS**7.1 Table 29-3 Summary of Key Project Impacts and Management Measures**

Surface water quality: Operational water quality impacts. It's noted stormwater and road runoff will be directed towards operational water quality treatment measures that will assist in the removal of pollutants from discharge water to protect ecosystem and human health. Grass swales will be the primary stormwater treatment measure. The proposed treatment structures will be designed to accommodate a spill volume of up to 40,000 L which would contain a major accidental spill, capturing hydrocarbons that may be released into sensitive receiving environments, causing impacts to ecosystem and human health.

RECOMMENDATION:

Recent learnings relating to spill containment drainage systems have occurred on the Woolgoolga to Ballina Pacific Highway Upgrade Project. The design included a system which used a series of ellis pipes set on an angle to allow structures to drain water but retain a hydrocarbon spill within the structure. The NSW State agencies including the EPA identified a number of issues with this design during construction including the failure to adequately capture a 40,000L spill event as intended. The EPA seeks clarification on the design of swales.

8.0 CONSTRUCTION**8.1 Table 6-2 Potential Enabling Work Activities**

The EPA notes there are a number of potential enabling work activities listed, some of which would involve some significant construction activities and present substantial environmental risks. Bridge construction, tunnel preparatory work and earth works associated with cuttings south of Roberts Hill and south of Korora pose a high level of risk. Table 6-2 suggests that these works could be carried out by construction contractors independent of the main construction works contractor.

Table 6-13 includes refuelling operations and maintenance as activity to occur out of normal hours in all areas to maximise plant and machinery operations and therefore reduce the overall duration of the project. The justification provided is not adequately supported by the interim construction noise guidelines. A reduction in the overall duration of the project alone is not enough to justify this activity occurring out of hours.

RECOMMENDATION:

1. Table 6-2 lists potential enabling work activities with a level of environmental risk high enough to warrant an approved CEMP and Environment Protection Licence (EPL). The EPA suggests that this aspect of the EIS be reviewed to minimise the number of activities that occur prior to the approval of a CEMP and issuing of an EPL.
2. In table 6-13 reassess the justification for refuelling and maintenance activities out of hours or provide more detail about the specific activities.

8.2 Assessment of Ancillary Facilities

8.2.1 Table 6-10 Assessment of Ancillary Facilities for Construction Zone 2 – based on standard condition criteria

The EPA notes that of the six potential ancillary sites identified for construction zone 2 all sites are less than 121m from the nearest residence with one having a residence next to the eastern boundary.

8.2.2 Table 6-11 Assessment of Ancillary Facilities for Construction Zone – based on standard condition criteria

Of the five ancillary sites identified all sites are less than 41 metres from the nearest residence. Given there will potentially be numerous occasions in zone 3 where OOH works will be required, using any of these sites during the night may potentially impact on nearby residents.

RECOMMENDATION:

If one of these sites is required, the EPA recommends selecting a site which is the furthest from residents. Ensure at-property treatments are complete at eligible properties, particularly in zone 3, prior to operating the ancillary facility.

8.3 Sourcing of Materials

8.3.1 Table 6-16 Source of Materials within the CHCC Area

A number of quarries in the local area are listed as potential sources of material for the project.

RECOMMENDATION:

That RMS put an effective process in place to verify and monitor the extraction limits of quarries providing material to the project. The process should allow for ongoing verification and monitoring to prevent the project from receiving material from potentially unlawful extraction activities.

9.0 GROUNDWATER

9.1 Water treatment prior to local recharge/discharge

The collection of groundwater seepage from the construction phase of the bypass is proposed as having two different methods:

1. Seepage collected from cutting walls will be treated and stored in offsite sediment dams in accordance to Environmental Protection Licence (EPL) requirements. The sediment dams then discharge into local waterways.
2. Water treatment plants have been prescribed to treat tunnel-only collected groundwater seepage during the construction phase of the tunnelling sites. Captured groundwater will then be retained in offsite infiltration dams which will slowly discharge to the underlying strata. These proposed infiltration dams and water treatment plants have not been described as operated under the requirements of an obtained EPL. Consultations with the EPA are proposed.

Details in the EIS regarding the treatment of seepage water prior to its discharge from retention dams are more specific to the construction part of the project, with limited details regarding the treatment of seepage and retained water collected during the ongoing operational phase (free flowing traffic along the bypass). The proponent has described that 'processes will be established to allow for groundwater recharge back into the underlying aquifers or creeks to mitigate impacts'. The processes are not defined further in the Groundwater Assessment report or within the EIS.

9.2 Groundwater Seepage Diversions

Throughout the EIS it is detailed that the collection of groundwater inflows into the bypass infrastructure is to be collected via a series of longitudinal pits and pipes and drain towards offsite basins (tunnel water into infiltration basins, cutting water into sediment basins). The EPA understands that once seepage is retained in these basins, collected inflows would then percolate through the pond floor to recharge the underlying strata or are discharge into local waterways.

There are concerns relating to the potential for impact as a result of vehicle contaminants and road surface runoff mixing with the cleaner groundwater inflows once the tunnel is commissioned. It is unknown if groundwater seepage drains are to act as clean water diversion conduits on route to the infiltration pits, or if all sources of water within the tunnels and cuttings are to be collected in the same drainage system and treated prior to their storage in the offsite dams.

No detailed information or schematic illustrating the isolation between groundwater infiltration and road runoff for the series of tunnels and cuttings could be located in the EIS.

RECOMMENDATION

1. The EPA seeks further information relating to the treatment of waters captured within the bypass infrastructure, prior to its retention in nearby infiltration dams.
2. The EPA strongly encourages EPL discharge conditions are adopted for proposed infiltration dams used to store seepage collected from tunnel walls.
3. The EPA has concerns regarding the proposed collection and diversion of tunnel and cutting groundwater seepage. Further information is sought regarding the separation of tunnel and cutting seepage drains from roadside runoff.