

# APPENDIX 6

## TRAFFIC IMPACT ASSESSMENT



# Coffs Harbour Water Treatment Plant Traffic Impact Assessment

14 May 2007

Prepared By:

---

Stefan Everingham  
Environmental Engineer  
Coffs Infrastructure Alliance

# Table of Contents

1	Introduction.....	3
1.1	Scope of Works.....	3
2	Transport Route .....	3
3	Existing Condition .....	3
4	Site Access Improvements .....	4
5	Impact Assessment.....	4
5.1	Construction.....	4
5.2	Operation.....	5
6	Summary of Mitigation Measures .....	5
7	Conclusion .....	6

# 1 Introduction

Coffs Harbour City Council (CHCC) are planning to construct a Water Treatment Plant (WTP) at 140 Upper Orara Road Karangi NSW. The WTP will be designed to treat water from Karangi Dam for use within the Coffs Harbour region. State Environmental Planning Policy (Major Projects) classifies the WTP as a 'Major Project' requiring approval from the Department of Planning prior to construction and operation in accordance with Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act). Part 3A of the EP&A Act requires the environmental impacts of the WTP to be assessed in the form of an Environmental Assessment (EA). This Traffic Assessment has been prepared to investigate the impacts that the construction and operation of the WTP is likely to have on the local traffic network in accordance with the Department of Planning Director Generals Requirements (DGR).

## 1.1 Scope of Works

The scope of works for this traffic impact assessment as defined in the DGR is as follows:

- Identify transport routes to and from the WTP.
- Provide details on any upgrading or construction of the access to the WTP.
- Assessment of the construction traffic impact of the WTP, in terms of the capacity and safety for these routes and also the potential for damage.
- Future traffic movements following completion of works and during full operation, such as chemical deliveries and sludge removal.

## 2 Transport Route

The limited options available with respect to the local road network imply that the route which the majority of construction traffic and operational movements would follow, is likely to be limited to the following:

- Most traffic expected to come from the Pacific Highway;
- Pacific Highway onto Coramba Road and
- Coramba Road onto Upper Orara Road and then into the WTP site.

The above route is highlighted in *Figure 1 Site Location and Route Identification*.

## 3 Existing Condition

The WTP will be constructed at 140 Upper Orara Road, Karangi, NSW. The surrounding area consists primarily of rural and rural residential properties with some industrial / special use land such as a major Transgrid electricity substation and the Karangi Dam and associated infrastructure (such as the existing dosing plant).

The exiting condition of the route is as follows:

- Coramba Road is the main arterial road linking Coffs Harbour to the regional suburbs of Karangi, Coramba, Nana Glen and Glenreagh.
- Between Coffs Harbour and Karangi, Coramba Road services local residences, property owners (banana plantations and so on), Red Hill Quarry (T.G. Jung Quarries), Coffs

Harbour Water Infrastructure (such as the Red Hill Balance Tanks) and various small businesses (primarily paper shop / takeaway type businesses).

- Upper Orara Road currently experiences an Average Daily Traffic Volume of 690 vehicles per day (vpd).
- The entrance to the WTP site is currently situated on the approximate apex of a corner with the entrance being a typical farm gate set back approximately 10 metres from the edge of the road.
- Traffic currently has a 200 metre line of sight for both directions at the site access point.

## **4 Site Access Improvements**

With the low Average Daily Traffic Volume and an existing Speed Limit of 80kph, it is not proposed to carry out any major road works at the access point of the WTP, however the following improvements to site access would be undertaken:

- Improve visibility for traffic approaching the site access by reshaping the embankment on the southern side of Upper Orara Road adjacent to the site access point.
- Reset the actual entry gate west (up the hill) and a further 20 metres north from the current position, allowing for off-road parking, for the possibility that the access gate may be blocked / closed on arrival and thus removing the need for vehicles to unnecessarily take up road space whilst waiting for the access to be cleared / opened.

## **5 Impact Assessment**

### **5.1 Construction**

Construction will involve some minor works on the embankments of Upper Orara Road adjacent to the WTP site to improve line of sight visibility and thus improve the safety for traffic entering and exiting the WTP site (refer to *Section 4*). These works will have a minimal short term impact on local traffic movements whilst providing a long term safety improvement.

The remainder of the traffic impacts related to construction are likely to involve those impacts associated with the following traffic movements:

- Traffic from construction crews; and
- Delivery of materials and equipment.

Construction crews are expected to be maintained at approximately 60 employees and peaking at 100 employees for short durations with the total construction period estimated to be approximately 18 months. The worst case scenario of each employee driving individually to and from the construction site would result in 200 vehicle movements during peak periods and an average of 120 vehicle movements through out the construction period.

Truck traffic is expected to include deliveries of materials, mechanical equipment, plant and water carts. Incoming truck movements could peak as high as 30 trucks per day with an average of approximately 10 trucks arriving at the site over the construction period (i.e. an average of 20 truck movements per day in and out of the site). The highest frequency of truck movements is expected during concrete pours.

Options for accessing the WTP site is limited with the primary route for construction traffic being via the Pacific Highway to Coramba Road and then onto Upper Orara Road.

The high volume of both car and truck movements to site during construction would require the following mitigation measures to be implemented to minimise traffic impacts:

- As mentioned in *Section 4* the entrance gate to the WTP will be located inside the front boundary to allow all vehicles an 'off road' waiting bay when entering or exiting the site. This would involve relocating the front gate up the hill and a further 20 metres from the current position.
- Advance advisory signs would be installed on the approaches to the access point, to warn road users of vehicular movements ahead.
- During Construction, traffic using Upper Orara Road in the vicinity of the WTP will be under Traffic Control in accordance with the RTA Manual for Traffic Control at Work Sites. Traffic Control would include;
  - Appropriate signage to give advance warning of possible approaching traffic hazards;
  - Qualified Traffic Controllers directing traffic when necessary; and
  - Reduced speed limits adjacent to the work site.

## 5.2 Operation

The operational traffic would primarily be restricted to the normal daytime working hours, with operational traffic movements including:

- Daily movements for operational staff (3 vpd); and
- Truck movements for the delivery of chemicals required for the treatment process when operating at maximum capacity as outlined in *Table 1*. (Note the early operational years would likely be half the frequency stated below)

*Table 1: Operational Deliveries and Truck Movements*

Chemical	Frequency of Delivery (deliveries per year)
Sodium Hydroxide	24
Potassium Permanganate	4
Lime	12
Carbon Dioxide	24
Aluminium Sulphate	2
Fluorosilicic Acid	4
Chlorine	6
Total	76

Mitigation for operational traffic impacts includes the 'off road' waiting bay and embankment reshaping as described in *Section 4* as well as signage indicating the location of the WTP access.

## 6 Summary of Mitigation Measures

Mitigation measures to be undertaken during the construction and operation of the WTP to minimise and where possible ameliorate the impacts on traffic are:

- Improve visibility for traffic approaching the site access.
- Provide an 'off road' waiting bay for vehicles entering or exiting the site.
- Provide adequate signage indicating the potential presence of construction or operational vehicles.
- Implement appropriate traffic control during construction.

## **7 Conclusion**

Vehicles entering and exiting the WTP site during construction and operation are limited to the one main route which could potentially have some localised traffic impacts. The impacts are expected to be minor given the low traffic volumes currently using Upper Orara Road, the minor construction and operational traffic flows and the short term nature of construction related impacts. It is additionally envisaged that the impacts would be adequately minimised and / or ameliorated through the implementation of the stated mitigation measures.

# **Annex A**

## **Figures**

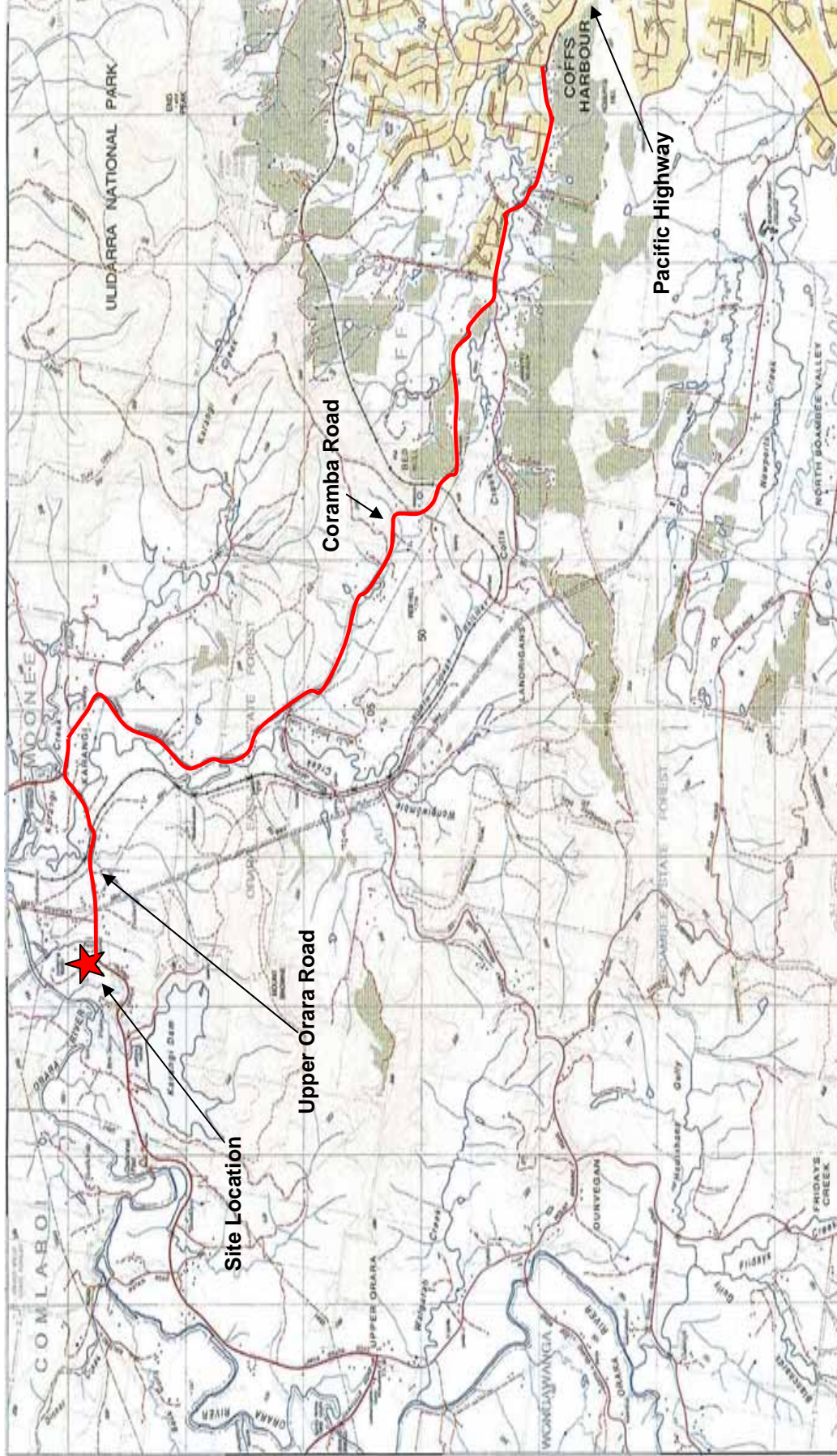


Figure 1: Site Location and Route Identification