14.1 Introduction

This Chapter addresses the traffic related impacts associated with the construction and operation of the proposed Power Plant taking into account cumulative impacts from current mill operations.

14.2 Methodology

The traffic and transport assessment was carried out by URS using a combination of desktop study and a site visit in June 2009.

The assessment assumes that both the construction and operational phases of the proposal proceed in tandem with current mill activities. Therefore traffic from current operations is considered to represent baseline conditions.

Traffic generated by SEFE's operations was collected from gatehouse records to characterise existing traffic movements. A site visit provided an opportunity to investigate and record the current condition and characteristics of the local and wider road network.

Throughout this Chapter a vehicle movement represents a return trip.

14.3 Existing Environment

14.3.1 The Princes Highway

The Princes Highway (State Highway No. 1) provides a north-south arterial traffic route linking Sydney and Victoria via the Illawarra and South Coast regions, connecting large regional centres such as Wollongong and Nowra with smaller coastal townships such as Ulladulla, Batemans Bay, Moruya, Narooma, Bega and Eden (NRMA 2004).

The total length of the Princes Highway from Waterfall to the Victorian Border is 479 km and is generally a two lane road with a 100 km/h speed limit for the majority of its length (**Table 14-1**).

Table 14-1 Princes Highway Characteristics

Lanes	
6 lanes	Less than 1%
4-5 lanes	16%
3 lanes	19%
2 lanes	64%
Speed Zones	
110 km/h	13%
100 km/h	68%
80-90 km/h	12%
60-70 km/h	7%

Source: NRMA Princes Highway Audit 2002 (Cited in NRMA 2004)

In the vicinity of Edrom Road, the Princes Highway is a sealed, two lane road in good condition with 7.0 to 7.5 m wide pavement and generally 3 m wide shoulders (**Plate 14-1)**. All vehicles accessing Edrom Road originate from the Princes Highway.

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Plate 14-1 Princes Highway between Eden and Edrom Road

14.3.2 Edrom Road

Edrom Road forms a controlled 'T' intersection with the Princes Highway, and runs north from the highway to the SEFE site (**Plate 14-2**). Traffic control incorporated into the intersection of the Princes Highway and Edrom Road includes:

- a right turn storage bay and 150 m long deceleration lane on the highway; and
- sealed shoulders for a minimum width of 1.5 m in the vicinity of the Edrom Road intersection.

Plate 14-2 Intersection of Princes Hwy and Edrom Road

Observations made during the June 2009 site inspection recorded that both the Princes Highway and Edrom Road to the SEFE site were in good condition. Upon approach to the SEFE site along Edrom Road the speed zone is reduced to 50 km/h.

The road was constructed by the Forestry Commission to a 100 km/h standard to give logging trucks high speed all weather access to the woodchip mill. Guard rails are maintained along curved sections of Edrom Road, and the bitumen road surface appears to be in good condition.

The road also has a recreation function as it provides access to Ben Boyd National Park, East Boyd State Forest and coastal recreational areas on the southern side of the bay. Access to these areas would be by vehicle transport only. There is no off-street provision for pedestrians in the way of footpaths and there are no bus stops or cyclist routes along Edrom Road.

14.3.3 Edrom Road traffic volumes

Over the last four years, around 1 million tonnes of logs have been processed at the SEFE mill annually. All timber received by the mill is delivered by truck. Truck deliveries occur between 0700 and 1000 Monday to Friday. Deliveries occasionally occur on Saturdays with deliveries typically restricted to between 0700 and 1430.

Logs are received at the gatehouse where deliveries are monitored and recorded in compliance with SEFE's Chain of Custody procedures. Truck delivery counts as well as tonnage of logs delivered to site are recorded as trucks proceed through the weighbridge located at the entrance of the facility.

Traffic monitoring conducted in 1999 identified that Edrom Road carried 377 vehicles per weekday, of which 261 were heavy vehicles. The high proportion of heavy vehicles was directly attributable to the SEFE mill operations. The number of vehicles on the road on weekends was nearly a quarter of the weekday flow, with only about 10% being heavy vehicles (SEMF 2002).

In recent years, typically around 200 to 250 heavy vehicles per day used Edrom Road. Of these around 40 would have been associated with Australian Marshalling Services which is an adjacent facility. Recent truck delivery records for January to June 2009 indicate an average of 1824 deliveries per month to the SEFE mill (**Figure 14-1**). This equates to 76 deliveries per day (assuming a 6 day week) or 91 deliveries assuming a 5 day week. Where deliveries were accepted on a Saturday, delivery numbers were only one or two truck loads.

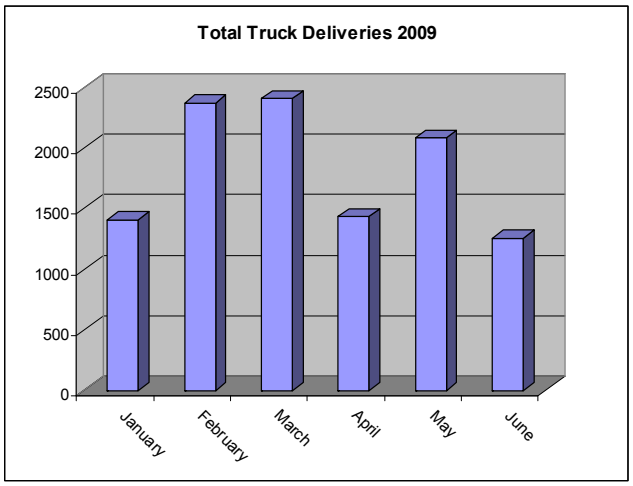

Figure 14-1 Monthly Truck Deliveries to SEFE's Mill

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This traffic volume has reduced from an average of 250 heavy vehicles per day in 2008. SEFE attribute the decline to a reduced demand for both softwood and hardwood chips as a general consequence of the economic slowdown. Given the potential for a quicker than anticipated market strengthening prior to construction commencing in late 2010, we have assumed an average of 200 daily truck deliveries for the purposes of this investigation.

In addition to log transport SEFE exports mulch to markets in the greater Sydney and Canberra metropolitan areas. Typically 900 truck loads of mulch are sold each year.

SEFE currently has a workforce of around 77 personnel. Private vehicle movements average six per day with the majority of the workforce being conveyed to site in three company busses.

14.4 Assessment of Potential Impacts

This section outlines the specific components and staging of the construction phase, as well as discussing the ongoing traffic generating activities during the projects operational phase.

14.4.1 Proposed Staging and Schedule

Subject to obtaining all necessary planning approvals, construction is due to commence in late 2010 with commissioning by late 2011. The total duration of construction works is around 15 months. Construction work would occur between 0700 to 1800 Monday to Friday and 0800 to 1300 Saturday.

The construction workforce will peak at around 40 construction personnel, ramping up from 15 in the early stages of construction. It is expected that the most of the construction workforce would travel to site by bus. Operation of the Power Plant will result in an increase of SEFE's permanent workforce by the equivalent of six full time personnel.

The current site access arrangements via Edrom Road will be used during both the construction and operational phases of the project.

Traffic generating activities are summarised in **Table 14-2**.

14.4.2 Construction Traffic Generation

The main impacts from construction generated traffic would occur:

- during the initial stages of construction works involving site preparation;
- through the regular daily delivery of equipment and plant via semi trailers during the initial stages of construction; and
- during the construction and installation stage where multiple concrete trucks would be required to travel to site each day over a two week period.

The impacts of the construction traffic have been reviewed with respect to:

- existing traffic volumes along Edrom Road;
- safety; and
- oversized vehicles.

Table 14-2 Description of Traffic Generating Activities

Stage	Description of works	Duration	Estimated no. of vehicles	Plant / machinery type
Stage 1 - Construction Delivery and Site Preparation Stage	Earthworks, excavation and installation of footings and foundations.	Around 7 days	1 heavy vehicle movement each day. Contractor vehicle movements, 5 per day.	Backhoe, concrete mixer, contractor vehicles
	Delivery of plant and equipment required for construction of the Power Plant. Delivery of the boiler package and turbine	Around 2 weeks	Around 2 semi-trailers delivering plant and equipment each day. Larger plant delivered over 6 low loader movements. Contractor vehicle movements, 5 per day.	Heavy vehicles include semi trailers and low loaders. Delivery of oversized components. Contractor vehicles.
Stage 2 – Construction and Installation	Delivery of concrete to site	Around 2 weeks	Around 50 heavy vehicle movements over the 2 week period. Contractor vehicle movements, 5 per day.	Concrete mixers, contractor vehicles
	Construction and assembly works; installation	Around 14 months	Movement of 150 t crane to site for duration of work. Contractor vehicle movements, 10 per day.	150 t crane, contractor vehicles
Stage 3 - Ongoing operation	A relatively small quantity of ash will be produced as waste.	Ongoing	Truck movements to remove ash from the facility would be around 18 per year.	Trucks
	Up to 23,000 t of wood waste imported each year from local and regional saw mills	Ongoing	920 truck deliveries of wood waste	Trucks
	Power Plant staff vehicles	Ongoing	Around 6 additional car movements per day	Cars / regular site vehicles

The predicted increase in traffic volume to the SEFE site during construction is shown in **Table 14-3**.

Construction activities would increase traffic to the SEFE site by 9.1%. This assumes that all construction stages occur simultaneously and consequently can be considered conservative. Heavy vehicle and contractor vehicle movements peak during the installation stage (2% and 6.8% respectively).

Given the high volume of heavy vehicles currently accessing the site, upgrade to the Princes Highway / Edrom Road intersection is not required.

Considering the existing local traffic environs, current operations at the SEFE mill site and the relatively minor increases in traffic volume as a result of construction of the Power Plant, the development is unlikely to have a significant impact on the local or regional traffic network.

Table 14-3 Predicted Traffic Flow During Construction

	Daily	Weekly*	Monthly	Annual
SEFE Mill Operations (Baseline conditions)				
Daily truck log deliveries	200	1200	4800	57600
SEFE employee vehicles	15	90	360	4320
Mulch exported from site	4	20	80	900
Total	**219**	**1310**	**5240**	**62820**
With Biomass Power Plant Development				
Daily truck log deliveries	200	1200	4800	57600
SEFE employee vehicles	15	90	360	4320
Mulch exported from site	4	20	80	900
Construction				
Initial delivery of required plant and equipment to site (around 2 weeks)	3	18	-	-
Site Preparation Stage (around 1 week)	1	6	-	-
Delivery of plant and equipment (around 2 weeks)	2	12	-	-
Installation (around 14 months)	4	25	100	1200
Contractor vehicle movements	10	60	240	2880
Total	**239**	**1431**	**5580**	**66900**
Percentage weekly change from existing mill operations	**+ 9.1%**			
** Assuming a 6 day week Monday - Saturday*				

Over-dimensional and Over-mass Transport

A number of plant components are likely to be transported to the site by special road convoy during the initial stage of construction. The detailed design phase would confirm the total numbers of deliveries required by low loader semi trailers, and oversized load convoy arrangements would need to be negotiated between SEFE, the Bega Valley Shire and the RTA for delivery to the site.

14.4.3 Operations

The predicted increase in traffic volume to the SEFE site during operations is shown in Table **14-4**.

The simultaneous operation of the mill and the proposed Power Plant would generate a small traffic increase to the SEFE site of 2.3%.

The proposed Power Plant would increase total staff numbers by an estimated six personnel. Once the Power Plant is operating no mulch will be exported from site resulting in a reduction of approximately 900 truck movements over a year. However, around 920 truck loads of wood waste from other milling operations would be transported to the SEFE site to be consumed as fuel.

Considering the existing local traffic environs, current operations at the SEFE mill site and the relatively minor increases in traffic volume as a result of operation of the Power Plant, the development is unlikely to have a significant impact on the local or regional traffic network.

Table 14-4 Predicted Traffic Flow during Operations

	Daily	Weekly*	Monthly	Annual
SEFE Mill Operations (Baseline conditions)				
Daily truck log deliveries	200	1200	4800	57600
SEFE employee vehicles	15	90	360	4320
Mulch exported from site	4	20	80	900
Total	**219**	**1310**	**5240**	**62820**
With Biomass Power Plant Development				
Daily log truck deliveries	200	1200	4800	57600
SEFE employee vehicles	15	90	360	4320
SEFE Power Plant employee vehicles	6	36	144	1728
Ash removal from site	-	-	1 - 2	18
Delivery of wood waste as fuel from other facilities	3	19	76	920
Total	**224**	**1345**	**5382**	**64586**
Percentage weekly change from existing mill operations	**+ 2.3%**			
** Assuming a 6 day week Monday - Saturday*				

14.5 Mitigation Measures

Recommended mitigation measures are detailed in **Table 14-5**.

Table 14-5 Mitigation Measures

Mitigation Measure	Project Stage		
	Pre construction	Construction	Operations
Princes Highway and Edrom Road would be inspected for overhead branches / powerlines and squeeze points prior to a construction traffic management plan being developed.	✓		
A construction traffic management plan will be prepared.		✓	
Consultation with the local council and / or the RTA will be held on the transport of over-mass and over- dimensional loads. Appropriate permits will be obtained.	✓		