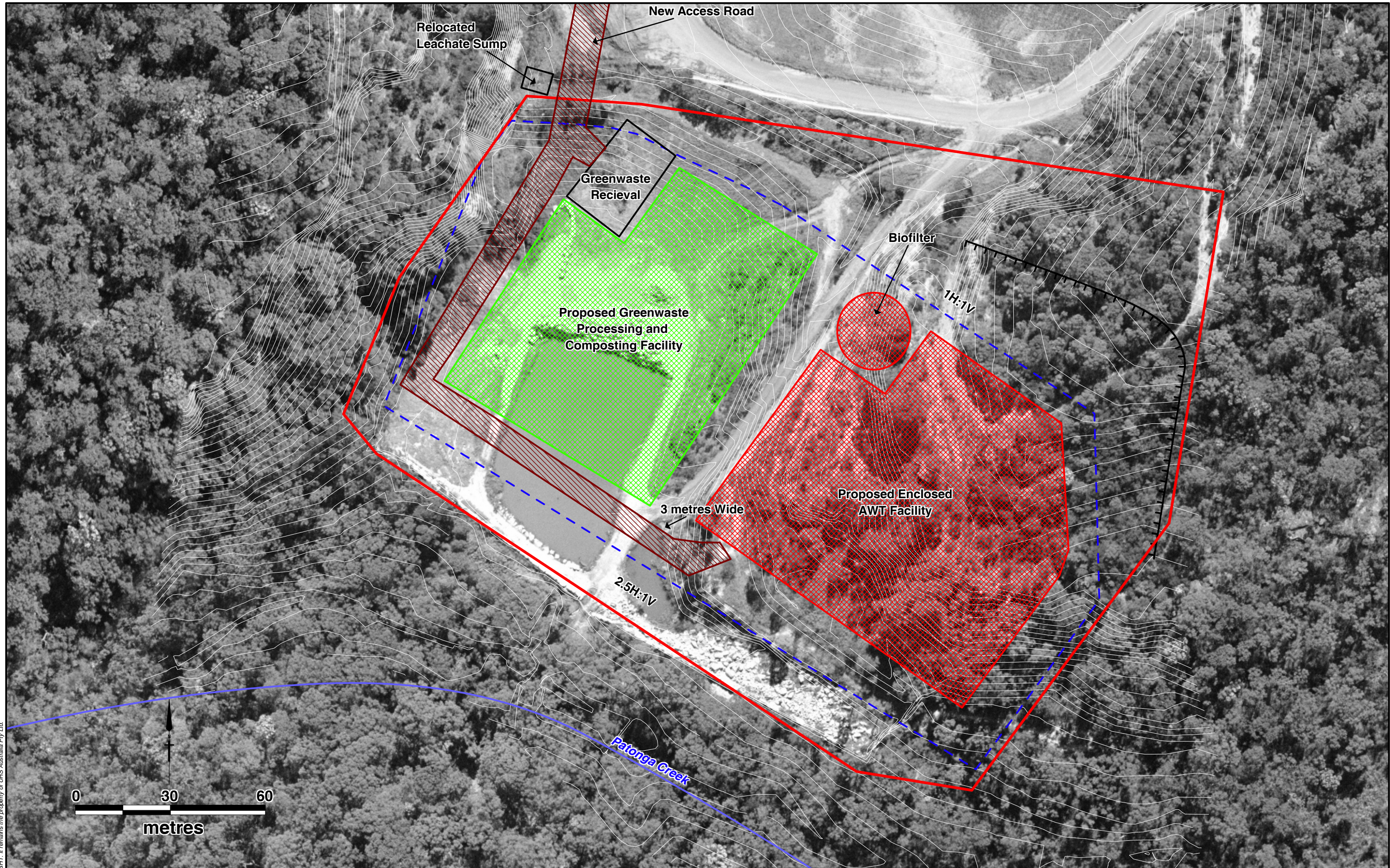




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Legend Proposed AWT Facility Platform Project Boundary	Client GOSFORD CITY COUNCIL		Project Environmental Assessment of Proposed Alternative Waste Technology and Composting Facilities at Woy Woy WMF		Title PROPOSED FACILITIES LAYOUT
			Drawn: AJW	Approved: FINAL	Date: 13/02/2007
			Job No: 43177409	File No: 43177409-024.wor	

Figure: 4.2

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4.8.4 Fire Fighting Water Supply

A dedicated fire fighting system would be available for the AWT and Composting Facilities. Firewater tanks would be available on site and these would be filled from several alternative sources including:

- rainwater runoff collected from the roofs of the AWT and Composting Facility buildings;
- townwater supply delivered to the tanks using a tanker; and
- the existing northern sedimentation pond.

This system would be designed to meet the AS2419.1 “Fire Hydrant Installations”, AS 2941 “Fixed Fire Protection installations – Pumpset Systems” and the Building Code of Australia. Further details on fire management are provided in **Chapter 16**.

4.8.5 Electrical Infrastructure Requirements

As part of the proposed development, a new power line would be established to the site. This line would provide sufficient capacity for the proposed AWT and Composting Facilities. If an anaerobic process is chosen as the AWT for treatment of the MSW, this would produce a biogas, which would be connected to the existing landfill gas treatment system as described in Section 4.4.2. Currently the landfill gas is flared, however based on gas generation rates, it may be feasible in the future to generate electricity from the landfill gas and the biogas from the proposed AWT, with the power generated used to provide an alternative power supply for the proposed on-site infrastructure.

4.8.6 Odour Emission Rates

Odour Emission Rates (OERs) have been calculated based on the proposed tonnage of material to be processed, in accordance with emission rates from existing facilities which employ similar processes to those proposed for the Woy Woy facilities. The OERs calculated include significant margin for safety, in order to be consistent with the conservative nature of this assessment. Where a range of OERs have been available, the most conservative rates have generally been selected.

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Table 4-3 Odour Emission Rates

Odour Source	Source Type	Odour Emission Rate (OU.m ³ .s ⁻¹)	Justification
AWT Treatment Facility	Fugitive	2303	OERs for the AWT facility and Biofilter have been estimated from a proposed MSW Facility at South Windsor (Thiess Services, 2003). The odour emission data presented in Thiess Services (2003) was based on empirical odour data collected from waste at a plant with similar operations, hence the data is considered suitable for use in this assessment.
AWT Treatment Facility (Biofilter)	Area	250	The OERs for the proposed Woy Woy AWT were scaled linearly to the throughput of 70,000 tonnes per annum for the AWT which resulted in an OER of 2303 OU.m ³ .s ⁻¹ for the AWT facility and an OER of 250 OU.m ³ .s ⁻¹ for the biofilter.
Green Waste Treatment Facility	Fugitive	6,424	Work undertaken by Kühner et al. 1999 has shown that for a Gore covered windrow has an SOER of 1.25 OU.m ⁻² .s ⁻¹ , resulting in an average odour emission rate of 714 OU.s ⁻¹ per windrow. On the basis that 18 windrows are contained within the Composting Facility, and that 50% of the odorous air is either treated using a biofilter or retained by the enclosure, the odours produced by the windrows that escape the building as fugitive emissions, is estimated to be 6,424 OU.m ³ .s ⁻¹ .
Green Waste Treatment Facility (Biofilter)	Area	1,848	The Composting Facility is proposed to have a biofilter which is used to treat the extracted air from the building. GHD (2006b) indicated that a 440m ² biofilter attached to a similar green waste facility (30,000 tpa) generated an SOER of 2.8 OU.m ⁻² .s ⁻¹ . Similar to the method used to calculate the biofilter area of the AWT facility, the area of the proposed biofilter has been designed to be 660m ² , based on 45,000 tpa of biosolids and greenwaste combined. This would produce a net emission rate of 1848 OU m ³ .s ⁻¹ from the biofilter.

4.9 Construction Works

4.9.1 Construction Program

The preliminary key dates and timeframes associated with the construction and operation of the proposed AWT and Composting Facilities is shown in **Table 4-4**. The milestones for construction and operation assume Project Approval is obtained and Council approves the investment model.

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Table 4-4 Key Dates and Timeframes

Activity	Timeframe
Preliminary Site works and Preparation of Engineered Platform for Proposed Facilities by Council	October 2007 to March 2008
Call Tenders for Design, Construction and Operation (to be determined) of AWT and Composting Facilities	October 2007
Award Tender for Design, Construction and Operation (to be determined) of AWT and Composting Facilities	April 2008
Design, Construction and Commissioning of AWT and Composting Facilities	August 2008 to July 2009
Operation of AWT and Composting Facilities	August 2009

4.9.2 Key Construction activities

The precise construction methods and sequence would be determined by Council and the selected contractors at the time of construction however would generally involve the following key activities:

- preparation and approval of a detailed construction environmental management plan (CEMP)
- installation of environmental controls including temporary erosion, sediment and water quality controls in accordance with the CEMP;
- removal of all shrubs, trees and other vegetation not identified for preservation and disposal of them as greenwaste;
- dewatering of existing southern sedimentation pond in accordance with CEMP;
- stripping and stockpiling of topsoil;
- bulk earthworks for construction of the engineered platform including excavation of existing hillside and filling of sedimentation pond to achieve design level (nominal level of RL 115m AHD) and gradients;
- construction of access road to the platform
- provide electricity line to the site;
- construct permanent stormwater drainage lines and detention areas;
- prepare subgrade and pavement on the platform;
- construction of Composting Facility including building, associated equipment and fire fighting system;
- commissioning of Composting Facility;
- construction of AWT facility including building, associated equipment and fire fighting system;
- commissioning of AWT facility.

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Other activities undertaken during the commissioning phases of the project include:

- landscaping of the site;
- installation of site security lighting;
- linemarking and signposting of road and facilities;
- finishing works.

All plant, equipment, buildings and services would be supplied, erected, operated and maintained in accordance with the relevant Australian Standards and the Building Code of Australia. Where an appropriate Australian Standard may not exist, the most suitable ISO, British, American or approved alternative standard would be used.

4.9.3 Construction Equipment, Workforce and Materials

The equipment and machine to be used during construction would include bulldozers, loaders, excavators, compactors, bobcats, graders, concrete trucks, water cart, delivery trucks, mobile cranes, paving machine. During the construction phases of the project the number of personal would vary as shown below:

- Stage 1 Site works: Approximately 10-20 jobs;
- Stage 2 Construction of Composting Facility: Approximately 20-40 jobs; and
- Stage 3 Construction of AWT Facility: Approximately 30-50 jobs.

The exact workforce used during the construction would depend on Councils and the contractors final work schedules.

All construction materials for bulk earthworks would be sourced onsite or would be sourced locally where possible from commercial suppliers in the Gosford region. Material used for the construction and fit-out of the Composting and AWT facilities would depend on the type of technology chosen and the contractor's requirements, however preference would be given where possible to source material from local manufacturers.