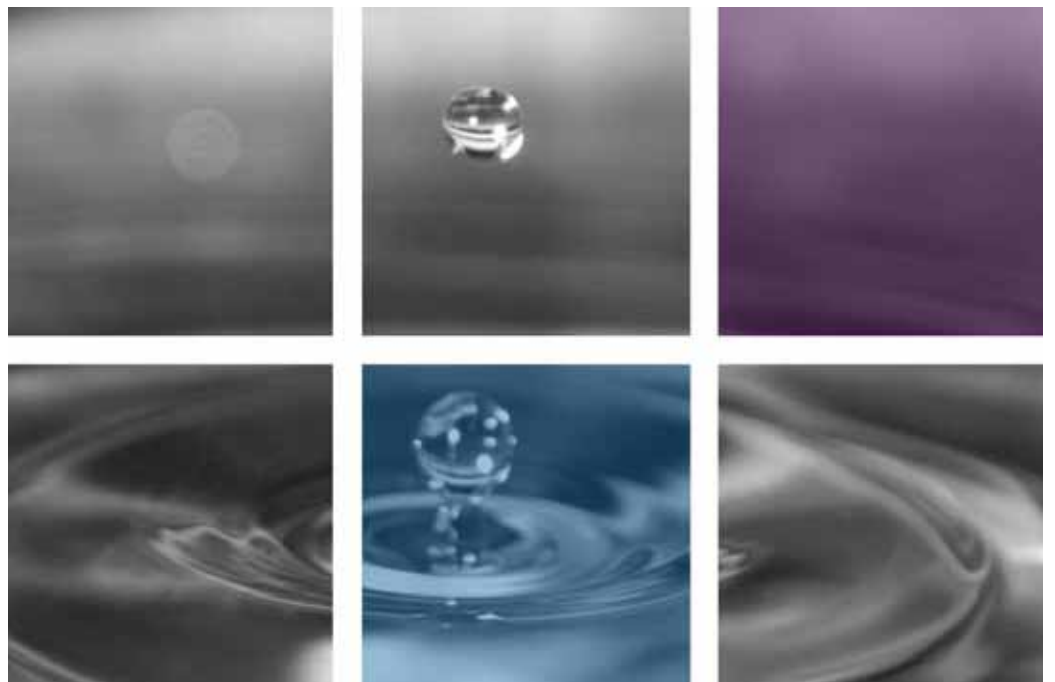




SUGARLOAF PIPELINE PROJECT

LANDSCAPE AND VISUAL IMPACT ASSESSMENT

FEBRUARY 2008





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Limitations

This Report:

- has been prepared by Melbourne Water, GHD Pty Ltd, Sinclair Knight Merz Pty Ltd, and John Holland, the participants in the Sugarloaf Pipeline Alliance (the 'Alliance');
- has been based on information provided up to 8 February 2008;
- has been produced as part of the Sugarloaf Pipeline Project Impact Assessment report and is for the purpose of identifying preferred pipeline corridors and associated management and mitigation measures for the Sugarloaf Pipeline Project;

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Executive Summary

The Sugarloaf Pipeline Alliance was engaged to develop the proposed 70 km pipeline, transporting water from the Goulburn River to Sugarloaf Reservoir. This report discusses the existing landscape and visual amenity values of the ‘preferred’ and ‘non-preferred’ pipeline corridors and surrounds, and the impacts this project may have on these values.

The landscape and visual values associated with all of the pipeline corridors (‘preferred’, ‘non-preferred’ and ‘rejected’) have been considered within the context of the relevant planning scheme provisions, legislation and conservation or recreational purposes. This report identifies management measures to address potential landscape and visual interactions.

A field and desktop investigation, which was initially undertaken to provide guidance on general landscape character, has assisted identifying potential visual quality and exposure areas and sensitive receptors for all the pipeline corridors and associated infrastructure.

To follow, the impacts on all the corridors and associated infrastructure on landscape and visual values were identified and investigated, and mitigation measures and recommendations proposed. Key findings from landscape and visual assessments are summarised in Table 1.

■ Table 1 – Summary of Landscape and Visual Impacts

Value	Summaries Impact	Suggested Mitigation Measures
Landscape	<p>It has been assumed that all vegetation within the 20 to 30m construction corridor will be removed. This will therefore result in changes to the vegetated landscape through the formation of a permanent easement, and in turn may reduce scenic quality in specified areas. Vegetation rehabilitation may only involve grass seeding along sections of the operational easement, and will not assume as a full management measure.</p> <p>Potential sources of impacts during pipeline corridor construction include removal of vegetation, earthworks associated with the removal of topsoil and temporary excavation and the creation of material stockpiles.</p> <p>The removal of roadside vegetation may detract from the landscape character of an area, and open views to construction activities.</p> <p>Areas identified as significant landscape alterations, that include moderate to high landscape sensitivity changes include:</p> <ul style="list-style-type: none"> ▶ ‘Preferred’ Corridor A2 and A3 – removal of vegetation within the Killingworth Reserve; ▶ ‘Non-preferred’ Corridor A1 – removal of vegetation adjacent to Killingworth Road and 	<p>Vegetation will only be removed if there is no practical alternative option that would result in minimal destruction of the existing vegetation.</p> <p>Any vegetation to be removed will be managed in accordance with the approved Off-Set Management Plan.</p> <p>Suitable management plans that will address erosion, weed and vegetation impacts.</p> <p>If the selected corridor adjoins the Kinglake National Park, landscape management strategies must be considered.</p> <p>Consideration of an alternative corridor to avoid landscape impacts to land within the Toolangi State Forest and Crown Land Reserves.</p> <p>Ensure ongoing control of recreational vehicles both during the project construction period and post rehabilitation through:</p>



Value	Summaries Impact	Suggested Mitigation Measures
	<p>within the Yea River Wetlands Reserve;</p> <ul style="list-style-type: none"> ▶ 'Non-preferred' pipeline corridor B1a – removal of vegetation adjacent to the Melba Highway and within Perts Reserve; ▶ 'Preferred' pipeline corridors E1, E2, E3, F1 and F3 – clearing of dense vegetation and excavation of steep slopes within the Toolangi State Forest; ▶ 'Non-preferred' pipeline corridor G2 – vegetated slopes adjacent to Hunts Lane; and ▶ 'Preferred' Corridors H2 and H4 and 'Non-preferred' Corridor H1 and H3 – clearing of vegetation located on the steep escarpment and within the Yarra Ranges Planning Scheme Significant Landscape Overlay (SLO4). <p>The ongoing use of recreational vehicles (post construction) on tracks within and adjacent to the pipeline construction corridor at Toolangi State Forest and neighbouring Forest Reserve, may affect the rehabilitated landscape, cause erosion and may impact on local fauna habitats.</p> <p>Changes to topography and landscape character of watercourse banks where pipes would be exposed within an riverine environment;</p> <p>The associated infrastructure will require moderate changes to topography, with removal of scattered trees and excavation for on-site levelling.</p>	<ul style="list-style-type: none"> ▶ Control and restrict access to recreational vehicles in close proximity and along the rehabilitated pipeline corridor through temporary fencing; and ▶ Provide project information sheets detailing changes to vehicle recreation tracks within Toolangi State Forest and adjacent Forest Reserve to relevant information centres or businesses that provide maps or brochures aimed at vehicle recreational users. <p>Reduction in the construction corridor width to minimise landscape impacts specifically within 'preferred' corridors H2 and H4.</p> <p>Consideration to minimise landscape impacts to land subject to the Yarra Ranges Planning Scheme SLO4.</p> <p>Site-specific concept plan, detailing revegetation and plant screening is recommended for all associated infrastructure.</p>
Visual	<p>The following provides a summary of visual impacts expected from the pipeline construction, focusing primarily on residents, tourists and travellers whose importance/sensitivity is considered to be 'moderate or high'.</p> <ul style="list-style-type: none"> ▶ People involved in outdoor recreation, with a focus on landscape values and particularly in areas adjacent to Toolangi State Forest may be impacted by 'preferred' pipeline corridors A2 and A3 and 'non-preferred' pipeline corridor A1. These impacts are expected, as there will significant loss of vegetation due to construction of the permanent operational easement. This section of corridor may not be suitable for the rehabilitation of comparable vegetation over the easement. ▶ Clearing of vegetation located on the steep escarpment to accommodate 'preferred' pipeline corridors H2 and H4 and 'non-preferred' corridors H1 and H3 may create views of landscape affects to rural dwellings and tourist locations in the neighbouring broad valley. In addition, these alignment options are predominately located within the Yarra Ranges SLO4, located south of Yarra Glen. 	<p>Vegetation will only be removed if there is no practical alternative option that would result in minimal destruction of the existing visually screening vegetation.</p> <p>Where the selected corridor traverses Toolangi State Forest, Management Guidelines for Areas of High Scenic Quality identified within the Forest Management Plan for Central Highlands should be considered.</p> <p>Consideration to minimise visual impacts to land subject to the Yarra Ranges Planning Scheme SLO4 – Upper Yarra River and Environs</p> <p>Minimise construction time and aim to located equipment in areas that are not visible from sensitive receptor locations.</p> <p>Removing construction equipment from areas as soon as practical after works have been completed.</p> <p>Sympathetic design and selection of building</p>



Value	Summaries Impact	Suggested Mitigation Measures
	<ul style="list-style-type: none"> ▶ Sensitive receptors, including residents within Yea, may have distant and localised views of construction activities i.e. construction vehicles surrounding 'preferred' pipeline corridors A2, A3 and B1c and 'non-preferred' pipeline corridors A1, B1a and B1b. ▶ Sensitive receptors, including residents within the Yarra Glen may have distant and localised views of construction activities i.e. construction vehicles surrounding 'preferred' pipeline corridors G5, G6, H2 and H4 and 'non-preferred' pipeline corridors G1, G2, G3, H1 and H3. ▶ The visual receptors most likely to be moderately impacted from the pipeline corridor construction activities are residents located in adjacent rural dwellings, wineries and accommodation facilities. Careful consideration should be give to the removal of roadside vegetation adjacent to the rural dwellings, as removal will reduce existing mitigation buffering and potentially open views to construction activities (on-site mitigation measures such as fencing and garden vegetation, may result in a sufficient mitigation measure, however this will not be clear until the final pipeline corridor has been selected). ▶ Travellers along the Melba Highway and local roads will have immediate views to pipeline construction activities, however the visual impact will not be significant as the traveller will have short term views whilst passing by. <p>In addition, careful consideration should be given for the on-site location and design of all associated infrastructure. A detailed VIA is recommended for the electrical infrastructure, low lift pump station, balancing storage and high lift pump station, with mitigation measures to assume immediately post construction.</p>	<p>materials and colours for the pump station, that is visually compatible with the surrounding landscape.</p> <p>Match the use of colour scheme for associated infrastructure to the existing environment, to blend as much as practical so that the impression of visual change is perceived to be low.</p> <p>Site-specific concept plan, detailing revegetation and plant screening is recommended for all associated infrastructure.</p> <p>A detailed Visual Impact Assessment (VIA) is recommended for the balancing storage and high-lift pump station.</p> <p>A VIA is recommended for the electrical infrastructure.</p>

This assessment should only be considered as initial guidance to identify impacts to landscape and visual amenity values.



1. Introduction

1.1 The Sugarloaf Pipeline Project

The Sugarloaf Pipeline Project aims to deliver additional water supply to Melbourne. The Project is a key component of the Victorian Government's *Our Water, Our Future - The Next Stage of the Government's Water Plan* (DSE, 2007), which aims to secure Victoria's water supplies in the face of drought, climate change and a growing population.

The pipeline will enable up to 75 gigalitres of water per year of water to be transferred from the Goulburn River into the Melbourne water distribution network via Sugarloaf Reservoir in the Yarra Ranges. Water for the Sugarloaf Pipeline Project will be sourced from savings achieved through the Food Bowl Modernisation Project, which involves modernisation of irrigation infrastructure in the Goulburn-Murray Irrigation District.

The project will involve the construction and operation of a water pipeline, approximately 70km in length, pump stations, a balancing storage and associated electrical infrastructure to deliver water to Sugarloaf Reservoir. The planning, design and construction phases of the Sugarloaf Pipeline Project will be undertaken by the Sugarloaf Pipeline Alliance, an alliance formed by Melbourne Water Corporation with SKM Pty Ltd, GHD Pty Ltd, and a constructor ,John Holland.

1.2 Purpose and Scope of the Study

This report has been prepared to describe the landscape and visual values of areas surrounding the 'preferred', 'non-preferred' and 'rejected' pipeline corridors, the low lift and high lift pump stations, associated electrical infrastructure, and summarises the possible impacts that the development may have on these values. This report will also provide suggestions for mitigation measures associated with the construction and operational stages.

A number of terms are frequently used in this assessment:

- View – what can be seen;
- Vantage points – a specific location from which a view can be obtained;
- Sensitive receptor – resident, traveller, tourist, people at their place of employment, and;
- Associated infrastructure – this includes the river pump station, air valves, balancing storage and tank, and high lift pump station air valves.

Where possible, this assessment has attempted to be objective and to incorporate multiple sources of visual characteristics, values and policies. It is, however, recognised that visual assessment is highly subjective and individuals will associate different visual experiences to the study area.

In addition, this assessment should only be considered as an initial guidance in identifying potential impacts to landscape and visual amenity values. As soon as the final site-specific location and design of



the associated infrastructure has been selected, a detailed VIA will be required. Additionally, this level of detail will achieve a strategy for mitigation measures.

The pipeline corridor, sections and corridor options are described in the Project Impact Assessment (PIA) report.

1.3 Methodology Overview

Components of the landscape and visual impact assessment methodologies for this study, including existing scenic quality classifications, impacts and mitigation measures have been referenced in accordance with the *Landscape Character Types of Victoria, Forests Commission of Victoria, Foothills Character types and Guidelines for Landscape and Visual Impact Assessment, Second Edition*, published by The Landscape Institute and Institute of Environmental Management and Assessment (2003).

Landscape and visual assessments are separate, although linked, procedures. The landscape baseline, its analysis and the assessment of landscape impacts all contribute to the baseline for visual assessment studies. Landscape impacts derive from changes in the physical landscape, which may give rise to changes in its character and how it is experienced. Visual impacts relate to the changes that arise in the composition of available views as a result of changes to the landscape, to people's responses to the changes, and to the overall effects with respect to visual amenity (Guidelines for Landscape and Visual Impact Assessment, 2003).

Components of the landscape and visual impact assessment methodologies for this study have been addressed as per the classification of landscape and visual impact process explanation detailed above.

The methodology adopted for this assessment follows a sequential series of tasks. The following aspects have been considered:

- A review of relevant planning scheme provisions and legislation to determine principle guidelines and conditions in relation to the protection of areas that are considered to have significant landscapes and aesthetic value and regulations for the consideration of potential impacts;
- A desktop and a field investigation to identify the landscape character, in relation to the existing natural and built landscape patterns surrounding the pipeline corridors and associated infrastructure and their visual quality classification. A scale of 'low, medium or high' is used;
- A desktop and a field investigation to assist in identifying potential areas of visual exposure along the pipeline corridors;
- A summary of potential impacts on landscape and visual amenity values due to the construction of the pipeline and associated infrastructure and the identification of sensitive scenic locations;
- Suggested mitigation measures in relation to landscape and visual impacts during construction and operation phases; and
- Summary of impacts and recommendations.