



Comments on

Water Availability and Forest Landuse Planning Tool Scoping Paper



25th August 2008

Prepared for: Department of Primary Industries and Water (DPIW)

DOCUMENT INFORMATION

PROJECT TITLE	Review of Forest Landuse Planning Tool
CLIENT ORGANISATION	Department of Primary Industries & Water (DPIW)
CLIENT CONTACT	David Nicholls
PROJECT MANAGER	Chris Thompson
PROJECT REFERENCE	5ForestIntercept

REVISION STATUS **Draft for Client Review**

DATE: **25/08/2008**

PREPARED BY: **Chris Thompson, Dr Rachel Walker**

APPROVED BY: **Chris Thompson**

Signature: 

EXECUTIVE SUMMARY

General Comments

It needs to be understood that this document is a peer review of the tool being developed to model interception of water use by changes in land use. Specifically those involved with forestry. It is not a review of the issues associated with interception itself. Notwithstanding this the following comments are made to assist in the process.

It is suggested that one of the more likely public issues will manifest as a short to medium term effect in small sub catchments, and therefore it may be worthwhile considering local catchment stakeholders in the development of Forest Practices plans. This would ensure that local springs and bores are protected. This will likely require the registration and licencing of all groundwater abstraction prior to being practical implemented.

Overview of Scoping Paper

- The agricultural community has long anticipated a tool such as the *Water Availability and Forest Landuse Planning Tool* to enhance understanding of issues related to forestry interception of water for downstream agricultural users.
- On the basis of information provided in the Hydro Tasmania Scoping Paper, and the briefings provided by DPIW and hydro Tasmania hydrology staff the outline of the *Water Availability and Forest Landuse Planning Tool* meets the requirements of the Consultancy Brief provided by DPIW.

We believe that there are some considerations that should be taken into account in the implementation of such a tool

Technical Considerations

- The forestry datasets that will be used as inputs to the *Water Availability and Forest Landuse Planning Tool* are crucial to ensuring representative model outputs. It is critical that these datasets contain information on ALL forestry land use in the State, not just forests managed by Forestry Tasmania. Private timber companies are currently the largest plantation managers in the State, and their role will only continue to grow.
- In the experience of ARM, WIMS has the potential to reasonably underestimate the true volumes of catchment extractions. The *Water Availability and Forest Landuse Planning Tool* should seek to deliberately use the most conservative estimates from WIMS eg. include all current, expired and cancelled allocations as Surety 1. There is no doubt that DPIW are actively working to improve these datasets.
- ARM believes that the design of the Water Availability and Forest Landuse Planning Tool should ultimately allow for real life inputs from the Ajeti system and Hydro, rather than estimated inputs from WIMS.
- To date, there has been no licensing and limited formal recording of groundwater abstractions in Tasmania. Certainly, no groundwater extractions are recorded in WIMS. Increasingly, farmers are looking to bores as an alternate water source. Anecdotally, farmers are already concerned about the impact of plantations on aquifer recharge zones. Groundwater considerations should be an important component of the Planning Tool. Correspondingly a lack of sound groundwater data can skew the measured outcomes from land use interception if hydrological measuring station data is not used. The meander catchment is a classic example where a proliferation of groundwater bores have been put in place in the past 3 years. This has occurred alongside the development of significant new plantation forestry. These bores would have likely usage in excess of 20 ML/day
- The comments ARM has provided are based on a sound understanding of catchment hydrology, however, given the complexity of the hydrological modelling involved, the comments can be at a high level only.

Implementation Considerations

- The Scoping Paper outlines that training in the use of the *Water Availability and Forest Landuse Planning Tool* will be provided to 2 staff in DPIW's Water Resource Division.
- Key regulatory mechanisms for water allocation in Tasmania is based on preparation of Water Allocation Assessment Reports (WAARs). The WIMS database is updated on basis of approved water allocations as assessment through the WAAR and Dam Assessment Report (DAR) process.
- Preparation of Water Allocation Assessment Reports (WAARs) is based entirely on SKM hydrology model, which includes no consideration of forestry on catchment hydrology.
- It is essentially the case that most WAARs are now developed by Private consultants on behalf of private proponents, due to high workload of DPIW Water Resource Staff. It should be noted that ARM are are significant provider of these services.
- It is suggested that technical service providers involved in the preparation of DARs and WAARs be given access to outputs from the *Water Availability and Forest Landuse Planning Tool*, to ensure the best information goes into the development of any new projects.

Once the farming sector becomes aware of the applicability of the *Water Availability and Forest Landuse Planning Tool*, farmers will be asking private technical consultants to consider its implications in relation to their own farm and business circumstances, thus the most efficient and timely uptake of the *Water Availability and Forest Landuse Planning Tool* will be ensured if approved private sector providers are given access the tool.

- The potentially sensitive nature of outputs from the *Water Availability and Forest Landuse Planning Tool*. We recommend that the tool and tool training only be made available to approved technical consultants, on the basis of a binding confidentiality and licensing agreement.

- It is understood the modelling system is to be based around the TasLucas system which is based on TasVeg mapping. Experienced gained by ARM staff during the implementation of the Meander Dam project has been that the TasVeg map system needs some significant updating and ground truthing. This is an area that may need attention.

CONTENTS

EXECUTIVE SUMMARY	ii
1. TECHNICAL CONSIDERATIONS	1
1.1 Reliability of Input Data	1
1.1.1 Forest Groups and Tabular Forest Land-Use Datasets	1
1.1.2 WIMS Dataset	1
1.1.3 Incorporation of Ajenti Telemetry System	2
1.2 Groundwater	2
1.3 Vegetation Mapping	3
2. IMPLEMENTATION CONSIDERATIONS	4

1. TECHNICAL CONSIDERATIONS

1.1 Reliability of Input Data

1.1.1 Forest Groups and Tabular Forest Land-Use Datasets

The Tasmanian reality is that many farmers are more concerned about the impact of plantations established and managed by private companies than they are about the impact of forests managed by Forestry Tasmania. This is particularly true in catchments where many farmers have seen neighbouring farms being sold to private companies for tree plantations.

It will be vital that the input forestry datasets cover plantation and forestry landuse on private land ie. Land owned and managed by private companies (eg. Gunns, FEA, Auspine, Great Southern) and private individuals (significant agroforestry plantations)

1.1.2 WIMS Dataset

Whilst WIMS is undeniably the most reliable dataset on water allocations, and has come ahead significantly in recent years, with DPIW water management branch is actively working to update the data. ARM staff practical experience is it is likely that WIMS potentially still represents a reasonable **underestimation** of water take in Tasmania. Daily, we are working with farmers who have discrepancies between dam volumes and river takes and their water licence volumes. Inevitably, updating on information on farms due to new projects highlights data sets are less than storage volumes and annual takes. A typical scenario might be a 200 ML dam with a licence for 30 ML recorded on WIMS. ***The cumulative effect of multiple underestimates and unlicensed extractions is currently unknown.***

In addition to underestimates of allocations, there is a level of incompleteness to the WIMS dataset. For example, for many extractions there is no recorded Water Surety Level eg. a surety of "0" is recorded for a lot of entitlements. In addition, to uncertainty regarding surety levels, there uncertainty in the farming sector regarding the status of Current, Expired and Cancelled extractions. Some farmers would not know the status of their water licence and continue to use expired or cancelled takes without knowing.

ARM believes the *Water Availability and Forest Landuse Planning Tool* should seek to deliberately use the most conservative estimates from WIMS eg. include all current, expired and cancelled allocations as Surety 1.

1.1.3 Incorporation of Ajenti Telemetry System

The Ajenti Telemetry System which will be installed on water meters throughout the State is likely to ultimately provide a better estimate of true water extractions from catchments. **ARM believes that the design of the *Water Availability and Forest Landuse Planing Tool* should ultimately allow for real life inputs from the Ajenti system, rather than estimated inputs from WIMS.**

ARM assumes that the Hydro Tasmania data entered into the Planning Tool will be current and accurate.

1.2 Groundwater

To date, there has been no licensing and limited formal recording of groundwater abstractions in Tasmania. Certainly, no groundwater extractions are recorded in WIMS. Increasingly, farmers are looking to bores as an alternate water source. Anecdotally, farmers are already concerned about the impact of plantations on aquifer recharge zones.

ARM has provided opinion to the developers in respect of the extent that the *Water Availability and Forest Landuse Planning Tool* incorporates groundwater considerations. Will the only consideration of groundwater be that which is factored in as part of the AWBM. Will this be adequate to understand the impact of forestry on aquifer recharge zones.

ARM believes that the significance of the *Water Availability and Forest Landuse Planning Tool* is only going to increase with time, given the potential impacts of climate change, expansion of plantation forestry and expansion of irrigated agriculture in Tasmania. On the basis on an initial review, the Scoping Paper developed by Hydro Tasmania appears to meet the Consultancy Brief as outlined by DPIW.

1.3 Vegetation Mapping

The modelling system as we understand it to be based around the TasLucas system which is based on TasVeg mapping. Experience gained by ARM staff during the implementation of the Meander Dam project has been that the TasVeg map system needs some significant updating and ground truthing. This is an area that may need attention.

2. IMPLEMENTATION CONSIDERATIONS

Currently DPIW Water Resource staff are heavily committed to existing projects. The ongoing drought season has imposed heavy workloads on all Water Resource staff, and a number of State and Federal project initiatives indicate that staff will likely continue to be heavily committed, even if the drought does let up.

To date, a key role of Water Resource staff and Regional Water Management Officers been the preparation of documentation in relation to new dam construction, dam upgrades and water allocations and licensing. Tangibly, this is through the preparation of Dam Assessment Reports (DARs) and Water Allocation Assessment Reports (WAARs). In recent times DPIW has commenced outsourcing all work in relation to preparation of DARs and WAARs.

Currently there are a number of service providers (including ARM) who undertake to complete these documents on behalf of DPIW and have considerable expertise in this area, which is important as these two documents are critical in maintaining regulation of Tasmanian water resources.

If outsourcing does continue, it is particularly important that external service providers have access to all tools that help inform water allocation. Currently, the Water Allocation Assessment Report document is based entirely on using the SKM Tool, ***which includes no consideration of forestry impacts on hydrology.***

Unless external service providers involved in the preparation of DARs and WAARs are given access to outputs from the *Water Availability and Forest Landuse Planning Tool*, a huge component of its value to ensuring sustainability of Tasmanian water resources will be lost.

In the process of preparing a DAR and WAAR, a site visit is made and considerable information about the offtake catchment and subcatchment is collated. The person writing the DAR and WAAR is in an ideal position to run the *Water Availability and Forest Landuse Planning Tool* in conjunction with the DAR and WAAR, and to make the most informed decision possible regarding the sustainable level of available water in the offtake catchment and subcatchment.

The high level of demand for technical water expertise in Tasmania means that the agricultural sector is increasingly recognising the high workload of DPIW Water Resource Staff and with the support of DPIW coming to the private sector for quicker turn-arounds on dam permit and water

licence applications. ARM anticipates that once the farming sector becomes aware of the applicability of the *Water Availability and Forest Landuse Planning Tool*, farmers will be asking private technical consultants to consider its implications in relation to their own farm and business circumstances.

Unless private technical consultants have direct access to tool outputs, they will be continuing to augment the workload of DPIW staff by asking them to run model scenarios for clients.

ARM appreciates the potentially sensitive nature of outputs from the *Water Availability and Forest Landuse Planning Tool*. It is recommend that the tool and tool training only be made available to approved technical consultants, on the basis of a binding confidentiality and licensing agreement.