1. Project Definition

Project ID	VicCI - Project 7
Project Title	Identification and application of improved methodologies for water availability projections
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2013	Milestone	Achievement Criteria	Due date
1	Six-monthly progress report including (1) Progress against deliverables, (2) Research effort over the period, (3) Science achievements, (4) Publications/presentations, (5) Communications	Report accepted by Project Management Committee for incorporation into overall Progress Report to be submitted to the Steering Committee	7 Sept 2013
2	Twelve-monthly progress report with the same 5 sections	Report accepted by Project Management Committee for incorporation into overall Progress Report to be submitted to the Steering Committee	21 Apr 2014
3	Draft Annual Work plan for next year	Work plan accepted by Project Management Committee to be recommended to the SC	21 Apr 2014
4	Report on research undertaken for year (objectives, methods, results, discussion, conclusions, links to other projects, next steps) as contribution to the Program Annual Research Report	Project Annual Research Report accepted by Project Management Committee for incorporation into overall Program Annual Research Report to be submitted to the Steering Committee.	1 May 2014
5	A paper investigating the rainfall-inflow relationship from key high yield catchments areas in the Victorian Alps.	Draft forwarded to the Project Management Committee	1 May 2014
6	Paper investigating strength and weaknesses of different bias-correction methodologies for use in hydrological applications.	Draft forwarded to the Project Management Committee	1 May 2014

2. Project Details

Introduction:	The aim of this project is to provide information about model behaviour and methodological choices that can improve the reliability and usefulness of runoff projections for mid- to long-term future time horizons (2040 and 2065), which are needed for the next round of Water-Supply Demand Strategies (WSDS) in 2016.
Activity 1. Description	Investigate simple methods to relate gridded rainfall to inflow observations for high yield catchment and their applicability to future climate simulations
Activity 1. Methodology	Test on historical observations the possibility of reconstructing inflows from catchment gridded rainfall for high yielding catchment across the Victorian Alps without using hydrological models but simply rely on observed relationship between high resolution rainfall and temperature and catchment yield. This approach will allow using analogue-based rainfall projections to provide future projections of inflows. Likely candidates are stations identified by the Bureau of Meteorology as Hydrologic Reference Stations (http://www.bom.gov.au/water/hrs/) across the Victorian Alps on rivers such as the Mitta-Mitta, Snowy Creek, Gibbo River, Buffalo River, Holland Creek, fifteen miles creek, Yea River as well as inflows to the Eildon lake and the Melbourne Water catchments. The final choice of locations and prioritisations of site to be done in consultation with DSE.
Activity 1. Deliverables	A paper investigating the rainfall-inflow relationship from key high yielding catchments areas in the Victorian Alps.
Activity 1. Outcomes	This work will provide simply derived future inflow projections which will serve as benchmarks for the more complex approaches to be tackled during the course of this project.
Activity 2. Description	Literature study of bias-correction techniques applied to climate change data. Testing of bias-correction methodologies using available climate change data sets, such as outputs from CMIP5, CCAM, or WRF.
Activity 2. Methodology	Review of peer-reviewed literature. Use methods identified in literature review and apply to publically available data sets from regional and global climate models. If appropriate and necessary, bias correction of analogue downscaling outputs from Activity 1 may also be investigated.
Activity 2. Deliverables	A paper on the suitability of different bias-correction methods for use in hydrological applications, including the key findings from the review of bias-correction methods and their associated assumptions/limitations.
Activity 2. Outcomes	List of methods most suited for bias-correction of climate change data used for deriving runoff projections in Project 7. This work will provide bias-corrected climate datasets to be used for runoff modelling later in the project.