

Annual report for Hoddles Creeks Water Supply Protection Area Stream Flow Management Plan 2003

Reporting period 1st July 2009 to 30th June 2010

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Foreword

This report is submitted to the Minister for Water and the Port Phillip and Westernport Catchment Management Authority in accordance with s32C of the *Water Act 1989*. A copy of this report is available for inspection at the offices of Melbourne Water. The broader public will be notified that the report is available by placing a notice in the newspaper, as required by section 32D of the *Water Act 1989*.

This report details Melbourne Water's activities in administering and enforcing the management plan, and provides information that demonstrates Melbourne Water compliance with the prescriptions of the plans and whether the objectives of the management plan are being achieved.

Area	Hoddles Creek Water Supply Protection Area
Segment	Surface water
Area Declared	24/11/2003
Plan Approved	24/11/2003
Allocation Limit	1,207 ML
Scheduled Plan Review	2008
Implementation Authority	Melbourne Water
Relevant CMA	Port Phillip and Westernport Catchment Management Authority
Report Period	1 July 2009 – 30 June 2010
Report Prepared by	Melbourne Water

1 Introduction

This is a report on Melbourne Water’s activities in carrying out its duties relating to administering and enforcing the Hoddles Creek Stream Flow Management Plan. This plan applies to the Hoddles Creek Water Supply Protection Area (Figure 1). This report is produced to comply with the Plan and sections 32C and 32D of the Water Act 1989.

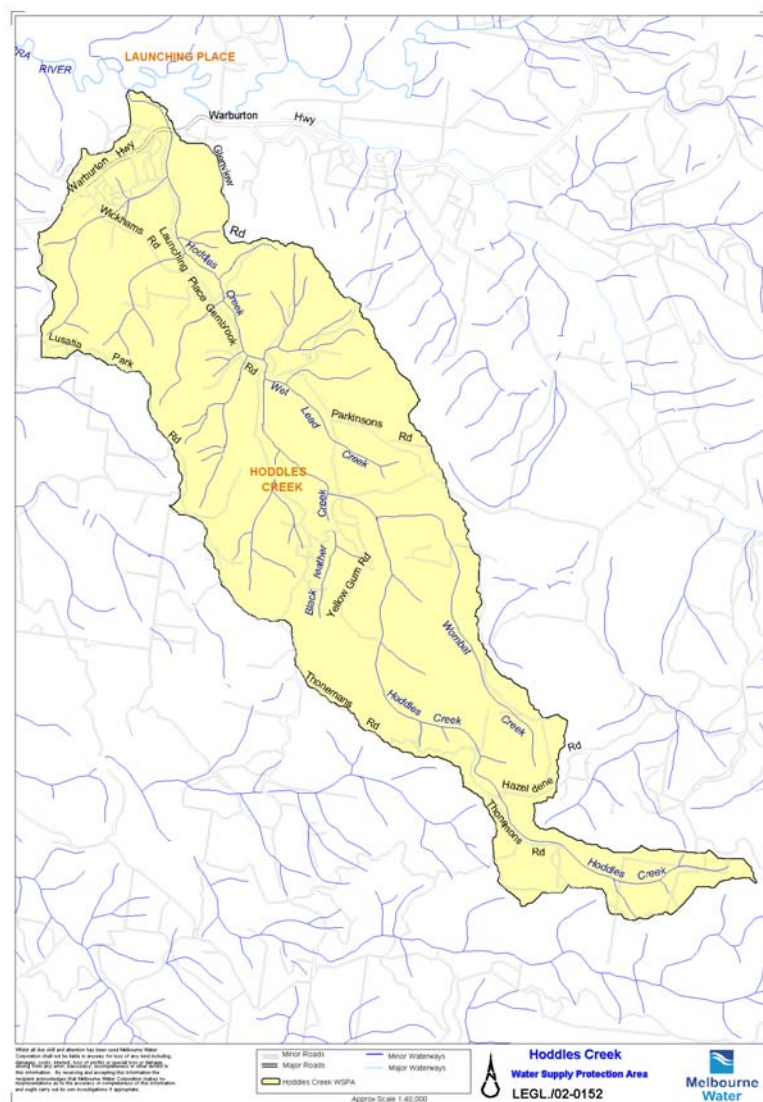


Figure 1 - The Hoddles Creek Water Supply Protection Area.

1.1 Objective of the plan

The objectives of the plan were set by the Stream Flow Management Plan Committee. The Water Act 1989 states:

“The object of a management plan is to make sure that the water resources of the relevant water supply protection area are managed in an equitable manner and so as to ensure the long-term sustainability of those resources.”

In addition to this general objective, additional objectives of the Plan have been identified by the Hoddles Creek Advisory committee for stream flow management, environmental management, water use, recreation and cultural heritage.

Stream flow Management

- To manage the stream to achieve agreed environmental flows, or to maintain natural flows as appropriate.
- To manage future developments to not adversely impact on existing stream users and the environmental health of the system.
- To allocate water in the future in accordance with the total available water resources in the catchment, having regard for available surface water and groundwater resources.
- To set environmental benchmarks and develop a monitoring and review program to determine the effectiveness of the agreed environmental flows

Environmental Management

- To maintain the existing species diversity and populations of aquatic fauna and, where possible, provide conditions that will encourage recolonisation of Hoddles Creek by fish species that can now utilise the upper Yarra system because of the Dight's Falls fishway.
- To meet environmental management objectives in accordance with *SEPP (Waters of Victoria)- Schedule F7 (Waters of the Yarra Catchment)(EPA VICTORIA 1999)*, while decreasing the sediment load entering the system, particularly from sources such as roads, secondary stream crossings (e.g. stock crossings) and on-stream dams.
- To maintain, and where possible, restore diverse and complex in-stream habitat (e.g. woody debris).
- To maintain remnants and rehabilitate degraded areas, of indigenous riparian vegetation along the banks of Hoddles Creek and its tributaries, and ensure adequate buffer strips between cleared land and the creeks.
- To maintain suitable River blackfish and Mountain galaxias habitat over the summer/autumn low flow period through the provision of environmental flows. These flows should also be suitable for macro-invertebrates, in-

stream flora and other vertebrates that are dependent on in-stream processes

Water Use

- To encourage the sustainable and efficient use of the available water resources.
- To ensure the equitable sharing of the available water resources between consumptive water users.
- To ensure that consumptive use does not degrade the environmental objectives of the system.
- To quantify total water use within the catchment including all stream flow, surface water

Recreational

- To provide recreational and aesthetic enjoyment opportunities in the Hoddles Creek system that are not in conflict with the conservation objectives of the system or the consumptive use of water.

Cultural and Heritage

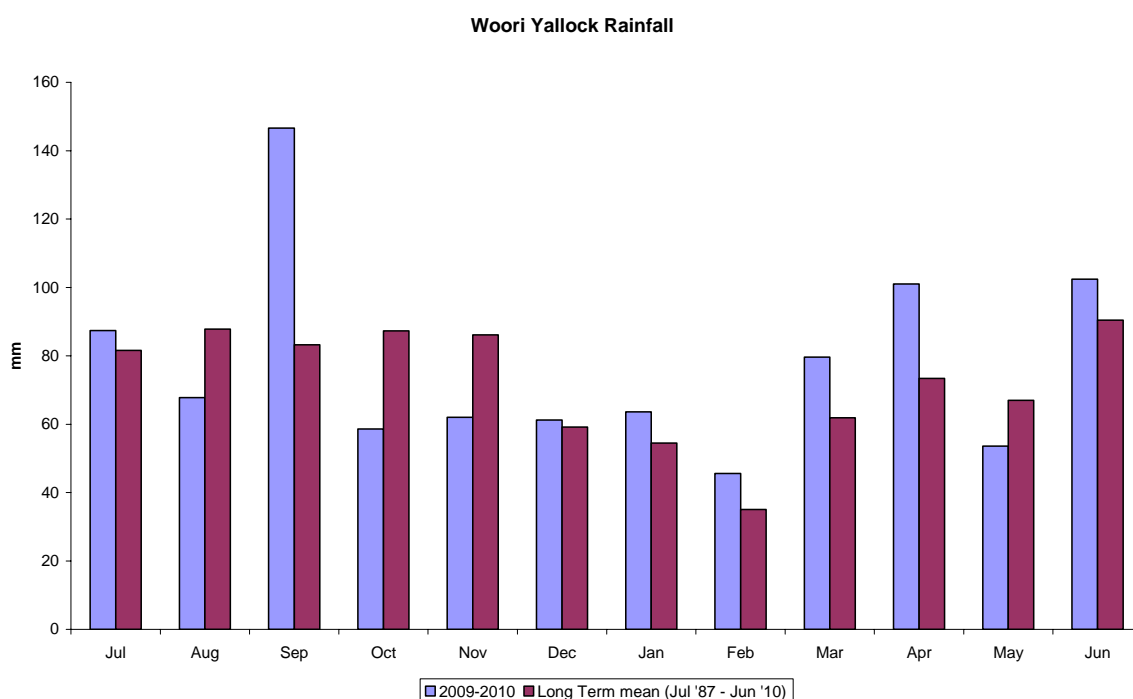
- To ensure that water use developments do not adversely impact on identified sites of cultural and heritage significance.

2 Key Observations

2.1 Rainfall

Rainfall is measured at a variety of sites in the catchment but the most representative site with long term data is Woori Yallock (586085). The total annual rainfall for the year was 929.40mm and this compares with a long term average (July 1987 to June 2010) of 867.50mm making the reporting year wetter than average.

Figure 2 - Monthly rainfall compared to long term average at Woori Yallock rain gauge (586085) 1 July 2009 to 30 June 2010.



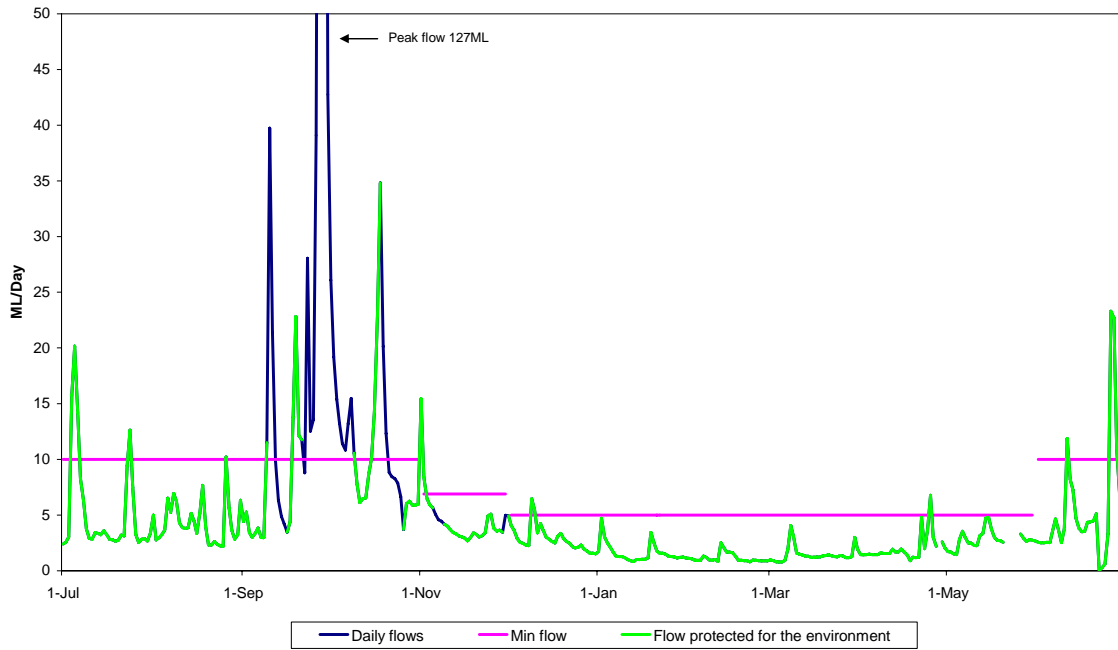
2.2 Water levels/flows

Stream flows are measured at the Launching Place gauging station (229224). A hydrograph and a flow duration curve for the reporting period are shown in Figures 3 and 4. The hydrograph shows the periods when bans were implemented in accordance with the requirements of the plan and when stream flows fell below the environmental flow level. The flow duration curve illustrates the prevalence of flows throughout the year.

Stream flows are recorded each morning to determine whether bans should be introduced or lifted for that day. The graphs below represent the daily stream flow at Launching Place and show both the minimum flow threshold (red line) and the periods when bans were actually implemented (green periods). It must be noted that bans are applied on the basis of changes in seven day average flows rather than the daily flows shown here. This is also discussed in Section 3.5.

Figure 3 – Hydrograph of mean daily flows at Launching Place gauging station, 1 July 2009 –30 June 2010. This is shown over the full range of flows (a) and for the lower flows (b). Flows that were protected for the environment are shown in green

(a)



(b)

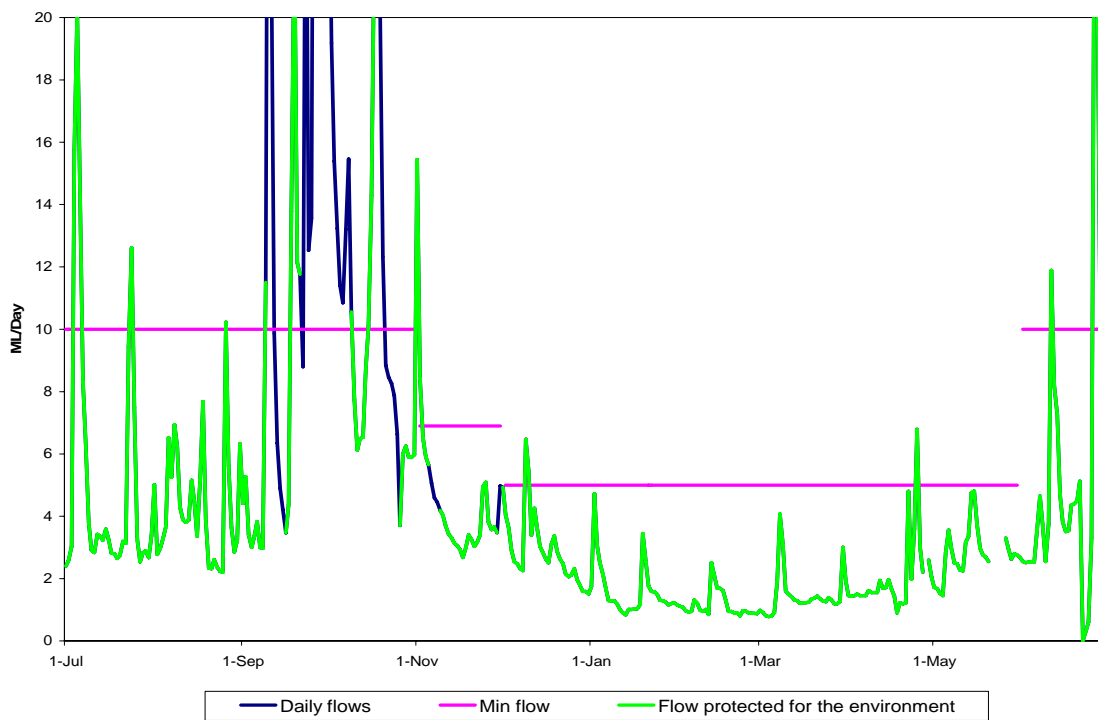
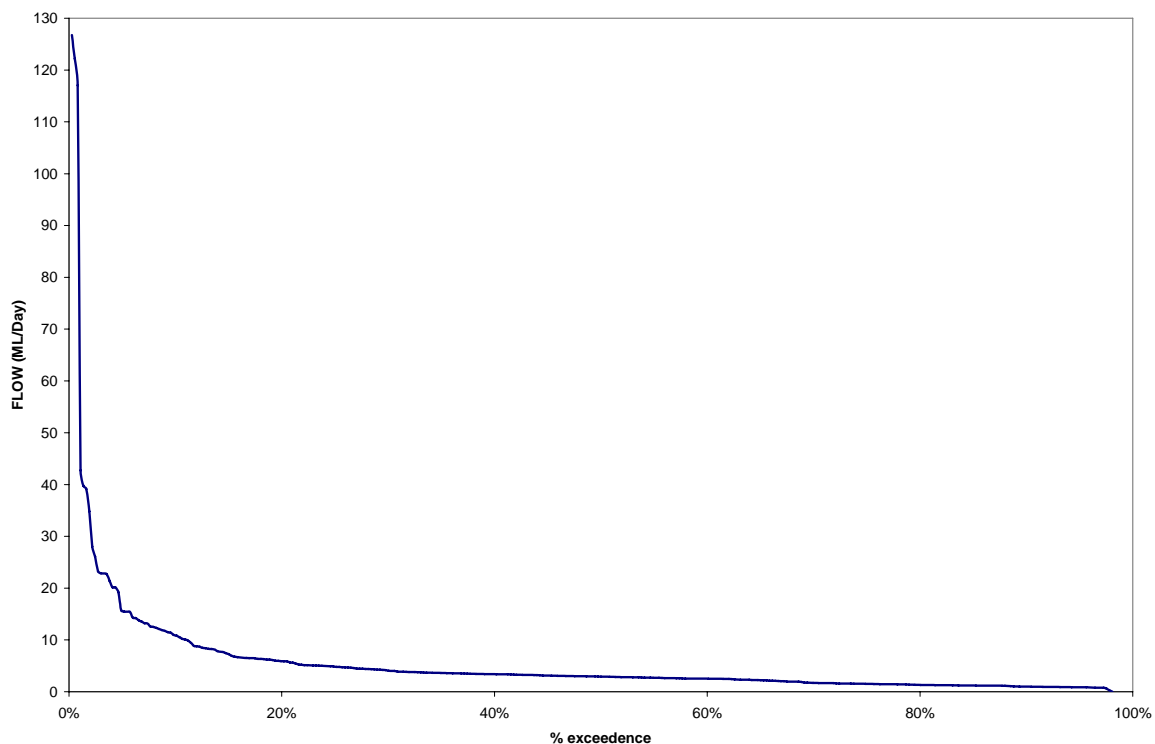


Figure 4 – Flow duration curve of mean daily flows at Launching Place gauging station between 1 July 2009 and 30 June 2010



2.3 Bans and restrictions on taking and using water

In order to protect environmental flows, the Hoddles Creek plan applies a ban during the low flow period 1st December – 31st May when flows fall below a trigger level of 5.0 ML/day at the Launching Place gauge. During the high flow period 1st June to 31st October a trigger level of 10 ML/day is applied at the gauge. A shoulder period between 1st and 30th November applies between the low and high-flow periods where a trigger level of 6.9 ML/day applies at the gauge. All of the bans and relief triggers apply to 7 day rolling averages.

Bans were in place for most of the season within the Hoddles Creek catchment, with 34 days of pumping available for the year. Bans were applied to licences in the Hoddles Creek catchment between the following periods:

- 1st July to 9th September
- 16th September to 21st September
- 9th October to 18th October
- 26th October to 5th November
- 9th November to 29th November
- 1st December to 30th June

No of days on ban	No of days water available
331	34

Table 1 - Summary of water availability in Hoddles Creek from 1st July 2009 to 30th June 2010

2.4 Water Use

In table 2 the water use in the catchments as at 30th June 2010 is presented.

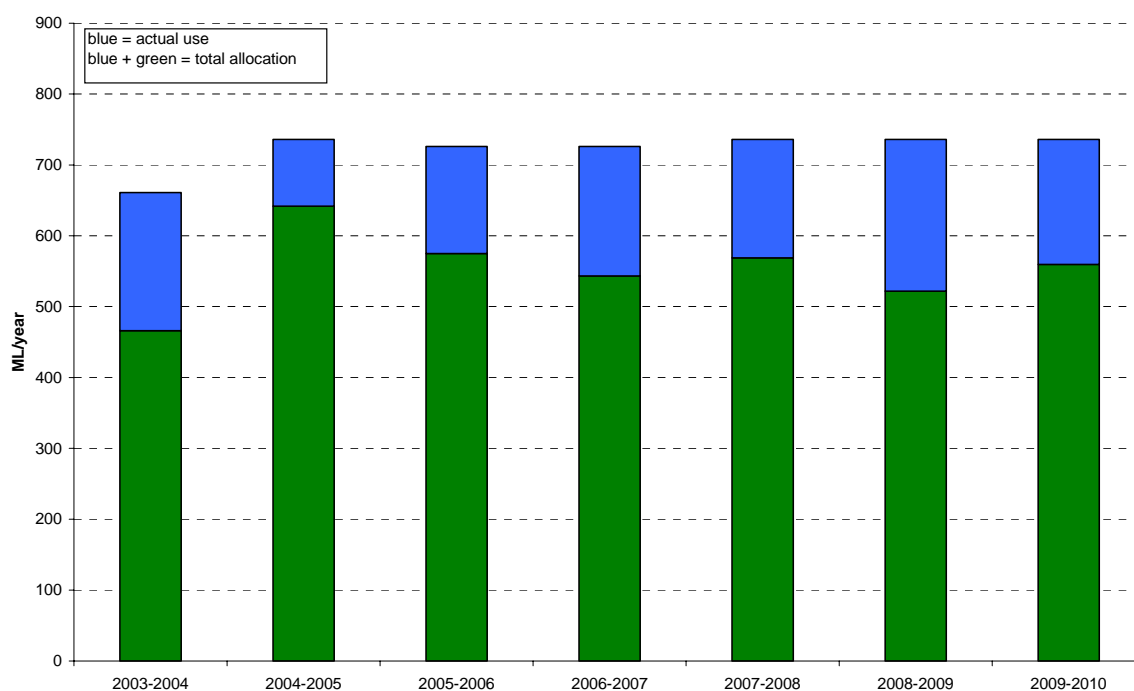
	2009/10
PCV (ML/year) or WSPA Allocation Limit	1,207
No. of licences	37 (including 5 farm dam registrations and 2 farm dam licences)
Total allocated volume (ML)	736
No of metered licences	(including 83 ML farm dams registrations and 46 ML of farm dam licences)
No. of metered licences	14
Total metered volume (ML)	533
Actual metered used (ML)	176.51
Total use	176.51
Metered use as % of allocation	23.98%
Metered use as % of PCV or WSPA allocation limit	14.62%
No. of licences with use greater than allocation	nil
Number of days on ban	331
Number of days on restriction	0
Number of non-compliance incidents	nil
Permanent transfers within WSPA (ML)	0
Temporary transfers within WSPA (ML)	0
Permanent transfers out of WSPA (ML)	0
Temporary transfers out of WSPA (ML)	0

Table 2 – Detail on water use during the year

2.5 Water use since introduction of plan

A summary of the water used in the catchment since the start of the plan is detailed in Table 3 and a summary of actual use compared to total allocated is presented in Figure 5.

Figure 5 - Summary of actual use compared to total allocation



	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
WSPA Allocation Limit	1,207 ML	1,207 ML	1,207 ML	1,207 ML	1,207 ML	1,207 ML	1,207 ML
No. of licences	30 (plus 4 farm dam registrations)	37 (including 5 farm dam registrations and 2 farm dam licences)	37 (including 5 farm dam registrations and 2 farm dam licences)	37 (including 5 farm dam registrations and 2 farm dam licences)	37 (including 5 farm dam registrations and 2 farm dam licences)	37 (including 5 farm dam registrations and 2 farm dam licences)	37 (including 5 farm dam registrations and 2 farm dam licences)
Total allocated volume	661 ML (plus 68 ML farm dams registrations complete)	736 ML (including 73 ML farm dams registrations and 46 ML of farm dam licences)	726 ML (including 73 ML farm dams registrations and 46 ML of farm dam licences)	726 ML (including 73 ML farm dams registrations and 46 ML of farm dam licences)	736 ML (including 83 ML farm dams registrations and 46 ML of farm dam licences)	736 ML (including 83 ML farm dams registrations and 46 ML of farm dam licences)	736 ML (including 83 ML farm dams registrations and 46 ML of farm dam licences)
No. of metered licences	23	13	13	13	14	13	14
Metered volume used	194.93ML	94.3 ML – all year licences	151.0 ML – all year licences	182.8.0 ML – all year licences	167.2. ML	162.8 ML – all year licences	533
Total use	194.93 (plus farm dams & un-metered stock and domestic)	94.3 ML (plus winter fill, farm dams & un-metered stock and domestic)	151.0 ML (plus winter fill, farm dams & un-metered stock and domestic)	182.8 ML (plus winter fill, farm dams & un-metered stock and domestic)	167.2 ML (plus, un-metered farm dams & stock and domestic use)	214.2 ML (plus winter fill)[1] (plus, un-metered farm dams & stock and domestic use)	176.51
Metered use as % of allocation	16.20%	12.80%	20.8% (all year licence volume as a percentage of the total allocation)	25.20%	22.70%	29.10%	23.98%
No. of licences with use greater than allocation	nil	nil	Nil	nil	nil	nil	nil
Metered use as % of Allocation Limit	16.20%	7.80%	12.5% (all year licence volume as a percentage of the WSPA allocation limit)	15.10%	13.90%	17.70%	14.62%

Table 3 - summary of the water use in the catchment since the start of the plan

2.6 Non compliance

Melbourne Water is not aware of any non-compliance during the year by licence holders in Hoddles Creek.

Melbourne Water has reviewed the process for implementing and recording of bans and restrictions. This process has been undertaken manually in the past requiring daily assessment and there had been occasions when bans were not correctly applied.

Melbourne Water has now automated the system for setting of bans and restrictions, which has overcome the problems associated with resourcing and human error. Automating the system involved converting existing 'dial up' flow gauges to radio telemetry and incorporating them into the Melbourne Water "SCADA system". Now this work has been completed, the process for determining and updating ban and restriction status has been automated for both the internet and telephone messaging service.

3 Plan Implementation

3.1 Stream flow gauge maintenance and operation

The Launching Place gauge (229224) was visited regularly by Melbourne Water's contractors, ALS. During 2007-2008, , Melbourne Water installed a low profile weir which has improved the reliability and accuracy of the data. This has been seen over the past two years with the production of quality flow data.

A record of gauged flows is shown in Figure 3. The daily flow at this gauge is also available online at www.melbournewater.com.au

3.2 Meter installation and reading

Meters have been fitted to all active commercial or irrigation licensees' equipment. This does not include registered farm dams or domestic and stock licences, which are not required to be metered.

Meters were read and checked on or around July 2009. In addition, ten "SMART" meters have been fitted to the largest and most active diverters in the catchment. SMART meters have been fitted through a joint venture with the Department of Sustainability and Environment. The meters have data loggers linked via communications, allowing the data to be downloaded in the office and the information viewed over a secure web link. Data collected can be used for improved hydrological modelling and enhanced water resource

management decisions e.g. rostering, compliance, improving environmental flows.

Automating meter readings allows Melbourne Water to increase the number of meter readings during drought conditions to ensure compliance with the Stream Flow Management Plan and protect environmental flows. Increased number of readings will provide our customers better information on their water usage patterns.

The data loggers feed information into a central internet portal via email through existing communications networks. Customers could potentially securely access this up to date information from anywhere at anytime via the internet. Recorded data is instantly viewable via trends, tables and other graphical display measures, simplifying the process of information sharing. Using this innovative method, historical comparisons can be achieved and operational decisions can be made faster and more accurately.

3.3 New or cancelled licences

There were no new or cancelled licences during 2009/10. A list of licences in the Water Supply Protection Area at 3rd September 2010 is shown in Appendix One.

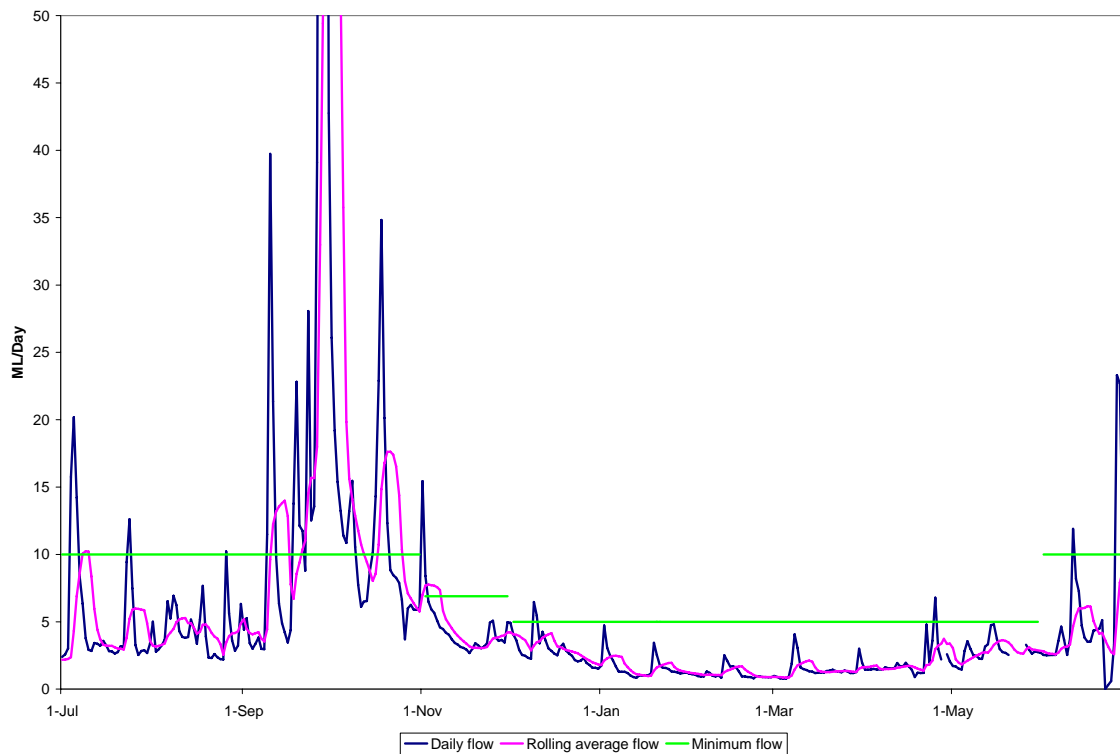
3.4 Licence trades/transfers

No trading occurred during the 2009/10 season in this catchment.

3.5 Maintaining environmental flows

To maintain environmental flows, bans on taking of water were implemented a number of times throughout the year (as detailed in section 2.2). As bans to protect the environmental flows are implemented using seven-day average flows, there is a small lag between the dropping or rising of flows across the environmental flow threshold and the introduction or lifting of a ban. This favours the environment before bans are implemented while flows are rising, but favours the water users before bans are lifted as flows are dropping. This effect can be seen in Figure 6 which shows the comparison of daily flow and 7 day rolling average flows.

Figure 6 - Comparison of daily flows and 7 day rolling average flows for Hoddles Creek between 1 July 2009 and 30 June 2010.



3.6 Monitoring the effect of the plan

Section 18 of the Hoddles Creek Stream Flow Management Plan stipulates that Melbourne Water must develop a program to monitor the implementation of the Plan. This monitoring program was developed in 2007 and is part of a larger Yarra Catchment Stream Flow Monitoring Plan. The Monitoring Program is in addition to other general monitoring activities undertaken by Melbourne Water such as collecting stream flow and water usage data, along with water quality information.

3.7 Plan Review

Melbourne Water completed a review in 2009 of the operation of the Hoddles Creek Stream Flow Management Plan as detailed in Section 20 of the Plan. This review was stipulated to take place within 5 years of the plan's implementation. As part of the Review, an Environmental Flows Study was completed and a Resource Allocation Model (REALM) was built for the catchment. A number of amendments to the plan have been proposed from the Review. The process for implementing amendments to the existing plan is currently being investigated.

3.8 Other reporting requirements

In its annual report Melbourne Water is also required to report on:

Reporting requirement	2009/10 Report
Activation of sleeper or dozer licences	None that MW is aware of
The extent of water usage resulting from transfers	None
Location and impact of new take and use licences	None
Development within the catchment as a result of subdivision	Not known – Melbourne Water is not the authority responsible for approval of subdivisions
The impact that any new development may have on the security of existing users or on flows in the waterway	To Melbourne Water's knowledge no new irrigation development has occurred

Table 4 – Other reporting requirements

4 Plan Compliance

Compliance against each prescription in the management plan is presented in the following table.

Prescription no	Plan requirement	Activity/Reference	Complies (Y/N)
1 – 5	None	N/A	N/A
6	<i>Specific objectives</i>	Please see <i>Section 1.1 Objectives</i> or <i>Schedule 2 of the Plan</i> for more information.	Yes
7	<i>Administration and Enforcement</i>	Activity undertaken as part of normal business operation.	Yes
8	<i>Permissible Annual Volume</i>	Melbourne Water is not aware of any non-compliance. Please see <i>Section 2.4 Water Use</i> for more information.	Yes
9	<i>Prohibitions on Granting New Licences</i>	No new licenses were granted or licenses cancelled. Please see <i>Section 3.3 New or Cancelled Licences</i> for more information.	Yes
10	<i>Transferring Licenses</i>	No trading occurred. Please see <i>Section 3.4 License Trades/Transfers</i> for more information.	Yes
11	<i>New Dams</i>	No new dams were licensed.	Yes
12	<i>Rosters and Restrictions</i>	Bans were in place for most of the season (331 days). Please see <i>Section 2.3 Bans and Restrictions</i> or <i>Schedule 3 of the Plan</i> for more information.	Yes
13	<i>License Conditions</i>	Licenses granted have been subject to the conditions as set out in Schedule 4.	Yes
14	<i>Stream Flow Monitoring Program</i>	Please see <i>Section 3.1 Stream Flow Gauge Maintenance and Operation</i> for more information.	Yes
15	<i>Installing Meters</i>	'Smart Meters' have been installed in the catchment. Please see <i>Section 3.2 Meter Installation and Reading</i> for more information.	Yes

Prescription no	Plan requirement	Activity/Reference	Complies (Y/N)
16	<i>Reading Meters</i>	The use of 'smart meters' has enabled increased meter readings, data accuracy and data availability. Please see <i>Section 3.2 Meter Installation and Reading</i> for more information.	Yes
17	<i>Maintaining Environmental Flows</i>	Environmental Flows were maintained for a large proportion of the year as demonstrated by Figures 3a and 3b. For more information please see: <ul style="list-style-type: none"> • <i>Section 3.5 Maintaining Environmental Flows</i> and • <i>Section 2.3 Bans and Restrictions</i> • <i>Section 2.2 Water Levels and Flows</i> 	Yes
18	<i>Monitoring Plan Implementation</i>	This monitoring program was developed in 2007 and is part of a larger <i>Yarra Catchment Stream Flow Monitoring Program</i> . Please see <i>Section 3.6 Monitoring the Plan</i> for more information.	Yes
19	<i>Reporting</i>	2009-10 Annual Report submitted to Minister and Port Phillip and Westernport CMA. Copy available at MWC Offices and on MWC website www.melbournewater.com.au	Yes
20	<i>Review of Plan</i>	Plan was endorsed in 2003 and reviewed in 2008/09. A number of amendments to the plan have been proposed from the Review. The process for implementing amendments to the existing plan is currently being investigated.	Yes

Table 5 – Compliance with prescriptions

Appendix One – Diversion Licence Database as at 03/09/2010

Licence no	Waterway	Total ML	Purpose	Licence type
465/788/0005	Blackleather Creek	2.00	Domestic & Stock	Diversion
465/780/0001	Hoddles Creek	2.00	Domestic & Stock	Diversion
465/780/0017	Hoddles Creek	2.00	Domestic & Stock	Diversion
465/780/0018	Hoddles Creek	2.00	Domestic & Stock	Diversion
465/780/0005	Hoddles Creek	2.00	Domestic & Stock	Diversion
465/780/0015	Hoddles Creek	2.00	Domestic & Stock	Diversion
465/787/0001	Wet Lead Creek	2.00	Domestic & Stock	Diversion
465/780/0024	Hoddles Creek	4.00	Domestic, Stock & Irrigation	Diversion
465/780/0021	Hoddles Creek	4.00	Domestic, Stock & Irrigation	Diversion
465/780/0004	Hoddles Creek	4.00	Domestic, Stock & Irrigation	Diversion
465/780/5001	Hoddles Creek	4.00	Domestic, Stock & Irrigation	Diversion
465/788/0007	Blackleather Creek	4.00	Domestic, Stock & Irrigation	Diversion
465/780/0010	Hoddles Creek	87.00	Irrigation	Diversion
465/780/5003	Hoddles Creek	120.00	Irrigation	Diversion
465/780/0006	Hoddles Creek	25.00	Irrigation	Diversion
465/780/0008	Hoddles Creek	5.00	Irrigation	Diversion
465/780/0012	Hoddles Creek	52.00	Irrigation	Diversion
465/780/0019	Hoddles Creek	114.00	Irrigation	Diversion
465/780/5014	Hoddles Creek	106.00	Off-Stream Dam Filling	Diversion
465/780/5000	Hoddles Creek	4.00	Off-Stream Dam Filling	Diversion
465/780/0002	Hoddles Creek	2.00	Off-Stream Dam Filling	Diversion
465/780/5004	Hoddles Creek	3.00	Off-Stream Dam Filling	Diversion
465/788/0002	Blackleather Creek	10.00	On-Stream Dam Filling	Diversion
465/788/0004	Blackleather Creek	10.00	On-Stream Dam Filling	Diversion
465/789/0001	Wombat Creek	3.00	On-Stream Dam Filling	Diversion
465/789/0002	Wombat Creek	12.00	On-Stream Dam Filling	Diversion
465/789/0003	Wombat Creek	9.00	On-Stream Dam Filling	Diversion
465/780/0016	Hoddles Creek	9.00	On-Stream Dam Filling	Diversion
465/788/5000	Blackleather	0.00	Power Generation	Diversion

	Creek			
465/780/0020	Hoddles Creek	2.00	Power Generation & Domestic & Stock	Diversion
465/780/5013	Hoddles Creek	21.00	Irrigation	Farm Dam Licence
465/780/5012	Hoddles Creek	25.00	Irrigation	Farm Dam Licence
465/780/5009	Hoddles Creek	15.00	Irrigation	Farm Dam Registration
465/787/5000	Wet Lead Creek	22.00	Irrigation	Farm Dam Registration
465/780/5010	Hoddles Creek	5.00	Irrigation	Farm Dam Registration
465/780/5011	Hoddles Creek	40.00	Irrigation	Farm Dam Registration
465/780/5005	Hoddles Creek	1.00	Irrigation	Farm Dam Registration
Total allocated volume		736.00		

Table 6 – Diversion licenses within the catchment