

Annual report for Plenty River Water Supply Protection Area Stream Flow Management Plan 2007

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 and notice of report availability will be published as required by s32D of the *Water Act 1989*.

The purpose of this report is to detail Melbourne Water's activities administering and enforcing the management plan, and provide information that is required to be reported under the plan.

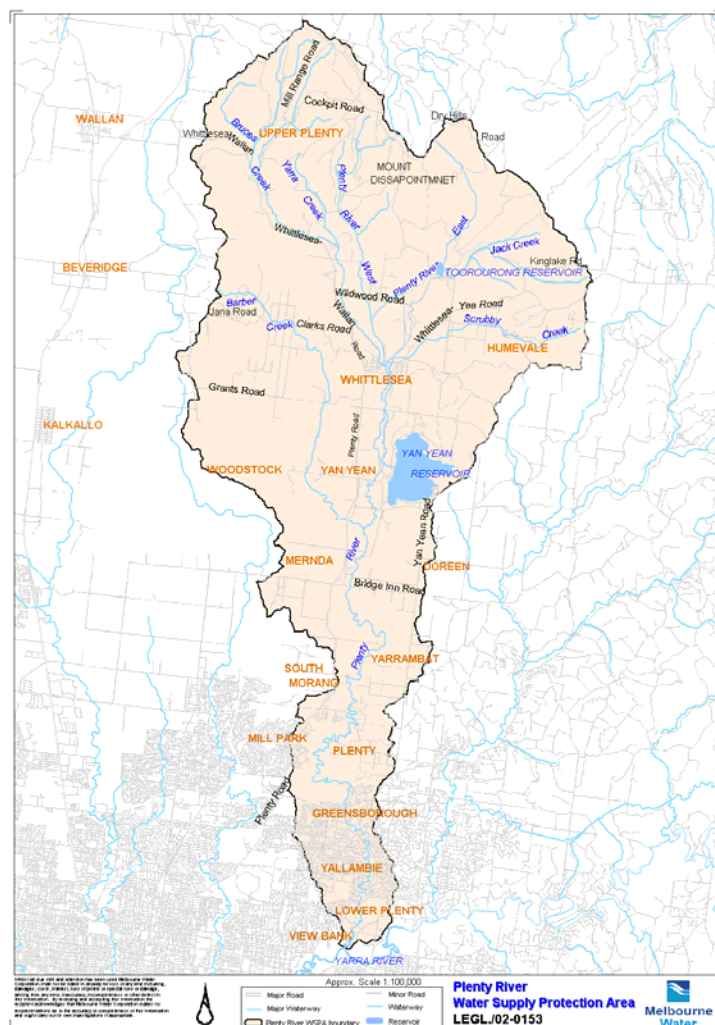
Area	Plenty River Water Supply Protection Area
Segment	Surface water
Area Declared	1999
Plan Approved	4 October 2007
Allocation Limit	669 ML
Scheduled Plan Review	2012
Implementation Authority	Melbourne Water
Relevant CMA	Port Phillip and Westernport Catchment Management Authority
Report Period	1 st July 2009 – 30 th 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 Plenty River Stream Flow Management Plan. This plan applies to the Plenty River Water Supply Protection Area (Figure 1). This report is produced to comply with the plan and the Water Act 1989.

This annual review was completed at the end of the 2009/10 reporting year for the Plenty River Stream Flow Management Plan. Annual reviews are required to be submitted to the Minister on or before September 30 reporting on the implementation of the Plan for the preceding financial year. The Plenty River Stream Flow Management Plan was approved in October 2007. This report covers the reporting period from 1 July 2009 to 30 June 2010 as required by section 32C(1)(a) of the Water Act 1989.

Figure 1 – The Plenty River 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, the committee has identified further objectives specific for the Plenty River Catchment. These objectives were developed following an analysis of the specific flow related issues facing the catchment including the nature of the streams, the current water use, land use practices, and fish populations expected to be present:

1. The surface water resources of the Plenty River Water Supply Protection Area are equitably shared between water users and the environment
2. The diversity of flow dependent species is maintained, and where possible migratory native fish species recolonise the Plenty River
3. Water quality is maintained in accordance with the State Environmental Protection Policy – waters of Victoria, Schedule F7 – Waters of the Yarra Catchment, 1999
4. In-stream habitats such as deep pools are maintained, and where possible, restored
5. River blackfish habitat is maintained
6. Migration and spawning of native fish species and stream forming processes such as channel scouring are occurring at sustainable levels
7. Use of available water resource is sustainable and efficient
8. Water users reliability of supply is protected along with the environmental condition of the Plenty River
9. Total water allocations are consistent with total available water resources in the protection area
10. Equitable access to water for existing users is maximised
11. Water users are involved in the ongoing management of water use licences in the Plenty River protection area
12. New tools and information for managing water resources are developed
13. Management of the Plenty River system is adaptive to allow for continual improvements for both the environmental and water use values

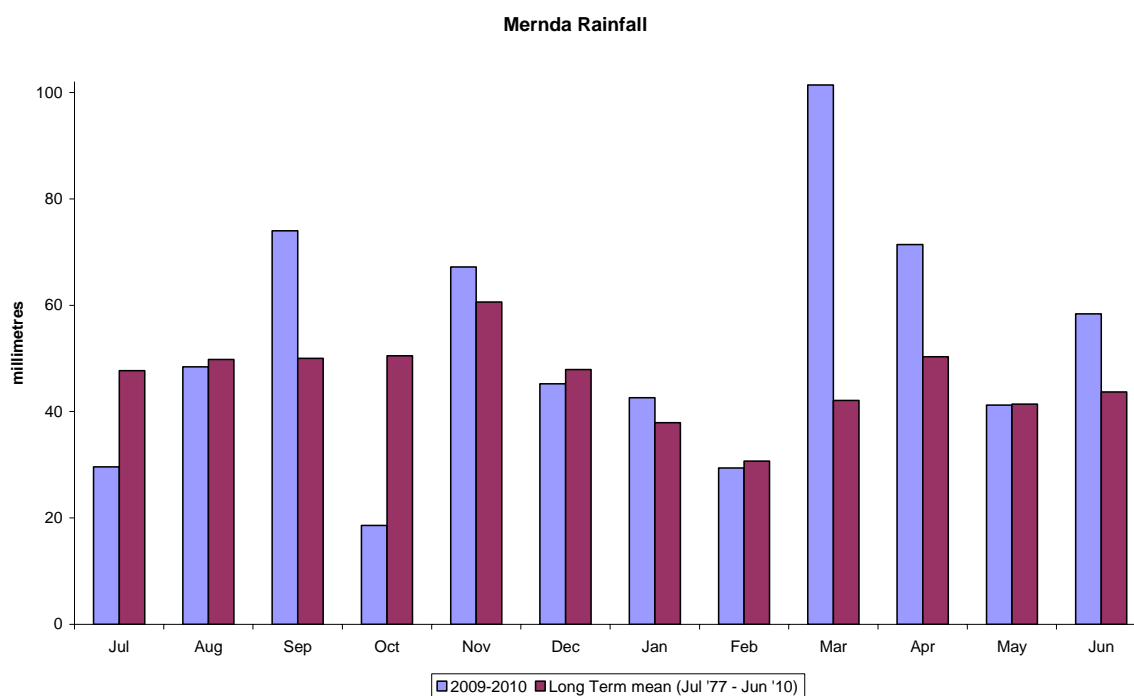
The SFMP objectives and targets are consistent with broad objectives set for the catchment by the Victorian Government and the Port Phillip Catchment and Land Protection Board including the State Environment Protection Policy, (Waters of Victoria) Schedule F7 (Waters of the Yarra Catchment) 1999, and the Port Phillip and Westernport Regional Catchment Strategy 2002.

2 Key Observations

2.1 Rainfall

Rainfall is measured at the rain gauge in Mernda (229616a). The total annual rainfall for the year was 627.4 mm and this compares with a long term average (July 1977 to June 2010) of 552.6mm, making the reporting year slightly wetter than the long term average.

Figure 2: Monthly rainfall compared to long term average at Mernda rain gauge



2.2 Water levels/flows

Stream flows are measured at the Plenty River at Mernda (gauge 229616A). Stream flows are recorded 24 hours a day, 365 days of the year and archived on the Melbourne Water Hydstra system. Each morning the flow data in the river is monitored to determine whether bans should be introduced or lifted for that day. A hydrograph for the gauge site is shown in Figure 3 along with a flow duration curve covering the reporting period in Figure 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 hydrographs 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.

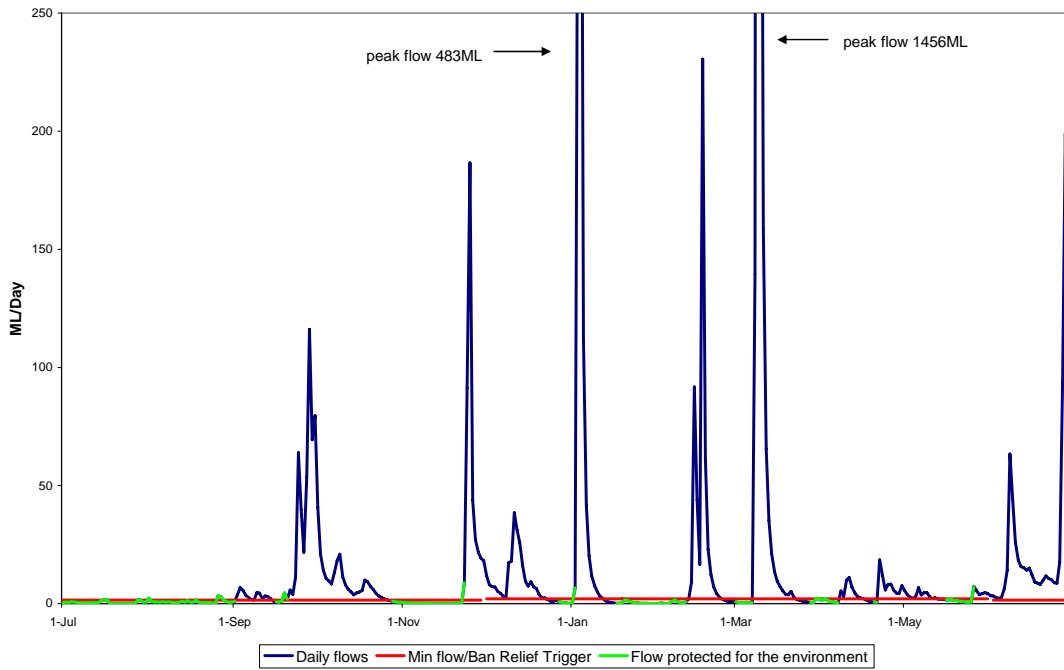
The compliance gauge for Plenty River is the Mernda gauging station. In this catchment Low-flow diversion restrictions are in place between 1 November and 30 April, with a trigger level of 1.5 ML/day applied to ban license holder from taking water from the catchment. This trigger is increased to 2.0 ML/day in the High-flow period from 1 May to 31 October (see table 1).

Table 1: Flow compliance triggers on Plenty River

Low-Flow Period			High-Flow Period (Winter-fill)		
Applicable Dates	BAN Trigger (ML/day)	RELIEF Trigger (ML/day)	Applicable Dates	BAN Trigger (ML/day)	RELIEF Trigger (ML/day)
01 Nov - 30 Apr	1.5	1.5	01 May - 31 Oct	2.0	2.0

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

(a)



(b)

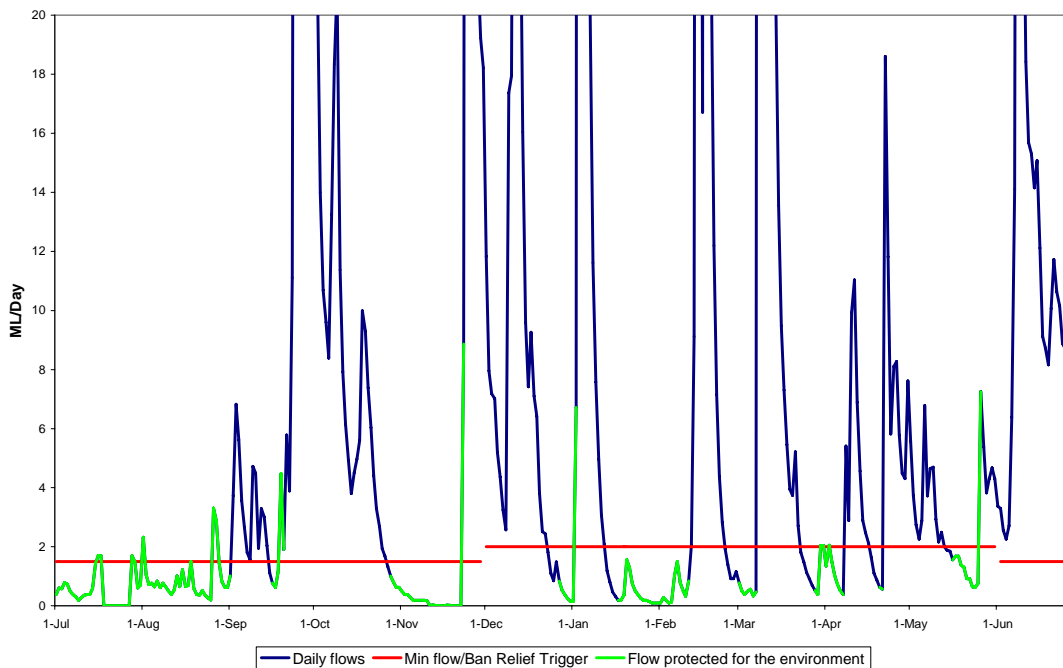
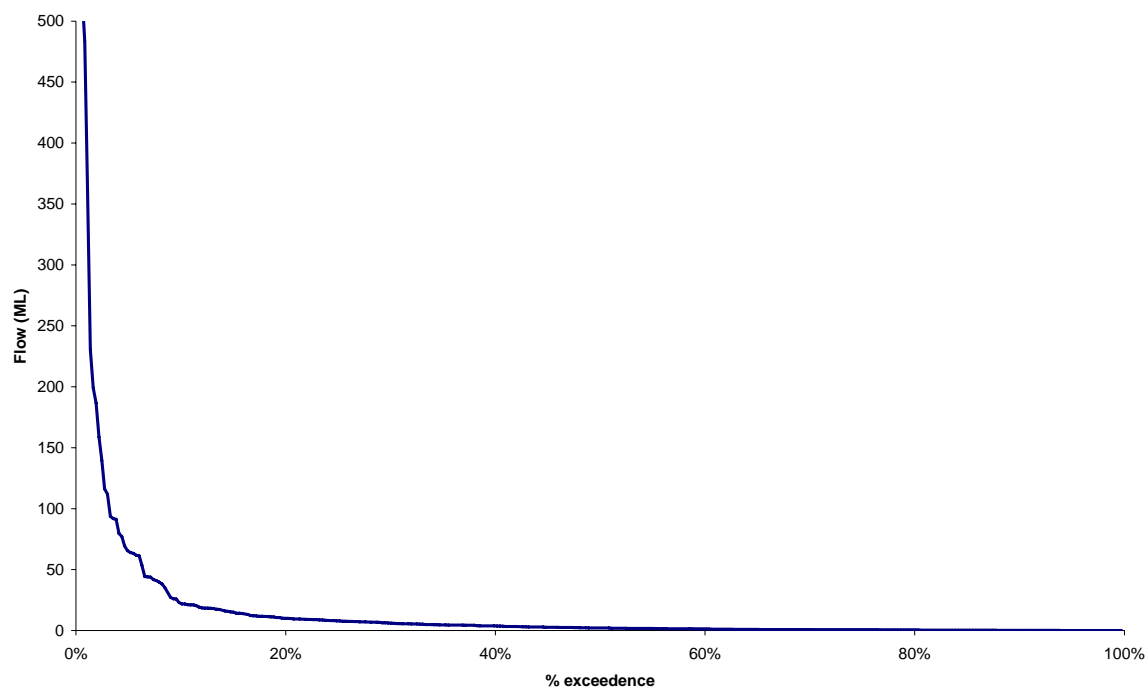


Figure 4 – Flow duration curve of mean daily flows at Mernda gauging station on the Plenty River between 1 July 2009 to 30 June 2010.



2.3 Bans and restrictions on taking and using water

Bans were in place for most of the season in the catchment. Bans were placed implemented depending on the flows in the river and were applied between:

- 1st July to 1st September 2009
- 16th September to 20th September 2009
- 28th October to 23rd November 2009
- 27th December to 2nd January 2010
- 17th January to 11th February 2010
- 1st March to 7th March 2010
- 28th March to 7th April 2010
- 20th April to 21st April 2010
- 16th May to 26th May 2010

Table 2 shows a summary of the water available within the Plenty River catchment. In effect, there were 206 days of pumping available during 2009/10.

Table 2: Summary of water availability in Plenty River from 1st July 2009 to 30th June 2010

No of days on ban	No of days water available
159	206

In early 2009 a large percentage of this catchment was affected by the bushfire and the catchment has been recovering since.

2.4 Water Use during 2009/10

Table 3 below details the water use in the catchments as at 30th June 2010.

Table 3 – Detail on water use during the year – Plenty River

	2009/10
PCV (ML/year)	699 ML
Licences (no.)	37 Licences (including 18 Farm dam; 1 farm dam licence)
Total allocated volume (ML/year)	686 ML (including 286 ML farm dams registrations and 10 ML farm dam licences)
No of metered licences	5
Total Metered Volume (ML)	187
Actual metered use (ML)	24.92
Total Use (ML)	24.92
Metered use as % of allocation	3.60%
Metered use as % of PCV	3.80%
No. of licences with use greater than allocation	0
Number of Ban days	159
Number of days on restriction	0
Number of non compliance incidents	2
Permanent transfers within WSPA (ML)	None in the reporting period
Temporary transfers within WSPA (ML)	None in the reporting period
Permanent transfers out of WSPA (ML)	None in the reporting period
Temporary transfers out of WSPA (ML)	None in the reporting period

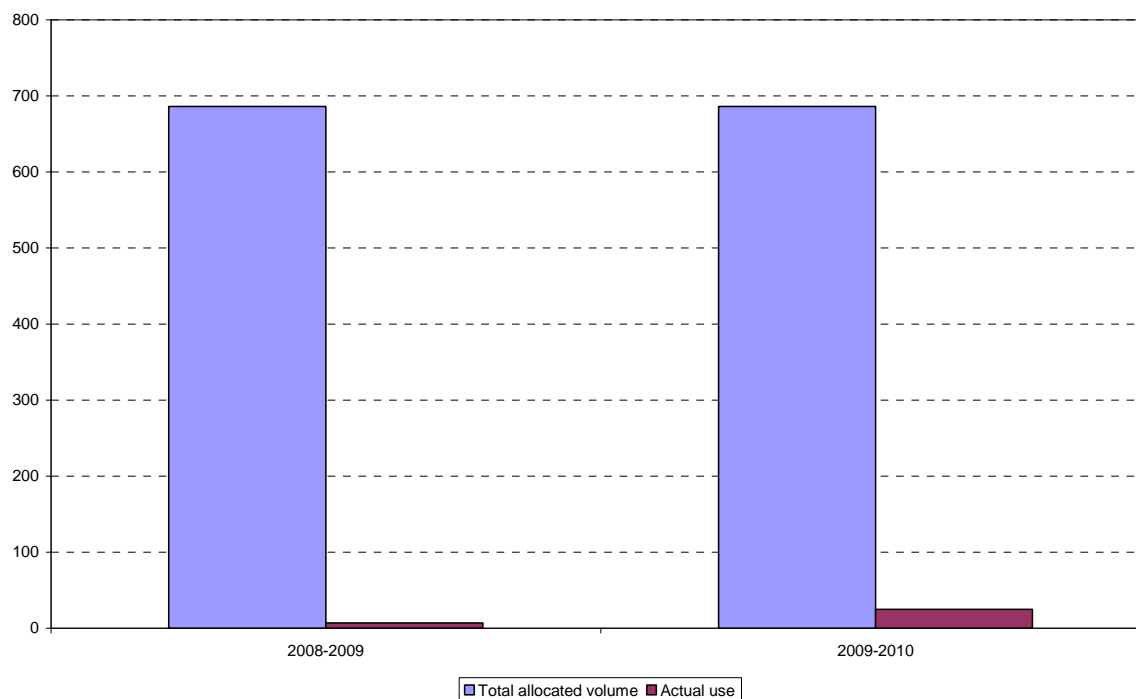
2.5 Water use since introduction of plan

A summary of the water used in the catchment since the start of the plan is detailed in Table 4 and a summary of actual use compared to total allocated is presented in Figure 5.

Table 4: Summary of water use since start of plan.

	2008-2009	2009-2010
PCV (ML/year) or WSPA Allocation Limit	699	699
No. of licences	37 (including 18 farm dam registrations and 1 farm dam licence)	37 Licences (including 18 Farm dam; 1 farm dam licence)
Total allocated volume	686 ML (including 286 ML farm dams registrations and 10 ML farm dam licences)	686 ML (including 286 ML farm dams registrations and 10 ML farm dam licences)
No. of metered licences	4	5
Total metered volume (ML)		187
Metered volume used	2007/08 - 0 ML - All year licences [1]; 2008/09 - 0 ML - All year licences [2]	24.92
Total use	2007/08 - 19.4 ML (winter fill only); 2008/09 - 6.8 ML (winter fill only)	24.92
Metered use as % of allocation	2007/08 - 2.8 %; 2008/09 - 1.0 %	3.60%
No. of licences with use greater than allocation	nil	nil
Metered use as % of Allocation Limit	2007/08 - 2.7 %; 2008/09 - 0.9 %	3.80%
Number of days on ban	305	159

Figure 5: Summary of allocated volume compared to metered use



2.6 Non compliance of Diverters

Melbourne Water is aware of two non-compliance issues in the Plenty River catchment including:-

- Formal warning letter issued to owner of licence 464/620/0003 Yan Yean Rd, Yarrambat for taking water outside authorised period.
- Formal warning letter issued to owner of licence 466/060/0001, Humevale Rd, Whittlesea for previous overuse in 08/09.

Further monitoring will be carried out to detect any additional breaches.

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

There is one gauge in the Plenty River Catchment at Mernda (229616A). Melbourne Water contractors, ALS, visited the stream flow gauges regularly. No issues were reported. A record of gauged flows is shown in Figure 2. The site is connected into Melbourne Water's SCARDA system to monitor the flows continuously.

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 and December each year.

3.3 New or cancelled licences

There were no new licenses issued or cancelled during the 2009/10 financial year. A list of licences in the Water Supply Protection Area at 30 June 2009 is shown in Appendix 1.

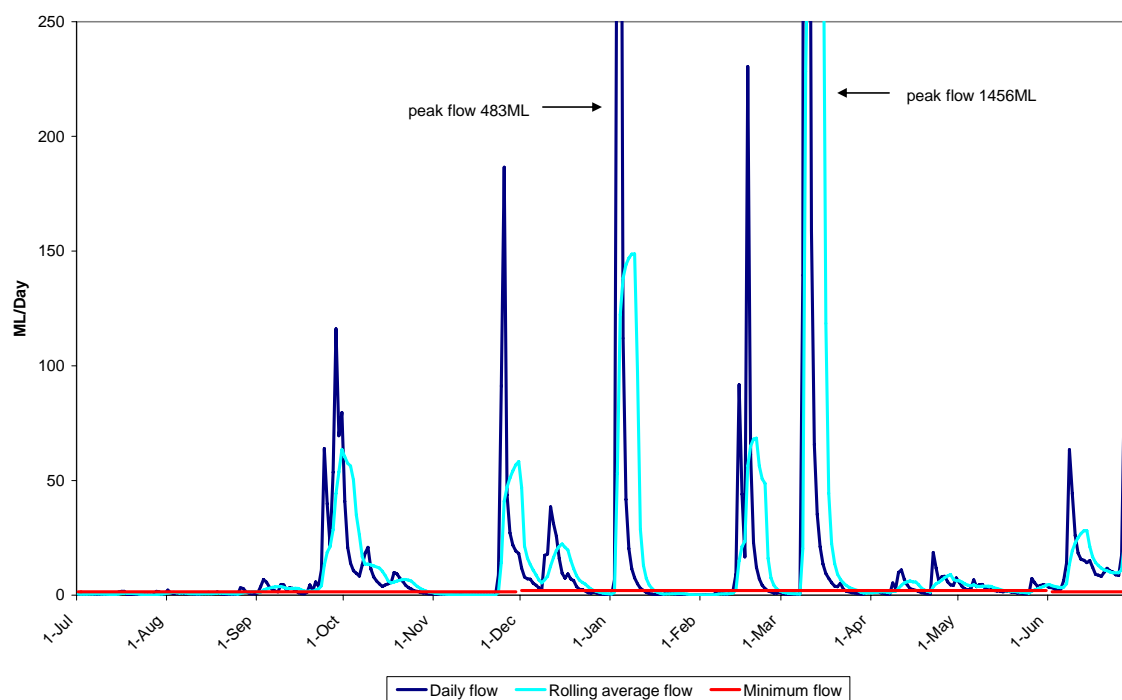
3.4 Licence trades

There were no temporary or permanent licences traded during the 2009-10 financial year.

3.5 Maintaining environmental flows

To maintain environmental flows, bans on taking of water were implemented as listed 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 water users before bans are implemented, but favours the environment before bans are lifted. 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 Plenty River between 1 July 2009 and 30 June 2010.



3.6 Monitoring the effect of the plan

Section 6.11 of the Plenty River Stream Flow Management Plan outlines how monitoring requirements for the Plenty River SFMP are to be incorporated into Melbourne Water's existing monitoring programs. Melbourne Water developed a monitoring program for SFMPs in 2007 and is part of a larger Yarra Catchment Stream Flow Monitoring Plan. This plan is in addition to existing programs that monitor of stream health across the Yarra Basin including water quality, macro invertebrate, fish and geomorphologic studies.

Melbourne Water also undertakes further monitoring and rehabilitation activities as part of the Port Phillip & Westernport Regional River Health Strategy. Projects undertaken in the Plenty River Catchment in 2009-10 include:

- Large scale control of woody weeds in the Plenty Gorge Park
- Ongoing weed control projects on the Plenty River in Greensborough
- Revegetation on the Plenty River at Rosanna Golf Club

3.7 Other reporting requirements

Table 5 documents items Melbourne Water is also required to report on in its annual report.

Table 5: Other Reporting Requirements

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.

4 Plan compliance

The annual report documents all plan prescriptions and discuss compliance against each prescription. A summary of the prescriptions and compliance is set out in table 6.

Prescription no	Plan requirement	Activity/Reference	Complies (Y/N)
1 - 6	Plan administration	Activity undertaken as part of normal business operation.	Yes
7	Administration and enforcement	Activity undertaken as part of normal business operation.	Yes
8	Permissible Annual Volume	Permissible Annual Volume set at 699 ML by the SFMP. Please see <i>Section 2.4 Water Use</i> for more information.	Yes
9	Prohibitions on granting new licences	No new licenses were granted or licenses cancelled. Please see <i>Section 3.3 New or Cancelled Licenses</i> for more information.	Yes
10	Transferring licences	No trading occurred. Please see <i>Section 3.4 License Trades/Transfers</i> for more information.	Yes
11	Rosters and restrictions	Bans were in place for some of the season (159 days). Please see <i>Section 2.3 Bans and Restrictions</i> for more information.	Yes
12	Licence conditions	Licenses granted have been subject to the conditions as set out in Schedule 4. Melbourne Water is aware of two non-compliance issues. Please see <i>Section 2.6 Non Compliance</i> for more information.	Yes
13	Stream flow monitoring program	Please see <i>Section 3.1 Stream Flow Gauge Maintenance and Operation</i> for more information.	Yes
14	Installing meters	Meters have been installed in the catchment. Please see <i>Section 3.2 Meter Installation and Reading</i> for more information.	Yes
15	Reading meters	Meters read manually. 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	Maintaining environmental flows	<p>Environmental Flows were maintained for a very small portion of the year as demonstrated by Figures 3a and 3b.</p> <p>For more information please see:</p> <ul style="list-style-type: none"> • <i>Section 3.5 Maintaining Environmental Flows</i> • <i>Section 2.3 Bans and Restrictions</i> • <i>Section 2.2 Water Levels and Flows</i> 	Yes
17	Monitoring the effects of the plan	<p>This monitoring program was developed in 2007 and is part of a larger <i>Yarra Catchment Stream Flow Monitoring Program</i>.</p> <p>Please see <i>Section 3.6 Monitoring the Plan</i> for more information.</p>	Yes
18	Reporting	<p>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</p>	Yes
19	Review of the plan	Plan due for review in 2012.	Yes

Table 6 - Summary of Plan compliance for the 2009-10 Year

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

<u>Licence no</u>	<u>Waterway</u>	<u>Total ML</u>	<u>Purpose</u>	<u>Licence type</u>
466/100/5000	Plenty River West Branch	2.00	Domestic & Stock	Diversion
464/610/5000	Plenty River (Lower)	2.00	Domestic & Stock	Diversion
466/080/5003	Bruces Creek (Upper)	2.00	Domestic, Stock & Irrigation	Diversion
466/080/5004	Bruces Creek (Upper)	7.00	Irrigation	Diversion
466/000/0001	Plenty River (Upper)	12.00	Irrigation	Diversion
464/610/0001	Plenty River (Lower)	10.00	Irrigation	Diversion
464/610/0003	Plenty River (Lower)	3.00	Irrigation	Diversion
464/610/0005	Plenty River (Lower)	12.00	Irrigation	Diversion
464/620/0002	Plenty River (Middle)	5.00	Irrigation	Diversion
464/620/0007	Plenty River (Middle)	6.00	Irrigation	Diversion
464/620/0003	Plenty River (Middle)	90.00	Off-Stream Dam Filling	Diversion
464/620/0005	Plenty River (Middle)	73.00	Off-Stream Dam Filling	Diversion
464/620/5000	Plenty River (Middle)	8.00	Off-Stream Dam Filling	Diversion
466/000/0005	Plenty River (Upper)	19.00	Off-Stream Dam Filling	Diversion
466/000/5000	Plenty River (Upper)	50.00	Off-Stream Dam Filling	Diversion
466/000/0006	Plenty River (Upper)	7.00	Off-Stream Dam Filling	Diversion
466/100/0001	Plenty River West Branch	67.00	Off-Stream Dam Filling	Diversion
466/060/0001	Scrubby Creek	15.00	Off-Stream Dam Filling	Diversion
466/000/5002	Plenty River (Upper)	10.00	Irrigation	Farm Dam Licence
466/100/5002	Plenty River West Branch	7.00	Irrigation	Farm Dam Registration
466/100/5001	Plenty River West Branch	2.00	Irrigation	Farm Dam Registration
466/000/5006	Plenty River (Upper)	12.00	Irrigation	Farm Dam Registration
466/000/5003	Plenty River (Upper)	28.50	Irrigation	Farm Dam Registration
466/000/5005	Plenty River (Upper)	4.00	Irrigation	Farm Dam Registration
466/080/5005	Bruces Creek (Upper)	35.00	Irrigation	Farm Dam Registration
466/080/5006	Bruces Creek (Upper)	15.00	Irrigation	Farm Dam Registration
466/080/5001	Bruces Creek (Upper)	24.00	Irrigation	Farm Dam Registration
466/080/5008	Bruces Creek (Upper)	13.00	Irrigation	Farm Dam Registration
466/070/5000	Bruces Creek - Tributary	4.00	Irrigation	Farm Dam Registration
466/070/5002	Bruces Creek - Tributary	4.50	Irrigation	Farm Dam Registration
466/080/5007	Bruces Creek - Tributary	42.00	Irrigation	Farm Dam Registration
466/000/5004	Plenty River (Upper)	0.50	Irrigation	Farm Dam Registration
466/070/5003	Barbers Creek	3.00	Irrigation	Farm Dam Registration
466/060/5004	Scrubby Creek	8.00	Irrigation	Farm Dam Registration
466/060/5003	Scrubby Creek	5.00	Irrigation	Farm Dam Registration
466/060/5002	Scrubby Creek	74.00	Irrigation	Farm Dam Registration
466/060/5006	Scrubby Creek	4.50	Irrigation	Farm Dam Registration
466/070/5001	Bruces Creek - Tributary 6073	0.00	Domestic & Stock	Operating Licence Only