

# Annual Report to the Federal Department of Environment.

Sugarloaf Pipeline Project  
November 2013





# Table of contents

Executive Summary	3
1 Introduction	5
1.1 Project Background	5
1.2 What is the purpose of this report?	6
1.3 Have the conditions been varied since approval?	6
1.4 Report Structure	6
2 Summary of Compliance with DoE Conditions	7
2.1 Environment Protection & Biodiversity Act 1999 listed species	7
2.2 Implementation of Flora Mitigation Plans	12
2.3 Implementation of Fauna Mitigation Plans	13
2.4 Implementation of Aquatic Fauna Plans	14
2.5 Management of Golden Sun Moth	14
2.6 Management of Little Pink Spider Orchid	15
2.7 Management of Matted Flax-lily, Clover Glycine, River Swamp Wallaby Grass and Little Pink Spider Orchid	15
2.8 Water Quality Monitoring	16
2.9 Provision of Waterway Crossing Plans	16
2.10 Approval of Water Quality Monitoring Procedure	17
2.11 Limitation of Pipeline Operational Volumes	17
2.12 Passage of Groundwater	18
2.13 Forest Rehabilitation Plans	19
2.14 Annual Report on Compliance with Conditions	19
2.15 Changes to Documentation/Conditions	20
2.16 Recordkeeping	20
2.17 Commencement of Construction	21
3 Independent Audited Reports of Water Savings	22
3.1 Water Savings Audited and Allocated	23
3.2 Water Savings Released and Supplied to Melbourne	25
4 Surveys and Monitoring for threatened fauna & flora	29
4.1 General measures for all Terrestrial Fauna	29
4.2 Woodland Forest and Scattered Tree Habitats	30
4.3 Water body Habitats	30
4.4 Grassland Habitats	30
4.4.1 Golden Sun Moth habitats	30
4.5 Aquatic Surveys	33

# Table of contents continued

4.6 Matted Flax-lily	33
5 Conclusion	36

## Document Versions

Revision	Issued To	Issued By
<b>Draft 1</b>	Senior Environmental Land Management Officer	Environmental Land Management Officer
<b>Draft 2</b>	Senior Water Resources Engineer	Environmental Land Management Officer
<b>Draft 3</b>	Manager Entitlement Framework, Water and Natural Resources Group Department of Environment & Primary Industries	Senior Water Resources Engineer
<b>Final</b>	General Manager Asset Planning	Team Leader- Land & Heritage

Melbourne Water is owned by the Victorian Government. We manage Melbourne's water supply catchments, remove and treat most of Melbourne's sewage, and manage rivers and creeks and major drainage systems throughout the Port Phillip and Westernport region.

© Melbourne Water Corporation 2013

This work is copyright. Apart from any use permitted under the Copyright Act 1968, parts of this publication may be reproduced as long as due acknowledgement is given to Melbourne Water Corporation and the author.

*Front cover photo courtesy of Ecology Australia Pty. Ltd. showing the Matted Flax-lily receptor site in Yarra Glen.*

## Abbreviations

Alliance	Sugarloaf Pipeline Alliance
DEPI	Department of Environment and Primary Industries.
DoE	Federal Department of Environment.
DPCD	Department of Planning and Community Development.
EMP	Environmental Management Plan
EPBC	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FFG	<i>Flora and Fauna Guarantee 1988(Vic)</i>
GSM	Golden Sun Moth
GHD	Gutheridge Haskins and Davey Pty Ltd
JH	John Holland Pty Ltd
MFL	Matted Flax-lily
MW	Melbourne Water Corporation
Project	Sugarloaf Pipeline Project
SKM	Sinclair Knight Mertz Pty Ltd
SLL	Striped Legless Lizard

## Executive Summary

The Project has complied with the conditions of the EPBC Approval for the current reporting period (1 July 2012 – 30 June 2013).

Three EPBC Listed species were located in the construction corridor:

- Striped Legless Lizard
- Golden Sun Moth
- Matted Flax-lily

The management of the above species and all other EPBC listed species has been in accordance with the Environmental Management Strategy which has been endorsed by State and Federal Government, except in unexpected situations where adaptive management has been necessary and subsequently approved before implementation.

The status of compliance with the conditions of the EPBC Approval are summarised below:

**Table 1: Compliance with EPBC Approval**

Condition of EPBC Approval	Status
1. Implementation of EMS	Compliant
2. Implementation of Flora Mitigation Plans	On track- ongoing monitoring until 2014.
3. Implementation of Fauna Mitigation Plans	On track- ongoing monitoring until 2014.
4. Implementation of Aquatic Fauna Mitigation Plans	Compliant
5. Management of Golden Sun Moth	On track- ongoing monitoring until 2014.
6. Management of Little Pink Spider Orchid	Compliant
7. Management of Matted Flax-lily, Clover Glycine, River Swamp Wallaby Grass and Little Pink Spider Orchid.	On track- ongoing monitoring until 2014.
8. Water Quality Monitoring	Compliant
9. Provision of Waterway Crossing Plans	Compliant
10. Approval of Water Quality Monitoring Procedure	Compliant

11. Limitation of Pipeline Operational Volumes	Compliant
12. Passage of Groundwater	Compliant
13. Forest Rehabilitation Plans	Ongoing-compliant to date
14. Annual Report on Compliance with Conditions	Ongoing-compliant to date.
15. Changes to documents/conditions	Compliant
16. Record Keeping	Ongoing- compliant to date.
17. Commencement of Construction	Compliant

The ongoing monitoring requirements are summarised below:

**Table 2: Ongoing EPBC Monitoring**

Aspect	Monitoring	Frequency & Timing
Woodland & Scattered Tree Habitat	Bandicoot Monitoring Program	Quarterly during 2015
	Habitat Linkage in Toolangi	8 month period during both 2013 and 2014.
Golden Sun Moth Habitat	GSM adult survey of transect lines and grassland restoration Experiment on Sheoak Property.	Annually over 4 visits until 2014.
Striped Legless Lizard	Monitoring established shelter grids on Sheoak property.	4 times (July, October, November and December) until 2014.
Matted Flax-lily	MFL monitoring of translocation site, in-situ sub populations on Gulf Road and Patch 8 (Melba Hwy).	Annually in Spring/ Summer until 2014.

# 1 Introduction

## 1.1 Project Background

Melbourne Water constructed the \$625 million Sugarloaf Pipeline (now known as the North-South Pipeline) linking the Goulburn River near Yea to the Sugarloaf Reservoir in Melbourne's north-east (the Project).

The purpose of the Project was to construct a pipeline and associated infrastructure to transfer water savings from the Goulburn River catchment to Melbourne's water distribution network via Sugarloaf Reservoir. The Project comprised two major pump stations, associated power supply connections, balancing storage(s) and a 70km pipeline capable of transferring up to 75GL per annum from the Goulburn River to Melbourne Water's Sugarloaf Reservoir.

The Project received State Government approval on 6th August 2008 and Federal approval under the *Environmental Protection and Biodiversity Conservation Act 1999* (the EPBC Act) on 12 September 2008, subject to conditions.

The Project was completed by the Sugarloaf Pipeline Alliance in February 2010. The Sugarloaf Pipeline Alliance was comprised of Melbourne Water Corporation (MW), Sinclair Knight Merz Pty Ltd (SKM), Gutheridge Haskins and Davey Pty Ltd (GHD) and John Holland Pty Ltd (JH). The Sugarloaf Pipeline Alliance was responsible for overall planning, design, procurement, construction, commissioning and completion activities associated with the Project. The Alliance contract has now ended and the Pipeline is now being maintained and operated by Melbourne Water.

Water was transferred through the Sugarloaf Pipeline until 9 September 2010 when the receiving storage, Sugarloaf Reservoir, became full due to prolonged wet conditions in Melbourne's catchments enabling the reservoir to be filled from its two other sources – Maroondah Reservoir (via aqueduct) and the Yarra River (via pumps at Yering Gorge). Very small volumes (31 million litres) were transferred until 28 October 2010 for pipeline testing and maintenance purposes.

Following the Victorian Coalition being elected to Government in November 2010, Melbourne Water has implemented the Coalition's pre-election commitment to only use the Sugarloaf Pipeline in times of 'critical human need'. This policy means that the pipeline will only be used in the event that the volume of water in Melbourne's 10 dams is below 30% as at 30 November in any year, or there is a need to use the pipeline's off takes for fire-fighting purposes. The Victorian Minister for Water amended Melbourne Water's Statement of Obligations (System Management) to

implement the Coalition's policy on the management of the Pipeline, effective 29th March 2012 when a notice appeared in a special gazette.

## 1.2 What is the purpose of this report?

This report provides information on the Projects compliance with Condition 14 of the EPBC Act 1999 approval (EPBC 2008/3960).

Condition 14 of the EPBC Approval states:

***"The person taking the action must provide by August each year an annual report on the compliance with these conditions, including the results of all EPBC listed surveys and environmental monitoring undertaken, independent audited reports of water savings achieved and the amount of water allocated for extraction, any adaptive management, any remedial actions taken and the effectiveness of the measures implemented to mitigate the impact on EPBC listed species."***

The Federal Department currently responsible for administering the EPBC Act is the Department of Environment (DoE). Through the life of this project this Federal Department has also been known as the Department of Environment, Water, Heritage and the Arts (DEWHA) and the Department of Sustainability, Environment, Water Populations and Communities (DSEWPaC) Project documents consequently contain reference all three names, for ease of reading this report only makes reference to DoE

## 1.3 Have the conditions been varied since approval?

A variation to Condition 14 was approved by DoE on 28th October 2010 to alter the date in the above condition to 30th November each year. This change was made to harmonise reporting requirements to DoE with independent annual audits on water allocations and transfers via the pipeline.

## 1.4 Report Structure

To address the requirements of the EPBC Approval conditions, the remainder of this report has been structured as follows:

- Section 2 the project's compliance with the conditions of the EPBC Approval;
- Section 3 the independent audited reports of water savings achieved;
- Section 4 outlines the results of monitoring of EPBC listed species undertaken; and
- Section 5 the conclusion.

## 2 Summary of Compliance with DoE Conditions

The EPBC Approval granted to the Project on 12 September 2008 is subject to 17 conditions. This section provides each of those conditions, with a summary of the Project's compliance for the current reporting period. The wording in the original EPBC Approval has been maintained, with variations noted where relevant.

### 2.1 Environment Protection & Biodiversity Act 1999 listed species

***Condition 1: To protect the Environment Protection and Biodiversity Conservation Act 1999 (EPBC) listed species that are known or could potentially occur in the action area, the person taking the action must implement the commitments made in the Environmental Management Strategy July 2008 and the associated documents referred to in the Environmental Management Strategy July 2008.***

As part of the Environmental Management Strategy (EMS), Mitigation Plans were developed for fauna, flora and aquatic species listed under either the EPBC Act or the *Fauna and Flora Guarantee Act 1988* (Vic) (the FFG Act). The EMS was implemented through detailed plans and programs outlined below.

#### 2.1.1 Environmental Management Plans

For each designated geographical section of the Project, a draft EMP was prepared. Feedback for each draft EMP was then sought from the Victorian Department of Environment and Primary Industries<sup>1</sup> (DEPI), the Victorian Department of Planning and Community Development (DPCD) and other relevant regulatory authorities. As requested, feedback was sought from DoE for the Toolangi State Forest, Sugarloaf Reservoir, Tunnel Portals and Category A Waterway Crossing EMPs. Feedback from regulatory authorities was incorporated by the Alliance in the preparation of final EMPs.

---

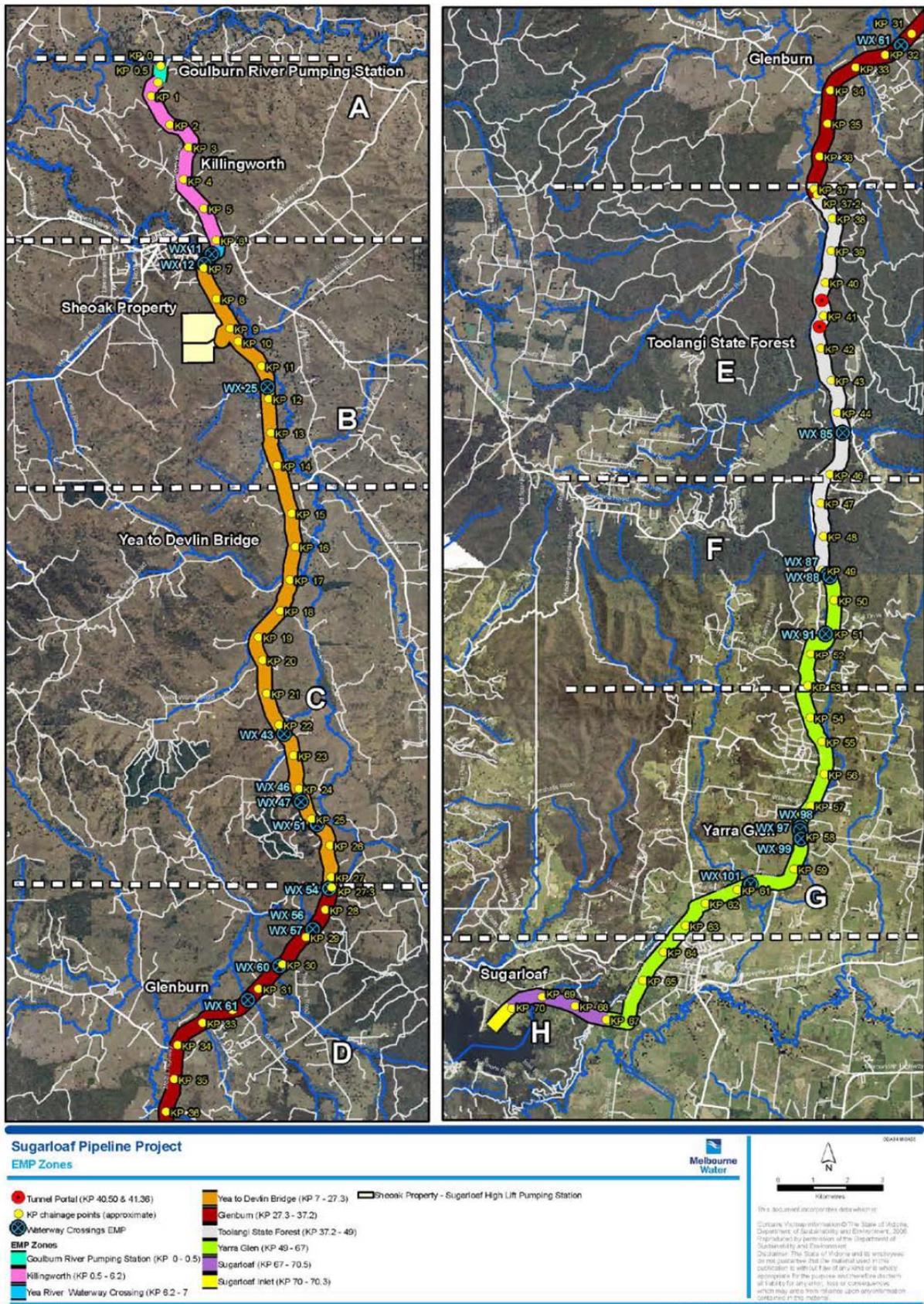
<sup>1</sup> The Department of Environment and Primary Industries was formally known as the Department of Sustainability and Environment.

All EMPs were endorsed or approved by the relevant regulatory authorities.

The area specific EMPs applied to each of the following seventeen sections:

- Goulburn River Pump Station;
- Killingworth;
- Yea to Devlin Bridge;
- Glenburn;
- Toolangi State Forest;
- Yarra Glen;
- Sugarloaf Reservoir;
- Sugarloaf Reservoir Goulburn Inlet;
- Temporary Pipe Storage – Sugarloaf Reservoir;
- Temporary Pipe Storage – Yarra Ranges;
- Temporary Goulburn Access Track;
- Sheoak High Lift Pump Station (Sheoak HLPS);
- Tunnel Portals;
- Waterway Crossings – Yea River at Yea and Kalatha Creek;
- Waterway Crossings – Yea River at Castella;
- Waterway Crossings – Yea River at Devlins Bridge;
- Waterway Crossings - Category B.

Figure 1 shows the pipeline EMP sections. The smaller waterway crossings EMPs and the Temporary works EMPs are not represented on this map.



**Figure 1: Map of the Sugarloaf Pipeline Project with EMP Zones marked**  
2 KP – Kilometre Point used a reference locator and WX – Waterway Crossing

### 2.1.2 Environmental Programs

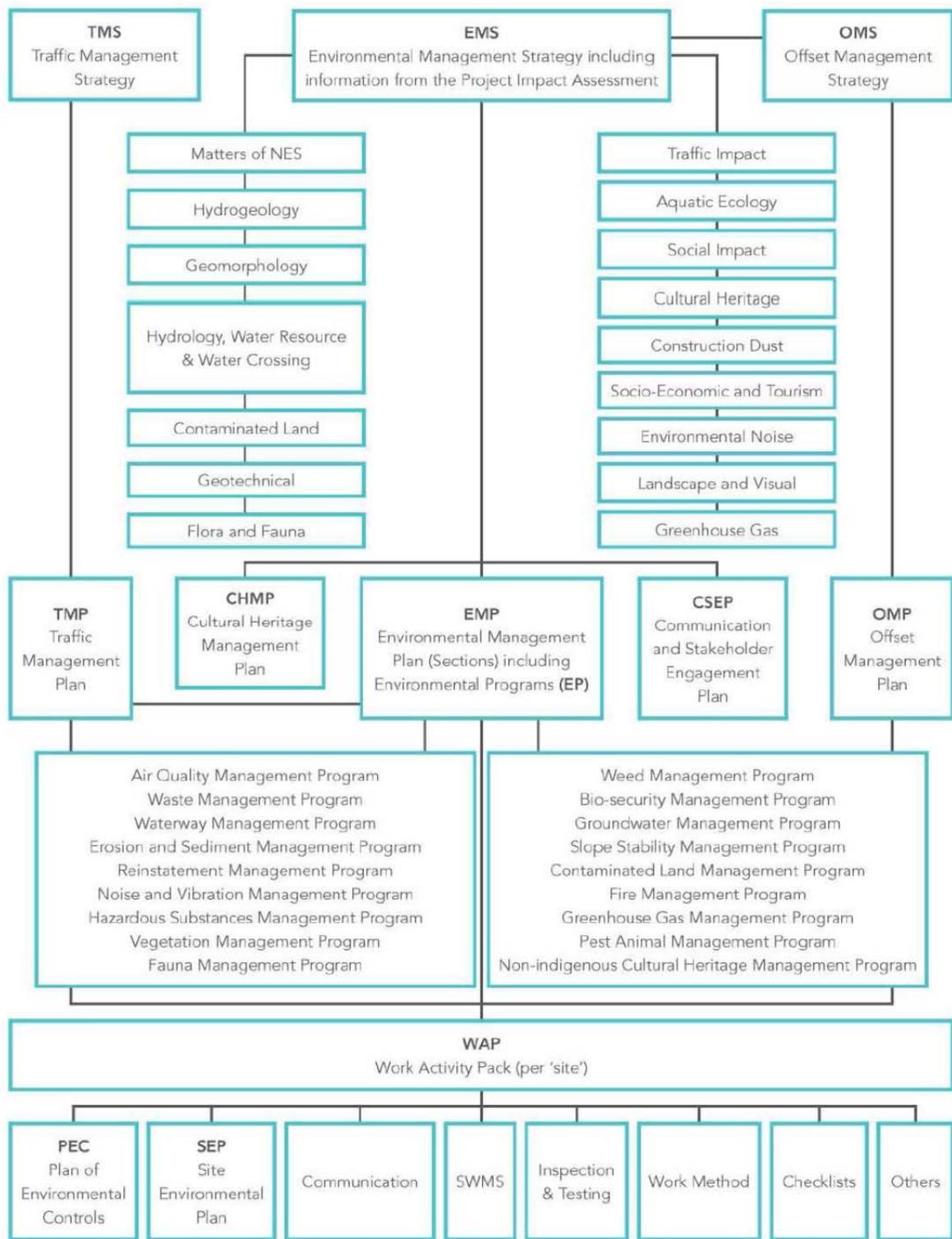
Each EMP includes environmental management information and requirements of the specific area covering several disciplines. Each discipline has an environmental programs specific to that EMP section. The aspects covered by these environmental programs include:

- Air Quality Management;
- Fauna Management;
- Vegetation Management;
- Greenhouse Gas Management;
- Biosecurity Management;
- Contaminated Land Management;
- Erosion and Sediment Management;
- Fire Management;
- Groundwater Management;
- Slope Stability Management;
- Hazardous Substances Management;
- Cultural Heritage Management;
- Pest Animal Management;
- Noise and Vibration Management;
- Reinstatement Management;
- Waste Management;
- Waterways Management;
- Weed Management.

### 2.1.3 Site Specific Environmental Plans

The project is further divided at site level, with the construction team being provided for a 'Work Activity Pack' (WAP) for each individual site. The WAP compiles all the necessary information to ensure that the Project construction teams implement all planning and environmental requirements. Each WAP includes a site specific 'Plan of Environmental Controls' (PEC) and a 'Site Environmental Plan' (SEP), which is an aerial photograph showing of environmental controls for the site.

Figure 2 outlines the interactions between the environmental management documents.



**Figure 2: Environmental Management Documentation**

## 2.2 Implementation of Flora Mitigation Plans

**Condition 2: 'To protect the EPBC listed flora species that are known to occur or could potentially occur in the action area, in particular the Matted Flax-lily (*Dianella amoena*), Clover Glycine (*Glycine latrobeana*), Little Pink Spider Orchid (*Caladenia rosella*) and the River Swamp Wallaby Grass (*Amphibromus fluitans*), the person taking the action must implement the 'Mitigation Plan for EPBC Act and Victorian Flora and Fauna Guarantee Act 1988 (FFG Act) Listed Flora Species July 2008'.**

The obligations within the 'Mitigation Plan for EPBC Act and Victorian FFG Act Listed Flora Species July 2008' for flora species were transferred into the relevant EMPs and EPs. The 'Vegetation Management Program' and 'Reinstatement Management Program' for each EMP section contain procedures for monitoring, management and mitigation of listed species that the Alliance has implemented.

The only EPBC listed flora species confirmed to occur by the Alliance's botanists through targeted on ground surveys was Matted Flax-lily (*Dianella amoena*). Clover Glycine (*Glycine latrobeana*), Little Pink Spider Orchid (*Caladenia rosella*) and the River Swamp Wallaby Grass (*Amphibromus fluitans*) were not identified during the surveys.

Management of the Matted Flax-lily included the formation of exclusion zones where construction would not impact on the species and translocation where impact is unavoidable. Several patches of Matted Flax-lily were removed from the Yarra Glen EMP Section and translocated. A 'Matted Flax-lily Translocation Commitment' document was developed by the Alliance in consultation with DoE, DEPI and MW. The 'MFL Translocation Commitment' was endorsed by the above parties.

We note that the Section 69 agreement under the *Conservation, Forests and Lands Act 1987* (Vic) referred to in the Translocation Commitment was not developed. Following discussion with DEPI and DoE, MW was informed via letter (DoE, 15th February 2012) that the Section 69 Agreement was no longer required as the site continues to be subject to state and national legislation and approval processes.

Translocation of the Matted Flax-Lily was undertaken in accordance with the 'Permit to Take Protected Flora (Permit No. 10004246)', which was issued to MW by DEPI on 5th September 2008.

Ongoing requirements for monitoring and management will continue to be implemented for the Matted Flax-Lily. Further information is provided in section 4.6.

## 2.3 Implementation of Fauna Mitigation Plans

***Condition 3: To protect the EPBC listed terrestrial species that are known to occur in the action area, in particular the Striped Legless Lizard (*Delma impar*), Southern Brown Bandicoot (*Isoodon obesulus obesulus*), Spotted Tail Quoll (*Dasyurus maculatus maculatus [SE mainland population]*), Growling Grass Frog (*Litoria rainformis*), and Golden Sun Moth (*Synemon plana*), the person taking the action must implement the Mitigation Plan for Terrestrial Fauna Listed under the EPBC Act and FFG Act July 2008.***

The obligations in the Mitigation Plan for Terrestrial Fauna Listed under the EPBC Act and FFG Act for terrestrial fauna species were transferred into the relevant EMPs and EPs. The Alliance incorporated relevant procedures into the section based EMPs and WAPs which have been implemented. The 'Fauna Management Program', 'Pest Animal Management Program' and 'Reinstatement Management Program' for each EMP section contained procedures for monitoring, management and mitigation of listed species that MW will continue to implement.

During the course of the project, targeted on-ground surveys identified the presence of the Golden Sun Moth (GSM) and Striped Legless Lizard (SLL) at a number of locations in the construction Right of Way (ROW). Comprehensive mitigation and management procedures were implemented during construction of the Project. The finding of larger than anticipated populations of GSM resulted in the development and implementation of mitigation measures being incorporated into EMPs. These measures were more comprehensive than specified within the 'Mitigation Plan for Terrestrial Fauna'.

Despite a range of targeted surveys for EPBC listed species, no Growling Grass Frogs, Spotted Tail Quolls or Southern Brown Bandicoots were found within the construction area during the project. Specific mitigation measures as noted within the 'Mitigation Plan for Terrestrial Fauna' were still implemented for these and all other fauna species (refer to sections 2.8 and 4.2).

Ongoing requirements for monitoring and management will continue to be implemented for GSM and SLL and are discussed in section 4.4.1 and 4.4.2 respectively.

## 2.4 Implementation of Aquatic Fauna Plans

***Condition 4: To protect the EPBC listed aquatic fauna species that are known to occur or could potentially occur in the action area, in particular the Macquarie Perch (*Macquaria australasica*), Trout Cod (*Maccullochella macquariensis*) and Murray Cod (*Maccullochella peelii*), the person taking the action must implement to Mitigations Plan for EPBC Act and FFG Act Listed Aquatic Fauna Species July 2008.under the EPBC Act and FFG Act July 2008.***

The obligations in the 'Mitigation Plan for EPBC Act and FFG Act Listed Aquatic Fauna Species July 2008' were transferred into the relevant EMPs and EPs. The relevant procedures were incorporated into the section based EMPs and WAPs. These have been implemented. The 'Fauna Management Program', 'Erosion and Sediment Management Program' and 'Waterway Management Program' for each EMP section contain procedures for monitoring, management and mitigation for the above species. These actions have been implemented.

During aquatic surveys in November 2009, a Macquarie Perch was recorded in the Yea River, at a site downstream of the Devlin's Bridge crossing. The Macquarie Perch was not found within the construction corridor, and additional management measures were not required.

The two years of post construction monitoring were completed in 2011. Overall the monitoring identified that the construction of the pipeline is unlikely to have had an on-going impact on the intersected waterways, and any impact that may have occurred was minor compared with the catchment scale impacts caused by the 2009 fires.

## 2.5 Management of Golden Sun Moth

***Condition 5: Where Golden Sun Moth known habitat cannot be avoided during February to September, the person taking the action must implement the experimental process of habitat slab replacement in known Golden Sun Moth habitat. The area in which the process is undertaken must be monitored for two years following the completion of the habitat slab replacement.***

***If monitoring indicates a decline or loss of the Golden Sun Moth population, an offset package must be submitted to the Department within 6 months of the monitoring results. This package must be approved by the Department and implemented. The offset package may include the purchasing of an area of Golden Sun Moth habitat of at least equal size for conservation and contribution to research and recovery.***

MW has undertaken several mitigation measures including development of a Conservation Management Plan (CMP) for the Sheoak property. Through discussion with DEPI and DoE the CMP forms the basis of an offset package as detailed in the Golden Sun Moth – Offset Package Proposal SPA-REP-GL-ENV-0019 submitted to DoE in September 2009. DoE has indicated its satisfaction that should the monitoring indicates a decline or loss of the GSM population, the Sheoak Property offset package along with other measures already committed to by Melbourne Water would be sufficient to offset this loss.

The final CMP has been approved by DEPI, with conditions of the CMP included in the section 69 agreement under the *Conservation, Forests and Lands Act 1987* registered on title for the Sheoak property. The DoE was sent a copy of the approved CMP for consideration in October this year.

## 2.6 Management of Little Pink Spider Orchid

***Condition 6: If the Little Pink Spider Orchid is found within the construction corridor and avoidance is not possible, the Department must be notified before construction in the area can commence and the persons taking the action must provide evidence that all alternative mitigation options for this species have been exhausted prior to proposing to translocate. The Department must approve the translocation.***

Little Pink Spider Orchid was not found within the construction corridor. Construction is now complete and Melbourne Water has demonstrated compliance with this condition.

As per correspondence from DoE accepting the 2011/12 report no further action relating to this condition is required however Melbourne Water will continue to report on compliance with all conditions of EPBC Act approval (2008/3960)

## 2.7 Management of Matted Flax-lily, Clover Glycine, River Swamp Wallaby Grass and Little Pink Spider Orchid

***Condition 7: If, following the outcomes of required monitoring, the translocation and adaptive management of the Matted Flax-lily, Clover Glycine, River Swamp Wallaby Grass and Little Pink Spider Orchid is found not to have been successful, an offsets package for each relevant species must be provided to the Department within 6 months. The offsets package must be approved by the Department and Implemented. The offsets package***

***may include the purchasing of an area of known habitat of at least equal size for conservation and the contribution to research and recovery.***

No Clover Glycine, River Swamp Wallaby Grass or Little Pink Spider Orchid have been located.

No Clover Glycine, River Swamp Wallaby Grass or Little Pink Spider Orchid were identified in on-ground surveys.

Several patches of Matted Flax-lily (MFL) were located in the Yarra Glen and Killingworth EMP Sections and translocation was undertaken where the species would be impacted. The Alliance produced a specific 'MFL Translocation Commitment document' which was endorsed by DoE, DEPI and other relevant stakeholders. See section 4.6 for details on MFL mitigation measures.

## 2.8 Water Quality Monitoring

***Condition 8: To protect the Macquarie Perch and Growling Grass Frog, water quality must be monitored during construction of waterway crossings to meet State Environment Protection Policy (SEPP) (Waters of Victoria 2003) objectives. If the water quality fails to meet SEPP (WoV), due to construction activities associated with the project adaptive management must be implemented. In this event the Department must be provided, within two months of the monitoring results being known, with a report stating the corrective action implemented and the results.***

The construction is now complete and Melbourne Water has demonstrated compliance with this condition.

As per correspondence from DoE accepting the 2011/12 report no further action relating to this condition is required however Melbourne Water will continue to report on compliance with all conditions of EPBC Act approval (2008/3960)

## 2.9 Provision of Waterway Crossing Plans

***Condition 9: The Waterway Crossings Category A and B Plans must be provided to the Department for approval prior to construction of the waterway crossings. These plans must include turbidity controls and creeks to be tunnelled. These plans must be implemented.***

The EMPs for each of the Category A and B Waterway Crossings were endorsed by DEPI and DoE prior to commencement of construction on these sections. Construction is now complete and Melbourne Water has demonstrated compliance with this condition.

As per correspondence from DoE accepting the 2011/12 report no further action relating to this condition is required however Melbourne Water will continue to report on compliance with all conditions of EPBC Act approval (2008/3960)

## 2.10 Approval of Water Quality Monitoring Procedure

***Condition 10: The Water Quality Monitoring Procedure must be provided to the Department for approval prior to construction commencing of the waterway crossings. This procedure must include turbidity monitoring. This procedure must be implemented.***

Construction is now complete and Melbourne Water has demonstrated compliance with this condition.

As per correspondence from DoE accepting the 2011/12 report no further action relating to this condition is required however Melbourne Water will continue to report on compliance with all conditions of EPBC Act approval (2008/3960)

## 2.11 Limitation of Pipeline Operational Volumes

***Condition 11: To protect EPBC listed fish species (Trout Cod (*Maccullochella macquariensis*), Murray Cod (*Maccullochella peelii*) and Macquarie Perch (*Macquaria australasica*)) that occur or may occur in the Goulburn River, the water extracted to the Sugarloaf Pipeline must be:***

- a) not more than 75GL in any one year;***
- b) not more than 360 ML per day, with any variation in this daily pumping rate limited to a maximum of 200 ML to minimise the rise and fall in riverlevels upstream and downstream of the off-take structure.***
- c) met only through controlled, pre-ordered releases from Melbourne's share of the water savings allocated to it pursuant to any bulk entitlement issued under the Victorian Water Act 1989;***
- d) sourced from savings not allocated to the Living Murray Initiative or the Waters for Rivers; and***

***e) zero if the necessary regulated releases are for the maintenance of environmental flows or materially deplete water stored in Eildon Weir that is designated as being an environmental reserve.***

***All water savings taken from the Goulburn River must be sourced from projects that comply with the requirements of the Environment Protection and Biodiversity Conservation Act 1999.***

Note that a variation to clause (a) above was approved by DoE on the 28<sup>th</sup> of October 2010, to provide clarity, and now reads:

***a) not more than 75GL in any period of 12 calendar months beginning on 1 July in any year and ending on 30 June in the following year;***

In December 2008, MW, DEPI and the Goulburn-Broken Catchment Management Authority (GBCMA) negotiated the following conditions, as part of the Heritage Rivers Act 2002 approval, to ensure that rates of rise and fall of the Goulburn River in response to diversion at the Sugarloaf Pipeline Intake are managed to within acceptable levels (as specified by State and Federal Government):

- For river passing flows below 300 ML/day, there is no diversion to the pipeline;
- For river passing flows between 300 ML/day and 799 ML/day, diversion can only be increased or decreased by up to 75 ML/day;
- For river passing flows between 800 ML/day and 1499 ML/day, diversion can only be increased or decreased by up to 120 ML/day;
- For river passing flows of 1500 ML/day or greater, diversion can only be increased or decreased by up to 180 ML/day.

These conditions were negotiated in response to the conditions placed by DoE on the water volume and operational limitations of water extraction from the Goulburn River. Further details of these conditions are provided at the conclusion of Section 3.2.1 of this report.

Full compliance with these conditions was achieved between 1 July 2012 and 30 June 2013. Details of compliance with conditions 11 (a) to (e) are also provided in Sections 3.1 and 3.2 of this report.

## 2.12 Passage of Groundwater

***Condition 12: The pipeline crossings of the Yea River flood plain must ensure passage of groundwater. This may be achieved by use of groundwater shunt***

***within the deep channel to permit the water tables to equilibrate post construction across the pipeline or by some alternative method.***

Groundwater level monitoring for the Yea River flood plain was completed in December 2010, Melbourne Water has demonstrated compliance with this condition.

As per correspondence from DoE accepting the 2011/12 report no further action relating to this condition is required however Melbourne Water will continue to report on compliance with all conditions of EPBC Act approval (2008/3960)

## 2.13 Forest Rehabilitation Plans

***Condition 13: Prior to construction through the Toolangi State Forest and the Sugarloaf Forest, the person taking the action must provide the Department with the Toolangi State Forest Rehabilitation Management Plan and the Sugarloaf Forest Rehabilitation Management Plan for approval. These plans, once approved, must be implemented.***

Reinstatement Management Programs were produced for each of the sections of the pipeline including the Toolangi State Forest, Tunnel Portals and Sugarloaf Forest. These Reinstatement Management Plans and the subsequent amendment to the Toolangi State Forest RMP have been approved by DoE and implemented by the Alliance.

Outstanding matters noted in the 2012 report relating to the 'Sugarloaf Reservoir Reinstatement Management Program' specifically the habitat linkages for Brush-tailed Phascogale at Sugarloaf Reservoir have been resolved. In May 2013 DoE provided advice that the Federal Department did not have an approval role in this amendment to the Management Program. Based on approvals by relevant State Government authorities Melbourne Water has progressed construction of the habitat linkages for Brush-tailed Phascogale at Sugarloaf Reservoir, it is expected that the completion of this program will be included in the 2014 report.

## 2.14 Annual Report on Compliance with Conditions

***Condition 14: The person taking the action must provide by August each year an annual report on the compliance with these conditions, including the results of all EPBC listed surveys and environmental monitoring undertaken, independent audited reports of water savings achieved and the amount of water allocated for extraction, any adaptive management, any remedial***

***actions taken and the effectiveness of the measures implemented to mitigate the impact on EPBC listed species.***

This report is the 2012/13 annual report addressing this condition. Note that the variation decision dated 28th October 2010 changed the due date to 30th November of each year to better align with timing of independent audit reports of water savings achieved and the amount of water allocated for extraction.

## 2.15 Changes to Documentation/Conditions

***Condition 15: If the person taking the action wishes to carry out any activity otherwise than in accordance with the documents identified in the above conditions relevant to EPBC listed species, the person taking the action must submit for the Department's approval a revised version of the document. If the Department approves a revised document, that document must be implemented in place of the document originally approved.***

Several changes to documentation and conditions have been requested over the life of this project, these have not been duplicated in this report. Details of the changes relating the 2012/13 reporting period only are detailed below.

Two of the three changes requested via letter to DoE August 2012 have been resolved however the matter relating to the ongoing monitoring of the Matted Flax-lily remains outstanding. As requested in May 2013 Geoff Carr expert biologist for the Matted Lily-lily provided DoE with a letter of recommendation supporting the requested changes. (for further information on the Matted Flax-lily monitoring for the 2012/13 season see section 4.6.3 of this report)

## 2.16 Recordkeeping

***Condition 16: The person taking the action must maintain accurate records of all activities associated with or relevant to the above conditions of approval, and make them available on request by the Department. Such records may be subject to audit by the Department, and used to verify compliance with the conditions of approval.***

The maintenance of accurate records and project documentation is currently undertaken by MW. Any such documentation is readily available to DoE on request.

## 2.17 Commencement of Construction

***Condition 17: If the person taking the action has not commenced construction of the action within 5 years of this approval then they must notify the Minister in writing and not commence construction without the Minister's agreement.***

As the Alliance has completed construction of the project compliance with this condition has been achieved.

### 3 Independent Audited Reports of Water Savings

As part of Condition 14, DoE requires “independent audited reports of water savings achieved and the amount of water allocated for extraction”. The following information is also required to determine compliance with the water savings audit component of Condition 14:

- All water ‘accounts’ held in Lake Eildon from which water would be drawn to supply the Sugarloaf Pipeline;
- Source, volume and timing of any water accruing to the above accounts;
- Volume and timing of any water released from the above accounts to supply the Sugarloaf Pipeline;
- Volume and timing of any water pumped into the Sugarloaf Pipeline; and if any water savings projects are deemed to be compliant with the EPBC Act without being referred, detailed information on how that conclusion was reached.

Goulburn-Murray Water manages the Allocation Bank Account (ABA) for the three metropolitan retail water corporations in Melbourne (the Retailers). Melbourne Water has been delegated the authority to order water from the Retailers’ ABA on their behalf.

The ABA from which water was able to be taken and transferred into the Sugarloaf Pipeline in 2012/13 was ABA088033. Melbourne’s water allocation was managed in this account under bulk entitlements for water savings to the Melbourne Retailers. The Melbourne Retailers also hold bulk entitlements to water savings achieved in the Murray system. The ABAs linked to these bulk entitlements are ABA088040 and ABA088042. Further descriptions of the entitlements are provided in section 3.1.

Section 3.1 also summarises the water savings allocated to the Melbourne Retailers’ accounts under their Goulburn System Bulk Entitlements in 2012/13. Unlike previous years, details on the source, volume and timing of the water to be accrued to these accounts in the current year (2013/14) cannot be provided as the Water Savings Audit Report for 2012/13 was not completed at the time of preparing this report. This will be provided in the 2014 Compliance Report.

A total of 18 ML was released during 2012/13 for charging the Sugarloaf Pipeline to keep it in good working order and ready for fire-fighting, as permitted under Melbourne Water’s *Statement of Obligations (System Management)*. Further details are provided in Section 3.2. There have been no releases to date in 2013/14.

As per Melbourne Water's letter to the Department of Environment, Water, Heritage and the Arts dated 23 December 2009, all sources of water are considered to comply with the EPBC Act. No additional sources of water have been allocated for extraction to the Sugarloaf Pipeline, other than those achieved through the Goulburn-Murray Water Connections Project (formerly NVIRP) and verified by audit.

The Melbourne Retailers' carry over into the 2012/13 financial year is documented in Table 3. It should be noted that the Retailers are able to carry over water from one year to the next, subject to the same rules that apply to all entitlement holders that carry over water in Northern Victoria, including deduction of a standard 5% on carry over for evaporation losses. Note that a new cap on carryover came into effect for the Goulburn system from 30 June 2013, which affects the carry over into 2013/14. Another new rule limiting carryover on the Murray system will apply from 1 July 2014, which will affect the carry over into 2014/15.

**Table 3: Water for Melbourne carried over into 2012/13**

Carry over into 2012/13*	Volume (ML)
Volume brought forward for carry over at 30/6/2012	54,313
Evaporation losses at 30/6/2012 (5%)	2,716
<b>Total volume carried over into 2012/13</b>	<b>51,597</b>

\* All water carried over for Melbourne into 2012/13 was carried over in ABA088033. No water was carried over in Melbourne's Murray system ABAs.

### 3.1 Water Savings Audited and Allocated

The water savings allocated to the Melbourne Retailers in 2012/13 is documented in Table 4.

The volume of water savings available for allocation to Melbourne in 2012/13 was verified by an independent audit of water savings achieved in 2011/12, a copy of which is provided in Appendix D. The audit report was provided to DSEWPC last year as part of Melbourne Water's previous submission. It reports the *actual* volume of water savings achieved for the 2011/12 irrigation season (referred to as Phase 3 savings) as well as *long-term average LTCE* water savings (referred to as Phase 4 savings), in accordance with the Victorian Government's Water Savings Protocols.

A one-third share of the actual volume of water savings (Phase 3 savings) achieved in the Goulburn and Murray systems was allocated for Melbourne under bulk entitlements in these systems.

Water allocated to Melbourne in 2012/13 was derived from a number of sources. These sources are summarised in Table .

**Table 4: Water allocated to Melbourne in 2012/13**

<b>Allocation in 2012/13 (from water savings projects in 2011/12) *</b>	<b>Volume (ML)</b>
Goulburn Trading Zone 1A†	18,099
Murray Trading Zone 6 2011/12§	4,466
Murray Trading Zone 7 2011/12£	4,477
<b>Total volume allocated to Melbourne Retailers in 2012/13</b>	<b>27,042</b>

\* Actual savings (Phase 3 savings) made in one irrigation season are not audited and allocated until the following irrigation season, in accordance with Water Savings Protocols. As such, the water allocated to Melbourne in 2012/13 consists of water savings achieved in 2011/12.

† Water savings achieved from Goulburn-Murray Connections Stage 1 works in Central Goulburn (CG 5-9), Rochester (RO) and Pyramid Boort (PB) contribute to the allocations from Goulburn Trading Zone 1A.

§ Water savings achieved from Goulburn-Murray Connections Stage 1 works in Murray Valley (MV) contribute to the allocation from Murray Trading Zone 6.

£ Water savings achieved from Goulburn-Murray Connections Stage 1 works in Torrumbarry (TO) contribute to the allocation from Murray Trading Zone 7.

Table summarises the water available to Melbourne in 2012/13, the water used by Melbourne in 2012/13, and the water carried over into the 2013/14 year. This takes into account the volume deducted annually for evaporative losses.

**Table 5: Water for Melbourne carried over into 2013/14**

Carry over into 2013/14	Volume (ML)
Volume available to Melbourne in 2012/13*	78,639
Volume used by Melbourne in 2012/13	18
Volume spilled in 2012/13	16,682
Volume sold in 2012/13	21,520
Volume brought forward for carry over at 30/6/2013	40,419
Evaporation losses at 30/6/2013 (5%)	2,021
<b>Total volume carried over into 2013/14</b>	<b>38,398</b>

\* This is the total volume carried over into 2012/13 (51,597 ML) plus the total volume allocated in 2012/13 (27,042 ML).

To date, no water savings have been allocated in 2013/14. This will occur once the volume of water savings achieved in 2012/13 is verified by an independent audit.

### 3.2 Water Savings Released and Supplied to Melbourne

In the 2012/13 financial year, 18 ML was released on 13/11/2012 for charging the Sugarloaf Pipeline to keep it in good working order and ready for fire-fighting, as permitted under Melbourne Water's *Statement of Obligations (System Management)*.

Condition 11 of the *Environment Protection and Biodiversity Conservation Approval (EPBC Approval)* specifies the rates, volumes and sources of water that can be extracted from the Goulburn River and transferred via the Sugarloaf Pipeline for Melbourne. Condition 11 states:

- 11. To protect EPBC listed fish species, Trout Cod (*Maccullochella macquariensis*), Murray Cod (*Maccullochella peelii*), and Macquarie Perch (*Macquaria australasica*) that occur or may occur in the Goulburn River, the Melbourne water extracted to the Sugarloaf Pipeline must be:**
- not more than 75 GL in any period of 12 calendar months beginning on 1 July in any year and ending on 30 June in the following year;**
  - not more than 360 ML per day, with any variation in this daily pumping rate limited to a maximum of 200 ML to minimise the rise and fall in river levels upstream and downstream of the river off-take structure;**
  - met only through controlled, pre-ordered releases from Melbourne's share of the water savings allocated to it pursuant to any bulk entitlement issued under the Victorian Water Act 1989;**

- d. *sourced from savings not allocated to the Living Murray Initiative or the Waters for Rivers; and*
- e. *zero if the necessary regulated releases are for the maintenance of environmental flows or materially deplete water stored in Eildon Weir that is designated as being an environmental reserve.*

***All water savings taken from the Goulburn River must be sourced from projects that comply with the requirements of the Environment Protection and Biodiversity Conservation Act 1999.***

The conditions are also replicated in clause 9 of the Retailers' Goulburn system bulk entitlements.

This section describes Melbourne Water's compliance with these conditions for the reporting period from 1 July 2012 to 30 June 2013.

### 3.2.1 Compliance Reporting: 1 July 2011 to 30 June 2012

#### Summary

Full compliance with Condition 11 was achieved with only 18 GL transferred into the Sugarloaf Pipeline for the period 1 July 2012 to 30 June 2013.

**Table 6: Summary of compliance for the period 1 July 2012 to 30 June 2013**

Condition	Description	DoE Compliance
11.a	not extract more than 75 GL in any financial year	✓
11.b.i	not extract more than 360 ML in any one day	✓
11.b.ii	limit variation of extraction to not more than 200 ML/day	✓
11.c. i	only extract controlled, pre-ordered releases	✓
11.c. ii	only extract water from Melbourne's share of water savings	✓
11.d	not extract water from the <i>Living Murray Initiative</i> or the <i>Water for Rivers</i>	✓
11.e	not deplete water designated in the environmental reserve	✓
final statement	water sourced from projects that comply with the EPBC Act 1999	✓

#### **Condition 11(a)**

***The water extracted to the Sugarloaf Pipeline must be not more than 75 GL in any period of 12 calendar months beginning on 1 July in any year and ending on 30 June in the following year.***

Melbourne Water has complied with this condition for the period 1 July 2012 to 30 June 2013, transferring a total of 18 ML into the pipeline over this period.

#### **Condition 11(b)**

***The water extracted to the Sugarloaf Pipeline must be not more than 360 ML per day, with any variation in this daily pumping rate limited to a maximum of 200 ML to minimise the rise and fall in river levels upstream and downstream of the river off-take structure.***

Melbourne Water has complied with this condition for the period 1 July 2012 to 30 June 2013, transferring a total of 18 ML into the pipeline over this period.

#### **Condition 11(c)**

***The water extracted to the Sugarloaf Pipeline must be met only through controlled, pre-ordered releases from Melbourne's share of the water savings allocated to it pursuant to any bulk entitlement issued under the Victorian Water Act 1989.***

Melbourne Water has complied with this condition for the period 1 July 2012 to 30 June 2013, transferring a total of 18 ML into the pipeline over this period.

Goulburn-Murray Water records indicate that 18 ML was released from the metropolitan Retailers' Allocation Bank Account from Lake Eildon (ABA088033).

#### **Condition 11(d)**

***The water extracted to the Sugarloaf Pipeline must be sourced from savings not allocated to the Living Murray Initiative or the Waters for Rivers.***

Melbourne Water has complied with this condition for the period 1 July 2012 to 30 June 2013, transferring a total of 18 ML into the pipeline over this period.

This water was released from the metropolitan Retailers' Allocation Bank Account from Lake Eildon (ABA088033) containing water sourced from Goulburn-Murray Connections Stage 1 savings as detailed in the independent audit report that MW provided to DoE last year.

**Condition 11(e)**

***The water extracted to the Sugarloaf Pipeline must be zero if the necessary regulated releases are for the maintenance of environmental flows or materially deplete water stored in Eildon Weir that is designated as being an environmental reserve.***

Melbourne Water has complied with this condition for the period 1 July 2012 to 30 June 2013, transferring a total of 18 ML into the pipeline over this period.

The daily passing flow recorded in the Goulburn River at Killingworth while pumping was 5,453 ML/day on 13/11/2012.

***All water savings taken from the Goulburn River must be sourced from projects that comply with the requirements of the Environment Protection and Biodiversity Conservation Act 1999.***

Melbourne Water has complied with this condition for the period 1 July 2012 to 30 June 2013, transferring a total of 18 ML into the pipeline over this period.

This water was released from the metropolitan Retailers' Allocation Bank Account from Lake Eildon (ABA088033) containing water sourced from Goulburn-Murray Connections Stage 1 savings as detailed in the independent audit report that MW provided to DoE last year.

## Goulburn Broken CMA Licence

### Goulburn Broken CMA Licence

The *Environment Protection and Biodiversity Conservation (EPBC) Approval* for the Sugarloaf Pipeline was issued on 12 September 2008. The Goulburn Broken Catchment Management Authority (GBCMA) subsequently issued a licence on 22 December 2008 for the Sugarloaf Pipeline under the *Water Act 1989* following consideration of an assessment under the *Heritage Rivers Act 1990*.

The GBCMA licence included additional requirements beyond those in the *EPBC Approval*, which were ultimately incorporated into the Retailers' Goulburn bulk entitlements.

These conditions are chiefly to ensure the ecological health of the Goulburn River and those conditions concerning river flows, and performance against them, is included in this report in the interests of completeness and transparency. In particular, the Retailers' Goulburn bulk entitlements state that water may only be taken from the Goulburn River when passing flows are at least 300 ML/day and the Sugarloaf Pipeline may be operated to increase or decrease the daily diversion rate by up to:

- a. 75 ML per day when the flow in the Goulburn River at Killingworth is between 300 and 799 ML per day
- b. 120 ML per day when the flow in the Goulburn River at Killingworth is between 800 and 1,499 ML per day
- c. 180 ML per day when the flow in the Goulburn River at Killingworth is at least 1,500 ML per day

## 4 Surveys and Monitoring for threatened fauna & flora

### 4.1 General measures for all Terrestrial Fauna

Pre-Construction and Construction mitigation measures for all Terrestrial Fauna have been previously described in the 2012 annual report to DoE and are not repeated here. The following describes the mitigation measures undertaken post construction over the period 1 July 2012 to 30 June 2013.

Site rehabilitation in line with the Reinstatement Management Programs for the EMP sections has also been undertaken to help facilitate re-colonisation of fauna species.

Post construction monitoring has been undertaken for EPBC listed species, Striped Legless Lizard (SLL) and Golden Sun Moth (GSM). The findings from the monitoring are summarised below.

## 4.2 Woodland Forest and Scattered Tree Habitats

Appropriate pre-construction and construction surveys were undertaken by the Alliance in accordance with the Fauna Mitigation Plan and were reported in the 2010 annual report to DoE.

In consultation with DEPI, the Alliance has agreed to a Bandicoot Monitoring Program to be undertaken by the Arthur Rylah Institute (ARI) in 2015. This program will monitor the bandicoots (and other animals) use of structures installed throughout the Toolangi State Forest to facilitate crossing the Sugarloaf Pipeline vehicle access track. Remote cameras will be installed at each of the four crossings and monitoring will occur every 3 months for a total of 4 visits during 2015.

Monitoring of the Toolangi Habitat Linkages has also been agreed to in consultation with DEPI and is currently being undertaken by GHD during 2013/2014. The program will monitor the habitat linkages installed in Toolangi State Forest through the use of remote cameras installed at 32 sites. Data will be recorded over an 8 month period in 2013 and repeated in 2014. The results from this program are expected to be included in the 2013/14 report.

## 4.3 Water body Habitats

Post construction surveys of water body habitat surveys were completed in 2010/11 and Melbourne Water has demonstrated compliance with this condition.

As per correspondence from DoE accepting the 2011/12 report no further action relating to this condition is required however Melbourne Water will continue to report on compliance with all conditions of EPBC Act approval (2008/3960)

## 4.4 Grassland Habitats

### 4.4.1 Golden Sun Moth habitats

Two years (equivalent to two flight seasons) of post construction monitoring for GSM have been completed and were reported in the 2011 annual report to DoE. The

Grassland Restoration Experiment and Habitat Slab Replacement monitoring were completed in 2011, and the final reports were included in the 2012 report.

Three additional years of GSM monitoring will be undertaken on the Sheoak property, with 2011/12 flying season as the first of these additional years, the final results expected to be provided in 2014 report to DoE.

#### 4.4.1.1 Monitoring Overview

In accordance with the approval conditions, adult GSM surveys were undertaken across the broader Sheoak property. The survey method and effort employed was compliant with the approved mitigation plan for the species. The proposed monitoring program and methods for the project were developed as a stand-alone document prior to the commencement of the 2009/10 flight season and were generally consistent with the national guidelines for the minimum acceptable standards for persons or organisations undertaking GSM surveys (DoE, 2009).

#### 4.4.1.2 Adaptive Management

The GSM monitoring period for 2012/13 did not require adaptive management as the aims, timing, effort and conditions during all surveys throughout the 2012/13 GSM flying season were consistent with the DoE guidelines.

#### 4.4.1.3 Results from 2012/2013 Flight Season

150 GSM were recorded in the 2012/13 flight season across the Sheoak property. In addition 81 GSM were incidentally observed while zoologists were walking between transects. Of the 150 GSM recorded in transects, 146 were male and four were female. While of the 81 incidental observations 78 were male and three were female.

The 2012/13 flight season results are encouraging with 231 GSM recorded across the Sheoak property. This is an increase from the 2011/12 flight season where 71 male GSM and no female GSM were recorded as detailed in the DoE 2012 report.

Further details, results and maps of GSM monitoring surveys are included Post Construction Golden Sun Moth Monitoring Results, 2012-13 Flight Season (Appendix A)

#### 4.4.1.4 Grassland Restoration Experiment

The Grassland Restoration Experiment is now complete, with the final results submitted in the 2012 report. Further GSM population surveys to be completed in the 2013/14 flight season across the broader Sheoak property which will include the experiment site.

As per correspondence from DoE accepting the 2011/12 report no further action relating to this condition is required however Melbourne Water will continue to report on compliance with all conditions of EPBC Act approval (2008/3960)

#### 4.4.1.5 Habitat Slab Replacement

The Grassland Restoration Experiment is now complete, with the final results submitted in the 2012 report.

As per correspondence from DoE accepting the 2011/12 report no further action relating to this condition is required however Melbourne Water will continue to report on compliance with all conditions of EPBC Act approval (2008/3960).

#### 4.4.2 Striped Legless Lizard Habitats

As part of the approvals process for the Sugarloaf Pipeline Project, the Alliance committed to conducting monitoring for SLL during the post-construction phase for a period of two years a draft monitoring plan was developed by the Alliance. Following further consultation, discussion and revisions, the document was endorsed by DEPI.

Post Construction Monitoring for SLL across the SLL monitoring sites (seven locations within the construction corridor where five or more SLL were captured) was completed in January 2012 (two years after the SLL release). Three additional years of SLL monitoring will be undertaken on the Sheoak property.

##### 4.4.2.1 Monitoring at Sheoak

15 sets of lizards monitoring grids were established broadly across the Sheoak property. Each grid consisted of 50 wooden shelters placed in five rows of ten shelters, with each shelter placed five metres from the next nearest shelter. Each shelter comprises a block of wood that is about 30 cm long, 20 cm wide and 7.5-10 cm thick. An additional 2cm x 2cm strip of wood is also placed along one edge of the shelter to raise it from the ground slightly.

These shelters have been checked on four occasions during the period 1 July 2012 – 30 June 2013. Up to 12 SLL were found across the Sheoak property during this monitoring period, two of which were incidental records not recorded within a grid.

- The shelters were checked by ecologists in late June 2012. No SLL were recorded;
- The shelters were checked by ecologists in mid-October 2012. No SLL were recorded;
- The shelters were checked by ecologists late November 2012. 7 SLL were recorded. 3 in Grid E, and one each in Grid H, M, J and L.
- The shelters were checked by ecologists mid-December 2012. 3 SLL were recorded One each in Grid J, K and L.

A summary report will be prepared annually with a full report prepared at the conclusion of the five years monitoring in late 2014. The 2012/13 Post-construction Monitoring Striped Legless Lizard is included as Appendix 2 of this report.

#### 4.5 Aquatic Surveys

Post construction surveys of water body habitat surveys were completed in 2010/11, the final results were submitted in the 2011 report.

As per correspondence from DoE accepting the 2011/12 report no further action relating to this condition is required however Melbourne Water will continue to report on compliance with all conditions of EPBC Act approval (2008/3960)

#### 4.6 Matted Flax-lily

Matted Flax-lily has been recorded in at least 18 different sites/properties within the survey corridors, with a total of at least 41 discrete patches. The distribution of this species is strongly linked with road reserves and public land within the broader Yarra Glen area, with two outlying occurrences near Yea.

The construction corridor has impacted the following areas supporting Matted Flax-lily:

- Maroondah Aqueduct (4 patches between Steels Creek Road and Gulf Road);
- Gulf Road (3 patches in road reserve);
- 1 patch immediately adjacent to Maroondah Aqueduct access track entrance

- point;
- 1 patch on northern side of road reserve, immediately east of a row of exotic trees;
- 1 patch on steep northern roadside embankment, east of aqueduct and west of Melba Highway;
- Glenview Road (1 patch on west side of road reserve, north of Yarraview Road);
- In addition the following patch has been impacted though it was not within the construction corridor and is included in this document:
- Melba Highway (1 patch on west side of road reserve, south of Hunts Lane).

Impact sites were surveyed in February 2009 with detailed results provided in the Matted Flax-lily translocation agreement.

#### 4.6.1 Translocation of Impacted Matted Flax-lily Patches

Impacted patches of Matted Flax-lily were removed in April 2009 under the supervision of an expert in the biology of Matted Flax-lily, Mr Geoff Carr. Mr Carr was recommended by DEPI for his knowledge of the biology of Matted Flax-lily. The removed Matted Flax-lily was transported to the Buxton Zoo Nursery which specialises in the growth of indigenous species. The plants were individually labelled, potted and grown on. They were transplanted into the receptor site in autumn 2010.

The receptor site for the MFL is located within the Maroondah Aqueduct close to the positions of Patches 1 to 4 (discussed above). The site covers an area of 120 x 3 m, and is situated along the southern boundary fence line of the aqueduct, between the Sugarloaf Pipeline access track and the fence line. The site was fully cleared during pipeline construction but was reinstated with stored topsoil, and then replanted with a locally indigenous species mix. This section of the aqueduct is known to support MFL as shown by the persistence of the species in this area prior to the construction of the Sugarloaf Pipeline.

A Matted Flax-lily Translocation Commitment was developed by the Alliance in consultation with DoE, DEPI and MW and has been endorsed. This Commitment is a detailed discussion of the translocation requirements and ongoing management actions to help facilitate the ongoing survival of this species over a five year period at the receptor site.

#### 4.6.2 Monitoring

Monitoring of the translocated MFL commenced in November 2010. The monitoring report "Matted Flax-lily (*Dianella amoena*) Translocation: Monitoring Autumn 2013" is attached in Appendix C. The next monitoring report (for autumn 2014) is due in February 2014 with results reported in the 2014 Annual Report.

The 2012/13 monitoring program of MFL within the translocation site on the pipeline easement found that:

- There was good (acceptable) survival of the *Dianella amoena* plants translocated, with minimal mortality (approximately 5%);
- Flowering has extended well beyond the usual October- January flowering period well into March; and
- Effective weed management has seen a dramatic response in growth and flowering of the *Dianella amoena* plants.

The monitoring report also noted an increase in the amount of weeds present at the translocation site. Weed management activities have been undertaken since the translocation in April 2009, but growing conditions in the last three years have favoured weed growth. Following receipt of the 2011/12 monitoring report, a Weed Management Plan was developed for the site in order to address the weed issues at the site thereby enhancing the performance of the MFL population. This Weed Management Plan was submitted to DoE in November 2012.

The MFL Translocation Commitment document also identified several 'control' sites against which the translocated population could be evaluated. These were located on roadsides, as follows:

- Maroondah Aqueduct (east side), approximately 30 m north of Yarraview Road (1 patch);
- Melba Highway (east side), adjacent to property no. 650, approximately 1 km north of Gulf Road (3 patches); and
- Patch 8 on Melba Highway (west side), approximately 150-175 m south of Hunts Lane (1 patch).

During field work in both 2011 and 2012 these populations could not be found, with the exception of the Hunt's Lane patch (Patch 8 on the Melba Highway). It is assumed that plants no longer exist, that is they have become extinct because of a combination of mowing (slashing) of the road reserves by local Councils, coupled with weed invasion. The patches near Gulf Road suffered a similar fate as discussed in the

2010/2011 monitoring report provided with the DoE annual report 2011. Mr Carr inspected this site again in February 2013 and again found no evidence of *Dianella*. The specialist concluded that MFL could easily fall extinct on these highly vulnerable road reserve populations, and that growing conditions for weed species has been exceptional this year.

#### 4.6.3 Adaptive Management

Under section 1.5.1 of the Matted Flax-lily Translocation Commitment document monitoring was scheduled to occur during autumn and winter each year, but this did not occur in 2013. The specialist deemed monitoring at this time would not provide any meaningful results (as detailed below) and has recommended that monitoring described in section 1.5.5 of the MFL commitment document be amended to an annual inspection during Spring/Summer for a further three years until 2014.

The specialists rational behind a reduced monitoring program are that the growth and responses of the plants is highly seasonal and they go into a quiescent period in summer, usually with considerable loss of leaves (which are facultatively deciduous in response to drought). Growth recommences in autumn following the autumn break. The specialist believes that nothing will be gained by monitoring in seasons other than the spring-early summer flowering period because we are interested in (i) the maximum seasonal expression of vegetative growth, and (ii) flowering and fruiting responses as a measure of successful establishment and reproductivity. Both these aspects of performance are best and most appropriately monitored in the spring-early summer flowering period. Vegetative performance documentation at other times may be quite ambiguous as to its interpretation. In June 2012 MW wrote to DPCD (cc DoE and DEPI) requesting that this change to the monitoring frequency be endorsed. A letter of support for the changes to the monitoring program from the expert in the biology of Matted Flax-lily, Mr Geoff Carr was forwarded to DoE in May this year.

## 5 Conclusion

The Sugarloaf Pipeline Alliance and Melbourne Water have implemented actions and adhered to the conditions placed on the Project by the then Federal Minister for the Environment, Heritage and the Arts.

Full compliance with pipeline operational volume conditions was achieved between 1 July 2012 and 30 June 2013 with only 18 ML extracted to the Sugarloaf Pipeline during this period.

Three EPBC Listed species have been located in the construction ROW - Striped Legless Lizard, Golden Sun Moth and Matted Flax-lily. The management of these species and all other EPBC listed species has been in accordance with the Environmental Management Strategy which has been endorsed by State and Federal Government, except in unexpected situations where adaptive management has been necessary and subsequently approved before implementation.

A large population of SLL was detected, and appropriate measures have been implemented throughout the project. Two years of post-construction monitoring (2009, 2010), and two additional years of monitoring (2011 & 2012) have been completed; with 12 live SLL observed in the monitoring grids in 2012/13. Monitoring will continue for a further year (until December 2014) on the Sheoak property.

Large populations of GSM have also been detected. Monitoring of GSM has been completed for two post construction flight seasons (2009/10, 2010/11) and two additional year of monitoring (2011/12, 2012/13), and will continue for a further flight seasons (2013/14) at the Sheoak property.

Impacted patches of Matted Flax-lily were removed from areas around Yarra Glen and were translocated to the agreed receptor site in autumn 2010. Monitoring and management measures have been undertaken each year (2010-2013) and will continue for a further season (2013/14) at the receptor site.

A number of the EPBC Approval conditions apply primarily to the construction phase of the project. Future annual reports will focus on monitoring and management of SLL, GSM and Matted Flax-lily; as well as compliance with the limitations of pipeline operational volumes set out in condition 11, in the event that the pipeline is used under conditions of 'critical human need.'

Appendix A: (Attached)  
Post Construction Golden Sun Moth Monitoring  
Results 2011 – 2012 Flight Season

Appendix B: (Attached)  
2012 Post Construction Monitoring  
Striped Legless Lizard

Appendix C: (Attached)

Post Construction Monitoring Matted Flax-lily.

Appendix D: (Attached)

Audit of Water Savings: Goulburn-Murray Water Connections Stage 1 2011/12