

Independent Environmental Audit

Environmental Audit Report

ICON WATER

MURRUMBIDGEE TO GOOGONG WATER TRANSFER

6TH AUDIT (OEMP IMPLEMENTATION)

AUGUST 2018



AUDIT DETAILS

AUDITED ORGANISATION	PROJECT
Icon Water	Murrumbidgee to Googong Water Transfer
ADDRESS	CONTACT DETAILS
12 Hoskins St Mitchell ACT	Ben Bryant
DEPTH OF AUDIT	SCOPE OF AUDIT
Environmental	OEMP Implementation
DATE OF AUDIT	AUDIT CRITERIA
22 nd and 23 rd August 2016	<ul style="list-style-type: none"> • OEMP (v5, May 2017) • Stream Flow and Water Quality MP (v6.2, April 2018) • Landscape Rehabilitation & Terrestrial Ecology MP (V5, March 2017) • Aquatic Ecology Monitoring Plan (V4.1, October 2017) • Biodiversity offsets Management Plan (Offset Delivery Plan) v2 (May 2017) and subplans • Project Approval 08_0160 • EPL 13322 • EPBC Approval 2009/5124
PERSONS CONTACTED	AUDIT TEAM
Ben Bryant, Tim Chaseling, Sally Wright, John Hyam, James Gray, Namal Perera	Natascha Arens, nghenvironmental – Lead auditor
PREVIOUS AUDIT DATE	PREVIOUS AUDIT REFERENCE
February 2013, August 2013, February 2014, August 2014, August 2016	NGH Environmental (February 2013, August 2013, February 2014, August 2014, August 2016)
NOTE:	
This audit was conducted specifically on the implementation of the OEMP and subplans.	

AUDIT SUMMARY

Environment:

This was the sixth audit of the operation phase of the Murrumbidgee to Googong Water Transfer Project (M2G). This audit focussed specifically on the implementation of the

- Stream Flow and Water Quality MP (v6.2, April 2018)
- Landscape Rehabilitation & Terrestrial Ecology MP (V3, Jan 2014)
- Aquatic Ecology Monitoring Plan (V4.1, October 2017)
- Biodiversity offsets Management Plan (Offset Delivery Plan) v2 (May 2017) and subplans

The audit included interviews with key operational staff and a review of the relevant environmental management plans. A site visit to both the pipeline and the offset site was undertaken. The audit found that considerable work had been undertaken on the plans since the previous audit to reflect the progression of the project since construction completion. The plans were implemented and staff had an excellent understanding of plan requirements.

The audited noted that the project was in STAND BY mode but subject to extended maintenance for the first time since construction completion. Although it is further noted that the operation of the pipeline was only pumping at a similar rate to that which is pumped during the maintenance “APPLE runs” or “operate to maintain runs” for less than a 30 day period.

One non-conformance was raised as part of this audit, relating to the specific OEMP training for project staff.

A further three Observations were raised.


<p>Signed: _____</p> <p style="text-align: center;">Principal’s Representative</p>	<p>Date:</p>
<p>Signed: </p> <p style="text-align: right;">Natascha Arens</p> <p style="text-align: center;">Lead Auditor</p>	<p>Date: 18/9/2018</p>

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Attachment A – CARs Issued at the Closing Meeting

1. REPORT SUMMARY

1.1 INTRODUCTION

This audit represents the sixth (6th) independent environmental representative audit conducted on the operational phase of the Murrumbidgee to Googong Water Transfer (M2G) Project. Following the completion of construction in 2012, a twice-yearly audit program was implemented. During that time, it became apparent that the project was unlikely to run in an operational mode for some time. Therefore, at the completion of the first 2 years of operation, the audit program was altered such that an independent audit is conducted every 2 years.

It should be noted that at the time of the audit the pipeline was pumping for an extended period as part of maintenance activities in STAND BY mode; although only one 21 megalitre pump was pumping.

1.2 SCOPE OF AUDIT

The audit scope for this audit was the implementation of Operational Environmental Management Plan (OEMP), the relevant subplans and relevant licence and project approval documents. This represents the first audit against the revised management plans, which were approved by the regulators in mid-2015. The following plans were audited:

- OEMP (v5, May 2017)
- Stream Flow and Water Quality MP (v6.2, April 2018)
- Landscape Rehabilitation & Terrestrial Ecology MP (V5, March 2017)
- Aquatic Ecology Monitoring Plan (V4.1, October 2017)
- Biodiversity Offsets Management Plan (Offset Delivery Plan) v2 (May 2017) and subplans

1.3 SUMMARY OF NON CONFORMANCES

NC No.	Section of Report	Details
1	3.4.3	Section 6.8 of the OEMP requires that toolbox training packages are to include the OEMP and sub plans. It was noted at the audit that a specific toolbox called M2G environmental conditions had been prepared to meet this requirement but that this particular toolbox talk has not been delivered to all relevant staff.

1.4 SUMMARY OF OBSERVATIONS

The following Observations were identified and explained to Iconwater during the audit. They are considered to be deficiencies in meeting specified requirements, which if not addressed, may lead to a risk of non-compliance.

Observation No.	Section of Report	Details
1	3.2	Recommendations raised in Land Condition Assessment Checklist or the biennial external check of the site are not easily tracked as having been completed, and therefore there is potential that some actions raised could be missed.
2	3.3, 3.5	<p>There were some issues with version control and/or inconsistencies in documentation including:</p> <ul style="list-style-type: none"> • Environmental policy – three different versions were found in various locations in the system (current controlled version) and on the internet (previous versions). • The version of the OEMP on the internet is Version 5 dated 30 May 2017 (previous version), the version of the OEMP on the intranet was Version 6 dated May 2018 (current controlled version). • Section of the Landscape Rehabilitation and Terrestrial Ecology Management Plan 3.2 refers to the monitoring requirements located in section 3.3 of the report. Section 3.3 does not include a monitoring regime.
3	3.6	Form F0053.4d is not referenced in the SFWQMP and is not related to a procedure. Staff indicated that this form is completed at 4 weeks, 2 weeks and 1 week prior to pumping, however this requirement is not documented.

2 AUDIT PROCESS

2.1 OPENING MEETING

An opening meeting was held on the morning of the 22nd August at the Icon Water offices in Mitchell. Present were Ben Bryant, Sally Wright, John Hyam, Tim Chaseling and Namal Perera. The scope of the audit was outlined to those present, as well as a general outline of how the audit will be conducted.

2.2 CLOSING MEETING

A closing meeting was held in the afternoon of the 23rd August. Present were Ben Bryant, James Grey and John Hyam.

2.3 DESIGNATED FOLLOW-UP

A follow-up of the audit findings will be managed by the Icon Water Environment and Sustainability Manager to verify the completion of all corrective actions. The next IER Audit will be conducted in August 2020.

2.4 PREVIOUS ENVIRONMENTAL AUDIT

This audit followed-up CARS and Observations of Concern (OOC's) raised at the previous environmental compliance audit (August 2016)

Table 2-1: Summary of Observations of CARS Concern raised on previous environmental audits (

No.	Status	Comment
August 2016 Audit		
CAR 1 During the site inspection, it was observed that the fencing around the Swainsona relocation plot had not been reinstated, presumably after it was removed for the controlled burn in 2015.	Fencing was reinstated before close out of the 2016 audit.	The Swainsona relocation plots were inspected during the site visit on the 22/8/18 and fencing was found to be intact.

No.	Status	Comment
<p>CAR 2</p> <p>Following the change in external monitoring frequency from 6-monthly to 2-yearly, there is currently no system of periodic inspection and assessing of the offset site.</p> <p>This has contributed to the issue raised in CAR 1.</p>	<p>Completed</p>	<p>01/05/18 Ben to revise the M2G Biodiversity Offset Management Plan, obtain consistency review from Erwin Budde and obtain approval from the relevant regulators (Guardian Action ACT 10656).</p> <p>Revised M2G Operation Environment Management Plan (OEMP) and Sub Plans approved by Commonwealth, ACT and NSW regulators, uploaded to the public website and communicated with internal stakeholders to realise efficiencies.</p> <p>Internal site checklists are completed six monthly and further inspections undertaken biennially externally.</p>
<p>OoC 001 – The 4-week notification checklist developed by E&S is not controlled.</p>	<p>Completed 16/01/17</p>	<p>New controlled form approved and added to the Integrated Management System (IMS) as FO05.34d</p>
<p>OoC 002 – The revised induction package does not meet all of the commitments made in the OEMP.</p>	<p>Completed 01/03/17</p>	<p>OEMP updated with new training section referring to the updated induction training package and relevant toolbox talks. Contractor training package also updated to reflect M2G training requirements. Induction training now incorporated into Grovo training package.</p> <p>An observation was however raised during the current audit regarding the training package refer to section 3.4.2 below.</p>
<p>OoC 003 -A number of observations are made in relation to the delivery of environmental work:</p> <ol style="list-style-type: none"> 1. The Rapid Assessment Form is not controlled 2. There is no formal signoff of the Rapid Assessment form. This presents a weakness in the process. It is considered that as a minimum both the assessor and their supervisor should sign the form. 3. There is no formal signoff of the Post Completion Assessment. It is 	<p>Completed 14/03/17</p>	<p>FO03.00i Environmental Works Completion Report template finalised in IMS 08/12/2016.</p> <p>Rapid assessment form revised in February 2017.</p>

No.	Status	Comment
considered that as a minimum both the assessor and their supervisor should sign the form.		

2.1 COMPLIANCE ASSESSMENT CRITERIA

This audit was undertaken with reference to the guidance document *Post Approval Compliance audits of State Significant Developments – Independent Auditor Guidelines (October 2015)*.

This document defines the compliance assessment criteria as detailed in the table below. It should be noted that the intent of this audit was not to test compliance with Conditions of Approval or commitments directly, as these requirements have since been integrated into environmental management plans, which have been approved by the various stakeholders, including the relevant regulators. The focus of this audit was to check the implementation of the relevant environmental management plans. Nonetheless the audit criteria below have been used to guide the audit findings.

Assessment	Criteria
Compliant (C)	Where the auditor has collected sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the audit.
Not verified (NV)	Where the auditor has not been able to collect sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the audit. In the absence of sufficient verification the auditor may in some instances be able to verify by other means (visual inspection, personal communication, etc.) that a requirement has been met. In such a situation, the requirement should still be assessed as not verified. However, the auditor could note in the report that they have no reasons to believe that the operation is non-compliant with that requirement.
Non-compliant (NC)	Where the auditor has collected sufficient verifiable evidence to demonstrate that the intent of one or more specific elements of the regulatory approval have not been complied with within the scope of the audit.
Administrative non-compliance (ANC)	A technical non-compliance with a regulatory approval that would not impact on performance and that is considered minor in nature (e.g. report submitted but not on the due date, failed monitor or late monitoring session). This would not apply to performance-related aspects (e.g. exceedance of a noise limit) or where a requirement had not been met at all (e.g. noise management plan not prepared and submitted for approval).
Not triggered (NT)	A regulatory approval requirement has an activation or timing trigger that had not been met at the time of the audit inspection, therefore a determination of compliance could not be made.
Observation (O)	Observations are recorded where the audit identified issues of concern which do not strictly relate to the scope of the audit or assessment of compliance. Further observations are considered to be indicators of potential non-compliances or areas where performance may be improved.
Note	A statement or fact, where no assessment of compliance is required.

3 DETAILS OF AUDIT FINDINGS – ENVIRONMENT

This section details the findings of the audit report. It focuses on findings requiring action as well as highlighting areas of compliance.

3.1 PREVIOUS AUDITS

Five previous audits on operational environmental compliance were conducted on 13th and 14th February 2013, the 29th August 2013, 7th February 2014, 26th August 2014 and 24-25th August 2016.

3.2 SITE INSPECTION

A detailed site inspection at the Offset Site was conducted. Areas visited included recent plantings along two water courses, recent erosion control efforts, the Bursaria plantings and the Swainsona translocation plots.

An inspection of landscape rehabilitation works along the pipeline was at accessible areas near the Snowy Mountains Highway.

The latest (26/4/2018) copy of the property condition assessment checklist was used during the inspection as a reference. It was noted at the last audit that there is no formal sign off on the property inspection form. Although the form notes who undertook the inspection there is no formal sign off on the actions raised during the inspection which was raised as an observation in the previous audit.

The property condition assessment checklist is referenced in the Offset delivery Plan as being part of the adaptive management process for the property. It is noted that any actions raised on the property condition assessment checklist are then raised in the works program for the site, however for the most recent checklist no actions were raised. This works program also includes actions from the external assessment undertaken biennially. A review of the works program shows that the actions contained are very generic and not specific to the outcomes of these inspections, therefore are not easily tracked. In order for this to be easily tracked there needs to be evidence that the actions raised in the checklist are transferred to the works program or similar document.

There has been improvement in the process since the previous audit, in that the inspection checklist assigns an author, the actions in the checklist are discussed as part of works programming. However, from an audit perspective the recommendations raised in checklists or the biennial external check of the site are not easily tracked as having been completed, and therefore there is some risk that some actions may be missed. This is raised as **Observation 01**.

The site visit included an inspection of

- Priority weed management undertaken for sweet briar, blackberry and St John's Wort
- Planting areas, including plantings of Bursaria, Acacia sp., Cassinia asp and Dodonaea sp.
- Planting in the pipeline corridor (only those areas visible from the Snowy Mountains Highway)
- Swainsonia plots
- Box plot exclusion areas
- Recent erosion control works.

The photos below show progress/condition of some of the works visited.



Clockwise from top left; gully erosion control; gully planting area; Box plot exclusion area; Swainsonia plot.

3.3 GENERAL MANAGEMENT FRAMEWORK (EMS)

Environmental management requirements for the M2G pipeline are documented in the OEMP and associated subplans. In addition to this, the company's Environmental Management System (EMS) is being used to control documents and implement outcomes.

During the course of the audit, the auditor was presented with various components of Icon Water's EMS. The EMS is externally certified as being in accordance with ISO14001:2015. A Certification audit was undertaken in June 2018. Two major non-conformances were raised in the certification audit which related to the requirement for

management reviews (every six months), the agenda items covered in the review were against the old ISO14001 standard (2004) vs (2015). Other minor non-conformances raised did not specifically relate the environmental requirements, but were related to the integrated management process as part of the safety suite of documentation.

The close out report for the certification audit was sighted (dated 17/8/2018) which noted that Icon Water meets the requirements of ISO 14001: 2015. The organisation has been recommended for certification under the new standard.

Audit findings are raised in cintellate (Guardian) which is used to manage all NCR, audit reports, incidents and near misses. The system sets a close out date, emails are sent to the assigned person, reminders are sent to the action, if close out date is not extended then the action gets escalated.

Environmental Policy

The Environmental Policy is contained within Appendix B of the OEMP. It was noted at the audit the policy appended to the OEMP was a version dated 2014 and the version on the internet site is dated 2017. The current controlled version of the policy is currently only available internally on the intranet via the Integrated Management System. The current version of the Environmental Policy 15 May 2018 next review is 2020.

The inconsistency in the policy date is raised as Observation 02.

The Policy was reviewed and evidence was sought for the project's compliance with the Policy. Specifically, the audit has found broad compliance with the Policy, with specific notes including:

- The biannual management review undertaken on 3 August 2018. The review found that the EMS has 100% compliance with all objectives and targets bushfire, sustainability (waste and energy) and compliance with conditions of approval.
- System improvements undertaken or considered include solids handling improvements, composting of sewage sludge and a proposed biochar trial.
- Consideration of the use of drones to improve assessment processes and also looking at other analysis that can be done with drones e.g. weed analysis.
- Source water protection programs – Icon Water manage the whole water cycle from the catchment to treatment to sewerage treatment. Influence with stakeholders (i.e. land managers, ACT Parks and Conservation Service, Councils, NSW LLS) on source water protection and erosion hot spot plans for Googong are currently being developed.

3.4 OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN

The version of the OEMP on the internet is Version 5 dated 30 May 2017, the version of the OEMP on the intranet was Version 6 dated May 2018. This relates to document control and has been combined with the observation above as **Observation 02**.

3.4.1 Statutory Framework

The biannual management review undertaken on 3 August 2018 found 100% compliance with all compliance with conditions of approval.

3.4.2 M2G Sub plans

M2G sub plans include:

- Stream Flow and Water Quality Management Plan
- Aquatic Ecology Monitoring Plan
- Landscape Rehabilitation and Terrestrial Ecology Management Plan
- Offset Delivery Plan

Compliance and implementation of these plans is presented in Sections 3.5 - 3.8 below.

3.4.3 Existing Systems and functions

Commitment to sustainability

Commitment to sustainability is discussed in the management review. Some examples are provided under the Environmental Policy Section above.

Water Supply and Sewerage Response Plan

In accordance with the Utilities (Emergency Planning Code) Determination 2011 (ACT) (the Code), Icon Water is to test the Water Supply and Sewerage Emergency Plan (WSSEP) at least annually.

To prepare for the test an exercise plan was developed describing the scenario and objectives set for the test scenario. A map was prepared of the potential inundation area as a result of the incident to provide a visual representation of the scenario.

A test exercise was undertaken to test the EN07.03.04 Murrumbidgee to Googong (M2G) Pipeline Emergency Response Plan (M2GERP), the EN07.03.03 Water Supply and Sewerage Emergency Plan (WSSEP) and a business need to test the EN07.03.18 Incident Management Centre Operations Plan (IMCOP) on the 24 March 2017.

The test scenario was a full-bore rupture of the M2G pipeline with associated impacts on roads, environment and electricity infrastructure.

The test achieved its aim and objectives.

A number of opportunities for improvement were identified during the exercise. The Risk and Emergency Management Branch will coordinate the implementation of those improvements. These were entered into "Guardian" and responsibility and a time frame assigned. Guardian entries were reviewed at the audit.

Environmental Incidents and notification

Seven environmental Incidents and/or near misses have been recorded in the 2016-2018 reporting period, however one of the recorded incidents was the *Swainsonia recta* translocation plot fencing which was raised in the previous (2016) compliance audit and was closed out on the day. The other six incidents included:

- 23/12/16 – There was an exceedance of pH during an operate to maintain (then APPLE) pump run. Pumping was halted, however it is also noted that prior to this incident, Iconwater had engaged GHD to review the pH triggers.
- 22 and 23 February 2017 Further pH and EC exceedances
- 26 – 27/6/2017 Further pH exceedances
- 18 October 2017 the electrical conductivity (EC) levels in Burra Creek (measured at the Burra Creek at Burra Road gauge 410774) were exceeded

It was noted that following further environmental monitoring and an independent review, revised operating management plans have been approved by the regulators and the new pH has a maximum value of 8.5 and EC of 600 $\mu\text{S}/\text{cm}$ (previously it was 400) the exceedances of EC and pH above were within the targets included in the new approved plan.

- Formal monitoring of land condition at the M2G Offset property and M2G pipeline corridor was not conducted during Spring 2017 as required under the M2G Operational Environment Management Plans. This monitoring was delayed until early Autumn 2018, therefore not fulfilling the biannual monitoring requirements of these land assets. Staff resources were inadequate during the Spring/Summer period of 2017-18 to conduct the monitoring, following multiple staff in acting roles and being light-on for officer level employees. During the 2017 spring/summer period, the properties underwent essential seasonal land management works. This compliance audit checked that the land condition checklist is being completed and found that a process is now being maintained.
- On 21/06/2018 during maintenance of the fish egg filter a small fish was discovered inside the element. The fish was dead and estimated to be approximately 20mm long.

The filter elements are designed to prevent fish eggs (primarily European carp) from entering the M2G pipeline and being transferred from the Murrumbidgee River to Burra Creek and Googong Dam. The effective operation of the fish egg filters is a condition in the approved M2G environmental management plans (Commonwealth, NSW and ACT Regulators) as a control to prevent transfer of European carp into the catchment upstream of Googong Dam.

The incident report and investigation was thorough and suggested that the fish came through the filter either as an egg or fish passed through the filter chamber against gravity flow during a prolonged filter change over.

A number of open actions are underway as a result of the incident including:

- Conduct otolith (ear bone) age analysis of fish recovered from filter to determine fish age and potential relationship with infrastructure operation and maintenance activities (Due date 13/9/18)
- Review potential failure mechanisms and identify appropriate controls for implementation to ensure effective operation and maintenance of infrastructure designed to prevent transfer of European Carp. (Due date 13/09/18)
- Conduct e-DNA sampling along Burra Creek to determine current presence/absence of European carp, identify existing potential sources of Carp in the catchment area and understand efficacy of M2G biosecurity controls. (Due date 30/11/18)
- Conduct electrofishing in the Googong Reservoir from Burra Creek towards the confluence with Queanbeyan River to determine presence/absence of European carp, verify species fish species recorded by reputable fisherman and understand efficacy of M2G biosecurity controls. (Due date 30/11/18)

All of the above incidents have been reported to the relevant regulatory bodies. A review of reporting was undertaken as part of the audit and found that the December 2016 incident was recorded in an incident report and the report provided to the all six government agencies on the 20/12/16 as noted in the guardian system.

Integrated management components

It is noted that since the 2016 audit further integration of the OEMP with the broader Icon Water management systems has occurred. This includes:

- Icon Water Operations plan – looks at water supply catchment and source conditions and expected customer demand.
- Operation and maintenance manuals – developed in accordance with manufacturers standards across Iconwater, including for M2G.
- Integrated management system – Integrating requirements of Quality, Safety and Environment.
- Risk management – operational and maintenance risks across Iconwater including M2G.

Performance Objectives

A review of the project's objectives and targets was undertaken during the audit. In summary, the following conclusions were drawn:

- Objective 1 – This is being met through the implementation of the OEMP, sub plans and EMS. Although some inconsistencies in version control were noted.
- Objective 2 – The aquatic ecology and water quality baseline data have been reviewed and new targets established in approved plans. One breach in relation to fish entering, despite fish screens. The investigation found that despite a non-conformance with the requirement, it was not a systemic problem. Ecological and water quality monitoring is occurring.
- Objective 3 – This is being met through the OEMP and Water Quality and Streamflow Management Plan. Specific measures include the geomorphology monitoring program, it is noted that the latest monitoring was undertaken in 2015, with another session planned for 2018. No erosion as a result of the works has been noted during operations.
- Objective 4 - This is being met through the implementation of the landscape rehabilitation program and the offset management program. A revised Offset Delivery Plan (ODP) and the Landscape Rehabilitation and Terrestrial Ecology Management Plan (LRTEMP) have been implemented and were approved by the relevant agencies in 2018. Weed management has been ongoing at the offset site and as agreed in the property interaction plans (PIP). It was noted at the time of the audit that landholder rehabilitation is almost complete with very few landholders requiring ongoing management of their lands.
- Objective 5 – This is being met through the planning and undertaking of maintenance work. Specific measures in place include geomorphology monitoring in relation to potential impacts on London bridge.
- Objective 6 – This is being met through the implementation of the complaints handling processes. No environmental complaints were noted during this reporting period.
- Objective 7 – This is being met through the implementation of the OEMP and other sub plans.
- Objective 8 – This is being met through the implementation of the offset plan.

Governance

Environmental reference group

The terms and conditions of the ERG was updated in 2016 to reflect the stage of works. General communication is via the information available on the website regarding updated plans etc. Emailed evidence of the changes to the terms of reference was sighted at the audit (email dated 30/6/2016 from Sally Wright). The terms require that the ERG is notified when M2G is in OPERATION mode for 30 days. It was noted at the audit that maintenance pumping commenced on the 22/8/2018 as part of STAND BY mode and therefore the notification requirement for an OPERATION mode had not been triggered. The ERG is also notified of operate to maintain runs.

Community information and reporting

At the time of the audit all relevant monitoring, environmental management and reporting data was current and available on the website.

One complaint has been received in the reporting period and due process was followed. The complaint was received on 30/03/17 concerning Williamsdale Road causeway protection during the maintenance run. An investigation was immediately conducted and according to all instrumentation over the period and the onsite observation, all flow pumping was within specification, including the requirement not to pump if flow conditions are above the 1 in 2 year flood level. It should be noted that there were two larger rainfall events in the period on 20 and 21 March with a total of about 90mm falling over two days, but there were no M2G pumps operating during that period.

At the time of the audit there were only 5 landholders that had not agreed to take over management responsibilities following the 5 year rehabilitation period. It was noted at the audit, that one easement within a property is likely to be managed in perpetuity by Icon Water. One other property easement may also go down this path.

Auditing

Internal auditing is occurring in line with the requirements of the OEMP. The latest internal audit was in 2018 and found no non-conformances.

Training

Icon Water implements a business-wide induction package which includes an environmental induction package – this has been recently updated and was uploaded on to the intranet in August 2018.

At present the induction is for new staff however there is a plan in the future to develop refresher training.

The forward training plan on SharePoint was reviewed and includes a toolbox talks scheduled for a 24 month period for the 17/18 years. Some of this is specific and some generic to the organisation. Training deemed relevant to M2G specifically was the “working in waterways and fish virus awareness”. Training was delivered between the 30 June 17 to the 30 June 18 internally to water engineers, asset monitoring and compliance, environment and sustainability staff as well relevant external contractors

It was noted at the audit that the OEMP Section 6.8 states

Two main forms of training include:

- *Induction training (taken upon commencing work)*
- *M2G specific ‘Toolbox’ training*

The induction training and toolbox training packages will include, but will not be limited to:

- *the purpose and objectives of the M2G Scheme*
- *the OEMP and sub plans (purpose, objectives etc.)*
- *legal requirements including due diligence, duty of care and potential consequences of infringements*
- *environmental roles and responsibilities*
- *conditions of licences, permits and approvals*
- *controls in place to ensure environmentally sound operations and maintenance*
- *incident management and emergency response and control*
- *significant risks and concerns associated with operations and management.*

A review of the training information in SharePoint noted that a toolbox that covered training specific to the OEMP and M2G had been prepared but hadn’t been delivered to relevant staff. ***This is raised as a NC 1.***

3.5 LANDSCAPE REHABILITATION AND TERRESTRIAL ECOLOGY MANAGEMENT PLAN

Interviews with staff Ben Bryant and James Gray indicate the requirements of this plan have been largely completed as the 5 year rehabilitation and monitoring of private property was completed in August 2016.

PIP’s have been prepared for 17 private landholders. Iconwater’s targets regarding rehabilitation is detailed in Section 3, Table 3-1 of the Landscape Management and Terrestrial Ecology Management Plan (LMTEMP). One inconsistency was found in the LMTEMP. Section 3.2 refers to the monitoring requirements located in section 3.3 of the report. Section 3.3 does not include a monitoring regime. This has been raised as an **Observation** along with other inconsistencies in documentation.

Prior to requesting that the landholders agree that the rehabilitation is complete and that they can now gain access to the land and take over responsibility for the maintenance of their land Iconwater engaged consultant Ecological Australia to monitor the site and test that they are meeting the KPIs, namely that they have achieved 70% cover and that 50% of the ground cover was native. Two property assessments were reviewed at the audit and found that while the KPI to achieve 50% native cover had been met, the KPI to achieve 70% cover had not been met in one instance and for the other neither of the KPIs had been met. Discussions with M2G staff indicate that they believe they had fulfilled their obligations in attempting in achieving their targets. Where targets have not been met this has been due to a combination of factors including lack of land holder support (i.e. not excluding stock from the rehabilitation areas) and the climatic conditions. There was ample evidence that the M2G team worked with the landholders to try to resolve concerns.

A review of the latest (Ecological Australia – BlueGum2016) planting monitoring report found that the 90% survival rate target and in many instances the lower 70% target has not been met. This can largely be attributed to grazing and the extremely dry drought conditions.

It is noted that Ecological Australia – BlueGum2016 recommended a changed KPI of 70% survival rate and that this has been accepted in the latest iteration of the landscape plan approved by regulators.

The report further recommended that *Planting maintenance should be improved, particularly watering at exposed or elevated situations, and reducing the amount of smothering herbage around plantings on properties associated with non-native pasture.* It was noted that these actions were then raised in guardian and further maintenance of the areas commissioned.

3.6 WATER QUALITY AND STREAMFLOW MONITORING PLAN

APPLE / Operate to maintain pumping is scheduled to occur every quarter. In practice the streamflow has to concur with baseflow protection for the Murrumbidgee River. There is a requirement in the Water Quality and Streamflow Monitoring Plan (WQSFMP) to protect a baseflow in the Murrumbidgee. This plan sets the baseflow, and this baseflow often did not allow pumping at APPLE/Operate to maintain levels. As a result GHD did an analysis of streamflow over a longer period and this resulted in a reduction of the baseline flow. SCADA data monitors flow and shuts down the pumps if the baseline flow doesn't meet criteria – see page 9 of WQSFMP.

Water quality parameters have also been simplified and modified to reflect naturally occurring conditions. The GHD report found that the natural system of the Murrumbidgee often sits above 8 naturally. The baseline criteria for pH now been set to 8.5 ph. Section 3 of the plan sets the limits of operations and sets targets to protect Burra Creek.

Form F0053.4d is the mechanism that ensures the streamflow and water quality parameters are met prior to prior to operation or operate to maintain. The audit reviewed the checklist for the operate to maintain scheduled for July 2018, the first check was done on the 13 June 2018. Interviews with staff indicate that the intent of the checklist is that it is completed at intervals; four weeks, two weeks and one week prior to pumping. The decision to operate is dependent on water levels. The most recent check was done on the 16 July 2018 and the operate to maintain run was done the following day. Part of the checking process is that a notification to pump is sent to stakeholders. The team leader customer services verifies that this occurs. This form gets sent to the water engineers as there are recommendations around the pumping and monitoring requirements for them to implement. The email notifying the team leader customer service of the four week check was sighted for the 13 June 2018.

It is noted that this form is not mentioned in the SFWQMP. Nor is the requirement to do the checks at 4 weeks, 2 weeks and 1 week prior to pumping. It would be useful for this to be either documented in the plan or elsewhere

in the system. This could be included in the SFWQMP or the Work instruction M2G operate to maintain. It was noted that the form had no related procedure. This is raised as **Observation #03**.

Operate to maintain commenced in July 2018. On the 22/8/18 an official declaration was made to be in operate mode as much as the base flow allows and the other criteria is met.

There is an online portal that shows all the monitoring points for M2G (as well as other Iconwater sites). The portal shows streamflow and other water quality parameters. Any decision to operate requires that either this data or the SCADA is checked prior to operation. A check of the data at the time of the audit showed that streamflow was at around 172.7ML/day, the baseflow conditions set in the SFWQMP for August are 133.6ML/day. Therefore, the data meets the requirements to pump in August on this day. Downstream requirements to ensure that the Burra Creek is not flooded were also met.

3.7 AQUATIC ECOLOGY MONITORING PLAN

Prior to the latest version of the Aquatic Ecology Monitoring Plan, Jacobs were commissioned by Icon Water to review the plans and monitoring requirements (as the pipeline had not been in operation at all) (Jacobs 2014). This version of the plan (Vers 4.1 October 2017) introduces sentinel monitoring, which accommodates reduced monitoring for the sentinel period (non operational periods).

Carp egg monitoring at Angle Crossing and in the discharge areas in Burn Creek is undertaken once every four years in the carp spawning season – the last monitoring was undertaken in March 2014. However, as the AEMP was not specifically audited at the last audit a review of the data was undertaken. The aim of the 2014 survey was to confirm that Carp and or Oriental Weather Loach were absent from Burra Creek as this is one of the primary concerns (i.e. the introduction of alien species into Burra Creek and Googong reservoir) and identified as a key threatening process in the EIS.

Key findings from the autumn 2014 survey are:

- The capture of juvenile Murray Cod at Angle Crossing
- No native fish species in Burra Creek
- No Carp or Oriental Weather Loach detected in the catchment upstream of Googong Reservoir

The results are consistent with the aims.

The results of the monitoring for all the other aquatic ecology parameters, undertaken in 2015 (GHD 2015) indicate that there was no significant change in water quality, periphyton, geomorphology or macroinvertebrate data at Angle Crossing or at Burra Creek monitoring locations. Similarly, there was no change in data at the Murrumbidgee Pump station site for measured parameters.

Interim sampling occurred in May 2018 and spring sampling is scheduled for later in 2018 as per the requirements of the plan.

3.8 OFFSET DELIVERY PLAN

The Offset Delivery Plan and its subplans are high-level guidance documents to assist Icon Water in managing the offset site under its obligations, and provides baseline data on the offset site for future comparison. The documents do not specifically provide actions or dictate activities. This is done through a monitoring and inspection regime, which includes 2-yearly monitoring by ELA and internal six monthly inspections by E&S staff.

An inspection checklist (Form FO03.01d) M2G Property Condition Assessment Checklist is used twice per year to check that the requirements of the ODP are being implemented. A review of the inspection checklist was undertaken on site for the checklist dated 26/4/18. As no recommendations were made in this checklist all the

site visit was able to determine was that the checklist had been completed. It was noted that the site was being maintained and no issues were raised for the offset site.

A review of the recommendations made in the 2016 M2G Biodiversity offset monitoring report was undertaken in the field. These actions were incorporated into the calendar of tasks broadly contained in the M2G Biodiversity Offset work program for 2016/17 – 2019/20, although it was noted that it was difficult to track the specific action as the description was relatively broad. The substantial actions are also included in the environmental works program on SharePoint.

The EMS Environmental Services Register and Environmental Works Program captures much larger works, such as responses to incidents (EG the carp incident and associated actions)

The site visit checked the planting at the Bursaria site and in the gully between the two formal offset areas (although it is noted that the whole property is managed regardless of the offset boundaries). The plantings are healthy but showing signs of being grazed.

A review of the Scope or Works issued for the Biodiversity Offset Site in January 2018 was reviewed. The work included rock armouring of erosion lines to increase bank stability. This areas was also visited during the site visit. No substantial rain had occurred since the installation of the rock armouring; however, it appears likely that the armouring should serve to reduce further erosion of the gully.

Box plot exclusion fences have been installed to monitor the pressures of grazing by native and exotic herbivores of the longer term. Dam drainage detention structures have also been installed allowing only gradual release to reduce water supply access supporting excess grazing. It was noted during the site visit that the site is heacily grazed and large numbers of Eastern Grey Kangaroos are present on the site. Plans are underway to determine whether culling of the Kangaroos is required.

Post completion reports were reviewed for the offset site plantings that were inspected at the site visit. The scope of works included a maintenance and watering schedule that is ongoing. The site inspection noted that the plants were in good condition with few mortalities and only a very small number of plants were noted as having damaged or missing tree guards.

A post completion report for weeds management of the pipeline was also reviewed for the 2017/18 weed program. This included spring weed control of St John's Wort and other broad leafed weeds along the pipeline corridor. Weed spraying was evident at the site with lots of stands of St John's Wort showing all above ground foliage as dead. Closer inspection showed that the weed is recovering with a healthy root stock and some leaf growth reappearing. It is recognised that St John's Wort is a persistent species and will require ongoing management in order to control.

3.9 LICENCING

The Water pipeline holds a licence issued in 2011 under the Pipelines Act 1967 (NSW). The licence conditions include pressure test and water quality sampling.

Googong water treatment plant holds an EPL:

Environment Protection Licence No. 5427

Licensee: ACTEW Corporation

Premises: Googong Water Treatment Plant

via Old Cooma Road

Queanbeyan NSW 2620

The last reporting for the EPL was in July 2018 and has been posted to the website in accordance with the EPL conditions. No exceedances were reported.

ATTACHMENT A

Corrective Actions Issued at the Close-Out Meeting

Corrective Action Request	
CAR No.: <u>001</u>	
Audit Date:	22-23/8/18
Activities Under Review:	M2G Operational Compliance
Audit Criteria:	CoA, SoC, OEMP, OEMP subplans
Type of Audit:	<input checked="" type="checkbox"/> External Audit <input type="checkbox"/> Internal Audit
Requirement (Standard Clause #, procedure #):	
	Condition of Approval 6.4
	OEMP section 6.8 training

Details	
<p>Section 6.8 of the OEMP requires that toolbox training packages are to include the OEMP and sub plans. It was noted at the audit that a specific toolbox called M2G environmental conditions has been prepared to meet this requirement but that this particular toolbox talk has not been delivered to all relevant staff.</p>	
Proposed Action:	
	Sally Wright, James Gray and the auditor discussed that this could be delivered to relevant staff at the next branch meeting
Date action is to be completed by:	30 September 2018

Action taken:	
Client Representative Name:	Signature:
Benjamin Bryant	
Date:	

