

## PENSTOCKS PROVIDE IMPROVED PLANT PERFORMANCE

The Lower Molonglo Water Quality Control Centre (LMWQCC) is the main treatment facility for Canberra and is the largest inland treatment facility in Australia.

Sewage is treated and released into the Molonglo River. It then flows into the Murrumbidgee River and drains into the Murray- Darling Basin river system, ultimately discharging into the ocean south of Adelaide. Icon Water's treatment process ensures that the water that is discharged into the Molonglo River has minimal impact on the environment and downstream users.

To improve plant performance, Icon Water Lower Molonglo Water Quality Control Centre (LMWQCC) replaced an isolation gate. The single isolation gate manages flows across two grit removal tanks, located inside their Raw Wastewater Channel. The arrangement was upgraded to include two new penstocks with built-in stoplogs. Six stopboards were also installed to increase plant process reliability, reducing operational disruptions and maintenance.

Operators require the ability to isolate and control flow into grit removal tanks. Installation of actuated penstocks at the entrance to each of the two grit removal tanks facilitates the ability to isolate penstocks without manual handling. Penstocks also allow partial closure of one or both gate structures to manage flow rates through one or both grit removal tanks.

AWMA custom designed and manufactured a pair of penstocks, one between the diversion gate and each of the two grit tanks. Each penstock was supplied with a stop-board frame and stop-board to facilitate double isolation to each of the grit tanks. This provides improved isolation of the grit tanks during maintenance activities, thereby reducing the likelihood of a significant safety incident. It is anticipated that SCADA connection will provide remote actuation of the penstocks.

The inclusion of six aluminium stopboards, provides secondary isolation between the Primary Distribution Channel and the Flocculation/Grit Tanks.

Specifications included the ability to clean the penstock guides without the need to enter the channel or any confined space. Location of the penstock actuation was required to be above the water level to facilitate future maintenance. No moving parts fixed to permanent elements were to be located below ground level. Adhering to the strictly limited and scheduled planned operational shutdown periods and managing exclusion zones, under confined space conditions, were the challenges of this project that AWMA successfully resolved.

Upon final inspection of the infrastructure AWMA was commended on the manufacturing processes; 'AWMA's welding in aluminium and stainless steel was exceptional and the best ever seen'.





# GENERALLY SPEAKING

AWMA operate under a strict internal quality management system. These quality procedures also facilitate the professional development of our staff as we empower them to improve their quality of work, which in turn improves client outcomes.

AWMA regularly review our performance in all areas. This month we shall undertake our routine employee performance reviews.

Not everyone enjoys the process of self-assessment but I believe it is universally accepted that 'stepping back' periodically and objectively discussing how we are all travelling against previously set goals, is a valuable process.

Each year AWMA complete a few hundred projects of varying complexity and value. As part of our ISO 9001:2015 Quality Management System we have committed to review all of our jobs internally, as well as gain insight directly from our customers.

This feedback all goes towards a continuous improvement process that ensures AWMA delivers products and services that meet (or exceed) customer and regulatory requirements.

So if you have recently completed a project with AWMA, it is likely that you will receive a follow up call from us. Thank you to all those who have assisted with this process in the past. Please be assured, we value your feedback and actively use it to continuously improve our performance and provide a greater level of customer satisfaction.

  
**Brett Kelly**  
Managing Director

  
**awma**  
Water Control Solutions

## NO FLOOD RECOVERY DOWNTIME

**"They're great -They work!!" exclaims landlord after successfully deploying AWMA Flood Barriers, "with no flood water entering the building, its business as usual almost immediately after the flood waters recede".**

Castlemaine's 'The Mill' located in central Victoria, was established in 1875 as the Castlemaine Woollen Mill. In 2014 the site was purchased by two locals with a vision to develop the space to support local businesses. Extensive development has already seen a great response from visitors to the area.

In addition to working on the development of The Mill, landlord Phil McConachy recognised the need to protect the historic buildings, property and operators from frequent flood events. Located along Castlemaine's Barkers Creek the site is subject to flash flooding with water rising and descending extremely quickly. In September 2016 floodwater broke the creek banks at 7am to reach the sites café entrance by 9am. Fortunately Phil had slept on site that night to ensure that as soon as floods were predicted to head his way, with a mate and a bobcat he dropped a number of AWMA Flood Barriers into their embedded frames within doorways and entrances to isolate the property

from floodwaters. By 2pm, the same day, the knee-high water had receded, the flood barriers were back in storage and businesses could operate as per usual.

Phil was so impressed by the ease of operation and success of the flood barriers that he now has four AWMA Demountable Flood Barriers with three more soon to be delivered, allowing a "lockdown" of the whole food precinct which is located on the creek floodplain.

The embedded frames can be protected in high traffic areas or be customised to replicate the aesthetics of adjoining walls.

Phil has since installed a solar powered sensor in the nearby stormwater pit to provide an alert signal with enough time to allow installation of all flood barriers before waters reach access areas. With sleepovers no longer necessary, Phil can rest assured that his property is well protected.





# FISH EXCLUSION SCREENS

Over the last few years AWMA have been in discussions with many organisations across numerous countries, assessing the issues associated with fish entrainment in water diversion systems. In order to deliver a sustainable solution that meets local requirements AWMA have partnered with international specialists under an arrangement that allows local manufacture and customised solutions.

AWMA now offer a range of fish exclusion screens to suit various (gravity and pumped) diversion applications including pump stations, irrigation diversions, water treatment plant diversions, hydro power facilities and cooling water intakes.

AWMA locally manufacture, support and service a range of fish and debris exclusion screens with a degree of customisation available. The screens utilise proven designs from 'Intake Screens Inc' (ISI) and 'Hydrolox' both based in the United States. These companies are specialised and experienced in their field. Together with AWMA's extensive manufacture and service capabilities, the market can expect effective, high quality products that meet local requirements.

AWMA will continue to partner commercial, community and educational projects to promote and deliver sustainable water control solutions without risk to flora and fauna.



# MODERNISATION PROJECTS

The \$27 million Swan Hill Modernisation Project (SHMP) required infrastructure upgrades and new fishways for the Lower Murray Weir and Fish Point Weir as part of Goulburn- Murray Water's (G-MW) Connections Project.

The Swan Hill Modernisation Project in north-west Victoria required the lowering of the Little Murray Weir pool by 2 metres, as well as integrating a fishway, automated control system and debris screens. AWMA custom manufactured dual leaf undershot ULF Penstocks for the fishway entry and exit points. A fully integrated stopboard frame and walkway design provided savings on installation costs.

The second site, Fish Point Weir required a new automated overshot gate to be retro-fitted to the existing structure, as well as three ULF undershot

penstocks and a set of modular stopboards for a fishway management.

A custom designed 2-in-1 MultiBay LayFlat Gate provides automated overshot flow regulation with integrated bulkhead gates for emergency isolation. The structure measures 6100mm wide x 4300mm high, allowing 5400mm clear water for a 2200mm supply level. Associated equipment includes real-time level sensors, access platforms, lifting devices, storage systems and actuation systems encased above flood levels.

AWMA's gate automation control and monitoring platform allows the same gate control methodology to be applied to both Lower Murray Weir and Fish Point Weir, reducing the whole-of-life costs for both sites.



# WATERWAY BOOMS



AWMA has been appointed as the exclusive Australian representative for the Worthington range of waterway barriers including debris control and dam safety systems.

Worthington is renowned for providing quality waterway barriers and containment booms for applications including:

- **DEBRIS CONTROL**
- **PUBLIC SAFETY AROUND DAMS**
- **BOAT BARRIERS**
- **FISH GUIDANCE SYSTEMS**
- **WATERWAY SECURITY BARRIERS**
- **STEEL PONTOONS**

Like AWMA, Worthington believe that it is not about their experience, but how that experience is used to benefit others. Worthington is the most trusted and called upon name to provide quality waterway barriers and containment booms.

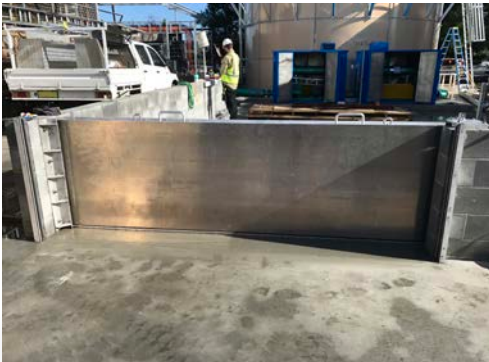
AWMA service and support includes accurate modelling and tailored solutions to ensure the sustainability and suitability of your boom line.





# RECENT PROJECT GALLERY

INNOVATIVE - CUSTOMISED - SUSTAINABLE



FLOOD | ENVIRONMENTAL | IRRIGATION | WATER TREATMENT | DAMS | ENERGY & RESOURCES

**awma**  
Water Control Solutions

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