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"Horses for Courses" and Maintenance at the Heart of Effective Stormwater System Decisions

Alan Hoban's forthright opinion piece in last month's Bulletin generated a significant amount of comment and I think that, for the most part, is extremely helpful.

Helpful in that it gets the industry talking, arguing, discussing and then pushing for better outcomes. If we stop talking, nothing improves, and no one wants that.

We had always planned to invite one of the industry's leading professional voices to provide an alternative point of view to Alan Hoban's in this month's issue and who better than Murray Powell. The level of Murray's contribution to the industry over many years is probably best reflected in his selection as the "Mitchell Johnson" of the Stormwater XI named at last year's National Conference.

The title of his opinion piece 'Get Over This Us vs Them Mentality – Horses for Courses (and Maintenance) The Only Legitimate Solution' sets the tone for a well-argued presentation.

Early within his piece Murray suggests 'Some of the things he (Alan Hoban) wrote I agree with, many of the things he wrote I do not agree with and some of what he wrote, to me seems plainly unfair'.

This Bulletin also features an opinion piece from Natalie Payne, Co President of Stormwater NSW and Waterways Rehabilitation Officer from Blacktown City Council. Natalie's piece entitled 'Are We Stuck On The Rails' offers her insights into the way forward for stormwater management, taking into account both Alan's and Murray's views.

We received a third opinion piece from Andy Hornbuckle where he considers the challenges faced by the promoters of stormwater treatment devices and how best we as an industry should be trying to meet those challenges.

He goes on to challenge the industry itself to identify and support a sustainable funding model for stormwater management and where elements of that funding should be allocated.

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Thank You Sustaining Members for Your Ongoing Support



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President's Message

Hello Stormies,

Stormwater Australia's Annual General Meeting next week was intended to coincide with the tabling of the Stormwater Inquiry report in the Senate. Although, we have just received advice that the release of the report has been delayed by a couple of months.

I am not sure what this means – it is the second reporting extension granted to the Senate Committee – but I'm hoping it's got something to do with a change in government direction.

Despite this disappointment, with the intent to formally appoint our new Board at the AGM I am expecting the meeting we will usher in a new era for the Association.

Getting to this point has been a long grind. Although I have been fortunate to be able to dedicate a couple of days a week exclusively to 'stormwater stuff' there is a lot more that can be done.

When I took the President's gig on a couple of years ago I did so with a conscious desire to build upon the earlier work of Steve and embed a paradigm change from being an organisation which essentially went through the paces, to a more dynamic and proactive organisation which was committed to taking a stand on key issues.

This requires a number of building blocks to be in place. From the perspective of a national association operating in what is essentially a federation model, an important component is to create a common language and build procedures that engender trust and respect between the various state entities.

As a member based organisation I consider it vitally important to have some common and core functionality that allow us to efficiently and effectively manage the entire membership process so we can spend proper time and collective talent on the important things (like advocacy).

I'm really encouraged by the response to the Alan Hoban article; the majority of feedback has been constructive, and overwhelmingly supportive of the need to tackle issues head on and have a mature and open discussion about what we need to be doing.

I recently attended a Council officer's workshop in Brisbane, which was convened by Healthy Waterways.

It may sound corny, but I was very pleased to see a Council officer hold the Bulletin aloft to the meeting and state words to the effect that 'these guys are looking out for us.'



Get Over This 'Us' vs 'Them' Mentality Horses for Courses and System Maintenance the Only Legitimate Solutions

An opinion piece by Murray Powell, who was also selected as a member of the Stormwater XI at Stormwater 2014, in response to the September article by Alan Hoban

The Editorial Team at the Bulletin approached me some months ago to prepare an opinion piece on engineered treatment systems. The Senate Enquiry into Stormwater then justifiably took over Bulletin coverage and I thought the opportunity to present my ideas had passed.

But then I was asked a couple of weeks ago to prepare that piece, but to also take into account Alan Hoban's Opinion Piece in the September Bulletin. And Alan's piece certainly has given the industry plenty to talk about. Some of the things he wrote I agree with, many of the things he wrote I do not agree with and some of what he wrote, to me seems plainly unfair.

I'd like to begin by telling you what I like about trains.... They are predictable and for the most part reliable. No traffic lights, no remembering not to speed and no need to keep filling up with fuel. To a large degree they are stress free and easy to use. In our stormwater industry we don't all need to buy the latest flashy car when the good old fashioned train will get you to the same place.

Like Alan, I too have come across a few Councils that don't want "manufactured treatment devices", but in my 25 years in this industry, I have come across far more that do.

What these Councils like is the easy ongoing predictable maintenance of manufactured treatment devices. They don't have to understand the biological and hydraulic complications of dozens of individually designed treatment solutions. Multiple reliable devices that are all the same make maintenance simpler, easier and therefore cheaper and more affordable.

Both treatments have a place in our stormwater market.

The other thing we know is that proprietary treatment devices of either a primary or secondary nature, can achieve awesome results if designed well, sized correctly, and most importantly... get well maintained. They ARE part of WSUD.

In response to the opinion on the selling techniques of some of our product vendors, it is my experience, and the experience of the stormwater professionals I discussed this with, that there are many reputable companies and a few cowboys, but you get that in any market. Does that make the behaviour of the cowboys acceptable, of course not, but we should also be careful not to tarnish the reputation of the whole sector because of the poor behaviour of a very small minority.

I am well versed in how every single primary treatment device works that is sold in Australia.

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I know their sales spiels and I know the truth. And lets just say, that “on the whole” most company’s claims are more valid now than ten years ago.

In relation to lobbying, I see it as a kind of marketing. Its not illegal and can be extremely helpful. I note, for example, Mike Smith, one of the new Stormwater Australia Board members is a lobbyist. I look forward to some of his skills and networks being applied for the benefit of the Association and the industry.

If a local authority feels unfairly treated or pressured into a course of action they don’t wish to take, they should report it to Stormwater Australia. There are codes of conduct that we expect from our members, and if those codes are broken there should be consequences.

Alternatively, more like the USA, our local authorities could demand a certain performance, and if it didn’t deliver, then the local authority could sue the proprietor. They would be completely within their rights to do this, but at present its considered “un-Australian” ... but for how long? Our local authorities have rights too.

“Biofiltration systems are not the silver bullet, they are not the answer to everything. There are plenty of scenarios where a smaller proprietary solution will be better suited to the site... “

In relation to the proposed Stormwater Australia protocol I think it is essential that input be gathered from all the product vendors that are doing, or have done, testing on their products. I noted in an earlier Bulletin that Stormwater Australia advocated involving all key stakeholders in the development and refinement of the protocol. No one would disagree with that and I look forward to that process taking place. As far as I’m aware, no-one has been excluded from contributing.

I am a huge advocate for maintenance commitments being the Number One criteria when selecting a device. And if Council staff felt like I do, then they need to build this factor into their decision making process. Councils might also like to get independent advice on the type of device, its sizing, and its maintenance expectations (not from the proprietor), so they make educated and logical decisions, based on affordable long term maintenance. But this is nothing to do with the protocol.

When it comes to selecting a proprietary product or a biofiltration system, I would challenge anyone in this industry to tell me its not a matter of “Horses for Courses”.

Biofiltration systems are not the silver bullet, they are not the answer to everything. There are plenty of scenarios where a smaller proprietary solution will be better suited to the site, the uses of that site, and the owners/operators ability to clean it. Don’t get me wrong, biofilters can be a brilliant treatment solution when used correctly. Historically more than 50% of bioretention systems have issues, (due to multiple causes) and if poorly understood or poorly maintained will suffer the same fate as a proprietary solution that is poorly maintained.

EVERYONE it seems is preaching WSUD. Our NSW state conference is titled WSUD.

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I bet you’ll see ten times as many papers on bioretention solutions as you do from device proprietors! Clearwater and Water by Design, and WSUD in Sydney are all talking and training people in bioretention systems. There is NOBODY training anybody in GPT design, sizing, siting, selection. That genuinely concerns me. The industry training in stormwater treatment is heavily biased towards vegetated solutions at present.

The Device Protocol will also NOT suddenly unveil the best proprietary solution in any given scenario. It is a big step in the right direction, but its not the end of the journey. Local authorities will still need engineers, consultants and designers to assist them with sound advice, that may.... or may not include biofilters or proprietary devices.

I understand why Alan’s Hoban’s opinion piece has generated so much “discussion”, and why some people even called me to discuss it. While, as I have noted above, I agreed with a number of the issues raised I think it genuinely failed to note the massive contribution proprietors make to our market. Like them or loathe them, they provide very good, and very cost effective solutions at times.

And because our training institutes are not discussing the functionality / maintenance differences between key proprietary solutions its up to the proprietors to try and keep us all up to speed with new products or enhancements to existing products. Oh, and they will probably try vigorously to get you to buy one, (or approve one) because if they can’t sell their wares, they have no job.

Finally, the “unexplained” die off and problems with some vegetated / biological solutions was noted and it was suggested we should “slow down our roll out of stormwater quality infrastructure until we get a better understanding...”. I don’t agree with this. One of my stormwater mentors, Geoff Hunter said it many years back.... “If a job is worth doing its worth doing poorly”. This means it is better to do something and learn from it, than wait around and do nothing at all.

In reality, with insufficient money even for the correct maintenance of many solutions, there will never be the money to monitor and understand everything about these systems, but we’ll try and learn and grow together. That’s why we have conferences, to exchange information on all elements within the stormwater industry. Luckily, the proprietary solutions all come with maintenance manuals, and their operation is comparatively simple.

So for Councils after less risk and easier maintenance.... my advice is this: think strategic, not necessarily at source, and have a focus on the frequency and cost of the long term maintenance of whatever solution you are planning or approving, and your ride on the train will be far more enjoyable.

Are we stuck on the Rails?

...a Reflection on 'Then and Now' by Alan Hoban

An opinion piece by Natalie Payne (Co-president Stormwater NSW and Waterways Rehabilitation Officer at Blacktown City Council, NSW)

On reading Alan Hoban's article in the last Bulletin and reading an advanced copy of Murray Powell's for this Bulletin, I have produced a piece which is not a direct response but rather a reflection on the issues raised by Alan and Murray.



So we can ask the questions are we stuck on course and not evolving? Are we too noisy or not noisy enough? Are we being effective or are we talking to the same people and repeating the same message? Are some of us snoozing and just riding it out? Do we need to change course? They all relate to the same issue, how do we move forward and respond as an industry to the evolution of WSUD principles

“...maintenance isn't really that sexy.”

Working for a local government authority, I can honestly say it's not that we have a preference for manufactured systems it's just they fit into our existing asset planning framework.

Also maintenance isn't really that sexy, so often asset planning receives a low priority and results in suboptimal asset management plans.

I'm not sure how you make maintenance sexy (our public relations personnel once offered to dress as a sexy macrophyte which may have attracted some attention), but if lifecycle costing was addressed in state government directives on asset planning manuals and templates it would be a start.

The first step is producing guidance, we have this, Water by Design and Melbourne Water both have literature on this, the challenge is embedding this 'guidance' into statutory directives or documents.

I can hear the collective groan of asset managers now about the new skill set they will need and the complexities involved and I sympathise. It hits at the nerve of the main issue, green infrastructure is just another asset in a long line of assets but it's here to stay so we need to accept and move forward.

As for product suppliers, I've come across many and like any industry some are better than others. Like all businesses they invest in a product and market it and like all industries some survive due to a superior product, some survive due to slick marketing and some don't survive even with a great product. It's the nature of business.

At Blacktown Council we have a reputation for being tough on product suppliers, rarely do we agree to pollutant reduction claims. But just as it is our legal right to set standards this opposing view also has its place, without it we wouldn't progress and we wouldn't review our own protocols.

Luckily at Blacktown we are a big council. Smaller councils however, may not have the advantages we have and can be more susceptible to outside influence (and yes I've worked in a range of small regional councils!).

“I think the issue Alan touched on about manufactured solutions versus green solutions is pertinent. In particular our need to seriously reflect on policy and practice for green solutions.”

So is it the fault of the product manufacturer for the way they market their product or is it a failing of the councils and the industry association that have the capacity to provide support and don't? Perhaps it's a little of both.

I once had another council tell me they ask product manufacturers what Blacktown allows and that's what they permit and that if product manufacturer has an issue they should take it up with Blacktown. Whilst this could be seen as passing the buck, how great! They have recognised Blacktown has the skills and funding needed to establish a process and they are adopting it. As a result many product manufacturers have sat down with us, and co-designed research and testing.

I think the issue Alan touched on about manufactured solutions versus green solutions is pertinent. In particular our need to seriously reflect on policy and practice for green solutions. Yes manufactured solutions are sucking oxygen from the green solutions but why? Is it fear or is it because they are a company and they market their product well?

Who markets bioretention or wetlands? It's emerging but time is required to develop off the shelf green infrastructure solutions that work and that are cost effective.

Whether you agree or not these systems reduce complexity and offer a quick option and whilst some may not be optimal solutions they are a start then we can evolve to more complex solutions.

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I also agree with Alan that more science is needed, but what about the evidence that's already there? In Blacktown in the midst of urban development we have a beautiful reference creek (thanks to Air Services for quarantining the land!) full of happy little macrophytes!

We have living proof of how connected imperviousness and other changes due to development can impact our creeks. We can see it! We are monitoring this creek as its catchment is being developed, so over time we will see those changes on paper it will no doubt reflect the existing research findings.

But look, the evidence is there now! Just ask a local resident that used to swim or fish in the local creek. Capture their story and market it (look at the success of the Let's Swim in the Parramatta River campaign being led by the Parramatta River Catchment Group). It's something that local councils are well placed to do as they have great local connections but it's not something we as an industry we particularly view with any seriousness. As stormwater practitioners we need to look outside our models and delve into the warm and fuzzy, and leverage what is already there to help sell the message.

It's also about looking beyond what we traditionally research. The CRC for Water Sensitive Cities has been helping cross this divide combining water research with other disciplines but is it enough?

Often housing affordability and health are the primary issues, why aren't we addressing that as the primary focus of our research and proving how vegetated systems improve affordability and overall health and wellbeing.

We need to think how we can strategically link water into other research streams where water isn't the main focus to ensure water is considered and sold as part of the outcome. This would also help leverage considerably more investment into water research.

In writing this article I can't claim to have a wealth of experience, it pales in comparison to many in the industry but I have a point of difference which offers a different perspective.

“So much of the stormwater movement is about disseminating information, selling a vision, selling an image.”

I finished university in a generation that had the WSUD Philosophy as my core learning. Our more experienced stormwater practitioners are the founders of the concepts and are leading the charge and I have much I need to learn. But I started out with a different base and for me its second nature, I don't know any different.

Take recycling for example each subsequent generation has learnt about it at school, they just know what to put in what bin even if they don't care or think why they are doing it. I truly believe generational change will help drive the creation of water sensitive cities!

I also think we don't understand how to gain traction, network or strategically think to achieve our own goals.

I once sat in a meeting with a round table of a who's who of state government departments. One particularly powerful department said of all the things you want to achieve link it to housing affordability and infrastructure delivery that's how you will get runs on the board in the current environment. In the next breath the other departments said no that's misleading its not what we are about, its not how we want to sell it.

Perhaps the issue is we are too precious to see the opportunities and that whilst we may listen we don't actively listen. Just because it's not getting through on the principles we want, should we throw a tantrum to be heard or should we compromise to set a future foundation?

So much of the stormwater movement is about disseminating information, selling a vision, selling an image. Blacktown Council has progressed in the last decade more than most and we don't have a single vision for what a water sensitive Blacktown looks like, we saw an opportunity and ran, and whilst we may have been backpacking around Europe with an open ended train ticket with little regard for our final destination we are starting to want to change the hostel nomadic life for more certainty.

We have some experience now; we know what's out there, now we can decide what we want! We are only just now creating our vision, but we are creating it with experience and by bringing our council and community on the journey with us.

There are times that I wish we could slow down because I know we are making mistakes. We are on a steep learning curve. The benefit is we have already learnt so many lessons. We have the foresight this time to monitor. I hope the next generation looks at what we have done and has my initial reaction when I came out of university - 'I don't get why you would concrete line everything', but that wasn't what I was taught was it?



Spelling out Sustainable Solutions for the Stormwater Industry!

An opinion piece by Andy Hornbuckle, Team Leader Australasia – Water Quality, SPEL Environmental

As a proprietary device supplier my experience with the stormwater industry is like trying to coordinate an army of rebel ants trying to bridge the gap between two leaves...

My leaf on one side is the launch pad so to speak, my environmental products and supporting engineering and environmental data, my business

case, the reason we exist as a company and I drive this forward with my passion to keep Australia’s waterways and beaches clean and open for our children, and their children, and of particular personal interest Queensland’s Moreton Bay and Great Barrier Reef.

This means I am passionate about the capture and removal of Gross Pollutants, Hydrocarbons, Nutrients and Heavy Metals... the whole gamut.

The composition of the other leaf incorporates the industry... the environmental and civil/stormwater consultants, councils, developers, contractors and last but not least, academic partners.



Who and what are the ants symbolic of?

Who: the people, my colleagues and industry peers in all the sectors previously mentioned.

What: the facts, the fiction, the legislative requirements, the science, the schools of opinion, the capex and opex costs of all the types of different treatments devices.

What is the chasm symbolic of? The gap that everyone is experiencing...nonexistence of a balanced and rigorous assessment protocol and approval / acceptance process/pathway for ALL types of stormwater treatment devices, lack of FIELD data and performance characteristics of ALL treatment devices...

In early to mid 2012 I got a clear and consistent message from the Council DA and Environmental teams in SEQ “we require compliance with the Healthy Waterways Water by Design MUSIC Modelling Guidelines GPT section on page 42, which basically means you need to independently field test your stormwater treatment devices and publish the results in a credible academic journal”...I thought I had my bridge for the gap! A defined pathway forward, a structurally sound and safe bridge...

It turns out it 2015 that the bridge was a mirage! Three years and hundreds of thousands of dollars, and thousands of hours later, when we reached the visionary goal, for the most part [many Councils but not all thankfully] the goal, the hurdle, the benchmark vaporized! A mirage!

The leaves are a platform with one attachment to the branch – a pivot point susceptible to weight. The weight of our independently collected field data, the University reports and the published peer review papers, as we carried them forward from the stem to the end of the leaf, reaching out to bridge the gap, weighed us down and hence the gap has widened.

On the other side, the negative weight of uncertainty with some, wanting someone else to tick the box; others doubting what mother nature is actually doing in the field; add the presumption of some people to prescribe concentration boundaries to an inherently variable environment hardly researched; and then assuming they fully understand things because it’s included in a model...all this weight re-positioned creating a chasm that need not exist.

All of this exacerbated by many key Councils greatly raising the height of the original bar! All I ask is before raising the bar, is give me recognition for jumping the first one and I will keep training to pole vault the new increased expectations!

Why? In my view, because of lack of certainty, technical awareness and education, but also because of things learnt, new industry issues emerging and schools of opinion on how they should or should not be dealt with.

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Who's fault? No one person, council or consultants fault at all...Australia is a comparatively young, zealous and innovative country, and so is the stormwater industry. We are growing up, going through our grades, and gathering experiences both good and bad.

The question is: how are we going to deal with it? I would suggest we deal with it like the issues of life...look around for others who have been through the same experiences and come out on top, seek out their counsel, their golden advice acquired through bitter experience, take the gems that can help us, polish them up to our own specific shine and proudly carry them forward and use them to enhance the environmental state of the lucky country that we live in.

The issue: no national testing protocol [to enable an apples for apples comparison] and uniform acceptance/approval pathway for both proprietary and vegetated stormwater treatment devices. This is causing massive duplication of submission and assessment by industry and Councils, and facilitating an uneven playing field.

Suggested solution: Stormwater Australia has facilitated the development of a protocol and process based on local and international experiences, and developed by stakeholders who are actually doing the testing so know what works and doesn't work. Support for this program nationally will solve this problem ...we need to look beyond a parochial state based view!

The Councils and consultants making the most noise about this issue didn't even bother to respond to the public industry consultation that was offered. So Stormwater Australia is going to run state based workshops in another attempt to get their engagement. If we really care about stormwater we will ensure we positively participate in these workshops!

The issue: common perception that vegetated assets do not need maintenance or need less maintenance than proprietary devices.

Suggested solution: drive around and have a look at vegetated assets ranging from 6 months to 6 years old...and if you still think they don't need maintenance email me for some photos. Every asset needs maintenance. Try not maintaining your car for 12 months.

The REAL industry issue I believe: is the lack of a sustainable funding model for all types of SQID devices on both private and public assets.

Suggested solution: Lobby all levels of Government with a view to getting the Federal Government to address this issue in a sustainable way, they need to give State and Local Governments the support and authority to implement a sustainable funding mechanism for stormwater treatment / gross pollutant capture and this will give Councils the means to implement and maintain these systems, and also the moral authority to insist that treatment occurs on private sites as well.

This has been implemented already in the United States by the Federal Government, and also in Germany.

<http://foresternetwork.com/free-reports/stormwater-solutions-funding-successfully-establishing-stormwater-management-utility/>

http://water.epa.gov/infrastructure/greeninfrastructure/upload/region3_factsheet_funding.pdf

<http://water.epa.gov/infrastructure/greeninfrastructure/upload/FundingStormwater.pdf>

<http://www.miamidade.gov/publicworks/stormwater-utility.asp>

<http://www.victoria.ca/EN/main/departments/engineering/stormwater/stormwater-utility.html>

Explained very simply at a high level, what this means is that every rate payer [the businesses are targeted higher as they typically pollute more] has a small extra fee [commonly \$2.50-\$4.50AUD – a cup of coffee!?] per quarter, this money is dedicated to implementing and maintaining water quality devices and infrastructure improvements for flood mitigation.

And don't tell me we can't afford this...according to World Bank – GDP 29 Sep 14, Australia's wealth per capita is \$67,468USD per capita compared to Germanys \$45,084USD and USA \$53,142USD...

Did you notice I used the word "lobby"? There is a place for lobbying in a positive way.

A senior bureaucrat recently told me "the problem with the stormwater industry is we never hear from them, and when that happens, the Premier thinks everything is ok and nothing needs to change" ...positive lobbying can happen when we all work together, and this will effect change for the good of all.

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I know there are persons who are unsettled by the negative and self-interested lobbying of some industry stakeholders...Having been subjected to it, all I can say is stand up and press on with your eyes on the goal and stick to your integrity.

Don't be put off, it's the world we live in, look at Taxi and Uber, look at the poultry industry with the definition of free range eggs, look at VW – will the car industry get a new testing protocol? And should we stop manufacturing cars whilst they sort it out?

The issue: lack of field data on proprietary and vegetated assets in Australian conditions.

Suggested solution: the industry needs to incentivise this with prizes, grants, recognition. The Universities need to slow down the lab testing and get on with the field [there is plenty of sites to choose from both old and new to retrofit auto samplers and flow meters to] testing...and test to the Stormwater Australia protocol...I acknowledge different types of devices need a slightly different protocol...but the principles remain. You can always flow weight field test, it's difficult but where there is a will there is a way.

I find it incredulous that some of my well-educated, respected industry colleagues refuse to believe some of the data we are publishing in third-party, peer-reviewed journals because it's not what they expected.

Those sort of people need to remember the flat earth theory, that was vehemently defended until a man and his team dared to sail off the edge! Then bingo – new lands and cultures were discovered. Intelligent people were skeptical and outspoken about Einstein's theories of special and general relativity which resulted in nuclear physics...I have a simple message – don't reject new scientific data based on your beliefs, you are trying to limit mother nature with your mind, look up the definition of a scientific experiment...

The next issue is: Stormwater Offset / Offsite Schemes; these schemes are being misused beyond their original intent and robbing the environment from timely and appropriately sized pollution mitigation, and taking work from both the consulting, supplier and contracting industry stakeholders.

The suggested solution: the original intent of this scheme (as I understand it) was for Council to be able to collect funds from sites that are physically impossible to treat, and use the money to implement a stormwater treatment system elsewhere [offsite] in the catchment to "offset" the pollution generated by the site. It was intended that this would be a last resort / option for the developer.

However what we are seeing is that the price of the contribution is much lower than that of a treatment system so naturally the developer takes the cheaper option.

The simple solution would be to ensure the \$m2 rate of the offset contribution is priced significantly higher than an onsite solution. This would give the developer true incentive to make an onsite stormwater treatment system work, whether it's a vegetated asset or a proprietary device.

The argument put forward by some Councils that is that Stormwater Offset schemes are the solution to the lack of WSUD asset maintenance problem. This is a short sighted view and the real solution is to have Stormwater Utilities like other developed nations.

The reality admitted to me by more than three Councils is that they are succumbing to a combination of:

1. lobbying by powerful developers and,
2. the opportunity to have a nice nest egg to do some publicly attractive projects.

So...we all need to keep at this and positively, unselfishly participate in working on progressive solutions to our industry problems, with Water Quality as the paramount common goal.

Stormwater in Australia is actually a young industry, we have growing pains – we just need to keep striving for maturity.

As we get the rebels in the army into the administration and all fall into line against the common enemy of pollution we will bridge the gap because we will achieve balance!



Continued from front page - "Horses for Courses" and Maintenance at the Heart of Effective Stormwater System Decisions

We received a fourth opinion piece also featured in this Bulletin from Andrew Macklin, Managing Director of the Ecosol Group in which he reflects on the challenges faced by those charting the future of their own organisations.

All of these opinion pieces are well developed and I believe the ideas they offer will play a significant role in shaping the stormwater agenda for some time to come.

We look forward to further quality contributions over the months and years ahead.

In relation to, what one of my correspondents called 'The Battle of the Solutions;' there was one common, overwhelming view and that was for some situations vegetated systems are going to be more effective, while for others, engineered systems will meet the needs of the client and the community more effectively - truly a matter of 'horses for courses'.

The common ground for all respondents was, however, the call for more effective maintenance planning, funding and delivery...

No matter what solution an organisations chooses, if they don't plan and fund regular system maintenance the system will fail. And that is bad news for the supplier, for our industry, for the community and for the environment.

So how can we, as an association and members, get maintenance well and truly on the agenda for all system decision makers?

How do we make sure they think about maintenance funding and programs before they "sign on the dotted line"?

Both Natalie Payne and Andy Hornbuckle in their pieces offer some suggestions in relation to changing the way our decision makers think about funding and maintenance that we will explore in future Bulletin issues, but any thoughts on what they have written would be most welcome.

I know system maintenance is an issue that's troubled our suppliers for a long time. I believe it is an issue that Stormwater Australia and the relevant state associations should take up with more enthusiasm and commitment.

By all means let the promoters of vegetated and engineered systems promote their solutions as the best available; after all, that's their job.

Let's also provide the decision makers with the tools they need to make effective comparisons as well as ask all the right questions when it comes to system selection and system maintenance.. As Murray Powell points out, without proper maintenance no system in the world will work effectively.

If we can get this to happen, our industry will be a winner and as a very positive consequence, our waterways will be even healthier.

We look forward to your thoughts on this month's opinion pieces and other Bulletin offerings.

Chris Gray, Editor
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What ensued was a healthy discussion to understand their needs and frustrations and I think Murray Powell's current article just about hits the nail on the head, but we should be grateful to Alan for challenging us to hold a mirror to ourselves.

We did receive a small bit of negative feedback to the Alan Hoban article and in a manner that, upon reflection gave me pause to empathise with others who find themselves on the short end of a range of marketing strategies.

As we take a stand on issues (such as open discussion) I suspect we are going to get burbles of disgruntled (and at times indignant feedback). That's OK, and I suspect not unusual in any maturing organisation.

Moving forward, I expect the role of Stormwater Australia will be to foster open dialogue on important issues, improve industry networking and capacity and create a sense of fairness and equity and in doing so, win a standing of respect from both supporters and detractors alike.

Looking at the range of articles in this edition I can see the issues being articulated from a variety of viewpoints.

Everyone has perspective, and understanding these will help us all to get along and make better informed decisions.

So enjoy this edition, if you think anything needs saying drop us a line, constructive opinion and dialogue is always welcome. So enjoy this edition, if you think anything needs saying drop us a line, constructive opinion and dialogue is always welcome.

It's your Stormwater Australia and you should be getting your two cents a day worth.

Until next time,

Andrew Allan,
National President
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LETTERS TO THE EDITOR



The editorial team are always on the lookout for quality content to share with our members.

We want to hear your stories about stormwater issues and developments.

Send an email to the Stormwater Editor on: editor@stormwater.asn.au to submit a story or find out more.

Singapore's Ingenious Way To Save Water

It rains a lot in Singapore — approximately 94 inches a year.

But rather than let that water evaporate wastefully on the streets and footpaths, Singapore recycles the rainwater through built-in runoff capture systems, reducing both the costs of water purification and its environmental impact.

Scientists believe our global water crisis is only getting worse. By 2025, two-thirds of the world population will struggle to find water and 1.8 billion people won't have any at all.

Using recycled water could be a solution and no country has such a robust system already in place as Singapore, where half the land area is equipped to capture rainwater in gutters, barrels, tanks, and reservoirs.

The most sophisticated of those systems is at the Changi Airport. Between 28 and 33% of all water used in the airport comes from captured rainwater, which is stored in two reservoirs. One reservoir balances the flow of water when tides are high, while the other collects runoffs from runways and green areas.

Each year, the infrastructure saves the airport more than \$US275,000 for non-potable uses, like flushing toilets and performing firefighting drills.

Scattered elsewhere around Singapore are capture systems on top of high-rise apartment buildings, in which 86% of citizens call home.

Rooftop harvesting equipment saves roughly 14 cents per cubic meter of water over relying on nearby rivers and streams or purifying water that flows through soil. When the rainwater isn't collecting on roofs, it's soaking into the urban environment at-large.

There's a fascinating backstory to Singapore's urban sponge scheme.

In the mid 1980s, Singapore's crisis of clean water got so bad that the country had no choice but to get creative. While it had plenty of rainwater, it had no way of capturing it. Water would mix with soil and other contaminants making it unfit for use. So, in 1986 Singapore took the first step in water conservation, creating the Sungei Seletar-Bedok water scheme.

In the decades since, Singapore has transformed its culture into one that prizes its ability to reuse rainwater. Even residents in the outskirts have transformed their homes into capture systems as a means of watering their lawns or, with the right treatment, staying hydrated.

To read more go to: www.businessinsider.com.au

A Time for Reflection and Decisions for ECOSOL

*An opinion piece by Andrew Macklin,
Ecosol Group Managing Director*



In the last Bulletin I read an opinion article written by Alan Hoban from Bligh Tanner Consulting, which I must say was a great read. I found that it was straight to the point, didn't pull any punches, and quite simply highlighted many of the current issues we're facing as an industry.

Alan hit the nail on the head when he said that, as an industry, we need to take a step back and reassess what goals we actually need to achieve, how we want to achieve our goals, and more broadly what we want our industry to look like.

Ecosol as a long standing manufacturer and supplier of stormwater filtration systems currently face great uncertainty. We can often sell our products within one jurisdiction, while at the same time not be allowed to sell the same products in the neighbouring jurisdiction.

We all hope that the development of SQIDEP by Stormwater Australia will eventually smooth our path to market, and all of us gain approvals after assessment under the same protocol.

The points raised by Alan Hoban, and the protracted evolution of SQIDEP, leave us in a tentative position. On the one hand the continued uncertainty in the industry leaves us hesitant to invest in further product research, development and testing. On the other hand Ecosol has been a responsible participant in the stormwater industry for the past 20 years. We have a highly skilled and dedicated workforce that we are indebted to and rely on for our future in the industry.

It's now a time for reflection and decisions for Ecosol. Just like the broader industry, we need to reflect on where we have come from, where we would like to be, and with all of the current impediments, determine if it's actually possible to get there.

For those who aren't familiar with our history Ecosol began operations in Adelaide, South Australia in January 1996 with the aim of developing an at-source method of filtering gross pollutants from stormwater side entry and grated stormwater pits.

Once that aim was met with the award-winning Ecosol Litter Basket, development of a wet sump Gross Pollutant Trap (GPT) began. At the time this became the company's flagship product, which quickly expanded to include the Ecosol Drop Trap.

Back then the primary focus in the industry was the removal of gross pollutants larger than 3mm from stormwater runoff, and it was generally the responsibility of the LGA to procure and maintain these systems.

Today the company's product range, and services it provides, has significantly expanded to meet current industry Best Practice Environmental Management requirements and to assist our clients achieve their Water Sensitive Urban Design (WSUD) objectives.

Continues next column

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Reflecting on our achievements over the past 20 years in the industry has been somewhat enlightening.

I reflect on the many signature projects we've been involved in, the great client relationships we have established and the many exceptional people who have been with us during that time, many of whom are still with us.

After lengthy considerations of all the above, Ecosol has decided that we do wish to continue to be a significant contributor in the future of the stormwater industry.

To be able to do this though we understand and acknowledge that it will be necessary to undertake further field testing of our products in line with SQIDEP.

To help us in the next phase of the Ecosol journey Dr Charles Kelly has recently joined us as National Business Development Manager.

Charles has considerable experience in the stormwater industry, in both consulting and manufacturing / supply environments.

Charles also has significant experience in field testing stormwater treatment devices and will therefore provide invaluable assistance on this front.

Field testing products comes at a significant expense and can take years, not months. Irrespective of this Ecosol is committed to being an ongoing partner in the stormwater industry into the future. We are committed to be, and have always been, ethical participants in the industry.

Our focus is always on our business and continuous improvement, what is best for the environment our clients, and also what is best for our employees and shareholders.

We will keep the industry abreast of our field testing results as they come to hand and we at Ecosol look forward to working with you all in the many years to follow.

OPINION PIECES

Stormwater Australia welcomes opinion pieces. Their publication is however at the discretion of the Executive of Stormwater Australia and the Bulletin Editorial Team.

Opinion pieces are published without comment. They also do not necessarily reflect the views of Stormwater Australia.

When providing an opinion piece please provide your full name, contact details and the organisation or company for whom you work.

We may also require a two or three line description of the types of services provided by your organisation or company.

Email your opinion to the Editor - editor@stormwater.asn.au



Victorian Desalination Plant Could Be Used For First Time To Cope With Hot Summer

Victoria's multi-billion-dollar desalination plant could be used for the first time, as the Andrews Government confronts a looming water crisis in drought-hit country towns.

The State Government is examining whether to start ordering water from the Wonthaggi plant, which has sat idle since it opened in 2012, as part of a review of the entire state's water grid.



Wonthaggi desalination plant pipes. *Gloria Kalache*

But questions remain about how that would help farmers in the Wimmera and Mallee regions, which are not connected to the rest of the grid.

Environment Minister Lisa Neville said all options were on the table, including using Victoria's "insurance policy" against drought.

"It's not about connecting new pipelines to the Wimmera-Mallee, it's about where does water sit, who's got allocations and how best do we use that water," she said.

A draft report on Victoria's water outlook showed there had been a worrying drop in water storage levels in the state's north-west, to 31.5 per cent in the Wimmera-Mallee.

"Victoria's winter rainfall was mostly below average to very much below average over most of the state except East and Central Gippsland," the report said.

"Parts of western Victoria have experienced very low rainfall for over a year, with some parts having experienced lowest-on-record rainfall over the last 14 months.

"In addition to the area of lowest on record rainfall in western Victoria, northern Victoria and central Victoria have all had severe or serious deficiencies."

Melbourne's water storages are now at a relatively healthy 74.4 per cent capacity, compared to 80.3 per cent at the same time last year.

To read more go to: <http://www.abc.net.au/news/2015-10-07/victorian-desalination-plant-may-be-switched-on-over-summer/6835042>

El Nino Unmasked: Changing Conditions Point to Ramped-up Risks for Australia

The impacts of the monster El Nino in the Pacific are likely to intensify across much of Australia, including worsening drought and an elevated bushfire threat, after conditions that were nullifying its effects suddenly retreated, the Bureau of Meteorology said.

In a rare move to reflect “a significant shift towards a drier October nationwide”, the bureau updated its three-month seasonal outlook for October to December just a fortnight after it was issued.

The main shift has been in the temperatures of the Indian Ocean, with the eastern region rapidly cooling off compared with the west, a pattern that tends to choke off rainfall streaming across the Australian continent from north-west Western Australia.

“The Indian Ocean has gone from masking to reinforcing the El Nino in Australia,” David Jones, head of climate analysis at the bureau, said.

“We’ve seen this sharp escalation in the impacts.”

South-eastern Australia’s weather has lurched towards significantly warmer conditions in the past week, with a massive high-pressure trough steering winds from the hot centre into the region.

The bureau is still compiling the data but many early-season heat records will be broken. Melbourne had its hottest maximum so early in October on Monday, with 34.4 degrees, only to set a new mark just a day later with 35.8 degrees.

Sydney had its hottest trio of days so early in the warming season, with the spell broken only by a strong southerly buster on Wednesday morning.

The exceptional heat - in places 15 degrees or higher than average for October - combined with Australia’s third-driest September to create very high fire danger levels in five states.

Outlook worsens

The bureau’s updated outlook highlights the shift in conditions.

Two weeks ago, the bureau issued its outlook for the odds of rain being above or below average for the coming three months, only to increase significantly the area likely to have sub-par rainfall in its update. In some areas, the decrease was as much as 40 percentage points.

To read more go to: <http://www.smh.com.au/environment/weather/el-nino-unmasked-changing-conditions-point-to-ramped-up-risks-for-australia-20151007-gk31ga.html>



Stormwater 2015 – Stormwater Best Management Practice Regional and Rural NSW Conference

By Mick Callan Environment & Waterways Alliance

Council staff and consultants from across the Central West of NSW descended on Dubbo on Friday 18 September 2015 for the inaugural regional Stormwater Best Management Practice Conference.

The event was hosted by the Orana and Central West branches of the Institute of Public Works Engineering Australasia (IPWEA) in partnership with the Central West Councils Salinity & Water Quality Alliance with the support of Central Tablelands and Central West Local Land Services regions.

A conference dinner on the Thursday evening attracted 24 attendees. The dinner was sponsored by local engineering and development firm Geolyse and provided an opportunity for professionals across the region to network in an informal setting prior to the conference the following day.

Caltex Park Function Room in Dubbo was the venue for the conference which was kindly supplied by Dubbo City Council. Caltex Park is an exceptional example of a facility that captures and treats stormwater for reuse through irrigation on the world class playing surface.



Murray Wood and Ian Bailey from Dubbo City Council presenting on the Caltex Park Stormwater Reuse Scheme

The Caltex Park stormwater reuse project was one of five local stormwater best management practice case studies presented in the morning session. This session was extremely well received by attendees as it demonstrated the high calibre of projects being undertaken within the region, proving that significant and industry leading projects are not just the domain of major city councils and developers.

Nerida Taylor from Blacktown City Council provided conference attendees with an understanding of the Water Sensitive Urban Design Capacity Building Program in place at Blacktown and how this could translate to smaller, regional councils.

This presentation was followed by Natalie Payne, Co-President of Stormwater NSW, who worked through a questionnaire to gain a greater understanding of how Stormwater NSW can work with regional councils to achieve best management practice stormwater management.

Continues next column

Continued from previous column

Throughout the day Ecosol displayed stormwater treatment solutions as part of their high quality industry display. Additionally, Geolyse provided information on the services that they provide across the fields of Civil, Structural and Environmental Engineering, Planning, Surveying, Architecture and Environmental projects, and IPWEA were promoted as an industry association for public works engineers.

The afternoon session saw Diana Kureen from Central Tablelands Local Land Services provide an introduction to Water Sensitive Urban Design, which led into an interactive workshop.



Blacktown City Council's WSUD Capacity Building Program presentation by Nerida Taylor

The workshop was facilitated by Rod Wiese, Director Storm Consulting, and provided participants with an opportunity to understand the impacts of urbanisation, appreciate the benefits of stormwater management and to consider alternative techniques.



Rod Wiese from Storm Consulting facilitating the interactive Stormwater Workshop.jpg

To conclude the day, a site visit to Keswick Estate in Dubbo provided participants with an understanding of the unique challenges faced at this site including managing stormwater flows while protecting remnant EEC Fuzzy Box Woodland.

Feedback from the 43 conference attendees was overwhelmingly positive and supportive of a similar event being held in the future.

Stormwater Queensland 'Winter School'

Stormwater Queensland is committed to providing professional development opportunities for the industry and, last month, they hosted their inaugural 'Winter School'.

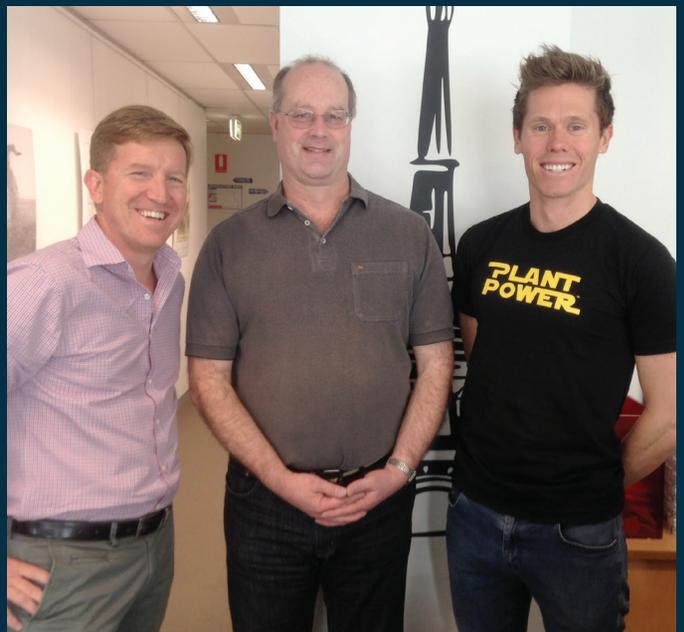
This was a series of individual daily training workshops, held over five days in Brisbane.

The workshops covered a wide range of topics, including:

- the design of pipes and outlets,
- water sensitive urban design,
- fauna friendly waterway crossings, and
- natural channel design

Each of the workshops were presented by:

- Grant Witheridge (from Catchments and Creeks),
- Andrew O'Neill (from Water By Design) and
- Amalie Wright (from Landscapology).



Charles Coathup, Grant Witheridge and Brad Dalrymple

Stormwater Queensland President Brad Dalrymple said "In just our first year of the Winter School, we had 82 day-registrations over the five days, which is a great response.

"We will continue to provide this event every year, although the topics will likely differ from year-to-year in response to the training needs of our members and wider stormwater industry". Mr Dalrymple concluded.

Stormwater Queensland Committee extends a special thanks to Charles Coathup and the GEMS Event team for organising this great event.

A New Flood Modelling System for Maroondah City Council

Sharing complex flood modelling outputs in a transparent and accessible manner has been an ongoing challenge for the team at Maroondah City Council in Melbourne, Victoria, for many years. But, in late 2014 Integrated Water Engineer, Cameron Dobb came up with a solution.

Recognising from experience that animated clips had proven particularly helpful in aiding a person's understanding of flooding, Cameron had an idea for a basic, low cost and user friendly animated flood modelling system.

While there were existing software programs that allowed the creation of animated flood modelling, they were highly specialised, expensive, and generally only suitable for large scale consideration of flood scenarios. So, a more accessible and customisable solution was required.

After some research Council's engineering team approached Lutra Consulting, a small company based in the United Kingdom, to see whether they would be interested in developing a new flood modelling animation tool as part of their existing freeware. Lutra was chosen because it is part of a passionate QGIS development community, and had a strong background in the flood risk industry.

Lutra took up the challenge and over a period of 35 weeks, Council and Lutra worked closely together on the software development.

The result, a free plugin that easily and simply produces animations for a whole platform of software packages and files, such as TuFlow.

The plugin was attached to a piece of free and globally available software called Crayfish as a new feature that animates flood modelling data through QGIS. The outputs are small video files which can be easily sent, and shared with stakeholders.

"Within Council we are constantly dealing with different audiences – both internal and external – that for a variety of reasons need to comprehend flood modelling but have very different levels of understanding when it comes to the topic.

"Often, it is hard to communicate a flooding scenario without the audience first being given a lesson in the detail and mechanics behind the information that forms the model," said Cameron.

Before the software was developed the team at Council was frequently using static images in an attempt to share information, even grouping them to produce scenarios. More often than not this didn't produce the desired result and was hard for stakeholders to understand.

Typically static outputs will show where the problem is but won't necessarily clearly communicate how the flooding occurs.

Once this is animated however, it is extremely transparent and easily communicated, regardless of experience with flood modelling data.

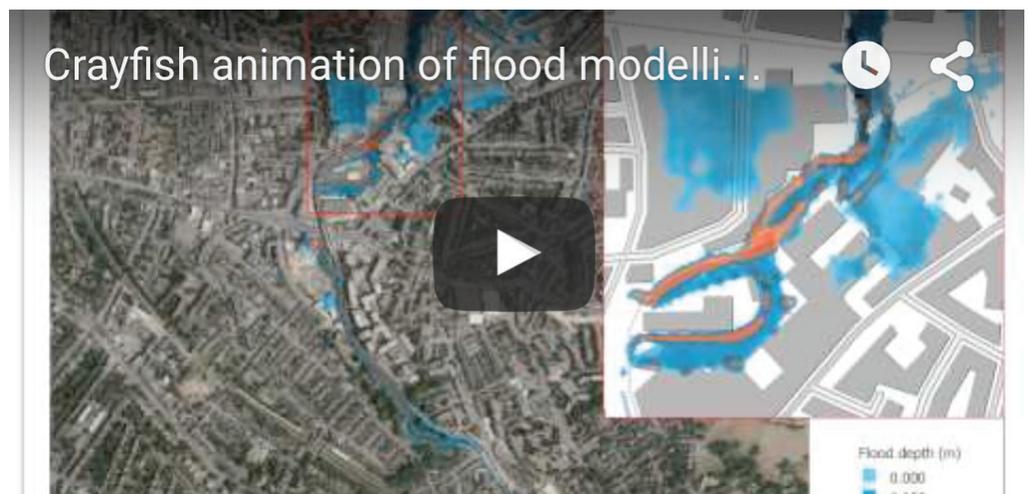
"With the new software we are able to easily produce and share animated flood models, and we have definitely seen a positive change in the sharing of information, and an increased understanding as a result," said Cameron.

"I have no doubt this software will also assist other local government organisations and relevant industry bodies in the sharing and understanding of flood modelling," said Cameron.

The Crayfish plugin tool is free and globally available for QGIS now.

For more information contact Cameron Dobb at Maroondah City Council on 1300 88 22 33.

To see the Crayfish plugin tool in action go to: <http://www.lutraconsulting.co.uk/products/crayfish/> or click on the image right.



Upcoming Events

9th International Water Sensitive Urban Design Conference

3rd International Erosion Control Association National Conference

H₂OLISTIC INTEGRATION: Concept, Design, Construction and Operation

19th – 23rd October 2015
Sydney, Australia



3rd International Erosion Control and 9th International Water Sensitive Urban Design Conferences

Dockside, Cockle Bay, Sydney
October 19th - 23rd 2015
E: registration@gemspl.com.au
W: www.wsud2015.org
P: +61 2 9744 5252

Ozwater 2016

Melbourne Convention and Exhibition Centre
10 - 12 May 2016
W: <http://www.ozwater.org/>

Novatech 2016

Lyon (France)
28 June - 1 July 2016
E: tim.fletcher@unimelb.edu.au
W: http://www.novatech.graie.org/a_index.php
P: +61 3 9035 6854

Management and Maintenance of Stormwater Quality Improvement Device Assets

Novotel Hotel, Brisbane
26 November 2015
E: admin@stormwaterqueensland.asn.au
W: stormwaterqueensland.asn.au/events
P: +61 2 9744 5252

9TH INTERNATIONAL CONFERENCE
NOVATECH
JUNE 28 > JULY 1 Lyon 2016



Planning & technologies for sustainable

urban water management



The 9th international conference “Novatech” will take place in Lyon (France) from June 28 - July 1st, 2016.

For 20 years, Novatech has been one of the leading international conferences promoting solutions for integrated and sustainable stormwater management.

The call for papers is out and closes 30th November. Note: you have a choice of submitting either a “scientific / technical” paper (which can either be as a 4-page extended abstract of a full paper; your choice) or a “case-study”.

The conference is an excellent opportunity to see some of the leading approaches to IUWM around the world, and takes place in one of the leading regions for implementing WSUD. The conference will include interactive workshops and field trips. For further details, visit the website: http://www.novatech.graie.org/a_index.php

If you have any questions at all, you can contact Tim Fletcher tim.fletcher@unimelb.edu.au or on 03 9035 6854.

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STORMWATER AUSTRALIA OBJECTIVES

Stormwater Australia is made up of a number of entities. These include Associations incorporated in individual Australian States and Nationally through a non-profit company called Stormwater Australia, also known as Stormwater Industry Association Ltd. The objectives for which Stormwater Australia is established are:

- To determine and co-ordinate policy direction for the stormwater industry;
- To implement policy via its member associations and / or organisations;
- To represent the member organisations at Australian Government level;
- To lobby the Federal Government policy advisors and committees for better environmental and technological management of stormwater;
- To represent the member associations and / or organisations on national issues with national groups, organisations, institutes, associations and any State body;
- To further nationally the interests of its member associations and / or organisations in stormwater management, and;
- To further establish the Stormwater Industry Association in all States and Territories of Australia.

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