

Reef Water Quality Improvement Plans (WQIP)
 Urban Storm Water Management (USWM) Workshop
 9:00 am – 4:00 pm, 28th October 2009 (Wednesday)

Venue: Council Chambers, 1st Floor Townsville City Council Administration Building, Walker St, Townsville

Purpose of Workshop:

- Updates on WQIP USWM related matters, including outcomes of USWM project
- Meet relevant USWM practitioners and have initial interactions
- Establish structure for USWM interactions for Reef “major cities” and related links
- Develop initial list of related actions, priorities and possible implementation strategy

A. Welcome and Introductions

Presenter: Chris Manning – general introduction and welcome.

Why are we here today?

- *To identify areas where we as can work together collaboratively on areas of similar interest and mutual benefit with respect to GBR and local water quality improvement*
- *To reduce costs in developing and implementing programs such as training packages, guidelines and compliance efforts*
- *To improve our ability to leverage funding for developing and implementing identified programs*
- *To improve our respective programs through sharing, learning and collaboration when appropriate.*

Presenter: Chris Manning

Reef Urban Stormwater Quality Management Working Group Workshop Objectives

Workshop Objectives

- *Updates on WQIP and USWM related matters, including the outcomes of DERMs USWM project*
- *Meet and interact with relevant USWM practitioners from ‘major urban areas’ in the Reef catchment*
- *Share information and explore opportunities for collaboration*
- *Discuss and establish a structure for ongoing collaboration, including the roles and responsibilities of participants*
- *Develop an initial list of actions, priorities and a possible implementation strategy*
- *Provide framework to demonstrate the collective capabilities of local government and regional NRM groups in helping to improve the water quality of our local waterways and GBR.*

Workshop attendees [Amended JB]

Name	Organisation
Chris Manning	Townsville City Council/Creek to Coral
John Bennett	Department of Environment and Resource Management
Peter Curley	Department of Environment and Resource Management
Alan Hoban	Water by Design (WBD)
Kate Clark	Department of Environment and Resource Management
Shannon Vannunen	Fitzroy Basin Association
Neil McKee	Gladstone Regional Council
Jason Vains	Great Barrier Reef Marine Park Authority
Carl Mitchell	Reef Catchments, Mackay Whitsundays
Ian Dight	NQ Dry Tropics, Townsville
Niall Connolly	Department of Environment and Resource Management
Robyn Birkett	Mackay Regional Council
Jonathon Herron	Rockhampton Regional Council
Peter Bradley	Terrain and Cairns Regional Council
Alastair McHarg	Townsville City Council/Creek to Coral
John Gunn	Creek to Coral
Dan Coonan 11.30am – 1pm	Townsville City Council

***Action item** – Look at the potential for a Great Barrier Reef Urban Stormwater Quality Managers cluster to develop proposals to access funding commensurate with the tasks required to manage stormwater for environmental and community benefit. [Amended JB]

B. Urban Stormwater Management – Policy Updates

Draft State Planning Policy Healthy Waters

Presenter: Peter Curley (see **Attachment 2** also)

***Action item** – Training and awareness required to enable LG to take on the greater responsibility devolved under the EP Act, at the local level.

***Action item** – Investigate the potential for other areas to adapt material developed in SEQ.

Comments/discussion: Niall C – resilience of receiving waters needs to be increased and offsets should not be used as an excuse to take no action to improve water quality and ecosystem health in susceptible areas e.g. in the vicinity of development. There are links to clearing of riparian regrowth and other measures which need to be made.

Peter B. - WSUD/USQM seems to be light on in FNQ Regional plan. [Amended PB]

Peter C – science wasn't ready to input to the plan at the time and therefore missed out on inclusion as strongly as was intended.

Peter C - There are some issues with how soil is treated in the IECA – best practice ESC document, and this needs to be addressed at the regional/local level in guidelines/codes etc.

An overview of NWQMS – EPP - EVs and WQOs and how they fit with WQIPs/HWM Plans.

Presenter: John Bennett - general USWM history and context with Chris Manning's introduction, then the status of the Reef WQIPs and an overview of the USWM components – as background to the subsequent presentations from each region/city (see **Attachment 3**) [Amended JB]

Comments/discussion: Niall C – The theory is that WQOs will be met through complying with the (draft) SPP?

Building Great Barrier Reef ecosystem resilience

Presenter: Jason Vains (see **Attachment 4**)

Comments/discussion: Chris M - Internal training and awareness for Councils is an important component to achieve Reef Guardian Council outcomes.

John B – The GBRMPA document; Land, Water, Waste and Community: Current best management practice for LG for reef protection, is a tool that can be embraced by local government to assist with TWCM. In particular, under the Land and Water component, the USWM planning and development assessment and compliance activities could be enhanced by this group's activities, as well as the USWM behavioural changes needed for existing urban areas (under the Community component). [Amended JB]

Niall C – It appears that discharge to the GBRMP from waste water treatment plants (WWTPs) is no longer seen as an option so discharge is now being directed to freshwaters. This is not an ideal solution and other disposal options need to be reviewed e.g. reuse.

John G - May be an avenue for funding when all Councils are on board and there is a solid 'block' of Reef Guardian Councils.

***Action item** – Look at the potential to build an action funding proposal to take to GBRMPA, based on combined Reef Guardian Councils implementing water quality improvement through TWCM (by April 2010).

***Action item** – Review the GBRMPA document; Land, Water, Waste and Community, for synergies with urban stormwater management planning and associated training/awareness opportunities.

C. Regional WQIP/USWM Updates

Cairns

Presenter: Peter Bradley (see **Attachment 5**)

Comments/discussion: Peter B - Still working out what are 'water envelopes' and how they impact developments, stormwater management design and development assessment?

***Action item** – look at MUSIC modelling input data in the context of the Wet Tropics and assess it for applicability. May need to develop a set of pollutant run-off coefficients specific to the Wet Tropics/Cairns region. These coefficients may also be of assistance for the Mackay-Whitsunday area, given its climate is closer to the Wet Tropics than the Dry Tropics. [Amended JB]

***Action item** – investigate how sediment generation from developing urban areas can be considered and included somehow in a Reef Rescue style funding package for urban areas.

***Action item** – investigate options for linking of urban stormwater monitoring results to other programs such as Paddock to Reef. This will assist with showing the relative importance of urban stormwater issues.

***Action item** – investigate options for a GBR catchments urban monitoring and modelling program supported by Reef Rescue style funding.

Presenter: Ian Dight

Burdekin WQIP

***Action item** – investigate options for a more collaborative approach to WQIP implementation between NQ Dry Tropics and Creek to Coral, potentially through the peri-urban interface.

Black Ross WQIP (Creek to Coral/ Townsville City Council)

Presenter: Chris Manning (see **Attachment 6**)

“Doing our bit to help protect our local waterways and the Great Barrier Reef”

Comments/discussion: Communicating to target audiences is important in the urban development continuum. Need to define the key audiences prior to development of programs. Different types of training and awareness are required for different audiences. Timing of treatments is important in the urban development continuum e.g. construction phase of WSUD measures. Behaviour change can be a significant method of source control. Implementation considerations need to be viewed in the context of local government decision mechanisms and resources.

Black Ross WQIP has taken the ABCD urban management practice framework forward and is also looking at how it can be measured in the WQ monitoring and modelling framework.

***Action item** – finalise the Black Ross WQIP taking into consideration recent changes to State policy and legislation and especially the EPP Water 2009, draft SPP Healthy Waters, draft Queensland Coastal Plan and the Sustainable Planning Act 2009.

***Action item** – investigate potential sources of external funding to assist with implementation of the Black Ross WQIP and cross-regional urban water quality improvement measures and especially influencing behaviour for better source control, and combined training opportunities.

Mackay

Presenter: Carl Mitchell (see **Attachment 7**)

***Action item** – increase collaboration with Mackay and Whitsunday Regional Councils to address urban water quality issues.

***Action item** – continue with the promotion of the Healthy Waterways program including cross-regionally for urban and rural GBR catchments.

Presenter: Robyn Burkett (see **Attachment 8**)

Comments/discussion: TWCM Mackay and Townsville case studies.

Cost of retrofitting prohibitive. Pilot programs may be able to prove the technology and set up the cost benefit justification.

Ambient and event WQ monitoring with a small budget \$50k/year.

Mackay is one of few RCs looking at going further than SPP design objectives. GBRMPA may be an avenue of support for the design objectives.

USQMP 2004 under review at present and doesn't include rural.

***Action item** – prepare a submission to DERM to align design objectives for Mackay region with the draft SPP Healthy Waters.

***Action item** – continue to promote cross-regional urban stormwater management solutions and collaboration.

Rockhampton (see **Attachment 8**)

Presenter: John Bennett (Introduction)

Presenter: Shannon Vannunen (FBA)

Comments/discussion: A whole of Council approach is required to ensure the various parts are working towards the same objectives.

Keen to be involved joint projects and learning.

Gladstone (see **Attachment 9**)

Presenter: John Bennett (introduction)

Comments/discussion: Issues with relevant treatments and climatic conditions.

May be helped by WSUD Dry Tropics guidelines. Also results from case studies etc will help in the future.

Bioretention filter medium issues and construction of measures.

Gladstone PCIMP

***Action item** – look at the potential for adaptation of the Townsville WSUD Dry Tropics guidelines and associated tools for Gladstone.

Bundaberg/Maryborough (see **Attachment 10**)

Presenter: John Bennett (using Sue Sargent prepared presentation)

***Action item** – development of proposal to assist local government access funding to manage stormwater impacts on HEV areas and EVs in general.

***Action item** – design and undertake pilot studies and document and analyse local WSUD elements e.g. WSUD business case prepared by WBD for Cairns, Townsville, Mackay and Brisbane.

***Action item** – more exposure for Duey dugong.

D. Technical Support / Tools

Modelling/Monitoring – SEQ and Reef Plan “Paddock to Reef” program [Amended JB]

Presenter: John Bennett (see *Attachment 11*)

Comments/discussion: CSIRO has been funded to develop a water circulation model in the Reef lagoon to improve understanding of the hydrodynamics and provide a basic component for future receiving water modelling. [Amended JB]

Carl M – Social and economic considerations/information including measuring improved management practice uptake, includes using industry data to give a picture of management practice adoption.

Carl M – There are gaps in receiving water modelling and ecosystem response models. Also initial point of impact, freshwater, is often overlooked in preference to attempting to determine the ‘bigger picture’ marine impact i.e. the Reef. Water quality improvement begins at the paddock/plot scale and can be best measured at this scale.

There is potential for an integrated approach and annual report card.

*How far does the budget extend? Confined to focus catchments for monitoring, and developing modelling at present. Catchment loads and regional loads are aggregated for Reef wide loads. Input from DERM etc for modelling is an advantage as funding constraints are generally related to monitoring.

***Action item** –Plot scale rainfall simulations for urban areas may be an option to investigate in the absence of rainfall events i.e. develop experiments particularly for developing urban areas, for different rainfall regimes, soils and vegetation. This would speed up results for urban areas and could be simulated for all climatic regimes in the one area, or moved from region to region to run simulations relative to local conditions i.e. soils and vegetation/groundcover.

Modelling for the Black Ross WQIP

Presenter: Alistair McHarg (see *Attachment 13*)

Comments/discussion: Based on WWTP upgrades for Townsville the cost of reduction of N is well above the cost for stormwater reductions as calculated in the WSUD Business Case report.

Design of a Best Practice Sustainable Urban Water Capacity Building Program

Presenter: Alan Hoban (see *Attachment 14*)

Comments/discussion:

- Adopting guidelines needs to be managed sensitively so that they are seen to be locally developed and relevant.
- Local guidelines are difficult to maintain and may need to be regional, with smaller specific local pieces as required (for cost effectiveness).
- Training needs to be specific for audiences and also be integrated i.e. LG and industry, so that common language is being used and issues can be investigated.
- Creek to Coral has been working with some notable behaviour change specialists with the view to improving ‘compliance’ with sustainable stormwater management (and other subjects). For capacity building programs to be effective there needs to be a high degree of rigour prior to the design of the program to ensure maximum impact/behaviour change can be achieved as an outcome.
- The various documents mentioned are available on WBD website. Need to register and log in to enable updates to be announced.
- MUSIC auditing tool?
- ‘Country’ MUSIC has been used for determining effectiveness of constructed wetlands in rural areas. DERM etc are now aiming to compare the usefulness of plot scale modelling for rural areas with the use of MUSIC, leading to the appropriate use of each of the models. [Amended JB]
- Proprietary stormwater treatment devices/products – claims are made which may not be ‘true’. Need independent peer reviewed research to confirm claims. (There is a product that removes 70% N that Alan H knows of)
- There is a workshop in Sydney shortly to kick off a National Lifecycle (WSUD) cost project. Organised by Kate Black (from WSUD in the Sydney Region project).

- Business case for WSUD is available and WBD is about to publish FAQs for LG and for developers. Results show that there are 2 to 3 times the benefits associated with WSUD compared to costs.
- Another resource is the Jim Binney report on costs associated with WQIPs implementation measures.
- Costs of WSUD need to be compared with costs that would be incurred as a normal component of development, rather than being seen as stand alone additional costs.
- Political cycles can 'slow' long-term solutions, as there is no kudos in something that can't be seen as an outcome in the short term.

***Action item** – Prepare a list of current Council WSUD and USM resources and what is required across the Reef Councils e.g. Mackay has a Lakes policy and guidelines and Townsville has draft WSUD technical design guidelines.

***Action item** – Look at developing regional/Reef guidelines and documents across the northern areas/Reef catchments based on broad 'wet' and 'dry' catchment types. [Amended JB]

***Action item** – Compile a compendium on stormwater treatment devices with measures of efficiency from manufacturers and independent sources. Provide examples and case studies from all regions.

***Action item** – Build on the WSUD business case information and other cost benefit data to add weight to the local case for WSUD adoption and implementation across Reef Councils.

F Consolidate actions, priorities, way forward for this group

How do we progress the group?

Comments/discussion:

- Some form of online discussion may be useful. Meetings are also a valuable means of communication and sharing ideas.
- Perhaps a combination of meetings and online discussion.

Jonathon Herron –The group is a great idea to be able to share and produce 'common' documents e.g. Reef Guardians, and access to guidelines etc. Meetings are good for the interactions and if every 3/4 months or so should not be cost prohibitive.

- Have moving meetings to make it easier for each Council to attend.
- Affiliation of the group with Reef Guardian Councils may add credibility to the group.
- The group needs to have more than just a Reef focus i.e. it must also focus on local waterways (along the theme of healthy catchments/lands, healthy waterways, healthy Reef). [Amended JB]
- Urban water quality is unlikely to be funded in the current Reef Rescue 'cycle' as funds have already been allocated. Urban areas could be included in the Reef report cards to raise the urban profile especially if there are achievements associated with urban water quality improvement measures.
- Regional Organisation of Councils as a conduit for support may not be effective for Townsville in the short term due to the unsettled circumstances resulting from amalgamation and economic circumstances.
- Reef Guardian Councils steering committee, consisting of Mayors and CEOs, will be meeting September 2010 and the Urban SWM Working Group could feed into that process/program.
- An opportunity exists for regional collaboration with the requirements for the preparation of new planning schemes. Stormwater management could be incorporated in planning schemes if a template was built to make things easier for the planners.
- Healthy waterways programs – looking at rebuilding the Mackay Whitsunday program and Fitzroy Basin is also looking at rebuilding the program. Potential exists to expand the concept to all urban centres in the Reef catchments.
- FNQROC may be a good model for WQ monitoring for Councils.

Peter Bradley – Will debrief with Cairns RC manager of infrastructure with the view that they take over the CRC role in the urban stormwater management group. From a Terrain perspective there needs to be more urban involvement, and there is already a platform laid with the structure of 'local' working groups and the emphasis placed on local government involvement.

Neil McKee - Yes involvement in the group is great and Gladstone Regional Council will be on board. The name of the group isn't an issue as the intent is right.

Ian Dight – involvement by NQ Dry Tropics will be more on the periphery as the Black Ross WQIP covers the region's largest population centre – Townsville. NQ Dry Tropics has been involved with constructed wetlands and there may be some learnings from the urban group that could be translated across. NQ Dry Tropics may also have a role in helping link the smaller Councils located within agricultural areas e.g. Burdekin Shire Council, with the urban components of stormwater management. NQ Dry Tropics will continue to involve Townsville City Council in its peri-urban activities. [Amended ID]

- Also diffusion of information through Reef Guardian Councils.
- There are linkages between any healthy waterways program and fish barriers and pests.
- Sue Sargent has been doing good work in Bundaberg with local government and is keen to be a part of the group.

Carl Mitchell - Reef Catchments are interested in being involved and have set aside some funds for healthy waterways. A new person is coming on board and they will probably be involved with the group

Shannon Vannunen – the group is relevant for FBA and Nathan Johnson will probably be the representative.

DERM - on board and already involved in Reef WQIPs and, in particular, inter-Council coordination and support on USQMP and other components. [Amended JB]

Reef Guardian Councils framework may be useful as well.

The Creek to Coral framework is also flexible enough to include additional players and take on regional programs as appropriate.

***Action item** – investigate what is happening with the Reef WQ Partnership sharepoint and the potential to utilise the sharepoint by the group.

***Action item** – Chris nominated as the group coordinator for the first year and will prepare and distribute notes from the meeting and look at arrangements for the next meeting (possibly in Mackay).

***Action item** – look at the needs/scope of the group and the possibility of setting up a secretariat.

***Action item** – prepare a draft Terms of Reference for the Reef Urban Stormwater Management / Healthy Waters working group including objectives, function and potential short and longer term strategies and actions.

***Action item** – document the discussions and outcomes of the initial meeting for distribution to workshop participants and those interested but unable to attend. Arrange for parking of presentations to enable access by workshop participants.

Notes from Alan Hoban (see **Attachment 15**)

Research needs:

- Pollutant generation inputs for modelling (EMC/DWC)
- Soil parameters (pervious area hydrology)
- Design for prolonged dry periods
- Plant palettes i.e. suitable species for climatic regions and situations
- Local monitoring to ground truth efficacy of treatment

Product needs (early gains)

- MUSIC modelling guidelines
- WSUD science summary reef catchments literature review (not a great deal of information currently available)
- ESC implementation note (from IECA)
- Construction and establishment guidelines
- Deemed to comply solutions

Work on wet and dry regions first and refine later for specific local areas. Get some runs on the board.

Also:

- Retrofitting guidelines and pilot sites (possibly in Townsville).
- Behaviour change studies.

***Action item** – on the basis of comments from the group and suggested actions compile and cost a list of options that would help advance the interests of the group and provide a platform for effective action.

Action extraction

Action item	Page
Look at the potential for a un-SEQ Healthy Waterways / Urban Stormwater Quality Managers cluster to develop proposals to access funding commensurate with the tasks required to manage stormwater for environmental and community benefit.	2
Training and awareness required to enable LG to take on the greater responsibility devolved under the EP Act, at the local level.	4
Investigate the potential for other areas to adapt material developed in SEQ.	4
Look at the potential to build an action funding proposal to take to GBRMPA, based on combined Reef Guardian Councils implementing water quality improvement through TWCM (by April 2010).	6
Review the GBRMPA document; Land, Water, Waste and Community, for synergies with urban stormwater management planning and associated training/awareness opportunities.	6
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Increase collaboration with Mackay and Whitsunday Regional Councils to address urban water quality issues.	11
Continue with the promotion of the Healthy Waterways program including cross-regionally for urban and rural GBR catchments.	11
Prepare a submission to DERM to align design objectives for Mackay region with the draft SPP Healthy Waters.	12
Continue to promote cross-regional urban stormwater management solutions and collaboration.	12
Look at the potential for adaptation of the Townsville WSUD Dry Tropics guidelines and associated tools for Gladstone.	13
Development of proposal to assist local government access funding to manage stormwater impacts on HEV areas and EVs in general.	14
Design and undertake pilot studies and document and analyse local WSUD elements e.g. WSUD business case prepared by WBD for Cairns, Townsville, Mackay and Brisbane.	14
More exposure for Duey dugong.	14
Plot scale rainfall simulations for urban areas may be an option to investigate in the absence of rainfall events i.e. develop experiments particularly for developing urban areas, for different rainfall regimes, soils and vegetation. This would speed up results for urban areas and could be simulated for all climatic regimes in the one area, or moved from region to region to run simulations relative to local conditions i.e. soils and vegetation/groundcover.	16
Prepare a list of current Council WSUD and USM resources and what is required across the Reef Councils e.g. Mackay has a Lakes policy and guidelines and Townsville has draft WSUD technical design guidelines	19
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Chris nominated as the group coordinator for the first year and will prepare and distribute notes from the meeting and look at arrangements for the next meeting (possibly Mackay).	21
Look at the needs/scope of the group and the possibility of setting up a secretariat.	21
Prepare a draft Terms of Reference for the Reef Urban Stormwater Management / Healthy Waters working group including objectives, function and potential short and longer term strategies and actions.	21
Document the discussions and outcomes of the initial meeting for distribution to workshop participants and those interested but unable to attend. Arrange for parking of presentations to enable access by workshop participants.	21
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