

Fact sheet 5

Improving water quality at the edge of block.

A guide to help extension and NRM officers identify edge of block water quality management initiatives and how to implement them.

DESIGNING AND IMPLEMENTING YOUR WATER QUALITY MANAGEMENT ACTIVITY.



Once you have a site, a willing farmer, an idea on which type of water quality management initiative you wish to implement, the next step will be to dig into the detail of the job! This will more than likely mean you need to engage a technical expert. This fact sheet provides select information on some of the key specific steps in taking the project from a good idea to a finished project.

Ensuring your project meets local, state and federal planning laws

It is possible that your project may require local or state government approval, or may not be allowed at all!!.. The best way to determine this is:

- Meet with your local (Council) or state (Department of State Development, Infrastructure, Local Government and Planning) government planning representative and discuss the merits of your project being classified as "General Farm Improvements". Ideally you would aim NOT to need a 'Construction Certificate', as this is often the trigger for state government approvals.
- If you don't import or export significant volumes of material for your project, then its highly likely that you won't need any approvals, unless you trigger some other planning layer.

The easiest way to see if your project will trigger other planning layers is to reference your site on the following planning sites:

Development Assessment Mapping System:

<http://bit.ly/MappingSystem>

State Planning Policy Interactive Mapping System:

<http://bit.ly/PlanningPolicy>

WetlandInfo Programs, Policy and Legislation page:

<http://bit.ly/ProgramsPolicyLegislation>

Obtaining in-principal commitment from the landholder

Making sure the landholder is on board with the project will be the key to its success, for both the ongoing maintenance and longevity of the proposed water quality management initiative, particularly if the landholder is contributing financially to the project. . Good collaboration and consistent communication are the key to achieving this. The landholder usually has the most detailed understanding of the hydrology of the site – so you (or the designer) will need their knowledge for selecting a suitable site and for ensuring an effective system is built.



Designing treatment systems

One of the biggest misconceptions with water quality treatment systems is that they are designed to receive and treat the water from all the runoff generated during a rainfall or irrigation event. This is not the case. Most treatment systems are designed to treat only a proportion of the water generated from an event, usually the 'first flush' of water from the catchment at the beginning of a rainfall event. Generally speaking, this first flush of water contains the highest concentrations of pollutants, and thus becomes the most important volume of water to treat.

Each type of treatment system will have their own specific design requirements, however each system that is designed should have a way of:

- engaging the 'treatable' flow – ensure water that needs to be treated will interact with the system in a way that promotes the key removal processes
- addressing high flows / flood events – ensure that flood and high flow events can be managed, either through an external or internal bypass system.
- addressing low flows – have minimum water levels during the in dry season to ensure key removal processes are maintained or have a mechanism to reduce flows and store water for as long as possible (i.e. close outlet of wetland in August)
- providing maintenance opportunities – discuss with the farmer the best way to access the system for periodic maintenance.

Timing of construction

Fact Sheet 2 discusses broad construction timeframes for a range of proposed systems, with almost all the actions discussed requiring some degree of earthmoving. Given this, these works will only be able to be done during the dry season usually between June and November (drier months and before the onset of heavy rains) – about the time cane is harvested, planting is occurring and fertilising is happening. This means that the landholder will be quite busy, so much of the planning work really needs to happen during the prior wet season.

Making sure what gets built is what everyone wanted

Having a decent set of plans to work off ensures that everyone knows what they are building. No matter how good design plans are, they are unlikely to be followed 100%. If all people involved in the project (landholder, designer, funder, construction person/s) understand the rationale of what is getting built (prestart meeting and inclusion from the activity for its inception), any modification during the construction process will likely be of benefit. Key phases in the construction of the project should be regularly checked as satisfactory by all involved parties (hold points) before moving to the next phase or project completion.

All stakeholders should be regularly consulted throughout the design and construction process. This will avoid conflict, ensure that everyone understands what is being achieved and issues are resolved both before, during and following works.