



## **QMDC comments on the Regulation of levee banks in Queensland: Draft assessment code for the construction of new levee banks or the modification of existing levee banks**

26 March 2014

### **Submission to:**

Floodplain Management Team  
Department of Natural Resources and Mines  
PO Box 15216  
City East, Brisbane, QLD 4002  
Fax: 07 31815173  
[levees@dnrm.qld.gov.au](mailto:levees@dnrm.qld.gov.au)

### **Submitting organisation:**

Chief Executive Officer  
Queensland Murray-Darling Committee Inc.  
PO Box 6243  
Toowoomba QLD 4350  
Phone: 07 4637 6276  
Fax: 07 4632 8062  
[geoffp@qmdc.org.au](mailto:geoffp@qmdc.org.au)

These comments are presented by the Chief Executive Officer, Geoff Penton, on behalf of the Queensland Murray-Darling Committee Inc. (QMDC). QMDC is a regional natural resource management (NRM) group that supports communities in the Queensland Murray-Darling Basin (QMDB) to sustainably manage their natural resources.

### **1.0 Background**

QMDC's core business is to provide soil conservation, water quality, floodplain and riparian management services. QMDC do not construct contour banks etc on the floodplain or in waterways. All earth works on the flood plain are designed by engineers/hydrologists.

QMDC's soil conservation work regarding contour banks and waterways is all done back on sloping lands. QMDC do not construct earth structures on the floodplain due to the risk of diverting water or the structures failing (due to flood waters).By working on properties above the floodplain helps reduce adverse impacts on the floodplain.

Staff, have therefore gained knowledge and experience in:

- Soil conservation design and implementation training and extension
- Landscape design for sub-catchment groups and individuals
- Property planning & design (inc GIS, mapping)
- Neighbour, council and relevant public utilities consultation



- Implementation (pegging waterways, w/w grassing technical support, surveying contour banks, keeping field records)
- Construction supervision
- Certification if required.

Soil conservation specifications for the Border Rivers and Maranoa Balonne catchments have been prepared by technical staff from QMDC and DNRW. Staff, have used information developed from the developed DPI (DNRW) regional specifications that were trialled and proven over the years. Some of the land management manuals contain these specifications.

These comments are informed by regional community aspirations and targets for floodplain management as articulated in the Regional NRM Plan, by QMDC's ongoing ground work on soil conservation projects and by QMDC's ever increasing natural disaster knowledge, which we have gained through our flood recovery programs.

## **2.0 General comments**

QMDC's comments aim to promote a greater correlation between floodplain management and land use planning (and coordination of runoff/flow across the catchment). This correlation and coordinated control needs to recognise the multiple functions of a floodplain, including the natural flow of water across the catchment and floodplain. Identification of risks and hazards is also necessary to determine what natural and human assets are at greatest risk and which strategically require the greatest protection, for example, aquatic ecosystems, strategic cropping land, endangered vegetation, community health infrastructure etc

In the Darling Downs floodplains, development or construction should be restricted on lands which will result in the alteration of flows and which require levee banks to protect that development or construction from floods.

## **3.0 Specific comments**

### **3.1 Overview of levee banks (pp.1-2)**

QMDC assert impacts caused by a design flood are not only caused by levee bank failures or overtopping but also because of the fact that water is diverted by levee banks or incorrect or poorly designed earthworks. Environmental impacts should also be acknowledged alongside economic damage and loss of life.

QMDC believes proposals to modify existing levee banks need to also consider on-property impacts to assess whether soil erosion may occur resulting in increased levels of turbidity which may have downstream impacts e.g. increased local government water treatment costs. It is suggested this could be addressed by including a new category of classification.

QMDC strongly urges the code to require an evaluation whether the rebuilding of a levee bank to the same specifications after a flood damage event is the best practice. The fact that the levee bank is damaged may demonstrate that it is situated in the wrong place or is poorly designed.

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### 3.2 Mandatory requirements (p.3)

QMDC believes the code needs to clarify how it will assess a new levee proposal when a flood event has not occurred to test the levee and whether it has an off property impact.

It should also be mandatory that the construction of levee banks in the floodplains should be built to a height no greater than 10cm as per The *Floodplain Management on the Darling Downs Better Management Practice Guidelines* (the Guidelines).

If a levee bank or structure will alter overland flow this should trigger the code and the levee bank design be assessed and approved by the administering authority.

### 3.3 Non-mandatory requirements (p.4)

QMDC recommends that consultation with immediate neighbours should be as per the requirements of the Soil Conservation Act 1986, s.10(5) & (6).

### 3.4 Category 1 and 2 levee banks – impact and code assessable (p.7)

QMDC argues that on property risks that result in changes to water quality, increased turbidity and significant soil erosion should also be included within this section of the code. It is suggested that a new category 3 be used to classify this type of levee bank and its risks.

### 3.5 Performance outcomes and acceptable outcomes (p.9)

QMDC asserts the code needs to address economic risks in terms of acceptable outcomes. We believe it is paramount that the code protects economic investment by not allowing businesses and industries to develop in high risk areas. If a levee bank, for instance, is built to protect an investment, that development needs to be assessed against other businesses or industries situated on the floodplains, and whether they are put at a higher risk because of the levee bank construction.

In QMDC's opinion the action of "avoiding" off-property impacts should be included in the performance outcome, PO1.

The design and construction standards for a proposed levee should trigger an assessment under the Guidelines.

Section 4 of the Guidelines addresses planning and designing infrastructure in the floodplains, specifically railways, roads, farm roads and tracks, fences and fence-lines, levees, irrigation infrastructure, and drains.

Some of the key management practices are based on the following:

- Co-ordinating planning with all stakeholders involved, to develop run off management plans for the length and breadth of the floodplains
- Identifying the issues, particularly those of strategic importance and resolving them in a workshop type environment to ensure equitable planning and realisation and acceptance of responsibility by stakeholders

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- It is best to try to avoid the use of flood protection levees because they exclude flow from one area to potentially concentrate and increase the velocity and depth of flows in another area.

QMDC asserts that recommendation 7.16 from the Queensland Floods Commission of Inquiry Final Report should also be considered as integral to this code.

*7.16 The Queensland Government should consider drafting assessment criteria to be included in the model flood planning controls which require that works in a floodplain:*

- *Do not change the flood characteristics outside the subject site in ways that result in:*
  - *Loss of flood storage*
  - *Loss of/changes to flow paths*
  - *Acceleration or retardation of flows, or*
  - *Any reduction to flood warning times elsewhere on the floodplain*

Additionally the Queensland Reconstruction Authority's guideline - *Planning for stronger, more resilient floodplains Part 2 – Measures to support floodplain management in future planning schemes* suggests at p.26 that the building of levees to protect a town or area may be more expensive than the cost of the property buy-backs or land swap programs for those areas. If a levee is to be constructed the details of the level of protection (i.e. 1% or 2% event etc) should be made available to land use planners within Council so they can tailor land use provisions accordingly. If there is a residual risk left by the levee, it has to be acceptable to the community and ensure the impacted areas are still resilient to the ensuing inundation.

<http://www.qldreconstruction.org.au/u/lib/cms2/resilient-floodplains-part2-full.pdf>