

10 February 2017

The Honourable Jackie Trad MP  
Deputy Premier, Minister for Infrastructure, Local Government and Planning and Minister for Trade and Investment  
c/- State Interest Feedback  
Planning Group  
Department of Infrastructure, Local Government and Planning  
PO Box 15009  
CITY EAST QLD 4002

Dear Minister Trad,

## **RE: Stormwater Queensland Submission on the Draft State Planning Policy**

I write to you on behalf of the members of Stormwater Queensland - the peak industry association for stormwater in Queensland. Stormwater Queensland has reviewed the draft *State Planning Policy* (SPP or 'the policy') and the proposed draft amendments to the policy. This letter outlines our submission on both the policy and the proposed draft amendments.

In general, we support the policy and the proposed draft amendments although have provided some discussion and recommendations for improving the policy. The intention of this submission is to support the State in providing strong and workable regulation which contributes to the achievement of the State interests outlined in the policy.

It is noted that Stormwater Queensland recently facilitated a forum on the draft SPP (31 January 2017 with 70 delegates). Our submission takes into account the information presented by the speakers as well as discussions which occurred during the forum and subsequent contributions by Stormwater Queensland members.

### **Summary of Recommendations**

We provide below a succinct summary of our recommended changes to the SPP. Each recommendation is elaborated thereafter, with explanation and justification for these changes.

#### **State Interest - Water Quality**

1. It is recommended that Total Water Cycle Management planning requirements are reinstated into the *Environmental Protection (Water) Policy* or other regulatory instrument as appropriate, to ensure the state achieves the water quality state interest.
2. It is recommended that the following wording be added to the 'state interest - water quality' and the associated 'development assessment requirements – water quality' or other location of the SPP deemed appropriate:

Part E State interest – water quality recommended wording (p41)

(6) *Water Sensitive Urban Design (WSUD) principles<sup>1</sup> are applied to developments to ensure that stormwater management measures are well-integrated with surrounding land uses.*

'Development assessment requirements – water quality' recommended wording (p42)

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<sup>1</sup> WSUD principles are provided in the *Urban Stormwater Quality Planning Guidelines* (DERM 2010)

The following requirements are assessment benchmarks for the development:

*Development is located and designed to ensure that stormwater management measures are well-integrated with surrounding land uses including by:*

- (a) applying Water Sensitive Urban Design (WSUD) principles; and*
- (b) integrating stormwater management with other open space uses; and*
- (c) minimising or avoiding retaining structures, steep batters and exclusion fencing.*

3. If the DILGP are going to accept offsets as a means to achieve the water quality state interest, the SPP:
  - Should specifically state this as an acceptable compliance pathway.
  - Provide some guidance on the types of development for which offsets may be appropriate (please refer to our offsets position statement in Appendix A).
  - Provide some guidance on the appropriate acquittal of offsets contributions (please refer to our offsets position statement in Appendix A).
  - Outline minimum planning requirements.
4. Either remove the Best Practice Environmental Management compliance option or clearly state its intended application. If the intent is compliance with 'Living Waterways' (Water by Design 2014) this should be clearly stated in the SPP.
5. Remove the development thresholds from the SPP and require assessment authorities to undertake the appropriate level of stormwater offset planning; or apply a lower threshold, as follows (note also changes to wording in below):
  - 1) *for a material change of use, or reconfiguring a lot for an urban purpose that involves land area greater than 850 m<sup>2</sup> that:*
    - (a) will result in an impervious area greater than 25 per cent of the net developable area; or*
    - (b) will result in three or more dwellings or lots.*
  - 2) *operational works for an urban purpose that involves disturbing a land area greater than 850 m<sup>2</sup>.*
6. The wording of the deemed to comply modelling target be changed to:  
In lieu of modelling, the default bio-retention treatment area to comply with load reduction targets for all Queensland regions is 1.5 per cent of the contributing catchment area. This applies only to development *that involves land area less than 2500 m<sup>2</sup> that:*
  - (a) will result in an impervious area greater than 25 per cent of the net developable area; or*
  - (b) will result in six or more dwellings or lots.*
7. Reconsider the need for including the defining bank in the SPP and SDAP. If the need is justified, consider utilising the 'outer bank' as defined by the Water Act instead of another new definition.
8. It is recommended that the following provisions be added to the development assessment requirements – water quality (p42).  
The following requirements are assessment benchmarks for the development:
  - 3) *Development is located in areas that avoid or minimise the disturbance to natural drainage, high risk soils, aquatic ecosystems (including high ecological value and slightly disturbed waters), groundwater and landform features.*
9. Reword Table B (d) Waterway stability objective (p76) to:  
*Waterway stability objective applies only if development drains to an un-lined waterway within or downstream of the site; or to a lined waterway where the local Council has identified, as part of catchment planning, future waterway remediation intent.*

## Construction Phase

1. Amend wording of the objective to:  
*Capture at least 80% of the average annual runoff volume that flows through or from exposed site areas and treat to 50mg/L TSS or less and pH in the range 6.5–8.5.*
2. Consider adopting the recommendations of the Cavendish and Witheridge (2014) paper particularly the regional zone mapping and the erosion and sediment control elements suggested for each zone. The erosion and sediment control elements could be adopted in the water quality guidelines to replace the single solution there currently.
3. Amend wording of the design objectives table as follows:

Issue	Design Objectives
Erosion Control	<ul style="list-style-type: none"> <li>• Stage clearing and construction works to minimise the area of soil exposed to rain or strong winds at any one time</li> <li>• Effectively stabilise<sup>1</sup> cleared areas prior to rainfall if works are delayed or works are not intended to occur immediately</li> <li>• Effectively stabilise<sup>1</sup> areas at finished level as soon as practicable and prior to rainfall</li> <li>• Prior to completion of works (i.e. plan sealing or on-maintenance) for the development and prior to removal of sediment controls, all site surfaces must be effectively stabilised<sup>1</sup> using methods which have achieved effective short-term stabilisation and which will continue to achieve effective stabilisation in the medium to long-term</li> </ul>
Drainage Control	<ul style="list-style-type: none"> <li>• Manage clean stormwater around or through areas of exposed soil in order to avoid contamination</li> <li>• Manage sheet flows and avoid or minimise rill and gully erosion</li> <li>• Provide concentrated flow paths to avoid rill or gully erosion and which have the required capacity and are stable as per Table A1</li> <li>• Provide emergency spillways for sediment basins as per Table A2</li> </ul>
Sediment Control	<ul style="list-style-type: none"> <li>• Runoff from exposed site soils must be directed to sediment controls which are appropriate to the extent of disturbance and level of erosion risk</li> <li>• As a minimum, all exposed areas in excess of 2500m<sup>2</sup> must be provided with sediment controls which are designed, implemented and maintained to a standard which would achieve at least 80% of the average annual runoff volume of the contributing catchment treated to 50mg/L TSS or less and pH in the range 6.5-8.5 (i.e. 80% hydrologic effectiveness)<sup>2</sup>.</li> </ul>
Waterway stability and flood flow management	<ul style="list-style-type: none"> <li>• Where measures are required to meet post-construction waterway stability objectives (specified in Table B), these are either installed prior to land disturbance and are integrated with erosion and sediment controls or equivalent alternative measures are implemented during construction</li> <li>• Earthworks and the implementation of erosion and sediment controls are undertaken in ways which ensure flooding characteristics (including stormwater quantity characteristics) external to the development site are not worsened during construction for all events up to and including the 1 in 100 year ARI (1% AEP)</li> </ul>

<sup>1</sup> An effectively stabilised surface is defined as one that does not, or is not likely to result in visible evidence of soil loss caused by sheet, rill or gully erosion or lead to sedimentation, or lead to water contamination

<sup>2</sup> The SPP Guideline has advice on measures which are deemed to comply with the 80% hydrologic effectiveness requirement for sediment controls

## Other

1. It is recommended that the DILGP consult with Stormwater Queensland on amendments to the 'water quality guideline' prior to the release of the draft and prior to official public consultation.
2. Make the studies upon which the water quality state interest is based publically accessible. If this is not possible, Stormwater Queensland would like to request copies of these document to enable more valuable feedback in the future.
3. Frequent flow objectives are reinstated in conjunction with planning (i.e. mapping) by assessment authorities (councils) identifying where these objectives apply and where they don't. Clearly articulate compliance pathways for achieving the frequent flow objective to assist implementation.
4. Investigate the adequacy of the Q1 Waterway Stability objective and encourage Councils to undertake monitoring and catchment planning to identify with greater resolution where the waterway stability objective applies, doesn't apply or where an alternative may apply.
5. Rainwater tanks are considered mandatory on all new developments unless an alternative stormwater harvesting scheme has been identified.
6. Revisit the load based objectives and their appropriateness. Consider what is actually required to achieve or move closer to achieving the 'protection and enhancement' of Queensland waters. Incentivised treatment above minimum standards is one potential mechanism of achieving improved outcomes for our waterways
7. The SPP should acknowledge and identify the need for maintenance of stormwater treatment systems both vegetated and proprietary. Council's should be required to identify, as part of their TWCM planning, the mechanisms through which adequate maintenance provisions will be attained.

## Explanation of Recommendations

### 1. State Interest - Water Quality

The Draft SPP retains 'Water Quality' as a State interest in planning and development. Stormwater Queensland strongly supports the retention of water quality as a State interest and the wording of the overarching state interest statement. As noted by James Coutts at the Stormwater Queensland Forum, the draft SPP proposes to achieve this state interest by focusing on '*ensuring development facilitates achievement of water quality objectives for Queensland waters*'.

The draft SPP suggests that this can be achieved through:

- Achieving the stormwater management design objectives in Table A and B (construction and post construction); or
  - Facilitating an equivalent or improved water quality outcome through locally appropriate solutions; or
  - Demonstrating best practice environmental management is applied.

However, each of these options will at best only deliver a reduction in stormwater pollutant loads generated by development and cannot therefore be expected to provide for the protection or enhancement of environmental values. These solutions therefore only provide for part of the solution.

In order to ensure the State interest is achieved, local governments must undertake catchment planning and Total Water Cycle Management (TWCM) planning. It is suggested that to ensure the state achieves the water quality state interest, the mandatory TWCM planning requirements be reinstated into the *Environmental Protection (Water) Policy* or other regulatory instrument as appropriate.

While it is acknowledged that in some jurisdictions water agencies are separate to local governments, this has not prevented Moreton Bay Regional Council or Redland City Council from successfully leading the development of their local TWCM plans. As such, reinstating the mandatory TWCM requirements is recommended.

**Recommendation:**

2. It is recommended that TWCM planning requirements are reinstated into the *Environmental Protection (Water) Policy* or other regulatory instrument as appropriate.

**2. Facilitating Good Urban Design**

Facilitating good urban design is noted as a key priority of the draft SPP. The ‘liveable communities’ provisions of the Draft SPP includes some valuable statements aimed at facilitating good urban design outcomes (page 23) however, there is little direction regarding the integration of land and water planning.

For example, it could be argued that the example shown in Figure 1 below complies with both the ‘liveable communities’ and ‘water quality’ state interest policies yet still delivers both poor urban design outcomes and likely poor water quality outcomes. In this example, neither state interest has been achieved. The proliferation of such examples demonstrates that stronger wording specific to stormwater management is required.



**Figure 1 Example of a poorly designed bioretention basin with high retaining walls and steep batters**

Given that Water Sensitive Urban Design (WSUD) is a design philosophy which seeks to integrate land and water planning, there is value in making WSUD part of the water quality and liveable communities state interest and associated development assessment requirements. This would also assist in overcoming the problem of local government planning schemes focusing on the water quality objectives rather than more integrated urban design outcomes.

Further information on the values of integrating land and water planning and how to achieve integration is also available in *The Framework for the Integration of Flooding and Stormwater Management into Open Space* (Water by Design 2011). This document also provides a framework which can easily be integrated directly into local government planning schemes in response to the recommended amendment making planning scheme compliance straightforward. Please refer to Appendix A for a copy of the Stormwater Queensland submission on the *Multiple Use Public Open Space Consultation Report* commissioned by the Department of Infrastructure, Local Government and Planning. Importantly, Stormwater Queensland believes that the successful integration of stormwater and open space will only be achieved with a head of power through the SPP.

### **Recommendation:**

It is recommended that the following wording be added to the 'state interest - water quality' and the associated 'development assessment requirements – water quality' or other location of the SPP deemed appropriate:

Part E State interest – water quality recommended wording (p41)

- (6) *Water Sensitive Urban Design (WSUD) principles<sup>2</sup> are applied to developments to ensure that stormwater management measures are well-integrated with surrounding land uses.*

'Development assessment requirements – water quality' recommended wording (p42)

The following requirements are assessment benchmarks for the development:

- (3) *Development is located and designed to ensure that stormwater management measures are well-integrated with surrounding land uses including by:*
- (a) applying Water Sensitive Urban Design (WSUD) principles; and*
  - (b) integrating stormwater management with other open space uses; and*
  - (c) minimising or avoiding retaining structures, steep batters and exclusion fencing.*

### **3. Stormwater Quality Offsets**

Local authorities are increasingly relying on stormwater quality offsets as a flexible solution to meeting the water quality state interest. As documented in the Stormwater Queensland *Stormwater Quality Offsets Position Statement* (refer to Appendix B), we support the adoption of stormwater quality offsets when undertaken following the appropriate level of planning.

Planning does not always guarantee that offsets will be applied responsibly however. Some Councils for example, have undertaken comprehensive planning and are expected to be spending collected offset contributions responsibly but they still accept offsets from most development applications, including in greenfield areas where integration of stormwater management measures can be readily achieved. This is not considered appropriate for the reasons outlined in the offsets position statement (Appendix A).

It would be appropriate for the state to require, as part of its state interest checks, that any local government collecting voluntary contributions from development for the provision of off-site stormwater quality solutions, must have regional stormwater quality planning in place for this purpose. It would also be appropriate that the state check what type of applications are being accepted for offsets and how offset contributions are intended to be spent.

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<sup>2</sup> WSUD principles are provided in the *Urban Stormwater Quality Planning Guidelines* (DERM 2010)

**Recommendation:**

We would recommend that if the DILGP are going to accept offsets as a means to achieve the water quality state interest, the SPP:

- Should specifically state this as an acceptable compliance pathway.
- Provide some guidance on the types of development for which offsets may be appropriate (please refer to our offsets position statement in Appendix A).
- Provide some guidance on the appropriate acquittal of offsets contributions (please refer to our offsets position statement in Appendix A).
- Outline minimum planning requirements.

**4. Best Practice Environmental Management**

The draft policy accepts that the water quality state interest can be achieved by '*demonstrating current best practice environmental management*'. Precisely what constitutes current best practice environmental management (BPEM), is however widely open for interpretation and the definition provided in the Environmental Protection Act 1994, section 21 does little to clarify the intent.

The definition states that BPEM includes 'minimisation of the activity's environmental harm through cost-effective measures assessed against the measures currently used nationally and internationally for the activity'. How this varies from achieving the water management objectives stated in the SPP remains unclear and the term 'minimisation' used in the definition does not provide any regulatory certainty.

This has led to a lot of confusion in the industry as to the intent of this policy statement including between leading practitioners in stormwater management. If the intent is compliance with 'Living Waterways' (Water by Design 2014) this should be clearly stated in the SPP. Stormwater Queensland has previously provided feedback on this document to Healthy Waterways which is provided in Appendix C.

**Recommendation:**

Either remove the BPEM compliance option or clearly state its intended application.

**5. Development Threshold**

The development thresholds is an area which the DILGP was specifically seeking comments. It is noted that the development thresholds listed in the draft SPP include the following:

- (1) for a material change of use, or reconfiguring a lot for an urban purpose that involves premises greater than 2500 m<sup>2</sup> and that will result in six or more dwellings or lots with an impervious area greater than 25 per cent of the net developable area; or
- (2) operational works for an urban purpose that involves disturbing a land area greater than 2500 m<sup>2</sup>.

Our response includes analysis of both the wording and relevance of the thresholds.

**5.1 Development Threshold Wording**

Firstly, it is noted that the first of these thresholds could be interpreted to mean that any lots with an impervious area greater than 25 per cent of the net developable area are triggered regardless of their size i.e. the relationship to the 2500 m<sup>2</sup> trigger is not clear in this wording. Based on advice from James Coutts and Brad Dines at the forum, the thresholds were not intended to have changed so the wording would need to be revised to reflect the intended meaning i.e. 2500m<sup>2</sup> **and** meeting the impervious trigger.

Secondly, the revised wording combining the triggers for MCU and ROL applications has the consequence of not applying the development assessment requirements for water quality to any commercial or industrial development because it only applies to MCU developments greater than 2500m<sup>2</sup> **and** six or more dwellings. This is also assumed to be an unintended consequence of trying to simplifying the wording of the triggers.

Thirdly, changing the wording of the trigger from 'land area' to 'premises' is confusing. This could be interpreted as gross floor area of a building which would further reduce the application of the policy for industrial developments.

Lastly, the wording is also different to that on page 76, Table B, item (a). This text is also unclear as to whether the impervious area criteria is subject to the 2500 m<sup>2</sup> trigger.

### **Recommendation (Wording):**

If the thresholds are to remain without any fundamental change to the actual intent, the following wording is recommended:

*1) for a material change of use, or reconfiguring a lot for an urban purpose that involves land area greater than 2500 m<sup>2</sup> that:*

*(a) will result in an impervious area greater than 25 per cent of the net developable area; or*

*(b) will result in six or more dwellings or lots.*

It should be noted that Stormwater Queensland does not support the retention of the current thresholds and further information on suggested improvements is provided below.

### **5.2 Development Threshold Relevance**

Having a threshold for stormwater quality management in previous state policies has been beneficial to avoid the need for management systems on very small lots and highly constrained sites. This was beneficial as meeting the SPP targets on highly constrained sites often leads to poor outcomes and is not cost effective. It is important to consider however, that in a number of the larger Council's such as Brisbane and the Gold Coast, small scale developments makes up the majority of development applications and therefore have the greatest impact on water quality and hydrology.

Even in local government areas where greenfield development still dominates as the primary type of development, the impact to water quality from small, infill development still has a disproportionately high impact due to the higher imperviousness of such development. An integrated design for the quantity and treatment option needs to be considered for these small scale developments as the cookie cutter approach of a small treatment system in the back corner of the development is not a good WSUD outcome and can lead to ongoing maintenance issues.

The impact of small scale development on water quality and catchment hydrology therefore needs to be managed. Acknowledging the physical constraints of small scale development to achieve water quality and catchment hydrology targets, it is considered that such development provides the perfect opportunity for the application of stormwater quality offsets. The funds from such offsets could then be invested in regional stormwater management strategies. This is only a workable solution however, if assessment authorities (local governments, ports, airports etc.), undertake the appropriate level of offset planning as outlined in point 3 above.



It is acknowledged that not all Council's will have the desire to adopt an offsets scheme in which case a reduced trigger could be adopted. Such a trigger should lower the thresholds for both land area and scale of development. Note that the recommended thresholds noted below are based upon:

1. Minimising the infrastructure requirements for very minor applications but applying the SPP to the bulk of applications with high imperviousness (heavily polluting uses) including high density residential, commercial and industrial uses.
2. The work undertaken by Gold Coast City Council in determining appropriate targets in its planning scheme.

### **Recommendation (Relevance):**

It is recommended that:

- The development thresholds are removed from the SPP; and
- Assessment authorities are required to undertake the appropriate level of offset planning as outlined in point 3 above.

OR

A lower threshold is retained, as follows:

*1) for a material change of use, or reconfiguring a lot for an urban purpose that involves land area greater than 850 m<sup>2</sup> that:*

*(a) will result in an impervious area greater than 25 per cent of the net developable area; or*

*(b) will result in three or more dwellings or lots.*

*(2) operational works for an urban purpose that involves disturbing a land area greater than 850 m<sup>2</sup>.*

### **6. Deemed to Comply Trigger**

The draft SPP suggests that:

In lieu of modelling, the default bio-retention treatment area to comply with load reduction targets for all Queensland regions in 1.5 per cent of the contributing catchment area.

During the forum, Brad Dines advised that the intent was for this to apply to small scale development however, it is currently being applied for all scales of development. This is an inappropriate application of a deemed to comply trigger such as the one suggested in the policy. The *Deemed to Comply Solutions* (Water by Design 2010) for example, capped such solutions to an upper limit of either 20 allotments or 12,500m<sup>2</sup> in land area.

According to this document, these upper limits were set to:

- *Ensure the solutions address the bulk of applications received by authorities (consisting of small scale applications within the ranges defined)*
- *Ensure that develop applications which justify full scale stormwater quality modelling and reporting are excluded from the solutions. These include large scale and more complex application which do not lend themselves to generic deemed to comply solutions.*

Since the publication of that guideline, our understanding of what makes up a complex application in terms of stormwater quality management has changed. For example, most applications where stormwater runoff flows into separate catchments is sufficiently complex to justify modelling in order to understand the appropriate design responses required to meet the state interest.

In this regard, the threshold targets suggested in point 7.2 above may be appropriate technically but may also trigger more modelling than is intended. The current thresholds however, would likely strike the right balance.

**Recommendation:**

The wording of the deemed to comply modelling target be changed to:

In lieu of modelling, the default bio-retention treatment area to comply with load reduction targets for all Queensland regions is 1.5 per cent of the contributing catchment area. This applies only to development *that involves land area less than 2500 m<sup>2</sup> that:*

- (a) will result in an impervious area greater than 25 per cent of the net developable area; or*
- (b) will result in six or more dwellings or lots.*

**7. Watercourse Definition**

The draft SPP includes a definition of a 'defining bank' as it relates to a 'watercourse', which is defined by the Water Act 2000. This is the same definition provided in the State Development Assessment Provisions (SDAP). The existing definition of a watercourse under the Water Act 2000 is influenced by definitions of the 'lateral limits', 'outer bank', and 'drainage feature' which are also defined by the Water Act 2000. The definition of a watercourse remains however, quite ambiguous to the extent that numerous court cases are brought before the Planning and Environment Court to resolve.

To add another definition in the SPP and SDAP further confuses the definition of a watercourse and will likely lead to further court actions.

**Recommendation:**

Reconsider the need for including the defining bank in the SPP and SDAP. If the need is justified, consider utilising the 'outer bank' as defined by the Water Act instead of another new definition.

**8. Protection of Natural Drainage**

The water quality state interests suggest that:

- (2) Land zoned for urban or future purposes is located in areas that avoid or minimise the disturbance to natural drainage, high risk soils, aquatic ecosystems (including high ecological value and slightly disturbed waters), groundwater and landform features.

This is an important and highly valuable provision of the draft SPP. Avoiding or minimisation of disturbance to these values should however extend development applications as well as land use planning/zoning.

Additionally, the provision of buffers would be beneficial in avoiding impacts to natural drainage and would facilitate opportunities for water quality improvement, floodplain management, disconnection of impervious surfaces etc.

**Recommendation:**

It is recommended that the following provisions be added to the development assessment requirements – water quality (p42).

The following requirements are assessment benchmarks for the development:

(3) *Development is located in areas that avoid or minimise the disturbance to natural drainage, high risk soils, aquatic ecosystems (including high ecological value and slightly disturbed waters), groundwater and landform features.*

## **9. Waterway Stability Objective - Wording**

The existing wording is confusing and doesn't recognise the potential of lined urban waterways (e.g. concrete channels) to be remediated into unlined vegetated ecological systems. This is becoming more and more common as the economic, environmental and social value of vegetated waterways, particularly with urban densification, is becoming better understood.

### **Recommendation:**

*Waterway stability objective applies only if development drains to an un-lined waterway within or downstream of the site; or to a lined waterway where the local Council has identified, as part of catchment planning, future waterway remediation intent.*

## **CONSTRUCTION PHASE**

### **1. Erosion and Sediment Control Design Objectives**

The wording of the current erosion and sediment control objective (Part 6 Appendix 2 Table A Page 74 Sediment Control (2)) appears to be confused. 80% hydrologic effectiveness is the same as treating 80% of the average annual runoff volume. It is understood that work has been completed which shows that 80% of the annual runoff volume can be treated using current best practice technologies.

Moreover, the wording on the design objectives seems to be equally confused from an engineering and scientific perspective.

### **Recommendation:**

Amend wording of the objective to:

*2. Capture at least 80% of the average annual runoff volume that flows through or from exposed site areas and treat to 50mg/L TSS or less and pH in the range 6.5–8.5.*

Amend wording of the design objectives table as follows:

Issue	Design Objectives
Erosion Control	<ul style="list-style-type: none"> <li>• Stage clearing and construction works to minimise the area of soil exposed to rain or strong winds at any one time</li> <li>• Effectively stabilise<sup>1</sup> cleared areas prior to rainfall if works are delayed or works are not intended to occur immediately</li> <li>• Effectively stabilise<sup>1</sup> areas at finished level as soon as practicable and prior to rainfall</li> <li>• Prior to completion of works (i.e. plan sealing or on-maintenance) for the development and prior to removal of sediment controls, all site surfaces must be effectively stabilised<sup>1</sup> using methods which have achieved effective short-term stabilisation and which will continue to achieve effective stabilisation in the medium to long-term</li> </ul>
Drainage Control	<ul style="list-style-type: none"> <li>• Manage clean stormwater around or through areas of exposed soil in order to avoid contamination</li> <li>• Manage sheet flows and avoid or minimise rill and gully erosion</li> <li>• Provide concentrated flow paths to avoid rill or gully erosion and which have the required capacity and are stable as per Table A1</li> <li>• Provide emergency spillways for sediment basins as per Table A2</li> </ul>
Sediment Control	<ul style="list-style-type: none"> <li>• Runoff from exposed site soils must be directed to sediment controls which are appropriate to the extent of disturbance and level of erosion risk</li> <li>• As a minimum, all exposed areas in excess of 2500m<sup>2</sup> must be provided with sediment controls which are designed, implemented and maintained to a standard which would achieve at least 80% of the average annual runoff volume of the contributing catchment treated to 50mg/L TSS or less and pH in the range 6.5-8.5 (i.e. 80% hydrologic effectiveness)<sup>2</sup>.</li> </ul>
Waterway stability and flood flow management	<ul style="list-style-type: none"> <li>• Where measures are required to meet post-construction waterway stability objectives (specified in Table B), these are either installed prior to land disturbance and are integrated with erosion and sediment controls or equivalent alternative measures are implemented during construction</li> <li>• Earthworks and the implementation of erosion and sediment controls are undertaken in ways which ensure flooding characteristics (including stormwater quantity characteristics) external to the development site are not worsened during construction for all events up to and including the 1 in 100 year ARI (1% AEP)</li> </ul>

<sup>1</sup> An effectively stabilised surface is defined as one that does not, or is not likely to result in visible evidence of soil loss caused by sheet, rill or gully erosion or lead to sedimentation, or lead to water contamination

<sup>2</sup> The SPP Guideline has advice on measures which are deemed to comply with the 80% hydrologic effectiveness requirement for sediment controls

## 2. Erosion and Sediment Control Mapping

Cavendish and Witheridge (2014) proposed that erosion and sediment control on civil construction sites should be based on several regional zones based on local climatic conditions and waterway type. This paper included a map of Queensland showing the proposed regional zones.

### Recommendation:

Consider adopting the recommendations of the Cavendish and Witheridge (2014) paper particularly the regional zone mapping and the erosion and sediment control elements suggested for each zone. The erosion and sediment control elements could be adopted in the water quality guidelines to replace the single solution there currently.

## **OTHER RECOMMENDATIONS**

### **1. Stormwater Quality Guidelines**

A revised water quality state interest guideline was not available at the time of review and it appears that there is no commitment for this guideline to be made available for consultation prior to the SPP being finalised or the Act commencing. As such, neither the existing nor amended version of this guideline were reviewed for this submission, which makes commenting on the policy difficult. It is expected that when the guideline becomes available, consultation on the guideline will be undertaken and there will be opportunity for comment. Stormwater Queensland would however like to request that it is consulted prior to the release of a draft so that we can provide meaningful input.

#### **Recommendation:**

It is recommended that the DILGP consult with Stormwater Queensland on amendments to the 'water quality guideline' prior to the release of the draft and prior to official public consultation.

### **2. Data Availability**

The water quality state interest is based upon a number of studies commissioned by the DILGP. It is understood that this included analysis of the erosion and sediment control requirements/business case and alternatives to meeting water quality objectives (BPEM). There is value in making these studies publically available so that a better understanding of the policy can be developed by the industry. Such an understanding is expected to lead to better planning outcomes.

#### **Recommendation:**

Make the studies upon which the water quality state interest is based publically accessible. If this is not possible, Stormwater Queensland would like to request copies of these document to enable more valuable feedback in the future.

### **3. Frequent Flow Objective**

Reinstatement of frequent flow or specifying new targets to control hydrology alteration. This should primarily aim at encouraging stormwater infiltration, through bio filter or others, stormwater harvesting (tanks/ponds) and groundwater recharge to maintain baseflows, particularly in ephemeral systems.

Councils should identify, through appropriate catchment planning, where additional (i.e. frequent flow objectives) apply to help protect waterway values.

#### **Recommendation:**

Frequent flow objectives are reinstated in conjunction with planning (i.e. mapping) by assessment authorities (councils) identifying where these objectives apply and where they don't. Clearly articulate compliance pathways for achieving the frequent flow objective to assist implementation.

### **4. Flow Criteria**

Flow control as a key criteria – consideration of expansion of waterway stability objective above Q1 events may be warranted as some developments are lacking detention altogether and this can result in hugely elevated stream power, doing rapid damage to some waterways. Additionally, there is also some merit in investigating achieving this control for flows below Q1 as certain streams maybe damaged at these lower thresholds. It should be customised based on the evidence downstream through site inspection, flow monitoring and modelling (potentially), this is becoming easier to identify with new technology in 2D modelling.

Bank full flows are the critical flows for bank stability (i.e. when highest velocities are typically experienced). The Q1 is often indicative of bank full flows but actual modelling and/or onsite inspection and /or flow monitoring may prove otherwise. The vulnerability of a waterway is also influenced by soils and existing condition of the receiving waterway particularly the cover of vegetation and shade. We agree that in most circumstances the management of the Q1 flows is beneficial in waterway stability. However, Councils may undertake monitoring and catchment planning to identify with greater resolution where the Waterway Stability Objective applies, doesn't apply or where an alternative may apply.

#### **Recommendation:**

Investigate the adequacy of the Q1 Waterway Stability objective and encourage Councils to undertake monitoring and catchment planning to identify with greater resolution where the waterway stability objective applies, doesn't apply or where an alternative may apply.

## **5. Rainwater Tanks**

We understand rainwater tanks were previously removed from state policy due to pressure from the development industry claiming it was increasing the cost of development. However, after the rainwater tanks were removed, the cost of housing did not decrease. In addition, previous studies into the cost-benefit of rainwater tanks (which also influenced the removal of these from legislation) was found to have incorrect assumptions applied (refer to Appendix D). More recent and rigorous studies have identified a positive cost-benefit.

Recent research on rainwater tanks has demonstrated a strong cost-benefit outcome to property developers, home owners and the environment. Successful outcomes to flood mitigation, water quality management and potable water reductions are demonstrated in the Aquarevo development.

<https://watersensitivecities.org.au/content/aquarevo-launch-heralds-new-standard-sustainable-living/>

The reuse of rainwater has a positive benefit on receiving waters and on potable water use reduction. Achieving targets for potable water use reduction is mandatory in other jurisdictions e.g. NSW - BASIX and <https://www.basix.nsw.gov.au/iframe/about-basix.html> “BASIX reduces water and energy consumption in homes across NSW. These environmental outcomes also provide a long term financial saving for the homeowner – and a valuable contribution to the sustainable future of our communities.”

and Victoria Clause 56 – Residential subdivision “Integrated water management provisions”

[http://www.dpcd.vic.gov.au/\\_data/assets/pdf\\_file/0007/135754/VPP\\_Clause\\_56\\_4-Intwaterman.pdf](http://www.dpcd.vic.gov.au/_data/assets/pdf_file/0007/135754/VPP_Clause_56_4-Intwaterman.pdf)

#### **Recommendation**

Rainwater tanks are considered mandatory on all new developments unless an alternative stormwater harvesting scheme has been identified.

## **6. Load Based Objectives**

The current load based pollutant reduction objectives are simple to apply, readily understood and have served well to date. However, the shortfalls of this singular method, including the lack of good integrated design are apparent and it is acknowledged by industry that these load based objectives don't achieve the "protection and enhancement" of waterways that the policy intent clearly states. Further investigation is necessary to understand what is required to achieve the policy outcome of 'protected and enhanced waterways'. This will require revisiting of the load based objectives and their appropriateness. Incentivised treatment above minimum standards is one potential mechanism of achieving improved outcomes for our waterways.

### **Recommendation:**

Revisit the load based objectives and their appropriateness. Consider what is actually required to achieve or move closer to achieving the 'protection and enhancement' of Queensland waters. Incentivised treatment above minimum standards is one potential mechanism of achieving improved outcomes for our waterways

## **7. Maintenance**

Maintenance for stormwater treatment systems, both vegetated and proprietary, is critical to their continued functionality. Mechanisms are required to ensure adequate funding and capacity is available for the ongoing maintenance of stormwater treatment systems.

### **Recommendation:**

The SPP should acknowledge and identify the need for maintenance of stormwater treatment systems both vegetated and proprietary. Councils should be required to identify, as part of their TWCM planning, the mechanisms through which adequate maintenance provisions will be attained.

I trust that this submission will assist in providing a more robust and workable policy for the State of Queensland and lead to better planning outcomes.

Should you have any questions or would like to discuss the SPP in general or our submission specifically, please contact Paul Dubowski (p: 3831 6744 e: [paul.dubowski@bmtwbm.com.au](mailto:paul.dubowski@bmtwbm.com.au)).

Kind regards



**Brad Dalrymple**  
President, Stormwater Queensland

**Appendix A: Stormwater Queensland submission on the *Multiple Use Public Open Space Consultation Report***



## **Appendix B: Stormwater Queensland Stormwater Quality Offsets Position Statement**

## **Appendix C: Stormwater Queensland Submission on 'Living Waterways' (Water by Design 2014)**

## **Appendix D: Expert Review of Rainwater Tanks Business Case**