Memorandum

To	Kirsty van Reenen
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From	Jack McConchie & Matt Balkham
Office	Wellington Environmental Office
Date	6 July 2018
File	3-53394.00
Subject	Western Rivers – Global Consent Application

1 Background

WSP Opus were engaged by the Environmental Regulation Department, GWRC to provide an independent review and advice regarding an application by the Flood Protection Department, GWRC for a global consent for river management activities.

Following a review of available material, WSP Opus provided two memoranda:

- WSP Opus, 2017; and
- WSP Opus 2018.

These summarised their expert opinion as to the appropriateness of the information provided, and the Assessment of Environmental Effects submitted, with the consent application;

In response to these memoranda, the Flood Protection Department (GWRC, 2018(e)) provided an overview of additional information, including two major reports (e.g. Williams, 2017 & Brierley, 2018), which had been written subsequent to the consent application. This material had therefore not been provided to WSP Opus for review.

A caucusing meeting was held on 22 May 2018 at which WSP Opus identified those areas where additional clarification would be of benefit to the Environmental Regulation Department when considering the application for a global resource consent.

It is important that this current memorandum is read in conjunction with the previous reports and memoranda to provide the full context for these additional comments.

2 Key areas for clarification

Four over-arching themes were identified regarding the original application:

1. The application reflects on-going river management, rather 'solving' a specific problem. The issues of 'avoiding' and 'remedying' effects of the proposed activities receive relatively little consideration;

2. The application appears to promote an *ad hoc* approach to managing both the over-supply i.e. aggradation of the bed, and under-supply i.e. bank erosion, of sediment. There seems to be little consideration of a sediment budget approach which considers the variable input, throughput and output of sediment. For example, rather than periodically removing sediment from within the channel to maintain bed levels, consideration should be given to reducing the potential supply of sediment i.e. from both erosion of the bed and banks, and slope processes. While this may be problematic when the source of sediment is outside of the river corridor, the advantages of a catchment management approach should be considered to the extent possible;

3. It is acknowledged that the full range and location of in-stream works over the next 35 years is largely unknown. Consequently, some flexibility is essential within the global consent. However, there is only very limited data on the effects of past activities, and by implication these future activities. The application appears to be based on the premise *"Trust me, I know what I am doing or what I might do"* over the next 35 years;

4. The documentation, including the draft consent conditions, provide no performance measures or minimum standards which must be met; and

5. The fact that there have been no complaints regarding past activities does not necessarily equate to *'a job well-done'*.

In addition, the application does not make it clear whether international best practice has been applied, especially since works can be constrained by the requirements of the relevant Flood Management Plan (FMP). All management and decisions regarding river works are made within the context of the FMP; which can become dated and potentially inappropriate. This has the potential to act as a significant constraint on the application of changing and dynamics international best practice.

The key areas requiring clarification are summarised below. It is recognised, that some of these issues have subsequently been addressed, by Williams (2017) & Brierley (2018), although at the time of caucusing these resources had yet to be provided for review:

- It must be explicitly stated, and understood, exactly where the 'line' exists between those activities covered by the application i.e. the global consent, and those activities that will still require a separate consent. This 'line' should be defined by a range of quantifiable parameters e.g. length of river or bank to be effected, duration of activity, type of activity, location of activity, context of activity, and whether it is new work or reinstatement of an existing 'structure'. There must be a transparent mechanism in the process for someone to review what is proposed, and confirm whether it is within scope of the global consent (e.g. OMP or annual plan). Ideally, this process should involve review by independent experts, including those with recognised experience and competence in fluvial geomorphology and riverine processes.

- The application does not articulate the end-point, overall philosophy or outcomes that the Flood Protection Department, GWRC are trying to achieve (e.g. giving the river more room, geomorphological outcomes, environmental outcomes etc.). These are fundamental for:

    - Decision-making regarding options for any proposed works;

    - Delivering and realising enhancements and improvements to both river management and the river environment;

- Monitoring the effects of works. What monitoring will be required, and how will the results be assessed against specific outcomes/performance standards? Any monitoring must be linked to specific standards and outcomes;
- Independent review – Monitoring standards and guidelines are also essential to provide criteria and guidance to the independent review panel;
- Feedback loop/adaptive management Changes to the FMP, OMP, and Code of Practice can only be recommended and adopted if the goals and desired outcomes are known and explicit. The application and associated documents must therefore include what is guiding the feedback/adaptive management process.

It is recognised that the underlying philosophy has now been articulated by Williams (2017) and Brierley (2018). It is essential, however, that this philosophy and the guiding principles are made explicit in: the consent application; any final resource consent; and the conditions of consent. These linkages are essential to give confidence that the philosophy meets 'international best practice' regarding river management; and that all activities will be consistent with ongoing or evolving 'best practice'.

- The Flood Management Plan (FMP) underpins all those documents forming the lower tiers in the proposed planning hierarchy. However, the FMP is a non-regulatory document, does not require formal expert peer review, and does not have to be consistent with 'best practice' regarding river management. A FMP is also generally 'long-lived'. The environment, priorities, and 'best practice' river management can change over the duration of the FMP. It is therefore essential that the FMP includes reference to the underlying philosophy, the principal criteria supporting decision-making, and is subject to external independent peer review by a person with recognised experience and competence in fluvial geomorphology and riverine processes.

- A Science Group was established by the Flood Protection Department to assist with the preparation of the consent application. There would be advantages to the establishment of an Independent Science Group (i.e. potentially this could be the Independent Review Group (IRG) proposed in the draft Code of Practice) to provide advice and oversight of the activities of the Flood Protection Department on an *ad hoc,* but on-going, basis. It must be ensured that this group has an appropriate balance of skills and experience in river environments; including at least one person with recognised experience and competence in fluvial geomorphology and riverine processes. To ensure independence, and to provide transparency, the membership of this group should be approved by the Manager, Environmental Monitoring, GWRC.

- To ensure transparency, and appropriate technical oversight, the approval of the Manager, Environmental Regulation needs to be based on independent external advice. It is noted that the Manager, Environmental Monitoring currently does not give approval without the advice of someone independent to the consent and applicant; either internal or external. A formalised Science Group might be an appropriate body to advise on decision-making regarding river works.

- It is noted that the latest iteration of the Code of Practice (version 18) has been improved significantly since an earlier draft reviewed by WSP Opus. It is suggested, however, that the philosophy underpinning decisions regarding river works, and the context for these works, needs to be enhanced further, and stated explicitly. This could include a 'philosophy section' to the Introduction. This would draw on the conclusions of Williams (2017) and Brierley (2018). The CoP needs to provide clear, concise and explicit reference to 'best

practice', and the criteria for decision-making. There needs to be a clear articulation of the vision for the future management of rivers in Western Wellington, and the goals regarding the river environment.

- The Code of Practice (CoP) should include assessment criteria for the decision-making process i.e. guidance to the supervisor when determining which methods to implement at a specific location on a river. This could involve a flow chart, or a hierarchy approach, so that the basis for any decisions is clear and transparent. The assessment process must be clear, concise and transparent, and ideally include parameters/variables which are quantifiable. This would avoid any suggestion that decisions are subjective rather than objective, and that they are not based on clearly defined criteria. When the required maintenance activities are outside of this decision-making process, it must be explicit that a separate resource consent for the works will be required.

- Since the global consent will authorise, with conditions, a wide range of works over various rivers, for a considerable time, there needs to be independent checks and balances throughout the process. Key to these checks and balances will be the use of independent persons with recognised experience and competence in fluvial geomorphology and riverine processes.

- Feedback loops need to be demonstrated throughout the framework so that it is explicit that the experience and learnings from a specific activity will inform, and support, future decision-making and work programmes. The aim will be to produce better, more resilient and sustainable outcomes. Again, these loops should be to reinforce, and where necessary modify, the key principles and decision-making criteria to provide better environmental outcomes in the future.

- There needs to be an explicit requirement for monitoring of the outcomes of specific works, and not just of the process. Monitoring should be required within the consent conditions, and needs to be linked back to the overall philosophy/outcomes to be achieved. Since the application includes only limited environmental monitoring of the effects of specific activities, and little empirical data, more intensive monitoring should be mandatory. Again, this will help to provide better environmental outcomes in the future.

3 Proposed Actions

It is suggested that the following actions and activities would lead to greater transparency and robustness of the proposed global consent. They would assist with managing the inherent uncertainty of river systems, mitigating potentially adverse environmental effects, and enhancing both community and environmental outcomes. These activities could include the following actions:

- The inclusion of a clear, concise philosophy statement within:
    - Any consent which is granted;
    - The CoP;
    - Any conditions of consent; and
    - All documents which form the planning and decision-making framework.

  Much of the underlying philosophy should come from the 'conclusions' of Williams (2017) and 'summary' of Brierley (2018).

- The inclusion of a set of criteria which clearly distinguishes between that work which can be undertaken under the global consent, and that which will require a separate consent. These criteria should include a range of quantifiable parameters e.g. length of river or bank to be effected, duration of activity, type of activity, location of activity, context of activity, and whether it is new work or reinstatement activities. These criteria should be attached to;
    - Any consent which is granted;
    - The CoP; and
    - Any conditions of consent.
- An Independent Science Group (or Independent Review Group) should be formed of appropriate persons, including persons with recognised experience and competence in fluvial geomorphology and riverine processes. This group should provide independent expert advice to The Manager, Environmental Monitoring when monitoring compliance with any resource consent, should it be granted.
- The ISG (or IRG) could also provide advice at each step of the development of the various documents supporting the proposed river management process (Figure 1). It is anticipated that involvement would be more intensive during the first 'planning cycle', and when specific activities are undertaken for the first time.

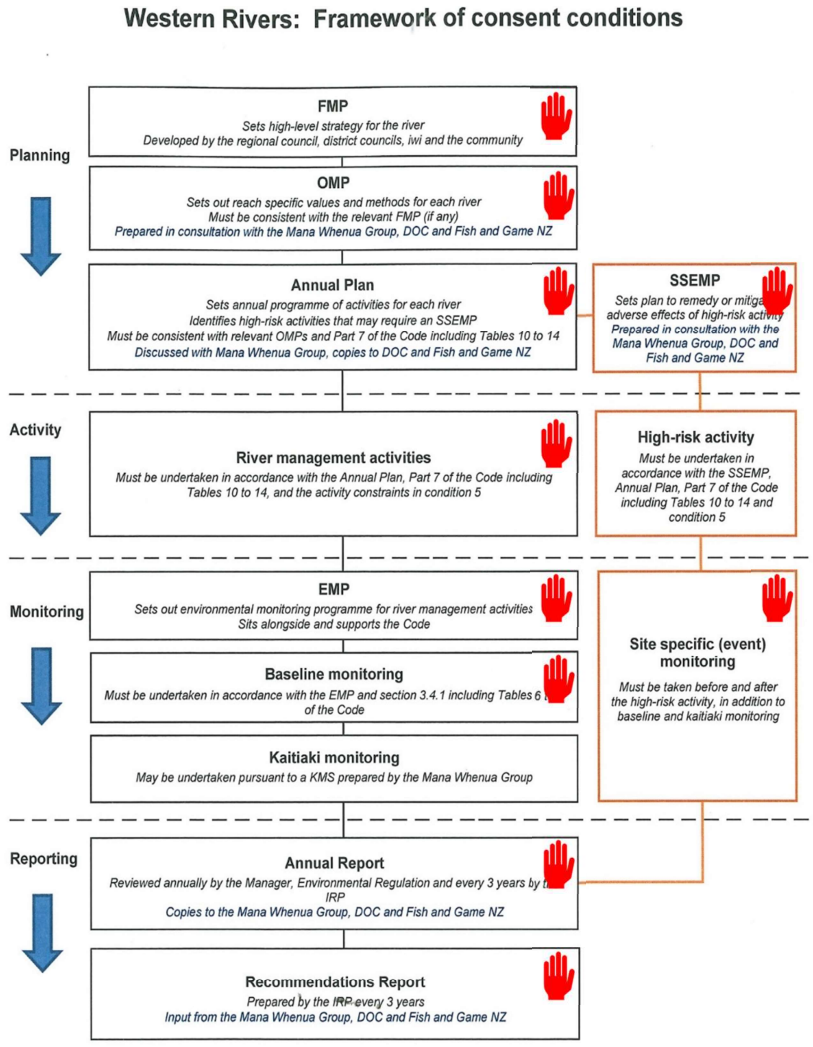

Figure 1: Proposed river management and decision-making framework; indicating either opportunities, or a requirement, for the involvement of an Independent Science Group.

It is considered that these actions, together with those which have already been undertaken by the Flood Protection Department (the results of which are reflected in the revised CoP and Draft conditions) will address many of the potential issues raised in WSP Opus (2017 & 2018). It is recognised that the evolution of the proposed river management framework now reflects the input of Williams (2017) and Brierley (2018); although some of this input could be stated more explicitly. This would show that the Flood Protection Department is attempting to follow 'international best practice', but within the constraints under which it operates.

4 Additional considerations

There is a large measure of uncertainty regarding river works, and this extends to their potential effects and impacts. This uncertainty needs to be both recognised and accommodated within the application, the assessment of environmental effects, and the conditions attached to any resource consent. At present, the draft consent conditions appear to be relatively weak and non-prescriptive. For example,

- There is no reference to avoiding, mitigating or remedying potential effects. The emphasis appears to be on '*minimising*' effects. This could be perceived to be a rather low standard. Also, the interpretation of *'minimise'* is subjective;
- The goal of in-stream works appears to be to "*minimise as far as practicable*";
- There are no quantifiable performance measures or standards, and therefore the management of any effects is very subjective and compliance monitoring will be difficult;
- The adoption of a "*Where appropriate*" management philosophy is also subjective;
- The hierarchical of approach omits the goal *'to avoid';*
- Many of the key decisions, and review of performance are made 'in house'; and
- The emphasis on *'good practice'* and not '*best practice*'.

This level of uncertainty, and the flexibility requested, emphasises the need for comprehensive and effective oversight by independent subject experts.

Other areas where further development should be encouraged, and which were identified in WSP Opus (2017 & 2018) include:

- A movement towards the adoption of a proactive, rather than reactive, approach to river management. This is consistent with the 'philosophy' and 'advice' of Williams (2017) and Brierley (2018). Perhaps in response to uncertainties regarding the future needs for interventions and river management, the CoP promotes a generally reactive approach. The focus appears to be on the mitigation of local environmental effects.

  An alternative 'catchment approach' could provide an opportunity for overall river character enhancement, while still delivering community and stakeholder aspirations. A proactive management strategy could also offer an opportunity to realise efficiencies in whole of life asset management costs.

- The potential gap in assessing cumulative and wider reaching effects of the proposed management activities. This is particularly problematic given the rather limited availability of empirical data. This 'gap' should be filled by more detailed and intensive monitoring,

particularly during the early phases of the implementation of any global consent for river works and channel management.

- Consideration of the performance of the river assets during extreme events is critical for planning around residual risk, and as justification for further river management activities. There is little discussion of residual risk, performance of works during extreme events, and the selection and application of freeboard (which effects the performance and residual risk).

  It might be most appropriate to deal with this uncertainty, and future developments, within the discussion of philosophy, and the guidance and criteria underpinning any decision-making.

5 References

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GWRC, 2018b: Minutes – Meeting with Opus on draft review 22 May 2018 3p.

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